



National Défense
Defence nationale

A-CR-CCP-603/PF-001



ROYAL CANADIAN SEA CADETS

BOOK 2 OF 2

**PHASE THREE
INSTRUCTIONAL GUIDES**

(ENGLISH)

Cette publication est disponible en français sous le numéro A-CR-CCP-603/PF-002.

Issued on Authority of the Chief of the Defence Staff

Canada



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Contact Officer: D Cds 3-2-4 – Sea Cadet Program Development Staff Officer

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FOREWORD AND PREFACE

1. **Issuing Authority.** This Instructional Guide (IG) A-CR-CCP-603/PF-001 was developed under the authority of the Director Cadets and Junior Canadian Rangers, and issued on the authority of the Chief of Defence Staff.
2. **Development.** Development of this IG was in accordance with the performance oriented concept of training outlined in the A-P9-050 Series, Canadian Forces Individual Training and Education System, with modifications to meet the needs of the Cadet Organization.
3. **Purpose of the IG.** The IG to be used by Royal Canadian Sea Cadet Corps in conjunction with other resources to conduct Phase Three training. The IG provides instructors with the base means from which to deliver training. Individual IGs are to be reviewed in conjunction with the Lesson Specifications (LSs) found in A-CR-CCP-603/PG-001, *Royal Canadian Sea Cadets Phase Three Qualification Standard and Plan*, Chapter 4, before instructing, so that each instructor can adequately plan for and prepare each lesson. Instructors may be required to develop instructional materials to support training in addition to any that may be provided, eg, posters, videos, handouts, models, etc, supplemental to training control and support documents. Suggested instructional activities are included in most IGs to maximize learning and fun. Instructors are also encouraged to modify and/or enhance the activities, as long as they continue to contribute to enabling objective achievement.
4. **Use of the IG.** Throughout these instructional guides, a series of information boxes are used to highlight information; they include:



Note to the Instructor.



Key information to pass along to cadets.



Refer to the following CF regulations and policies.



Points of interest or special instructions the instructor should pass along to cadets.

5. **Suggested Changes.** Suggested changes to this document shall be forwarded through the normal chain of command to National Defence Headquarters (NDHQ) Attention: Sea Cadet Program Development Staff Officer (D Cdts 3-2-4), or by e-mail to sea.dev@cadets.gc.ca.

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CHAPTER 11
PO 320 – RECOGNIZE ASPECTS OF THE CANADIAN NAVY



ROYAL CANADIAN SEA CADETS

PHASE THREE

INSTRUCTIONAL GUIDE



SECTION 1

EO M320.01 – IDENTIFY CLASSES OF CANADIAN NAVAL SHIPS

Total Time:

60 min

PREPARATION

PRE-LESSON INSTRUCTIONS

Resources needed for the delivery of this lesson are listed in the lesson specification located in A-CR-CCP-603/PG-001, Chapter 4. Specific uses for said resources are identified throughout the instructional guide within the TP for which they are required.

Photocopy the information sheets located at Annex A.

Photocopy Annex B for each of the six groups.

Make posters for each class of naval ship using the information sheets located at Annex A. Enlarge the sheets if possible to make the posters more visible.

PRE-LESSON ASSIGNMENT

N/A.

APPROACH

An in-class activity was chosen for this lesson as it is an interactive way to provoke thought and stimulate an interest in the Canadian Navy as the cadets identify the different classes of Canadian naval ships.

INTRODUCTION

REVIEW

N/A.

OBJECTIVES

By the end of this lesson the cadet shall have identified classes of Canadian naval ships.

IMPORTANCE

It is important for the cadets to identify Canadian naval ships to stimulate an interest in the Canadian Navy which is currently involved in international operations, ready to help during domestic emergencies and a key player in the assertion of Canadian sovereignty in the Arctic.

Teaching Point 1

Conduct an In-Class Activity Where the Cadets Will Identify the Different Classes of Canadian Naval Ships

Time: 50 min

Method: In-Class Activity

ACTIVITY

OBJECTIVE

The objective of this activity is to have the cadets identify different classes of Canadian naval ships.

RESOURCES

- Naval ships information sheets located at Annex A,
- Scavenger hunt worksheet located at Annex B,
- Stopwatch,
- Whistle, and
- Pens/pencils.

ACTIVITY LAYOUT

Display the posters around the classroom/training area.

ACTIVITY INSTRUCTIONS

1. Divide the cadets into six groups.
2. Give each group a copy of the scavenger hunt worksheet.
3. Blow the whistle to begin the scavenger hunt. Allow the cadets 25 minutes to find the information.
4. After 25 minutes blow the whistle to stop the scavenger hunt.
5. Review the information with the groups.

SAFETY

Supervise carefully to ensure that the groups go through the displays in an orderly manner.

CONFIRMATION OF TEACHING POINT 1

The cadets' participation in the scavenger hunt will serve as the confirmation of this TP.

END OF LESSON CONFIRMATION

The cadets' participation in the scavenger hunt will serve as the confirmation of this lesson.

CONCLUSION

HOMEWORK/READING/PRACTICE

N/A.

METHOD OF EVALUATION

N/A.

CLOSING STATEMENT

The Canadian navy is an important element of the Canadian Forces. Identifying the different classes of Canadian naval ships helps cadets understand the composition of the navy and how ships perform different roles during international operations, domestic crises and sovereignty operations in the Arctic.

INSTRUCTOR NOTES/REMARKS

N/A.

REFERENCES

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ROYAL CANADIAN SEA CADETS

PHASE THREE

INSTRUCTIONAL GUIDE



SECTION 2

EO M320.02 – DESCRIBE THE DOMESTIC ROLE OF THE CANADIAN FORCES (CF)

Total Time:

60 min

PREPARATION

PRE-LESSON INSTRUCTIONS

Resources needed for the delivery of this lesson are listed in the lesson specification located in A-CR-CCP-603/PG-001, Chapter 4. Specific uses for said resources are identified throughout the instructional guide within the TP for which they are required.

Review the lesson content and become familiar with the material prior to delivering the lesson.

The activity in TP 2 uses learning stations. Learning stations are a form of group work where the cadets learn by sorting through the information presented. When setting up learning stations, ensure there is enough room for each cadet to be comfortable and have adequate space for writing down information. When the cadets arrive at a learning station, all required information shall be available. These stations should be placed closely together to minimize time for movement; however, far enough apart to avoid interruptions from other groups. For this lesson, set up four learning stations.

Photocopy the handouts located at Annex C and make four copies of each worksheet located at Annex D and place them at the appropriate learning station.

PRE-LESSON ASSIGNMENT

N/A.

APPROACH

An interactive lecture was chosen for TP 1 to introduce Canadian naval bases, stations and reserve units as it allows the instructor to deliver new information while encouraging the cadets to actively participate by asking and responding to questions.

An in-class activity was chosen for TP 2 as it is an interactive way to stimulate interest and provoke thought about the role of the CF in domestic operations.

INTRODUCTION

REVIEW

N/A.

OBJECTIVES

By the end of this lesson the cadet shall have identified Canadian naval bases, stations and reserve units and described the domestic role of the CF in assisting during crises and protecting Canadian sovereignty.

IMPORTANCE

It is important for cadets to be able to locate Canadian naval bases, stations and reserve units to know where the Canadian Navy lives. It is also important for cadets to know how the CF assists during domestic crises and helps assert Canadian sovereignty, to become informed citizens and to develop pride in the contributions of the Canadian Navy at home.

Teaching Point 1

Identify Canadian Naval Bases, Stations and Reserve Units

Time: 10 min

Method: Interactive Lecture

THE DEPARTMENT OF NATIONAL DEFENCE (DND) MISSION

The mission of DND and the CF is to defend Canada, its interests and its values, while contributing to international peace and security. The three major roles of the CF are to:

- protect Canada;
- defend North America in co-operation with the United States of America; and
- contribute to peace and international security.

The CF operates out of Canadian Forces Bases (CFBs) and Canadian Forces Stations (CFSs) as well as reserve units to accomplish its mission.

CFBs

CFB refers to a military installation of the CF. For a facility to qualify as a CFB, it must station one or more major units (eg, army regiments, navy ships or air force wings). There are two CF naval bases in Canada located at CFB Halifax on Canada's east coast and CFB Esquimalt on Canada's west coast.

CFB Halifax

CFB Halifax is Canada's east coast naval base and home port of the Atlantic Fleet. It is the largest military base in Canada in terms of the number of posted personnel. It is formed from a variety of military properties around Halifax Harbour, N.S., which include:

Her Majesty's Canadian (HMC) Dockyard. This is the oldest defense establishment in Canada, having been established by the Royal Navy (RN) during the 18th century.

Willow Park. The location of base transport and supply.

Shannon Park. The location of the base arena and other recreational facilities.

Windsor Park. The site of the Seamanship Division and Personnel Support Program facilities such as the Military Family Resource Centre.

Stadacona Barracks. Frequently referred to as "Stad", it houses the:

- naval communications centre,
- the CF Engineering School,

- the CF Naval Operations School,
- the base hospital and gymnasium,
- the CF Maritime Warfare Centre, and
- the Fleet Club, Chiefs and Petty Officers mess, the Wardroom and Atlantic Block where junior non-commissioned members are housed.

12 Wing Shearwater. This is an Air Force Wing which is a lodger unit of CFB Halifax and home to 423 and 406 Squadrons, Sea King helicopter units and the Fleet Diving Unit (Atlantic) and Regional Cadet Support Unit Atlantic (RCSU[A]).

Canadian Forces Ammunition Depot Bedford (CFAD Bedford). This site, frequently referred to as “Bedford Magazine”, houses all the weaponry for Maritime Forces Atlantic (MARLANT) vessels and has a loading jetty.

Bedford Rifle Range. This is the site of a small arms training facility.

Damage Control School. This is a training site which simulates a realistic, ship-like environment where personnel train to fight fires and control floods.

CFB Esquimalt

CFB Esquimalt is Canada’s west coast naval base and is located in the municipality of Esquimalt, west of Victoria, B.C. The role of CFB Esquimalt is to support Joint Task Force (Pacific) and the warships of the Canadian Pacific Fleet. There are approximately 4 200 military and 2 000 civilians working at the base which covers over 10 300 acres.

The first military presence on Canada’s west coast developed as a result of tension between Canada and the United States (US) in the 1840s. In 1910, Canada began its own naval service and inherited the Royal Navy Dockyards on both the east and west coasts. In 1966, all of the separate sites were incorporated to form CFB Esquimalt. Canada has expanded this site and CFB Esquimalt has grown to include the following military properties and lodger units:

Naden. Formerly called HMCS Naden, this was originally the site built by the RN for a naval hospital and except for a brief period, it continued this role until 1906. Today, Naden, is primarily a barracks and instructional site with the CF Fleet School Esquimalt (CFFSE) as the major unit.

Work Point Barracks. This site was designated a Canadian military base in 1887. That year C Battery, Royal Canadian Artillery, came by train from Quebec to Esquimalt, where they were to instruct the military in gunnery. To do so they had to clear the forest and build their own barracks, some of which are still in use today. Work Point now houses Venture—the Naval Officer Training Centre (NOTC) and Regional Cadet Support Unit Pacific (RCSU[Pac]).

Colwood. Colwood, on the western side of Esquimalt Harbour, was originally built as an ammunition depot. The former Colwood Ammunition Depot is presently the site of a Nuclear, Biological and Chemical Warfare School, Damage Control Training Facility (DCTF) GALIANO for firefighting and flood control training, general storage space and a base for Fleet Diving Unit (Pacific).

Belmont Park. Belmont Park, located southwest of the Colwood site, is the married quarters (MQ) area for CF personnel serving at CFB Esquimalt.

Albert Head and Mary Hill. These are training areas located southwest of Victoria and Esquimalt. They were originally the sites of coastal defence gun batteries which formed a portion of the Victoria-Esquimalt Fortress during both world wars. Today, they are used by both CF regular and reserve units for training purposes. Every summer, cadets train at the Albert Head Air Cadet Summer Training Centre (AHACSTC).

Rocky Point. This site replaced Colwood as the west coast ammunition depot. It is located southwest of Victoria on an isolated triangular peninsula.

Nanaimo. This was the site of a military camp during World War Two. Since then, it has served in a variety of roles and today, it houses 748 Communications Squadron and serves as a detachment of CFB Esquimalt.

Nanoose. This is located approximately 130 km north of Esquimalt and 25 km northwest of Nanaimo on the east side of Vancouver Island. It is the home of the CF Maritime Experimental and Test Ranges which is jointly used by the CF and the US Navy for torpedo testing.

CFS

A CFS is a military establishment that is much smaller than a CFB and will host a minor unit such as a radar station. CFS St. John's in N.L. is Canada's only operational naval station.

CFS St. John's

CFS St. John's is located in the city of St. John's, N.L. Until 1961, what is now CFS St. John's was the US Pepperell Air Force Base. After the US pulled out, the site was taken over by the CF and in 1968, was officially opened as CFS St. John's.

Presently, it has a staff of 125 and supports 15 different military units and organizations, numerous cadet corps and squadrons, 450 full-time military personnel and about 1 400 reservists.

CFS St. John's is primarily a naval engineering and communications station.

NAVAL RESERVE UNITS

Reserve units of all three branches of the CF are located across Canada and are designed to augment the regular force. They are part-time members of the CF and an estimated 40 percent of reservists have full-time jobs and undergo training during evenings and weekends or for short blocks of time, usually during the summer.

Approximately, 5 000 naval reservists are located in 24 naval divisions across Canada. Divisions, often known as "stone frigates" are land-based units housed in buildings with a similar structure to sea-going ships' companies. They are commanded through Naval Reserve Headquarters in Quebec City.



Information regarding each naval reserve unit can be found at http://www.navy.forces.gc.ca/navres/units/navres_units-ships_e.asp.

The primary roles of the naval reserve are:

- maritime coastal defence; and
- the provision of crews for the 12 Maritime Coastal Defence Vessels (MCDVs).

They are also responsible for:

- coastal surveillance and harbour defence;
- inspection diving;
- naval control of shipping; and
- supplying personnel for the Canadian Navy when needed.

Since the early 1990s, more than 5 500 reservists have been deployed for UN and NATO operations in places such as Bosnia, Croatia and Haiti. They have also been involved in domestic operations across Canada providing disaster relief, conducting search and rescue operations and helping out during times of crisis such as Swissair Flight 111 recovery.



RCSC Corps across Canada are supported by a partnership between the Navy League of Canada and the DND. DND provides support to these corps through its network of bases, stations and reserve units. In many instances, cadet corps and squadrons have their headquarters situated on DND property and may be considered lodger units.

CONFIRMATION OF TEACHING POINT 1

QUESTIONS

- Q1. What are the three major roles of the CF?
- Q2. Name Canada's two naval bases and identify their location.
- Q3. What is the primary role of the naval reserve?

ANTICIPATED ANSWERS

- A1. The three major roles of the CF are to:
- protect Canada;
 - defend North America in cooperation with the United States of America; and
 - contribute to peace and international security.
- A2. Canada's two naval bases are CFB Halifax in Nova Scotia and CFB Esquimalt in British Columbia.
- A3. The primary roles of the naval reserve are:
- maritime coastal defence; and
 - the provision of crews for the 12 MCDVs.

Teaching Point 2

Conduct an Activity Where the Cadets Will Describe a Domestic Operation in Which the CF Was Deployed

Time: 40 min

Method: In-Class Activity




Provide the cadets with the following information before conducting the activity.

CANADA COMMAND (Canada COM)

Domestic operations are those CF activities conducted within Canada in response to requests for support from Canadian civil authorities or from the Canadian public.

Canada COM is the CF organization responsible for the conduct of all military routine and emergency domestic operations in Canada which was formed on February 1, 2006.

 The main priority of Canada COM is to “Defend and protect Canada”. The CF is not only fighting abroad but is also committed to the protection and defence of Canadians at home.

Canada COM Organization

Canada COM is headquartered in Ottawa, Ont., with six regional headquarters or Joint Task Force (JTF) commands to ensure constant awareness in all parts of Canada. The six regions are:

- JTF (Pacific),
- JTF (West),
- JTF (Central),
- JTF (East),
- JTF (Atlantic), and
- JTF (North).



Department of National Defence, 2007, Canada Command. Retrieved April 10, 2008, from http://www.canadacom.forces.gc.ca/en/index_e.asp

Figure 11-2-1 Canada COM Regions

The Commander of Canada COM reports directly to the Chief of the Defence Staff, Canada’s highest-ranking military officer. Each regional task force has a commander responsible for military planning and response in their respective geographic area of responsibility. Reporting to the Commander of Canada COM, they also have resources at their disposal for routine military tasks, such as aerial surveillance, sovereignty patrols and avalanche control. During a rapid response emergency situation, the regional task force commander has the immediate authority to deploy navy, army and air force personnel in their region to provide support as required.

Before Canada COM was created, the CF response to a crisis or a threat to national security was co-ordinated jointly by several different military organizations. Under the Canada COM structure, the command and control of navy, army and air force personnel in a domestic operation now falls under one authority or chain of command. For the first time, a single, integrated authority brings the best available military resources from across Canada to respond to a crisis or threat.

TYPES OF DOMESTIC OPERATIONS

Canada COM provides assistance in a wide variety of operations such as:

- search and rescue operations;
- disaster relief;
- territorial and aerial surveillance and protection;
- coast surveillance; and
- support to federal counter-drug operations.

In 2006, search and rescue personnel saved over 1 200 lives and assisted more than 20 000 Canadians in need of help. Canada COM works with organizations at the provincial and federal level including:

- Public Safety and Emergency Preparedness Canada,
- the Royal Canadian Mounted Police (RCMP),
- Fisheries and Oceans Canada,
- US Northern Command, and
- the North American Aerospace Defence Command (NORAD).

Canada COM does not replace civil authorities, but rather supports them during crises, or in operations of national interest that require some of the specialized or unique capabilities of the CF.

ACTIVITY

Time: 30 min

OBJECTIVE

The objective of this activity is to have the cadets describe a domestic operation involving the CF.

RESOURCES

- Domestic operations information sheet located at Annex C,
- Worksheets located at Annex D,
- Stopwatch,
- Whistle,
- Flip chart paper,
- Coloured markers, and
- Pens/pencils.

ACTIVITY LAYOUT

1. Set up and label four learning stations “Operation ASSISTANCE”, “Operation RECUPERATION”, “Operation PEREGRINE” and “Arctic Sovereignty.”
2. Place a section of Annex C (Operations ASSISTANCE, RECUPERATION, PEREGRINE and Arctic Sovereignty) and four copies of the corresponding section from Annex D at the appropriate learning station.

ACTIVITY INSTRUCTIONS

1. Divide the cadets into four groups and place one group at each learning station.
2. Assign each group a leader. Have the group leader assign a recorder and a reader.
3. Have the cadets read the information sheets and fill out a worksheet on each domestic operation. Each group only needs to fill out one worksheet.
4. After five minutes, have the groups rotate clockwise to the next station, where they will have another eight minutes to complete a worksheet.
5. Rotate the groups through the remaining stations.
6. Have the groups share their information.

SAFETY

N/A.

CONFIRMATION OF TEACHING POINT 2

The cadets’ participation in the activity will serve as the confirmation of this TP.

END OF LESSON CONFIRMATION

The cadets’ participation in the domestic operations activity will serve as the confirmation of this lesson.

CONCLUSION

HOMEWORK/READING/PRACTICE

N/A.

METHOD OF EVALUATION

N/A.

CLOSING STATEMENT

One aim of the Canadian Cadet Movement (CCM) is to develop an interest in the Canadian Navy. Knowing where the Canadian Navy lives and how it affects the everyday lives of Canadians helps to accomplish this aim of the CCM and helps develop pride in the CF generally, and the navy in particular.

INSTRUCTOR NOTES/REMARKS

N/A.

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ROYAL CANADIAN SEA CADETS

PHASE THREE

INSTRUCTIONAL GUIDE



SECTION 3

EO M320.03 – DESCRIBE THE ROLE OF THE CANADIAN FORCES (CF) WITHIN INTERNATIONAL INSTITUTIONS

Total Time:

60 min

PREPARATION

PRE-LESSON INSTRUCTIONS

Resources needed for the delivery of this lesson are listed in the lesson specification located in A-CR-CCP-603/PG-001, Chapter 4. Specific uses for said resources are identified throughout the instructional guide within the TP for which they are required.

Review the lesson content and become familiar with the material prior to delivering the lesson.

Photocopy Annexes E to G for each group.

Retrieve current information for CF involvement in international operations and update this lesson as required.

PRE-LESSON ASSIGNMENT

N/A.

APPROACH

An interactive lecture was chosen for TP 1 as it allows the instructor to present information on the role of the CF within international institutions.

An in-class activity was chosen for TP 2 as it is an interactive way to reinforce and confirm the cadet's knowledge of the UN, NATO and NORAD and the involvement of the CF in current operations of these international institutions.

INTRODUCTION

REVIEW

N/A.

OBJECTIVES

By the end of this lesson the cadet shall have described the role of the CF in current international operations of the UN, NATO and NORAD.

IMPORTANCE

It is important for cadets to know about the CF's involvement in current international operations to develop a sense of pride in the CF by becoming informed about its contribution to world security. For Canadians,

international operations such as peacekeeping are about trying to protect people in mortal danger and bringing peace to these areas.

Teaching Point 1

Describe the United Nations (UN), the North Atlantic Treaty Organization (NATO) and the North American Air Defense Command (NORAD)

Time: 20 min

Method: Interactive Lecture

There are three international institutions within which Canadian Forces (CF) personnel serve. They are the United Nations (UN), the North Atlantic Treaty Organization (NATO) and the North American Air Defense Command (NORAD).

THE UN

Formation of the UN. The UN is an organization of countries created to promote world peace and co-operation. It brings together countries that are rich and poor, large and small and with different political systems. The UN came into existence on October 24, 1945, after China, France, the Soviet Union, the United Kingdom, the US and 45 other countries ratified the UN Charter.

The UN's Mission. The mission of the UN is to:

- maintain international peace and security;
- develop friendly relations among nations;
- co-operate in solving international economic, social, cultural and humanitarian problems;
- promote respect for human rights and freedoms; and
- be a meeting place where nations can peacefully co-operate to accomplish these purposes.

As of 2008, there are 192 members of the UN.



United Nations Day is celebrated on October 24 annually.

THE STRUCTURE OF THE UN

The Secretary-General. The Secretary-General is head of the UN and is appointed by the General Assembly on the recommendation of the Security Council.

The General Assembly. The General Assembly is made up all UN members and is the main policy-making and consensus building organ of the UN. Each country, regardless of its size or status, has one vote. Votes taken on issues of peace and security and the election of Security Council members require a two-thirds majority while other matters are decided by a simple majority. The General Assembly meets from September to December each year.



The General Assembly can make only non-binding recommendations to Member States on international issues and cannot force them to take action.

The Security Council. The Security Council has the primary responsibility for the maintenance of international peace and security. It has 15 members, of which China, France, the Russian Federation, the United Kingdom and the US are considered permanent members with another 10 non-permanent members elected by the

General Assembly for two-year terms. It meets most weekdays and a representative of each of its members must be present at all times at the UN Headquarters in New York City.



The Security Council authorizes the use of military force against countries that break the peace and the deployment of UN peacekeepers throughout the world.

The Economic and Social Council. The Economic and Social Council has 54 members elected for three-year terms by the General Assembly. It meets throughout the year. The Economic and Social Council works under the authority of the General Assembly to co-ordinate the work of other UN agencies such as the United Nations Children's Fund (UNICEF), the World Trade Organization (WTO), the World Health Organization (WHO), the International Monetary Fund (IMF) and the World Bank.



One of the UN's most important mandates is the promotion of higher standards of living, full employment, and conditions to improve economic and social progress. As much as 70 percent of the work of the UN is devoted to accomplishing this mandate.

The Trusteeship Council. The Trusteeship Council is made up of the five permanent members of the Security Council. The main responsibility of the Trusteeship Council is to supervise and administer territories controlled by the UN. The council suspended operations on November 1, 1994, after Palau, the last remaining United Nations Trust Territory, was granted independence.



As of November 1, 1994, all Trust Territories have attained self-government or independence. The Trusteeship Council now meets only at the request of the President or a majority of the members of the General Assembly.

The International Court of Justice. The International Court of Justice is the principal judicial body of the UN. It was established in June 1945, by the Charter of the UN and began work in April 1946. The Court is composed of 15 judges, elected by both the General Assembly and the Security Council for nine-year terms. Its main function is to decide legal disputes submitted to it by member states and to give legal advice to the UN. The headquarters of the Court is at the Peace Palace in The Hague (Netherlands).



Of the six principal organs of the UN, the International Court of Justice is the only one not located in New York City.

The Secretariat. The Secretariat is an international staff of 8 900 people, working in duty stations around the world to carry out the day-to-day work of the UN. It administers the programs and policies of the other organs of the UN.



In 1988, UN Peacekeeping Forces received the Nobel Peace Prize for their efforts in maintaining world peace and security. The prize money, which accompanies the award, was used to create the Dag Hammarskjöld Medal which is awarded to the families of peacekeepers who have died while on UN duty.

NATO

Formation of NATO. The US, 10 European countries and Canada founded NATO in 1949 as a safeguard against Soviet aggression. Greece and Turkey were admitted to the alliance in 1952; the Federal Republic of Germany (FRG) in 1955; Spain in 1982; the Czech Republic, Hungary, and Poland in 1999; and Bulgaria, Estonia, Latvia, Lithuania, Romania, Slovakia, and Slovenia in 2004.

NATO's Mission. NATO's mission is to safeguard the stability, well-being and freedom of its members by means of a system of collective security. As of 2008, it has 26 members and has its headquarters in Brussels, Belgium.

STRUCTURE OF NATO

North Atlantic Council. The highest authority within NATO is the North Atlantic Council, composed of permanent delegates from all member countries, headed by the Secretary-General. It is responsible for general policy, budgets and general administrative actions. Under the North Atlantic Council are:

- the Secretariat, which handles all the non-military functions of the alliance;
- the Military Committee, which consists of the chiefs of defence staff of member countries; and
- various temporary committees.

The Military Committee. The chiefs of staff meet at least twice a year. Between such meetings, the Military Committee is in permanent contact with military representatives of the member nations.

Below the Military Committee, NATO forces have been consolidated into Allied Command Europe (ACE) and Allied Command Atlantic (ACLANT). Military forces available to NATO are divided into three main categories:

- high readiness forces,
- forces at lower readiness, and
- long term build-up forces.

Airborne Warning and Control System. The NATO fleet of Airborne Warning and Control Systems (AWACS) radar aircraft provides NATO with an immediately available airborne surveillance and warning and command capability. The AWACS are modified Boeing 707s, called E-3A, equipped with a special radar capable of detecting air traffic over large distances and at low altitudes. The data can be transmitted directly from the aircraft to command and control centres on the ground, at sea or in the air.



Except for the high readiness forces and AWACS personnel, troops available to the alliance remain under the full control of member countries during peacetime. The AWACS fleet is one of the few military assets that are actually owned and operated by NATO.

In the early 1990s, after the breakup of the Soviet Union, NATO members approved the use of its military forces for peacekeeping operations (PKOs) in countries outside the alliance and in 1994, agreed to enforce UN resolutions enacted to bring about an end to the conflict in the former Yugoslavia.



In 1994, NATO carried out its first military action in its 45-year history when US fighter jets enforced the no-fly zone over Bosnia-Herzegovina and shot down four Serbian warplanes and bombed Bosnian Serb military positions and airfields.

Canada's Commitment to NATO. The Canadian commitment to NATO is updated every year. Since 1949, Canada has been the sixth largest contributor to NATO's military and civil budgets. Through NATO, Canada provides:

- a joint task force headquarters,
- a naval task force of up to four combat and support ships with air support,

- three separate battle groups or a brigade group (an infantry battalion is designated to serve with NATO's Immediate Reaction Force),
- a wing of fighter aircraft, and
- one squadron of tactical transport aircraft.

Canada also provides the following peacetime commitments to NATO:

- one ship for Standing Naval Force Atlantic,
- on an occasional basis, one ship for Standing Naval Force Mediterranean,
- aircrews and other personnel to serve with the NATO Airborne Early Warning System,
- approximately 200 personnel to serve in NATO headquarters, and
- provision of NATO infrastructure.

NORAD

Formation of NORAD. NORAD is a US and Canadian organization formally established in 1958 to monitor and defend North American airspace.

NORAD's Mission. NORAD monitors and tracks man-made objects in space and detects, validates and warns of attack against North America by aircraft, missiles or space vehicles including satellites and space debris. NORAD also provides surveillance and control of national Canadian and US airspace.

NORAD uses a network of satellites, ground-based radar, airborne radar and fighters to detect, intercept and, if necessary, engage any airborne threat to North America. As a part of its aerospace control mission, NORAD also assists in the detection and monitoring of aircraft suspected of illegal drug trafficking. This information is passed to civilian law enforcement agencies to help combat the flow of illegal drugs into North America. The NORAD Agreement renewal, signed in May 2006, added a maritime warning mission to warn of threats to maritime approaches, areas and inland waterways in Canada and the US.

NORAD's Organization. The Commander of NORAD is appointed by, and is responsible to, both the Prime Minister of Canada and the President of the US. Traditionally, the Commander of NORAD is American and the Deputy Commander, Canadian. NORAD headquarters is located at Peterson Air Force Base, Colorado Springs, Colorado. NORAD's warning and control missions are exercised through the Cheyenne Mountain Operations Center, located a short distance away.

The North Warning System. The North Warning System is one of Canada's NORAD operations. It consists of 15 long-range radars (11 in Canada, four in Alaska) and 39 short-range radars (36 in Canada, three in Alaska) along the northern edge of North America to provide surveillance of potential attack routes via Arctic airspace. All aircraft penetrating the radar coverage are detected and identified by the personnel of 21 Aerospace Control and Warning Squadron (AC+W Sqn) who are duty, 24 hours a day, seven days a week. The string of radars form a 4 800 km long and 320 km wide "tripwire" stretching from Alaska to Newfoundland.

AWACS. Airborne radar coverage is provided by the E-3 AWACS aircraft. Canada contributes military personnel to AWACS operations. The AWACS are better than ground-based radar stations and can detect targets from about 580 km and guide Canadian or US aircraft to visually identify any unknown aircraft. Two Canadian bases, CFB Cold Lake, Alta. and CFB Bagotville, Que., provide support to AWACS operations when required.

NORAD's Regions. NORAD is divided into three regions which are:

- Canadian Region (CANR), with headquarters at 17 Wing in Winnipeg, Man.;

- Alaskan NORAD Region (ANR) with headquarters in Elmendorf Air Force Base, Alaska; and
- Continental US NORAD Region (CONR) with headquarters in Tyndall, Florida.

Each of the three NORAD regions has a similar structure. CANR has a Canadian Commander and an American Deputy Commander. ANR and CONR have American Commanders and Canadian Deputy Commanders.

CANR executes a variety of tasks to defend Canadian airspace, which include:

- identifying and tracking all aircraft entering Canadian airspace; and
- exercising command and control of all air defence forces in CANR and operations in support of other government departments and agencies.



The CANR, headquartered at 17 Wing in Winnipeg, Man., oversees all domestic Canadian air force operations as well as the operations of the Canadian NORAD region. However, 22 Wing in North Bay, Ont. oversees the main surveillance, identification, control and warning for the defence activities of North America.

NORAD OPERATIONS

Operation NOBLE ONE (ONE)

NORAD does not conduct missions in the same manner as the UN or NATO. NORAD is always on duty in a continuous operation protecting the airspace over North America.

Since September 11, 2001, CANR has been heavily committed to Operation Noble One (ONE), NORAD's ongoing internal air defense mission. To support ONE, CANR fighter aircraft are on continuous alert to respond to any possible aerial threat to the safety of Canada and to conduct random air patrols across the country.

The military organization responsible for providing combat-ready air forces to meet Canada's commitments to NORAD and to maintain the sovereignty of Canadian airspace is 1 Canadian Air Division. In addition to personnel at 22 Wing North Bay and CANR HQ in Winnipeg, Man., Canadian Air Force units assigned to NORAD include 441 Silver Fox and 416 Lynx Tactical Fighter Squadrons at 4 Wing Cold Lake, Alta. and 425 Alouette and 433 Porcupine Tactical Fighter Squadrons at 3 Wing Bagotville, Que. All four squadrons fly the CF-18 Hornet fighter-bomber.

There are currently 283 Canadian personnel based at various locations in the US. However, the number of Canadians assigned to designated NORAD positions constantly changes to reflect the current needs of Canadian defence policies.

Counter Drug Mission

Since 1991, NORAD has assisted in the detection and monitoring of aircraft suspected of illegal drug trafficking. In co-operation with the RCMP and US drug and law enforcement agencies, the Canadian region of NORAD monitors all air traffic approaching the coast of Canada. Any aircraft that has not filed a flight plan may be directed to land and be inspected by the RCMP and Customs Canada.

NORAD has served the citizens of Canada and the US as the first line of defence against an air attack on their homelands since 1958. NORAD provides the Government of Canada with the capability to exercise effective surveillance and control over Canadian airspace in a cost-effective manner. Both Canada and the US have the final say on issues related to their own defence and can respond in a fashion that best serves their national interests.



Since 1958, NORAD has tracked the movements of Santa Claus on Christmas Eve. When Santa leaves the North Pole the North Warning System of NORAD begins to track his movements by following the infrared signature of Rudolph's nose. NORAD also uses the Santa Cam to take pictures of Santa and the reindeer as they make their journey around the world. These images are uploaded to the website for all to see.

For more details, visit: <http://www.noradsanta.org>.

CONFIRMATION OF TEACHING POINT 1

QUESTIONS

- Q1. Name three international institutions to which Canada belongs.
- Q2. On what mandate does the UN spend 70 percent of its budget?
- Q3. Which institution's purpose is to ensure the stability, well-being and freedom of its members by means of a system of collective security?
- Q4. Which institution uses a network of satellites, ground-based radar, airborne radar and fighters to detect, intercept and, if necessary, engage any airborne threat to North America?

ANTICIPATED ANSWERS

- A1. Canada belongs to the UN, NATO and NORAD.
- A2. The UN's most important mandate is the promotion of higher standards of living, full-employment and conditions of economic and social progress and development.
- A3. NATO.
- A4. NORAD.

Teaching Point 2

Conduct an Activity to Reinforce the Cadets' Knowledge of the UN, NATO and NORAD and the Involvement of the CF in Current Operations of These International Institutions

Time: 30 min

Method: In-Class Activity



Provide the cadets with the following information before conducting the activity.

INTERNATIONAL OPERATIONS

An international operation means the CF is deployed under the mandate of an international institution such as the UN, NATO or NORAD and will be involved with other nations. It is an operation that is conducted outside of Canada and can be a humanitarian aid operation or an international peace support operation.

Humanitarian aid operations include assistance for any type of natural disaster, armed conflict or political and environmental crisis. The following are considered humanitarian crisis operations:

- providing medical attention (saving lives, reducing suffering and maintain human dignity);
- ensuring distribution of relief supplies;
- providing material and logistical assistance; and
- setting up reconstruction teams.

International operations may also include the following actions:

- protecting civilians;
- monitoring peace treaties and negotiations between parties;
- preventing the spread of conflict; and
- preventing the recurrence of conflicts.

To Canadians, PKOs are the most recognizable type of international operation involving the CF. The importance of peacekeeping to Canada is recognized in the following ways:

- Peacekeeping Day was recently inaugurated as an annual celebration in most provinces and many municipalities.



Peacekeeping Day, inaugurated in the provinces in 2002–2004, is held on August 9. Federal observance is traditionally held during UN week (20–26 October).

- The federal government honours Canadian peacekeepers at the National Peacekeeping Monument in Ottawa, Ont., where the Chief of Defence Staff pins peacekeeping medals to uniforms. He also presents, on behalf of the UN, the Dag Hammarskjold medal to the families of peacekeepers who have died while on UN duty.
- Canadian public opinion polls have shown consistent support for peacekeeping in general and for specific missions.
- Peacekeeping symbols appear on the national currency. A female soldier wearing a UN blue beret looks through binoculars on one side of the Canadian ten dollar bill (2001 issue) below a bilingual banner which reads “AU SERVICE DE LA PAIX/IN THE SERVICE OF PEACE”.
- The Canadian dollar coin (1995 issue) bears an image of the National Peacekeeping Monument named “Reconciliation”, which is one of the major monuments in Ottawa, Ont.
- Other memorials and monuments to peacekeepers can be found in various Canadian cities. For instance, in 2004, Calgary, Alta. created Peacekeepers’ Park and Manitoba dedicated a Peacekeepers’ Cairn in Winnipeg to honour the sacrifices of Canadian peacekeepers.

Over 125 000 Canadian military personnel have served in UN PKOs since 1947, which constitutes more than 10 percent of the UN total. To acknowledge such service, the Department of National Defence issues a special medal, in addition to medals for specific operations. The Canadian Peacekeeping Service Medal, instituted in 2000, is given to military and civilian personnel who have served for 30 days or more in UN or other PKOs.

Over 120 Canadian soldiers have made the supreme sacrifice while peacekeeping, including nine in a UN transport plane shot down accidentally by Syrian Forces on August 9, 1974. The names of over 100 fallen peacekeepers are inscribed on a prominent plaque at the entrance of the Canadian Forces College, Toronto, Ont., the main centre for senior military education in Canada.



Canada has taken part in almost all of the UN PKOs carried out throughout the world.

Since 2001, CF involvement with UN PKOs has dropped considerably. Canada spent approximately \$215 million to support Canadian military participation in UN missions between 2001 and 2006. The full cost of Canadian participation in all international military operations over the last five years has been approximately \$6.132 billion, of which at least \$4.147 billion is spent on operations related to the NATO-led mission in Afghanistan.

The CF prefers missions sponsored by NATO as opposed to the UN. There are several reasons for this, which include:

- in NATO the military structure is better defined,
- the number of troops deployed is larger,
- the level of support is greater, and
- partner nations are generally better equipped and trained than in UN missions.

Canada reduced its contribution to UN missions as NATO took on new peacekeeping missions especially in Afghanistan. Canada currently contributes 59 military personnel to UN missions around the world. There are currently 64 322 military personnel participating in UN missions worldwide but Canada currently contributes less than one tenth of one percent of the military personnel participating in these missions. Before the mid-1990s, Canada was consistently among the top 10 contributors to UN PKOs. In 2005, Canada ranked 35 out of the 96 countries but today Canada ranks 50 out of the 95 countries currently contributing to UN missions.

ACTIVITY

Time: 25 min

OBJECTIVE

The objective of this activity is to have the cadets prepare a summary of an international operation and present it to their peers.

RESOURCES

- Information on international operations located at Annex E,
- Presentation format located at Annex F,
- A map of current CF operations located at Annex G,
- Flip chart paper (two sheets per team), and
- Flip chart markers.

ACTIVITY LAYOUT

N/A.

ACTIVITY INSTRUCTIONS

1. Divide the cadets into five groups.

2. Distribute an information sheet from Annex E, the presentation format located at Annex F, and the map of current CF operations located at Annex G to each group.
3. Have the groups select a leader and a presenter.
4. Allow 20 minutes for the groups to read their information sheets and summarize the information regarding an international operation on no more than two sheets of flip chart paper. Groups should follow the format located at Annex F to summarize their information but should be as creative as possible.
5. Have the groups present their information to the class.

SAFETY

N/A.

CONFIRMATION OF TEACHING POINT 2

The cadets' participation in the activity will serve as the confirmation of this TP.

END OF LESSON CONFIRMATION

The cadets' participation in the in-class activity will serve as the confirmation of this lesson.

CONCLUSION

HOMEWORK/READING/PRACTICE

N/A.

METHOD OF EVALUATION

N/A.

CLOSING STATEMENT

Canada has always been committed to international involvement in world affairs and will continue to be a strong member of the UN, NATO and NORAD. Canadians believe in world service and want to improve international peace and security. We want a world based on law and order where military force is used only to uphold ideals such as those expressed in the UN Charter rather than accomplish selfish national interests.

INSTRUCTOR NOTES/REMARKS

N/A.

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ROYAL CANADIAN SEA CADETS

PHASE THREE

INSTRUCTIONAL GUIDE



SECTION 4

EO C320.01 – PARTICIPATE IN A DISCUSSION/ PRESENTATION ON A NAVAL COMMEMORATIVE EVENT

Total Time:

30 min

PREPARATION

PRE-LESSON INSTRUCTIONS

Resources needed for the delivery of this lesson are listed in the lesson specification located in A-CR-CCP-603/PG-001, Chapter 4. Specific uses for said resources are identified throughout the instructional guide within the TP for which they are required.

Review the lesson content and become familiar with the material prior to delivering the lesson.

Photocopy the information web located at Annex H for each cadet.

Copy the information web located at Annex H on a flip chart or whiteboard to present the material in TP 1.

A guest speaker may be brought in to conduct this lesson.

PRE-LESSON ASSIGNMENT

N/A.

APPROACH

An interactive lecture was chosen for TP 1 as it allows the instructor to explain the importance of a naval commemorative event and to generate interest among cadets.

A group discussion was chosen for TPs 2 and 3 as it allows the cadets to interact with their peers and share their knowledge, experiences, opinions and feelings about naval commemorative events.

INTRODUCTION

REVIEW

N/A.

OBJECTIVES

By the end of this lesson the cadet shall have participated in a discussion/presentation on a naval commemorative event.

IMPORTANCE

It is important for cadets to learn about naval commemorative events so that people and events of the past can live on, even today, in our memory.

Teaching Point 1

Explain the Importance of a Naval Commemorative Event

Time: 5 min

Method: Interactive Lecture



In Phase Two, EO M220.04 (Participate in a Discussion/Presentation on a Naval Commemorative Event, A-CR-CCP-602/PF-001, Chapter 10, Section 4), the Battle of the Atlantic Sunday was the naval commemorative event suggested for study. In Phase Three, EO C320.01 (Participate in a Discussion/Presentation on a Naval Commemorative Event), the Merchant Navy Day is the suggested naval commemorative event.

COMMEMORATION

A commemoration is a ceremony, an observance or a monument designed to honour an event, person or group. Commemorations involve building, naming, or shaping physical sites and ritual acts such as saying prayers, playing music, observing silences, lowering and raising flags, wearing poppies and visiting memorials.



The following information is meant to reinforce material on the Merchant Navy which may have been taught in EO C220.01 (Recognize the Role of the Merchant Navy, A-CR-CCP-602/PF-001, Chapter 10, Section 5).



Show the information web and give the handout to each cadet.

MERCHANT NAVY DAY

Merchant Navy Day is a naval commemoration recognizing the contribution of the Merchant Navy to World War II (WW II) and is held every year on September 3. The national ceremony takes place at the National War Memorial, Confederation Square in Ottawa, Ont.

The Merchant Navy Fleet

The Merchant Navy was a fleet of converted passenger ships and freighters which carried people, munitions and other supplies, vital to the war effort, from North America to different ports all over the world. An average-sized cargo ship could carry enough food to feed 225 000 people for a week. These ships also transported clothing, fuel, steel, aluminum, lumber, aircraft, tanks, jeeps, trucks and guns. Merchant Navy ships tried to ensure the safe passage of their cargo by sailing across the Atlantic in convoys for security and protection.

On August 26, 1939 the Royal Canadian Navy (RCN) took control of all merchant shipping in Canada and while merchant crews could not be forced to sail, most did. In the beginning, Canada had only 38 ocean-going merchant ships, many of which were old and had not been used for years, manned by 1450 Canadian seamen.

The Merchant Navy Crews

Merchant crews had no uniforms and were poorly paid. Approximately 12 000 merchant seamen served during the war. Some served in the Merchant Navy because they were either too young or too old for the other branches. Most merchant seamen were in their 40s but ages ranged from 15 to 70 years. Some were medically rejected from service in other branches of the military while others served in the Merchant Navy because they preferred it. Life for a merchant seaman was difficult and dangerous, which created low morale. The Merchant Navy casualty rate was higher than any branch of Canada's armed services. Eighty-eight percent of these casualties occurred by the end of 1942. However, by the summer of 1943, considerably fewer merchant ships were being sunk mainly because of improved training and equipment, and longer range air protection.

Governmental Recognition

According to Rear-Admiral Leonard Murray, Commander-in-Chief Canadian Northwest Atlantic during WW II, "the Battle of the Atlantic was not won by any Navy or Air Force, it was won by the courage, fortitude, and determination of the British and Allied Merchant Navy" (Veterans Affairs Canada, *Valour at Sea*, Her Majesty the Queen in Right of Canada, p. 15).

Despite their importance to the war effort, members of the Merchant Navy were not given official veteran status until 1992 but still did not receive the same benefits as other veterans. In February 2000, the Minister of Veterans Affairs announced the first of a series of payments to make Merchant Navy veterans' benefits equal to those of other veterans and by May 2001 the total payout was \$104.5 million.

In 2000, the federal government announced that a national Merchant Navy Day would be celebrated on September 3 every year. September 3 was chosen because WW II began on that day and it was the date of the first allied merchant ship casualty when the SS Athenia was sunk.

CONFIRMATION OF TEACHING POINT 1

QUESTIONS

- Q1. What is a commemoration?
- Q2. Why was the Merchant Navy important to the war effort?
- Q3. What date was chosen as Merchant Navy Day?

ANTICIPATED ANSWERS

- A1. A commemoration is a ceremony, observance or a monument of some kind designed to honour an event, person or group.
- A2. The Merchant Navy transported vital supplies from North America to ports all over the world.
- A3. September 3.

Teaching Point 2**Discuss National, Provincial and Local Naval Commemorative Events**

Time: 10 min

Method: Group Discussion

BACKGROUND KNOWLEDGE

The purpose of the group discussion is to draw the following information from the group using the tips for answering/facilitating discussion and the suggested questions provided.



Record comments from the group discussion on a whiteboard/flip chart/OHP slide to be referenced later during the conclusion of the lesson.

WHY DOES THE GOVERNMENT OF CANADA DESIGNATE CERTAIN DATES AS NATIONAL COMMEMORATIONS?

The government of Canada is proud of Canada's military heritage. The dramatic events of Canadian history and the Canadians who have contributed to Canada's national development have become part of a national heritage worthy of celebration and commemoration. It is important that Canada's historic traditions and the sacrifice Canadians have made throughout the years be preserved for future generations.

WHAT DATES ARE NATIONALLY COMMEMORATED BY THE CF?

The CF commemorates four dates:

- Remembrance Day is observed on November 11 every year at the National War Memorial, Confederation Square in Ottawa, Ont. November 11 is when the Armistice was signed, ending World War I (WW I).
- Battle of the Atlantic Sunday is observed on the first Sunday in May every year at the Sailor's Memorial in Point Pleasant Park in Halifax, NS. WW II officially ended on May 8, 1945.
- Battle of Britain is commemorated every year, at the Canadian Aviation Museum in Ottawa, Ont. on the first Sunday between September 15 and September 21. This date was chosen because on September 15, 1940 the Royal Air Force overwhelmingly defeated the German Air Force in the sky over Britain.
- Merchant Navy Day is observed on September 3 at the National War Memorial, Confederation Square in Ottawa. This was the first day of WW II and the date on which the first merchant ship was sunk. This date was not chosen until 2000, a few years after the government of Canada granted official veteran status to the Merchant Navy.

WHAT ARE PROVINCIAL AND LOCAL COMMEMORATIONS?

Provincial commemorations are similar to national commemorations except that they take place at war memorials in provincial capital cities rather than Ottawa, Ont., except for the Battle of the Atlantic national ceremony which is held in Halifax, NS. Local commemorations are community-based events, usually organized by the Royal Canadian Legion or some other community organization and may include a parade to the local war memorial as well as other rituals of commemoration.



Discuss local commemorations to include the location, people involved, who or what is being commemorated and what ritual aspects of commemorations are involved.

GROUP DISCUSSION



TIPS FOR ANSWERING/FACILITATING DISCUSSION

- Establish ground rules for discussion, eg, everyone should listen respectfully; don't interrupt; only one person speaks at a time; no one's ideas should be made fun of; you can disagree with ideas but not with the person; try to understand others as much as you hope they understand you; etc.
- Sit the group in a circle, making sure all cadets can be seen by everyone else.
- Ask questions that will provoke thought; in other words avoid questions with yes or no answers.
- Manage time by ensuring the cadets stay on topic.
- Listen and respond in a way that indicates you have heard and understood the cadet. This can be done by paraphrasing their ideas.
- Give the cadets time to respond to your questions.
- Ensure every cadet has an opportunity to participate. One option is to go around the group and have each cadet answer the question with a short answer. Cadets must also have the option to pass if they wish.
- Additional questions should be prepared ahead of time.

SUGGESTED QUESTIONS

- Q1. Why does Canada have national commemorations?
- Q2. Why do we celebrate Remembrance Day on November 11?
- Q3. What does the Battle of the Atlantic Sunday commemorate?
- Q4. Merchant seamen were not part of the CF. Is it appropriate for Canada to observe September 3 as Merchant Navy Day?



Other questions and answers will develop throughout the group discussion. The group discussion should not be limited to only those suggested.



Reinforce those answers given and comments made during the group discussion, ensuring the teaching point has been covered.

Teaching Point 3**Discuss the Implications for Future Naval Commemorative Events**

Time: 10 min

Method: Group Discussion

BACKGROUND KNOWLEDGE

The purpose of the group discussion is to draw the following information from the group using the tips for answering/facilitating discussion and the suggested questions provided.

Many of the historic events that are commemorated today occurred in the distant past. As time passes, many may not understand the importance of commemorating them.

THE IMPORTANCE OF CONTINUING TO COMMEMORATE HISTORIC EVENTS

Historic events have, in some way or other, affected all of us. What happened during the wars gives us the lifestyle that we enjoy today. In addition, historic events are all around us in the movies we watch, music we listen to and the people we meet. Most of us know someone who is a veteran but, sadly, these storytellers and their stories will soon be gone, which makes the acts of commemoration even more important. If we do not continue to commemorate historic events, people may:

- repeat these past events;
- feel that acts of inhumanity are acceptable or excusable;
- forget what happened; or
- feel disconnected from what happened.

THE NATURE OF FUTURE COMMEMORATIONS

For some people, traditional commemorations are not effective. They feel that people do not learn from past mistakes and that commemorations are important only to the victims of cruelty and are ignored by those who commit cruel acts. Further, remembering in the traditional way makes an event important once a year but then we may feel that we have done our part and forget about it for another year. Commemorations become more valuable when they help us change our behaviour. In the future, it may be useful to commemorate in non-traditional ways which are more personally meaningful. Such methods may include:

- making a commemorative wall containing pictures, written notes and memorabilia of the event or person being remembered;
- designing and making a memorial;
- creating poems, songs, videos, etc;
- respecting local veterans by volunteering to help them in various ways; and
- recognizing the sacrifice many Canadians are continuing to make throughout the world.

GROUP DISCUSSION



TIPS FOR ANSWERING/FACILITATING DISCUSSION

- Establish ground rules for discussion, eg, everyone should listen respectfully; don't interrupt; only one person speaks at a time; no one's ideas should be made fun of; you can disagree with ideas but not with the person; try to understand others as much as you hope they understand you; etc.
- Sit the group in a circle, making sure all cadets can be seen by everyone else.
- Ask questions that will provoke thought; in other words avoid questions with yes or no answers.
- Manage time by ensuring the cadets stay on topic.
- Listen and respond in a way that indicates you have heard and understood the cadet. This can be done by paraphrasing their ideas.
- Give the cadets time to respond to your questions.
- Ensure every cadet has an opportunity to participate. One option is to go around the group and have each cadet answer the question with a short answer. Cadets must also have the option to pass if they wish.
- Additional questions should be prepared ahead of time.

SUGGESTED QUESTIONS

- Q1. Why is it important that we continue to commemorate historic events?
- Q2. Why do some people think that traditional commemorations are ineffective?
- Q3. How might future commemorations change?
- Q4. Why might such commemorations be more meaningful?



Other questions and answers will develop throughout the group discussion. The group discussion should not be limited to only those suggested.



Reinforce those answers given and comments made during the group discussion, ensuring the teaching point has been covered.

CONFIRMATION OF TEACHING POINT 3

The cadets' participation in the group discussion will serve as the confirmation of this TP.

END OF LESSON CONFIRMATION

The cadets' participation in the group discussions will serve as the confirmation of this lesson.

CONCLUSION

HOMEWORK/READING/PRACTICE

N/A.

METHOD OF EVALUATION

N/A.

CLOSING STATEMENT

Commemorations of historic events help preserve Canadian heritage. The contributions Canadians have made to the world and to the development of Canada as a nation are worth honouring and commemorating.

INSTRUCTOR NOTES/REMARKS

A guest speaker may be brought in to conduct this lesson.

This EO should be conducted in conjunction with EO C102.01 (Participate in a Ceremonial Parade, A-CR-CCP-601/PF-001, Chapter 2, Section 2) where applicable.

REFERENCES

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ROYAL CANADIAN SEA CADETS

PHASE THREE

INSTRUCTIONAL GUIDE



SECTION 5

EO C320.02 – DESCRIBE THE WOMEN’S ROYAL CANADIAN NAVAL SERVICES (WRCNS)

Total Time:

60 min

PREPARATION

PRE-LESSON INSTRUCTIONS

Resources needed for the delivery of this lesson are listed in the lesson specification located in A-CR-CCP-603/PG-001, Chapter 4. Specific uses for said resources are identified throughout the instructional guide within the TP for which they are required.

Review the lesson content and become familiar with the material prior to delivering the lesson.

Assign cadets roles as described in Annex I.

Photocopy and distribute Annex I to each cadet.

PRE-LESSON ASSIGNMENT

Have the cadets read Annex I and become familiar with their assigned roles.

APPROACH

An interactive lecture was chosen for TP 1 as it allows the instructor to introduce new information about the WRCNS while encouraging the cadets to become involved by asking and responding to questions.

An in-class activity was chosen for TP 2 as it is an interactive way to involve the cadets and stimulate an interest in the development of the WRCNS.

INTRODUCTION

REVIEW

N/A.

OBJECTIVES

By the end of this lesson the cadet shall have described the establishment, purpose and dissolution of the WRCNS and listed milestones in its history.

IMPORTANCE

It is important for cadets to describe the WRCNS to fully appreciate the fact that for over a century, Canadian women have served their nation during times of conflict. The opportunities available to women today in the CF are the result of this long history of service and sacrifice.

Teaching Point 1**Describe the WRCNS**

Time: 20 min

Method: Interactive Lecture

THE ESTABLISHMENT OF THE WRCNS

In 1941, representatives from all three branches of the Canadian military met to discuss the possibility of allowing women to join the Canadian Armed Forces. The Royal Canadian Navy (RCN) decided not to allow women to join but in one year would change its position and allow the WRCNS to become part of the Canadian Navy.

The WRCNS was established on May 8, 1942, by an order of the federal government of Canada. The new organization was to form part of the naval forces of Canada and therefore, from the beginning, the WRCNS was a part of the RCN and not a separate organization. The order establishing the WRCNS made female officers equal to male officers with “the same power of command exercisable by officers of the RCN of relative rank.” (Dundas, B., *A History of Women in the Canadian Military*, Art Global Editions, p. 60)



Before they were legally allowed to join the military, women organized volunteer groups in which to serve and paid for training and uniforms themselves. DND considered laying criminal charges against these organizations because their uniforms, badges and ranks might suggest they were members of the military which was an offence under the Criminal Code and the Defence of Canada Regulations. Within a year, the WRCNS was formed as part of the RCN.

Despite being made legally equal, it was not smooth sailing for the female sailors. They were often not taken seriously and were paid one third of what men were paid, both civilian and military.

In spite of this, between 1942 and 1946, close to 7 000 volunteers enlisted in the WRCNS and served on naval bases in Canada and other countries.



Women who served with the WRCNS were nicknamed WRENS after their English counterparts who served in the Women’s Royal Naval Service (WRNS).

THE PURPOSE OF THE WRCNS

The main purpose of the WRCNS was to “release men for duties of a heavier nature than they are now performing” (Dundas, B., *A History of Women in the Canadian Military*, Art Global Editions, p. 60) but there was a genuine belief in the value of the women’s contribution toward the war effort.



“The time now is the most crucial, momentous period of the War, and it will be the help of those girls, the help of the women ... which will perhaps provide ... the decisive impulse which may carry us to victory.” J. L. Ralston, Minister of National Defence, 1944. (Dundas, B., *A History of Women in the Canadian Military*, Art Global Editions, p. 37)

The women had numerous reasons for wanting to join, which included:

- feelings of patriotism towards their country;
- the desire to escape the boredom of everyday life;
- the desire to serve because of the loss of a loved one in the war;

- the desire to be closer to their husbands or boyfriends;
- being attracted by the uniform and the promise of travel; and
- joining because friends had done so.



Have the cadets compare their reasons for joining cadets to those of women in the 1940s who joined the WRCNS.

THE DISSOLUTION OF THE WRCNS

Of the nearly 7 000 women who had joined the WRCNS, 1 600 left the navy by the end of August 1945. Between September and December 1945, a further 1 800 left and by the end of 1946, the last remaining members of the WRCNS had become civilians.

In the early 1950s, the WRCNS was re-established as the Korean War began and it would remain in existence until the Canadian military was integrated in 1968 after which women, from all three branches of the service who wanted to remain in the military, became regular members of the CF.

CONFIRMATION OF TEACHING POINT 1

QUESTIONS

- Q1. When was the WRCNS established?
- Q2. Why was the WRCNS established?
- Q3. When did the last members of the WRCNS leave the military?

ANTICIPATED ANSWERS

- A1. The WRCNS was established on May 8, 1942.
- A2. WRCNS was established to free up men for “duties of a heavier nature.”
- A3. The last members of the WRCNS left the military by the end of 1946.

Teaching Point 2

Conduct an Activity Where the Cadets Will List Milestones of the WRCNS

Time: 30 min

Method: In-Class Activity

ACTIVITY

OBJECTIVE

The objective of this activity is to have the cadets list the milestones of the WRCNS.

RESOURCES

Script located at Annex I.

ACTIVITY LAYOUT

Set up the classroom in accordance with the setting located at Annex I.

ACTIVITY INSTRUCTIONS

1. Ensure that the cadets have a copy of Annex I and understand their assigned role.
2. Have the cadets perform the skit.
3. Debrief the cadets.

SAFETY

N/A.

CONFIRMATION OF TEACHING POINT 2

The cadets' participation in the activity will serve as the confirmation of this TP.

END OF LESSON CONFIRMATION

The cadets' participation in the press conference skit will serve as the confirmation of this lesson.

CONCLUSION

HOMEWORK/READING/PRACTICE

N/A.

METHOD OF EVALUATION

N/A.

CLOSING STATEMENT

Canadians, throughout history have demonstrated qualities of courage, loyalty and service in times of war. The participation of women during wartime is often overlooked but is an inspiring aspect of Canadian military service which illustrates those qualities very well. Women had to work hard to convince the CF to allow them to serve and the fact that women now serve in all aspects of naval operations is due, in large part, to the hard work and adventurous spirit of the WRCNS.

INSTRUCTOR NOTES/REMARKS

N/A.

REFERENCES

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ROYAL CANADIAN SEA CADETS

PHASE THREE

INSTRUCTIONAL GUIDE



SECTION 6

EO C320.03 – DESCRIBE CANADIAN NAVAL AVIATION

Total Time:

60 min

PREPARATION

PRE-LESSON INSTRUCTIONS

Resources needed for the delivery of this lesson are listed in the lesson specification located in A-CR-CCP-603/PG-001, Chapter 4. Specific uses for said resources are identified throughout the instructional guide within the TP for which they are required.

Review the lesson content and become familiar with the material prior to delivering the lesson.

Photocopy the information sheets located at Annex J.

Photocopy Annex K for each of the six groups.

Make posters for each aircraft carrier using the information sheets located at Annex J. Enlarge the sheets if possible to make the posters more visible.

PRE-LESSON ASSIGNMENT

N/A.

APPROACH

An interactive lecture was chosen for TP 1 as it allows the instructor to introduce new information about Canadian naval aviation while encouraging the cadets to become involved by asking and responding to questions.

An in-class activity was chosen for TP 2 as it is an interactive way to involve the cadets and stimulate an interest in learning about milestones in the development of Canadian naval aviation.

INTRODUCTION

REVIEW

N/A.

OBJECTIVES

By the end of this lesson the cadets shall have described Canadian naval aviation and listed milestones in the development of Canadian naval aviation.

IMPORTANCE

The effectiveness of aircraft carriers was proven during World War II (WW II) and toward the end of the war, Canada began a program to procure aircraft carriers for its fleet. Naval aviation had a short but interesting history in the Royal Canadian Navy (RCN) and later in the Canadian Forces (CF). These three large aircraft carriers helped make Canada a world-class naval power and inspired pride and loyalty from the crews that sailed them. Listing milestones in the history of naval aviation in the RCN, will make cadets aware of this aspect of naval history and help them develop a sense of pride in the RCN of the past and the Canadian Navy today.

Teaching Point 1

Describe the Purpose of Canadian Naval Aviation and the Aircraft Carrier HMS Nabob and HMS Puncher

Time: 20 min

Method: Interactive Lecture

THE PURPOSE OF CANADIAN NAVAL AVIATION

Canadians have been involved with naval aviation since World War I (WW I) but the RCN did not officially form a naval aviation division until after WW II. At the start of WW II, Canadians who wanted to become naval aviators volunteered with the Royal Navy (RN) as members of the Royal Naval Volunteer Reserve (RNVR) or the Royal Canadian Naval Volunteer Reserve (RCNVR).



These Canadians made a great contribution and of the two Victoria Crosses (VC) awarded to Canadians in WW II, one was awarded posthumously to Lieutenant Robert Hampton Gray of the RCNVR.

At the end of WW II, Canada's navy was the third largest navy in the world and the addition of aircraft carriers would help it maintain its position among the world's fleets. There were other reasons why the RCN thought it would be useful to establish its own naval aviation division in the early 1940s, which include:

- the use of carrier-borne aircraft in the sinking of the German battleship Bismarck in 1941;
- the destruction to the United States (US) Pacific Fleet at Pearl Harbour on December 7, 1941 by carrier-borne aircraft of the Japanese Navy;
- the need to protect Allied merchant ships in the Atlantic from German submarines after the US fleet was transferred to the Pacific after the attack at Pearl Harbour; and
- the usefulness of aircraft carriers that could act as a floating airfield which would effectively extend the range of aircraft.

Consequently, in 1942, a plan was worked out for the RN to loan two aircraft carriers, HMS NABOB and HMS PUNCHER, to the RCN. The RCN would provide the crews and the RN would provide the aircraft, senior officers and experienced aircraft maintenance personnel who would conduct on-the-job training for the Canadian crews.



A major problem was created by the split RCN/RN crew arrangement. Pay for the RN was lower than for the RCN and food for all ranks was to RN standard which was lower than the RCN standard. These two standards did not make for a happy ship.

Aircraft carriers are ocean going, self-propelled, self-sufficient airstrips and servicing bases. Carriers make it possible to win battles and they make a very effective anti-submarine weapon because no other ship can cover so much distance in such a short time. Carrier aircraft can strike inland targets and provide cover for troops landing ashore.

The most important department in a carrier is the air department which must work at top efficiency to ensure that aircraft are launched and recovered safely. Consequently, carriers spend most of their time conducting training exercises to make sure that their operation is first class.

HMS NABOB

HMS Nabob was commissioned into the RN in September 1943 and began service with the RCN in January 1944 mainly transporting land-based aircraft from North America to Europe. However, in August 1944, she joined the British Home Fleet and took part in two operations off the Norwegian coast against German battleships. On August 22, HMS Nabob was torpedoed in these operations resulting in a hole 3 m² behind the engine room and below the waterline. Amazingly, she made it back to port under her own power on August 27, but was not considered worth repairing and was decommissioned on October 10, 1944. In 1947, she was sold to be broken up in Holland, but was resold and converted for merchant service until she was finally scrapped in Taiwan in 1978.



G. B. Mason, Service Histories of Royal Navy Warships in World War 2, (2006). Retrieved May 2, 2008, from <http://www.naval-history.net/xGM-Chrono-05CVE-Nabob.htm>

Figure 11-6-1 HMS Nabob

HMS PUNCHER

HMS Puncher was commissioned into the RN in February 1944, and began service with the RCN in June ferrying motor launches and aircraft between North America and Europe. On February 1, 1945, she joined the British Home Fleet and following the end of WW II in Europe, was used for several months for deck landing training. In September she was partially converted to serve as a troop carrier and employed the rest of the year bringing Canadian troops home from Britain. In 1946, she left Halifax for the US and was decommissioned there in January. She was converted for merchant service and finally scrapped in Taiwan in 1973.



G. B. Mason, Service Histories of Royal Navy Warships in World War 2, (2006). Retrieved May 2, 2008, from <http://www.naval-history.net/xGM-Chrono-05CVE-Puncher.htm>

Figure 11-6-2 HMS Puncher



The main function of HMS Nabob and HMS Puncher was to serve as training ships to prepare the RCN to command and operate its own fleet of aircraft carriers.

In the years after WW II, the RCN operated three aircraft carriers, HMCS Warrior and HMCS Magnificent, on loan from the RN and the only Canadian-owned ship, HMCS Bonaventure.

CONFIRMATION OF TEACHING POINT 1

QUESTIONS

- Q1. How did Canadians, at the beginning of WW II, become naval aviators?
- Q2. Name the first two aircraft carriers that served with the RCN.
- Q3. What was purpose of the HMS Nabob and HMS Puncher?

ANTICIPATED ANSWERS

- A1. They volunteered with the RN as members of the RNVR or the RCNVR.
- A2. HMS Nabob and HMS Puncher.
- A3. Their main purpose was to serve as training ships for members of the RCN.

Teaching Point 2**Conduct an Activity Where the Cadets Will List Milestones in the Development of Canadian Naval Aviation**

Time: 30 min

Method: In-Class Activity

ACTIVITY

OBJECTIVE

The objective of this activity is to have the cadets list milestones in the development of Canadian naval aviation.

RESOURCES

- Naval ships information sheets located at Annex J,
- Scavenger hunt worksheet located at Annex K,
- Stopwatch,
- Whistle, and
- Pens/pencils.

ACTIVITY LAYOUT

Display the previously prepared posters around the classroom/training area.

ACTIVITY INSTRUCTIONS

1. Divide the cadets into three groups.
2. Distribute a scavenger hunt worksheet to each group.
3. Blow the whistle to begin the scavenger hunt. Allow the cadets 15 minutes to find the information.
4. After 15 minutes, blow the whistle to stop the scavenger hunt.
5. Review the information with the groups.

SAFETY

Supervise carefully to ensure that the groups go through the displays in an orderly manner.

CONFIRMATION OF TEACHING POINT 2

The cadets' participation in the scavenger hunt will serve as the confirmation of this TP.

END OF LESSON CONFIRMATION

The cadets' participation in the activity will serve as the confirmation of this lesson.

CONCLUSION

HOMEWORK/READING/PRACTICE

N/A.

METHOD OF EVALUATION

N/A.

CLOSING STATEMENT

The aircraft carriers of the RCN were all over 207 m long, 25 m wide, with a flight deck length of at least 213 m, able to carry over 40 aircraft and carried a crew of 1 300 personnel. The decommissioning of HMCS Bonaventure in 1970, Canada's last aircraft carrier, was more than the end of a ship and represents the passing of an era in Canadian naval history. The Canadian navy today does not have any aircraft carriers or any ships even close to that size and we will likely never see the likes of the carriers again.

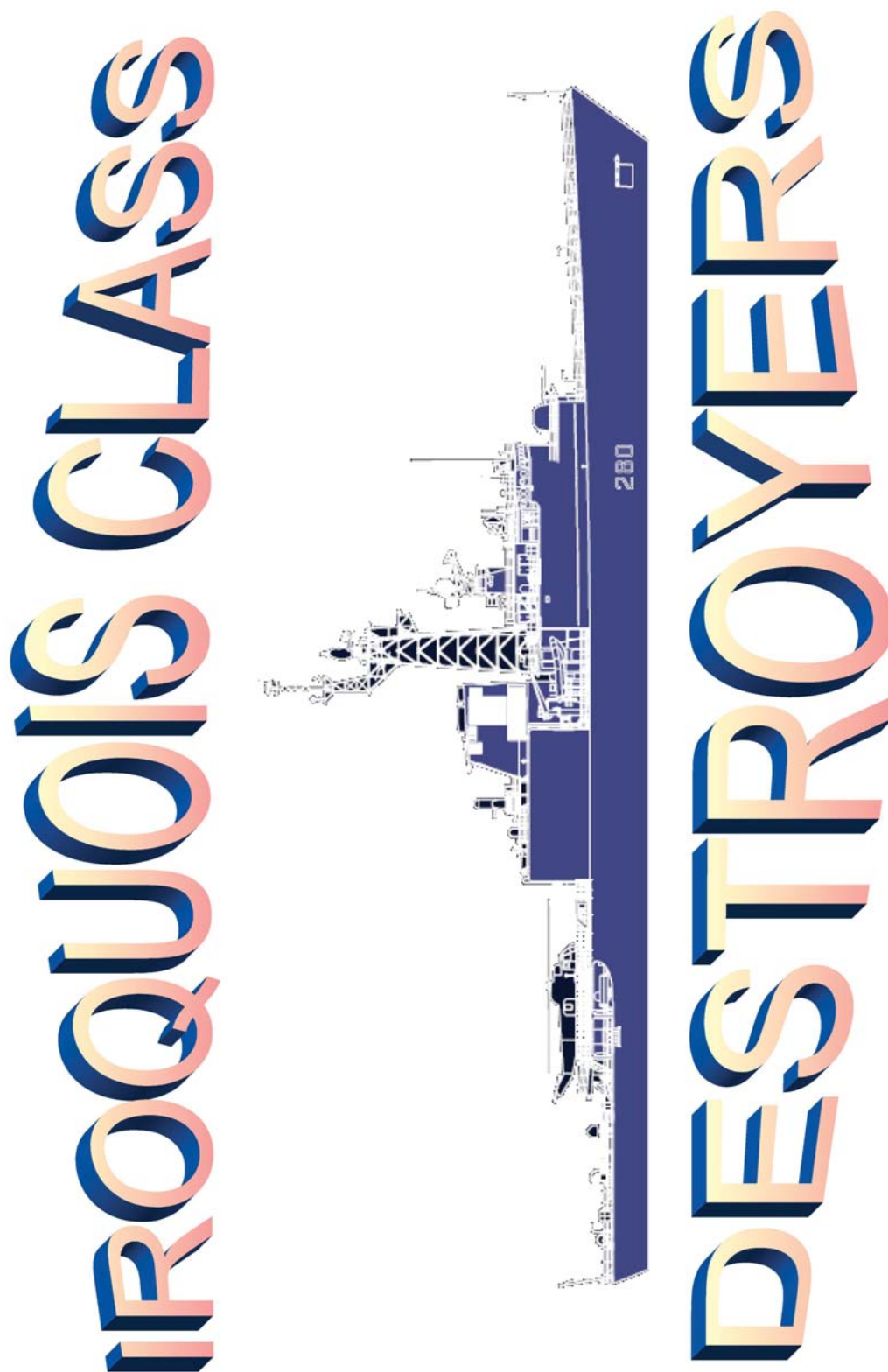
INSTRUCTOR NOTES/REMARKS

N/A.

REFERENCES

- C1-132 L'Heureux, E.J. (n.d.). *Aircraft Carriers: Royal Canadian Navy*. Retrieved February 18, 2008, from <http://www.aviation.technomuses.ca/pdf/Carriers.PDF>.
- C1-153 Mason, G.B. (2006). *Service Histories of Royal Navy Warships in World War 2*. Retrieved May 1, 2008, from <http://www.naval-history.net/xGM-Chrono-05CVE-Nabob.htm>.
- C1-153 Mason, G.B. (2006). *Service Histories of Royal Navy Warships in World War 2*. Retrieved May 1, 2008, from <http://www.naval-history.net/xGM-Chrono-05CVE-Puncher.htm>.
- C1-154 Hazegray. (2005). *RN Type Light Fleet Carriers*. Retrieved May 1, 2008, from <http://www.hazegray.org/navhist/canada/postwar/carriers/>.
- C1-155 Fleet Air Arm Archive. (2001). *HMS WARRIOR* Retrieved May 2, 2008, from <http://www.fleetairarmarchive.net/Ships/Warrior.html>.

NAVAL SHIPS INFORMATION SHEETS



The Ships of Her Majesty's Canadian Fleet, Department of National Defence. (2008). Retrieved April 23, 2008, from <http://navy.dwan.dnd.ca/english/PA/pamphlets.asp>

Figure 11A-1 Iroquois Class—Area Air Defence Destroyer

SPECIFICATIONS

Class	Type	Length (Metres)	Beam (Metres)	Speed (Knots)	Range (Nautical Miles)	Crew Size
Iroquois	Area Air Defence Destroyer (DDG)	129.9	15.2	29	4500	280

SHIPS

Name	Hull Number	Commissioned	Homeport
HMCS Iroquois	280	29 July 1972	Halifax
HMCS Huron	281	16 December 1972	Esquimalt
HMCS Athabaskan	282	30 September 1972	Halifax
HMCS Algonquin	283	03 November 1973	Esquimalt



These ships are often referred to as "Tribal Class" destroyers because they are named after the First Nations of Canada.

DETAILS



These "280" Class helicopter-carrying, anti-submarine warfare destroyers were all launched in the early 1970's and built for the stormy North Atlantic.



During the late 1980s and early 1990s, they underwent a major refit called the Tribal Class Update and Modernization Program (TRUMP) after which they were primarily used as area air defence destroyers.



They can shoot down any aircraft within 50 nautical miles (92.6 kilometres) with their Standard SM-2 (MR) missiles.



These destroyers are the only Canadian naval ships with a command and control capability allowing them to lead operations instead of simply participating in them.



They are the "flagships" of the Canadian Navy.



HMCS HURON was decommissioned in March, 2005. The Canadian navy now has three destroyers.



*The Ships of Her Majesty's Canadian Fleet, Department of National Defence. (2008).
Retrieved April 23, 2008, from <http://navy.dwan.dnd.ca/english/PA/pamphlets.asp>*

Figure 11A-2 Halifax Class—Multi-Role Patrol Frigate

SPECIFICATIONS

Class	Type	Length (Metres)	Beam (Metres)	Speed (Knots)	Range (Nautical Miles)	Crew Size
Halifax	Guided Missile/Multi- Role Patrol Frigate (FFH)	134.1	16.4	29	9500	225

SHIPS

Name	Hull Number	Commissioned	Homeport
HMCS Halifax	330	29 June 1992	Halifax
HMCS Vancouver	331	23 August 1993	Esquimalt
HMCS Ville de Quebec	332	14 July 1994	Halifax
HMCS Toronto	333	29 July 1993	Halifax
HMCS Regina	334	30 September 1994	Esquimalt
HMCS Calgary	335	12 May 1995	Esquimalt
HMCS Montreal	336	21 July 1994	Halifax
HMCS Fredericton	337	10 September 1994	Halifax
HMCS Winnipeg	338	23 June 1995	Esquimalt
HMCS Charlottetown	339	9 September 1995	Halifax
HMCS St. John's	340	24 June 1996	Halifax
HMCS Ottawa	341	28 September 1996	Esquimalt



Halifax Class frigates used to be called City Class frigates because they are named after Canadian cities.

DETAILS



These twelve helicopter-carrying frigates were launched in the early-to-mid 1990s. They combine anti-submarine, anti-surface and anti-air systems to deal with threats below, on and above the sea surface.



The frigates were originally designed to replace the Iroquois Class destroyers.



Various ships of this class have deployed to the Persian Gulf and Northern Arabian Sea, most recently in support of Operation Apollo and the war against terrorism.



These ships operate large helicopters from small decks, and are fitted with the Canadian developed "beartrap" helicopter haul-down system which allows Sea Kings to take-off and land from these ships in most weather conditions.

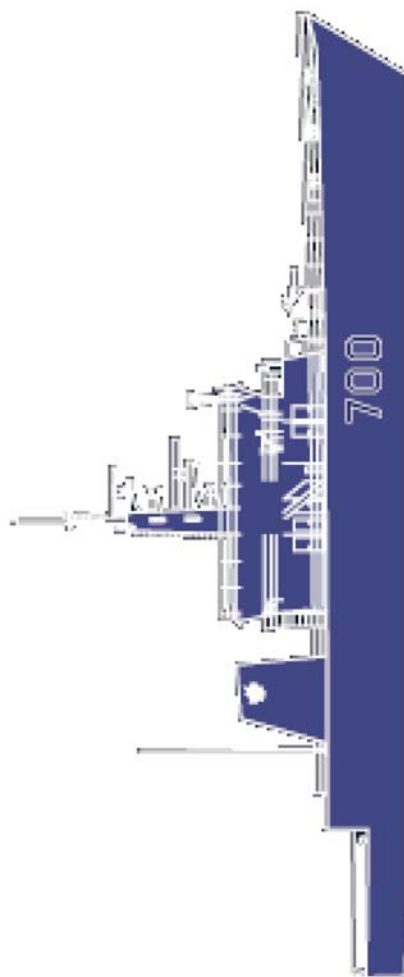


The 12 frigates will receive a \$3.1 billion refit beginning in 2010 and will likely take seven years. The refit will include improved command and control centres on the frigates, allowing them to lead operations instead of simply participating in them. They will be able to accommodate the CH-148 Cyclone Maritime helicopter.



They are large and well suited to the heavy seas of the North Atlantic and are considered the "workhorses" of the Canadian navy because they can fill many different roles.

KINGSTON CLASS



MARITIME COASTAL DEFENCE VESSEL

*The Ships of Her Majesty's Canadian Fleet, Department of National Defence. (2008).
Retrieved April 23, 2008, from <http://navy.dwan.dnd.ca/english/PA/pamphlets.asp>*

Figure 11A-3 Kingston Class–Maritime Coastal Defence Vessel

SPECIFICATIONS

Class	Type	Length (Metres)	Beam (Metres)	Speed (Knots)	Range (Nautical Miles)	Crew Size
Kingston	Maritime Coastal Defence Vessel (MCDV)	55.3	11.3	15	5000	37

SHIPS

Name	Hull Number	Commissioned	Homeport
HMCS Kingston	700	21 September 1996	Halifax
HMCS Glace Bay	701	26 October 1996	Halifax
HMCS Nanaimo	702	10 May 1997	Esquimalt
HMCS Edmonton	703	21 June 1997	Esquimalt
HMCS Shawinigan	704	14 June 1997	Halifax
HMCS Whitehorse	705	17 April 1998	Esquimalt
HMCS Yellowknife	706	18 April 1998	Esquimalt
HMCS Goose Bay	707	26 July 1998	Halifax
HMCS Moncton	708	12 July 1998	Halifax
HMCS Saskatoon	709	05 December 1998	Esquimalt
HMCS Brandon	710	05 June 1999	Esquimalt
HMCS Summerside	711	18 July 1999	Halifax



The Kingston Class Maritime Coastal Defence Vessels (MCDVs), like the frigates, are named after Canadian cities.

DETAILS



The Kingston Class MCDVs were launched in the mid-1990s.



The MCDVs are manned primarily by naval reservists. This provides excellent training for reservists and frees up regular force personnel for other duties.



These ships carry out many operations including coastal patrol, minesweeping, sidescan sonar surveys and remote operated vehicles (ROVs) handling.



Equipment used for minesweeping, ROV operation and survey work on these ships is modular, meaning that it can be easily moved from ship to ship as required.

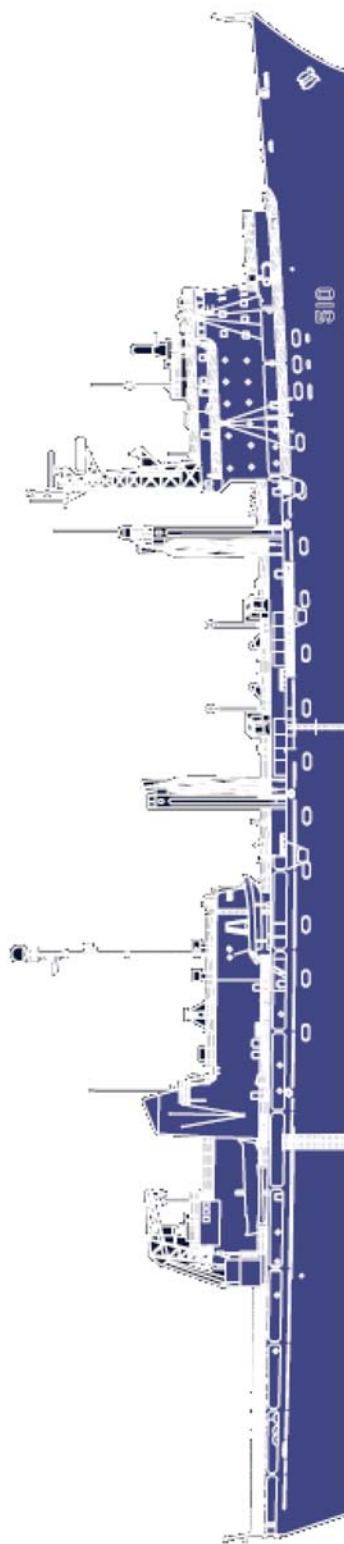


The ships have a combination diesel and electric propulsion system which drives two azimuth or Z-drives. These Z-drives are fixed pitch propellers situated side-by-side at the stern, like two outboard motors. These propellers can rotate a full 360 degrees which makes the MCDVs extremely manoeuvrable.



The MCDVs are modern in most respects but the guns carried by these ships are Second World War surplus and are very limited in capability.

PROTECTEUR CLASS AUXILIARY OIL REPLENISHMENT



*The Ships of Her Majesty's Canadian Fleet, Department of National Defence. (2008).
Retrieved April 23, 2008, from <http://navy.dwan.dnd.ca/english/PA/pamphlets.asp>*

Figure 11A-4 Protecteur Class–Auxiliary Oil Replenishment

SPECIFICATIONS

Class	Type	Length (Metres)	Beam (Metres)	Speed (Knots)	Range (Nautical Miles)	Crew Size
Protecteur	Auxiliary Oil Replenishment Vessel (AOR)	171.9	23.2	20	7500	365

SHIPS

Name	Hull Number	Commissioned	Homeport
HMCS Protecteur	509	30 August 1969	Esquimalt
HMCS Preserver	510	30 July 1970	Halifax



These auxiliary oil replenishment (AORs) ships are commonly referred to as “supply ships” because they provide ships with required supplies while at sea (eg, protect and preserve the fleet).

DETAILS



These two AOR ships re-supply ships at sea with food, ammunition, fuel, spare parts and have sophisticated medical and dental facilities.



Both ships have ice-strengthened hulls and are the largest ships ever built for the Canadian Navy.



They were originally fitted with a twin gun mount on the bow, but these were removed due to high maintenance problems.



When HMCS Protector was sent to the Gulf War, two Phalanx Close-In Weapons Systems (CIWS) guns were fitted as a temporary measure to guard against enemy missiles. This addition was made permanent in post-Gulf war refits on both ships of the class.

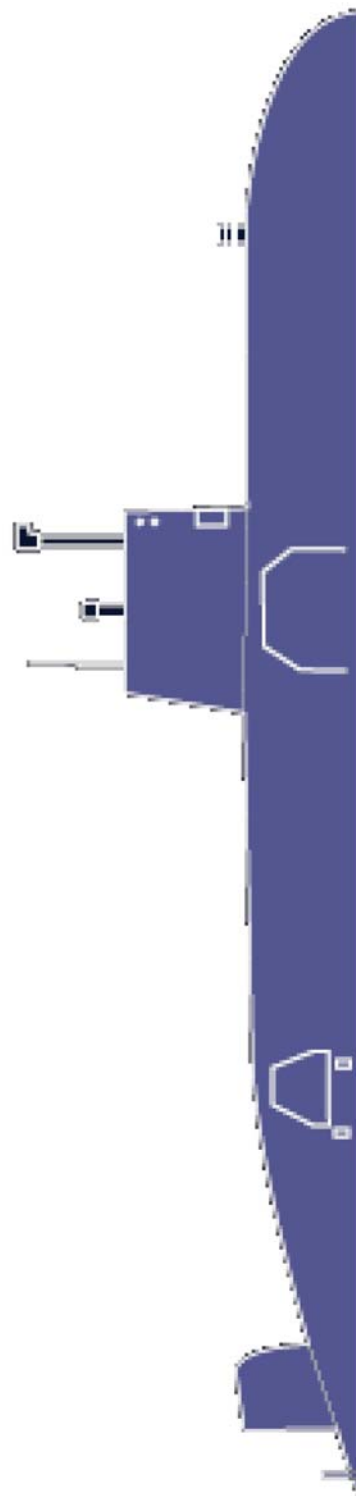


HMCS Protector was the only supply ship in the Gulf War to conduct her own boardings to prevent illegal arms from entering Iraq.



Both HMCS Protector and HMCS Preserver were deployed in 2001–2002 to the Arabian Sea in aid of Operation Apollo in the war against terrorism.

VICTORIA CLASS



LONG RANGE PATROL SUBMARINE

*The Ships of Her Majesty's Canadian Fleet, Department of National Defence. (2008).
Retrieved April 23, 2008, from <http://navy.dwan.dnd.ca/english/PA/pamphlets.asp>*

Figure 11A-5 Victoria Class–Long Range Patrol Submarine

SPECIFICATIONS

Class	Type	Length (Metres)	Beam (Metres)	Speed (Knots)	Range (Nautical Miles)	Crew Size
Victoria	Long Range Patrol Submarine	70.26	7.6	12--surface 20--submerged	8 week patrols	48

SHIPS

Name	Hull Number	Commissioned	Homeport
HMCS Victoria	876	23 November 2000	Esquimalt
HMCS Windsor	877	pending	Halifax
HMCS Corner Brook	878	pending	Halifax
HMCS Chicoutimi	879	pending	Halifax



The Victoria Class continues the Canadian Navy tradition of naming ships after Canadian cities.

DETAILS



On April 6, 1998, the Canadian Government announced that four ex-Royal Navy submarines were purchased from Britain.



These submarines were decommissioned from the Royal Navy in 1993 and were then laid up for several years, after the Royal Navy decided to focus solely on nuclear submarines.



The range of a submarine depends on whether it is patrolling on the surface or submerged. A patrol can cover 125 000 square km.



This class of subs is suffering a large number of problems on being reactivated possibly made worse by the long period of deactivation.



HMCS Chicoutimi was underway to Canada from Scotland in 2004 when she suffered a serious fire. The crew were able to extinguish the fire, but several crew members suffered injury from smoke inhalation and one officer later died of his injuries. HMCS Chicoutimi was towed back to Scotland and put on the back of the transport ship Eide Transporter and arrived in Halifax on February 1, 2005.



On October 12, 2005 the Navy ordered all subs to be returned to port indefinitely pending the investigation into the fire on HMCS Chicoutimi.

As of 2006:



HMCS Victoria was in refit in British Columbia.

HMCS Windsor was the only operational VICTORIA class submarine, and has undertaken several cruises and participated in at least one exercise with the United States Navy (USN).

HMCS Corner Brook was in HMC Dockyard undergoing a refit.

HMCS Chicoutimi was in the dock of Halifax Shipyard undergoing repairs necessitated by the fire she suffered in 2004.

ORCA CLASS



PATROL CRAFT TRAINING VESSEL

*The Ships of Her Majesty's Canadian Fleet, Department of National Defence. (2008).
Retrieved April 23, 2008, from <http://navy.dwan.dnd.ca/english/PA/pamphlets.asp>*

Figure 11A-6 Orca Class–Patrol Craft Training Vessel

SPECIFICATIONS

Class	Type	Length (Metres)	Beam (Metres)	Speed (Knots)	Range (Nautical Miles)	Crew Size
Orca	Patrol Craft Training Vessel (PCT)	33	8.6	22	800	4 crew + 20 trainees

SHIPS

Name	Hull Number	Accepted	Homeport
Orca	55	2006	Esquimalt
Raven	56	2007	Esquimalt
Caribou	57	2007	Esquimalt
Renard	58	2007	Esquimalt
Wolf	59	2008	Esquimalt
Grizzly	60	2008	Esquimalt
Cougar	61	2008	Esquimalt
Moose	62	Expected Sept. 2008	Esquimalt



The Orca Class ships have been given the names of armed yachts that served in the Royal Canadian Navy during World War II.

DETAILS



The Orca class Patrol Craft Training (PCTs) vessels replace the 50-year-old wooden-hulled Yard Auxiliary General (YAG) vessels.



They have modern bridge facilities modelled after those found on larger Canadian Navy vessels and are intended to assume the burden of naval officer training from the Kingston and Halifax class ships.



These craft will not be commissioned into the Canadian Navy, nor will they officially be part of the auxiliary fleet.



All Orca Class PCTs will be stationed at CFB Esquimalt.

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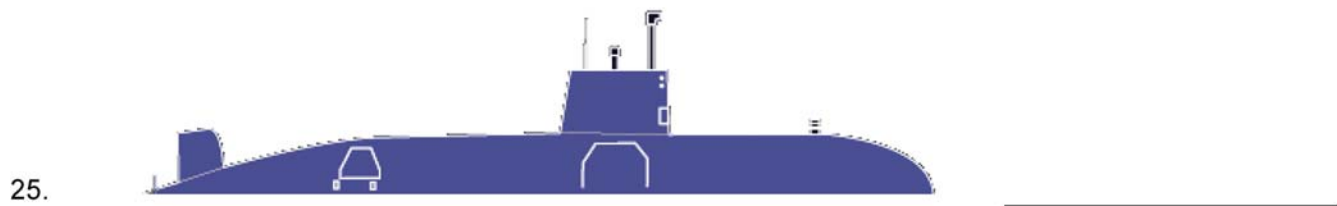
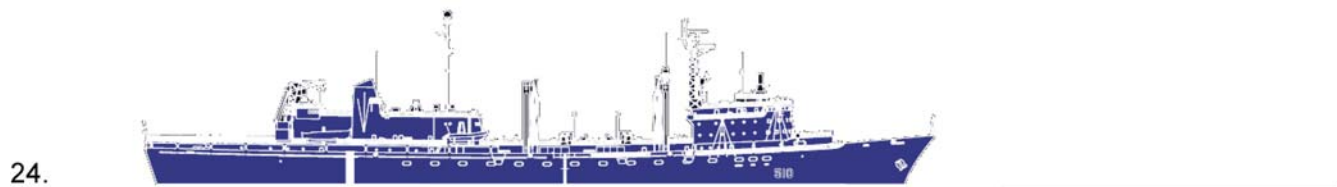
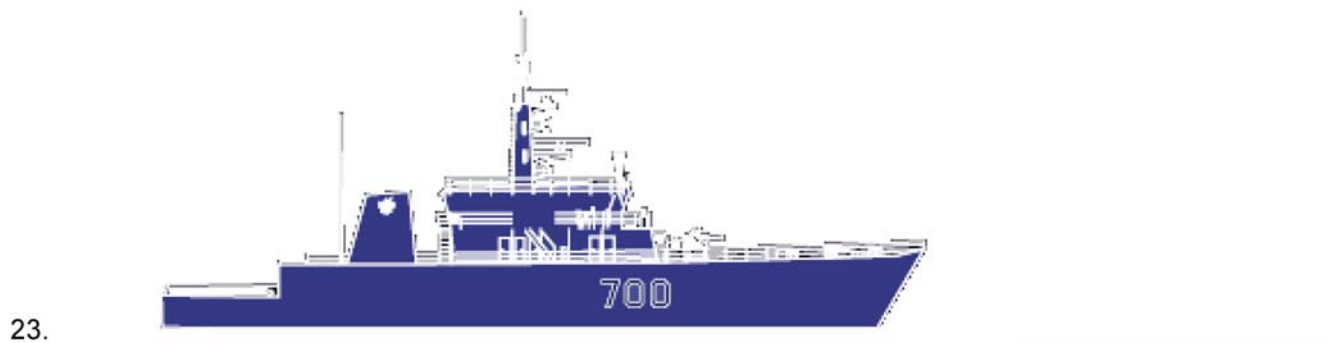
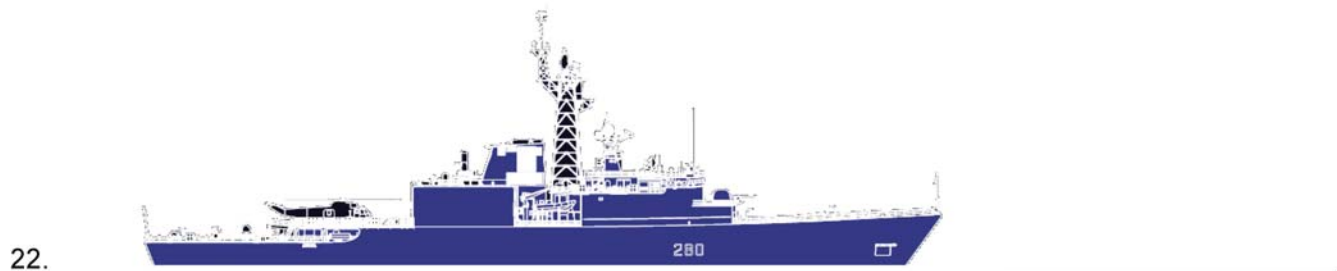
SCAVENGER HUNT WORKSHEET AND ANSWER KEY (NAVAL SHIPS)

SCAVENGER HUNT WORKSHEET

Find the following:

1. One function of the Kingston class.
2. The fastest classes of ships.
3. The only operational submarine in the Canadian Navy.
4. The newest class of ships.
5. The class of ship that is manned by naval reservists.
6. One class of ships named after Canadian cities.
7. The class of supply ships.
8. The only class of ship stationed entirely at CFB Esquimalt.
9. The class of ships named after the First Nations of Canada.
10. The number of operational destroyers in the Canadian Navy.
11. The main function of the Iroquois Class.
12. The class of ships nicknamed the “flagships” of the Canadian Navy.
13. The name of the submarine class.
14. The class of ship nicknamed the “workhorses” of the Canadian Navy.
15. The largest ships ever built for the Canadian Navy.
16. The oldest class of ships.
17. The name of the submarine that had a fire onboard while at sea.
18. The class of ships primarily used for training.
19. One class of ship whose home port is CFB Halifax.
20. One class of ship whose home port is CFB Esquimalt.

Identify the class of ship:



SCAVENGER HUNT – ANSWER KEY

1. One function of the Kingston class. (**coastal patrol, minesweeping, surveys, ROV handling**)
2. The fastest classes of ships. (**Iroquois and Halifax**)
3. The only operational submarine in the Canadian Navy. (**HMCS Windsor**)
4. The newest class of ships. (**Orca Class**)
5. The class of ship that is manned by naval reservists. (**Kingston Class**)
6. One class of ships named after Canadian cities. (**Halifax, Kingston, Victoria**)
7. The class of supply ships. (**Protecteur**)
8. The only class of ship stationed entirely at CFB Esquimalt. (**Orca**)
9. The class of ships named after the First Nations of Canada. (**Iroquois Class**)
10. The number of operational destroyers in the Canadian Navy. (**three**)
11. The main function of the Iroquois Class. (**air defence**)
12. The class of ships nicknamed the “flagships” of the Canadian Navy. (**Iroquois**)
13. The name of the submarine class. (**Victoria**)
14. The class of ship nicknamed the “workhorses” of the Canadian Navy. (**Halifax**)
15. The largest ships ever built for the Canadian Navy. (**Protecteur**)
16. The oldest class of ships. (**Iroquois**)
17. The name of the submarine that had a fire onboard while at sea. (**HMCS Chicoutimi**)
18. The class of ships primarily used for training. (**Orca**)
19. One class of ship whose home port is CFB Halifax. (**all except Orca**)
20. One class of ship whose home port is CFB Esquimalt. (**all classes**)

21.



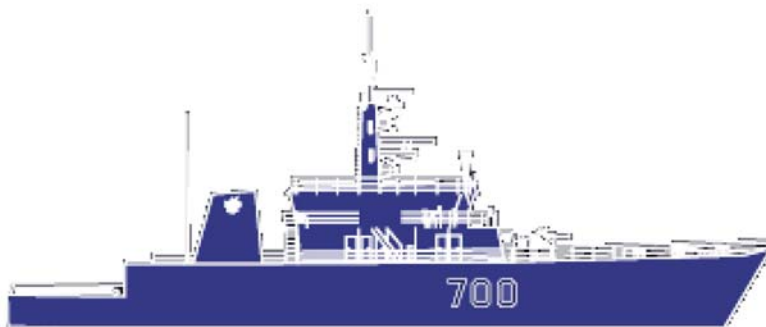
Iroquois

22.



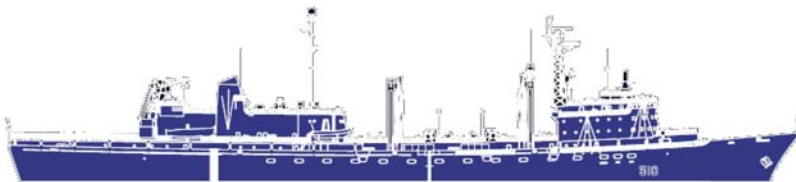
Halifax

23.



Kingston

24.



Protecteur

25.



Victoria

DOMESTIC OPERATIONS INFORMATION SHEETS

OPERATION ASSISTANCE

Red River, Manitoba.

April 21 to May 19, 1997.

Background

The Red River flows northerly from the US into Manitoba. Approximately 75 percent of Manitoba's population lives in the Red River Valley. Typically, the Red River is 200 to 500 m wide with a flow rate of 141 600 litres per second. During the flood of 1997, the Red River was 40 km wide with a flow rate of 4 785 500 litres per second.



Natural Resources Canada, 2005, Geoscientific Insights Into the Red River and its Flood Problems in Manitoba. Retrieved March 15, 2007, from http://gsc.nrcan.gc.ca/floods/reddriver/geological_e.php

Figure 11C-1 Map of Red River Valley, Manitoba

In early April 1997, after a winter of heavy snow, the Red River in Manitoba, began to flood. By April 20, the area surrounding the city of Winnipeg was mostly flooded and the people of the Red River Valley were beginning to lose their battle against the rising water.

On April 21, the CF launched Operation ASSISTANCE to work under the direction of Emergency Preparedness Canada, helping provincial and municipal authorities and volunteers. The main tasks were to:

- fill sandbags;
- build floodwalls and breakwaters;
- set up and use pumps;
- patrol evacuated towns; and
- provide medical attention.

On May 1, the flood reached its highest level and spilled over Winnipeg. The evacuations began May 8 for Winnipeg and the rural areas around it. By May 12, the worst was over and troops began to withdraw.

Facts and Figures

- More than 8 500 regular and reserve CF personnel were mobilized to work for Operation ASSISTANCE.
- Over 5 million sandbags were used.
- Over 152 911 cubic m of sand was used within a two-week period.
- Over 100 earthen dykes were built around homes.
- An area of 2 000 square km was flooded.



On May 13, 135 CF vehicles rolled through downtown Winnipeg on their way out of town. The citizens lined the streets, clapping and cheering.

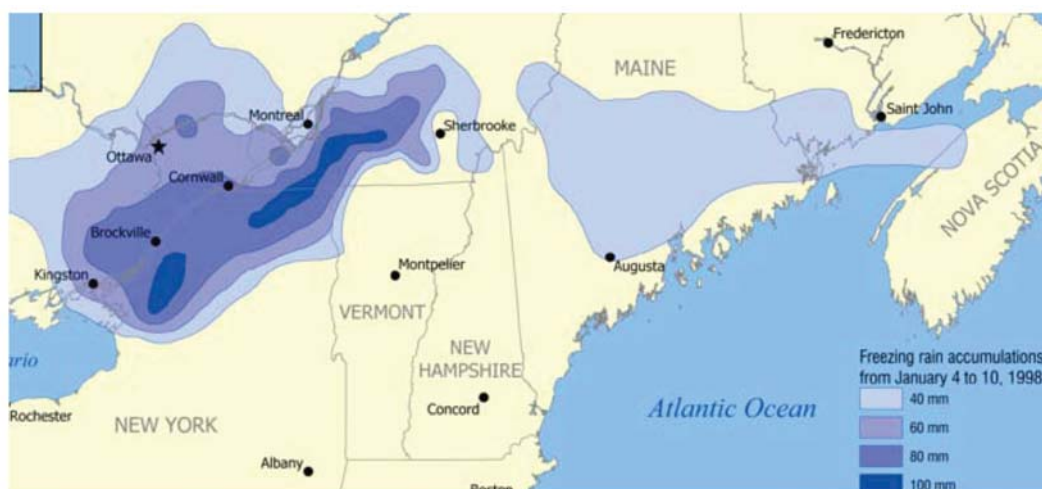
OPERATION RECUPERATION

East central Canada (western New Brunswick, southern Quebec and eastern Ontario).

January 8 to February 8, 1998.

Background

On January 4, 1998, an ice storm began in east central Canada. The freezing rain fell for approximately 80 hours and when it finally stopped on January 8, the temperature dropped sharply. The weight of the ice brought down millions of trees, the roofs of large buildings, 120 000 km of power lines and telephone cables, 130 major transmission towers and about 300 000 utility poles.



Wikipedia, 2006, North American Ice Storm of 1998. Retrieved March 15, 2007, from http://en.wikipedia.org/wiki/1998_ice_storm

Figure 11C-2 Map of East Central Canada

The severity of ice storms depends on:

- the amount of accumulation of ice;
- the length of the storm; and
- the geographic size of the area affected.

By these criteria, the ice storm of 1998 was the worst ever to hit Canada.

The total precipitation which fell as freezing rain, ice pellets and snow exceeded 85 mm in Ottawa, Ont., 73 mm in Kingston, Ont., 108 mm in Cornwall, Ont., and 100 mm in Montreal. Previous storms saw about half this amount.

The geographic area affected by the storm was enormous. At the height of the storm the freezing rain extended across Ontario through Quebec, New Brunswick and Nova Scotia.

Generally, the areas affected receive freezing rain for about 45 to 65 hours a year. During the ice storm of 1998, freezing rain fell for double that amount of time.

The storm did the most damage in western New Brunswick, southern Quebec, especially around Montreal, and eastern Ontario in the farming communities of the lower Ottawa Valley. Emergency vehicles could hardly move because roads were blocked by fallen trees, broken power lines and ice. On January 13, the province of Quebec requested that the CF assume the powers of peace officers around worst affected areas of Montreal.

CF personnel from 200 units across Canada helped to:

- clear roads;
- rescue people and animals trapped by storm wreckage;
- evacuate the sick;
- shelter and feed about 100 000 people frozen out of their homes;
- ensure that farmers had generators and fuel to keep their operations going; and
- work with hydro companies to repair and replace downed transmission towers and utility poles.

Facts and Figures

Operation RECUPERATION involved 15 784 deployed army, navy and air force personnel, 10 550 in Quebec, 4 850 in Ontario and 384 in New Brunswick. 3 740 were reserve soldiers.

In addition, 6 200 CF members and DND employees working at their regular jobs provided the logistical support required to sustain such an operation.

At least 25 people died, mainly from hypothermia.

About 100 000 people took refuge in shelters.

The damage in eastern Ontario and southern Quebec was so severe that the electrical grid had to be rebuilt and not repaired.

Many Quebec maple syrup producers, who account for 70 percent of the world supply, were ruined with much of the sugar bush permanently destroyed.

More than one million households (about 900 000 in Quebec and 100 000 in Ontario) totalling about 4 million people, lacked electricity, which meant no lights, central heating, running water, refrigeration or hot meals.



Operation RECUPERATION was the largest deployment of troops ever to serve on Canadian soil in response to a natural disaster and the largest operational deployment of CF personnel since the Korean War.

OPERATION PEREGRINE

British Columbia.

August 3 to September 16, 2003.

Description

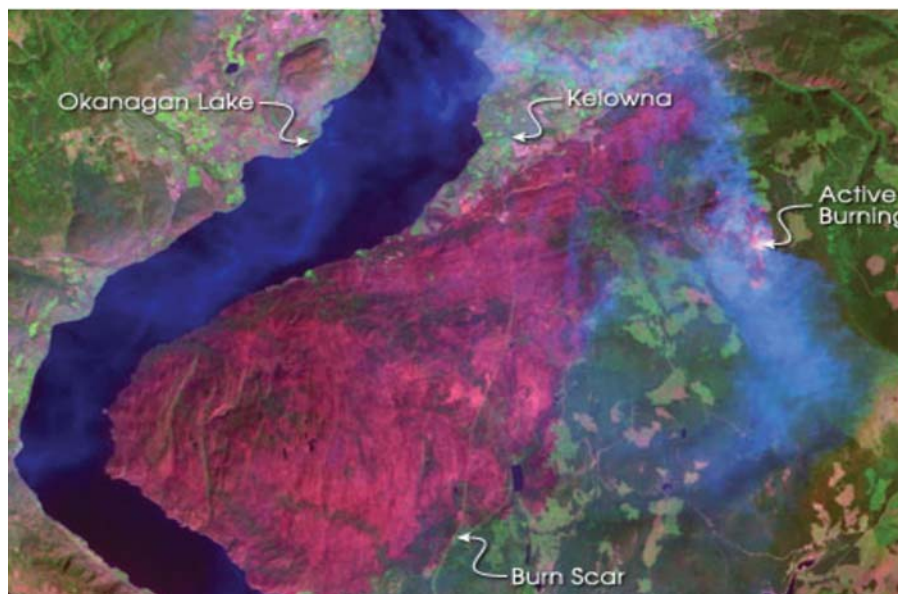
One of the worst fire seasons in British Columbia in several decades occurred in 2003. At the height of the crisis, about 800 fires were burning at once in British Columbia and thousands of people were ordered out of their homes.

On August 2, 2003, the Government of British Columbia declared a state of emergency because forest fires were burning throughout the province. Within 24 hours, the first soldiers were deployed and arrived in Merritt, B.C., as part of Operation PEREGRINE.



Operation PEREGRINE was the CF's second-largest deployment after Operation ATHENA, the CF's contribution to the International Security Assistance Force (ISAF) in Afghanistan.

After receiving a day of basic forest firefighting training from the British Columbia Forest Service, including safety procedures, fire ratings, hose handling and fire behaviour, the soldiers took to the fire lines.



Visible Earth, a Catalog of NASA Images and Animations of Our Planet. Copyright 2003 by NASA/GSFC/MITI/ERSDAC/JAROS and U.S./Japan Aster Science Team. Retrieved March 16, 2007, from http://visibleearth.nasa.gov/view_rec.php?id=16565

Figure 11C-3 Satellite View of the Okanagan Region During the 2003 Fires

The soldiers were divided in two task forces, with Task Force One deployed in Kamloops and Task Force Two deployed in the Okanagan Valley and performed the following duties:

- fighting fires;
- working with civilian firefighters to control unstable fires;

- stabilizing less active areas of fire zones;
- delivering medical attention;
- providing administration and logistical support; and
- mopping up.



The process known as “mopping up” is extremely physically demanding since it requires that the soldiers dig to the roots of the trees and then soak them with water to make sure the fire does not continue to burn underground.

Facts and Figures

Almost 2 500 fires were burning in the province.

Over a quarter of a million hectares of timber were destroyed.

The estimated value of the lost timber was \$5.6 billion.

It will cost the B.C. government \$100 million for reforestation to replace the timber.

The estimated cost of fighting the fires was \$545 million.

- More than 2 200 CF members (including 900 reservists) were involved in fighting five of the worst fires at Barriere-McLure, Okanagan Mountain Park, Vaseux Lake, McGillivray and Kuskanook.
- 60 fire departments from across Canada and around 1 000 firefighters took part in fighting the fires.



The state of emergency was invoked on August 2, 2003, and not lifted until September 14, 2003.

Operation PEREGRINE was the third largest domestic operation after the 1998 ice storm (Operation RECUPERATION) and the 1997 Red River Flood (Operation ASSISTANCE). It lasted 45 days.

ARCTIC SOVEREIGNTY

Canada's motto is “From Sea to Sea” referring to the Atlantic and Pacific Oceans, but many Canadians are quick to point out that it is really “From Sea to Sea to Sea” and that the Arctic Ocean is just as important to Canada as the other two. Canadians have always regarded the north as part of Canada and there is even a reference to it in the national anthem, “The true north strong and free.”

There is general international agreement that the many islands in the Arctic belong to Canada but there is disagreement about the water between them. Canada says they are Canadian waters but at least three other countries, the United States, Russia and Denmark, dispute this.

The UN's Convention on the Law of the Sea (2003), states that countries can control access to their shoreline that is 19 km wide. However, the waterways between Arctic islands are almost 100 km wide, in places, which makes Canada's claim difficult.

Canada must demonstrate two things to win a sovereignty claim over Arctic waters. It must be demonstrated that:

- the waters are the internal waters of Canada; and
- the Northwest Passage is not an international strait.

Canada's arguments for sovereignty over the Arctic include:

- the Inuit spend large amounts of time hunting and living on the ice which makes it an extension of the land;
- the fact that Canada owns the only year-round site of human habitation closest to the North Pole with its military station at Alert; and
- the fact that there were only 11 maritime trips through the Northwest Passage between 1904 and 1984 which means that it is not a navigation or shipping-route.



The most direct challenge to Canada's sovereignty in Arctic waters came in 1985 when the United States sent its icebreaker the *Polar Sea* through the Northwest Passage without asking or informing Canada.

Some think that Canada's case is weak and that the government should do more to declare and enforce its sovereignty over the Arctic. Consequently, the Canadian government has taken various measures to assert Canada's sovereignty in the north which are outlined below.

OPERATION LANCASTER

Eastern Arctic.

August 12–25, 2006.

Operation LANCASTER was a domestic operation which took place from August 12–25, 2006, in the eastern Arctic. CF personnel conducted operations in support of sovereignty and surveillance of the waters of Lancaster Sound.

Operation LANCASTER was directed by Canada COM and carried out by JTF (North) with support from JTF (Atlantic), JTF (East) and other government agencies including the RCMP, Parks Canada, Fisheries and Oceans Canada and the Canadian Coast Guard (CCG).

Operation LANCASTER included:

- sovereignty patrols (air, land, and sea) along the Baffin Coast into Lancaster Sound;
- a stop at Devon Island by HMCS Montreal for a RCMP grave restoration;
- a stop at Pond Inlet for a community day; and
- a fisheries patrol by the Canadian Navy and Fisheries and Oceans Canada in the Davis Strait.

OPERATION NANOOK 07

Iqaluit and Baffin Island.

August 7–17, 2007.

Operation NANOOK 07 was a sovereignty operation directed by Canada COM and JTF (North) on August 7–17, 2007. It was a joint operation involving all three elements of the CF as well as the RCMP and the CCG.

During the operation, personnel from JTF (North) were trained in the conduct of domestic operations in conjunction with other government departments. There were two training exercises during Operation NANOOK 07:

- CF response to a request from the RCMP for assistance with a drug seizure; and
- CF response to a request from the CCG for assistance with environmental protection.

Approximately 600 CF members, CCG personnel and RCMP members took part in Operation NANOOK 07.

The real purpose of operations such as these has to do with showing the Canadian flag and exerting Canadian sovereignty over the Arctic.

ARMED NAVAL ICEBREAKERS AND ARCTIC/OFFSHORE PATROL SHIPS

On July 9, 2007, the government of Canada announced that it would procure six to eight armed naval icebreakers named Arctic/Offshore Patrol Ships (A/OPS) to patrol the full area of Canada's "200-mile limit."

Currently, the Canadian Navy can patrol the coastal waters of the Atlantic and Pacific with its Maritime Coastal Defense Vessels (MCDVs) but these vessels cannot be used in the open ocean or the Arctic.

The primary tasks of the A/OPS will be to:

- conduct surveillance operations out to the farthest boundary of Canada's "200-mile limit";
- conduct surveillance in the Arctic; and
- co-operate with other elements of the CF and other federal government departments to assert and enforce Canadian sovereignty.

The ships are expected to remain operational for 25 years.

DEEPWATER PORT AT NANISIVIK ON BAFFIN ISLAND AND ARMY BASE AT RESOLUTE

On August 10, 2007, the Canadian government announced that the CF would establish a new deepwater naval port at Nanisivik on Baffin Island and a northern army base at Resolute. Both of these bases are located at strategic points along the Northwest Passage that Canada claims as an internal waterway but which other nations regard as an international sea route for use by any nation.

Global warming has resulted in the Northwest Passage becoming navigable for longer and longer periods of time each year. Since this is a considerably shorter route between Asia and Europe Canada feels it needs to be ready to exert its claim to the passage when it becomes more usable.



In 2005, a somewhat humorous border dispute took place between Canada and Denmark over Hans Island situated halfway between Greenland which is owned by Denmark, and Ellesmere Island which is owned by Canada. To symbolize their claim to the island, visitors from both countries took turns erecting their nation's flag and removing the flag of the other nation as well as leaving a bottle of its finest liquor at the site.

Incidents such as the Hans Island dispute lead some to conclude that the issue of sovereignty in the Arctic is blown out of proportion. However, the issue is very important for two reasons:

Submarines can travel under the ice and right now Canada cannot detect them. Other countries argue that Canada cannot claim sovereignty if we do not patrol or monitor the area more thoroughly.

The Arctic ice is melting quickly and some predict that the Northwest Passage may be an open waterway for large parts of the summer in as little as 15 years.

If the Northwest Passage becomes a commercial sea route it will be very tempting for other countries to test Canada's sovereignty because it will be a shipping route between Asia and Europe that is 5 000 km shorter than through the Panama Canal.

DOMESTIC OPERATIONS WORKSHEETS

OPERATION ASSISTANCE

1. (a) Where did it take place?

(b) When did it take place?

(c) Write out three facts about the disaster.

2. List three duties performed by the CF.

3. List three statistics about the disaster.

OPERATION RECUPERATION

1. (a) Where did it take place?

(b) When did it take place?

(c) Write out three facts about the disaster.

2. List three duties performed by the CF.

3. List three statistics about the disaster.

OPERATION PEREGRINE

1. (a) Where did it take place?

(b) When did it take place?

(c) Write out three facts about the disaster.

2. List three duties performed by the CF.

3. List three statistics about the disaster.

Arctic Sovereignty

1. List two countries besides Canada that have been known to claim sovereignty in the Arctic?

2. Identify two CF operations that have been conducted to assert Canadian sovereignty in the Arctic.

3. How do operations such as these help enforce Canadian sovereignty in the Arctic?

4. Identify two recent federal government announcements related to Canadian sovereignty in the Arctic.

5. Why has the issue of sovereignty become even more important in the last 15 years?

INTERNATIONAL OPERATIONS INFORMATION
THE UN TRUCE SUPERVISION ORGANIZATION (UNTSO)
OPERATION JADE

GEOGRAPHICAL LOCATION

Operation JADE is the name given to Canada's contribution to the UN peacekeeping mission within the five Middle Eastern countries of Egypt, Israel, Jordan, Lebanon and the Syrian Arab Republic.



Operation JADE is Canada's longest running overseas commitment.

BACKGROUND

The state of Israel was created in 1948, out of territory which was formerly a part of Palestine. Palestinian Arabs and neighboring Arab States, in protest of this UN action, attacked Israel just one day after it was created. UNTSO was created in 1948, to observe the UN-imposed ceasefire which ended the first Arab-Israeli War. In 1954, Canada began contributing UN Military Observers (UNMOs) to UNTSO to serve in the Golan Heights, south Lebanon and the Sinai.

There was relative peace in the area until 1956, when Britain and France along with Israel tried to take back control of the Suez Canal which had just been taken over by Egypt. The rest of the world condemned this action and Lester B. Pearson, a Canadian diplomat at the UN, proposed that the UN intervene to end the dangerous situation. He suggested that the UN send an international military force to the area and stand between the opposing sides to bring an end to the hostilities.

Dag Hammarskjold, the first Secretary-General of the UN immediately agreed and the United Nations Emergency Force (UNEF) was established. Canada was in a good position to help establish the peacekeeping force that Pearson had proposed. A Canadian, Major-General E.L.M. (Tommy) Burns, was already commanding UNTSO and had already gained familiarity with the political leaders in the region. Secretary-General Hammarskjold immediately appointed him the first commander of UNEF, with responsibility to organize the operation. Canada immediately sent soldiers for signals, transport, reconnaissance and administration to get the mission started.

Keeping the peace in the Middle East occupied much of Canada's and the world's attention for decades to follow. After the Six-Day War in 1967 resulted in the Israeli occupation of large sections of Arab territory, there was a need for a new peacekeeping mission but Israel refused, so UNTSO was expanded. After the next Arab-Israeli War in 1973, known as the Yom Kippur War, two new missions were established. To help implement the ceasefire and disengagement, Canada contributed to the new United Nations Emergency Force II (UNEFII) in Egypt and the United Nations Disengagement Force (UNDOF) in the Golan Heights of Syria.

Today the CF maintains a contingent of seven UNMOs in the UNTSO as well as a Lieutenant-Colonel to serve as Group Commander when requested by the UN.

HEROES, BRAVERY AND SACRIFICE

Major General E.L.M. (Tommy) Burns became the first Canadian commander of a UN peacekeeping mission.

Canadian UN diplomat and future Prime Minister of Canada, Lester B. Pearson, won the Nobel Peace Prize in 1957, for his proposal of establishing a peacekeeping force to restore peace around the Suez Canal. Previous to the UNEF, peacekeeping missions consisted of unarmed military observers. Lester B. Pearson's proposal

established the basic principles of peacekeeping that the UN would use throughout the world. As a result, UN peacekeeping missions would be:

- under the command of the Secretary-General (as the earlier observer missions had become);
- recruited from Member States other than the permanent members of the Security Council;
- comprised of whole units from member states who would be equipped with weapons;
- paid for by the UN, except for the salaries of troops, which continued to be covered by the contributing states (although the UN would pay states a contribution for each soldier);
- fair to all sides; and
- able to use force in self-defence.

Two members of the CF have lost their lives while serving with Operation JADE under UNTSO.

UNITED NATIONS DISENGAGEMENT OBSERVER FORCE (UNDOF) OPERATION GLADIUS

GEOGRAPHICAL LOCATION

Syria is a small Arab country located in the Middle East along the eastern edge of the Mediterranean Sea. It has a population of 18 million people. The Golan Heights is a territory between Syria and Israel with a harsh climate where poisonous snakes and other natural threats are common. In summer, temperatures can reach 40 degrees Celcius and in winter it can be cold, wet and snowy.



Maps of Golan Heights, Foundation for Middle East Peace. Retrieved March 8, 2007, from http://www.fmep.org/maps/map_data/golan_heights/golan_1991.gif

Figure 11E-1 Map of the Golan Heights of Syria

BACKGROUND

The Middle East has seen lots of violence in recent history especially since Israel was created in 1948. Immediately after the creation of the state of Israel there was a war in the area followed by similar wars in 1967 and 1973. In the 1967 war, Israel captured the Golan Heights and put it under Israeli military administration from 1967 to 1981. In 1973, Syria and Egypt once again fought Israel in the Yom Kippur War. On May 31, 1974, an agreement was signed between Israeli and Syrian forces.

The UN was called upon to supervise the ceasefire plan and to monitor the situation and UNDOF was created. The plan created a buffer zone between Israel and Syria called the "Area of Separation". It is 80 km long and between 1 km to 10 km wide. Inside this area, no military presence is allowed other than the UN observers. Beyond this area is an "Area of Limitation" where there are restrictions on any military presence and the activity of both armies.



Syria and Israel contest the ownership of the Golan Heights but have not used military force since 1974.

The Canadian contribution to UNDOF is Operation GLADIUS under which the CF carries out numerous duties which include:

- supervising the ceasefire;
- monitoring activity in the buffer zone;
- supervising the implementation of the disengagement agreement; and
- providing transportation, supply, maintenance, communications and other logistical support services for the main observer force.



The most important duty is the logistical support provided by the CF. Without these essential services UNDOF would not be able to operate.

HEROES, BRAVERY AND SACRIFICE

As of March 2006, 12 000 CF members have served in the Golan Heights making it Canada's third-largest peacekeeping commitment.

Hostile fire, landmines, vehicle accidents and psychological stress are the most obvious dangers in this conflict zone.



In the Golan Heights, Canadians found a way to cope by getting a mascot. "Digger the Dog" lived with the Maintenance Platoon and held the honorary rank of Sergeant. He has been with the contingent for more than 20 tours and even had his picture taken with the then-Prime Minister of Canada, Jean Chrétien.

In total, 40 UN personnel have died while serving in the Golan Heights including four Canadians.



Nine CF members serving with another UN mission in Egypt were killed on August 9, 1974, when their plane was shot down by a Syrian missile while making a supply run to UNDOF in the Golan Heights.

Two senior officers are still serving in the Golan Heights operation.

UNITED NATIONS FORCE IN CYPRUS (UNFICYP) OPERATION SNOWGOOSE

GEOGRAPHICAL LOCATION

Cyprus is the third-largest island in the Mediterranean of 9 000 square km but is smaller than Cape Breton Island, N.S. Cyprus lies off the southern coast of Turkey and the western shore of Syria. It has a population of almost 800 000 people. Cyprus was a British colony until 1960 when the island gained its independence.

Cyprus is mainly Greek in culture, language and population and many Greek Cypriots wanted Cyprus to become part of Greece. However, the minority Turkish population of Cyprus opposed this and during the independence period, friction between the two groups grew until 1963 when violence exploded everywhere on the island.



PLC Map Collection/University of Texas Library Online by University of Texas at Austin.
Retrieved March 8, 2007, from http://www.lib.utexas.edu/maps/cia06/cyprus_sm_2006.gif

Figure 11E-2 Map of Cyprus

BACKGROUND

At the beginning of World War I (WW I) Britain took over Cyprus and in 1925 declared it a Crown colony. In 1955, a guerrilla war against British rule was launched by the National Organization of Cypriot Combatants (EOKA). Cyprus became an independent nation on August 16, 1960, after Greek and Turkish Cypriots agreed on a constitution.

The accumulated tensions between the Greeks and Turks in Cyprus erupted into violence in 1963. In 1964, Cyprus asked the UN to send a peacekeeping force to maintain peace between the two sides and UNFICYP was created. The Canadian contribution to this mission is Operation SNOWGOOSE.

This mission was challenged immediately after setting up in Cyprus. Since small groups of Turks lived among larger groups of Greeks, fights were happening everywhere. After managing many disagreements and conflicts the UN forces created a fragile balance.

This uneasy balance lasted until 1974, when Greek Cypriots tried to overthrow the government of Cyprus and have the island become a part of Greece. In response, troops from neighbouring Turkey invaded Cyprus and

took control of the northern part of the island where the Turkish Cypriots were mainly located. The UN forces were caught in the middle between the two sides.

After several weeks of fighting, the UN established the “Green Line” which is a buffer zone extending across Cyprus, running through the capital city of Nicosia, separating the parts of the island controlled by the Greeks and the Turks.



The “Green Line” varies in width from 20 m to 7 km and at times it was not possible to move even a single sandbag without causing an incident.

From 1964 to 1993, the CF maintained a battalion-sized contingent of peacekeepers on Cyprus. The contingent varied in size during the years of Canada’s involvement, from a high of 1 100 personnel in 1964 to fewer than 500 in 1974.

CF members serving with Operation SNOWGOOSE perform many duties which include:

- patrolling the buffer zone and monitoring the ceasefire;
- maintaining crowd control; and
- supervising mediation between angry parties.

HEROES, BRAVERY AND SACRIFICE

The Canadian mission to Cyprus lasted 29 years. More than 25 000 CF members have served in Cyprus, many of them more than once.



At times CF members had to use creativity to perform their duties. During the Turkish invasion, Turks were threatening to attack the Cyprus airport and the CF was tasked with defending the area with only a few anti-tank weapons and heavy machine guns. They achieved their mission by moving around the airport at night to create the illusion that the airport was heavily defended.

During the fighting of 1974, several bravery medals were awarded to Canadian soldiers. Corporal Joseph Whelan and Privates Joseph Belley and Joseph Pelletier placed themselves under enemy fire to retrieve comrades wounded in battle.



On April 4, 2008, Ledra Street Crossing, the checkpoint which divided Greek and Turkish Cypriots in the capital city of Nicosia for decades, was torn down. This is seen as an important symbolic step towards reunifying Cyprus.

Twenty eight Canadian peacekeepers have given their life while serving in Cyprus.

UNITED NATIONS PROTECTION FORCE (UNPROFOR) OPERATIONS BRONZE AND BOREAS

GEOGRAPHICAL LOCATION

The Balkan countries are located in southeast Europe, north of Greece and across the Adriatic Sea from Italy. This is a land of beautiful mountains, fertile plains and an island-studded coastline that stretches along the Adriatic Sea.



PLC Map Collection/University of Texas Library Online by University of Texas at Austin.
Retrieved March 8, 2007, from http://www.lib.utexas.edu/maps/europe/central_balkan_pol98.jpg

Figure 11E-3 Map of The Balkans Region

BACKGROUND

For much of the 20th century, until the early 1990s, Yugoslavia was a federation of regions similar to Canada and the US. The federation consisted of six republics including Croatia, Serbia, Montenegro, Slovenia, Bosnia-Herzegovina and Macedonia. These six republics had many similarities in language, culture and custom and were able to live peacefully together for many years.



In 1984, Sarajevo was host of the winter Olympics.

Trouble started in the Balkans with the collapse of Communism in the late 1980s. Nationalist groups in several states rose to power and manipulated their followers to fear fellow Yugoslavs in other republics and created a new identity based on ethnic background and religion.

Serbia, was the most powerful of the republics and attempted to take control of the Yugoslav federation but was opposed by Croatia, Slovenia and Bosnia who declared independence in 1991. Croatia and Bosnia had large ethnic Serb populations who did not want independence and waged civil war against their new governments.

At first, the Yugoslav National Army (JNA) tried to end these civil wars and preserve the federation but there were too many ethnic divisions within the army and it collapsed. After the collapse of the army, Serbia abandoned the Serbian minorities in Croatia and Bosnia forcing them to defend themselves against the newly created Croatian and Bosnian armies.

The Serb militias were given weapons, vehicles and volunteers from the former Yugoslav army while the Croatian and Bosnian armies were supplied by outside countries including Germany and the United States. These groups were little more than armed gangs and between 1992 and 1995, these wars were fought by amateurs without any rules of conduct. Unprotected civilians became the main target and the objective was not to destroy the enemy's military power but to kill their families so the soldiers would not have a home to return to after the war. During that period, there were many cases of "ethnic cleansing" where entire villages were persecuted, driven out or killed.

The UN went into this situation with the UNPROFOR in 1992, first into Croatia and later into Bosnia. The CF contributions to this mission is Operations BRONZE and BOREAS. However, the UN has failed to end the fighting since its deployment in early 1992.



In 1994, NATO carried out its first military action in its 45-year history when US fighter jets enforced the no-fly zone over Bosnia-Herzegovina and shot down four Serbian warplanes and bombed Bosnian Serb military positions and airfields.

On December 20, 1995, NATO began the mass deployment of 60 000 troops to enforce the Dayton Peace Accords, signed in Paris by the leaders of the former Yugoslavia on December 14.

HEROES, BRAVERY AND SACRIFICE

The CF has served in the Balkans under the UN and the NATO.



In 1999, Canadian pilots flew combat missions in the Balkans for the first time since the Korean War (1950–1953).

The largest number of Canadians to serve in a UN mission in the Balkans during the 1990s at any one time was 2 000. Often in the 1990s, Canadians found themselves in a full-fledged war zone in the Balkans and had to engage in firefights to carry out their mission.



At the start of the Bosnian Civil War, Major-General Lewis Mackenzie was in command of Sector Sarajevo and under fire from all sides, managed to open the Sarajevo airport for humanitarian aid. Martin Bell, a reporter with the British Broadcasting Corporation (BBC) said, "General Mackenzie was interviewed more than any other human being in the history of television over a 30-day period."

In September 1993, Croats attacked Serbs at a place called Medak Pocket. After two days of fighting, the Croats were forced to retreat and the CF was tasked with supervising the withdrawal. When CF troops moved in to implement the ceasefire the Croats attacked, forcing the Canadians to fight to not only implement the ceasefire but to defend themselves. The firefights lasted all night and into the next morning.



The Canadian government did not publicize the battle at Medak Pocket for fear of jeopardizing the peace talks that were taking place at the time. Ten years after the fighting a medal was awarded to the soldiers who fought at Medak Pocket.

Captain (Capt) Joseph Bélisle and Sergeant (Sgt) Mario Forest received Medals of Bravery while serving in Sarajevo. While under sniper fire, Capt Bélisle returned fire to shield Sgt Forest, who crawled to two wounded women and moved them to safety.

On two occasions, Canadian soldiers found themselves in hospitals, full of patients that had been abandoned by staff because of intense fighting in the area. Canadian soldiers protected the hospitals and gave aid to the patients.



Master Corporal (MCpl) Mark Isfeld was a combat engineer who served in three peace missions before losing his life in a landmine explosion in Croatia in 1994. MCpl Isfeld was known for giving children in the war-torn regions handmade dolls that his mother and others had sent from Canada. After his death, thousands of dolls began to flood in from people across Canada in order to keep MCpl Isfeld's tradition alive. The dolls are now known as "Izzy dolls".

In the Balkans, 20 Canadians gave their lives in various missions.

INTERNATIONAL SECURITY ASSISTANCE FORCE (ISAF) OPERATIONS ATHENA, ARCHER AND ARGUS

GEOGRAPHICAL LOCATION

Afghanistan is a landlocked, arid nation characterized by rugged mountains, valleys and expansive deserts. It is about the size of Saskatchewan and has a population of about 30 million people. The capital city is Kabul and the country is divided into 34 provinces. It is located in Southern Asia, north and west of Pakistan and east of Iran with borders also adjacent to many other countries. Pashtuns (42 percent) and Tajiks (27 percent) are the two dominant ethnic groups in Afghanistan. The vast majority of the population are Sunni Muslims (80 percent), with Shia Muslims (19 percent) representing most of the remaining population. In the mid 1990s, the Taliban regime gained control and ruled Afghanistan from 1996 until 2001. The Taliban regime severely limited the civil rights of the citizens and supported terrorist groups, including al Qaeda, who claimed responsibility for the attacks on September 11, 2001 in the US.



Understanding Afghanistan: Land in Crisis, National Geographic.com, 2007, Copyright 2007 by National Geographic Society. Retrieved March 8, 2007, from <http://www.nationalgeographic.com/landincrisis/political.html>

Figure 11E-4 Map of Afghanistan

BACKGROUND

There have been six main phases of conflict in Afghanistan over the last 30 years. In 1979, the Soviet Union invaded Afghanistan to help the communist government fight a resistance movement led by a collection of rebel groups called the Mujheddin. The Soviet occupation led to 10 years of communist rule and a guerilla war with the Mujheddin rebels who were financially supported by other countries. The Soviets withdrew in 1989, and the Mujheddin fought the communist government in a civil war from 1990 until 1996. This period saw the rise of the Taliban movement who promised Afghanistan peace through Islamic rule. In 1996, the Taliban captured Kabul and defeated rival rebel groups for control of the government. For five years the Taliban ruled Afghanistan under strict Islamic Law and ancient tribal customs. During this time the United Front/Northern Alliance was formed by merging various rebel groups against the Taliban. The Taliban was supported by and gave protection to the terrorist group al Qaeda. The US assisted by 55 other countries, lead an invasion force in the fall of 2001, called Operation ENDURING FREEDOM, after holding al Qaeda responsible for the September 11 attacks on the World Trade Center in New York City. The Taliban was defeated within two months and its leaders and al Qaeda went into hiding.

CF INVOLVEMENT

Operation SUPPORT was Canada's first response to the terrorist attacks of September 11, 2001 which provided the following:

- support for passengers and crew of aircraft diverted to Canadian airports when all flights over North America were grounded;
- HMCS Preserver, HMCS Iroquois and HMCS Ville de Quebec were made ready to sail to the US and give assistance if needed;
- the Disaster Assistance Response Team (DART) was placed on alert at 8 Wing, Trenton, Ont.; and
- Canada's NORAD commitment was increased by the placement of CF-18 fighter aircraft at strategic places across the country.

On October 4, 2001, the North Atlantic Council of NATO announced that it was invoking Article 5 which states that any attack on a NATO nation launched from outside that nation shall be interpreted as an attack on all the NATO members. Canada established Operation APOLLO almost immediately to be deployed under the US-led Operation ENDURING FREEDOM. Navy ships were the first CF units to participate in the campaign against terror and began deploying immediately.



Operation ALTAIR is the continuing contribution of Canadian warships to the US-led coalition fleet conducting anti-terrorist operations in the Persian Gulf and Arabian Sea under Operation ENDURING FREEDOM. Canadian ships – usually Halifax Class frigates – deploy individually and are integrated into US Navy strike groups. Deployments on Operation ALTAIR are for a six-month period.

ISAF

On December 20, 2001, the UN Security Council authorized the creation of ISAF with the first troops being deployed January 4, 2002 as a multinational force. The initial Canadian contribution to ISAF consisted of 700 CF members stationed in Kabul. They were responsible for providing support to southern locations and also had to patrol the western sector of the city. Their responsibilities around Kabul included:

- bringing security and stability to the area;
- destroying enemy strongholds;
- patrolling areas of the country;
- organizing demining activities;
- assisting in the operations of Kabul International Airport;
- helping with control and management of ammunition depots and facilities;
- helping to rebuild the Afghan National Army and police force; and
- providing humanitarian efforts (digging water wells, rebuilding schools, rebuilding roads and distributing relief supplies like blankets, food and school materials).



On August 9, 2002, NATO took control of ISAF.

JOINT TASK FORCE AFGHANISTAN (JTF AFG)

The CF contribution to ISAF consists of approximately 2 500 personnel from units across Canada and is referred to as Joint Task Force Afghanistan (JTF AFG). JTF AFG involves three missions that work cooperatively. The three missions currently underway are:

- Operation ATHENA,
- Operation ARCHER, and
- Operation ARGUS.

OPERATION ATHENA

There are approximately 2 500 CF personnel deployed as part of Operation ATHENA in the following units:

- at Kandahar Airfield:
 - a Battle Group operating as part of the Multinational Brigade in ISAF Regional Command (South);
 - the National Support Element (NSE) which provides logistical support to JTF AFG;
 - an Operational Mentor and Liaison Team which advises and assists the Afghanistan National Army (ANA);
 - a tactical Unmanned Aerial Vehicle (UAV) unit which flies a small remote-controlled aircraft packed with aerial reconnaissance equipment; and
 - a Health Services Support Company which provides medical staff for the CF and international troops;
- the Kandahar Provincial Reconstruction Team (KPRT) which operates from Camp Nathan Smith in downtown Kandahar. It is made up of CF members, members of the RCMP, members of the Department of Foreign Affairs and International Trade and the Canadian International Development Agency to help Afghanistan rebuild and develop a stable government ; and
- the Theatre Support Element (TSE) in the Persian Gulf which provides logistical support to JTF AFG.



On February 28, 2006, Canada assumed leadership of the Multinational Brigade in ISAF Regional Command (South) in Kandahar Province.

OPERATION ARCHER

Operation ARCHER is the Canadian contribution to the US-led Operation ENDURING FREEDOM in Afghanistan and involves approximately 30 CF personnel.

Since the fall of the Taliban in December 2001, the international community has been rebuilding Afghanistan's infrastructure, institutions, government and army. This effort involves more than just supplying weapons and equipment. The Combined Security Transition Command-Afghanistan (CSTC-A) is currently reforming and building both the ANA and the Afghan National Police (ANP). The CF currently contributes 15 personnel to act as instructors involved in the training of the Afghan National Army at the Canadian Afghan National Training Centre Detachment (C ANTC Det) in Kabul.

OPERATION ARGUS—STRATEGIC ADVISORY TEAM—AFGHANISTAN (SAT-A)

Since September 2005, the CF has provided a team of military planners to support the government of Afghanistan in developing national strategies and mechanisms for the effective implementation of those strategies. The team is called the Strategic Advisory Team—Afghanistan (SAT-A).

The SAT-A consists of 15 CF members and civilian employees who provide advice on economic development issues. The team includes a small command and support element, two teams of strategic planners, a defense analyst and a strategic communications advisor.

The team is embedded in various Afghan government ministries and agencies and works under Afghan leadership. The planning team members bring a wide range of training, education, experience and military strategic planning skills to help Afghans solve complex civil problems.

HEROES, BRAVERY AND SACRIFICE

Over the past several years, more than 8 000 CF members have helped Afghanistan in its transition to a democratic government.



Prior to becoming Canada's Chief of Defence Staff (CDS) on February 4, 2005, General Rick Hillier commanded the ISAF mission in Afghanistan between February and August, 2004. General Hillier announced in April 2008 that he would resign as CDS effective July 1, 2008.

As of April 2008, 82 members of the CF and one Canadian diplomat have been killed in Afghanistan.



In honour of those who have died during the Afghanistan mission a section of Highway 401 in Ontario between Trenton and Toronto has been renamed "The Highway of Heroes".

During a firefight with insurgents, Captain (Capt) Nichola Kathleen Sarah Goddard of the 1st Royal Canadian Horse Artillery from Shilo, Man. was the first woman in Canadian history killed in a combat role and the first female killed in action since World War II. On five occasions, Capt Goddard volunteered to conduct reconnaissance operations in unsteady villages.

On February 19, 2007, Her Excellency the Right Honourable Michaëlle Jean, Governor General and Commander-in-Chief of Canada, presented six Military Valour Decorations to CF members who have displayed gallantry and devotion to duty in combat. This was the first time these have been presented since they were created in 1993.



During that ceremony, Capt Nichola Kathleen Sarah Goddard was awarded the Meritorious Service Medal (posthumously) for her unfaltering dedication and courage.

On October 12, 2007 Prime Minister Stephen Harper announced the formation of an independent panel, headed by John Manley, to make recommendations on Canada's future in Afghanistan. The Manley Report was presented to government in January 2008 and, among other things, recommended that Canada should continue with its combat role in Kandahar beyond 2009, on two conditions:

- if NATO can provide an additional battle group of 1 000 soldiers to assist Canada; and
- if the Canadian government can secure helicopters to transport troops and material to the forward observation bases and high performance UAVs for intelligence gathering.



On March 13, 2008, the Canadian parliament voted to extend Canada's mission in Afghanistan until 2011.



At the Bucharest Summit, held in Bucharest, Romania in April 2008, NATO pledged to provide Canada with the additional battle group, helicopters and UAVs it needs.

PRESENTATION FORMAT

NAME THE MISSION

Name the CF Operation

Identify the Location

BACKGROUND

Write three statements about how the conflict started.

Write two statements about how the international institution helped.

Write two duties of the CF during the mission.

Write one interesting fact about the mission.

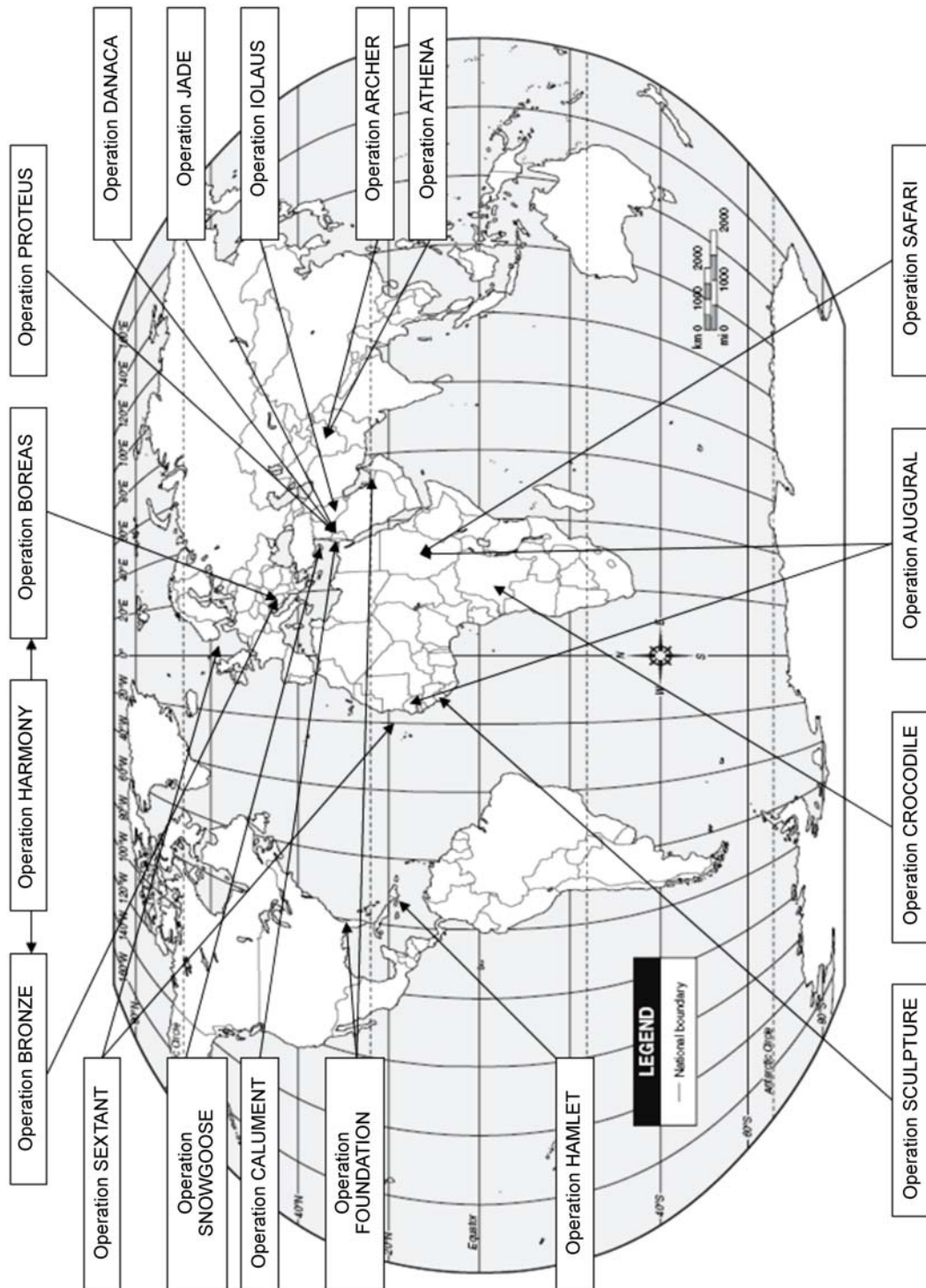
HEROES, BRAVERY AND SACRIFICE

Write one example of CF bravery during the mission.

Write one example of CF sacrifice during the mission.

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MAP OF CURRENT CF OPERATIONS

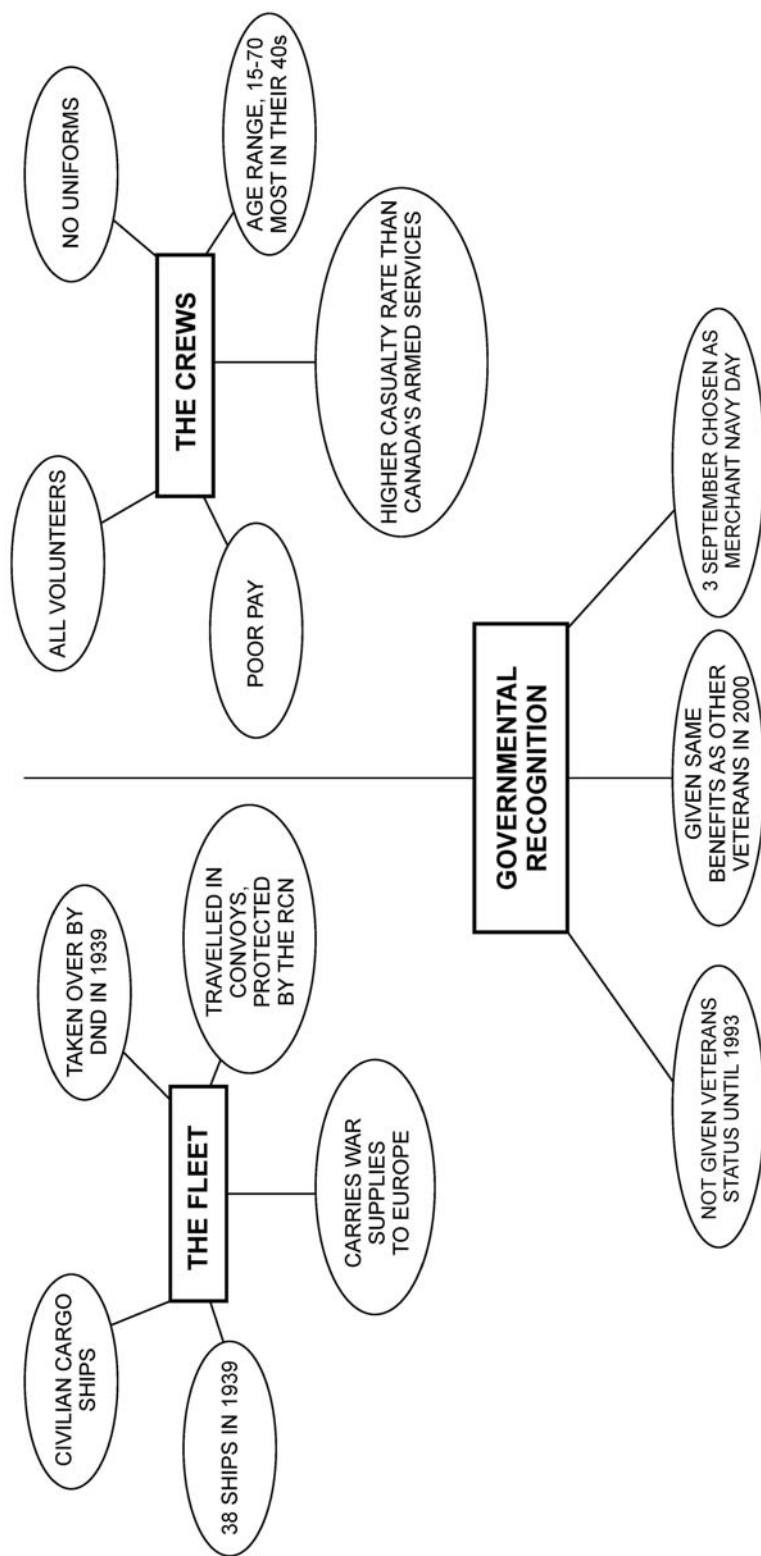


Houghton, Miffling Education Place. Retrieved April 8, 2008, from <http://www.eduplace.com/ss/maps/pdf/world.country.pdf>

Figure 11G-1 Map of Current CF Operations

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THE MERCHANT NAVY



Director Cadets 3, 2007, Ottawa, ON: Department of National Defence

Figure 11H-1 The Merchant Navy

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WRCNS SKIT–THE PRESS CONFERENCE

CAST:

Leading Seaman (LS) Banyan–Press Secretary,
Lieutenant Commander (LCdr) Marta Mulkins–First female captain of a Canadian Navy ship,
Chief Petty Officer, First Class (CPO1) Jan Davis–First female coxswain of a Canadian Navy ship,
Master Seaman (MS) Colleen Beattie–First female submariner,
Leading Seaman (LS) Sally Ship–Reporter,
Leading Seaman (LS) Nautical-Nellie–Reporter,
Leading Seaman (LS) Scuttlebutt–Reporter,
Leading Seaman (LS) Chinstrap–Reporter,
Leading Seaman (LS) Bitter-End–Reporter.

SETTING:

A press conference is being held at RCSCC (local corps). There is a podium at the front of the room, three chairs to the left of the podium, and several chairs facing the podium.

LS Banyan, the press secretary, is at the podium and three special guests, LCdr Marta Mulkins, CPO1 Jan Davis, and MS Colleen Beattie are seated to his left. Members of the press are seated on chairs facing the podium. Other invited guests are seated behind the members of the press.

ACT 1: SCENE 1

LCdr Mulkins, CPO1 Davis and MS Beattie are on a speaking tour of sea cadet corps across Canada to highlight the contribution women have made to the Canadian military over the years.

LS Banyan: Special guests, members of the press, ladies and gentlemen. It is my pleasure to welcome LCdr Mulkins, CPO1 Davis and MS Beattie here tonight. LCdr Mulkins was the first female captain of a Canadian warship, CPO1 Davis was the first female coxswain of a Canadian warship and MS Beattie was the first submariner in the Canadian navy. For the past several months, they have been travelling across Canada speaking about the contribution women have made to the Canadian military.

LCdr Mulkins will make an opening statement.

LS Banyan stands to the side of the podium and remains there until the press conference is over. LCdr Mulkins goes to the podium

LCdr Mulkins: Thank you. Women have a long history of service in the military and in the last two or three decades, women have achieved many milestones in the Canadian Forces (CF). Women are now pilots, ship's captains, coxswains and combat arms leaders. These are but a few of the achievements women have made and are continuing to make in the CF.

These achievements could not have happened without the many decades of service by women in the military and that's what we are here to talk about tonight. Hopefully, the history of women's service to the military will not only be interesting but also an inspiration to you to achieve your own personal goals in whatever field you pursue.

LCdr Mulkins returns to her seat.

LS Banyan: Thank you, LCdr Mulkins. I will now open the floor to questions. Please raise your hand to be recognized.

LS Sally Ship raises her hand to be recognized.

LS Banyan: LS Ship, go ahead please.

LS Ship stands and asks a question.

LS Ship: Thank you. My question is for LCdr Mulkins. You mentioned that women have a long history of service in the military. Would you give us a brief history of that service?

LS Ship returns to her seat. LCdr Mulkins comes to the podium.

LCdr Mulkins: Thank you. Women first served in the Canadian military in the late 1880s as nurses during the Northwest Rebellion in western Canada. In World War I (WW I) and World War II (WW II) women continued to serve with the Navy, Army and Air Force Medical Corps. They served in foreign countries but were not permitted to serve on ships, combat aircraft or in combat arms.

LCdr Mulkins remains at the podium. LS Nautical-Nellie raises a hand to be recognized.

LS Banyan: LS Nautical-Nellie, go ahead please.

LS Nellie: LCdr Mulkins, were these nurses part of the military?

LCdr Mulkins: No. They were considered separate from the military but some of them transferred to the military after the WRCNS was created as part of the RCN in 1942. CPO1 Davis has studied this in detail and will give you the background on the establishment of the WRCNS and the first class of trainees.

CPO1 Davis comes to the podium. LCdr Mulkins returns to her seat.

CPO1 Davis: Thank you. The federal government of Canada approved the establishment of the WRCNS on May 8, 1942, as a way to free men for "heavier duties" aboard ship and in combat zones.

From the beginning, the WRCNS was a part of the RCN and not a separate group as were women's organizations in the army and the air force. Women who joined the WRCNS were nicknamed WRENS and were expected to remain in the RCN until the war was over.

The first class was a group of 70 women from across Canada who began training on August 31, 1932. They were trained at the Ontario Training School for Girls in Galt, Ont. The first class trained to be secretaries, postal clerks, stewards, coders, cooks, pay clerks, drivers, and laundry workers. They were not allowed to serve aboard ship or in combat zones.

The training facilities and living accommodations were adequate but there was difficulty providing uniforms for the new recruits. Eventually, uniforms were provided but not all WRENS were happy with them. In fact they had a song expressing their dislike of the uniform:

In my sweet little pusser* blue gown
That I wore that first night into town
But what good does it do when you wear pusser blue
And your figure looks best in a light frilly dress?

Cotton stockings just don't seem to be
What a young sailor lad wants to see
You're sharp as a thistle, but can't raise a whistle
In your sweet little pusser blue gown.

**“pusser”, in this instance, referred to a uniform that was neat and proper but not very attractive.

LS Scuttlebutt raises a hand to be recognized.

LS Banyan: LS Scuttlebutt, go ahead please.

LS Chief Davis, you mentioned that WRENS could not work on ships or in combat zones, but were Scuttlebutt: they allowed to work outside of Canada?

CPO1 Yes they were but MS Beattie is more knowledgeable about this aspect of the WRCNS and will Davis: explain that.

CPO1 Davis returns to her seat. MS Beattie comes to the podium.

MS Beattie: Thank you, Chief. Working outside of Canada was called being “posted overseas” and the first members of the WRCNS to be posted overseas were sent to England in late 1943 to work in various RCN shore establishments. Before the end of the war more than 500 Canadian women served in cities such as London, Londonderry or Plymouth in England and Greenock in Scotland. Nearly 600 were sent to Newfoundland, which at the time was considered an overseas posting because Newfoundland was a Dominion of the British Commonwealth and not yet a province of Canada. Another 50 were stationed in Washington and New York in the United States (US).

LS Chinstrap raises a hand to be recognized.

LS Banyan: LS Chinstrap, go ahead please.

LS Did members of the WRCNS receive any honours or awards?
Chinstrap:

MS Beattie: Women did receive honours and awards for their service. In fact 20 servicewomen of the WRCNS received honours. Three were awarded the Officer of the Order of the British Empire (OBE), seven were awarded the Member of the Order of the British Empire (MBE) and eight received the British Empire Medal (BEM). Two received the King’s Commendation for Brave Conduct (now called the Queen’s Commendation).

Sadly, 71 women gave their lives during WW II while serving in the Canadian military.

CPO1 Davis returns to her seat. LCdr Mulkins comes to the podium.

LS Bitter-End raises a hand to be recognized.

LS Banyan: LS Bitter-End, go ahead please.

LS Bitter- LCdr Mulkins, what happened to the WRCNS when WW II ended?
End:

LCdr The WRCNS participation during WW II was an impressive achievement. In 1945, Commander Mulkins: William Strange, Director of Naval Information said, “it seems almost impossible that there should be a navy without them” but, ironically, by 1946 the WRCNS was totally dissolved.

At the end of WW II there was the optimistic hope that co-operation would replace conflict as a way to solve the world’s problems and there was a massive reduction of military personnel including the WRCNS. But this optimism was misplaced and by 1951 we were at war in Korea and once again women were recruited into the military for good.

In May 1951, the government of Canada once again authorized the creation of the WRCNS but only as part of the RCN reserve and not the regular navy. This was changed to the regular navy in 1955 but they could not be employed in trades that would negatively affect men's promotions and were not allowed to go to sea.

By 1961, there were only 140 women serving in the RCN and a committee was formed to study the future of the WRCNS. It was recommended that the WRCNS remain but by 1965 the future of women in the armed services was still uncertain. However, during the late 1960s and early 1970s their role would expand.

MS Beattie has more information on this.

LCdr Mulkins returns to her seat. MS Beattie comes to the podium.

MS Beattie: On February 1, 1968, the RCN, Canadian Army and the Royal Canadian Air Force (RCAF) were unified to form the CF. By the mid-1970s women were serving at all major locations in Canada and with North Atlantic Treaty Organization (NATO) and United Nations (UN) missions around the world.

On March 1, 1978, the Canadian Human Rights Act which forbade numerous forms of discrimination including gender became law. This legislation caused the CF to set up a five-year evaluation plan known as Service Women in Non-traditional Environments and Roles (SWINTER) to determine the viability of employing women in such roles in all three services. Subsequently, a SWINTER sea trial was carried out aboard HMCS Cormorant. The conclusion was that servicewomen were regarded as suitable for posting to minor war vessels such as patrol boats and small training vessels.

In 1985, the Canadian Charter of Rights and Freedoms came into effect and six months later the Parliamentary Sub-Committee on Equality Rights recommended that "all trades and occupations in the CF be open to women."

In order to test how increased equality would affect the CF, the Combat Related Employment of Women (CREW) trials were announced in 1987 and as a result, women were recruited for the first time into all sea trades except on submarines, and combat units. In 2000, women were allowed to serve on submarines.

In the last two decades, international events such as the Gulf War, NATO/UN peacekeeping operations and the war on terrorism, as well as governmental legislation have continued to advance women in the military.

Advancements will continue to be made and the challenge for the CF is to create an environment that will offer opportunities to all Canadians who accept the challenge of a military career.

Thank you for your attention and thoughtful questions.

MS Beattie returns to her seat.

LS Banyan: Thank you. That concludes the press conference.

NAVAL AIRCRAFT CARRIER INFORMATION SHEETS

HMCS WARRIOR



LIGHT FLEET CARRIERS

Fleet Air Arm Archive, 1939–1945, 2001, HMCS Warrior. Retrieved May 2, 2008, from <http://www.fleetairarmarchive.net/Ships/Warrior.html>

Figure 11J-1 HMCS Warrior

SPECIFICATIONS

Class	Type	Length (Metres)	Beam (Metres)	Speed (Knots)	Range (Nautical Miles)	Crew Size
COLOSSUS	Aircraft Carrier	192	24.3	25	213.3	1300

DETAILS



HMCS Warrior was commissioned into the RCN on January 24, 1946, the first aircraft carrier to be commissioned in the RCN and operated solely by Canadians.



HMCS Warrior was a warm climate ship and could not operate in the Canadian North Atlantic. HMCS Warrior's homeport was CFB Esquimalt.



When HMCS Warrior travelled through the Panama Canal she had only 22 cm clearance on each side.



In November 1947, HMCS Warrior sailed to England to bring back new aircraft for the RCN. On return, she carried out deck landing exercises and patrol training exercises.



HMCS Warrior was decommissioned from the RCN in March, 1948, and returned to the RN. She was replaced by HMCS Magnificent.

HMCS MAGNIFICENT



LIGHT FLEET CARRIERS

Sailor's Muse, (n.d.), HMCS Magnificent. Retrieved May 2, 2008, from <http://www.sailorsmuse.com/Bio's.htm>

Figure 11J-2 HMCS Magnificent

SPECIFICATIONS

Class	Type	Length (Metres)	Beam (Metres)	Speed (Knots)	Range (Nautical Miles)	Crew Size
MAJESTIC	Aircraft Carrier	192	24.3	25	213.3	1200

DETAILS



On April 7, 1948, HMCS Magnificent was commissioned in the RCN and soon became known by her nickname "Maggie."



HMCS Magnificent arrived in Canada on June 1, 1948. Her first operation was a reconnaissance mission in the Magdalen Islands and the Hudson Strait.



HMCS Magnificent was able to conduct cold weather training operations, unlike HMCS WARRIOR.



HMCS Magnificent was the first RCN aircraft carrier to carry fighter jets.



From January to April, 1949, HMCS Magnificent was the Commander of a training exercise with the RN and the United States Navy (USN) off Bermuda and Cuba.



In August 1950, HMCS Magnificent became the flagship of a Canadian Special Service Squadron (CSSS) which was a diplomatic cruise to consolidate friendship with North Atlantic Treaty Organization (NATO) countries.



Exercise MARINER, which began September 16, 1953, was one of HMCS Magnificent's most important exercises. Over 19 days, 300 ships, 1 000 aircraft and half a million men from nine countries took part in coordinated operations in the North Atlantic, the North Sea and the English Channel to give the participating navies practice in working together under simulated war conditions.



During the Suez crisis in the Middle East in 1956, HMCS Magnificent arrived in Port Said with a deck load of vehicles and army personnel as Canada's contribution to the United Nations Emergency Force (UNEF).



HMCS Magnificent was decommissioned on June 14, 1957, and replaced by HMCS Bonaventure.

HMCS BONAVENTURE



LIGHT FLEET CARRIERS

Aircraft Carriers, 1999, HMCS Bonaventure. Retrieved May 2, 2008, from <http://www.maverick2.com/carriers.html>

Figure 11J-3 HMCS Bonaventure

SPECIFICATIONS

Class	Type	Length (Metres)	Beam (Metres)	Speed (Knots)	Range (Nautical Miles)	Crew Size
MAJESTIC	Aircraft Carrier	192	24.3	24.5	213.3	1370

DETAILS



On January 17, 1957, HMCS Bonaventure was commissioned in the RCN and soon became known by her nickname "Bonnie."



Unlike the other aircraft carriers which were loaned to the RCN by the RN, HMCS Bonaventure was bought outright and became the first aircraft carrier to be owned by the RCN.



HMCS Bonaventure had three million dollars worth of electrical equipment installed throughout the ship.



Operation BEAVERDAM, December 6, 1957, was HMCS Bonaventure's first training exercise with the RCN.



In March 1958, HMCS Bonaventure took part in Operation MAPLE ROYAL II, a joint training exercise with the RN designed to make HMCS Bonaventure a landing deck for aircraft from the RN.



In early 1959, the RCN was beginning to question the practicality of having a large ship with a crew of over 1 000 men to keep one or two aircraft airborne for short periods of time. Consequently, HMCS Bonaventure reorganized its training system and was able to keep four aircraft airborne around the clock. This "sustained operations", nicknamed "Sustop", was HMCS Bonaventure's trademark among NATO navies.



In late December, 1959, HMCS Bonaventure was severely damaged in a storm at sea when waves crashed across her flight deck, approximately 13 m above water, and flooded the hangar and mess decks.



After undergoing repairs for the damage caused by the storm at sea, HMCS Bonaventure spent most the remainder of the first half of 1960 taking part in sail pasts, open houses and fleet regattas in celebration of the 50th anniversary of the RCN.



During the first half of 1961, HMCS Bonaventure became the flagship for exercises with the USN. Later in the year, she carried out patrols around Hudson and Ungava Bays in Canada's north.



In addition to regular training exercises, HMCS Bonaventure helped rescue survivors and recover bodies after a civilian airplane carrying 76 passengers crashed at sea for which the ship received a commendation from Prime Minister John Diefenbaker.



HMCS Bonaventure took part in the United Nations Peacekeeping Force in Cyprus (UNFICYP) as a troop transport and support ship.



After the navy, army and air force were unified into the Canadian Forces (CF) in 1968, many people retired and the military experienced a severe personnel shortage. As a result, HMCS BONAVENTURE spent the last few years of her life either in refit or tied up.



HMCS Bonaventure, Canada's last aircraft carrier, was decommissioned on July 1, 1970 and sold for scrap.

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SCAVENGER HUNT WORKSHEET AND ANSWER KEY (NAVAL AIRCRAFT CARRIERS)

SCAVENGER HUNT – WORKSHEET

Find the following:

1. HMCS Warrior's commissioning date.
2. The name of HMCS Bonaventure's first exercise.
3. The name of a UN mission in which HMCS Magnificent participated.
4. The name of a UN mission in which HMCS Bonaventure participated.
5. HMCS Magnificent's decommissioning date.
6. The name of the ship that replaced HMCS Magnificent.
7. The name of the first aircraft carrier to carry fighter jets.
8. What happened to HMCS Warrior after she was decommissioned from the RCN.
9. The name of the first aircraft carrier to be owned by the RCN.
10. HMCS Bonaventure's trademark among NATO fleets.
11. The name of one of HMCS Magnificent's most important exercises.
12. HMCS Bonaventure's nickname.
13. HMCS Magnificent's nickname.
14. What happened to HMCS Bonaventure after she was decommissioned from the RCN.
15. What happened to HMCS Bonaventure in 1959 at sea.

SCAVENGER HUNT – ANSWER KEY

Find the following:

1. HMCS Warrior's commissioning date. **(January 24, 1946)**
2. The name of HMCS Bonaventure's first exercise. **(Operation BEAVERDAM)**
3. The name of a UN mission in which HMCS Magnificent participated. **(UNEF)**
4. The name of a UN mission in which HMCS Bonaventure participated. **(UNFICYP)**
5. HMCS Magnificent's decommissioning date. **(June 14, 1957)**
6. The name of the ship that replaced HMCS Magnificent. **(HMCS Bonaventure)**
7. The name of the first aircraft carrier to carry fighter jets. **(HMCS Magnificent)**
8. What happened to HMCS Warrior after she was decommissioned from the RCN. **(Returned to the RN)**
9. The name of the first aircraft carrier to be owned by the RCN. **(HMCS Bonaventure)**
10. HMCS Bonaventure's trademark among NATO fleets. **(Sustained operations capability)**
11. The name of one of HMCS Magnificent's most important exercises. **(Operation MARINER)**
12. HMCS Bonaventure's nickname. **(Bonnie)**
13. HMCS Magnificent's nickname. **(Maggie)**
14. What happened to HMCS Bonaventure after she was decommissioned from the RCN. **(Sold for scrap)**
15. What happened to HMCS Bonaventure in 1959 at sea. **(Damaged by a storm)**

CHAPTER 12
PO 321 – RIG A LIFTING DEVICE



ROYAL CANADIAN SEA CADETS

PHASE THREE

INSTRUCTIONAL GUIDE



SECTION 1

EO M321.01 – DESCRIBE SAFETY PROCEDURES FOR OPERATING LIFTING DEVICES

Total Time:

30 min

PREPARATION

PRE-LESSON INSTRUCTIONS

Resources needed for the delivery of this lesson are listed in the lesson specification located in A-CR-CCP-603/PG-001, Chapter 4. Specific uses for said resources are identified throughout the instructional guide within the TP for which they are required.

Review the lesson content and become familiar with the material prior to delivering the lesson.

PRE-LESSON ASSIGNMENT

N/A.

APPROACH

An interactive lecture was chosen for this lesson to introduce safety procedures for operating lifting devices.

INTRODUCTION

REVIEW

N/A.

OBJECTIVES

By the end of this lesson the cadet shall have described safety procedures for operating lifting devices.

IMPORTANCE

It is important for cadets to be familiar with personal safety equipment, safe practices and danger zones while working with lifting devices as there is the potential for injury if safety procedures are not followed.

Teaching Point 1

Discuss Safety Procedures and Equipment for Operating Lifting Devices

Time: 15 min

Method: Interactive Lecture

SAFE PRACTICES



It is essential that the following safe practices be applied at all times to avoid injury while working with lifting devices.

Personal Conduct

- Do not run or participate in horseplay.
- Do not stand in danger zones.
- Do not straddle or wrap lines around any part of the body.
- Do not stand in bights or coils of lines.
- Do not walk on spars.
- Do not throw equipment.

Clothing

- Avoid loose clothing while working with tackles.
- Avoid clothing with draw-strings or hanging zippers.

Use of Rigging Equipment

- Do not step over a tackle while it is under tension.
- Do not put hands through a tackle when choking a block.
- Do not put hands/fingers on a block under tension.
- Do not walk with an open knife.
- Do not cut towards the body.

PERSONAL SAFETY EQUIPMENT

The following personal safety equipment must be worn at all times while working with lifting devices:

- Hard hat,
- Issued cadet boots or safety boots, and
- Knife lanyard (if knife is used).

CONFIRMATION OF TEACHING POINT 1

QUESTIONS

Q1. When shall safe practices be applied?

- Q2. What types of clothing should be avoided when operating lifting devices?
- Q3. What personal safety equipment must be worn at all times while working with lifting devices?

ANTICIPATED ANSWERS

- A1. At all times.
- A2. Loose clothing and clothing with draw-strings or hanging zippers.
- A3. Personal safety equipment includes:
- Hard hat,
 - Issued cadet boots or safety boots, and
 - Knife lanyard (if knife is used).

Teaching Point 2

Describe Danger Zones

Time: 10 min

Method: Interactive Lecture

DANGER ZONES

While operating lifting devices, there is the risk of injury due to a failure in the rigging equipment. To minimize this risk, danger zones have been determined that come into effect at specific times during the rigging.

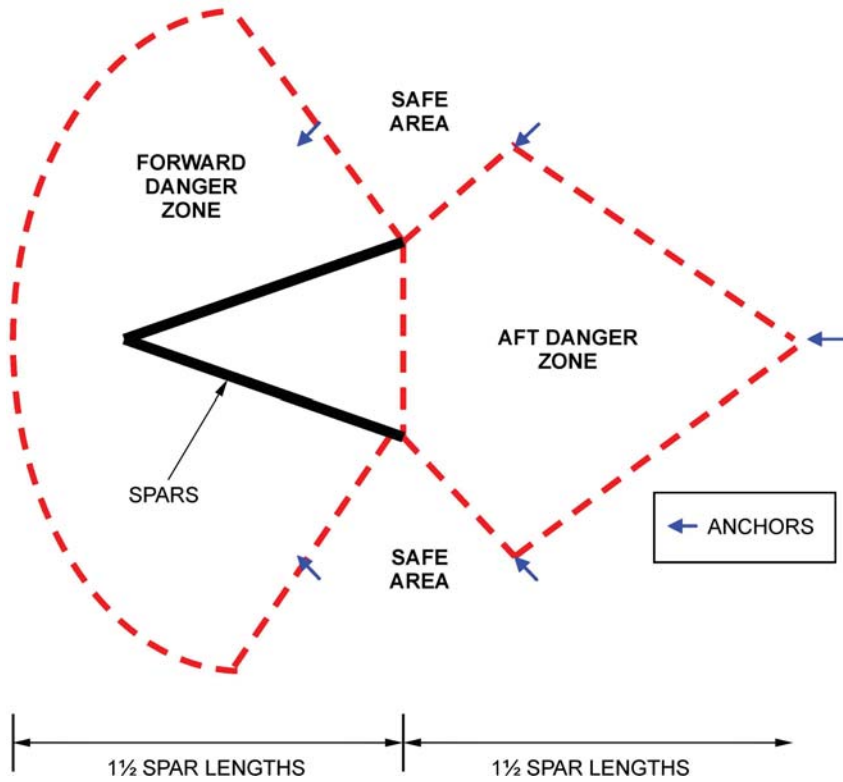
Sheers

There are two main danger zones when rigging sheers that must be observed:

1. **Forward Danger Zone.** When the topping lift is heaved in, an area within an arc approximately 1 and 1/2 spar lengths in front of the sheers and extending out from the heels becomes a danger zone (as illustrated in Figure 12-1-1). If the heel tackles or topping lift fails, the sheers may fall forward within this area.
2. **Aft Danger Zone.** When the topping lift is heaved in, the area approximately 1 and 1/2 spar lengths directly behind the sheers and extending out from the after heel anchors becomes a danger zone (as illustrated in Figure 12-1-1). If the sheers are raised too high or the load becomes unhooked, the sheers may snap back and fall backward into this area. This risk can be minimized by fitting a martingale to the sheers.



When the splay tackles and heel tackles have been tensioned and choked, the area inside the spars becomes unsafe. If the tackles were to release accidentally, the spars may snap back quickly along the ground.



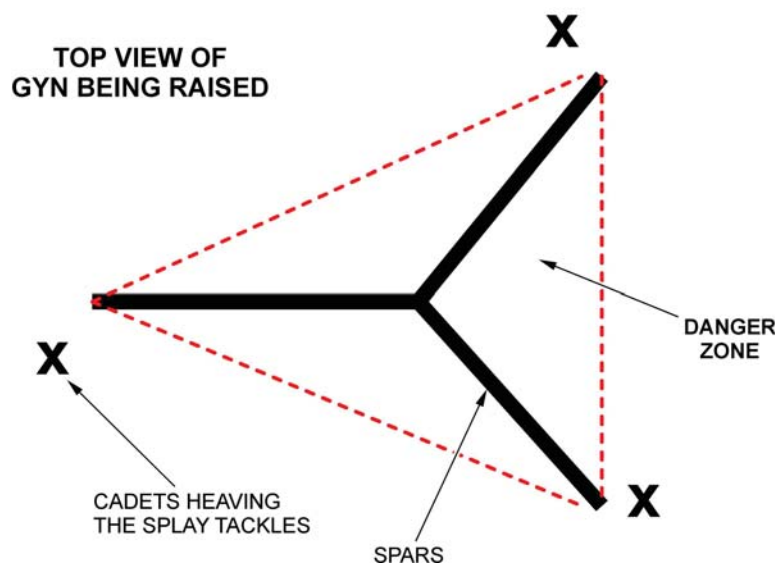
Navy League of Canada, NLP 101 Flotilla and Provincial Seamanship Competition Manual, Navy League of Canada (p. 4)

Figure 12-1-1 Sheers Danger Zones

Gyn

When the splay tackles are heaved in to raise the gyn, the area between the heels becomes a danger zone. Care should be taken when working with the splay tackles and the main purchase.

Heave in the splay tackles in small increments when the gyn nears its full height as it can be heaved off balance easily and fall to the side. Cadets who are working with the splay tackles should stand close to the heels until the gyn reaches full height (as illustrated in Figure 12-1-2).

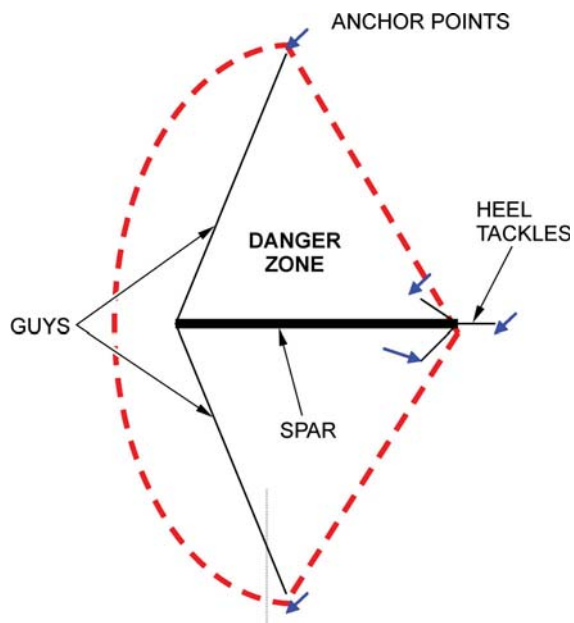


Director Cadets 3, 2008, Ottawa, ON: Department of National Defence

Figure 12-1-2 Gyn Danger Zone

Standing Derrick

When the topping lift is heaved in to raise the standing derrick, the area within an arc approximately 1 and 1/2 spar lengths directly in front of the spar between the guy anchors becomes a danger zone. If the topping lift or one of the guys fails, the spar will fall within this area (as illustrated in Figure 12-1-3). The topping lift should be checked away before the load is hooked on or unhooked.



Director Cadets 3, 2008, Ottawa, ON: Department of National Defence

Figure 12-1-3 Standing Derrick Danger Zone

CONFIRMATION OF TEACHING POINT 2

QUESTIONS

- Q1. When do the forward and aft danger zones of the sheers become active?
- Q2. Why should care be taken when heaving in the splay tackles on the gyn?
- Q3. What should be done before hooking on or unhooking the load on the standing derrick?

ANTICIPATED ANSWERS

- A1. When the topping lift is heaved in.
- A2. The gyn may become unstable when it nears full height.
- A3. The topping lift should be checked away.

END OF LESSON CONFIRMATION

QUESTIONS

- Q1. When should personal safety equipment be worn?
- Q2. Why is the inside of the sheers a danger zone when the heel tackles are under tension?
- Q3. What are danger zones?

ANTICIPATED ANSWERS

- A1. At all times.
- A2. The spars may snap back along the ground if the splay or heel tackles fail.
- A3. Areas where there is a risk of injury due to a failure in the rigging equipment.

CONCLUSION

HOMEWORK/READING/PRACTICE

N/A.

METHOD OF EVALUATION

This EO is assessed IAW A-CR-CCP-603/PG-001, Chapter 3, Annex B, Appendix 4 (321 PC).

CLOSING STATEMENT

It is important to be familiar with the personal safety equipment, safe practices and danger zones while working with lifting devices as there is the potential for injury if safety procedures are not followed.

INSTRUCTOR NOTES/REMARKS

This EO shall be conducted prior to EO M321.02 (Rig Sheers, Section 2).

REFERENCES

- A1-004 B-GN-181-105/FP-E00 Chief of the Maritime Staff. (2000). *CFCD 105 Fleet Seamanship Rigging and Procedures Manual*. Ottawa, ON: Department of National Defence.
- C1-131 Navy League of Canada. (2008). *NLP 101 Flotilla and Provincial Seamanship Competition Manual*. Toronto, ON: Navy League of Canada.

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ROYAL CANADIAN SEA CADETS

PHASE THREE

INSTRUCTIONAL GUIDE



SECTION 2

EO M321.02 – RIG SHEERS

Total Time:

150 min

PREPARATION

PRE-LESSON INSTRUCTIONS

Resources needed for the delivery of this lesson are listed in the lesson specification located in A-CR-CCP-603/PG-001, Chapter 4. Specific uses for said resources are identified throughout the instructional guide within the TP for which they are required.

Review the lesson content and become familiar with the material prior to delivering the lesson.

Photocopy and cut out the parts cards located at Annex A.

Photocopy the blank sheers diagram located at Annex B, the sequence for Station 3 located at Annex C and the sheers scoresheet located at Annex D.

Ensure that the cadets have their issued cadet boots with them.

PRE-LESSON ASSIGNMENT

N/A.

APPROACH

An interactive lecture was chosen for TPs 1, 2 and 5 to present and illustrate the function, basic materials needed and the application of commands for rigging sheers.

Demonstration and performance was chosen for TPs 3, 4, 6 and 8 as it provides the instructor the opportunity to introduce sheers, demonstrate procedures and observe the cadets' rigging and de-rigging skills.

A practical activity was chosen for TP 7 as it is an interactive way to introduce the cadets to operating sheers in a safe and controlled environment. This activity contributes to the development of seamanship skills and teamwork in a fun and challenging setting.

INTRODUCTION

REVIEW

Review safe practices, personal safety equipment and sheers danger zones from EO M321.01 (Describe Safety Procedures for Operating Lifting Devices, Section 1).

OBJECTIVES

By the end of this lesson the cadet shall, as a member of a group, rigged, operated and de-rigged sheers.

IMPORTANCE

It is important for cadets to rig sheers as it introduces sea activities of the Canadian Navy while stimulating an interest in seamanship specialty training. Although sheers are no longer used regularly by the Canadian Navy, it is a great way to foster teamwork and practice seamanship skills.

Teaching Point 1

Explain the Function of Sheers

Time: 5 min

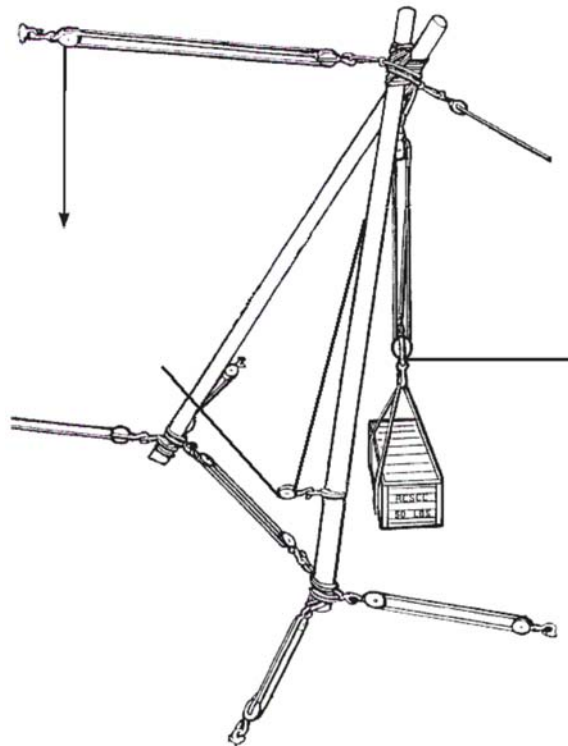
Method: Interactive Lecture

SHEERS

Due to improvements in technology, improvised lifting devices are not as widely used today as in the past. However, when no suitable crane or hydraulic device is available on board or ashore for lifting a heavy object or equipment, some form of lifting device must be rigged. This may include sheers, a standing or swinging derrick or a gyn.

Sheers consist of a pair of spars called legs, which are lashed together and crossed near their heads. The heels of the spars are splayed apart a distance that is approximately one third the length of the spars used for the sheers. This splayed distance is maintained by the use of a splay tackle. The heel tackles provide firm tension on the heels and are placed in such a way to provide both lateral and fore-and-aft support. As sheers need no lateral support, side guys are not required.

Since sheers use two spars, they are stronger than a derrick of similar size. Sheers can be raised or lowered to a limited angle using a topping lift. Sheers are particularly suited for lifting loads vertically from the edge of a jetty onto the deck of a ship.



Royal Navy, Admiralty Manual of Seamanship 1967 (Vol. 2), Her Majesty's Stationery Office (p. 197)

Figure 12-2-1 Assembled Sheers

CONFIRMATION OF TEACHING POINT 1

QUESTIONS

- Q1. How many spars are required to rig sheers?
- Q2. What is the purpose of the splay tackle?
- Q3. When are sheers used?

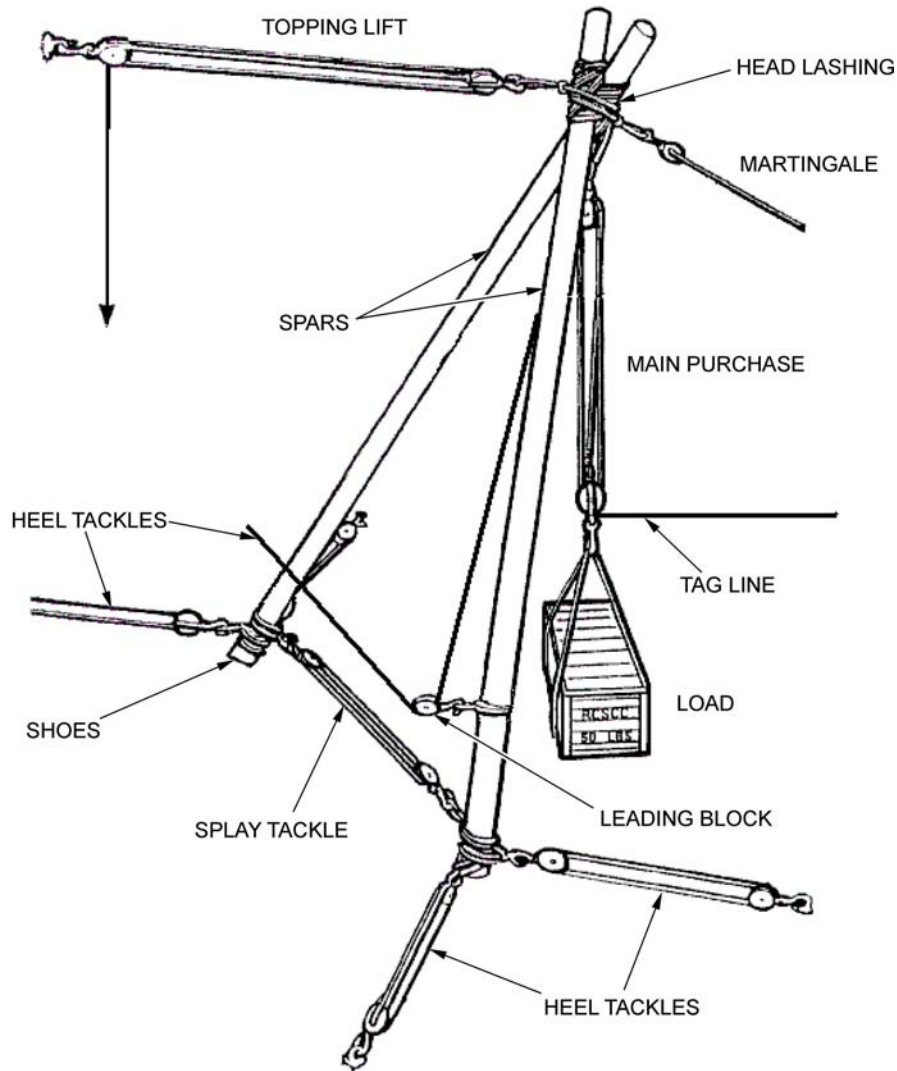
ANTICIPATED ANSWERS

- A1. Two.
- A2. To maintain the distance that the spars are splayed.
- A3. For lifting loads vertically from the edge of a jetty onto the deck of a ship.

Teaching Point 2**Describe the Parts of the Sheers**

Time: 10 min

Method: Interactive Lecture

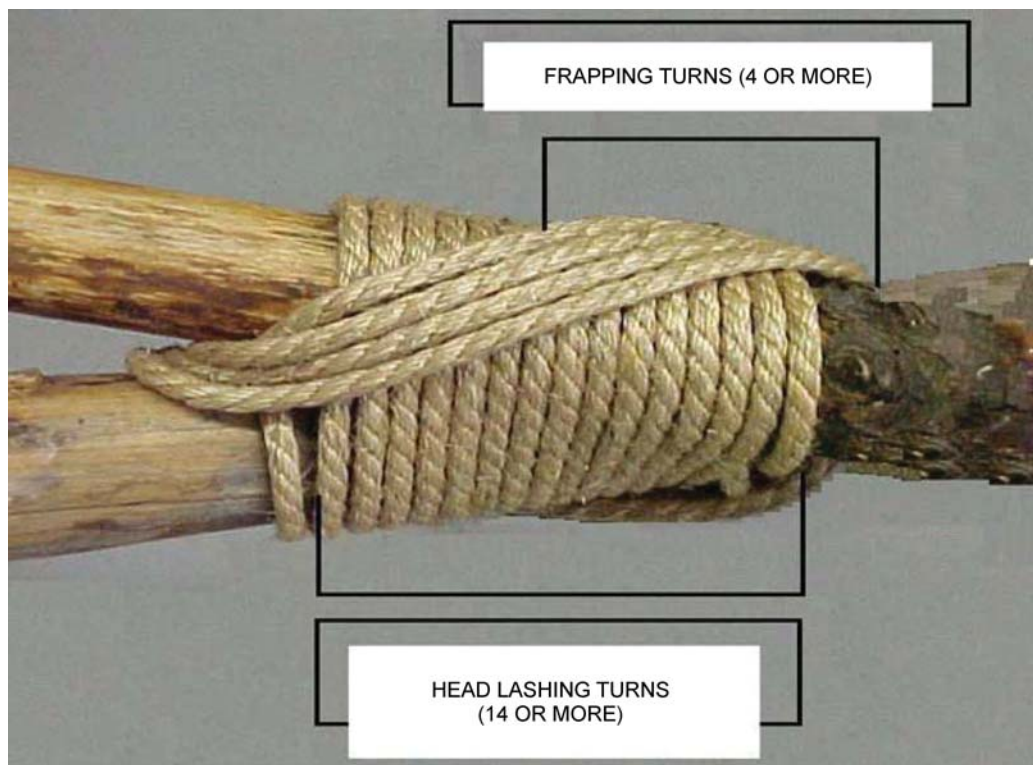
PARTS OF THE SHEERS

Royal Navy, Admiralty Manual of Seamanship 1967 (Vol. 2), Her Majesty's Stationery Office (p. 197)

Figure 12-2-2 Assembled Sheers

Spars. Two spars are used as the legs of the sheers. The spars are crossed and lashed together with a head lashing.

Head Lashing. The head lashing forms the head of the sheers. The spars are lashed together using 14 or more turns around both spars followed by four or more frapping turns through the upper and lower crutch that forms when the spars are splayed apart (as illustrated in Figure 12-2-3).



Navy League of Canada, NLP 101 Flotilla and Provincial Seamanship Competition Manual, Navy League of Canada (p. 14)

Figure 12-2-3 Sheers Head Lashing

Topping Lift. The topping lift, consisting of a two-fold purchase, is used to raise or lower the sheers. If no suitable overhead attachment point exists, the topping lift can be anchored to the deck or ground a minimum distance of one and a half spar lengths from the heel anchor points.

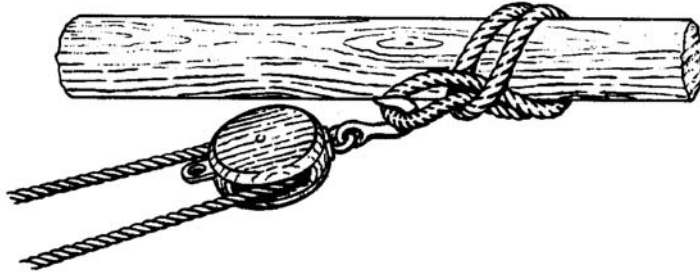


The sheers should not be raised to an angle greater than 75 degrees from the ground or deck.

If the topping lift is anchored to the ground, the sheers should not be lowered to an angle less than 25 degrees from the ground.

Main Purchase. The main purchase, consisting of a two-fold purchase, is attached to the head of the sheers and is used to raise or lower the load.

Strops. Strops are a continuous loop in a line or wire rope. They are used to pass around a cask, spar, piece of line, etc to provide an eye to be placed over a hook or shackle (as illustrated in Figure 12-2-4).



Royal Navy, Admiralty Manual of Seamanship 1964 (Vol. 1), Her Majesty's Stationery Office (p. 193)

Figure 12-2-4 Strop on a Spar

Leading Block (for the Fall of the Main Purchase). The leading block is secured to one of the spars and the hauling part, or fall of the main purchase, is led through it. This block is used to change the direction of pull on the fall of the main purchase.



The fall of the main purchase refers to its hauling part which exits the standing block attached to the head of the sheers. The fall must be heaved in a downward motion, directly under the spars which would put a cadet within a danger zone. The leading block allows the line to be safely heaved in from the side of the sheers.

Splay Tackle. The splay tackle, consisting of a luff, prevents the spars from splaying – moving further apart – when they are under load.

Heel Tackles. The heel tackles, consisting of luffs, provide firm tension on the heels of the spars and also provide both lateral and fore-and-aft support.

Tag Line. A line, attached to the running block of the main purchase, used to retrieve the main purchase without stepping into the forward danger zone.

Martingale (if Fitted). If a suitable attachment point exists at the front of the sheers, a martingale may be led down from the head. This will prevent the sheers from springing up or back when hoisting and lowering a load.

Shoes (if Fitted). Shoes are usually square slabs of hardwood with a recess in their upper surface to take the heel of a spar. The length of each side should not be less than four times the diameter of the spar. They are used to distribute the weight of the load and the thrust of the spars over an area of the deck. When ashore, they are used to distribute the weight to prevent the spars from sinking into the ground.

CONFIRMATION OF TEACHING POINT 2

QUESTIONS

- Q1. What is the purpose of the topping lift?
- Q2. How many turns are required for the sheers head lashing?
- Q3. Why is a leading block used for the fall of the main purchase?

ANTICIPATED ANSWERS

- A1. To raise or lower the sheers.
- A2. 14 or more.

A3. To redirect the hauling part so it may be heaved in from the side of the sheers.

Teaching Point 3

Demonstrate and Have the Cadets Tie a Timber Hitch

Time: 20 min

Method: Demonstration and Performance

TIMBER HITCH

Use of a Timber Hitch

The timber hitch is used to tow, hoist or lower a spar. The more tension placed on the hitch, the more it will hold the spar. When the tension is released, the hitch will loosen.

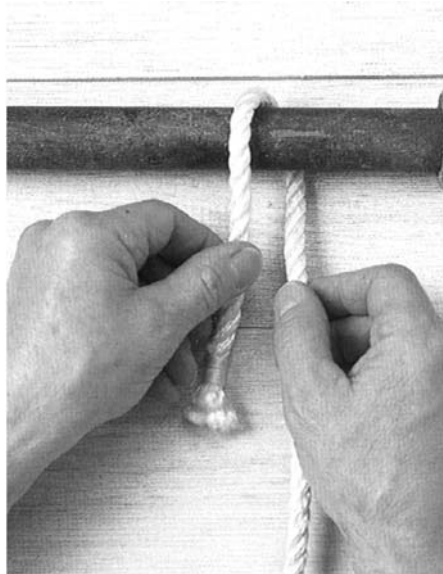
To add directional stability or when tying the hitch to a tapered spar, an extra half hitch should be added beside the timber hitch on the side facing the direction of pull.

How to Tie a Timber Hitch



Demonstrate and have the cadets practice each step of making the timber hitch.

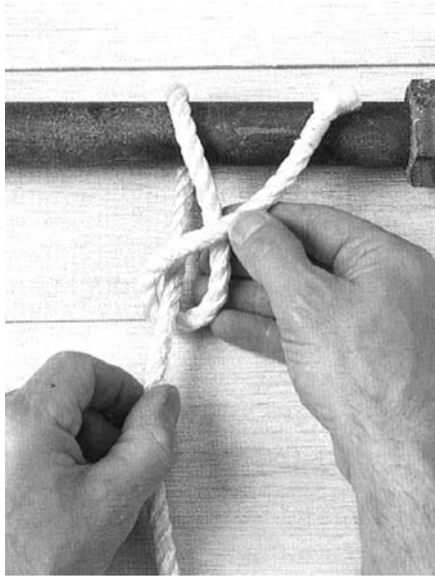
1. Pass the working end of a line around the spar and bring it to the front.



G. Budworth, The Ultimate Encyclopedia of Knots & Ropework, Anness Publishing Limited (p. 98)

Figure 12-2-5 Timber Hitch Step 1

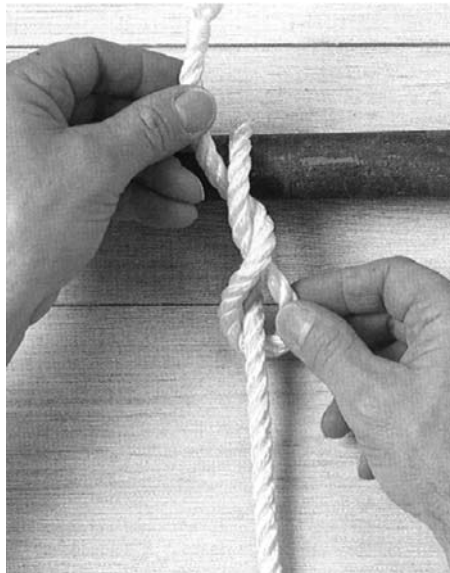
2. Take the end around the standing part and make a small loop.



G. Budworth, The Ultimate Encyclopedia of Knots & Ropework, Anness Publishing Limited (p. 98)

Figure 12-2-6 Timber Hitch Step 2

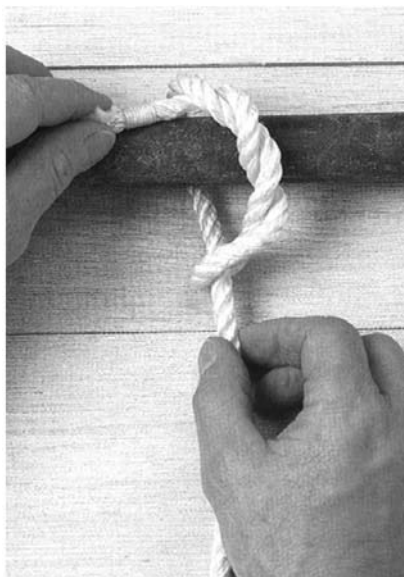
3. Tuck the working end between the standing end and itself.



G. Budworth, The Ultimate Encyclopedia of Knots & Ropework, Anness Publishing Limited (p. 98)

Figure 12-2-7 Timber Hitch Step 3

4. Bring the end around and repeat Step 3 until the required number of tucks are completed (minimum of three).



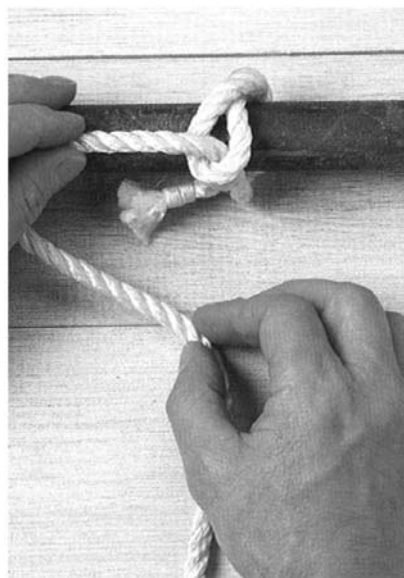
G. Budworth, The Ultimate Encyclopedia of Knots & Ropework, Anness Publishing Limited (p. 98)

Figure 12-2-8 Timber Hitch Step 4



Tucking in this fashion, to make a sliding noose, is known as “dogging”.

5. Pull on the standing end to tighten the hitch around the spar.



G. Budworth, The Ultimate Encyclopedia of Knots & Ropework, Anness Publishing Limited (p. 98)

Figure 12-2-9 Completed Timber Hitch

CONFIRMATION OF TEACHING POINT 3

The cadets tying a timber hitch will serve as the confirmation of this TP.

Teaching Point 4

Demonstrate and Have the Cadets Choke a Luff

Time: 20 min

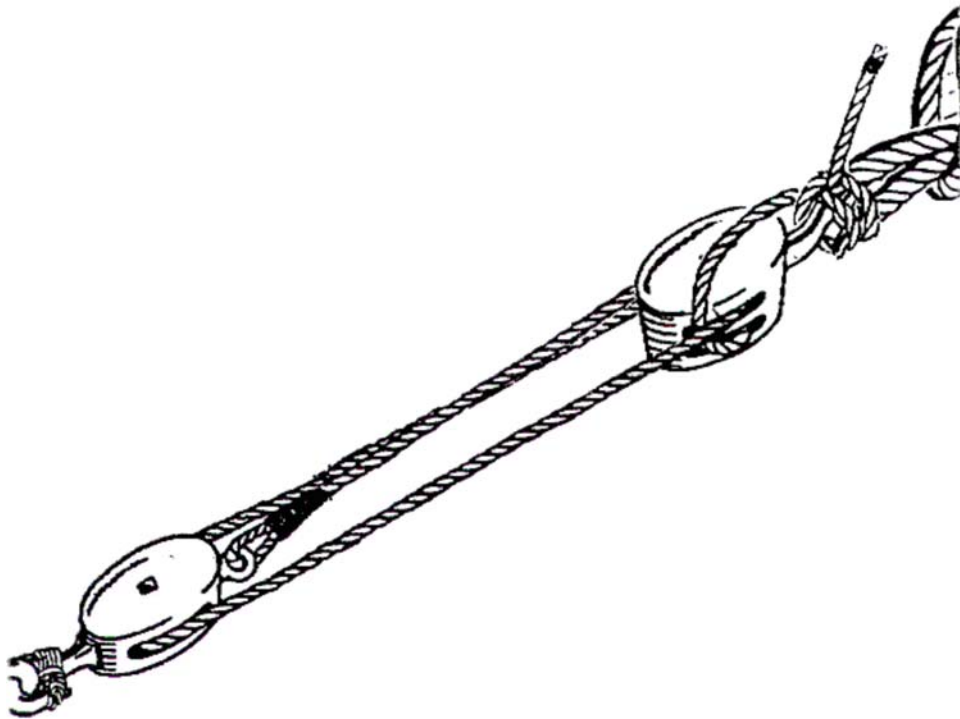
Method: Demonstration and Performance

CHOKING A LUFF



Demonstrate and have the cadets practice choking a luff.

To temporarily secure a luff under tension when there is no cleat available, the hauling part is passed underneath its adjacent running part where it fouls, or chokes, the block. Two half hitches may be added above the block to ensure that the choke does not slip.



Navy League of Canada, NLP 101 Flotilla and Provincial Seamanship Competition Manual, Navy League of Canada (p. 13)

Figure 12-2-10 Choking a Luff



This method should be used with luffs under light loads only, as damage to the rope may occur if the load is too heavy.

CONFIRMATION OF TEACHING POINT 4

The cadets choking a luff will serve as the confirmation of this TP.

Teaching Point 5

Describe the Actions Taken in Response to Commands

Time: 15 min

Method: Interactive Lecture

COMMANDS

Heave in. Give a strong pull together on a line.

Check Away. Ease out a line under control.

Avast. Stop.

Choke. Choke the standing block with the hauling part and secure it with two half hitches above the crown.

Secure. Make fast a line.

Handsomely. Slowly, carefully.

Roundly. Rapidly.



These are the most commonly used commands for working with sheers; however, the list is not exhaustive. Other commands may be used based on unit preferences.

CONFIRMATION OF TEACHING POINT 5

QUESTIONS

- Q1. What does the order HEAVE IN mean?
- Q2. What order is given to make fast a line?
- Q3. What does the order AVAST mean?

ANTICIPATED ANSWERS

- A1. Give a strong pull together on a line.
- A2. SECURE.
- A3. Stop.

Teaching Point 6**Demonstrate and Have the Cadets, as Members of a Group, Rig Sheers**

Time: 20 min

Method: Demonstration and Performance

RIGGING SHEERS

Demonstrate and have the cadets practice the steps for rigging sheers.

1. Lay the spars for the legs side by side, with their heels together and their heads supported clear of the ground or deck.
2. Start the head lashing with a timber hitch on one of the spars followed by 14 or more turns around both spars. Spread the spars apart to allow four or more frapping turns to pass around the spars and through the crutch formed above and below the spars (as illustrated in Figure 12-2-3). Finish the head lashing with a clove hitch on the spar opposite to the timber hitch. Once the head lashing is complete, splay the heels of the spars apart to a distance of one third the length of the spars used for the sheers.
3. Place the main purchase strop around the head lashing, following the path of the frapping turns (as illustrated in Figure 12-2-11). Ensure the bight of the strop is pointed down between the spars.
4. Place the topping lift strop around the head lashing and main purchase strop (as illustrated in Figure 12-2-11). Ensure the bight of the strop is pointed up from the head.



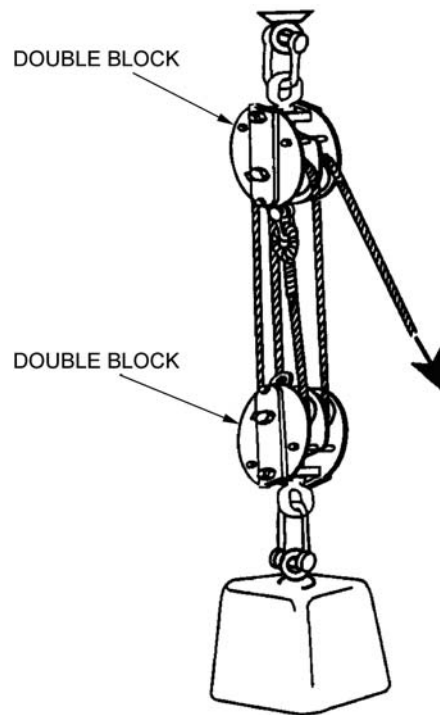
Navy League of Canada, NLP 101 Flotilla and Provincial Seamanship Competition Manual, Navy League of Canada (p. 14)

Figure 12-2-11 Topping Lift and Main Purchase Strops

5. Rig the main purchase using a two-fold purchase (as illustrated in Figure 12-2-12). Attach the standing block to the main purchase strop (as illustrated in Figure 12-2-11) ensuring that the main purchase is

rigged to disadvantage with the hauling part exiting the standing block. Attach the tag line to the running block and lay it out so an end will be outside the danger zone when the sheers are raised.

- Rig the topping lift using a two-fold purchase (as illustrated in Figure 12-2-12). Attach the standing block to the topping lift anchor point and the running block to the topping lift strop. Ensure the topping lift is rigged to disadvantage with the hauling part exiting the standing block. Tie a figure eight knot in the end of the hauling part.



BON-050-002/PT-004, BR 67 Admiralty Manual of Seamanship (p. 3-155)

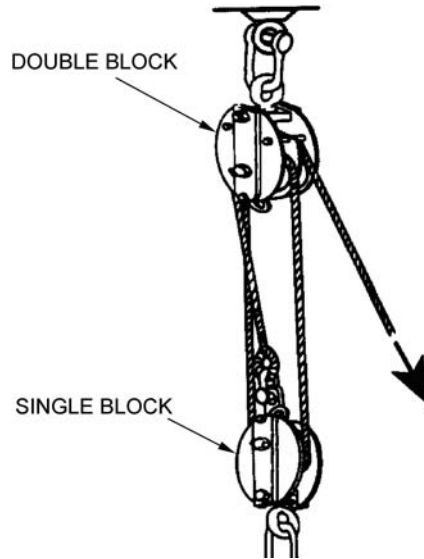
Figure 12-2-12 Two-Fold Purchase

- Attach strops to the feet of the spars (as illustrated in Figure 12-2-14) for the leading block, splay and heel tackles. Attach the splay tackle strops between the strops for the heel tackles. Attach the leading block strop above or between the heel tackle strops. Ensure the strops are placed together, as low as possible but no lower than one hands-width above the heels.



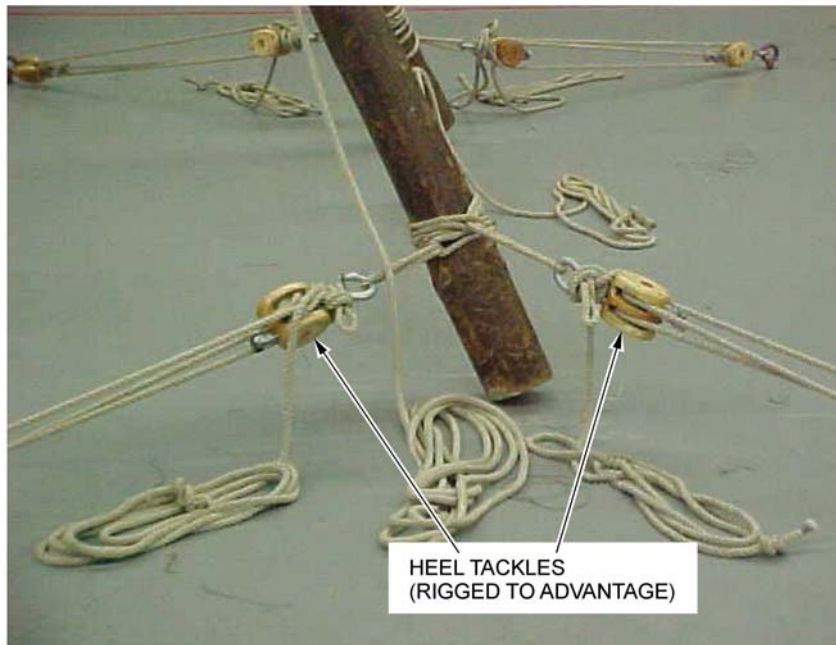
Placing the leading block strop between the heel tackle strops will stop it from sliding up the spar when the fall is heaved in.

- Hook the leading block on to the strop. Reeve the fall of the main purchase through the leading block and tie a figure eight knot in the end. Coil the excess line and place it on the deck outside the danger zone, on the opposite side of the sheers from the side where the leading block is attached.
- Rig the splay tackle using a luff (as illustrated in Figure 12-2-13) and attach to the strops between the spars and under the topping lift. Tie a figure eight knot in the end of the hauling part. Heave in the splay tackle to splay the heels of the spars apart to a distance approximately one third the length of the spars used for the sheers. Choke and secure the splay tackle. Coil any excess line and place it on the deck.
- Rig the heel tackles using luffs (as illustrated in Figure 12-2-13) and attach to the strops and anchor points. Ensure that all heel tackles are rigged to advantage with the hauling parts exiting the running blocks attached to the spars (as illustrated in Figure 12-2-14). Tie a figure eight knot in the end of the hauling part.



BON-050-002/PT-004 (p. 3-155)

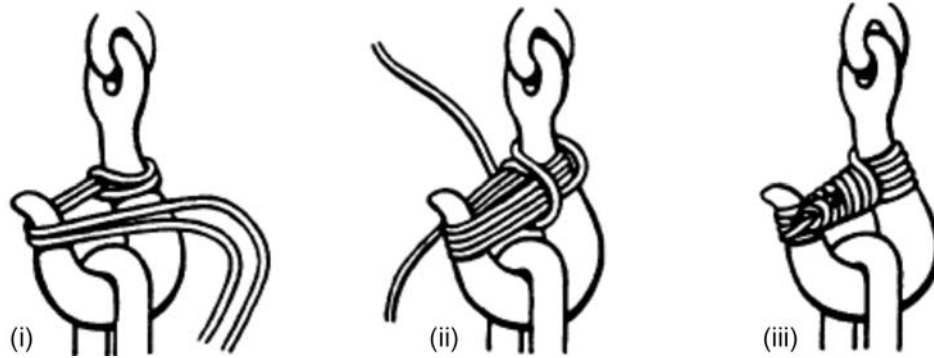
Figure 12-2-13 Luff



Navy League of Canada, NLP 101 Flotilla and Provincial Seamanship Competition Manual, Navy League of Canada (p. 14)

Figure 12-2-14 Heel Tackles Rigged to Advantage

11. Mouse all hooks (as illustrated in Figure 12-2-15).



B-GN-181-105/FP-E00, CFCD 105 Seamanship Rigging and Procedures Manual (p. 5-46)

Figure 12-2-15 Mousing a Hook



Mousing is not required for blocks equipped with a safety catch on the hook. If the safety catch has been removed or the spring is missing from the catch, the block must be replaced.

12. Heave in all heel tackles until they are evenly taut. Choke and secure them with two half hitches. Coil any excess line and place neatly on the deck. If the sheers are not positioned correctly, they can be adjusted by heaving in or checking away the individual heel tackles.



To adjust the position of the sheers, stand at the head facing the heels and use the following sequence:

1. Adjust the side-to-side position of the sheers by heaving in evenly on both heel tackles on the side the sheers are to move toward while checking away handsomely on the opposite heel tackles. When the sheers reach the correct position, avast checking away.
2. Adjust the fore-and-aft position of the sheers by heaving in evenly on both forward heel tackles (tackles closest to the head) while checking away handsomely on the after heel tackles. When the sheers reach the correct position, avast checking away.
3. Adjust the head of the sheers so that it is centred between the heels by heaving in on the after heel tackle on the side the head is to move towards while checking away handsomely on the opposite side's forward heel tackle. When the head is in the correct position, avast checking away.
4. Choke all heel tackles and secure them with two half hitches above the blocks.

13. Heave in on the topping lift handsomely until the sheers have been raised to an angle between 25 and 75 degrees from the floor. Choke and secure the topping lift.



If the topping lift is anchored to the deck, the head of the sheers must be picked up and held at chest height until the topping lift becomes taut. The person at the head of the sheers shall then step out of the danger zone.

14. Heave in on the tag line to pull the running block out of the danger zone, checking away on the fall of the main purchase if required. Secure the fall of the main purchase to the spar opposite the leading block with a round turn and two half hitches.
15. The sheers are now complete and ready for operation (as illustrated in Figure 12-2-2).

CONFIRMATION OF TEACHING POINT 6

The cadets' participation in rigging sheers will serve as the confirmation of this TP.

Teaching Point 7

Have the Cadets, as Members of a Group, Operate the Sheers

Time: 40 min

Method: Practical Activity



Demonstrate how to operate the sheers prior to starting the activity.

ACTIVITY

OBJECTIVE

The objective of this activity is to have the cadets, as members of a group, operate the sheers.

RESOURCES



The list of required equipment for the sheers is located at A-CR-CCP-603/PG-001, Chapter 2, Annex C, Appendix 1.

When choosing the equipment for rigging the sheers, ensure that each item is compatible with the others (eg, the blocks are suitable for the size of the line).

- Assembled sheers,
- Load of 22 kg (50 lbs) or less,
- Whipping twine,
- Pylons,
- Hooks,
- Hard hats,
- Parts cards located at Annex A,
- Picture/model of sheers (blank picture located at Annex B),
- Sequence for Station 3 located at Annex C,
- Scoresheet located at Annex D,

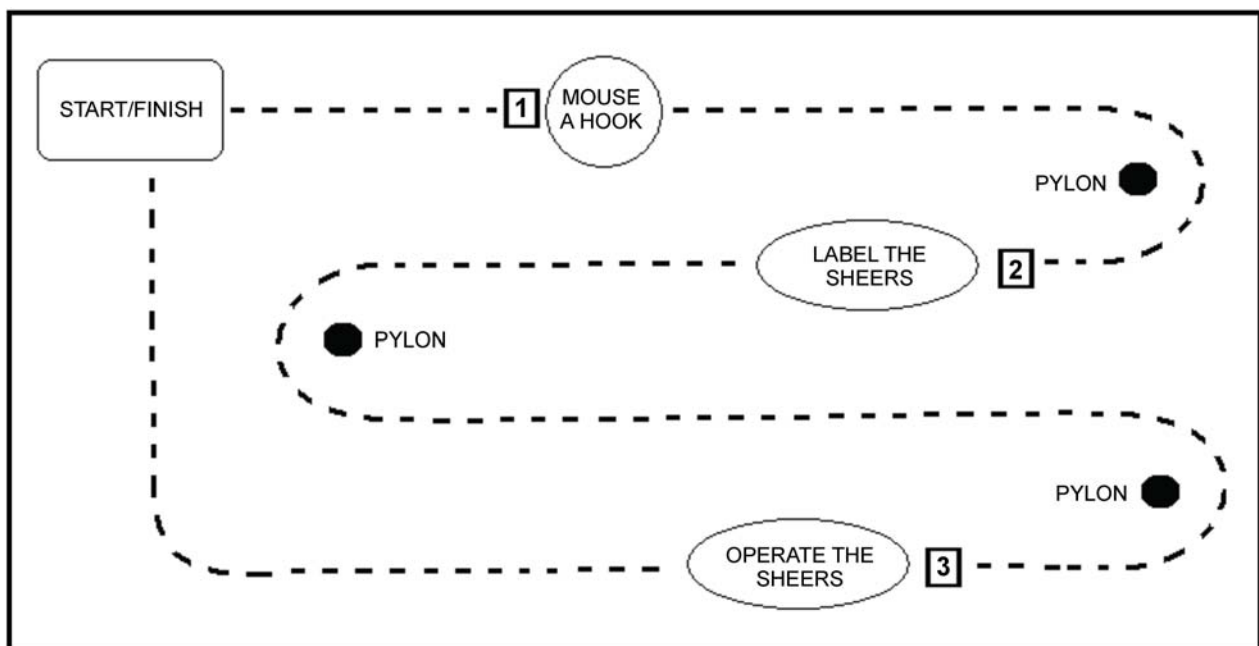
- Whistle, and
- Stopwatch.

ACTIVITY LAYOUT

- Mark off a start area.
- Set up the start area with various pieces of safety equipment.
- Set up Station 1 with whipping twine and hooks.
- Set up Station 2 with parts cards, tape and a picture/model of sheers.
- Set up Station 3 with the sheers, whipping twine and a load.



The sheers at Station 3 shall be fully rigged (as illustrated in Figure 12-2-1). If no overhead mounting point is available, anchor the topping lift at least one and one-half spar lengths back from the heel tackle anchors.



Director Cadets 3, 2008, Ottawa, ON: Department of National Defence

Figure 12-2-16 Sheers Run

ACTIVITY INSTRUCTIONS

1. Divide the cadets into groups of four.
2. Have the first group line up in the start area.
3. On the whistle signal, have the group put on their personal safety equipment and proceed to Station 1.



Ensure the time is started on the stopwatch at the whistle signal.

4. At Station 1, have each cadet in the group mouse a hook. Check the mousings for strength. If any of the mousings come off easily, that cadet will do another mousing. Upon successfully completing the mousings, have the group proceed to Station 2.
5. At Station 2, have the group label the picture/model of the sheers and then proceed to Station 3.
6. At Station 3, stop and record the time. Have the group operate the sheers by responding to commands listed at Annex C, as given by the instructor. Award points IAW the scoresheet located at Annex D.
7. Upon completion of Station 3, have the group continue to the finish line and tally the score.
8. Have each group complete the sheers run in the above sequence.
9. Declare the group with the most points the winner.

SAFETY

- Ensure the personal safety equipment is worn at all times.
- Ensure the cadets stay outside the danger zones while the sheers are raised.
- Ensure all hooks are moused or fitted with working safety catches.

CONFIRMATION OF TEACHING POINT 7

The cadet's participation in the activity will serve as the confirmation of this TP.

Teaching Point 8

**Demonstrate and Have the Cadets, as Members of a Group,
De-Rig Sheers**

Time: 10 min

Method: Demonstration and Performance

DE-RIGGING SHEERS



Demonstrate and have the cadets practice each step in de-rigging sheers.

1. Check away on the topping lift handsomely until the head of the sheers is resting on the deck. When the sheers near the deck, it is permissible to step into the danger zone to grab the head of the sheers and lower it by hand.
2. Release the choke on the heel tackles, being careful not to place hands in the running parts of the luffs.



Once the head is on the ground and the tension has been released from the heel tackles, the sheers are safe to de-rig.

3. Cut any mousings that have been applied and unhook the blocks from the strops.
4. Un-reeve the heel, splay, main purchase and topping lift tackles.
5. Remove the strops from the spars.
6. Untie the head lashing.
7. Coil all lines and secure the equipment as required.

CONFIRMATION OF TEACHING POINT 8

The cadets' participation in de-rigging sheers will serve as the confirmation of this TP.

END OF LESSON CONFIRMATION

The cadets' rigging, operating and de-rigging sheers will serve as the confirmation of this lesson.

CONCLUSION

HOMework/READING/PRACTICE

N/A.

METHOD OF EVALUATION

This EO is assessed IAW A-CR-CCP-603/PG-001, Chapter 3, Annex B, Appendix 4 (321 PC).

CLOSING STATEMENT

Rigging sheers requires teamwork. Sheers are a device that has many practical uses within the Canadian Navy, although it is not used as frequently today as in years past due to improvements in technology. Rigging sheers acts as an introduction to sea activities of the Canadian Navy while stimulating an interest in seamanship specialty training.

INSTRUCTOR NOTES/REMARKS

This EO shall be conducted after EO M321.01 (Describe Safety Procedures for Operating Lifting Devices, Section 1).

This EO may be conducted as five consecutive periods on a weekend training day or over two training nights. Training night one will consist of TPs 1–4 for a total of two periods. Training night two will consist of TPs 5–8 for a total of three periods.

REFERENCES

C1-003 (ISBN II 770973 5) Royal Navy. (1972). *Admiralty Manual of Seamanship 1964* (Vol. 1). London, England: Her Majesty's Stationery Office.

- C1-049 (ISBN 0-11-771958-7) Royal Navy. (1967). *Admiralty Manual of Seamanship 1967* (Vol. 2). Cambridge, England: Her Majesty's Stationery Office.
- C1-064 (ISBN 1-55267-986-1) Budworth, G. (2001). *The Ultimate Encyclopedia of Knots & Ropework*. London, England: Anness Publishing Limited.
- C1-131 Navy League of Canada. (2008). *NLP 101 Flotilla and Provincial Seamanship Competition Manual: Sheers*. Toronto, ON: Navy League of Canada.



ROYAL CANADIAN SEA CADETS

PHASE THREE

INSTRUCTIONAL GUIDE



SECTION 3

EO C321.02 – RIG A STANDING DERRICK

Total Time:

150 min

PREPARATION

PRE-LESSON INSTRUCTIONS

Resources needed for the delivery of this lesson are listed in the lesson specification located in A-CR-CCP-603/PG-001, Chapter 4. Specific uses for said resources are identified throughout the instructional guide within the TP for which they are required.

Review the lesson content and become familiar with the material prior to delivering the lesson.

Photocopy and cut out the parts cards located at Annex E.

Photocopy the blank standing derrick diagram located at Annex F, the sequence for Station 3 located at Annex G and the standing derrick scoresheet located at Annex H.

Ensure that the cadets have their issued cadet boots with them.

PRE-LESSON ASSIGNMENT

N/A.

APPROACH

An interactive lecture was chosen for TPs 1–3 to illustrate the function, parts and rigging commands for a standing derrick.

Demonstration and performance was chosen for TPs 4 and 6 as it provides the instructor the opportunity to introduce a standing derrick, demonstrate procedures and observe the cadets rigging and de-rigging a standing derrick.

A practical activity was chosen for TP 5 as it is an interactive way to introduce the cadets to operating a standing derrick in a safe and controlled environment. This activity contributes to the development of seamanship skills and knowledge in a fun and challenging setting.

INTRODUCTION

REVIEW

Review EO M321.01 (Describe Safety Procedures for Operating Lifting Devices, Section 1).

OBJECTIVES

By the end of this lesson the cadet shall, as a member of a group, rigged, operated and de-rigged a standing derrick.

IMPORTANCE

It is important for cadets rig a standing derrick as it introduces them to sea activities of the Canadian Navy while stimulating an interest in seamanship specialty training. Although the standing derrick is no longer used regularly by the Canadian Navy, it is a great way to foster teamwork and practice seamanship skills.

Teaching Point 1

Explain the Function of a Standing Derrick

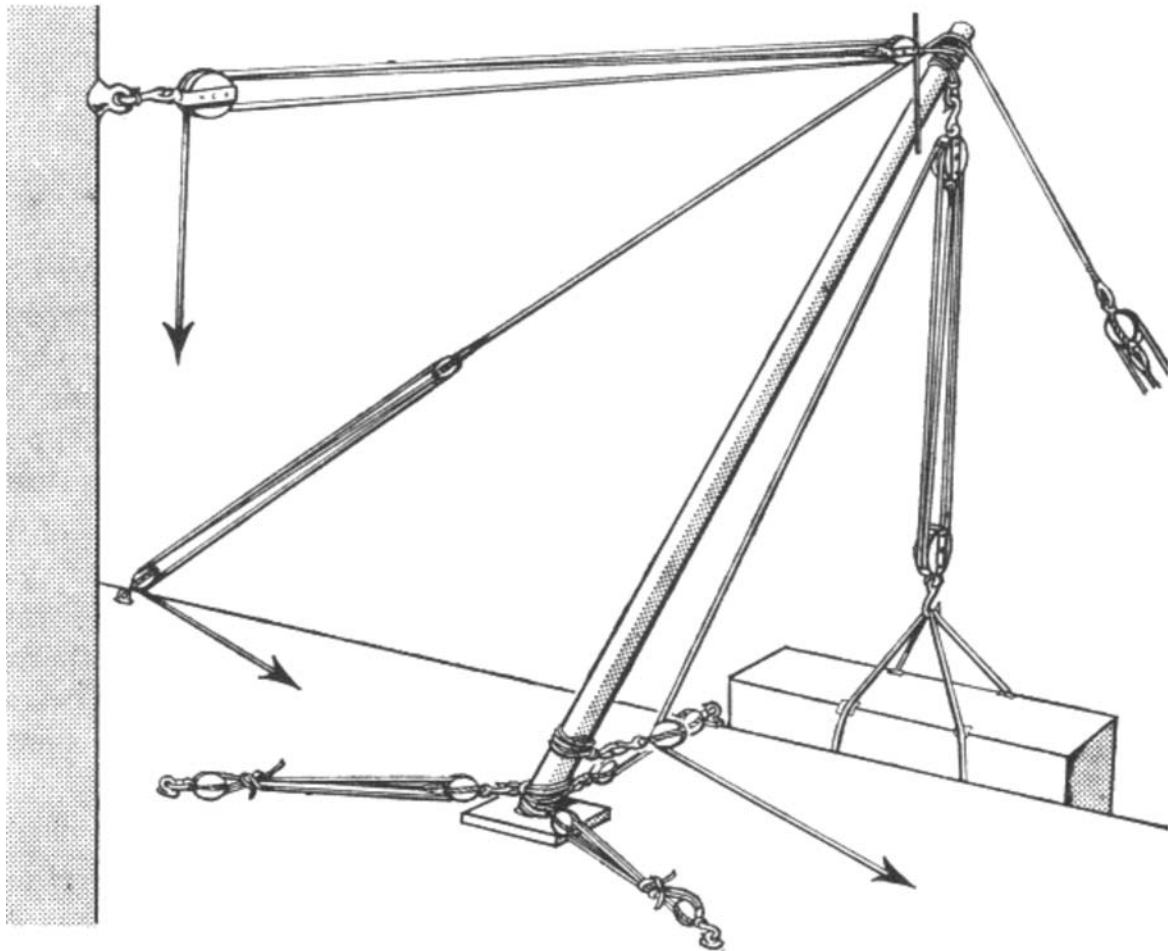
Time: 5 min

Method: Interactive Lecture

STANDING DERRICK

Due to improvements in technology, improvised lifting devices are not as widely used today as in the past. However, when no suitable crane or hydraulic device for lifting a heavy object or equipment is available on board or ashore, some form of lifting device must be rigged. This may include sheers, a standing or swinging derrick or a gyn.

A standing derrick is effective in situations that require the load to be hoisted and moved laterally a short distance from the lifting point. It can be rigged with less equipment than other lifting devices as only one spar is required.



Royal Navy, Admiralty Manual of Seamanship 1967 (Vol. 2), Her Majesty's Stationery Office (p. 195)

Figure 12-3-1 Standing Derrick

CONFIRMATION OF TEACHING POINT 1

QUESTIONS

- Q1. When is a standing derrick used?
- Q2. How many spars are required to rig a standing derrick?
- Q3. What is a standing derrick used for?

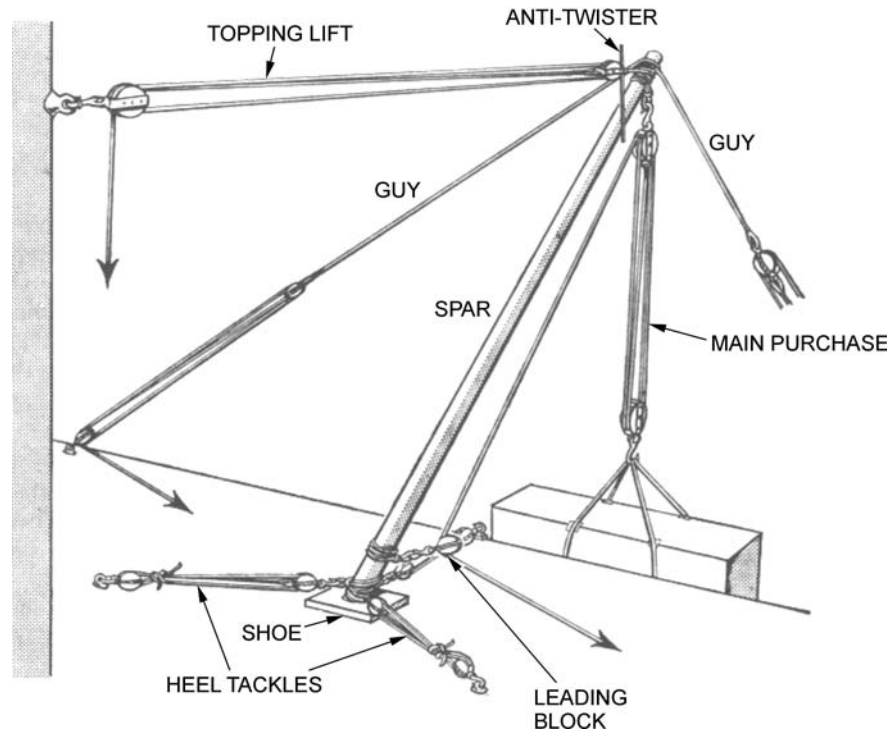
ANTICIPATED ANSWERS

- A1. When no suitable crane or hydraulic device is available on board or ashore.
- A2. One.
- A3. Hoisting and moving loads laterally a short distance.

Teaching Point 2**Identify the Parts of a Standing Derrick**

Time: 15 min

Method: Interactive Lecture

PARTS OF A STANDING DERRICK

Royal Navy, Admiralty Manual of Seamanship 1967 (Vol. 2), Her Majesty's Stationery Office (p. 195)

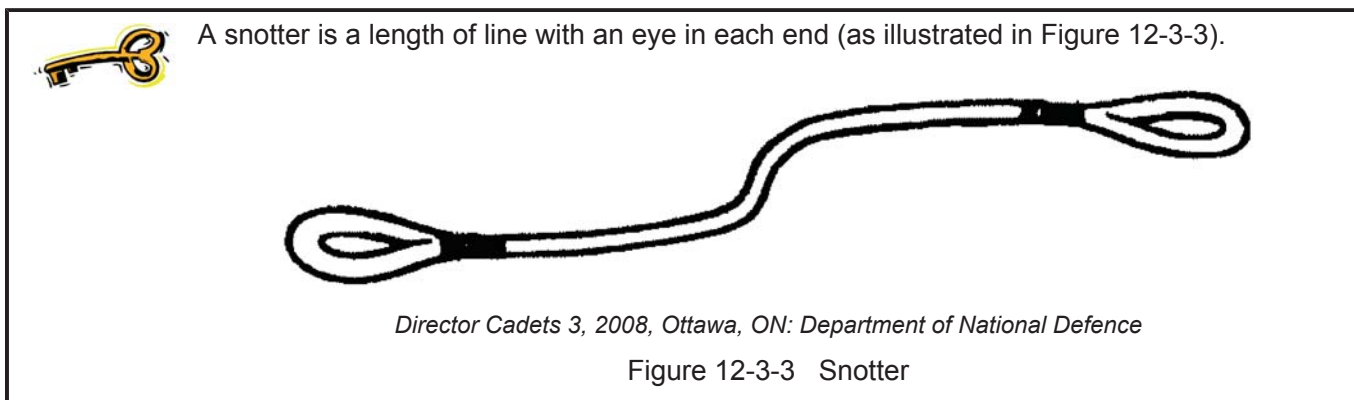
Figure 12-3-2 Parts of a Standing Derrick

Topping Lift. The topping lift, consisting of a two-fold purchase, is used to raise or lower the standing derrick. If no suitable overhead attachment point exists, the topping lift can be anchored to the deck or ground a minimum distance of one and a half spar lengths from the heel anchor points.



If the topping lift is anchored to the ground, the standing derrick should not be lowered to an angle less than 25 degrees from the ground.

Side Guys. The side guys, consisting of luffs attached to a snotter at the head of the spar, are fitted to give lateral support. The snotter's length will determine how far the standing derrick may slew from side-to-side using the side guys.

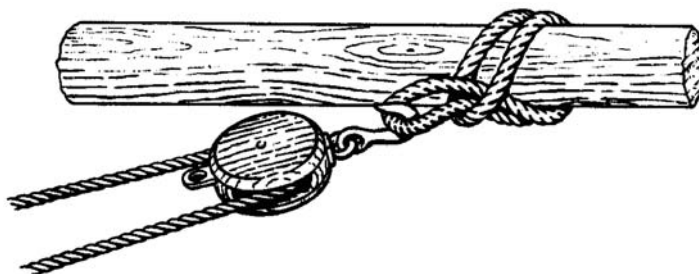


Main Purchase. The main purchase, consisting of a two-fold purchase, is attached to the head of the spar and is used to raise or lower the load.

Spar. The spar is the main support system for the standing derrick. The side guys, topping lift and the main purchase are attached to the spar.

Anti-Twister. An optional piece of wood that is attached to the strop at the block of the topping lift used to prevent the topping lift from twisting.

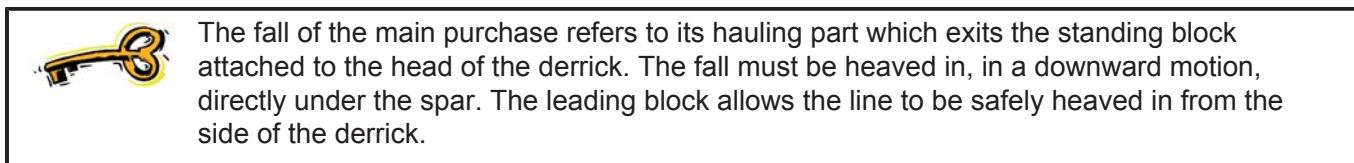
Strops. Strops are a continuous loop in a line or wire rope. They are used to pass around a cask, spar, piece of line, etc to provide an eye to be placed over a hook or shackle (as illustrated in Figure 12-3-4).



Royal Navy, Admiralty Manual of Seamanship 1964 (Vol. 1), Her Majesty's Stationery Office (p. 193)

Figure 12-3-4 Strop on a Spar

Leading Block (for the Fall of the Main Purchase). The leading block is secured to the heel of the spar and the hauling part, or fall of the main purchase, is led through it. This block is used to change the direction of pull on the fall of the main purchase.



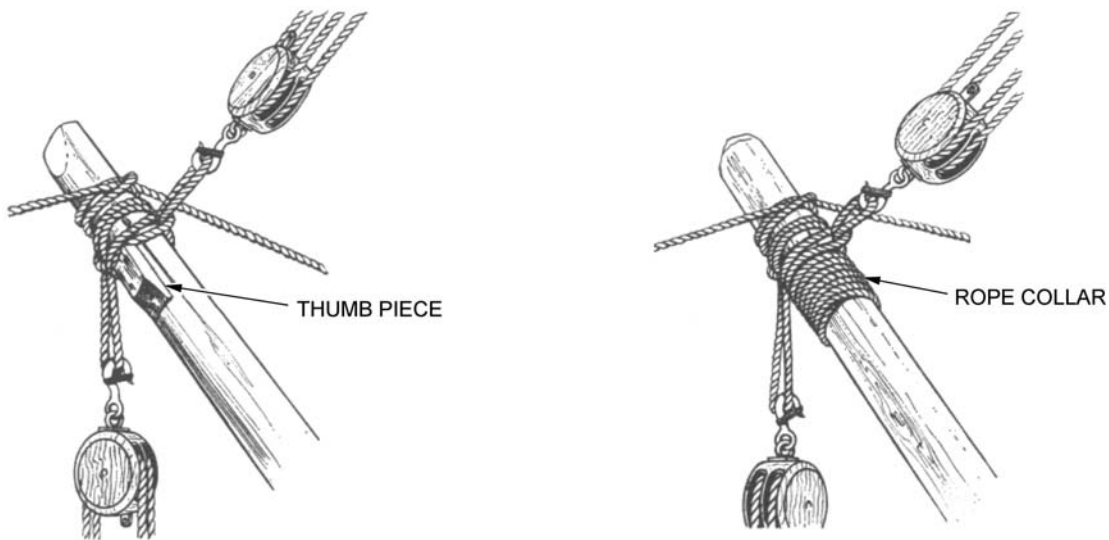
Heel Tackles. The heel tackles, consisting of luffs, are used to prevent the heel from moving.

Tag Line. A line, attached to the running block of the main purchase, used to retrieve the main purchase without stepping into the danger zone.

Martingale (Fore Guy) (if Fitted). If a suitable attachment point exists at the front of the standing derrick, a martingale or fore guy may be led down from the spar (not illustrated in Figure 12-3-2). This will prevent the spar from springing up or back when hoisting and lowering a load.

Shoe (if Fitted). The shoe is usually a square slab of hardwood with a recess in its upper surface to take the heel of a spar. The length of each side should not be less than four times the diameter of the spar. It is used to distribute the weight of the load and the thrust of the spar over an area of the deck. When ashore, it is used to distribute the weight to prevent the spar from sinking into the ground.

Thumb Pieces/Rope Collars (if Fitted). Thumb pieces/rope collars are used to prevent the strops from slipping on the spars (as illustrated in Figure 12-3-5). Thumb pieces are wooden pieces that are screwed or nailed to the spar. Rope collars are put onto the spar like a whipping.



Royal Navy, Admiralty Manual of Seamanship 1967 (Vol. 2), Her Majesty's Stationery Office (p. 207)

Figure 12-3-5 Thumb Piece and Rope Collar

CONFIRMATION OF TEACHING POINT 2

QUESTIONS

- Q1. What is the minimum angle that the standing derrick may be lowered to when the topping lift is anchored to the floor?
- Q2. What is the purpose of a martingale or fore guy?
- Q3. What are heel tackles used for?

ANTICIPATED ANSWERS

- A1. 25 degrees.
- A2. To prevent the spar from springing up or back when hoisting and lowering a load.
- A3. To prevent the heel from moving.

Teaching Point 3**Describe the Action Taken in Response to Commands**

Time: 15 min

Method: Interactive Lecture

COMMANDS**Heave in.** Give a strong pull together on a line.**Check Away.** Ease out a line under control.**Avast.** Stop.**Choke.** Choke and secure the tackle(s).**Secure.** Make fast a line.**Handsomely.** Slowly, carefully.**Roundly.** Rapidly.

These are the most commonly used commands for working with the standing derrick; however, the list is not exhaustive. Other commands may be used based on unit preferences.

CONFIRMATION OF TEACHING POINT 3**QUESTIONS**

- Q1. What does the order HEAVE IN mean?
- Q2. What order is given to make fast a line?
- Q3. What does the order AVAST mean?

ANTICIPATED ANSWERS

- A1. Give a strong pull together on a line.
- A2. SECURE.
- A3. Stop.

Teaching Point 4**Demonstrate and Have the Cadets, as Members of a Group, Rig a Standing Derrick**

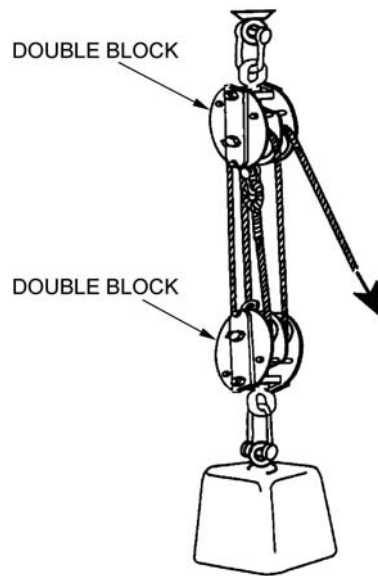
Time: 20 min

Method: Demonstration and Performance

RIGGING A STANDING DERRICK

Demonstrate and have the cadets practice each step in rigging the standing derrick.

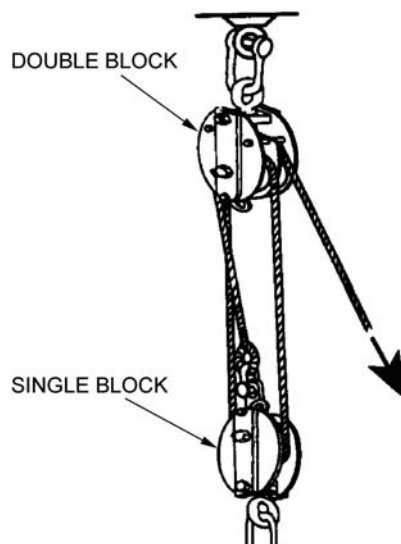
1. Place the strops for the main purchase and topping lift over the head of the spar. Attach thumb pieces/rope collars to prevent the strops from slipping (as illustrated in Figure 12-3-5). Lay the strops close together to avoid a bending stress on the spar.
2. Rig the main purchase using a two-fold purchase (as illustrated in Figure 12-3-6). Attach the standing block to the main purchase strop. Ensure that the main purchase is rigged to disadvantage with the hauling part, or fall, exiting the standing block. Attach the tag line to the running block and lay it out so an end will be outside of the danger zone when the standing derrick is raised.
3. Rig the topping lift using a two-fold purchase. Attach the standing block to the topping lift anchor point and the running block to the topping lift strop. Ensure that the topping lift is rigged to disadvantage with the hauling part exiting the standing block. Tie a figure eight knot in the end of the hauling part.



BON-050-002/PT-004 (p. 3-155)

Figure 12-3-6 Two-Fold Purchase

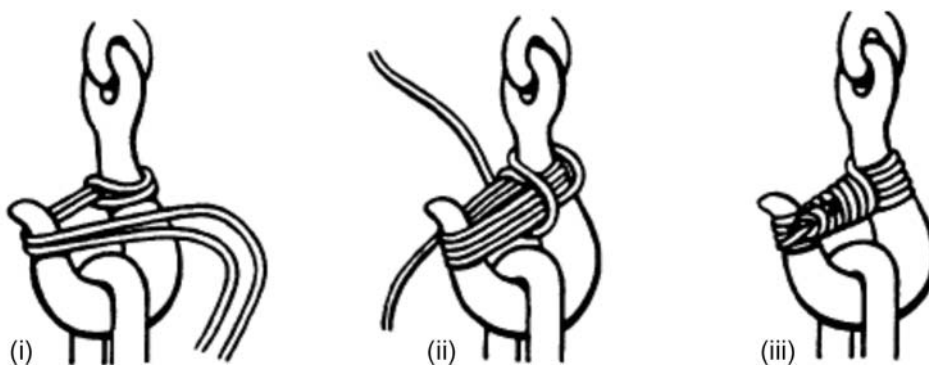
4. Attach a snotter over the head of the spar, above the strops, using a clove hitch. Ensure that the eyes of the snotter extend equally from the spar. Rig the side guys using luffs (as illustrated in Figure 12-3-7). Attach the running blocks to the eyes in the snotter and the standing block to the side guys anchor point. Ensure that the side guys are rigged to disadvantage with the hauling parts exiting the standing blocks. Tie figure eight knots in the end of the hauling parts.



BON-050-002/PT-004 (p. 3-155)

Figure 12-3-7 Luff

5. Place the foot of the spar in a shoe if one is fitted.
6. Rig the heel tackles using luffs. Attach the standing blocks to the heel strops and the running blocks to the heel tackle anchor points. Ensure that the heel tackles are rigged to disadvantage with the hauling parts exiting the standing blocks. Tie a figure eight knot in the end of the hauling part.
7. Attach the leading block strop to the foot of the spar. Hold the strop in place with a thumb piece/rope collar. Reeve the fall of the main purchase through the leading block, tie a figure eight knot in the end and coil the excess line to one side of the spar.
8. Mouse all hooks (as illustrated in Figure 12-3-8).



B-GN-181-105/FP-E00 (p. 5-46)

Figure 12-3-8 Mousing a Hook



Mousing is not required for blocks equipped with a safety catch on the hook. If the safety catch has been removed or the spring is missing from the catch, the block must be replaced.

9. Heave in all heel tackles until they are evenly taut. Choke and secure the heel tackles. Coil any excess line and place neatly on the deck.
10. Heave in on the topping lift handsomely until the standing derrick has been raised to an angle between 25 and 75 degrees from the floor. Choke and secure the topping lift.



If the topping lift is anchored to the deck, the head of the spar must be picked up and held at chest height until the topping lift becomes taut. The person at the head of the spar shall then step out of the danger zone.

11. Heave in on the tag line to pull the running block out of the danger zone, checking away on the fall of the main purchase, if required.
12. The standing derrick is now complete and ready for operation (as illustrated in Figure 12-3-2).

CONFIRMATION OF TEACHING POINT 4

The cadets' participation in rigging a standing derrick will serve as the confirmation of this TP.

Teaching Point 5

Have the Cadets, as Members of a Group, Operate a Standing Derrick

Time: 75 min

Method: Practical Activity



Demonstrate how to operate the standing derrick prior to starting the activity.

ACTIVITY

OBJECTIVE

The objective of this activity is to have the cadets, as members of a group, operate a standing derrick.

RESOURCES



The list of required equipment for a standing derrick is located in A-CR-CCP-603/PG-001, Chapter 2, Annex C, Appendix 1.

When choosing the equipment for rigging the standing derrick, ensure that each item is compatible with the others (eg, the blocks are suitable for the size of the line).

- Assembled standing derrick,
- Load of 22 kg (50 lbs) or less,
- Whipping twine,
- Pylons,
- Hooks,

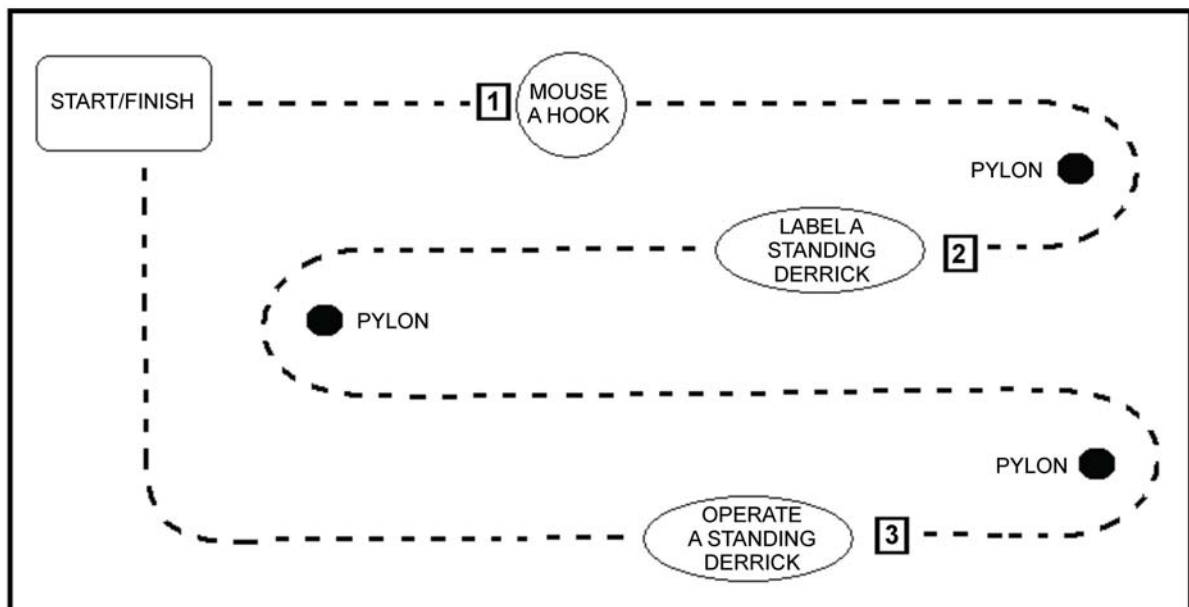
- Hard hats,
- Parts cards located at Annex E,
- Picture/model of a standing derrick (blank picture located at Annex F if required),
- Sequence for Station 3 located at Annex G,
- Scoresheet located at Annex H,
- Whistle, and
- Stopwatch.

ACTIVITY LAYOUT

- Mark off a start line and set up personal safety equipment.
- Set up Station 1 with whipping twine and hooks.
- Set up Station 2 with the picture/model of the standing derrick and a bag/box with parts cards.
- Set up Station 3 with a standing derrick, whipping twine and a load.



The standing derrick in Station 3 shall be fully rigged (as illustrated in Figure 12-3-2).



Director Cadets 3, 2008, Ottawa, ON: Department of National Defence

Figure 12-3-9 Standing Derrick Run

ACTIVITY INSTRUCTIONS



Encourage the cadets to cheer on the groups while the activity is conducted.

1. Divide the cadets into groups of four.
2. Have the first group line up behind the start line.
3. On the whistle signal, have the group put on their personal safety equipment and proceed to Station 1.



Ensure the time is started on the stopwatch at the whistle signal.

4. At Station 1, have each cadet in the group mouse a hook. Check the mousings for strength. If any of the mousings come off easily, that cadet will do another mousing. Upon successfully completing the mousings, have the group proceed to Station 3.
5. At Station 2, have the group label the picture/model of the standing derrick and then proceed to Station 3.
6. At Station 3, stop and record the time. Have the group operate the standing derrick by responding to commands from Annex G given by the instructor. Award points IAW the scoresheet found at Annex H.
7. Upon completion of Station 3, have the group proceed to the finish line and tally the score.
8. Repeat the activity for the remaining groups.
9. Declare the group with the most points the winner.

SAFETY

- Ensure the personal safety equipment is worn at all times.
- Ensure the cadets stay clear of all danger zones when the standing derrick has been raised.
- Ensure all hooks are moused or fitted with working safety catches.

CONFIRMATION OF TEACHING POINT 5

The cadets' participation in the activity will serve as the confirmation of this TP.

Teaching Point 6**Demonstrate and Have the Cadets, as Members of a Group,
De-Rig a Standing Derrick**

Time: 10 min

Method: Demonstration and Performance

DE-RIG A STANDING DERRICK

Demonstrate and have the cadets practice each step in de-rigging the standing derrick.

1. Check away the topping lift handsomely, until the spar is resting on the ground.
2. Release the choke on the heel tackles, being careful not to place hands in between the running parts of the luff.



Once the spar is on the ground and the tension has been released from the heel tackles, the standing derrick is safe to de-rig.

3. Cut any mousings that have been applied and unhook the blocks from the strops.
4. Un-reeve the heel, guy, main purchase and topping lift tackles.
5. Remove the strops from the spar.
6. Remove the spar from the shoe.
7. Coil all lines and secure the equipment, as required.

CONFIRMATION OF TEACHING POINT 6

The cadets de-rigging a standing derrick will serve as the confirmation of this TP.

END OF LESSON CONFIRMATION

The cadets' rigging, operating and de-rigging a standing derrick will serve as the confirmation of this lesson.

CONCLUSION**HOMEWORK/READING/PRACTICE**

N/A.

METHOD OF EVALUATION

N/A.

CLOSING STATEMENT

Rigging a standing derrick is an exercise that requires teamwork. The standing derrick is a device that has many practical uses within the Canadian Navy, although it is not used as frequently today as in years past

due to the development of technology. It acts as an introduction to sea activities of the Canadian Navy while stimulating an interest in seamanship specialty training.

INSTRUCTOR NOTES/REMARKS

This EO should be conducted after EO M321.01 (Describe Safety Procedures for Operating Lifting Devices, Section 1).

The cadets must wear issued cadet boots and hard hats while operating the standing derrick.

REFERENCES

- A1-004 B-GN-181-105/FP-E00 Chief of the Maritime Staff. (2000). *CFCD 105 Fleet Seamanship Rigging and Procedures Manual*. Ottawa, ON: Department of National Defence.
- C1-047 (ISBN 0-11-772695-8/BON-050-002/PT-004) Command of the Defence Council. (1995). *BR 67 Admiralty Manual of Seamanship*. London, England: Her Majesty's Stationary Office Publications Centre.
- C1-049 (ISBN 0-11-771958-7) Royal Navy. (1967). *Admiralty Manual of Seamanship 1967* (Vol. 2). Cambridge, England: Her Majesty's Stationery Office.



ROYAL CANADIAN SEA CADETS

PHASE THREE

INSTRUCTIONAL GUIDE



SECTION 4

EO C321.03 – RIG A GYN

Total Time:

150 min

PREPARATION

PRE-LESSON INSTRUCTIONS

Resources needed for the delivery of this lesson are listed in the lesson specification located in A-CR-CCP-603/PG-001, Chapter 4. Specific uses for said resources are identified throughout the instructional guide within the TP for which they are required.

Review the lesson content and become familiar with the material prior to delivering the lesson.

Photocopy and cut out the parts cards located at Annex I.

Photocopy the blank gyn diagram located at Annex J, the sequence for Station 3 located at Annex K and the gyn scoresheet located at Annex L.

Ensure that the cadets have their issued cadet boots with them.

PRE-LESSON ASSIGNMENT

N/A.

APPROACH

An interactive lecture was chosen for TPs 1–3 to illustrate the function, parts and rigging commands for a gyn.

Demonstration and performance was chosen for TPs 4 and 6 as it provides the instructor the opportunity to introduce a gyn, demonstrate procedures and observe the cadets rigging and de-rigging a gyn.

A practical activity was chosen for TP 5 as it is an interactive way to introduce the cadets to operating a gyn in a safe and controlled environment. This activity contributes to the development of seamanship skills and knowledge in a fun and challenging setting.

INTRODUCTION

REVIEW

Review safe practices, personal safety equipment and gyn danger zones from EO M321.01 (Describe Safety Procedures for Operating Lifting Devices, Section 1).

OBJECTIVES

By the end of this lesson the cadet, as a member of a group, shall have rigged, operated and de-rigged a gyn.

IMPORTANCE

It is important for cadets to rig a gyn as it introduces them to sea activities of the Canadian Forces while stimulating an interest in seamanship specialty training. Although the gyn is no longer used regularly by the Canadian Navy, it is a great way to foster teamwork and practice seamanship skills.

Teaching Point 1

Explain the Function of a Gyn

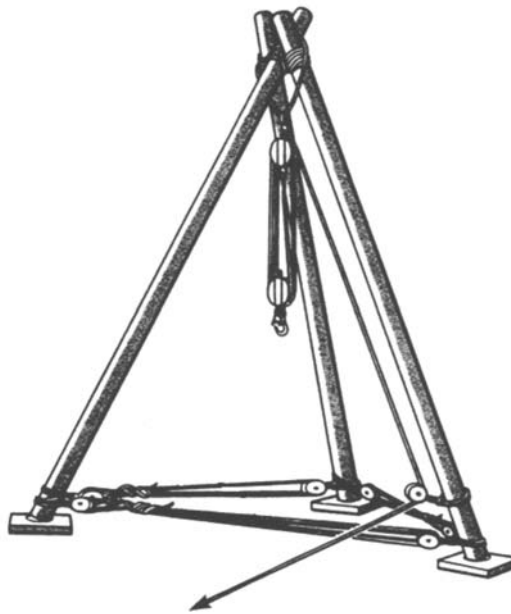
Time: 5 min

Method: Interactive Lecture

GYN

Due to improvements in technology, improvised lifting devices are not as widely used today as in the past. However, when no suitable crane or hydraulic device is available on board or ashore for lifting a heavy object or equipment, some form of an improvised lifting device must be rigged. This may include, sheers, a standing or swinging derrick, or a gyn.

A gyn is the strongest of these types of improvised lifting devices and requires no additional rigging to support it. It is used for straight lifts only.



Royal Navy, Admiralty Manual of Seamanship 1967 (Vol. 2), Her Majesty's Stationery Office (p. 198)

Figure 12-4-1 Assembled Gyn

CONFIRMATION OF TEACHING POINT 1

QUESTIONS

- Q1. What is the strongest type of improvised lifting device?
- Q2. When is a gyn used?
- Q3. For what type of lift is a gyn used?

ANTICIPATED ANSWERS

- A1. Gyn.
- A2. When no suitable crane or hydraulic device is available on board or ashore for lifting a heavy object or equipment.
- A3. Straight lifts.

Teaching Point 2

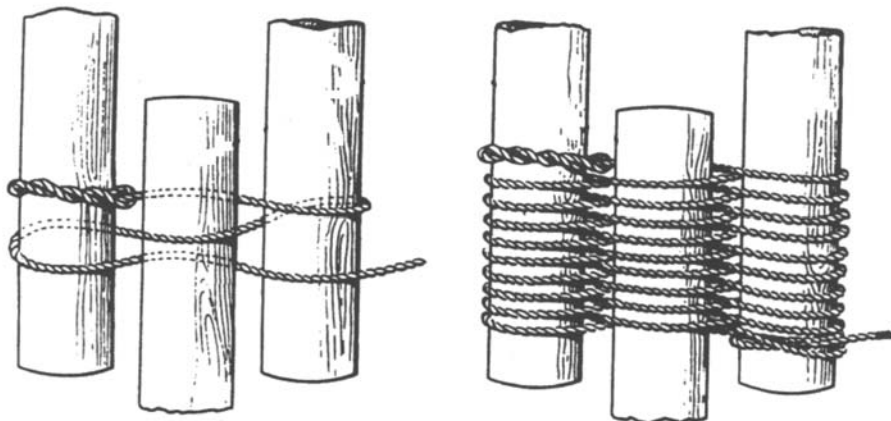
Time: 15 min

Identify the Parts of a Gyn

Method: Interactive Lecture

PARTS OF A GYN

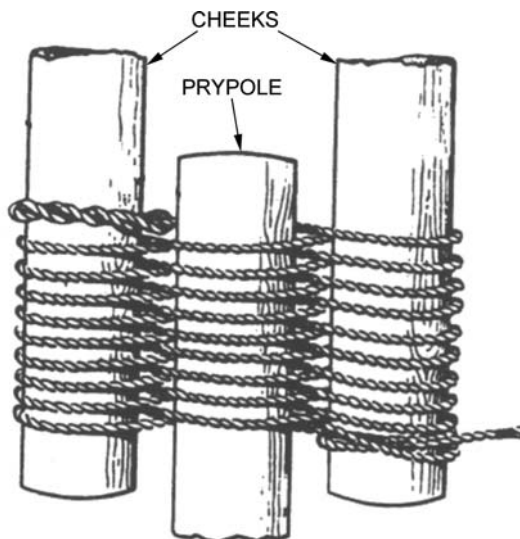
Head Lashing. The head lashing forms the head of the gyn. The spars are lashed together to form a tripod using six to eight figure-of-eight turns.



Royal Navy, Admiralty Manual of Seamanship 1967 (Vol. 2), Her Majesty's Stationery Office (p. 207)

Figure 12-4-2 Head Lashing

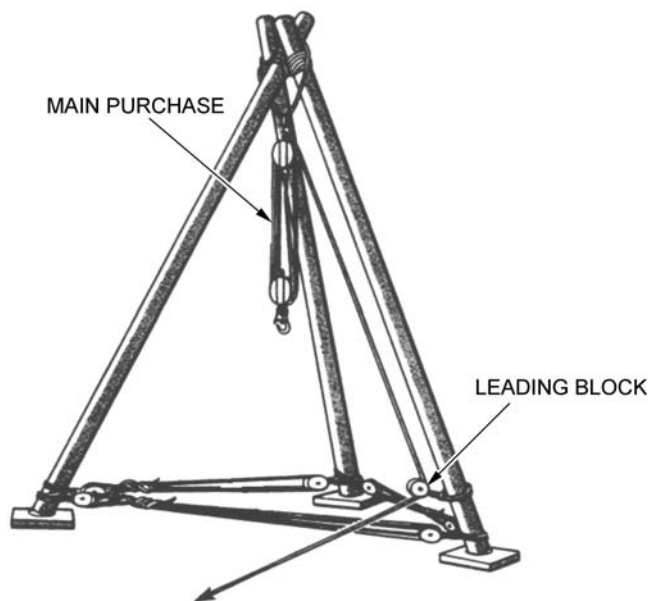
Spars. Spars are the basis of the tripod, acting as the legs of the gyn. There are three spars used in the rigging of the gyn. The heads of the spars are lashed together with a head lashing to connect them. When applying the head lashing, the spars are laid out parallel with the centre spar – the pry-pole – in the opposite direction from the other spars – the cheeks.



Royal Navy, Admiralty Manual of Seamanship 1967 (Vol. 2), Her Majesty's Stationery Office (p. 207)

Figure 12-4-3 Spars

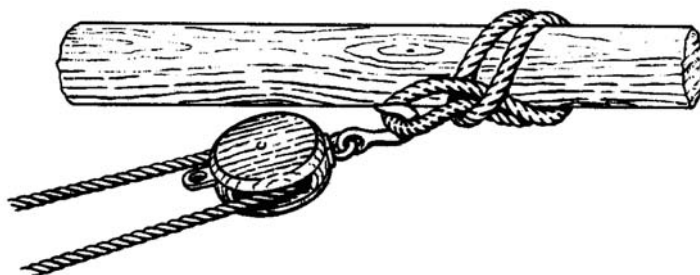
Main Purchase. The main purchase, consisting of a two-fold purchase, is attached to the head of the spars and is used to lift the load (as illustrated in Figure 12-4-4).



Royal Navy, Admiralty Manual of Seamanship 1967 (Vol. 2), Her Majesty's Stationery Office (p. 198)

Figure 12-4-4 Main Purchase and Shoes

Strops. Strops are a continuous loop in a line or wire rope. They are used to pass around a cask, spar, piece of line, etc to provide an eye to be placed over a hook or shackle (as illustrated in Figure 12-4-5).



Royal Navy, Admiralty Manual of Seamanship 1964 (Vol. 1), Her Majesty's Stationery Office (p. 193)

Figure 12-4-5 Strop on a Spar

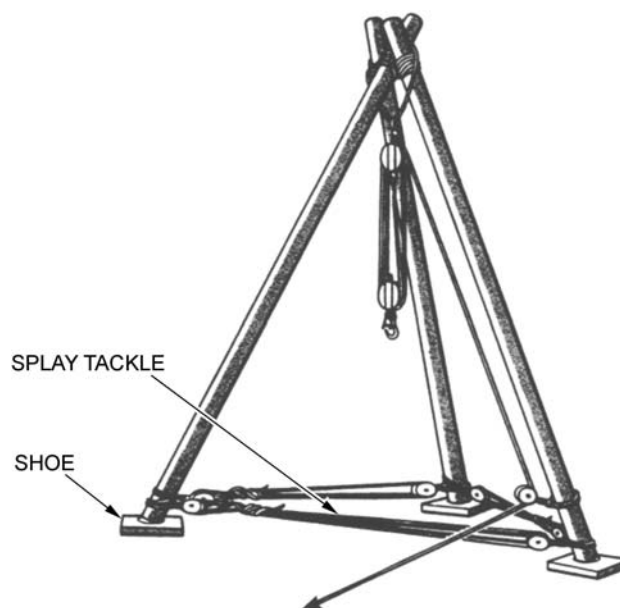
Leading Block (for the Fall of the Main Purchase). The leading block is secured to one of the spars and the hauling part, or fall of the main purchase is led through it (as illustrated in Figure 12-4-4). This block is used to change the direction of pull on the fall.



The fall of the main purchase refers to its hauling part which exits the standing block attached to the head of the gyn. The fall must be heaved in, in a downward motion, directly under the spars. The leading block allows the line to be safely heaved in from the side of the gyn.

Splay Tackles. The splay tackles, consisting of luffs, are rigged between each leg to prevent the legs from splaying – moving further apart – when they are under load.

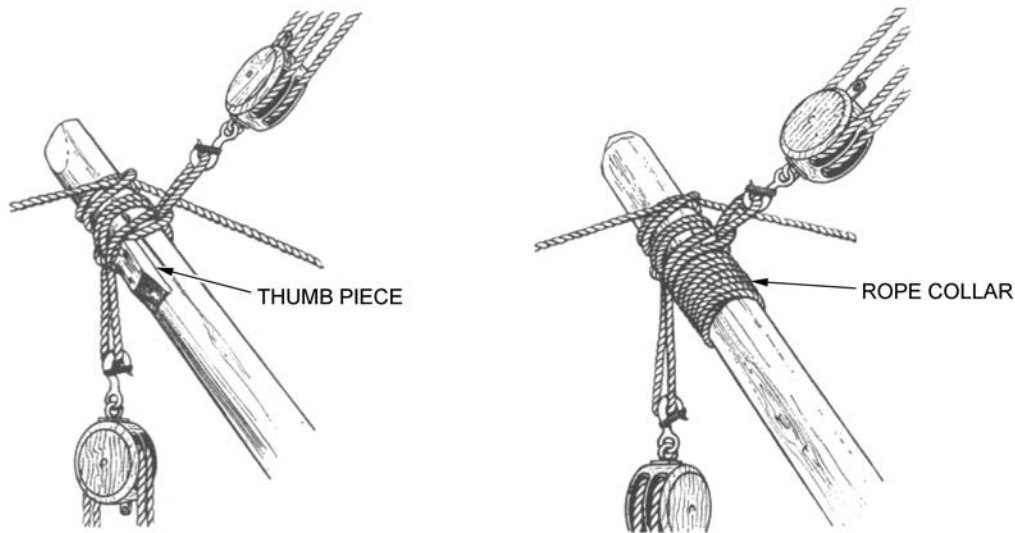
Shoes (if Fitted). Shoes are usually square slabs of hardwood with a recess in their upper surfaces to take the heels of the spars (as illustrated in Figure 12-4-6). The length of each side should not be less than four times the diameter of the spar. They are used to distribute the weight of the load and the thrust of the spar over an area of the deck. When ashore, they are used to distribute the weight so as to prevent the spar from sinking into the ground.



Royal Navy, Admiralty Manual of Seamanship 1967 (Vol. 2), Her Majesty's Stationery Office (p. 198)

Figure 12-4-6 Splay Tackles and Shoes

Thumb Pieces/Rope Collars (if Fitted). Thumb pieces/rope collars are used to prevent the strops from slipping on the spars. Thumb pieces are wooden pieces that are screwed or nailed onto the spar. Rope collars are put onto the spar like a whipping.



Royal Navy, Admiralty Manual of Seamanship 1967 (Vol. 2), Her Majesty's Stationery Office (p. 207)

Figure 12-4-7 Thumb piece and Rope Collar

CONFIRMATION OF TEACHING POINT 2

QUESTIONS

- Q1. What are splay tackles used for?
- Q2. What is the centre spar called?
- Q3. What are thumb pieces/rope collars used for?

ANTICIPATED ANSWERS

- A1. To prevent the legs from splaying – moving further apart – when they are under load.
- A2. Prypole.
- A3. To prevent the strops from slipping on the spars.

Teaching Point 3

Describe the Actions Taken in Response to Commands

Time: 15 min

Method: Interactive Lecture

Heave in. Give a strong pull together on a line.

Check Away. Ease out a line under control.

Avast. Stop.

Choke. Choke the standing block with the hauling part and secure it with two half hitches above the crown.

Secure. Make fast a line.

Handsomely. Slowly, carefully.

Roundly. Rapidly.



These are the most commonly used commands for working with the gyn. However, the list is not exhaustive. Other commands may be used based on unit preferences.

CONFIRMATION OF TEACHING POINT 3

QUESTIONS

- Q1. What does the order HEAVE IN mean?
- Q2. What order is given to make fast a line?
- Q3. What does the order AVAST mean?

ANTICIPATED ANSWERS

- A1. Give a strong pull together on a line.
- A2. SECURE.
- A3. Stop.

Teaching Point 4

**Demonstrate and Have the Cadets, as Members of a Group,
Rig a Gyn**

Time: 20 min

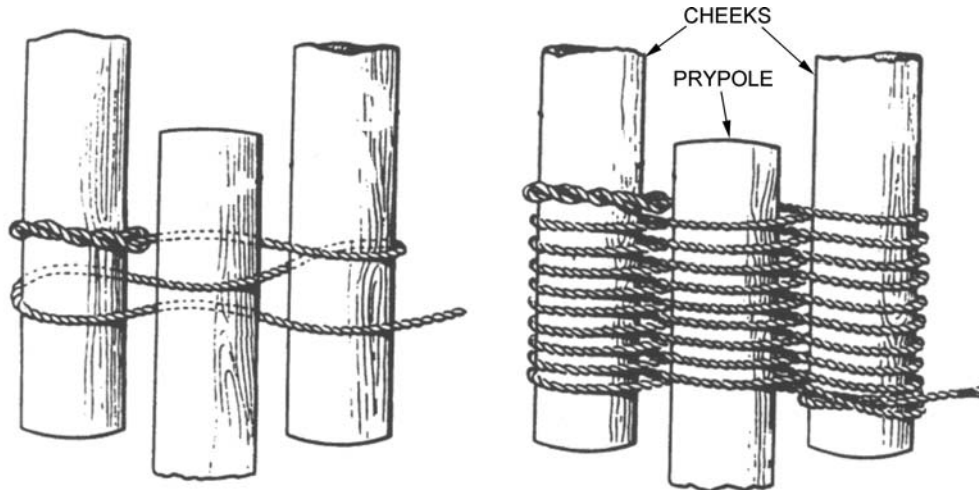
Method: Demonstration and Performance

RIGGING A GYN



Demonstrate and have the cadets practice each step in rigging the gyn.


1. Mark the position for the head lashing on the three spars to be used for legs. Lay the spars parallel to each other, five centimetres (two inches) apart, with the heel of the centre spar – the prypole – pointing in the opposite direction from the other two spars – the cheeks (as illustrated in Figure 12-4-8).



Royal Navy, Admiralty Manual of Seamanship 1967 (Vol. 2), Her Majesty's Stationery Office (p. 207)

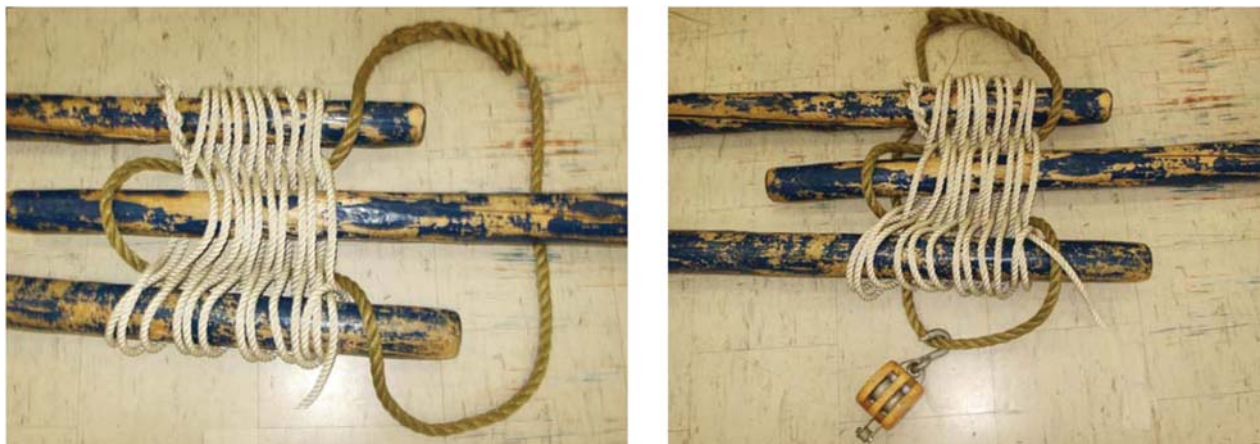
Figure 12-4-8 Head Lashing

2. Support the heads of the spars above the deck. Start the head lashing with a timber hitch on one of the cheeks followed by six to eight figure-of-eight turns around the spars and finish with a clove hitch around the opposite cheek (as illustrated in Figure 12-4-9). Apply the lashing loose enough to allow the gyn to be raised but no so loose that it will slip once the gyn is erect.



An alternative approach to applying the head lashing is to place the three spars parallel with the heel of the prypole even with the heads of the cheeks. This allows the figure-of-eight turns to be applied easily over the ends. Once all turns are in place, the prypole is then slid back through the turns until the heads are positioned together (as illustrated in Figure 12-4-8).

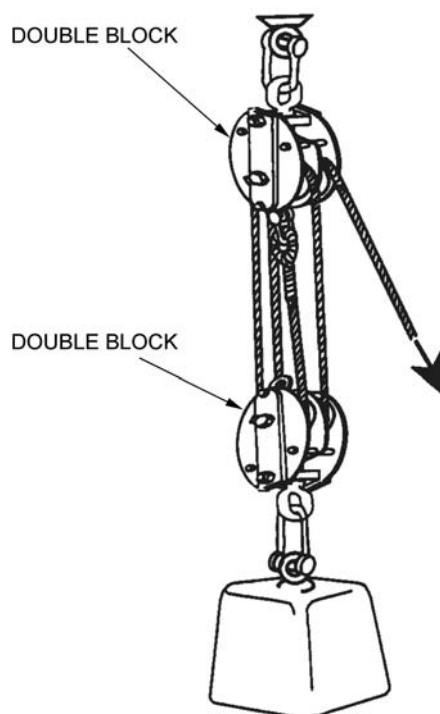
3. Place a rope collar around the prypole to prevent the head lashing from slipping down the spar when raising the gyn.
4. Place the main purchase strop around the head lashing (as illustrated in Figure 12-4-9). The strop goes under the head lashing and over the tip of the prypole. The bight on each side is slipped over the tips of the cheeks. Ensure that the splice is positioned so that it will not come in contact with the hook of the block once the gyn is raised.



Navy League of Canada, NLP 101 Flotilla and Provincial Seamanship Competition Manual, Navy League of Canada (p. 12)

Figure 12-4-9 Head Lashing Strop


5. Rig the main purchase using a two-fold purchase (as illustrated in Figure 12-4-10). Attach the standing block to the main purchase strop (as illustrated in Figure 12-4-9). Ensure that the main purchase is rigged to disadvantage with the hauling part exiting the standing block.

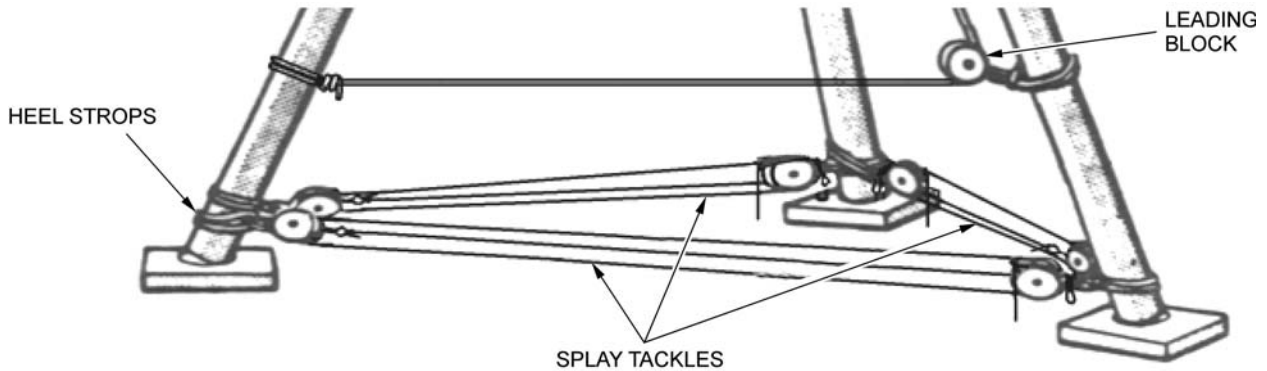


BON-050-002/PT-004 (p. 3-155)

Figure 12-4-10 Two-Fold Purchase

6. Place the splay tackle strops and the leading block strop at the feet of the spars (as illustrated in Figure 12-4-11).

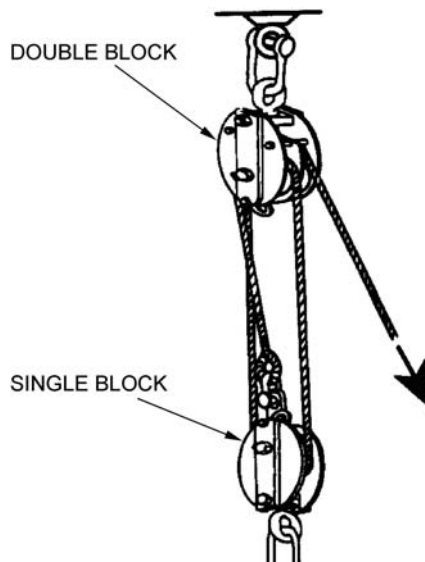
 The strop for the leading block may be attached above or between the splay tackle strops.



Royal Navy, Admiralty Manual of Seamanship 1964 (Vol. 1), Her Majesty's Stationery Office (p. 193)

Figure 12-4-11 Gyn Splay Tackles

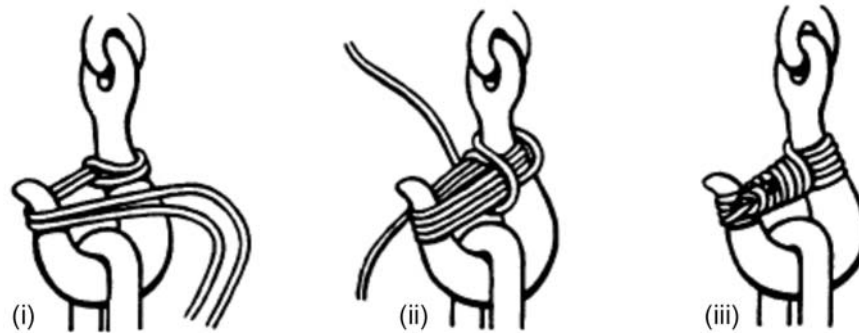
- Rig the splay tackles using luffs (as illustrated in Figure 12-4-12) and attach to the strops between the spars. Tie figure eight knots in the ends of the hauling parts.



BON-050-002/PT-004 (p. 3-155)

Figure 12-4-12 Luff

- Attach the leading block to the leading block strop and lead the fall of the main purchase through it. Tie a figure eight knot in the end of the fall.
- Place thumb pieces/rope collars on the heels of the spars above the strops to prevent the strops from slipping up the spars.
- Mouse all hooks (as illustrated in Figure 12-4-13).



B-GN-181-105/FP-E00 (p. 5-46)

Figure 12-4-13 Mousing a Hook



Mousing is not required for blocks equipped with a safety catch on the hook. If the safety catch has been removed or the spring is missing from the catch, the block must be replaced.

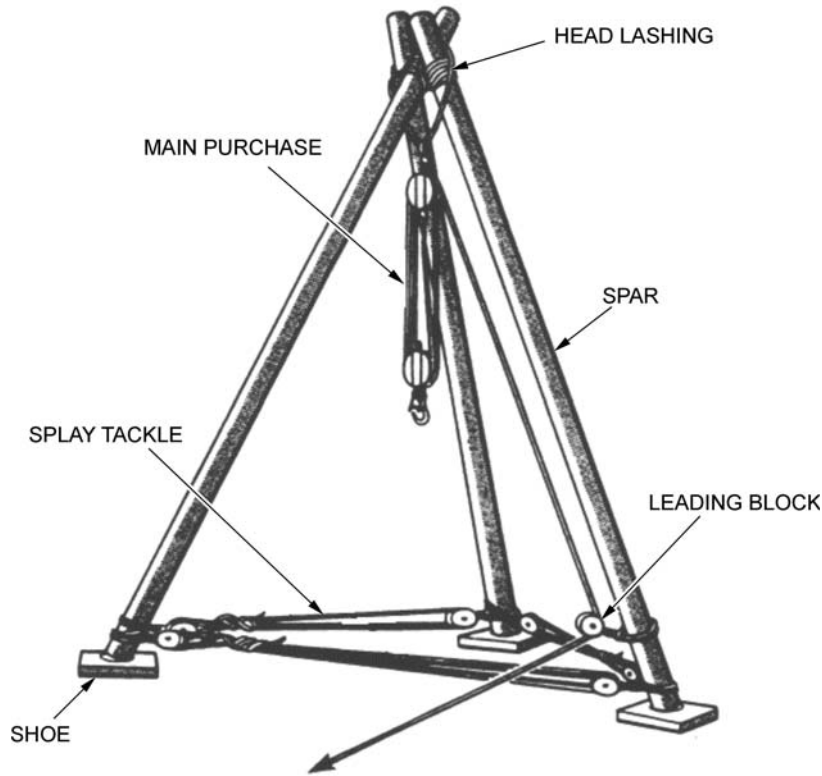
11. Raise the head of the gyn to chest height. Heave in the splay tackles to pull the heels together. Continue heaving in handsomely until the distance between the heels of the gyn are approximately one-third the length of the spars used for the gyn. Choke and secure the splay tackles. Coil any excess line on the deck beside the spars.



Extreme care should be exercised here as the gyn may topple over if the splay tackles are not heaved in evenly. It is advisable to heave in splay tackles individually once the gyn nears its full height.

If the splay tackles do not heave in easily, ensure that the head lashing has not been applied too tightly.

12. The gyn is now complete and ready for operation (as illustrated in Figure 12-4-14).



Royal Navy, Admiralty Manual of Seamanship 1967 (Vol. 2), Her Majesty's Stationery Office (p. 198)

Figure 12-4-14 Assembled Gyn

CONFIRMATION OF TEACHING POINT 4

The cadets' participation in rigging the gyn will serve as the confirmation of this TP.

Teaching Point 5 **Demonstrate and Have the Cadets, as Members of a Group, Operate a Gyn**

Time: 75 min

Method: Practical Activity



Demonstrate how to operate the gyn prior to starting the activity.

ACTIVITY

OBJECTIVE

The objective of this activity is to have the cadets, as members of a group, operate a gyn.

RESOURCES



The list of required equipment for a gyn is located in A-CR-CCP-603/PG-001, Chapter 2, Annex C, Appendix 1.

When choosing the equipment for rigging the gyn, ensure that each item is compatible with the others (eg, the blocks are suitable for the size of the line).

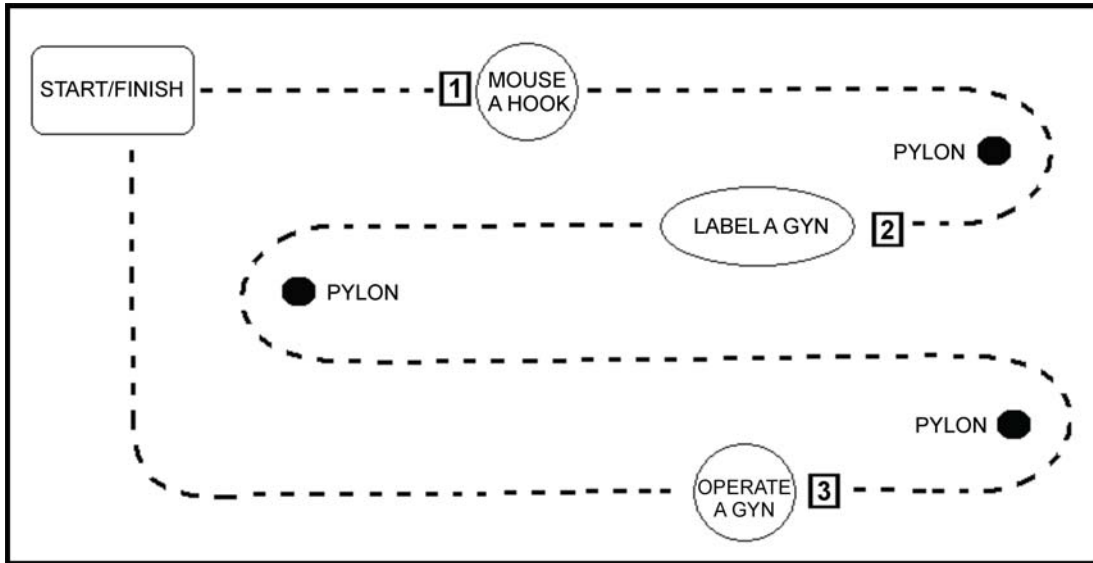
- Assembled gyn,
- Load of 22 kg (50 lbs) or less,
- Whipping twine,
- Pylons,
- Hooks,
- Hard hats,
- Parts cards located at Annex I,
- Picture/model of a gyn (blank picture located at Annex J, if required),
- Sequence for station 3 located at Annex K,
- Gyn scoresheet located at Annex L,
- Whistle, and
- Stopwatch.

ACTIVITY LAYOUT

- Mark off a start area.
- Set up Station 1 with whipping twine and hooks.
- Set up Station 2 with parts cards, tape and a picture/model of a gyn.
- Set up Station 3 with a gyn, whipping twine and a load.



The gyn in Station 3 shall be fully rigged (as illustrated in Figure 12-4-14).




Director Cadets 3, 2007, Ottawa, ON: Department of National Defence

Figure 12-4-15 Gyn Run

ACTIVITY INSTRUCTIONS

1. Divide the cadets into groups of three.
2. Have the first group line up in the start area.
3. On the whistle signal, the group is to put on their personal safety equipment and proceed to Station 1.



Ensure the time is started on the stopwatch at the whistle signal.

4. At Station 1, have each cadet in the group mouse a hook. Check the mousings for strength. If any of the mousings come off easily, that cadet will do another mousing. Upon successfully completing the mousings, have the group proceed to Station 2.
5. At Station 2, have the group label the picture/model of the gyn and then proceed to Station 3.
6. At Station 3, stop and record the time. Have the group operate the gyn by responding to commands from Annex K as given by the instructor. Award points IAW the scoresheet found at Annex L.
7. Upon completion of Station 3, have the group continue to the finish line and tally the score.
8. Have each group complete the gyn run in the above sequence.
9. Declare the group with the most points the winner.

SAFETY

- Ensure the personal safety equipment is worn at all times.
- Ensure the cadets stay clear of the load while it is in motion.

- Ensure all hooks are moused or fitted with working safety catches.

CONFIRMATION OF TEACHING POINT 5

The cadets' participation in the activity will serve as the confirmation of this TP.

Teaching Point 6

Demonstrate and Have the Cadets, as Members of a Group, De-Rig a Gyn

Time: 10 min

Method: Demonstration and Performance

DE-RIG A GYN



Demonstrate and have the cadets practice each step in de-rigging the gyn.

1. Release the choke on the splay tackles, being careful not to place hands between the standing parts of the luff.
2. Check away on the splay tackles handsomely as the heels are pulled out to lower the gyn. To ensure that the gyn is lowered safely, have one cadet check away on the splay tackle and another cadet pull out each spar by hand.
3. Once the head of the gyn is at chest height, it may be lowered by hand until it is resting on the deck.



The gyn is safe to de-rig once the head is resting on the ground.

4. Cut any mousings that have been applied and unhook the blocks from the strops.
5. Un-reeve the splay tackles and main purchase.
6. Remove the strops from the spars.
7. Remove the head lashing from the spars.
8. Coil all lines and secure the equipment as required.

CONFIRMATION OF TEACHING POINT 6

The cadets' participation in de-rigging a gyn will serve as the confirmation of this TP.

END OF LESSON CONFIRMATION

The cadets' rigging, operating and de-rigging a gyn will serve as the confirmation of this lesson.

CONCLUSION

HOMEWORK/READING/PRACTICE

N/A.

METHOD OF EVALUATION

N/A.

CLOSING STATEMENT

The operation of a gyn is an exercise that requires teamwork. It is a device that has many practical uses within the Canadian Navy, although it is not used as frequently today as in years past due to improvements in technology. The gyn acts as an introduction to sea activities of the Canadian Forces while stimulating an interest in seamanship specialty training.

INSTRUCTOR NOTES/REMARKS

This EO shall be conducted after EO M321.01 (Describe Safety Procedures for Operating Lifting Devices, Section 1).

The cadets must wear issued cadet boots and hard hats while operating the gyn.

REFERENCES

- A1-004 B-GN-181-105/FP-E00 Chief of the Maritime Staff. (2000). *CFCD 105 Fleet Seamanship Rigging and Procedures Manual*. Ottawa, ON: Department of National Defence.
- C1-003 (ISBN 11-770973-5) Royal Navy. (1972). *Admiralty Manual of Seamanship* (Vol. 1). London, England: Her Majesty's Stationery Office.
- C1-047 (ISBN 0-11-772695-8/BON-050-002/PT-004) Command of the Defence Council. (1995). *BR 67 Admiralty Manual of Seamanship*. London, England: Her Majesty's Stationery Office Publications Centre.
- C1-049 (ISBN 0-11-771958-7) Royal Navy. (1967). *Admiralty Manual of Seamanship 1964* (Vol. 2). Cambridge, England: Her Majesty's Stationery Office.



ROYAL CANADIAN SEA CADETS

PHASE THREE

INSTRUCTIONAL GUIDE



SECTION 5

EO C321.04 – MAKE A MONKEY’S FIST

Total Time:

60 min

PREPARATION

PRE-LESSON INSTRUCTIONS

Resources needed for the delivery of this lesson are listed in the lesson specification located in A-CR-CCP-603/PG-001, Chapter 4. Specific uses for said resources are identified throughout the instructional guide within the TP for which they are required.

Review the lesson content and become familiar with the material prior to delivering the lesson.

Complete a monkey’s fist to be used as a model for the lesson.

Photocopy the monkey’s fist pattern located at Annex N for each cadet if the alternative method will be taught.

PRE-LESSON ASSIGNMENT

N/A.

APPROACH

An interactive lecture was chosen for TP 1 to explain the use of the monkey’s fist.

Demonstration and performance was chosen for TP 2 as it allows the instructor to demonstrate making a monkey’s fist while providing an opportunity for the cadets to practice this skill under supervision.

INTRODUCTION

REVIEW

N/A.

OBJECTIVES

By the end of this lesson the cadet shall have made a monkey’s fist.

IMPORTANCE

It is important for cadets to know how to make a monkey’s fist as it introduces advanced ropework skills in a fun and challenging way, while providing a practical skill that can be used in today’s maritime community.

Teaching Point 1**Explain the Use of a Monkey's Fist**

Time: 5 min

Method: Interactive Lecture

USE OF A MONKEY'S FIST

To get heavy lines from the ship to the shore or ship to ship, a light line known as a heaving line, is used to pull the heavier line across. To give weight to the end of the heaving line, a monkey's fist is often used.

When this knot is made, a small, round cork or wooden ball can be placed inside the knot prior to completion. Care should be taken that the finished knot is not so heavy as to be dangerous to the people ashore.

Sea cadets today will see this knot used on heaving lines as well as for many decorative uses such as finishing the ends of guide ropes and key fobs.



The monkey's fist has a special significance to a sailor because it is often the first thing that connects them with the land at the end of a voyage.

CONFIRMATION OF TEACHING POINT 1**QUESTIONS**

- Q1. Why is the monkey's fist used?
- Q2. What can be placed inside the monkey's fist?
- Q3. Where can the monkey's fist be used decoratively?

ANTICIPATED ANSWERS

- A1. To give weight to the end of a heaving line.
- A2. A small round cork or wooden ball.
- A3. At the end of a guide rope or key fob.

Teaching Point 2**Demonstrate and Have the Cadets Make a Monkey's Fist**

Time: 45 min

Method: Demonstration and Performance

STEPS FOR MAKING A MONKEY'S FIST

Demonstrate and have the cadets practice each step in making the monkey's fist.

To introduce cadets to the use of a knot-weaving board, an alternative method for making a monkey's fist is located at Annex M. This method introduces the cadets to knot-weaving used for more ornamental ropework.

1. Wind three turns around the hand (as illustrated in Figure 12-5-1).



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Figure 12-5-1 Monkey's Fist Step 1

2. Pinch the turns together and pass a second set of three turns across and around the first three (as illustrated in Figure 12-5-2).



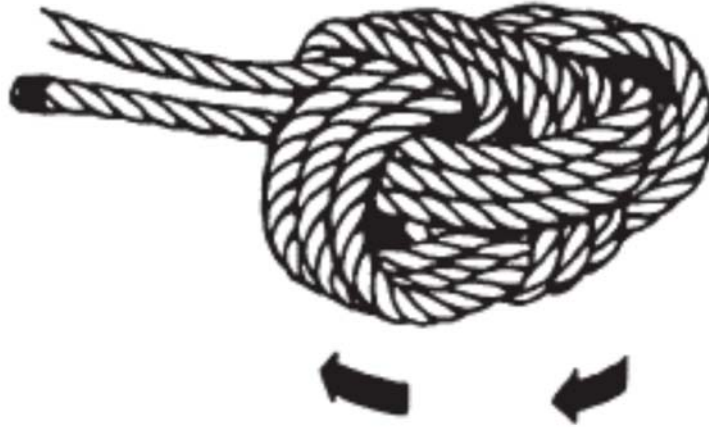
B-GN-181-105/FP-E00 (p. 5-35)

Figure 12-5-2 Monkey's Fist Step 2

3. Pass a third set of three turns around and across the second set but inside the first set, in the direction shown by the arrows (as illustrated in Figure 12-5-3).



If the knot is correctly made, the end will come out alongside the standing part.



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Figure 12-5-3 Monkey's Fist Step 3



If required, insert a small, round cork or wooden ball into the centre of the knot before pulling the parts taut.

- Carefully pull each part taut in the opposite direction from which it was tied until it becomes snug. The knot should be rolled around in a circular motion with the palms of the hands to even out the shape.
- Use a fid or something pointed to pick and pull each cord to an even firmness.



When the last parts of the cord are tensioned, there is a tendency for the loose loop of cord to twist as it passes through the tightened sections. To prevent this twisting, maintain tension on the loop in one hand as the cord is drawn through, until it can no longer be easily grasped. The short loop should tuck in with little or no twist in it.

- To finish the knot, seize the bitter end to the standing part where it comes out of the monkey's fist.



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Figure 12-5-4 Completed Monkey's Fist



Tucking the bitter end inside the monkey's fist, then working all parts taut is another method of finishing off the knot.

CONFIRMATION OF TEACHING POINT 2

The cadets' completion of a monkey's fist will serve as the confirmation of this TP.

END OF LESSON CONFIRMATION

The cadets' completion of a monkey's fist will serve as the confirmation of this lesson.

CONCLUSION

HOMework/READING/PRACTICE

N/A.

METHOD OF EVALUATION

N/A.

CLOSING STATEMENT

Making a monkey's fist provides a way of introducing advanced ropework skills in a fun and challenging way. A monkey's fist is used commonly for heaving lines in today's maritime community.

INSTRUCTOR NOTES/REMARKS

N/A.

REFERENCES

- A1-004 B-GN-181-105/FP-E00 Chief of the Maritime Staff. (2000). *CFCD 105 Seamanship Rigging and Procedures Manual*. Ottawa, ON: Department of National Defence.
- C1-102 Fukuhara, D. (2002). *Fancy Knotting: An Introduction*. Vancouver, BC: David Fukuhara.

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ROYAL CANADIAN SEA CADETS

PHASE THREE

INSTRUCTIONAL GUIDE



SECTION 6

EO C321.05 – MAKE A TURK’S HEAD

Total Time:

60 min

PREPARATION

PRE-LESSON INSTRUCTIONS

Resources needed for the delivery of this lesson are listed in the lesson specification located in A-CR-CCP-603/PG-001, Chapter 4. Specific uses for said resources are identified throughout the instructional guide within the TP for which they are required.

Review the lesson content and become familiar with the material prior to delivering the lesson.

Make a turk’s head to be used as a model for the lesson.

Photocopy the turk’s head pattern located at Annex P for each cadet if the alternative method will be taught.

PRE-LESSON ASSIGNMENT

N/A.

APPROACH

An interactive lecture was chosen for TP 1 to explain the use of the turk’s head.

Demonstration and performance was chosen for TP 2 as it allows the instructor to demonstrate making a turk’s head while providing an opportunity for the cadets to practice this skill under supervision.

INTRODUCTION

REVIEW

N/A.

OBJECTIVES

By the end of this lesson the cadet shall have made a turk’s head.

IMPORTANCE

It is important for cadets to know how to make a turk’s head as it introduces advanced ropework skills in a fun and challenging way, while providing a practical skill that can be used in rigging lifting devices and in ornamental ropework.

Teaching Point 1**Explain the Use of a Turk's Head**

Time: 5 min

Method: Interactive Lecture

USE OF A TURK'S HEAD

The turk's head is an ornamental knot that is supposed to resemble the turban once worn in Turkey. It may be made either as a standing or a running knot. A standing turk's head is made in the end of a line (as illustrated in Figure 12-6-1) and is used as an ornamental stopper knot. A running turk's head is made around a bight of rope, a stanchion or other fitting (as illustrated in Figure 12-6-2) using a single length of cord.

*B-GN-181-105/FP-E00 (p. 5-40)*

Figure 12-6-1 Standing Turk's Head

*B-GN-181-105/FP-E00 (p. 5-42)*

Figure 12-6-2 Running Turk's Head

In addition to its ornamental ropework uses, the running turk's head can be used on lifting devices as an alternative to a rope collar. When made taut around a pipe or hose, the turk's head will rival the holding strength of a metal clamp.

CONFIRMATION OF TEACHING POINT 1

QUESTIONS

- Q1. How did the turk's head get its name?
- Q2. In what forms can a turk's head be made?
- Q3. What can a running turk's head be used for?

ANTICIPATED ANSWERS

- A1. It is supposed to resemble the turban once worn in Turkey.
- A2. Standing and running.
- A3. Ornamental ropework, alternative to a rope collar, pipe or hose clamp.

Teaching Point 2**Demonstrate and Have the Cadets Make a Turk's Head**

Time: 45 min

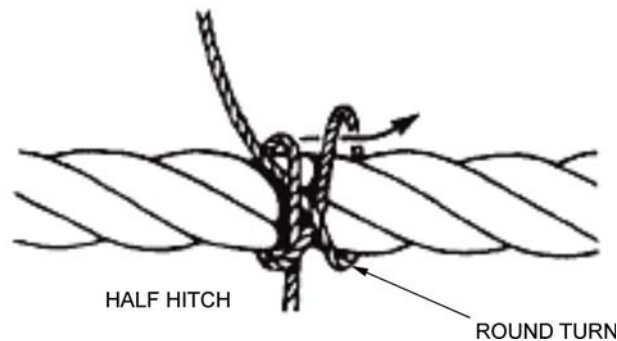
Method: Demonstration and Performance

STEPS FOR MAKING A TURK'S HEAD

Demonstrate and have the cadets practice the steps for making a turk's head.

To introduce cadets to the use of a knot-weaving cylinder, an alternative method for making a turk's head is located at Annex O. This method introduces the cadets to knot-weaving used for more ornamental ropework.

1. Make a half hitch around a rope or fitting followed by a round turn (as illustrated in Figure 12-6-3).
2. Dip the end under the bight of the half hitch (as illustrated in Figure 12-6-3).



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Figure 12-6-3 Steps 1–3

3. Cross the bight – that is on the same side as the lead end – underneath the other bight (as illustrated in Figure 12-6-3).
4. Pass the end down between the bights to the other side (as illustrated in Figure 12-6-4).



B-GN-181-105/FP-E00 (p. 5-42)

Figure 12-6-4 Step 4

5. Steps 3. and 4. are repeated until the rope is encircled (as illustrated in Figure 12-6-5).



B-GN-181-105/FP-E00 (p. 5-42)

Figure 12-6-5 Step 5

6. Follow the ends around as many times as required (as illustrated in Figure 12-6-6). Finish the knot by hauling all parts taut and trimming the ends off flush with the knot.



B-GN-181-105/FP-E00 (p. 5-42)

Figure 12-6-6 Step 6

CONFIRMATION OF TEACHING POINT 2

The cadets' making a turk's head will serve as the confirmation of this TP.

END OF LESSON CONFIRMATION

The cadets' making a turk's head will serve as the confirmation of this lesson.

CONCLUSION

HOMEWORK/READING/PRACTICE

N/A.

METHOD OF EVALUATION

N/A.

CLOSING STATEMENT

Making a turk's head introduces advanced ropework skills in a fun and challenging way. A turk's head is commonly used as a substitute for a rope collar and can also be used to decorate circular objects.

INSTRUCTOR NOTES/REMARKS

N/A.

REFERENCES

- A1-004 B-GN-181-105/FP-E00 Chief of the Maritime Staff. (2000). *CFCD 105 Seamanship Rigging and Procedures Manual*. Ottawa, ON: Department of National Defence.
- C1-102 Fukuhara, D. (2002). *Fancy Knotting: An Introduction*. Vancouver, BC: David Fukuhara.

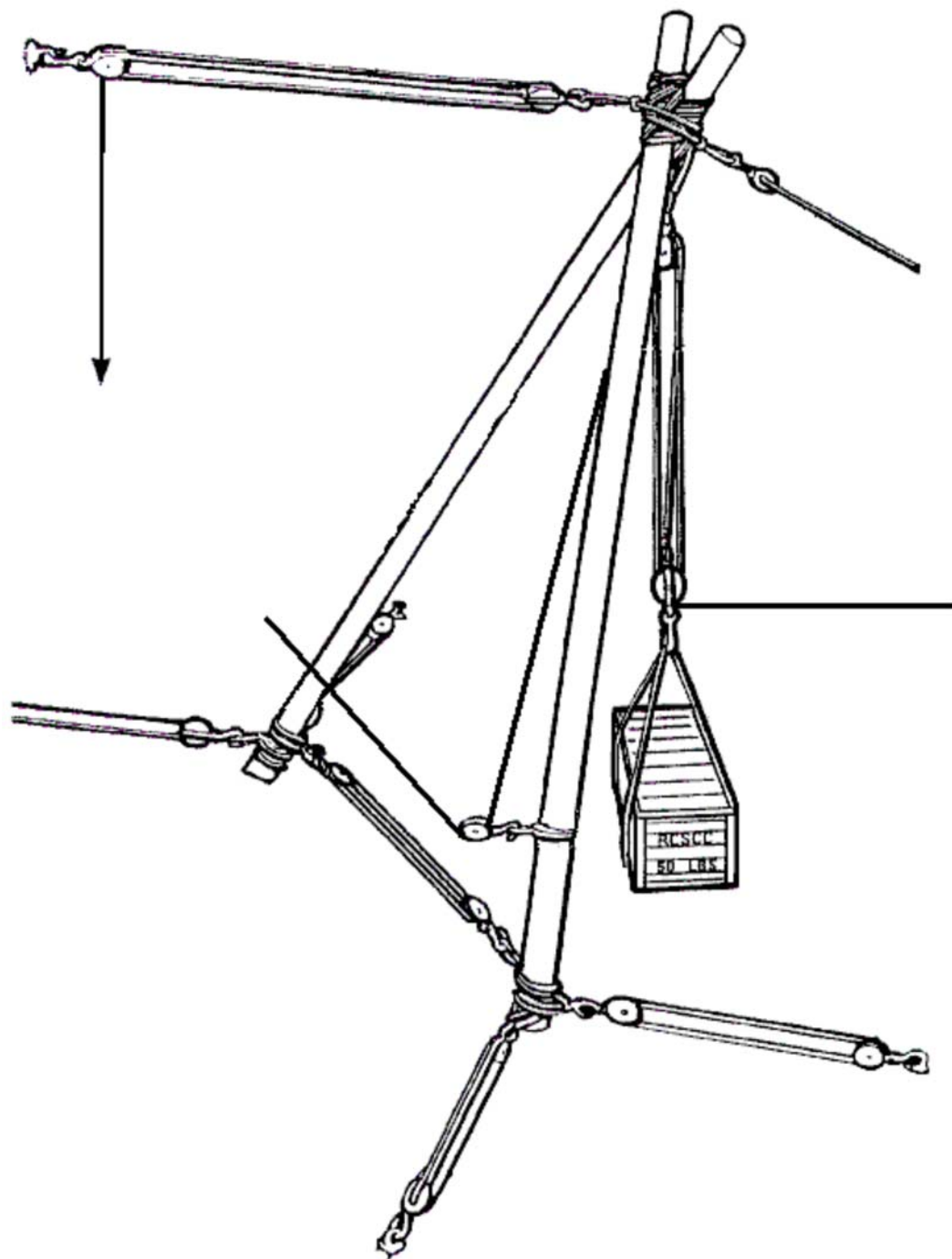
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PARTS CARDS – SHEERS

SPLAY TACKLE	SHOE
STROP	HEAD LASHING
MAIN PURCHASE	LEADING BLOCK
SPAR	HEEL TACKLE
TOPPING LIFT	TAG LINE

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ASSEMBLED SHEERS



Royal Navy, Admiralty Manual of Seamanship 1967 (Vol. 2), Her Majesty's Stationery Office (p. 197)

Figure 12B-1 Assembled Sheers

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SEQUENCE FOR STATION 3 – OPERATING THE SHEERS



The sheers will be fully rigged and lowered to an angle of 30 degrees from the ground with the tag line attached to the main purchase and extended out of the forward danger zone.

The following sequence will be followed by each group for Station 3:

1. hook on the load (hook must be moused) – five points; and
2. respond to the following commands – five points each:
 - a. heave in main purchase;
 - b. avast;
 - c. secure main purchase;
 - d. heave in topping lift;
 - e. avast;
 - f. choke the topping lift;
 - g. check away main purchase;
 - h. avast; and
 - i. secure main purchase.

SAFETY INFRACTIONS

1. Not wearing a hard hat.
2. Not wearing issued cadet boots.
3. Running.
4. Horseplay.
5. Walking with an open knife.
6. Stepping over tackles under tension.
7. Putting hand through tackles when choking.
8. Putting hands/fingers on a block when the tackle is under tension.

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SHEERS SCORESHEET

Group	Overall Time/Points Conversion	Points for Operating the Sheers (35 point maximum)	Penalties (-)	Total Score
Example	4 min, 20 sec = 420 1 000 - 420 = 580	35	5	610

- Notes:**
1. The overall time will be converted into points and subtracted from 1000. For example, a time of 4 minutes and 20 seconds will be converted to 1000 minus 420 points, to give a score of 580.
 2. When operating the sheers, five points will be given for every command followed properly.
 3. Penalties will be issued as follows:
 - a. 5 points for every part incorrectly labelled at Station 2,
 - b. 25 points if mousing comes off too easily, and
 - c. 50 points for every safety infraction (IAW Annex C) while operating the sheers.
 4. The total score will be the points for the overall time plus the points for operating the sheers, minus any penalties.

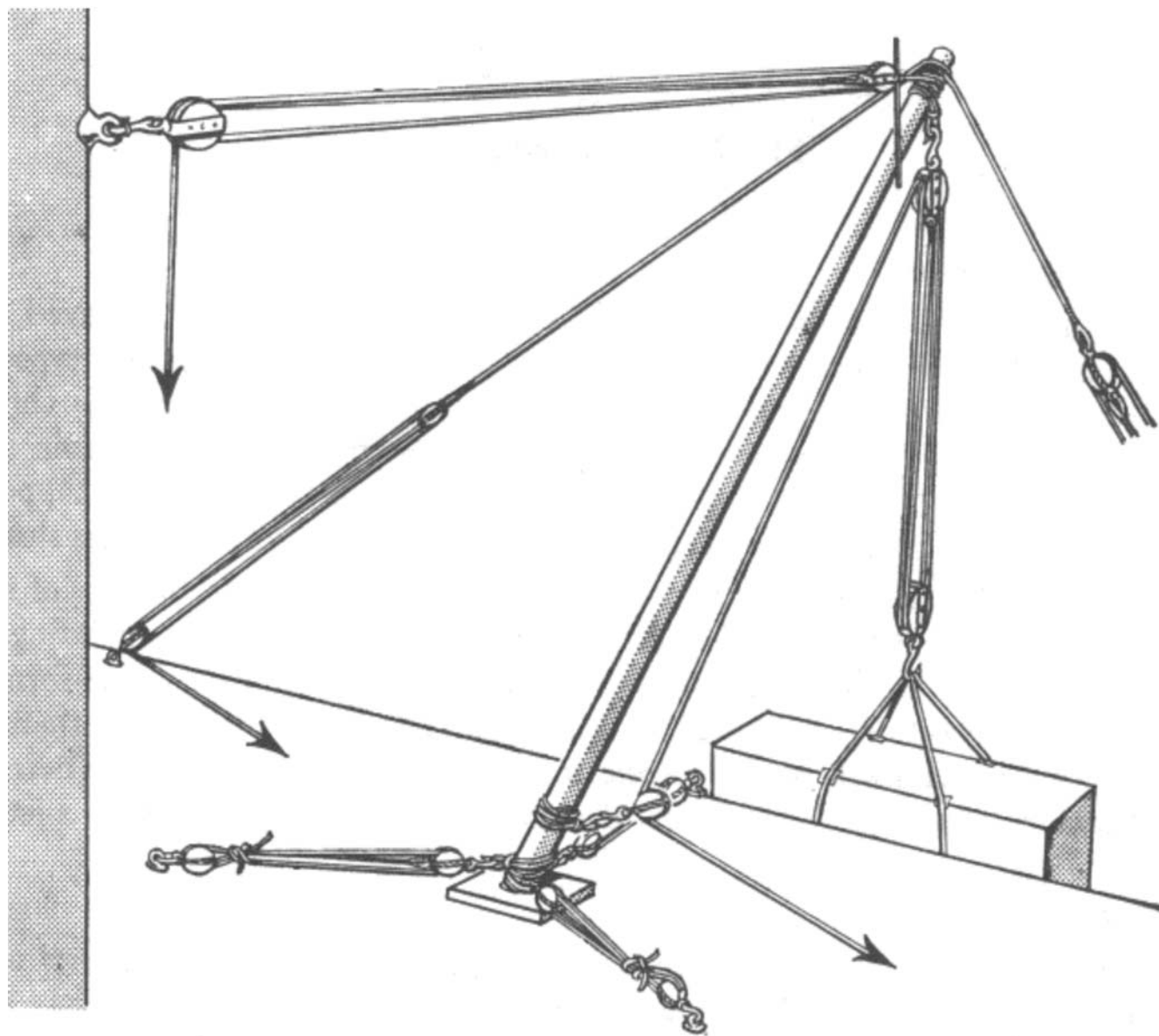
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PARTS CARDS – STANDING DERRICK

TOPPING LIFT	SHOE
STROP	SIDE GUY
MAIN PURCHASE	LEADING BLOCK
SPAR	THUMB PIECE/ROPE COLLAR
MARTINGALE/FORE GUY	HEEL TACKLE

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STANDING DERRICK



Royal Navy, Admiralty Manual of Seamanship, Her Majesty's Stationery Office (p. 195)

Figure 12F-1 Standing Derrick

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SEQUENCE FOR STATION 3 – OPERATING A STANDING DERRICK



The standing derrick will be positioned with the topping lift checked away and the head of the derrick on the ground. The main purchase is slackened to allow the running block to be hooked onto the load before the derrick is raised.

The following sequence will be followed by each group for Station 3:

1. hook on the load (hook must be moused – five points;
2. respond to the following commands – five points each:
 - a. heave in topping lift;
 - b. avast;
 - c. heave in main purchase;
 - d. avast;
 - e. heave in topping lift, check away guys;
 - f. avast;
 - g. heave in port guy, check away starboard guy;
 - h. avast;
 - i. heave in starboard guy, check away port guy;
 - j. avast;
 - k. check away main purchase;
 - l. avast; and
3. unhook the load – five points.

SAFETY INFRACTIONS

1. Not wearing a hard hat.
2. Not wearing issued cadet boots.
3. Running.
4. Horseplay.
5. Walking with an open knife.
6. Stepping over tackles under tension.
7. Putting a hand through tackles when choking.
8. Putting hands/fingers on a block when the tackle is under tension.

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STANDING DERRICK SCORESHEET

Group	Overall Time/Points Conversion From Station 1 & 2 (Subtracted From 1000)	Points for Operating the Standing Derrick From Station 3 (35 point maximum)	Penalties (-)	Total Score
Example	4 min, 20 sec = 420 1000 - 420 = 580	35	5	610

- Notes:**
1. The overall time will be converted into points and subtracted from 1000. For example, a time of 4 minutes and 20 seconds will be converted to 1000 minus 420 points, to give a score of 580.
 2. While operating the standing derrick, five points will be given for every command followed properly.
 3. Penalties will be issued as follows:
 - a. 5 points for every incorrectly labelled part at Station 1,
 - b. 25 points if mousing comes off too easily, and
 - c. 50 points for every safety infraction (IAW Annex G) while operating the standing derrick.
 4. The total score will be the points for the overall time plus the points for operating the sheers, minus any penalties.

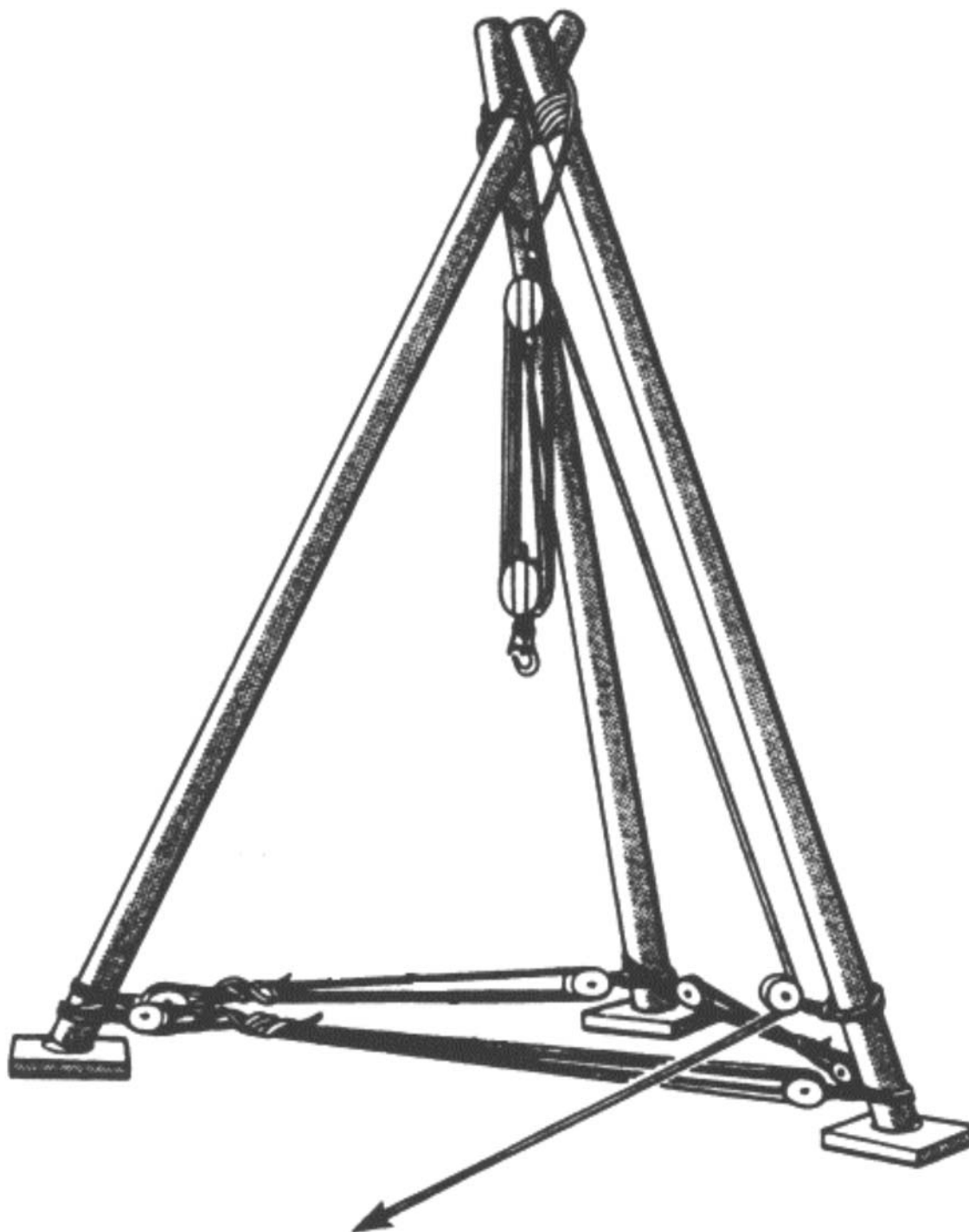
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PARTS CARDS – GYN

SPLAY TACKLE	SHOE
STROP	HEAD LASHING
MAIN PURCHASE	LEADING BLOCK
SPAR	THUMB PIECE/ ROPE COLLAR

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ASSEMBLED GYN



Royal Navy, Admiralty Manual of Seamanship 1967 (Vol. 2), Her Majesty's Stationery Office (p. 198)

Figure 12J-1 Assembled Gyn

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SEQUENCE FOR STATION 3 – OPERATING A GYN



The gyn will be fully rigged with the main purchase checked away to allow the running block to be hooked onto the load.

The following sequence will be followed by each group for Station 3:

1. hook on the load (hook must be moused) – five points;
2. respond to the following commands – five points each:
 - a. heave in main purchase;
 - b. avast;
 - c. secure main purchase;
 - d. check away main purchase;
 - e. avast; and
3. unhook the load – five points.

SAFETY INFRACTIONS

1. Not wearing a hard hat.
2. Not wearing issued cadet boots.
3. Running.
4. Horseplay.
5. Walking with an open knife.
6. Stepping over tackles under tension.
7. Putting hand through tackles when choking.
8. Putting hands/fingers on a block when the tackle is under tension.

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GYN SCORESHEET

Group	Overall Time/Points Conversion	Points for Operating the Gyn (35 point maximum)	Penalties (-)	Total Score
Example	4 min, 20 sec = 420 1000 - 420 = 580	35	5	610

- Notes:**
1. The overall time will be converted into points and subtracted from 1000. For example a time of 4 minutes and 20 seconds will be converted to 1000 minus 420 points, to give a score of 580.
 2. When operating the gyn, five points will be given for every command followed properly.
 3. Penalties will be issued as follows:
 - a. 5 points for every part incorrectly labelled at Station 1,
 - b. 25 points if mousing comes off too easily, and
 - c. 50 points for every safety infraction (IAW Annex K) while operating the gyn.
 4. The total score will be the points for the overall time plus the points for operating the gyn, minus any penalties.

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ALTERNATIVE METHOD FOR MAKING A MONKEY'S FIST

EQUIPMENT LIST

- 4 mm (3/16 inch) diameter line (cord),
- Corkboard or cardboard square,
- Straight pins,
- 25 mm (1 inch) diameter wooden or cork ball,
- Tape,
- Cutting tool, and
- Monkey's fist pattern.

KNOT WEAVING

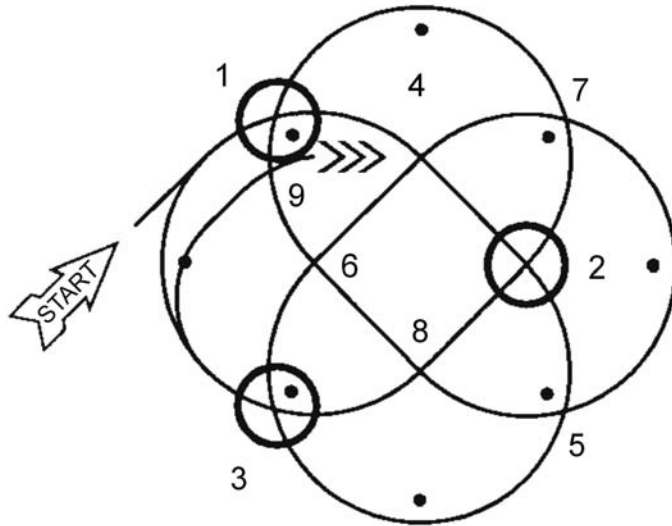
Introduction

As knots become more complicated, it becomes difficult to keep track of where cords are to be woven. One method of weaving intricate knots is the use of a knot-weaving board. The board consists of wood, cork or cardboard that allows a knot pattern to be affixed by pins or nails. The cord is woven around the pins following a given pattern which indicates the direction and where cords will cross under or over each other. The pins maintain the desired shape of the knot until it is complete.

Knot Patterns

To make knot weaving easier, a series of arrows, dots, circles, lines and numbers are used on the knot patterns. They are as follows:

- An outlined arrow with the word "START" indicates the starting position and the initial direction for laying the cord.
- The numbers are placed at alternate crossings on the diagram and are to be followed consecutively during the weaving process.
- A circle at a crossing indicates an underpass of a cord already there.
- A crossing with no circle indicates an overpass of a cord already there.
- A feathered arrow indicates the end of the pattern.
- Small dots on the pattern indicate the turning points and the placement of pins.

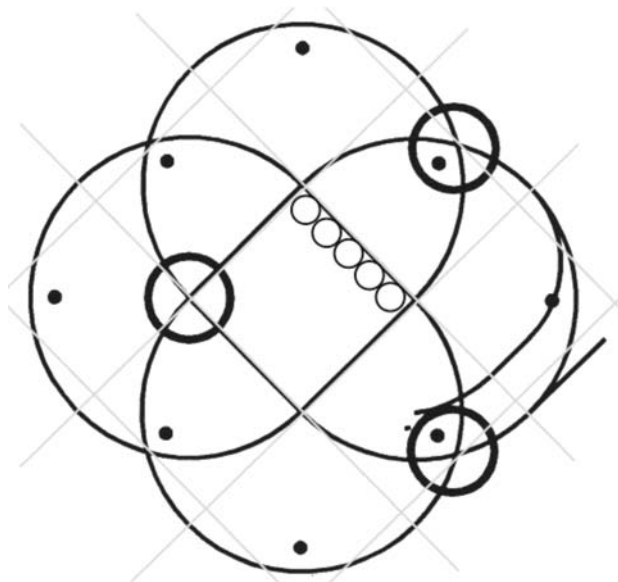


D. Fukuhara, Fancy Knotting: An Introduction, David Fukuhara (p. 11)

Figure 12M-1 Typical Knot Pattern

Scaling a Pattern

Each knot pattern is drawn on a square grid. This allows for visualization of the knot pattern and easy identification of which crossover points are overpasses and which are underpasses.



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Figure 12M-2 Pattern Grid

Diameter of Cord	Length of Square's Side*
4 mm (3/16 inch)	20 mm (3/4 inch)
6 mm (1/4 inch)	30 mm (1 1/4 inch)
9 mm (3/8 inch)	45 mm (1 7/8 inch)
12 mm (1/2 inch)	60 mm (2 1/2 inch)
*This chart is based on a three-lead pattern. To change the number of leads in the pattern, add or subtract a cord diameter from the square's side measurement accordingly.	

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Figure 12M-3 Pattern Scaling Chart

You can use the pattern for different sizes of line by scaling the size of the squares. The sides of squares should be roughly five cord diameters in length. The following guide may be used:



The term “lead” refers to a cord that follows the knot pattern to completion. For example, a three-lead knot has the cord following the pattern to completion three times.

Length of Cord

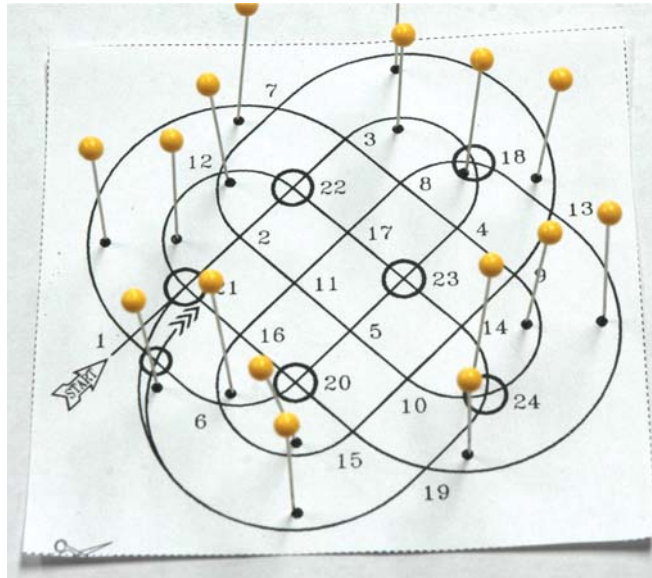
The length of cord required to weave the knot can be determined before weaving. With the pattern on the knot-weaving board, put a pin at each turning point. Pin one end of the uncut cord at the starting point. Lay the cord on the pattern following the numbers from start to finish ignoring the underpasses. Mark this length with a piece of tape. After removing the cord, cut a length of cord equal to three times this measurement and add 30 cm (12 inches). The extra length will allow for hiding the ends in the middle of the knot.

STEPS FOR MAKING A MONKEY'S FIST



Hand out the monkey's fist pattern located at Annex N to each cadet.

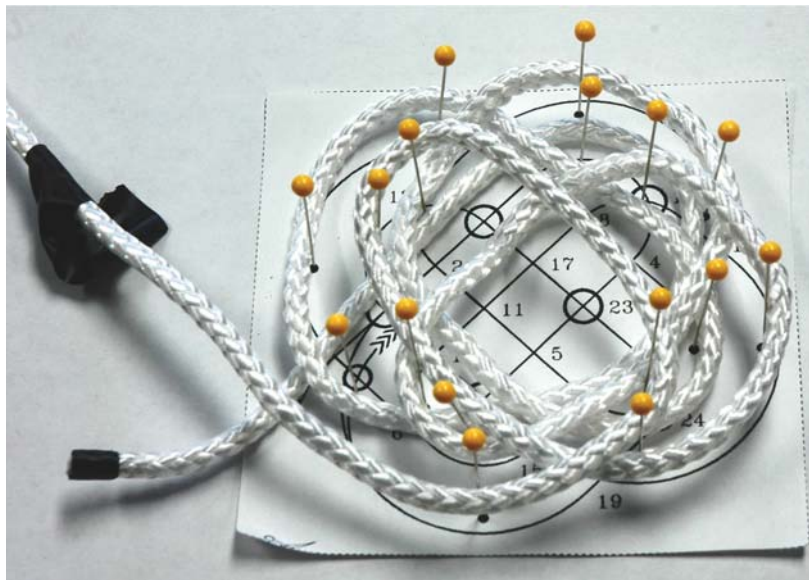
1. Cut out the monkey's fist pattern located at Annex N.
2. With the pattern on a knot-weaving board, put a straight pin at each turning point (as illustrated in Figure 12M-4).



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Figure 12M-4 Step 2

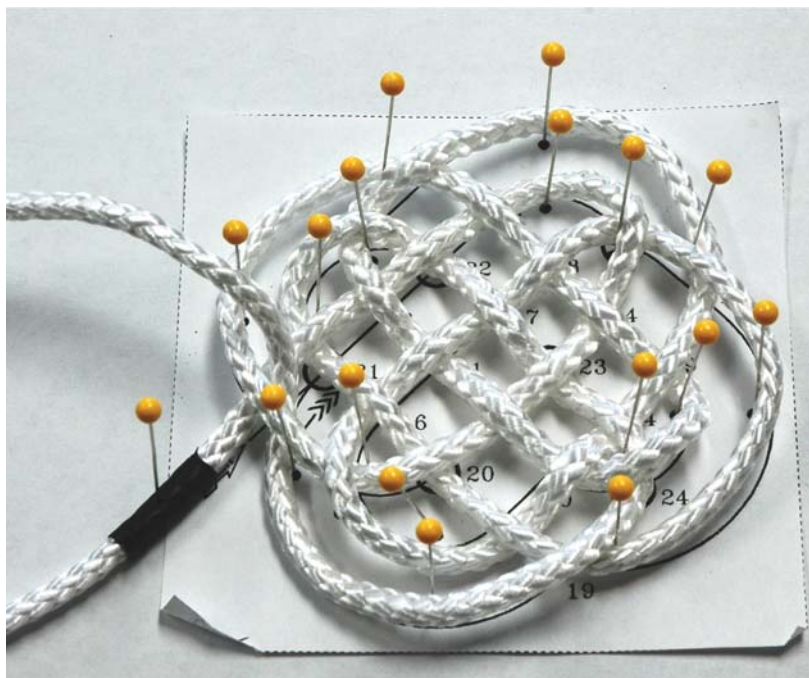
3. Lay the cord onto the pattern following the numbers from start to finish ignoring the underpasses (as illustrated in Figure 12M-5). Mark the one-third position and remove the cord from the pattern. Cut the cord to a length equal to three times the one-third length plus 30 cm (12 inches).



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Figure 12M-5 Step 3

4. Pin the cord's one-third position onto the outlined arrowhead at the starting point (as illustrated in Figure 12M-6).
5. Lay the shorter length of cord onto the pattern following the numbers. At the turns, lay the cord around the pins and continue (as illustrated in Figure 12M-6). Pay attention to the underpasses at crossings with circles.



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Figure 12M-6 Steps 4 and 5

6. When the cord is back to crossing number 1, the initial weaving sequence is complete. Check to ensure that the over and under sequence has been maintained from start to finish.

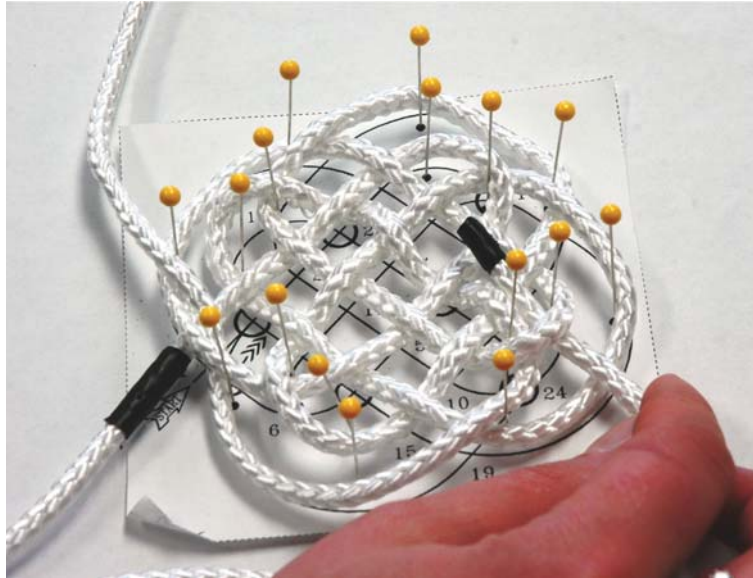


Any errors must be corrected now.



Once the initial lay of cord is complete, the pattern is no longer required.

7. Lay the remaining two-thirds of the cord following the previously laid cord in the opposite direction (as illustrated in Figure 12M-7).



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Figure 12M-7 Step 7



Weaving may be done on the board or by hand after removing the pins.

8. Continue until you have the correct number of leads required (as illustrated in Figure 12M-8).



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Figure 12M-8 Step 8

9. After the weaving is complete, the slack must be taken out in small increments. The first part of the tightening is done without the cork or wooden ball inside (as illustrated in Figure 12M-9).



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Figure 12M-9 Step 9

10. Once the original opening begins to close, insert the cork or wooden ball (as illustrated in Figure 12M-10). The knot should be moulded around the ball in a circular motion using the palms of the hands until the original opening is no longer evident.



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Figure 12M-10 Step 10

11. Use a small fid or something pointed to pick and pull each cord into a firm tension.



When the last parts of the cord are tensioned, there is a tendency for the loose loop of cord to twist as it passes through the tightened sections. To prevent this twisting, maintain tension on the loop in one hand as the cord is drawn through, until it can no longer be easily grasped. The short loop should tuck in with little or no twist in it.

12. To finish the knot, the ends of the cord can be tied together to form a loop to attach to a heaving line. If the knot was tied on the end of a heaving line, lay the smaller end alongside the heaving line, whip them together for a short distance and cut off the excess (as illustrated in Figure 12M-11).



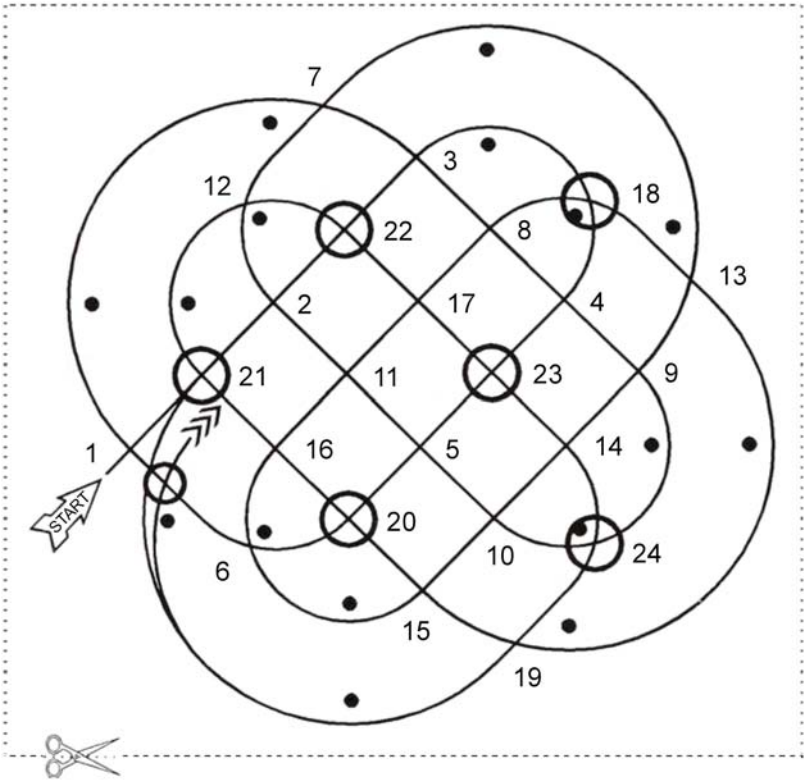
As this monkey's fist is constructed using the weaving method, the ends will not exit the knot from the same location.



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Figure 12M-11 Step 12

MONKEY'S FIST PATTERN



D. Fukuhara, *Fancy Knotting: An Introduction*, David Fukuhara (p. 42)

Figure 12N-1 Monkey's Fist Pattern

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ALTERNATIVE METHOD FOR MAKING A TURK'S HEAD

EQUIPMENT LIST

- 4 mm (3/16 inch) diameter line (cord),
- 40 mm (1 1/2 inch) thick foam,
- Straight pins,
- Paper clip,
- Transparent tape,
- Glue,
- Cutting tool, and
- Turk's head pattern.

KNOT WEAVING – CYLINDER METHOD

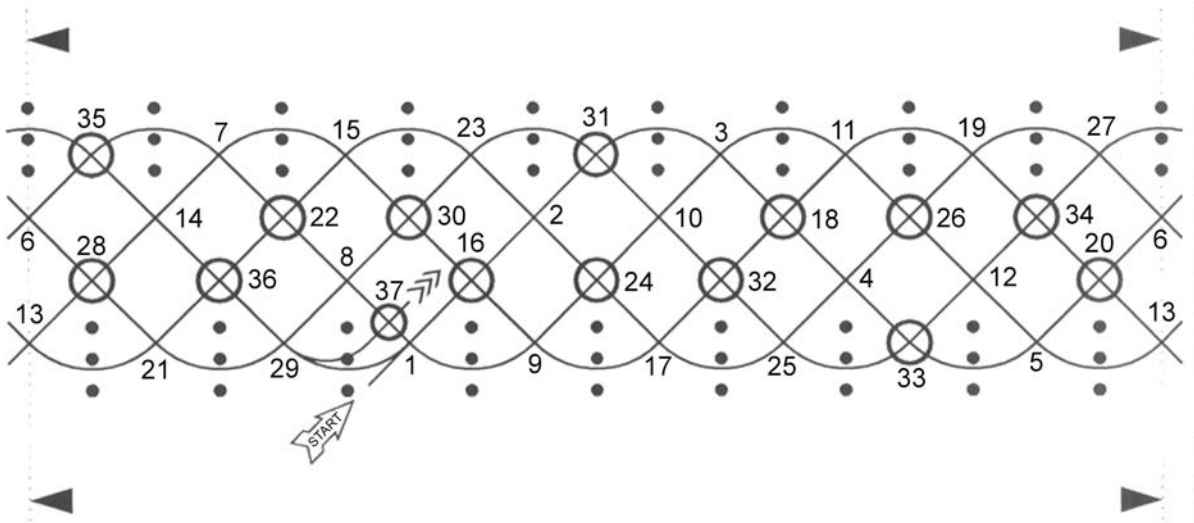
Introduction

As knots become more complicated, it becomes difficult to keep track of where cords are to be woven. One method of weaving intricate knots is the use of a knot-weaving cylinder. The cylinder consists of a rolled up piece of foam that allows a knot pattern to be affixed using tape or pins. The cord is woven around the pins following a given pattern, which indicates direction and where cords will cross under or over. The foam and pins maintain the desired shape of the knot until it is complete.

Knot Patterns

To make knot weaving easier, a series of arrows, dots, circles, lines and numbers are used on the knot patterns. They are as follows:

- An outlined arrow with the word "START" indicates the starting position and the initial direction for laying the cord.
- The numbers are placed at alternate crossings on the diagram and are to be followed consecutively during the weaving process.
- A circle at a crossing indicates an underpass of a cord already there.
- A crossing with no circle indicates an overpass of a cord already there.
- A feathered arrow indicates the end of the pattern.
- Small dots on the pattern indicate the turning points and the placement of pins.
- Two arrowheads at each end of the diagram aid in the alignment.

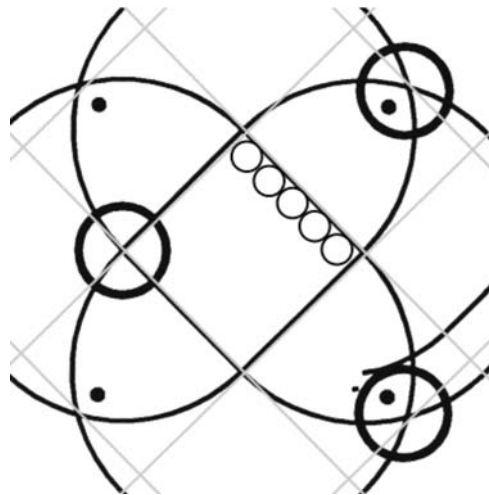


D. Fukuhara, Fancy Knotting: An Introduction, David Fukuhara (p. 11)

Figure 12O-1 Typical Knot Pattern–Cylinder Method

Scaling a Pattern

Each knot pattern is drawn on a square grid. This allows for visualization of the knot pattern and easy identification of which crossover points are overpasses and which are underpasses.



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Figure 12O-2 Pattern Grid

By scaling the size of the squares, you can use the pattern for different sizes of line. The sides of the squares should be roughly five times the diameter of the cord. The following guide may be used:

Diameter of Cord	Length of Square's Side*
4 mm (3/16 inch)	20 mm (3/4 inch)
6 mm (1/4 inch)	30 mm (1 1/4 inch)
9 mm (3/8 inch)	45 mm (1 7/8 inch)
12 mm (1/2 inch)	60 mm (2 1/2 inch)

*This chart is based on a three-lead pattern. To change the number of leads in the pattern, add or subtract a cord diameter from the square's side measurement accordingly.

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Figure 12O-3 Pattern Scaling Chart



The term “lead” refers to a cord that follows the knot pattern to completion. For example, a three-lead knot has the cord following the pattern to completion three times.

Length of Cord

The length of cord required to weave the knot can be determined before weaving. With the pattern on the knot-weaving cylinder, put a pin at each turning point. Pin one end of the uncut cord at the starting point. Lay the cord on the pattern following the numbers from start to finish ignoring the underpasses. Mark this length with a piece of tape. After removing the cord, cut a length of cord equal to three times this measurement and add 30 cm (12 inches). The extra length will allow the ends to be hidden in the middle of the knot.

STEPS FOR MAKING A TURK'S HEAD

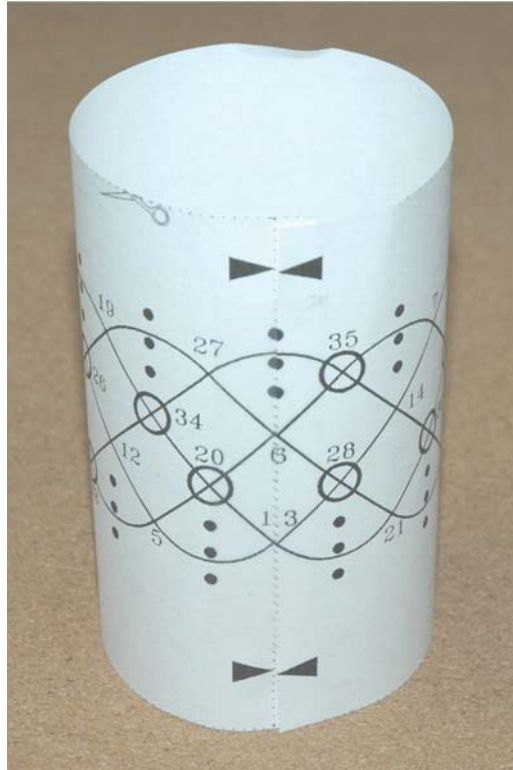


Hand out the turk's head pattern located at Annex P to each cadet.



The turk's head pattern used for this lesson will make a decorative bracelet that can be worn around the wrist. The turk's head may also be used to decorate a cylindrical object by placing it over the end of the object and heaving each lead taut.

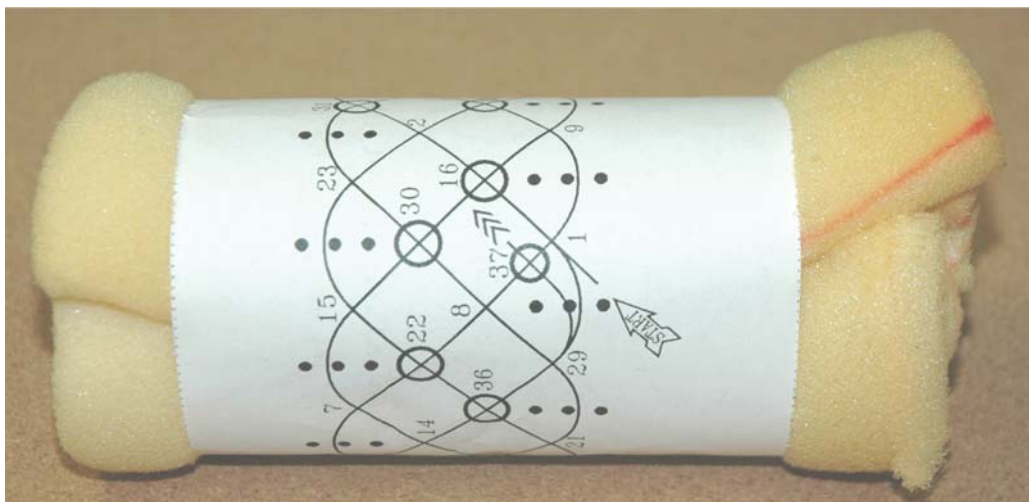
1. Cut out the turk's head pattern located at Annex P. Ensure that the pattern is cut out on the outside dotted line, leaving room for the pattern to overlap.
2. Using transparent tape, join the points of the arrowheads on the pattern together so that the pattern forms a cylinder (as illustrated in Figure 12O-4).



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Figure 12O-4 Step 2

3. Roll up a piece of foam and insert it into the pattern cylinder created in Step 2. Allow the foam to expand inside the pattern cylinder (as illustrated in Figure 12O-5).

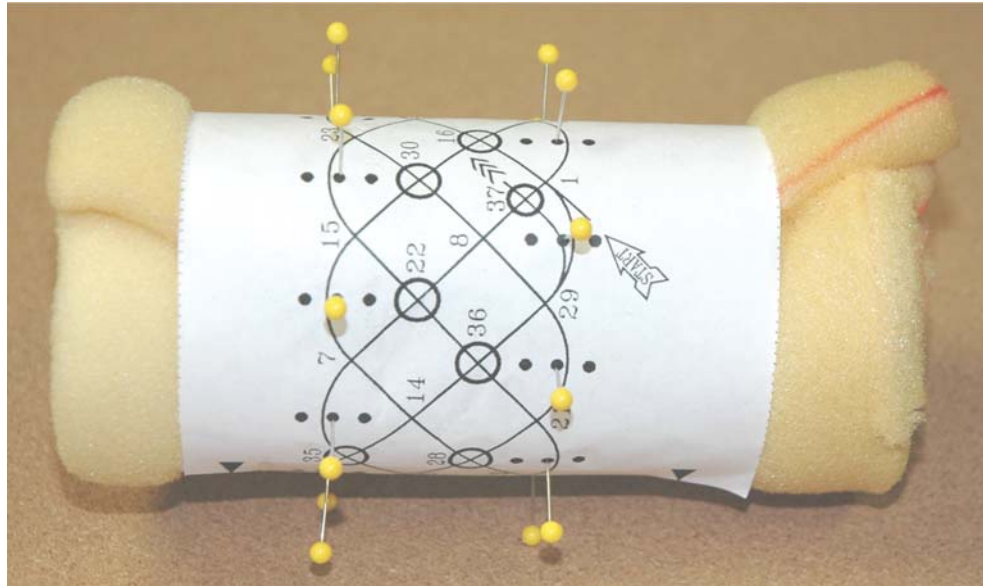


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Figure 12O-5 Step 3

 If a larger piece of foam can be forced into the pattern cylinder, the foundation for making the turk's head will be firmer.

4. Insert straight pins through the dots printed on the pattern (as illustrated in Figure 12O-6). Leave 13 mm (1/2 inch) of each pin protruding to hold the cord in place as the turk's head is made.



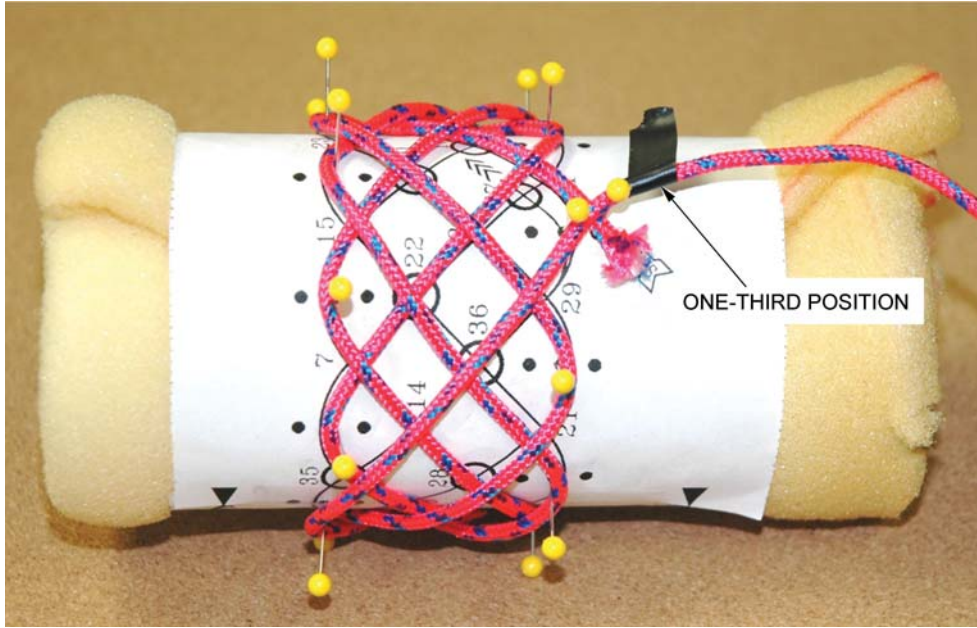
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Figure 12O-6 Step 4



There are three rows of dots on the turk's head pattern, located at Annex P, that are used for making different sized turk's heads. The outer row is used to make a larger diameter turk's head and the inner row is used to make a smaller one.

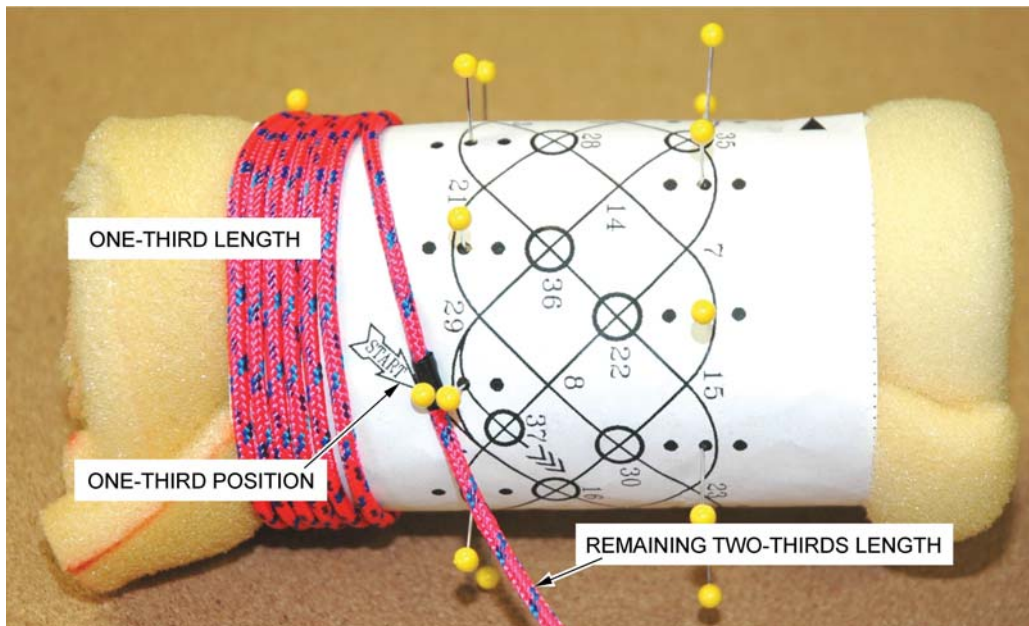
5. Lay the cord onto the pattern following the numbers from start to finish ignoring the underpasses (as illustrated in Figure 12O-7). Mark the one-third position and remove the cord from the pattern. Cut the cord to a length equal to three times the one-third length plus 30 cm (12 inches).



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Figure 12O-7 Step 5

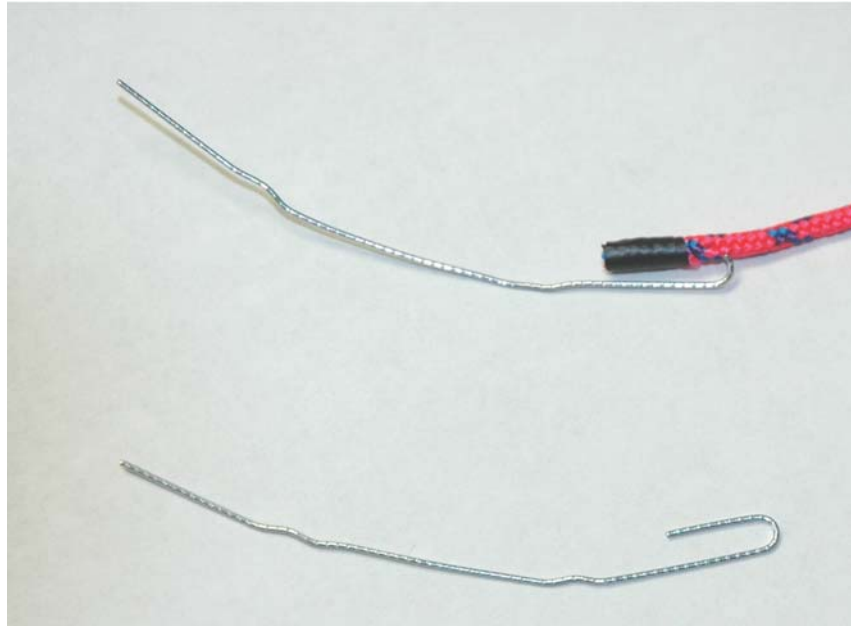
6. Pin the cord's one-third position onto the outlined arrowhead at the starting point and wrap the one-third length around the blank portion of the cylinder (as illustrated in Figure 12O-8). Pin this one-third length to the cylinder to keep it neat for later use.



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Figure 12O-8 Step 6

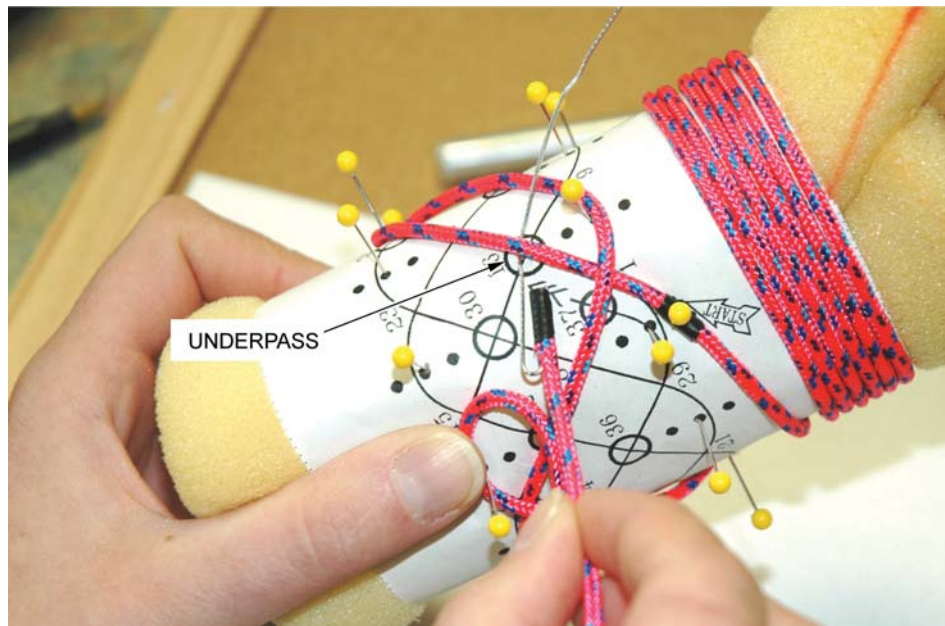
7. Bend a paper clip to make a weaving needle (as illustrated in Figure 12O-9) and attach to the working end of the longer length of cord (the two-thirds length).



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Figure 12O-9 Step 7

8. Lay the longer length of cord (the two-thirds length) onto the pattern following the numbers. At the turns, lay the cord around the pins and continue. Use the weaving needle to pass the cord under any previously-laid cords at a circled crossing (as illustrated in Figure 12O-10).



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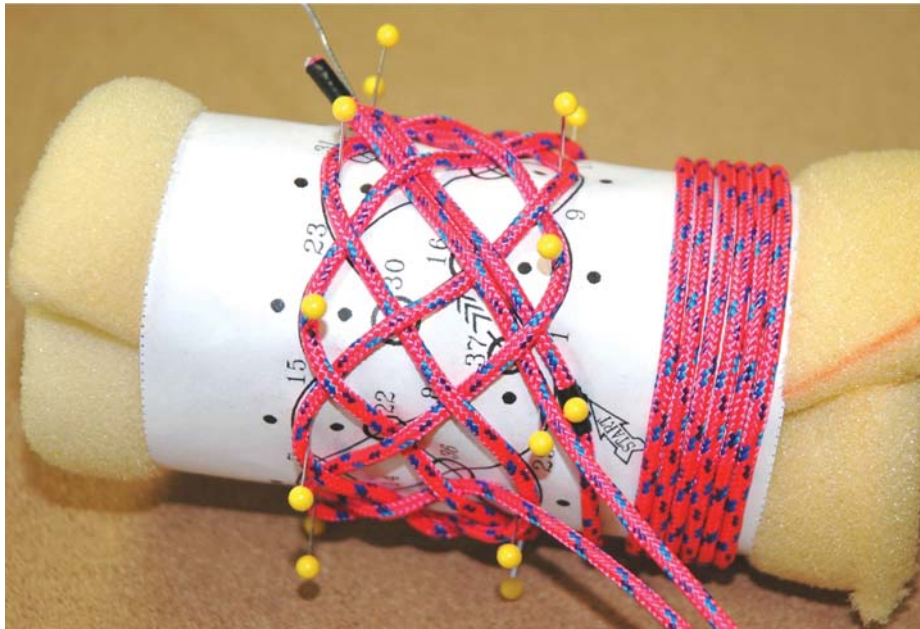
Figure 12O-10 Step 8

9. When crossing number 37 is reached, check the weaving for any errors.



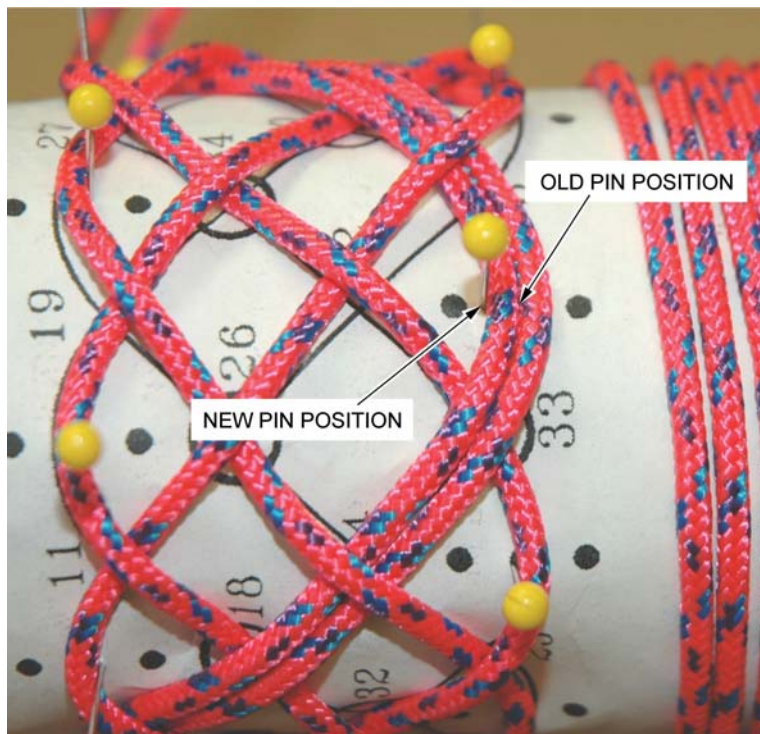
Correct any errors before proceeding to the next step.

10. Continue laying the cord side by side to the initial cord (as illustrated in Figure 12O-11) following it under or over at the crossings. When the cord reaches a turn and must pass on the inside of its arc (between the initial cord and a pin), remove the pin, lay the new cord beside the initial cord and re-insert the pin inside the new arc (as illustrated in Figure 12O-12). Moving the pin will maintain the overall shape of the turk's head.



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Figure 12O-11 Step 10



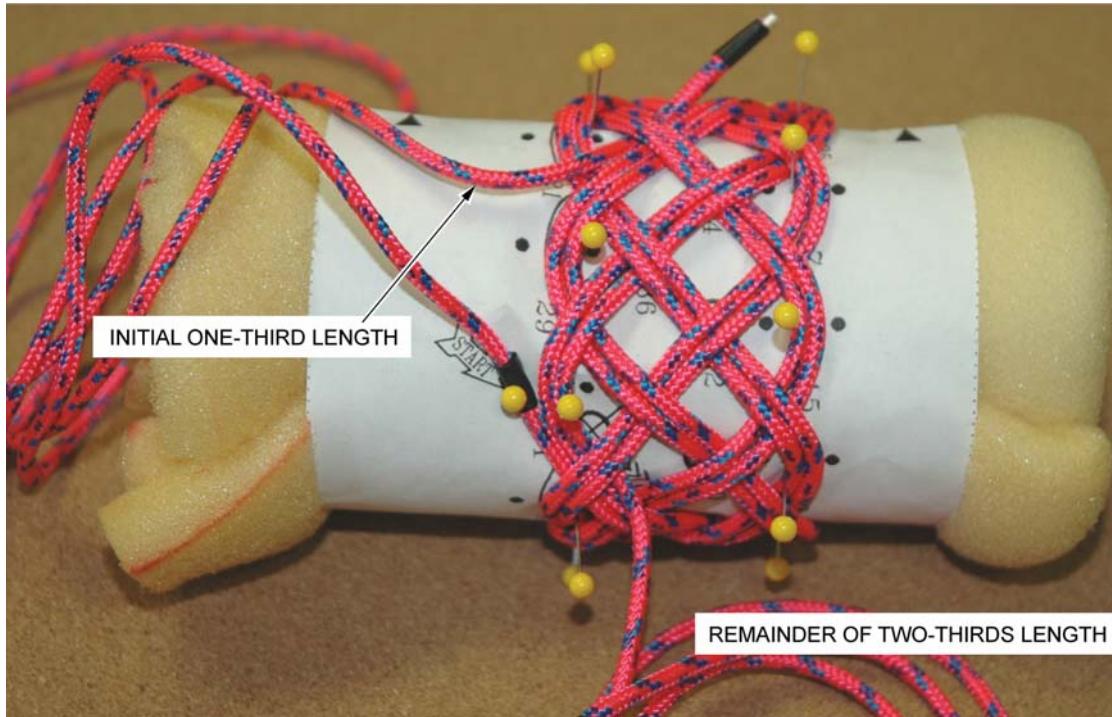
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Figure 12O-12 Moving a Turn Pin



Crossing number 37 on the pattern located a Annex P, is the same as crossing number 1.

11. When the cord is back to the start, undo the one-third length that was wound around the cylinder in Step 6. and lay it side-by-side to the cords previously laid but in the opposite direction (as illustrated in Figure 12O-13). Ensure that pins are moved on the inside arc of the turns (as illustrated in Figure 12O-12).



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Figure 12O-13 Step 11

12. When the turk's head shows three cords side-by-side everywhere, the weaving is complete. Remove the pins from the pattern and slide the turk's head from the cylinder. Ensure that the ends meet inside the turk's head and not on the outer rim (as illustrated in Figure 12O-14).



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Figure 12O-14 Step 12

13. To finish the turk's head, the cord can be glued to its adjacent cord for a length equal to four times the diameter of the cord and the excess cord can be trimmed (as illustrated in Figure 12O-15).



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Figure 12O-15 Step 13



An alternative to finishing the turk's head is to sew the cord to its adjacent cord for a length equal to four times the diameter of the cord and then trim the excess.

14. The turk's head bracelet is now complete and ready to wear (as illustrated in Figure 12O-16).

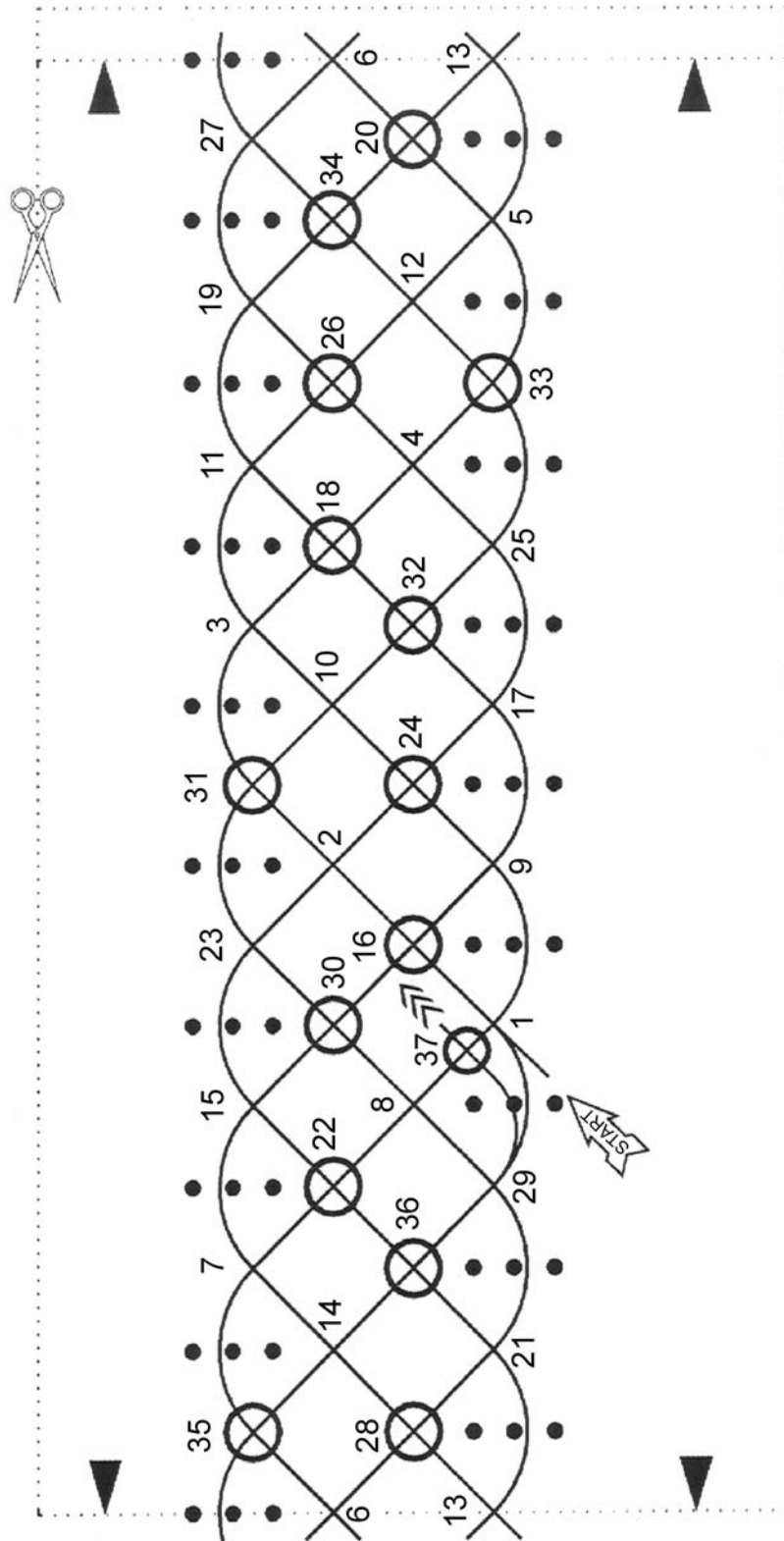


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Figure 12O-16 Finished Turk's Head Bracelet

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TURKS HEAD PATTERN



D. Fukuhara, Fancy Knotting: An Introduction, David Fukuhara (p. 23)

Figure 12P-1 Turk's Head Pattern

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CHAPTER 13

PO 322 – ATTAIN PLEASURE CRAFT OPERATOR COMPETENCY CARD



ROYAL CANADIAN SEA CADETS

PHASE THREE

INSTRUCTIONAL GUIDE



SECTION 1

EO C322.01 – DESCRIBE ACTS, CODES AND REGULATIONS

Total Time:

30 min

PREPARATION

PRE-LESSON INSTRUCTIONS

Resources needed for the delivery of this lesson are listed in the lesson specification located in A-CR-CCP-603/PG-001, Chapter 4. Specific uses for said resources are identified throughout the instructional guide within the TP for which they are required.

Review the lesson content and become familiar with the material prior to delivering the lesson.

Attain copies of A-CR-050-SCO/PT-001, *Small Craft Operator (SCOP) Module 1 Workbook* and *Safe Boating Guide*, for distribution to the cadets.

PRE-LESSON ASSIGNMENT

N/A.

APPROACH

An interactive lecture was chosen for this lesson to familiarize the cadets with the acts, codes and regulations and fines and penalties for non-compliance.

INTRODUCTION

REVIEW

N/A.

OBJECTIVES

By the end of this lesson the cadet shall have described acts, codes and regulations that govern boating safety.

IMPORTANCE

It is important for cadets to know the acts, codes and regulations that govern boating safety as they will be required to follow them while operating a pleasure craft.

Teaching Point 1**Describe the Acts, Codes and Regulations That Govern Boating Safety**

Time: 20 min

Method: Interactive Lecture

Pleasure craft operators have the obligation to comply to several acts, regulations and codes that govern boating safety. The following are the acts, regulations and codes:

- *Criminal Code of Canada*,
- *Contraventions Act*, and
- *Canada Shipping Act*:
 - *Boating Restriction Regulations*,
 - *Small Vessel Regulations*,
 - *Collisions Regulations*, and
 - *Charts and Nautical Publications Regulations*.

THE CRIMINAL CODE OF CANADA

The *Criminal Code of Canada*, is a federal statute enacted by Parliament which provides the federal government exclusive jurisdiction to legislate criminal offences in Canada. The *Code* contains most of the criminal offences that have been created by Parliament. The *Code* establishes the type and degree of punishment that may be imposed when an individual is convicted of an offence and the procedures to be followed throughout the conviction process.

The *Criminal Code of Canada* states the following with regards to boating safety:

1. A vessel must be operated in a safe manner so that it is not dangerous to the public (Section 249[1]).
2. The operator of a pleasure craft should watch for signals that indicate distress and need of assistance. The operator of a pleasure craft, in so far as he/she can do so without serious danger to his/her own craft and the persons on board, shall render assistance to every person who is found at sea and in danger of being lost (Section 451).
3. The operator of a pleasure craft has an obligation to stop and offer assistance when the operator is involved in an accident (Section 252[1]).
4. A spotter must keep watch on a person being towed and a person cannot be towed after dark (Section 250[1] & [2]).
5. Unseaworthy vessels cannot knowingly be operated (Section 251[1]).
6. Alcohol, drugs and controlled substances could impair a person's ability to operate a vessel. It is illegal to operate a vessel while impaired (Section 253).
7. Sending a false message is a criminal offence (Section 372).
8. A vessel cannot interfere with a marine signal by:
 - a. making fast the craft to a signal, buoy or other sea-mark that is used for the purposes of navigation; and

- b. willfully altering, removing or concealing a signal, buoy or other sea-mark that is used for purposes of navigation (Section 439).

THE CONTRAVENTIONS ACT

The *Contraventions Act* was passed in October 1992 to provide a procedure for less-serious federal offences to be prosecuted in a regulatory manner. These offences, or contraventions, could then be prosecuted by means of a fine instead of being prosecuted under criminal law. An example would be a fine for speeding.

THE CANADA SHIPPING ACT

The *Canada Shipping Act* establishes a framework of rules and regulations and incorporates international conventions that shape the behaviour of mariners. The four regulations under the *Canada Shipping Act* that apply to pleasure craft are:

- *Boating Restriction Regulations*,
- *Small Vessel Regulations*,
- *Collisions Regulations*, and
- *Charts and Nautical Publications Regulations*.

BOATING RESTRICTION REGULATIONS

The *Boating Restriction Regulations* impose:

- prohibited vessel types,
- speed limits (both posted and un-posted),
- shoreline speed zones,
- maximum engine power limits, and
- other operating restrictions on specified waterways.

SMALL VESSEL REGULATIONS

The *Small Vessel Regulations* outline the minimum mandatory safety equipment required to be carried on a pleasure craft (determined by size), safety precautions to follow before and while on the water, and construction standards for building a pleasure craft.

COLLISION REGULATIONS

The *Collision Regulations* are a published set of rules to aid mariners in the prevention of collisions at sea. The rules provide clear directions as to what actions shall be taken for any situation that may arise on the water.

CHART AND NAUTICAL PUBLICATIONS REGULATIONS

The *Charts and Nautical Publications Regulations* outline the requirements for the carriage of charts, tide tables and other nautical publications for the safe operation of a vessel at sea. Pleasure craft that are propelled by oars or paddles are not required to carry charts and nautical publications.

CONFIRMATION OF TEACHING POINT 1

QUESTIONS

- Q1. What is contained in the *Criminal Code of Canada*?

Q2. How are contraventions prosecuted under the *Contraventions Act*?

Q3. Who does the *Canada Shipping Act* pertain to?

ANTICIPATED ANSWERS

A1. Most of the criminal offences that have been created by Parliament.

A2. Fines.

A3. All boaters.

Teaching Point 2

Describe the Fines and Penalties for Non-Compliance With Acts, Regulations and Codes

Time: 5 min

Method: Interactive Lecture

FINES AND PENALTIES FOR NON-COMPLIANCE WITH ACTS, CODES AND REGULATIONS

Most on-water enforcement authorities have a zero tolerance policy regarding missing safety equipment. Under the *Contraventions Act*, authorities can ticket offenders on the spot for offences instead of requiring them to appear in court.

Examples of fines for common boating offences (excluding administrative charges):

- Operating a vessel in a careless manner - \$200.
- Speeding - \$100.
- Underage operation of a personal watercraft - \$100.
- Operating a power-driven pleasure craft without the required Pleasure Craft Operator Card - \$250.
- Insufficient number of approved, appropriately sized floatation devices - \$200 for each absent device.



The fines listed above were current as of May 2008. Refer to <http://www.boatingsafety.gc.ca> for a complete list of boating-related offences under the *Contraventions Act* and their associated fines.

CONFIRMATION OF TEACHING POINT 2

QUESTIONS

Q1. Which act allows on-water authorities to ticket for offences?

Q2. What is the fine for operating a power-driven pleasure craft without the required Pleasure Craft Operator Card?

Q3. What is the fine for having an insufficient number of approved, appropriately sized floatation devices on board the pleasure craft?

ANTICIPATED ANSWERS

A1. *Contraventions Act*.

A2. \$250.

A3. \$200 for each absent device.

END OF LESSON CONFIRMATION

QUESTIONS

Q1. Which acts, regulations and codes govern boating safety?

Q2. Which rules provide clear directions as to what actions shall be taken for any situation that may arise on the water?

Q3. What is the fine for underage operation of a pleasure craft?

ANTICIPATED ANSWERS

A1. The acts, regulations and codes govern boating safety are:

- *Criminal Code of Canada,*
- *Contraventions Act,* and
- *Canada Shipping Act:*
 - *Boating Restriction Regulations,*
 - *Small Vessel Regulations,*
 - *Collisions Regulations,* and
 - *Charts and Nautical Publications Regulations.*

A2. *Collision Regulations.*

A3. \$100.

CONCLUSION

HOMEWORK/READING/PRACTICE

N/A.

METHOD OF EVALUATION

This EO is assessed IAW *Pleasure Craft Operator Competency* Test Protocol, Directorate of Cadets (DND), as approved by Transport Canada.

CLOSING STATEMENT

While operating a pleasure craft, you are required to follow all acts, codes and regulations that govern boating safety. Fines for non-compliance can be severe.

INSTRUCTOR NOTES/REMARKS

N/A.

REFERENCES

- C0-194 Department of Justice. *Criminal Code*. (2005). Retrieved April 03, 2008, from <http://laws.justice.gc.ca/EN/C-46.htm>.
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- C1-098 (ISBN 0-662-42286-4) Office of Boating Safety (2006). *Safe Boating Guide*. Ottawa, ON: Her Majesty the Queen in Right of Canada, as represented by Transport Canada.
- C1-103 Transport Canada. *Boating Restrictions Regulations*. (2001). Retrieved April 03, 2008, from <http://www.tc.gc.ca/acts-regulations/GENERAL/C/csa/regulations/001/csa005/csa5-A.html>.
- C1-103 Transport Canada. *Canada Shipping Act*. (2001). Retrieved April 03, 2008, from <http://www.tc.gc.ca/acts-regulations/GENERAL/C/csa2001/menu.html>.
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- C1-103 Transport Canada. *Small Vessel Regulations*. (2001). Retrieved April 03, 2008, from <http://www.tc.gc.ca/acts-regulations/GENERAL/C/csa/regulations/070/csa076/csa76.html>.



ROYAL CANADIAN SEA CADETS

PHASE THREE

INSTRUCTIONAL GUIDE



SECTION 2

EO C322.02 – DESCRIBE PERSONAL SAFETY

Total Time:

120 min

PREPARATION

PRE-LESSON INSTRUCTIONS

Resources needed for the delivery of this lesson are listed in the lesson specification located in A-CR-CCP-603/PG-001, Chapter 4. Specific uses for said resources are identified throughout the instructional guide within the TP for which they are required.

Review the lesson content and become familiar with the material prior to delivering the lesson.

Photocopy and cut out the Emergency Kit Flash Cards located at Annex A for each group.

Photocopy and cut out the Overboard Recovery Activity Cards located at Annex B, place them in an envelope.

Photocopy the Overboard Recovery Activity Summary Sheet located at Annex C for each cadet.

PRE-LESSON ASSIGNMENT

N/A.

APPROACH

A group discussion was chosen for TP 1 as it allows the cadets to interact with their peers and share their knowledge, experiences, opinions, and feelings about the use of PFDs and lifejackets.

An interactive lecture was chosen for TPs 2 and 4 to introduce personal safety to the cadets.

An in-class activity was chosen for TPs 3 and 5 as it is an interactive way to provoke thought and stimulate an interest in personal safety procedures followed during the operation of a pleasure craft.

INTRODUCTION

REVIEW

Review TP1 from EO M224.02 (Prepare for Sail Training, A-CR-CCP-602/PF-001, Chapter 13, Section 2).

OBJECTIVES

By the end of this lesson the cadet will have listed the personal safety equipment required on board a pleasure craft and the procedures to follow in an emergency situation.

IMPORTANCE

It is important for cadets to describe personal safety and what personal safety equipment is available on board a pleasure craft so they can prevent emergencies from happening or respond correctly when they occur.

Teaching Point 1

Discuss the Use of PFDs and Lifejackets

Time: 20 min

Method: Group Discussion

BACKGROUND KNOWLEDGE



The cadets have been introduced to some of this information in EO M224.02 (Prepare for Sail Training, A-CR-CCP-602/PF-001, Chapter 13, Section 2).



The purpose of the group discussion is to draw the following information from the group using the tips for answering/facilitating discussion and the suggested questions provided.

USE OF PFDS AND LIFEJACKETS

The operator of a pleasure craft, and persons on board, should always wear PFDs or lifejackets to prevent drowning.

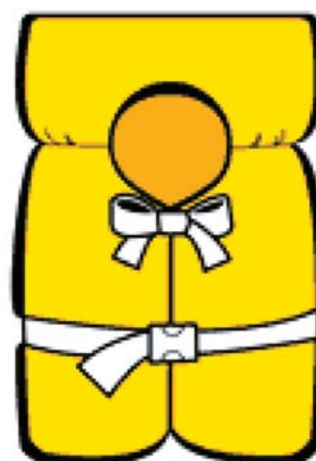
PFDs (as illustrated in Figure 13-2-1) are designed for sporting activities and therefore are smaller, more comfortable and allow for easier movement. PFDs can be found in a range of sizes (based on chest sizes for adults and body weight for children) and colours. They are recommended for all small vessel recreational activities.

Lifejackets (as illustrated in Figure 13-2-2) are designed to keep a person's face out of the water by rolling them onto their back should they become unconscious. Lifejackets are larger, bulkier, less comfortable and can only be found in two sizes (90 lbs and above, and 90 lbs and below).



Canadian Yachting Association, *White Sail Workbook*. (2007). Manuscript in preparation

Figure 13-2-1 PFD



Canadian Yachting Association, *White Sail Workbook*. (2007). Manuscript in preparation

Figure 13-2-2 Lifejacket



Never under-estimate the protection that a floatation device can provide. It is called lifesaving equipment for a reason.



Throughout this IG, the term PFD will also refer to lifejacket, unless otherwise specified.

PFD APPROVAL

PFDs required on board must have a stamp or a label indicating they have been approved by the Department of Transport (DOT), Canada (As described in the *Small Vessel Regulations*, Equipment Standards, Life Saving Equipment). Using a PFD as a cushion or fender may result in damage to the PFD. The approved status of a PFD becomes void if it has been repaired or altered.

PFD STORAGE

All PFDs not in use must be stored in a dry, well ventilated and readily accessible location. If the PFDs become wet, they should be left to dry in the open air. Do not dry them in constant exposure to sunlight or close to a direct heat source. If a PFD becomes dirty, it should be cleaned using a mild soap and running water. Never dry-clean or use strong detergents or gasoline to clean a PFD.

PFD SELECTION

When selecting a PFD, it should be:

- snug-fitting, yet allow freedom of movement of arms and legs;
- appropriate to the size of the person ie, “adult sizing” for adults and “children sizing” for children; and
- appropriate for the type of waterway activity.

PFD TESTING

When testing a PFD the following steps should be followed:

1. don the PFD,
2. walk into chest deep water,
3. bend the knees and float on the back, and
4. ensure the PFD keeps the chin above the water so that it is easy to breathe.



PFDs should be tested yearly to ensure they have not lost their buoyancy. In addition to a buoyancy test, lifejackets should be tested to ensure they keep a person's face out of the water.

DONNING A PFD IN THE WATER

The following are steps to be followed if a PFD must be donned in the water:

1. spread the device open with the inside facing up out of the water,
2. rotate the device so as to look at the neck opening,
3. extend both arms over the head,
4. position the device around the upper body, and
5. fasten the device to fit snugly.



The *Small Vessel Regulations* states that there must be a Canadian-approved PFD or lifejacket of appropriate size for each person on board, however, IAW A-CR-CCP-030/PT-001, a PFD must be worn at all times by cadets.

GROUP DISCUSSION



TIPS FOR ANSWERING/FACILITATING DISCUSSION

- Establish ground rules for discussion, eg, everyone should listen respectfully; don't interrupt; only one person speaks at a time; no one's ideas should be made fun of; you can disagree with ideas but not with the person; try to understand others as much as you hope they understand you; etc.
- Sit the group in a circle, making sure all cadets can be seen by everyone else.
- Ask questions that will provoke thought; in other words avoid questions with yes or no answers.
- Manage time by ensuring the cadets stay on topic.
- Listen and respond in a way that indicates you have heard and understood the cadet. This can be done by paraphrasing their ideas.
- Give the cadets time to respond to your questions.
- Ensure every cadet has an opportunity to participate. One option is to go around the group and have each cadet answer the question with a short answer. Cadets must also have the option to pass if they wish.
- Additional questions should be prepared ahead of time.

SUGGESTED QUESTIONS

- Q1. What are the major differences between a PFD and a lifejacket?
- Q2. Who approves a PFD and why is it important not to alter a PFD in anyway?
- Q3. How should PFDs be cared for?
- Q4. What must be considered when fitting a PFD and why should they be buoyancy tested annually?



Other questions and answers will develop throughout the group discussion. The group discussion should not be limited to only those suggested.



Reinforce those answers given and comments made during the group discussion, ensuring the teaching point has been covered.

CONFIRMATION OF TEACHING POINT 1

The cadets' participation in the group discussion will serve as confirmation of this TP.

Teaching Point 2**Describe Personal Safety**

Time: 15 min

Method: Interactive Lecture



The cadets have been introduced to some of the points listed below in the instruction and practical activities delivered in sail training.

FACTORS THAT AFFECT PERSONS ON BOARD A PLEASURE CRAFT

The operator of a pleasure craft and passengers on board should be aware that the motion of a pleasure craft, sunlight, waves, wind, and/or alcohol can negatively affect the following:

- balance,
- coordination,
- reflexes,
- judgement,
- response time,
- eyesight and/or hearing.

BRIEF PASSENGERS BEFORE DEPARTURE

The operator of a pleasure craft should be familiar with the location and operation of all equipment carried on-board. They should also know how to quickly react to the various emergencies that can occur while on the water. If the operator becomes incapacitated, the persons on board the pleasure craft must know what to do in an emergency.

The operator of a pleasure craft should inform the persons on board about the following safety points before departing:

- the location of PFDs,
- the techniques for putting on a PFD,
- the techniques for putting on a PFD when in the water,
- the importance of wearing PFDs at all times,
- the location of the emergency kit,
- the importance of keeping oneself low, on the centre line and holding on to a rigid part of the pleasure craft while moving around on board,
- the importance of keeping one's hands, arms and legs inside the pleasure craft when approaching or leaving a dock,
- the effects of the motion of the pleasure craft, sunlight, waves, wind, sound and alcohol on them, and
- their roles in the event of emergencies.

CONFIRMATION OF TEACHING POINT 2

QUESTIONS

- Q1. If the operator becomes incapacitated, who must know what to do in an emergency?
- Q2. What safety points must the operator of a pleasure craft inform the persons on board before departing?

ANTICIPATED ANSWERS

- A1. The persons on board the pleasure craft.
- A2. The persons on board the pleasure craft should be informed about the following safety points:
1. the location of PFDs;
 2. the techniques for putting on a PFD;
 3. the techniques for putting on a PFD when in the water;
 4. the importance of wearing PFDs at all times;
 5. the location of the emergency kit;
 6. the importance of keeping oneself low, on the centre line and holding on to a rigid part of the pleasure craft while moving around on board;
 7. the importance of keeping one's hands, arms and legs inside the pleasure craft when approaching or leaving a dock;
 8. the effects of the motion of the pleasure craft, sunlight, waves, wind, sound and alcohol on them; and
 9. their roles in the event of emergencies.


Teaching Point 3

Conduct an Activity Where the Cadets Will Identify the Contents of an Emergency Kit

Time: 25 min

Method: In-Class Activity

CONTENTS OF AN EMERGENCY KIT



Conduct the in-class activity prior to delivering the content of this TP.

While on the water, an operator of a pleasure craft must be prepared for emergency situations by carrying an emergency kit stocked with required items. To keep the items dry, store them in a watertight plastic bag.

An emergency kit may consist of the following items:

- a flashlight,
- a whistle/sound-signalling device,

- a knife,
- a first aid kit,
- emergency rations,
- drinking water, and
- dry clothing.

ACTIVITY

Time: 20 min

OBJECTIVE

The objective of this activity is to have the cadets identify the items that belong in an emergency kit.

RESOURCES

- Emergency Kit Flash Cards for each group, and
- Two small containers or envelopes for each group.

ACTIVITY LAYOUT

1. Arrange tables in the classroom to accommodate groups of three.
2. Place a set of Emergency Kit Flash Cards, located at Annex A, randomly on each table.
3. Place two small containers or envelopes on each table.
4. Label one of the containers as the emergency kit and the other as the discard can.

ACTIVITY INSTRUCTIONS

1. Divide the cadets into groups of three and place each group at one of the tables.
2. Allow approximately 15 minutes for the groups to choose the items they would place in an emergency kit.
3. Have the groups place the cards in either the emergency kit or the discard box.
4. Have the groups share their answers with the rest of the cadets.
5. Debrief the cadets by providing feedback, focusing on:
 - a. items that belong in an emergency kit and what situations they would be useful in, and
 - b. items that do not belong in an emergency kit.

SAFETY

N/A.

CONFIRMATION OF TEACHING POINT 3

The cadets' participation in the activity will serve as confirmation of this TP.

Teaching Point 4**Describe Hypothermia**

Time: 25 min

Method: Interactive Lecture



The cadets have been introduced to some of this information in EO M224.02 (Prepare for Sail Training, A-CR-CCP-602/PF-001, Chapter 13, Section 2).

HYPOTHERMIA

Hypothermia is a drop in body temperature below the normal level. When participating in water sports or leisure, hypothermia typically develops from exposure to abnormally low temperatures such as:

- immersion in cold water,
- exposure to cool air in water-soaked clothing, or
- prolonged exposure to low environmental temperatures.



Even on warm summer days, it is likely to be cool out on the water. You should always dress warmly, especially when the air temperature is below 21 degrees Celsius or the water temperature is below 18 degrees Celsius. Generally, it is better to overdress as you can always remove layers if you get too warm.

Stages of Hypothermia

There are three stages of hypothermia:

- mild,
- moderate, and
- severe.

Each of these stages can be identified by various signs (as illustrated in Figure 13-2-3).

Signs of Hypothermia

Signs	Mild Hypothermia	Moderate Hypothermia	Severe Hypothermia
Pulse	<ul style="list-style-type: none"> normal 	<ul style="list-style-type: none"> weak 	<ul style="list-style-type: none"> weak, irregular or absent
Breathing	<ul style="list-style-type: none"> normal 	<ul style="list-style-type: none"> slow and shallow breathing 	<ul style="list-style-type: none"> slow or absent
Appearance	<ul style="list-style-type: none"> shivering slurring speech 	<ul style="list-style-type: none"> shivering violently clumsy stumbling pupils becoming dilated skin becoming bluish 	<ul style="list-style-type: none"> shivering has stopped
Mental State	<ul style="list-style-type: none"> conscious but withdrawn or disinterested 	<ul style="list-style-type: none"> confused, sleepy, and irrational 	<ul style="list-style-type: none"> unconscious

Director Cadets 3, 2007, Ottawa, ON: Department of National Defence

Figure 13-2-3 Signs of Hypothermia

Treatment of Hypothermia

If it is suspected that someone is suffering from mild hypothermia due to immersion, the following treatments are recommended:

1. remove the individual from the source of cold exposure;
2. provide dry shelter;
3. if possible, prevent further decrease in body temperature and warm the person's body gradually by:
 - a. replacing wet clothing with dry clothing,
 - b. wrapping the person in blankets,
 - c. placing dry coverings over the person,
 - d. covering the person's head and neck,
 - e. covering the person with an insulating device and vapour barrier, and
 - f. applying warm, dry objects (40 to 45 degrees);
4. if asked for, offer warm liquids but do not give alcohol or hot stimulants to the person;
5. do not rub or massage the surface of the person's body or extremities; and
6. use or exhibit signals to indicate distress and need of assistance, if necessary.



Always handle the individual very gently and keep the casualty as horizontal as possible.

Methods of Prevention

The following are measures to be taken to prevent hypothermia:

- **Dressing Warmly.** Dressing for the weather plays a key role in preventing hypothermia. The air temperature on the water is often much colder than on land, therefore wearing extra clothing is recommended.
- **Staying Dry.** When the air and water temperatures are cold it is recommended to stay out of the water and stay dry.



Immersion hypothermia is caused by being in cold water. A person will lose body heat 25 times faster in water than in air of the same temperature.

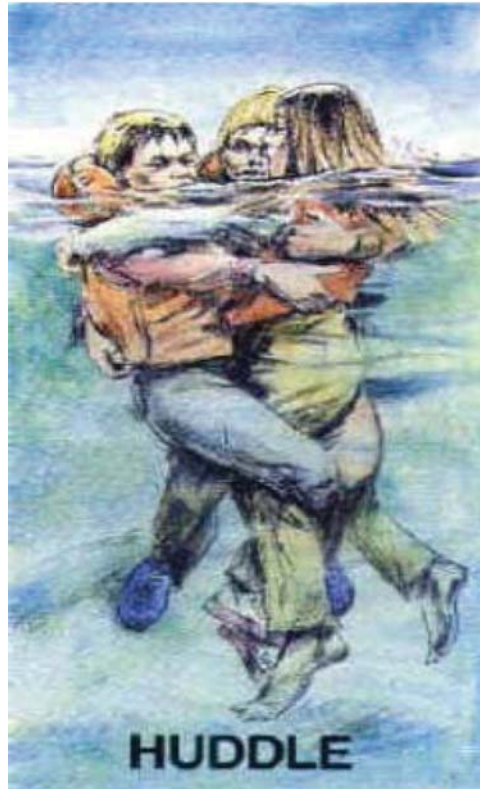
- **Wear a Waterproof Layer.** It is possible to become wet without falling overboard. A waterproof jacket or rain gear may be worn to keep clothes from becoming wet.
- **Wear Equipment Designed for Protection Against Hypothermia.** Wear equipment that provides additional protection against hypothermia on days where the water is very cold. The equipment comes in a variety of styles and names including:
 - floater or survival suits: a full nose-to-toe PFD,
 - anti-exposure work suits: a PFD with a thermal rating,
 - dry suits: to be used with a PFD and a thermal layer,
 - wet suits: to be used with a PFD, traps and heats water against the body, and,
 - immersion suits: to be used in extreme conditions when abandoning a vessel.
- **Adopt the Heat Escape Lessening Position (H.E.L.P.).** Adopting the H.E.L.P. position when in the water alone will decrease the amount of body heat lost by half. The H.E.L.P. position is adopted by holding the knees up to the chest (as illustrated in Figure 13-2-4).
- The H.E.L.P. position covers the following major areas of heat loss:
 - head,
 - neck,
 - armpits,
 - chest,
 - groin, and
 - back of the knees.



A-CR-050-SCO/PH-001, Cadets Small Craft Operator's Program, Modules 2 to 7 (Module 3)

Figure 13-2-4 H.E.L.P. Position

- **Get Out of the Water.** If possible climb onto a nearby object to get as much of the body out of the water as possible.
- **Adopting the Huddle Position.** The huddle position should be adopted when in the water with a group. The huddle position covers the same areas of major heat loss as the H.E.L.P. position and provides more insulation to the sides of the body. The huddle position is formed by forming a tight circle, placing the left arm around the shoulder of the swimmer to the left and placing the right arm under the arm and around the back of the swimmer to the right (as illustrated in Figure 13-2-5).



A-CR-050-SCO/PH-001 (Module 3)

Figure 13-2-5 Huddle Position

CONFIRMATION OF TEACHING POINT 4

QUESTIONS

- Q1. Why is it important to dress warmly when on the water?
- Q2. Why is it important to wear a waterproof layer?
- Q3. What are the six things an individual can do to prevent further decrease in body temperature and warm the person's body gradually?

ANTICIPATED ANSWERS

- A1. The air temperature on the water is often much colder than on land.
- A2. To keep clothes from becoming wet.
- A3. The six things an individual can do to prevent further decrease in body temperature and warm the person's body gradually are:
- replacing wet clothing with dry clothing;
 - wrapping the person in blankets;
 - placing dry coverings over the person;
 - covering the person's head and neck;

- covering the person with an insulating device and vapour barrier; and
- applying warm, dry objects (40 to 45 degrees).

Teaching Point 5

Conduct an Activity Where the Cadets Will Describe the Procedures for Retrieving a Person Overboard

Time: 25 min

Method: In-Class Activity



Brainstorm the procedures for retrieving a person overboard with the cadets, and write down the responses. After the brainstorming is complete, compare the class list to the list below.

RETRIEVING A PERSON OVERBOARD

It is important for an operator of a pleasure craft and passengers to be familiar with overboard recovery procedures and techniques. The effectiveness of some techniques will vary based on sea-state and the condition of the person overboard. When a person's size or when the freeboard of the vessel makes it difficult to carry out a rescue by hand, equipment such as lifting slings and rigging help retrieve a person overboard.

Knowing and practicing the following procedures will lessen panicked moments if a person falls overboard:

1. Sound the alarm by shouting "person overboard".
2. Throw something buoyant to assist the person in staying afloat or mark the general area if the person submerges.
3. Assign someone to monitor the person overboard. Always keep the person overboard in sight as they could submerge.
4. Carefully manoeuvre the vessel to recover the person overboard on the windward side.
5. Switch off the engine, to prevent the possibility of injury due to the propellers.
6. Throw a buoyant heaving line or a lifebuoy to the person overboard and pull them to the side of the vessel.
7. Bring the person on board over the transom or the lowest point of freeboard on the windward side to prevent swamping in higher sea-states.

For a pleasure craft with a freeboard greater than 0.5 m, a reboarding device must be on board to assist a person in getting back into the vessel from the water. A heavy rope, chain or cable secured at both ends and draped over the side, can provide a makeshift step.

ACTIVITY

Time: 10 min

OBJECTIVE

The objective of this activity is to have the cadets identify the procedures for recovering a person overboard.

RESOURCES

- Overboard Recovery Activity Cards located at Annex B, and

- Overboard Recovery Activity Summary Sheet located at Annex C.

ACTIVITY LAYOUT

N/A.

ACTIVITY INSTRUCTIONS



The cadets may be split into groups if the class size requires.

1. Have each cadet remove an activity card(s) from the envelope until there are no more cards.
2. Have the cadets hold up the card(s) and arrange themselves in sequence based on the information from the card.
3. Have each cadet answer the question that is written on the card(s) that they hold.
4. Discuss the answers with the class and correct any sequence errors.



Distribute the Overboard Exercise Activity Summary Sheet to all cadets.

SAFETY

N/A.

CONFIRMATION OF TEACHING POINT 5

The cadet's participation in the activity will serve as the confirmation of this TP.

END OF LESSON CONFIRMATION

QUESTIONS

- Q1. What use of a PFD will void the DOT-approved status?
- Q2. What should an emergency kit consist of?
- Q3. What pleasure craft must carry a reboarding device?

ANTICIPATED ANSWERS

- A1. Using the PFD as a seat cushion or fender.
- A2. An emergency kit should consist of:
 - a flashlight,
 - a whistle/sound-signalling device,

- a knife,
- a first aid kit,
- emergency rations,
- drinking water, and
- dry clothing.

A3. A pleasure craft with a freeboard greater than 0.5 m.

CONCLUSION

HOMEWORK/READING/PRACTICE

N/A.

METHOD OF EVALUATION

This EO is assessed IAW *Pleasure Craft Operator Competency Test Protocol*, Directorate of Cadets (DND), as approved by Transport Canada.

CLOSING STATEMENT

To react quickly to emergency situations, it is important to know what personal safety equipment is available on board a pleasure craft.

INSTRUCTOR NOTES/REMARKS

N/A.

REFERENCES

- C1-007 (ISBN 0-920232-17-5/A-CR-CCP-009/PT-001) Donaldson, S. (2001). *Basic Sailing Skills*. Kingston, ON: Candian Yachting Association.
- C1-098 (ISBN 0-662-42286-4) Office of Boating Safety (2006). *Safe Boating Guide*. Ottawa, ON: Her Majesty the Queen of Right of Canada, as represented by Transport Canada.
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- C1-139 A-CR-050-SCO/PT-001 Director Cadets (2005). *Cadets Small Craft Operator's Program (SCOP) Module 1*. Ottawa, ON: Department of National Defence.
- C1-142 Office of Boating Safety. (n.d.). *Boating Safety Course Standard: Task Listing*. Ottawa, ON: Transport Canada.



ROYAL CANADIAN SEA CADETS

PHASE THREE

INSTRUCTIONAL GUIDE



SECTION 3

EO C322.03 – DESCRIBE VESSEL SAFETY

Total Time:

150 min

PREPARATION

PRE-LESSON INSTRUCTIONS

Resources needed for the delivery of this lesson are listed in the lesson specification located in A-CR-CCP-603/PG-001, Chapter 4. Specific uses for said resources are identified throughout the instructional guide within the TP for which they are required.

Review the lesson content and become familiar with the material prior to delivering the lesson.

Photocopy the Pleasure Craft Safety Equipment Requirements Reference Sheets located at Annex D, Terminology Crossword Handout located at Annex G and Trip Plan Worksheet located at Annex I for each cadet.

Photocopy and cut out the Vessel Type Cards located at Annex E and the Trip Plan Scenario Cards located at Annex J.

Photocopy the Terminology Crossword Puzzle Answer Key located at Annex H.

Photocopy the Vessel Safety Equipment Flash Cards located at Annex F. Cut them out and randomly place them around the classroom.

Photocopy the Safe Fuelling Flash Cards located at Annex K. Cut them out and place them in an envelope.

Photocopy the Safe Fuelling Wallet Cards located at Annex L onto card stock for each group of eight cadets.

PRE-LESSON ASSIGNMENT

N/A.

APPROACH

An interactive lecture was chosen for TPs 2, 3 and 7 to familiarize the cadets with vessel licensing requirements, safe loading practices and actions taken in response to emergencies.

An in-class activity was chosen for TPs 1 and 4–6 as it is an interactive way to provoke thought and stimulate an interest in vessel safety procedures followed during operation of a pleasure craft.

INTRODUCTION

REVIEW

Review TP 2 from EO M123.01 (Define Basic Naval Terminology, A-CR-CCP-601/PF-001, Chapter 11, Section 1), TPs 1 and 2 from EO M223.01 (Define Ship-Related Terms, A-CR-CCP-602/PF-001, Chapter 12, Section 1) and TP 3 from EO M223.07 (Identify the Procedure for Berthing a Ship, A-CR-CCP-602/PF-001, Chapter 12, Section 7).

OBJECTIVES

By the end of this lesson the cadet shall have described vessel safety.

IMPORTANCE

It is important for cadets to know all aspects of vessel safety while operating a pleasure craft as an emergency situation may arise without warning. Knowing what equipment is on board and the procedure for its use may prevent a situation from becoming life-threatening.


Teaching Point 1

Conduct an Activity Where the Cadets Will Identify the Safety Equipment to be Carried on Board a Pleasure Craft

Time: 40 min

Method: In-Class Activity

SAFETY EQUIPMENT TO BE CARRIED ON BOARD A PLEASURE CRAFT




Brainstorm the list of safety equipment to be carried on board a pleasure craft with the cadets and write them on a flip chart. Distribute the Pleasure Craft Safety Equipment Requirements Reference Sheets located at Annex D to each cadet and compare it to the class list.

Having safety equipment on board a pleasure craft will aid in quickly responding to an emergency. Make sure the equipment is easily accessible and can be properly used by everyone on board.



Ensuring that all lifesaving and navigation equipment is in good working order is the law.

The *Small Vessel Regulations* identify the minimum equipment required on board a pleasure craft according to vessel length. To determine the length of a vessel, refer to the manufacturer's product information or measure from the forward of the foremost outside surface to the aftermost outside surface of the hull.



Manual Propelling Device. Apparatus that can be used manually by a person to propel a vessel.

Unpowered—Less Than 6 m in Length	
Personal Protection Equipment	<ul style="list-style-type: none"> • One Transport Canada approved personal floatation device or lifejacket of appropriate size for each person on board. • One buoyant heaving line no less than 15 m in length.

Unpowered—Less Than 6 m in Length	
Safety Equipment	<ul style="list-style-type: none"> • One manual propelling device, or an anchor with no less than 15 m of cable and/or chain in any combination. • One Class 5BC fire extinguisher, if the pleasure craft is equipped with a fuel-burning cooking, heating or refrigerating appliance. • One bailer, or manual water pump fitted with, or accompanied by sufficient hose to enable a person using the pump to discharge water from the bilge of the vessel over the side of the vessel.
Distress Equipment	<ul style="list-style-type: none"> • N/A.
Navigation Equipment	<ul style="list-style-type: none"> • A sound-signalling device or a sound-signalling appliance. • Navigation lights that meet the applicable standards set out in the <i>Collision Regulations</i> if the pleasure craft is operated after sunset and before sunrise or in periods of restricted visibility. • Compass (not required if within sight of navigational marks).



A bailer or manual pump is not required for self-bailed sealed hull sailing vessel fitted with a recess-type cockpit that cannot contain a sufficient quantity of water to make the vessel capsize or a multi-hull vessel that has subdivided multiple-sealed hull construction.

Powered—Less Than 6 m in Length	
Personal Protection Equipment	<ul style="list-style-type: none"> • One Transport Canada approved personal floatation device or lifejacket of appropriate size for each person on board. • One buoyant heaving line no less than 15 m in length.
Safety Equipment	<ul style="list-style-type: none"> • One manual propelling device, or an anchor with no less than 15 m of cable and/or chain in any combination. • One Class 5BC fire extinguisher, if the pleasure craft is equipped with an inboard engine, a fixed fuel tank of any size, or a fuel-burning cooking, heating or refrigerating appliance. • One bailer, or manual water pump fitted with, or accompanied by sufficient hose to enable a person using the pump to discharge water from the bilge of the vessel over the side of the vessel.
Distress Equipment	<ul style="list-style-type: none"> • A watertight flashlight, or • Three Transport Canada approved flares of Type A, B or C.
Navigation Equipment	<ul style="list-style-type: none"> • A sound-signalling device or a sound-signalling appliance. • Navigation lights that meet the applicable standards set out in the <i>Collision Regulations</i> if the pleasure craft is operated after sunset and before sunrise or in periods of restricted visibility. • Compass (not required if within sight of navigational marks).



Pyrotechnic distress signals that must be carried on board a pleasure craft, must be approved by the DOT, as described in the *Small Vessel Regulations*.

Required pyrotechnic distress signals are not regarded as meeting the carriage requirements if four years or more have elapsed since the date of their manufacture.

The operator of a pleasure craft should read manufacturer instructions before using pyrotechnic distress signals.



The following are the four types of flares approved by Transport Canada:

Type A. Single red star. When launched it reaches a height of 300 m and with the aid of a parachute comes down slowly. The flare is easily observed from the surface or air and burn for 40 seconds.

Type B. Two or more red stars. When launched they reach a height of 100 m and burns for four or five seconds each. The flares are easily observed from the surface or air.

Type C. Red flame torch held by hand. Is best used for pinpointing location during an air search but has limited surface visibility. Burns for at least one minute.

Type D. Produces a dense orange smoke for three minutes. Used only as a day signal.

Greater Than 6 m but Not Greater Than 8 m in Length

Personal Protection Equipment	<ul style="list-style-type: none"> • One Transport Canada approved personal floatation device or lifejacket of appropriate size for each person on board. • One buoyant heaving line no less than 15 m in length, or one lifebuoy with an outside diameter of 610 mm or 762 mm that is attached to a buoyant line no less than 15 m in length. • A reboarding device if the freeboard of the vessel is greater than 0.5 m.
Safety Equipment	<ul style="list-style-type: none"> • One manual propelling device, or an anchor with no less than 15 m of cable and/or chain in any combination. • One Class 5BC fire extinguisher, if the pleasure craft is a power-driven vessel. • One Class 5BC fire extinguisher, if the pleasure craft is equipped with an inboard engine, a fixed fuel tank of any size, or a fuel-burning cooking, heating or refrigerating appliance. • One bailer, or manual water pump fitted with, or accompanied by sufficient hose to enable a person using the pump to discharge water from the bilge of the vessel over the side of the vessel.
Distress Equipment	<ul style="list-style-type: none"> • A watertight flashlight. • Six Transport Canada approved flares of Type A, B or C.
Navigation Equipment	<ul style="list-style-type: none"> • A sound-signalling device or a sound-signalling appliance. • Navigation lights that meet the applicable standards set out in the <i>Collision Regulations</i> if the pleasure craft is operated after sunset and before sunrise or in periods of restricted visibility. • Compass (not required if within sight of navigational marks).



A pleasure craft is exempt from carrying pyrotechnic distress signals if:

- it is operating in a river, canal or like in which it can at no time be more than one nautical mile (1.852 km) from shore, or
- it is engaged in an official competition or in final preparation for an official competition and has no sleeping arrangements.

Greater Than 8 m but Not Greater Than 12 m in Length

Personal Protection Equipment	<ul style="list-style-type: none"> • One Canadian-Approved personal floatation device or lifejacket of appropriate size for each person on board. • One buoyant heaving line no less than 15 m in length. • One lifebuoy with an outside diameter of 610 mm or 762 mm that is attached to a buoyant line no less than 15 m in length. • A reboarding device if the freeboard of the vessel is greater than 0.5 m.
Safety Equipment	<ul style="list-style-type: none"> • An anchor with no less than 30 m of cable and/or chain in any combination. • One Class 10BC fire extinguisher, if the pleasure craft is a power-driven vessel. • One Class 10BC fire extinguisher, if the pleasure craft is equipped with an inboard engine, a fixed fuel tank of any size, or a fuel-burning cooking, heating or refrigerating appliance. • One bailer. • One manual water pump fitted with, or accompanied by sufficient hose to enable a person using the pump to discharge water from the bilge of the vessel over the side of the vessel.
Distress Equipment	<ul style="list-style-type: none"> • A watertight flashlight. • 12 Transport Canada approved flares of Type A, B, C or D, no more than six of which are Type D.
Navigation Equipment	<ul style="list-style-type: none"> • A sound-signalling device or a sound signalling appliance. • Navigation lights that meet the applicable standards set out in the <i>Collision Regulations</i>. • Compass (not required if voyage is less than 20 nautical miles [37 km] from shore).

Greater Than 12 m but Not Greater Than 20 m in Length

Personal Protection Equipment	<ul style="list-style-type: none"> • One Transport Canada approved personal floatation device or lifejacket of appropriate size for each person on board. • One buoyant heaving line no less than 15 m in length. • One lifebuoy with an outside diameter of 610 mm or 762 mm that is attached to a buoyant line no less than 15 m in length. • A reboarding device.
Safety Equipment	<ul style="list-style-type: none"> • An anchor with no less than 50 m of cable and/or chain in any combination. • Bilge pumping arrangements.

Greater Than 12 m but Not Greater Than 20 m in Length	
	<ul style="list-style-type: none"> • One Class 10BC fire extinguisher, at each of the following locations: <ul style="list-style-type: none"> ○ at each access to any space where a fuel-burning cooking, heating or refrigerating appliance is fitted, ○ at the entrance to any accommodation space, and ○ at the entrance to the engine room space. • Two buckets, each with a capacity of 10 L or more. • One axe.
Distress Equipment	<ul style="list-style-type: none"> • A watertight flashlight. • 12 Transport Canada approved flares of Type A, B, C or D, no more than six of which are Type D.
Navigation Equipment	<ul style="list-style-type: none"> • A sound-signalling device or a sound-signalling appliance. • Navigation lights that meet the applicable standards set out in the <i>Collision Regulations</i>. • Compass (not required if voyage is less than 20 nautical miles [37 km] from shore).



A vessel greater than 12 m shall carry pyrotechnic distress signals and is not exempt under the conditions listed for smaller vessels.

Greater Than 20 m in Length	
Personal Protection Equipment	<ul style="list-style-type: none"> • One Transport Canada approved personal floatation device or lifejacket of appropriate size for each person on board. • One buoyant heaving line no less than 30 m in length. • Two lifebuoys, each with an outside diameter 762 mm that are attached to a buoyant line no less than 30 m in length, and one of which is equipped with a self-igniting light. • A lifting harness with rigging. • A reboarding device.
Safety Equipment	<ul style="list-style-type: none"> • An anchor with no less than 50 m of cable and/or chain in any combination. • Bilge pumping arrangements. • One power-driven fire pump located outside the machinery space, with one firehose and nozzle positioned so that a jet of water can be directed into any part of the vessel. • One Class 10BC fire extinguisher, at each of the following locations: <ul style="list-style-type: none"> ○ at each access to any space where a fuel-burning cooking, heating or refrigerating appliance is fitted, ○ at the entrance to any accommodation space, and ○ at the entrance to the engine room space. • Four buckets, each with a capacity of 10 L or more. • Two axes.

Greater Than 20 m in Length	
Distress Equipment	<ul style="list-style-type: none"> • A watertight flashlight. • 12 Transport Canada approved flares of Type A, B, C or D, no more than six of which are Type D.
Navigation Equipment	<ul style="list-style-type: none"> • Two sound-signalling appliances. • Navigation lights that meet the applicable standards set out in the <i>Collision Regulations</i>. • Compass (not required if voyage is less than 20 nautical miles [37 km] from shore).

ACTIVITY

Time: 20 min

OBJECTIVE

The objective of this activity is to have the cadets identify the safety equipment to be carried on board a vessel.

RESOURCES

- Vessel safety equipment, to include:
 - PFDs and/or lifejackets of various sizes,
 - buoyant heaving line,
 - lifebuoy,
 - anchor,
 - bailer,
 - manual bilge pump,
 - fire extinguisher,
 - watertight flashlight,
 - assorted flares of Type A, B, C and D,
 - whistle/sound-signalling device, and
 - navigation lights,
- Vessel Type Cards, and
- Vessel Safety Equipment Flash Cards.

ACTIVITY LAYOUT

Randomly place the items in the resources list around the classroom or training area.



If the items in the resources list are not available, use the Vessel Safety Equipment Flash Cards located at Annex F.

ACTIVITY INSTRUCTIONS

1. Have one cadet choose a Vessel Type Card located at Annex E from the pile.
2. Have the remaining cadets assemble a vessel safety kit using the parts found in the classroom or training area. Cadets should use the *Safe Boating Guide* or the Vessel Safety Equipment Requirements Reference Sheet to determine what equipment is necessary.
3. When completed, discuss the choices with the class and correct any errors.
4. Repeat Steps 1. to 3. until the cadets have assembled equipment safety kits for each type of vessel.

SAFETY

N/A.

CONFIRMATION OF TEACHING POINT 1

The cadets' participation in the activity will serve as the confirmation of this TP.

Teaching Point 2

Describe Vessel Licensing Requirements

Time: 5 min

Method: Interactive Lecture

VESSEL LICENSING REQUIREMENTS

Pleasure craft less than 15 gross tons or 12 m or less, powered by an engine of 10 hp (7.5 kW) or more must be licensed or registered, regardless of where they operate in Canada. A licence is free-of-charge and can be obtained through Service Canada or Service New Brunswick Centres.

By law, a pleasure craft's licence number must be displayed above the water line on both sides of the bow, as far forward as practical and where it can easily be seen. The numbers must be in block letters, 7.5 cm (3 inches) in height and must contrast with the colour of the pleasure craft's bow (as illustrated in Figure 13-3-1).



Office of Boating Safety, *Safe Boating Guide*, Her Majesty the Queen of Right of Canada, as represented by Transport Canada

Figure 13-3-1 License Markings

CONFIRMATION OF TEACHING POINT 2

QUESTIONS

- Q1. What pleasure craft must be licensed?
- Q2. How much does it cost?
- Q3. Where must the license markings be placed?

ANTICIPATED ANSWERS

- A1. Less than 15 gross tons or 12 m or less, powered by an engine of 10 hp (7.5 kW) or more.
- A2. Free-of-charge.
- A3. Displayed above the water line on both sides of the bow, as far forward as practical and where it can easily be seen.

Teaching Point 3


Time: 5 min

Describe Safe Loading Practices

Method: Interactive Lecture

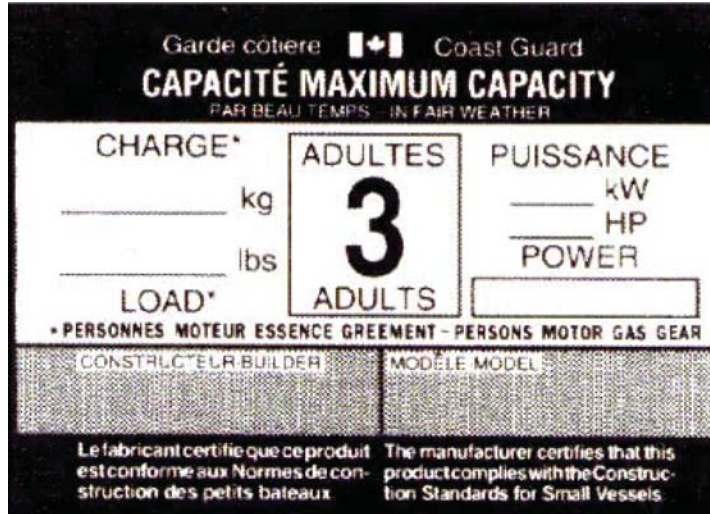
GROSS LOAD CAPACITY

A capacity plate (as illustrated in Figure 13-3-2), stating the recommended maximum gross load capacity, the recommended maximum number of occupants and the recommended maximum safe limit of engine power, must be affixed on a pleasure craft.



Gross load capacity means the total weight of persons, equipment, stores, fuel, motor assembly and steering controls.

The number of occupants means number of adult occupants.




Director Cadets 3, 2008, Ottawa, ON: Department of National Defence

Figure 13-3-2 Capacity Plate

LOAD A PLEASURE CRAFT

The weight distribution on board a pleasure craft can greatly effect vessel performance, stability and safety. When loading a pleasure craft the operator shall:

- adhere to the recommended gross load capacity or the equivalent number of adult person of the pleasure craft by not overloading the craft;
- position the persons on board and the gear so as to evenly distribute the weight;
- position the load as low as possible on board the craft; and
- lash the gear or stow the gear in lockers to prevent uncontrolled movement of the gear.



The operator of pleasure craft should locate the equipment required to be carried in readily accessible locations on board the craft.

CONFIRMATION OF TEACHING POINT 3

QUESTIONS

- Q1. What does gross load capacity mean?
- Q2. Where can an operator find the recommended maximum safe limit of engine power?
- Q3. How can weight distribution effect pleasure craft?

ANTICIPATED ANSWERS

- A1. Gross load capacity means the total weight of persons, equipment, stores, fuel, motor assembly and steering controls.
- A2. The recommended maximum safe limit of engine power can be found on the capacity plate.
- A3. The weight distribution on board a pleasure craft can greatly effect vessel performance, stability and safety.

Teaching Point 4

Conduct an Activity Where the Cadets Will Define Nautical Terms

Time: 25 min

Method: In-Class Activity

NAUTICAL TERMS



The cadets have been introduced to some of these terms in EOs M123.01 (Define Basic Naval Terminology, A-CR-CCP-601/PF-001, Chapter 11, Section 1), M223.01 (Define Ship-Related Terms, A-CR-CCP-602/PF-001, Chapter 12, Section 1) and M223.07 (Identify the Procedure for Berthing a Ship, A-CR-CCP-602/PF-001, Chapter 12, Section 7). Ask the cadets to define the terms below and provide the definitions for those not previously covered.

Abaft. Further aft than.

Ahead. The direction or position pointing forward of a vessel.

Astern. The direction or position pointing aft of a vessel.

Beam. The greatest width of the hull.

Bow. The forward part of the vessel.

Draught (Draft). The distance from the lowest point of the vessel in the water to the surface.

Fenders. A device for protecting the vessel's sides.

Gale Warning. Sustained wind speeds in the range of 34 to 47 knots (62 to 87 km/h) inclusive, as defined by Atmospheric Environment Service, Environment Canada.

Hull. The body or shell, of the vessel.

Light Winds. Wind speeds less than 15 knots (28 km/h), as defined by Atmospheric Environment Service, Environment Canada.

Moderate Winds. Wind speeds in the range of 15 to 19 knots (28 to 35 km/h), as defined by Atmospheric Environment Service, Environment Canada.

Operator. The person in charge and control of a pleasure craft and who is responsible for the pleasure craft.

Pleasure Craft. A boat, ship, vessel or any other watercraft used exclusively for pleasure and does not carry passengers or goods for hire, reward remuneration or any object of profit.

Port. The left side of the vessel, facing forward.

Power Vessel. A vessel propelled by machinery.

Sailing Vessel. A vessel under sail that is not using propelling machinery.

Small Craft Warning. Sustained wind speeds in the range of 20 to 33 knots (37 to 61 km/h), as defined by Atmospheric Environment Service, Environment Canada.

Starboard. The right side of the vessel, facing forward.

Stern. The after part of the vessel.

Storm Warning. Sustained wind speeds in the range of 48 to 63 knots (88 to 117 km/h) inclusive, as defined by Atmospheric Environment Service, Environment Canada.

Strong Winds. Wind speeds in the range of 20 to 33 knots (37 to 61 km/h), as defined by Atmospheric Environment Service, Environment Canada.

Underway. Not at anchor or made fast to the shore.

Wash. The loose or broken water left behind a pleasure craft as it moves along and includes the water thrown aft by the propeller.

Wake. The disturbed column of water around and behind a moving pleasure craft which is set into motion by the passage of a pleasure craft.

ACTIVITY

Time: 10 min

OBJECTIVE

The objective of this activity is to have the cadets define nautical terms.

RESOURCES

Terminology Crossword Handout.

ACTIVITY LAYOUT

N/A.

ACTIVITY INSTRUCTIONS

1. Distribute the Terminology Crossword Handout located at Annex G to each cadet.
2. Have the cadets complete the Terminology Crossword Handout.
3. Discuss the answers with the class and correct any errors.

SAFETY

N/A.

CONFIRMATION OF TEACHING POINT 4

The cadets' participation in the activity will serve as the confirmation of this TP.

Teaching Point 5**Conduct an Activity Where the Cadets Will Describe Pre-Departure Responsibilities**

Time: 25 min

Method: In-Class Activity

PRE-DEPARTURE RESPONSIBILITIES

Provide the cadets with this material prior to conducting the activity.

An operator of a pleasure craft must prepare for any events that may take place while they are out on the water. If planned, the trip will be safer and more enjoyable.

Check the Weather Forecast

Before departing, an operator should obtain a current weather forecast for the area that they will be operating in. This forecast will give an indication as to the weather patterns expected and any potential dangers to a pleasure craft on the water.

Current weather forecasts can be obtained from the following locations:

- personal observations,
- newspapers,
- radios,
- television weather channel,
- radiotelephones, or
- Environment Canada website.



To obtain a current marine weather forecasts (as illustrated in Figure 13-3-3), visit the Environment Canada website at http://www.weatheroffice.gc.ca/marine/index_e.html.

Environment Canada Weather Forecast

Marine Forecast issued for Juan de Fuca strait.

Issued: 4 PM PDT Monday 14 April 2008 for the period ending
4 PM Tuesday with an outlook for the following 24 hours.

Synopsis:

A weak ridge of high pressure over northern Vancouver Island this evening will drift southeastward through the south coast tonight. Meanwhile a weak front well offshore will reach the north coast overnight and will slowly move inland on Tuesday. Moderate westerlies will back to moderate to strong south or southeast in advance of the warm front over most areas from northern Vancouver Island northward. Winds will veer to moderate to strong westerly behind the front. In the far south moderate to strong west or northwest winds will prevail tonight with gales forecast through Juan de Fuca strait. Winds will ease to light to moderate by Tuesday morning.

Forecast:

Gale warning continued.

Winds westerly 25 to gales 35 knots easing to 15 to 25 overnight. Partly cloudy. Chance of showers. Outlook. Moderate to strong westerlies.

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Marine Weather by Environment Canada, 2008, Juan de Fuca Straits. Retrieved April 14, 2008, from http://www.weatheroffice.gc.ca/marine/marine_e.html?c-jfs. Copyright 2008 by Environment Canada

Figure 13-3-3 Marine Weather Forecast

Consider Local Hazards

When planning a trip on the water, research the area for local hazards that may impede the operation of a pleasure craft and increase the risk of injuries or loss of life to persons on board. Knowing where these hazards are located will aid in making decisions in case of an emergency.

Local hazards may include:

- low-head dams,
- rapids,
- sudden winds,
- tides,
- currents,
- white water,
- overhead cables,
- underwater cables,
- bridges, or
- rapid build-up of high wave conditions.

Information on local hazards can be obtained from marine charts of the area, *Sailing Directions*, current tide tables and atlases and knowledgeable local residents.



Sailing Directions are publications that provide information on general navigation, meteorology, ports, buoyage, currents, regulations and detailed advice on passage in each local area.

Prepare a Trip Plan

Before heading out on the water, an operator of a pleasure craft should complete a trip plan (as illustrated at Annex I) with all of the necessary details to assist in initiating a call for search and rescue in case of an emergency. File the plan with a responsible person that is familiar with the instructions to follow in case of an emergency and update the plan during the trip if there are any changes.

The trip plan should contain the following information:

- the name and number of the vessel,
- whether the vessel is a sailing or power-driven vessel,
- the name, address and phone number of the owner,
- the number of persons on board,
- the size, type and colour of the vessel,
- the type of engine,
- any distinguishing features of the vessel,
- the type of radiotelephone carried, if any, and the channel monitored,
- any safety equipment carried including flares, lifejackets and life rafts,
- a description of the trip, time of departure, time of return and proposed route, and
- any instructions to follow in case of emergency.



Distribute the Trip Plan Worksheet located at Annex I to the cadets and discuss what information should be entered in the sections.



Trip plans may also be referred to as sail or float plans.

Use a Pre-Departure Checklist

The operation of a pleasure craft should be fun, safe and hassle-free. To ensure the pleasure craft is in good working order and to avoid situations which could lead to emergencies, a pre-departure checklist (as illustrated in Figure 13-3-4) should be followed before heading out on the water.

Pre-departure Checklist	
√	Daily inspection complete.
√	Fuel/Oil tanks full.
√	Is all gear on board and secure.
√	Bilge pump working.
√	Tools and spares on board.
√	Lights and spot lights working.
√	Steering checked.
√	Sail plan filed.
√	VHF radio check and portables charged.
√	Cell phone and extra batteries checked.
√	PFDs on board.
√	Crew briefed.
√	Start-up procedure followed.

Director Cadets 3, 2008, Ottawa, ON: Department of National Defence

Figure 13-3-4 Pre-Departure Checklist

ACTIVITY

Time: 10 min

OBJECTIVE

The objective of this activity is to have the cadets describe pre-departure responsibilities.

RESOURCES

- Trip Plan Worksheet, and
- Trip Plan Scenario Cards.

ACTIVITY LAYOUT

N/A.

ACTIVITY INSTRUCTIONS

1. Divide the cadets into four groups.
2. Have each group select one of the Trip Plan Scenario Cards located at Annex J and complete a Trip Plan Worksheet using the information found on the card.
3. Have each group discuss their Trip Plan with the remainder of the class.
4. Discuss any errors or omissions with the class.

SAFETY

N/A.

CONFIRMATION OF TEACHING POINT 5

The cadets' participation in the activity will serve as the confirmation of this TP.

Teaching Point 6

Conduct an Activity Where the Cadets Will Describe Safe Fuelling Procedures

Time: 20 min

Method: In-Class Activity

SAFE FUELLING PROCEDURES

Fuel is extremely harmful to the marine environment and its vapours create a fire hazard. Any enclosed space that contains fuel-burning engines or appliances should be well ventilated. Operators should ensure that fuel-burning engines or appliances designed for marine use and are maintained to prevent oil and fuel from leaking into the water.

By law the fuelling procedure that must be followed includes these steps:

1. Moor the boat securely to prevent spillage.
2. Shut off all engines.
3. Send all persons ashore.
4. Extinguish all open flames.
5. Do not smoke.
6. Turn off electrical switches and avoid using electrical devices such as portable radios.
7. Close all windows, portholes, hatches and cabin doors.
8. Remove portable tanks from the vessel.
9. Ground the nozzle against the filler pipe.
10. Know the capacity of the fuel tank and do not overfill it.
11. Wipe up spillage and properly dispose of the cloth or towel used.
12. Turn on the engine compartment blower for at least four minutes immediately before starting a gasoline engine.
13. Check for fuel vapour odours from the engine compartment before starting up the engine.



Carbon monoxide (CO) is an inflammable, colourless, odourless and tasteless toxic gas produced during the incomplete combustion of fuel. When oxygen is replaced with carbon monoxide in our blood, our bodies poison themselves by cutting off the needed oxygen to our organs, resulting in unconsciousness or death. Cooking, heating or even leaving a motor on idle for too long, particularly where there are enclosed or partially enclosed spaces, can result in a dangerous build-up of CO.

If the vessel has accommodations and is fitted with an inboard engine, generator or fuel-burning appliance, a CO detector must be installed close to where people will be sleeping.

ACTIVITY

Time: 10 min

OBJECTIVE

The objective of this activity is to have the cadets describe safe fuelling procedures.

RESOURCES

- Safe Fuelling Flash Cards, and
- Envelope or small container.

ACTIVITY LAYOUT

N/A.

ACTIVITY INSTRUCTIONS

1. Have each cadet remove a Safe Fuelling Flash Card(s) located at Annex K from the envelope until there are no more cards.
2. Have the cadets hold up their card(s) and arrange them in sequence based on the information from the card.
3. Discuss the sequence with the class and correct any errors.



Distribute the Safe Fuelling Wallet Cards located at Annex L to all cadets.

SAFETY

N/A.

CONFIRMATION OF TEACHING POINT 6

The cadets' participation in the activity will serve as the confirmation of this TP.

Teaching Point 7

Describe the Actions Taken in Response to Emergencies

Time: 20 min

Method: Interactive Lecture

RESPONSE TO EMERGENCIES

The three events that are most likely to cause an emergency are mechanical failure, collision with an object and deterioration in the weather. Preparing for these events before heading out on the water could prevent them from becoming worse and could possibly save lives.

Breakdown

The following actions should be taken in response to a breakdown:

1. alter the speed of the vessel as appropriate to the prevailing circumstances;
2. anchor the vessel as appropriate to the prevailing circumstances;
3. investigate the problem;
4. correct the problem if possible; and
5. use or exhibit signals to indicate distress and need of assistance, if necessary.

The owner of a pleasure craft should maintain the vessel and its equipment on a regular basis and ensure that everything onboard the vessel is functioning properly to reduce the probability of breakdowns.

Hull Leaks or Flooding

The following actions should be taken in response to a hull leak or flooding:

1. locate the source of the hull leak or flooding;
2. stop the leak or the source of flooding if possible;
3. remove the accumulation of water in the hold or other compartments of the vessel using either handheld bailers, manual pumps or bilge pumping systems appropriate for the circumstances and the vessel; and
4. use or exhibit signals to indicate distress and need of assistance, if necessary.

The operator of a pleasure craft should carry tools and material onboard at all times to temporarily stop hull leaks or flooding.

Capsizing, Swamping, Sinking or Grounding

The following actions should be taken in response to a vessel capsizing, swamping sinking or grounding:

1. don PFDs or lifejackets;



The *Small Vessel Regulations* state that there must be a Canadian-approved PFD or lifejacket of appropriate size for each person on board, however, IAW A-CR-CCP-030/PT-001, a PFD must be worn at all times by cadets.

2. stay with the vessel when appropriate;
3. account for persons previously on board; and
4. use or exhibit signals to indicate distress and need of assistance, if necessary.

Anchoring

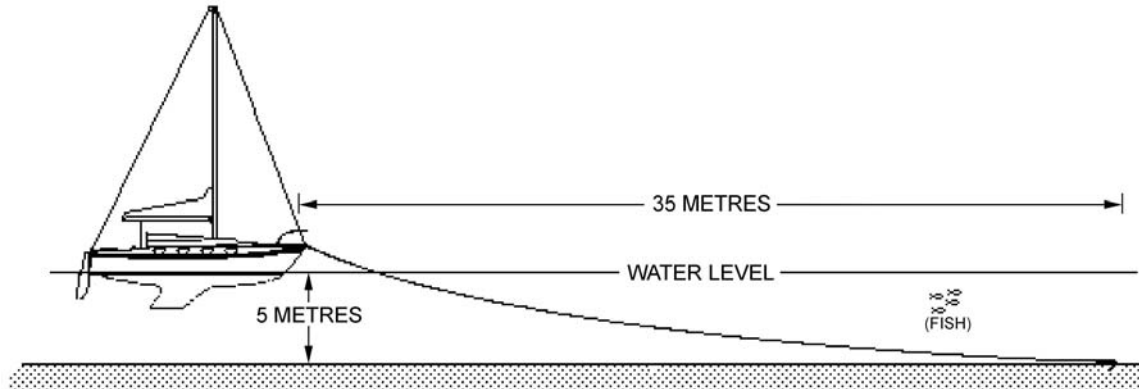
Anchoring a pleasure craft is a safety option to consider in the following conditions:

- when severe weather threatens, or
- when a pleasure craft is disabled.



Veer. To let out anchor cable.

When anchoring, it is important to fasten the inboard end of the anchor line to a secure point on the pleasure craft and to securely fasten the outboard end of the anchor line to the anchor. For an anchor to dig into the bottom, it must have the correct amount of cable veered. This is known as the scope of the cable. For a short stay or “lunch hook”, veer out a scope of 3:1 or a cable length of three times the depth of water. For a longer stay, a scope of 5:1 is required. A scope of 7:1 is recommended for an overnight anchorage.



Director Cadets 3, 2008, Ottawa, ON: Department of National Defence

Figure 13-3-5 Anchor Scope

CONFIRMATION OF TEACHING POINT 7

QUESTIONS

- Q1. What are the three main events that are most likely to cause an emergency?
- Q2. How should you remove the water accumulation in the vessel after stopping a leak?
- Q3. What actions should be taken in response to a vessel capsizing, swamping, sinking or grounding?

ANTICIPATED ANSWERS

- A1. Mechanical failure, collision with some other object or deterioration in the weather.
- A2. Handheld bailers, manual pumps or bilge pumping systems as appropriate for the circumstances and the vessel.
- A3. The following actions should be taken in response to a vessel capsizing, swamping, sinking or grounding:
 1. don PFDs or lifejackets;



The *Small Vessel Regulations* state that there must be a Canadian-approved PFD or lifejacket of appropriate size for each person on board, however, IAW A-CR-CCP-030/PT-001, a PFD must be worn at all times by cadets.

2. stay with the vessel when appropriate;

3. account for persons previously on board; and
4. use or exhibit signals to indicate distress and need of assistance, if necessary.

END OF LESSON CONFIRMATION

QUESTIONS

- Q1. What determines the minimum equipment required on board a pleasure craft?
- Q2. At what wind speeds will a small vessel warning be issued?
- Q3. What scope is recommended for an overnight anchorage?

ANTICIPATED ANSWERS

- A1. Vessel length.
- A2. Sustained wind speeds in the range of 20-33 knots.
- A3. 7:1.

CONCLUSION

HOMework/READING/PRACTICE

N/A.

METHOD OF EVALUATION

This EO is assessed IAW *Pleasure Craft Operator Competency Test Protocol*, Directorate of Cadets (DND), as approved by Transport Canada.

CLOSING STATEMENT

An emergency situation may arise without warning. Knowing what equipment is on board and the procedure for its use may prevent an uncomfortable situation from becoming life-threatening.

INSTRUCTOR NOTES/REMARKS

N/A.

REFERENCES

- | | |
|--------|---|
| A1-004 | B-GN-181-105/FP-E00 Chief of the Maritime Staff. (2000). <i>CFCD 105 Seamanship Rigging and Procedures Manual</i> . Ottawa, ON: Department of National Defence. |
| C1-098 | (ISBN 0-662-42286-4) Office of Boating Safety (2006). <i>Safe Boating Guide</i> . Ottawa, ON: Her Majesty the Queen of Right of Canada, as represented by Transport Canada. |
| C1-142 | Office of Boating Safety. (n.d.). <i>Boating Safety Course Standard: Task Listing</i> . Ottawa, ON: Transport Canada. |

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ROYAL CANADIAN SEA CADETS

PHASE THREE

INSTRUCTIONAL GUIDE



SECTION 4

EO C322.04 – DESCRIBE NAVIGATION SAFETY

Total Time:

90 min

PREPARATION

PRE-LESSON INSTRUCTIONS

Resources needed for the delivery of this lesson are listed in the lesson specification located in A-CR-CCP-603/PG-001, Chapter 4. Specific uses for said resources are identified throughout the instructional guide within the TP for which they are required.

Review the lesson content and become familiar with the material prior to delivering the lesson.

Photocopy the Rules of the Road Handout located at Annex M, Collision Regulations Exercise located at Annex N, Lateral Buoys and Standard Daybeacons Handout located at Annex P and the Cardinal Buoys and Special Buoys Handout located at Annex R for each cadet.

Photocopy the Collision Regulations Exercise Answer Key located at Annex O.

Photocopy and cut out the Lateral Buoys Exercise Handout located at Annex Q and the Cardinal and Special Buoys Exercise Handout located at Annex S.

PRE-LESSON ASSIGNMENT

N/A.

APPROACH

An interactive lecture was chosen for TPs 1 and 4 present basic material and to orient the cadets with aspects of safe boating practices and navigational resources .

An in-class activity was chosen for TPs 2 and 3 as it is an interactive way to provoke thought and stimulate an interest in navigation safety.

INTRODUCTION

REVIEW

Review Collision Regulations from TP 1 of EO C322.01 (Describe Acts, Codes and Regulations, Section 1).

OBJECTIVES

By the end of this lesson the cadet shall have described navigation safety.

IMPORTANCE

It is important for cadets to know the rules, regulations and navigational aids that must be obeyed while operating a pleasure craft as they may be required to operate a pleasure craft during cadet activities.

Teaching Point 1

Identify Safe Boating Practices

Time: 25 min

Method: Interactive Lecture

SHARING WATERWAYS

While operating a pleasure craft an operator must be aware of the impact of their wake and wash on other water activities, property and commercial traffic. While operating a pleasure craft in the presence of other persons or properties the operator shall take the following actions:

- stay well clear of swimmers and properties;
- adjust the speed of the craft so that the wake will not cause injury, damage to property or erode the shoreline;
- follow the *Collision Regulations*; and
- use courtesy and common sense so as not to create a hazard, a threat, a stress or an irritant to themselves, to others, to the environment or to wildlife.

The speed of a pleasure craft can greatly influence an operator's ability to react to different situations. A craft travelling at high speeds requires increased stopping distance. It also requires the operator to be more attentive because the operator has less time to react to changing conditions.

Heavy fog, rain and wind can greatly reduce visibility while on the water. The reduction of speed in bad weather will help to maintain control of the pleasure craft and decrease the risk of injury or loss of life to persons on board.

COLLISION REGULATIONS



The cadets have been introduced to some of these rules in EO C322.01 (Describe Acts, Codes and Regulations, Section 1). Ask the cadets to describe the general and right-of-way rules and write down the responses. Compare the class list to the list below.



Distribute the rules of the road handout located at Annex M to each cadet.

The *Collision Regulations* are a published set of rules to aid mariners in the prevention of collisions at sea. The rules provide clear directions as to what actions shall be taken for any situation that may arise on the water.

General Rules

The *Collision Regulations* state the following general rules:

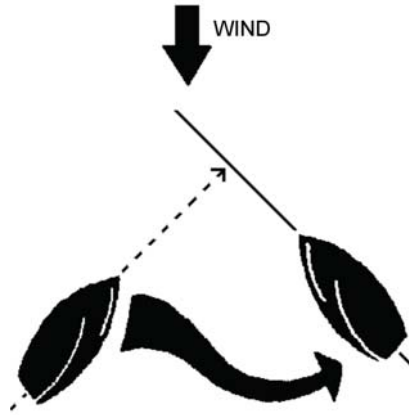
1. The operator of a pleasure craft shall make every effort and take any action to avoid collisions at sea (Rules 1 & 2).

2. The operator of a pleasure craft shall at all times maintain a proper lookout by sight and hearing (Rule 5), gather as much information as possible from as many sources as available and practicable to determine a risk of collision (Rules 5 & 7). If there is any doubt such risk shall be deemed to exist.
3. A pleasure craft shall at all times proceed at a safe speed so that proper and effective action could be taken to avoid collision (Rule 6). Pleasure craft operators shall take the following factors into account in determining safe speed:
 - a. state of visibility,
 - b. traffic density including the concentrations of fishing vessels and/or other vessels,
 - c. state of wind,
 - d. sea state and current, and
 - e. proximity to navigational hazards.
4. A pleasure craft shall at all times proceed with caution at a speed such that wake and wash will not adversely affect:
 - a. other vessels, such as anchored vessels, grounded vessels, wrecks, dredges, tows, rowboats or canoes,
 - b. work being passed such as shoreline, docks, floats or wetlands,
 - c. other waterway users such as swimmers,
 - d. area of bathing beaches,
 - e. area where divers are working, or
 - f. area of anchorage.
5. The operator of a pleasure craft of less than 20 m in length or a pleasure sailing craft shall not impede the safe passage of a vessel which can safely navigate only within a narrow channel (Rule 9).
6. The operator of a pleasure craft of less than 20 m in length or a pleasure sailing craft shall not impede the safe passage of a power driven vessel following a traffic lane (Rule 10).
7. The operator of a pleasure craft not in sight of other vessels in or near an area of restricted visibility shall proceed at a safe speed adapted to the prevailing circumstances and conditions of restricted visibility (Rule 19).

Right-of-Way Rules

The *Collision Regulations* state the following right-of-way rules:

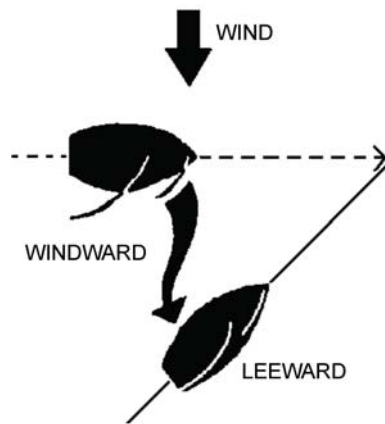
1. The expression “windward side” shall be deemed to be the side opposite to that on which the mainsail is carried on a pleasure sailing craft (Rule 12).
2. The operator of a pleasure sailing craft that has the wind on the port side shall take early and substantial action to keep well clear of a pleasure sailing vessel that has the wind on the starboard side (Rules 12[a{i}] & 16).



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Figure 13-4-1 Rules 12(a[i]) & 16

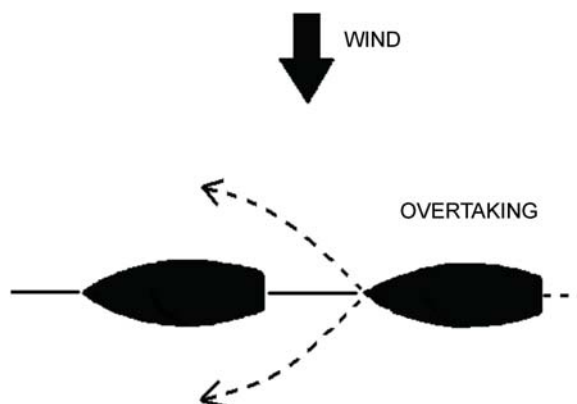
3. The operator of a pleasure sailing craft that has the wind on the same side of other sailing vessels, shall take early and substantial action to keep well clear of sailing vessels to leeward (Rules 12[a{ii}] & 16).



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Figure 13-4-2 Rules 12(a[ii]) & 16

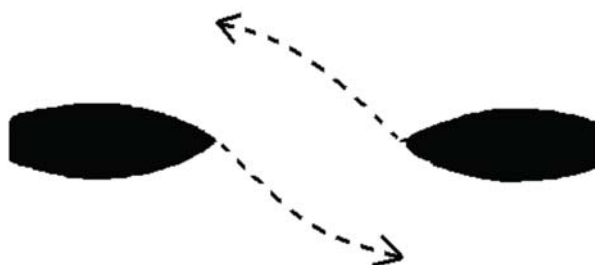
4. The operator of a pleasure sailing craft that has the wind on the port side and cannot determine with certainty whether other sailing vessels to windward have the wind on the port or on the starboard side shall take early and substantial action to keep well clear of the sailing vessels (Rules 12 & 16).
5. The operator of a pleasure craft shall take early and substantial action to keep well clear of vessels being overtaken (Rules 13 & 16).



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Figure 13-4-3 Rules 13 & 16

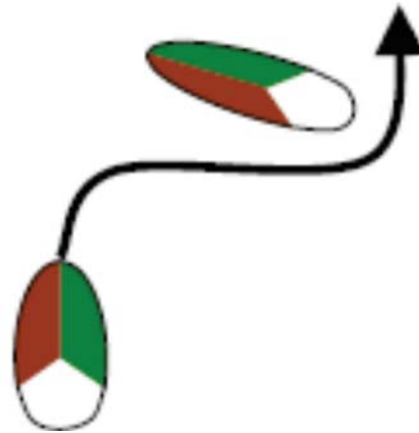
6. The operator of a pleasure craft that meets on reciprocal courses to other power-driven vessels, so as to involve a risk of collision, shall alter course to starboard so that they should pass on the port side of the others (Rule 14).



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Figure 13-4-4 Rule 14

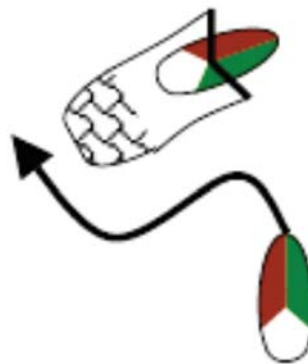
7. The operator of a pleasure craft that has other power vessels on the starboard side and must cross them so as to involve a risk of collision, shall take early and substantial action to keep well clear and, if necessary, avoid crossing ahead of the other vessels (Rules 15 & 16).



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Figure 13-4-5 Rules 15 & 16

8. The operator of a pleasure craft that does not have to take early and substantial action to keep well clear of other vessels shall maintain course and speed (Rules 16 & 17).
9. The operator of a power-driven pleasure craft or a pleasure sailing craft shall take early and substantial action to keep well clear of a vessel engaged in fishing (Rules 16 & 18[a & b]).



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Figure 13-4-6 Rules 16 & 18[a & b]

10. The meaning of the following flags when exhibited:
 - a. from the International Code of Signals, flag ALFA (A) (as illustrated in Figure 13-4-7), indicates "I have a diver down, keep well clear at slow speed", and
 - b. from the Private Buoy Regulations, flag "red and white" marks area where diving is in progress.
11. The operator of a pleasure craft shall take early and substantial action to keep well clear of vessels engaged in diving operations that exhibit the International Code flag "A" (Rules 18 & 27).



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Figure 13-4-7 International Code of Signals Flag A Figure 13-4-8 Private Buoy Regulations Diver Flag



The information on lights and shapes, sound signals and signals of distress is new. Provide the cadets with the following material prior to conducting the activity.

LIGHTS AND SHAPES

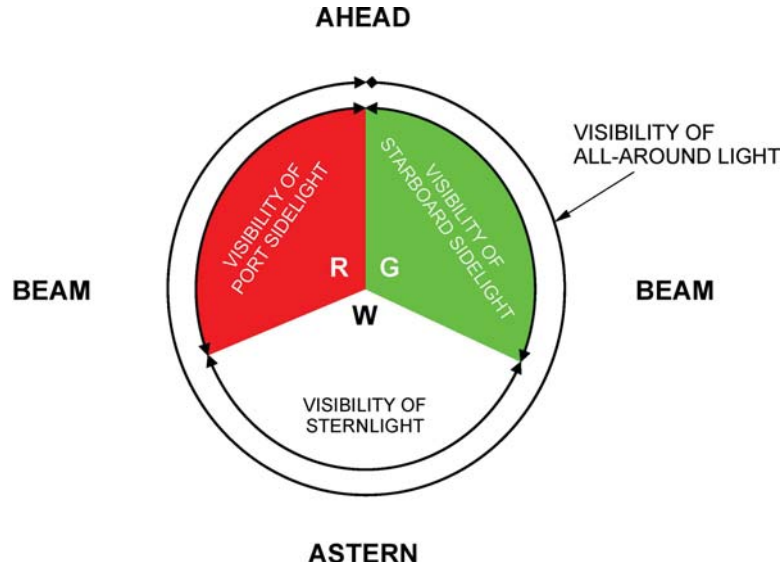
The *Collision Regulations* define the following:

Masthead Light. A white light placed over the fore-and-aft centerline of a vessel, showing an unbroken light over an arc of the horizon of 225 degrees and so fixed as to show the light from right ahead to 22.5 degrees abaft the beam on either side of the vessel (Rule 21[a]).

Sidelights. A green light on the starboard side and a red light on the port side, each showing an unbroken light over an arc of the horizon of 112.5 degrees and so fixed as to show the light from right ahead to 22.5 degrees abaft the beam on either side of a vessel (Rule 21[b]).

Sternlight. A white light placed as nearly as practical at the stern showing an unbroken light over an arc of the horizon of 135 degrees and so fixed as to show the light 67.5 degrees from right aft on each side of the vessel (Rule 21[c]).

All-Round Light. A light showing an unbroken light over an arc of the horizon of 360 degrees (Rule 21[e]).



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Figure 13-4-9 Arc of Visibility

The *Collision Regulations* state the following rules pertaining to lights:

1. The operator of a power vessel underway shall, from sunset to sunrise, exhibit a masthead light forward, sidelights and a sternlight (Rules 20 & 23[a]).
2. The operator of a power vessel of less than 12 m in length underway may exhibit, from sunset to sunrise, in lieu of a masthead light forward, sidelights and a sternlight, an all-round white light and sidelights (Rules 20 & 23[c]{i}).
3. The operator of a sailing vessel underway shall, from sunset to sunrise, exhibit sidelights and a sternlight (Rules 20 & 25[a]).
4. The operator of a sailing vessel of less than 20 m in length underway may exhibit, from sunset to sunrise, in lieu of sidelights and a sternlight, a combined sidelights and sternlight in one lantern carried at or near the top of the mast (Rules 20 & 25[b]).
5. The operator of a sailing vessel of less than 7 m in length underway shall exhibit from sunset to sunrise, if practical, sidelights and a sternlight, but if the operator cannot, they shall have ready at hand an electric torch or lighted lantern showing a white light which shall be exhibited in sufficient time to prevent collision (Rules 20 & 25[d]{i}).
6. The operator of a vessel under oars may exhibit, from sunset to sunrise, sidelights and a sternlight but if the operator does not, they shall have ready at hand an electric torch or lighted lantern showing a white light which shall be exhibited in sufficient time to prevent collision (Rules 20 & 25[d]{ii}).
7. The operator of a vessel of less than 50 m in length at anchor shall exhibit, from sunset to sunrise, in the fore part an all-round white light (Rules 20 & 30[a]{i}).

SOUND SIGNALS

The *Collision Regulations* define the following:

Short Blast. A blast of about one second duration (Rule 32[b]).

Prolonged Blast. A blast of from four to six second duration (Rule 32[c]).

The Collision Regulations state the following rules pertaining to sound signals:

1. The operator of a vessel of less than 12 m in length shall carry sound signalling appliances or some other means of making an efficient sound signal (Rule 33).
2. The operator of a vessel in or near an area of restricted visibility, whether by day or night, shall sound the following signals using a whistle or sound-signalling device of the vessel to indicate presence:
 - a. A power vessel underway and making way through the water shall sound, at intervals of not more than two minutes, one prolonged blast (Rule 35[a]),
 - b. A power vessel underway but making no way through the water shall sound, at intervals of not more than two minutes, two prolonged blasts in succession with an interval of about two seconds between them (Rule 35[b]), and
 - c. A vessel at anchor shall, at intervals of not more than one minute, ring the bell rapidly for about five seconds. A vessel at anchor may in addition sound three blasts in succession, namely one short, one prolonged and one short blast, to give warning of her position and of the possibility of collision to an approaching vessel (Rule 35[g]).

SIGNALS TO INDICATE DISTRESS

The *Collision Regulations* state that an operator of a pleasure craft shall recognize, use or exhibit signals (as illustrated in Figure 13-4-10) to indicate distress and need of assistance (Rule 37).





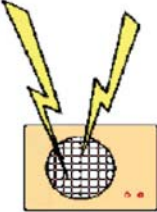
Signal	Usage
 <p>Gun or other explosive signal</p>	<p>Fired at intervals of about one minute.</p>
 <p>Fog or sound-signalling device</p>	<p>Continuous sounding.</p>
 <p>Rockets or shells throwing red stars</p>	<p>Fired one at a time at short intervals.</p>
 <p>(SOS) Morse code</p>	<p>Made by any signalling method.</p>
 <p>Radiotelephony</p>	<p>Spoken word MAYDAY sent by radiotelephony.</p>

Figure 13-4-10 (Sheet 1 of 3) Signals of Distress
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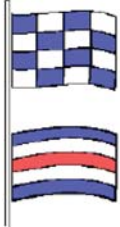




Signal	Usage
 <p>Flags "N" and "C"</p>	<p>International Code of Signals message that indicates distress.</p>
 <p>Square flag and ball</p>	<p>Square flag having above or below it, a ball or anything resembling a ball.</p>
 <p>Flames</p>	<p>Flames on a vessel.</p>
 <p>Rocket parachute flare</p>	<p>Rocket parachute flare or hand flare showing a red light.</p>
 <p>Smoke signal</p>	<p>Orange smoke.</p>

Figure 13-4-10 (Sheet 2 of 3) Signals of Distress

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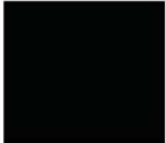

Signal	Usage
 <p>Waving arms</p>	<p>Slowly and repeatedly raising and lowering arms outstretched to each side.</p>
 <p>Emergency position-indicating radio beacon (EPIRB)</p>	<p>Signal transmitted.</p>
 <p>Orange background with square and ball on it.</p>	<p>Orange background with a black square and black circle on it to be viewed from the air.</p>
 <p>Dye marker</p>	<p>Dye marker in the water.</p>
 <p>Square shape</p>	<p>Square shape or anything resembling a square shape.</p>
 <p>High-intensity, flashing white light</p>	<p>Flashing at regular intervals of 50 to 70 times per minute.</p>

Figure 13-4-10 (Sheet 3 of 3) Signals of Distress
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RADAR REFLECTOR REQUIREMENTS

The *Collision Regulations* state that an operator of a vessel that is less than 20 m in length or which is constructed primarily of non-metallic materials shall equip the vessel with a passive radar reflector (Rule 40):

- mounted or suspended at a height of not less than 4 m above the water, if practicable;
- unless in limited traffic conditions, daylight and favourable environmental conditions and where compliance is not essential for the safety of the vessel; or
- unless the small size of the vessel or operation away from radar navigation makes compliance impracticable.



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Figure 13-4-11 Radar Reflector

ACTIVITY

Time: 10 min

OBJECTIVE

The objective of this activity is to have the cadets identify the collision regulations.

RESOURCES

Collision Regulations Exercise located at Annex N.

ACTIVITY LAYOUT

N/A.

ACTIVITY INSTRUCTIONS

1. Distribute the Collision Regulations Exercise located at Annex N to each cadet.
2. Have the cadets complete the Collision Regulations Exercise.

3. Discuss the answers with the class and correct any errors.

SAFETY

N/A.

CONFIRMATION OF TEACHING POINT 1

The cadets' participation in the activity will serve as the confirmation of this TP.


Teaching Point 2

Conduct an Activity Where the Cadets Will Describe Canadian Aids to Navigation

Time: 20 min

Method: In-Class Activity

CANADIAN AIDS TO NAVIGATION

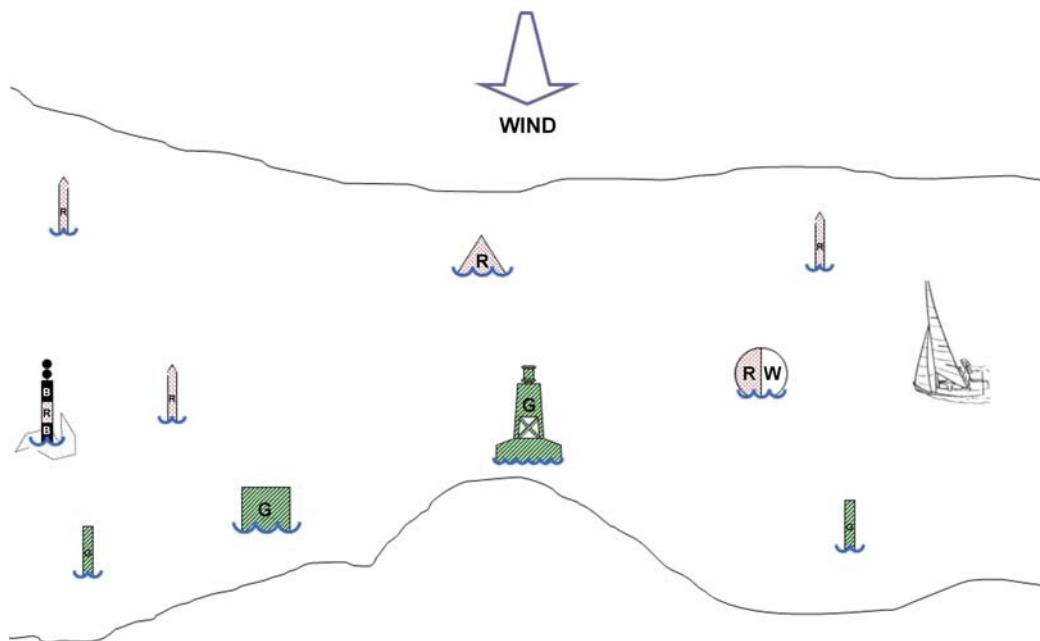


Distribute the Lateral Buoys and Standard Daybeacons Handout located at Annex P to each cadet.

Provide the cadets with this material prior to conducting the activity.

Aids to navigation are devices or systems external to a vessel that help determine position or course, warn of dangers and obstructions and identify a preferred route. Lateral buoys are buoys that mark channels. They come in various shapes and sizes.

Vessels may encounter several lateral buoys while on the water (as illustrated in Figure 13-4-12). Correct navigation of lateral buoys will ensure that the vessel does not get damaged by hazards to navigation.



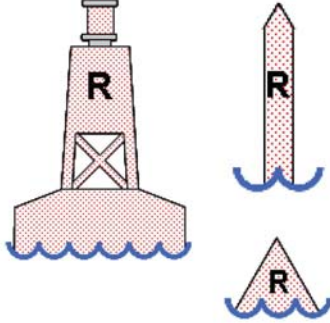
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Figure 13-4-12 Lateral Buoys Marking the Channel

The following terms are used when describing lateral buoys:

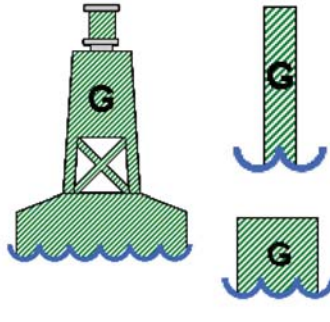
- **Headwaters.** The source of a river system. Typically, this is a lake or series of lakes that drain into a river and flows in the direction toward the ocean.
- **Flood Tide.** The incoming tide when the sea water level rises along a shoreline.
- **Upstream.** The direction away from the ocean, toward the headwaters of a river, into a bay or harbour or with a flood tide.
- **Topmark.** A shape or shapes on the top of a buoy. In Canada, topmarks are only used on isolated danger buoys in an ice-free area, as they are susceptible to damage.

LATERAL BUOYS

Starboard Lateral Buoy	
	<p>Use. Marks the starboard (right) side of a channel or the location of a danger and must be kept on the starboard side of a pleasure craft when proceeding in the upstream direction.</p> <p>Identification. Displays identification letter(s) and even numbers.</p> <p>Colour. Red.</p> <p>Light. Red. Flash every 4 seconds or quick flash every 1 second (if carried).</p> <p>Top. Pointed (if no light carried).</p> <p>Topmarks. Single red cone (if carried).</p>


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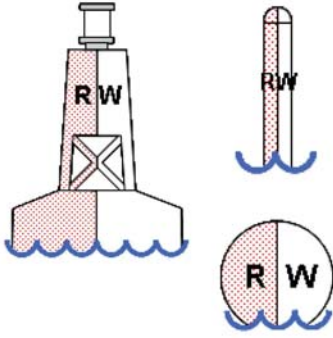
Figure 13-4-13 Starboard Lateral Buoy

Port Lateral Buoy	
	<p>Use. Marks the port (left) side of a channel or the location of a danger and must be kept on the port side of a pleasure craft when proceeding in the upstream direction.</p> <p>Identification. Displays identification letter(s) and odd numbers</p> <p>Colour. Green.</p> <p>Light. Green. Flash every 4 seconds or quick flash every 1 second (if carried).</p> <p>Top. Flat (if no light carried).</p> <p>Topmarks. Single green cylinder (if carried)</p>

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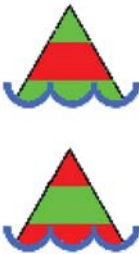
Figure 13-4-14 Port Lateral Buoy

 A simple trick to remember which lateral buoy is on which side is the phrase, “Red right returning”. The red marks (starboard lateral buoys) are kept on the right (starboard) side of the sailboat when returning home to a bay, harbour or the source of a river.

Fairway (Mid-Channel) Buoy	
	<p>Use. Indicates safe water and is used to mark channel entrances and channel centres.</p> <p>Colour. Red and white.</p> <p>Top. Round.</p> <p>Light Colour. White. 1 short flash, then one long flash, repeated 10 times per minute (if carried).</p> <p>Topmarks. None.</p>

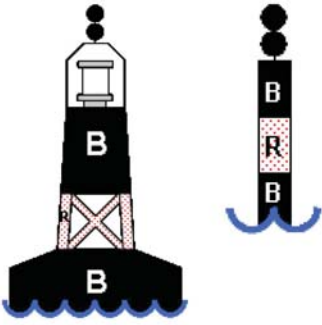
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Figure 13-4-15 Fairway Buoy

Bifurcation Buoys	
	<p>Use. Used where two safe channels exist. This buoy may be passed on either side; however, the preferred channel is indicated by the colour of the top band.</p> <p>Colour. Red and green. Topmost colour band indicates main or preferred channel.</p> <p>Topmarks. None.</p>

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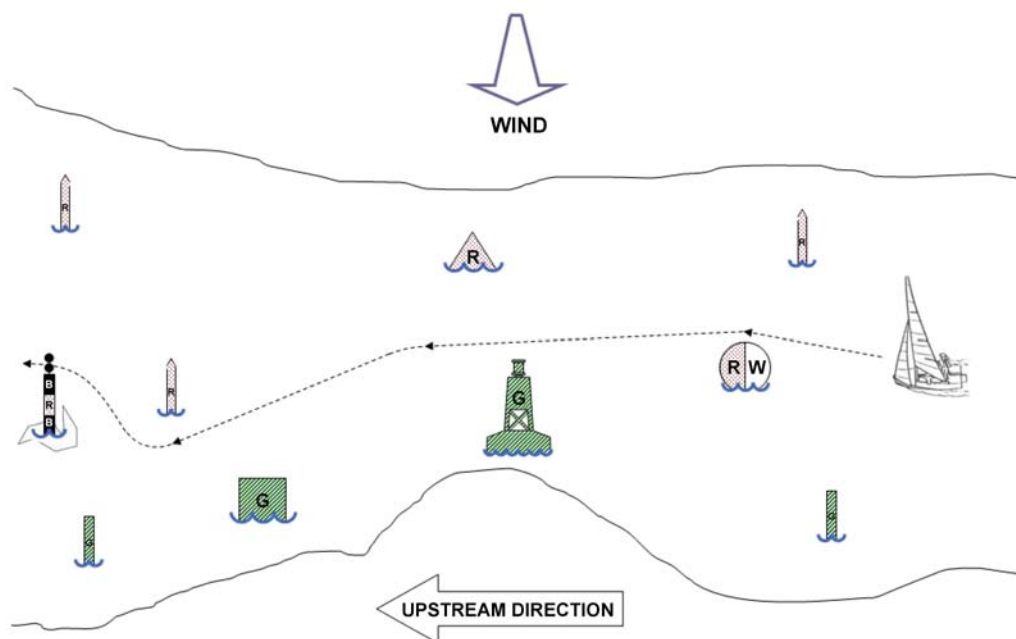
Figure 13-4-16 Bifurcation Buoys

Isolated Danger Buoy	
	<p>Use. Marks an isolated danger that has safe water all around it and may be passed on either side.</p> <p>Colour. Black and red.</p> <p>Top. Flat.</p> <p>Light. White. 2 flashes every 4 seconds (if carried).</p> <p>Topmarks. Two vertical spheres.</p>

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Figure 13-4-17 Isolated Danger Buoy

Understanding how to use the lateral buoys will allow a sailboat to navigate a channel safely (as illustrated in Figure 13-4-18).







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Figure 13-4-18 Navigating the Lateral Buoys

STANDARD DAYBEACONS

Daybeacons can be used in the place of lateral buoys during daylight hours in areas where a buoy is impractical. Daybeacons are usually affixed to a solid surface such as a bridge support or shore location.

Starboard Daybeacon		Port Daybeacon	
	<p>Use. Marks the starboard side of a channel when proceeding upstream.</p> <p>Colour. Outer green square with a black (or green) square inside on a white background.</p>		<p>Use. Marks the port side of a channel when proceeding upstream.</p> <p>Colour. Outer red triangle with a red triangle inside on a white background.</p>
Junction Daybeacon			
	<p>Use. Indicates the main or preferred channel is to the right when proceeding upstream.</p> <p>Colour. Outer red diamond with a green square inside on a white background.</p>		<p>Use. Indicates the main or preferred channel is to the left when proceeding upstream.</p> <p>Colour. Outer red diamond with a red triangle inside on a white background.</p>

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Figure 13-4-19 Standard Daybeacons

ACTIVITY

Time: 10 min

OBJECTIVE

The objective of this activity is to have the cadets practice navigating through lateral buoys and standard daybeacons by participating in a simulated activity on shore.

RESOURCES

Lateral Buoys Exercise Handout located at Annex Q.

ACTIVITY LAYOUT

N/A.

ACTIVITY INSTRUCTIONS

1. Distribute one lateral buoy or standard daybeacon from the Lateral Buoys Exercise Handout located at Annex Q to each cadet.
2. Organize the cadets according to their handout, to create a navigation channel. These cadets are called the buoys.
3. Inform the cadets which direction is upstream.

4. Have one cadet navigate the channel by keeping the buoys on the proper side.
5. If the cadet passes a buoy on the wrong side, the buoy will shout, “bang”. Have the cadet start over at the beginning of the channel.
6. When the channel has been successfully navigated, the cadet is to take a new position at the end of the channel, creating a new buoy.
7. Repeat steps 4. to 6. until all cadets have navigated the channel.

SAFETY

N/A.

CONFIRMATION OF TEACHING POINT 2

The cadets’ participation in the activity will serve as the confirmation of this TP.

Teaching Point 3

Conduct an Activity Where the Cadets Will Describe Canadian Aids to Navigation

Time: 25 min

Method: In-Class Activity

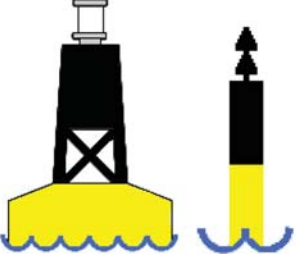
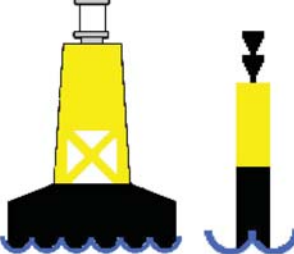
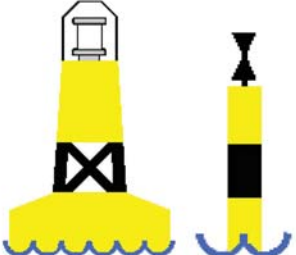

CARDINAL BUOYS



Distribute the Cardinal Buoys and Special Buoys Handout located at Annex R to each cadet.

Provide the cadets with this material prior to conducting the activity.

The cardinal buoys are used to mark the direction of safe water using the cardinal points of a compass. The buoys are marked with a unique combination of yellow and black bands.

North Cardinal Buoy		South Cardinal Buoy	
	<p>Use. Indicates the direction of safe water is to the north.</p> <p>Colour. Black and yellow.</p> <p>Light. White. Quick flash every 1 second or very quick flashing every 0.5 second (if carried).</p> <p>Topmarks. Two cones, apex pointing up.</p>		<p>Use. Indicates the direction of safe water is to the south.</p> <p>Colour. Black and Yellow.</p> <p>Light. White. Group of 6 quick flashes, followed by 1 long flash, every 15 seconds or group of 6 very quick flashes, followed by 1 long flash every 10 seconds (if carried).</p> <p>Topmarks. Two cones, apex pointing down.</p>
West Cardinal Buoy		East Cardinal Buoy	
	<p>Use. Indicates the direction of safe water is to the west.</p> <p>Colour. Yellow with a broad black band.</p> <p>Light. White. Group of 9 quick flashes every 15 seconds or group of 9 very quick flashes every 10 seconds (if carried).</p> <p>Topmarks. Two cones, apex pointing at each other.</p>		<p>Use. Indicated the direction of safe water is to the east.</p> <p>Colour. Black and yellow.</p> <p>Light. White. Group of 3 quick flashes every 10 seconds or group of 3 very quick flashes every 5 seconds (if carried).</p> <p>Topmarks. Two cones, apex pointing away from each other.</p>

Director Cadets 3, 2008, Ottawa, ON: Department of National Defence

Figure 13-4-20 Cardinal Buoys

SPECIAL BUOYS

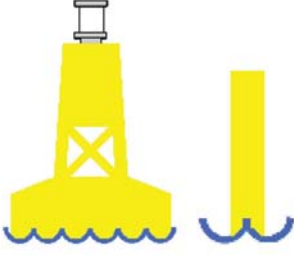
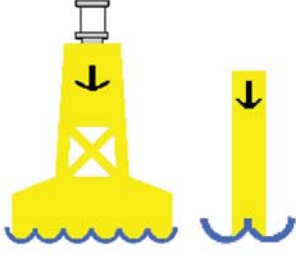
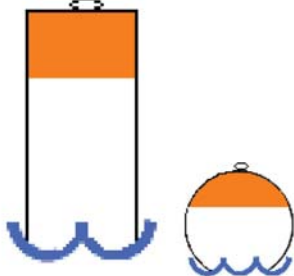
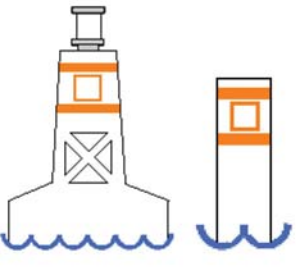
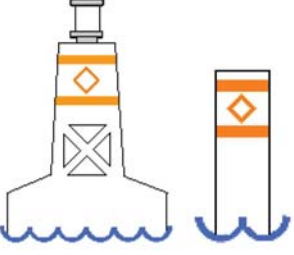
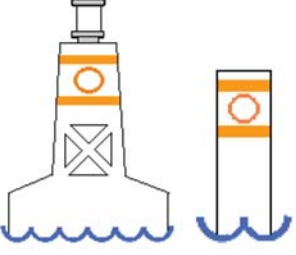
	<p>Use. Marks dangers such as firing ranges, underwater pipelines, seaplane bases and areas where no through channel exists.</p> <p>Identification. Displays letter(s).</p> <p>Colour. Yellow.</p> <p>Light. Yellow. Flash every 4 second (if carried).</p> <p>Topmarks. May display a yellow "X".</p>		<p>Use. Marks the perimeter of a designated anchorage.</p> <p>Colour. Yellow.</p> <p>Light. Yellow. Flash every 4 second (if carried).</p> <p>Topmarks. May display a yellow "X".</p>
	<p>Use. For mooring or securing a vessel.</p> <p>Colour. White with an orange band at the top.</p> <p>Topmarks. None.</p>		<p>Use. By means of words or symbols displays information regarding locality, marina, campsite, etc.</p> <p>Colour. White with an orange square between two orange bands.</p> <p>Light. Yellow. Flash every 4 second (if carried).</p> <p>Topmarks. None.</p>
	<p>Use. Marks random hazards such as shoals and rocks.</p> <p>Colour. White with an orange diamond between two orange bands.</p> <p>Light. Yellow. Flash every 4 seconds (if carried).</p> <p>Topmarks. None.</p>		<p>Use. Indicates speed limits, wash restrictions, etc.</p> <p>Colour. White with an orange circle between two orange bands.</p> <p>Light. Yellow. Flash every 4 seconds (if carried).</p> <p>Topmarks. None.</p>

Figure 13-4-21 (Sheet 1 of 2) Special Buoys

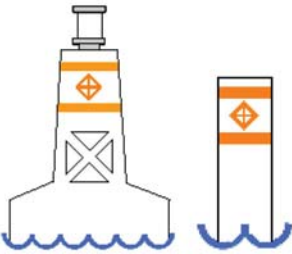
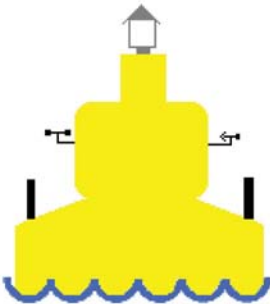
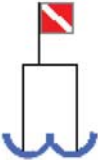
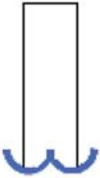
Keep Out Buoy		Scientific Buoy (ODAS)	
	<p>Use. Marks an area in which boats are prohibited.</p> <p>Colour. White with an orange cross inside an orange diamond between two orange bands.</p> <p>Light. Yellow. Flash every 4 seconds (if carried).</p> <p>Topmarks. None.</p>		<p>Use. Collects meteorological and other scientific data.</p> <p>Colour. Yellow.</p> <p>Topmarks. May display a yellow "X".</p> <p>Note. May be any shape.</p>
Diving Buoy		Swimming Buoy	
	<p>Use. Marks an area where scuba or other such diving activity is in progress.</p> <p>Colour. White buoy flying a red flag with a diagonal white line on it.</p> <p>Light. Yellow. Flash every 4 seconds (if carried).</p> <p>Topmarks. None.</p>		<p>Use. Marks the perimeter of a swimming area.</p> <p>Colour. White.</p> <p>Light. Yellow. Flash every 4 seconds (if carried).</p> <p>Topmarks. None.</p>

Figure 13-4-21 (Sheet 2 of 2) Special Buoys

Director Cadets 3, 2008, Ottawa, ON: Department of National Defence

COMMAND AND WARNING SIGNS

Warning signs may be posted to warn of local hazards or post special instructions for vessels operating in the area. The signs may include the following information:

- no wake,
- no anchorage area,
- speed limit zone,
- low head dam hazard,
- power line hazard, or
- pipe line hazard.

ACTIVITY

Time: 10 min

OBJECTIVE

The objective of this activity is to have the cadets practice navigating through cardinal and special buoys by participating in a simulated activity on shore.

RESOURCES

Cardinal and Special Buoy Exercise Handout located at Annex S.

ACTIVITY LAYOUT

N/A.

ACTIVITY INSTRUCTIONS

1. Distribute one buoy from the Cardinal and Special Buoys Exercise Handout located at Annex S to each cadet.
2. Organize the cadets according to their handout, to create a navigation channel. These cadets are called the buoys.
3. Inform the cadets which direction is north.
4. Have one cadet navigate the channel by keeping the buoys on the proper side.
5. If the cadet passes a buoy on the wrong side, the buoy will shout, "bang". Have the cadet start over at the beginning of the channel.
6. When the channel has been successfully navigated, the cadet is to take a new position at the end of the channel, creating a new buoy.
7. Repeat steps 4. to 6. until all cadets have navigated the channel.

SAFETY

N/A.

CONFIRMATION OF TEACHING POINT 3

The cadets' participation in the activity will serve as the confirmation of this TP.

Teaching Point 4

Describe Navigational Resources

Time: 10 min

Method: Interactive Lecture

NAVIGATIONAL RECOURCES

Canadian aids to navigation such as lateral buoys and cardinal buoys provide assistance to mariners. These aids are however limited to the line of sight of the vessel. Charts, topographical maps and compasses provide mariners with the opportunity to plan their trip prior to getting underway.

Charts

Charts are published by the Canadian Hydrographic Service, Department of Fisheries and Oceans. The charts are intended for use by mariners to assist navigation, by providing graphic representations of water areas, to include:

- water depth,
- underwater hazards,
- traffic routes,
- aids to navigation, and
- nearby coastal areas.

Topographical Maps

Topographical maps are published by Natural Resources of Canada and some provincial authorities. The maps are intended for use by the general public on the land, and provide information about natural and artificial features of the land to include:

- elevation contours,
- shoreline,
- rocks,
- land features above water, and
- cultural features.

Topographical maps are used by mariners when no charts are available however they do not depict the following:

- underwater hazards,
- marine aids to navigation,
- channels, and
- anchorage areas.

Compasses

Mariners have used compasses to navigate safely for centuries. Modern navigational resources such as Global Positioning Systems (GPS) may have become more fashionable but basic navigation using a compass is a valuable skill that every sailor should possess. While navigating mariners should be aware that compasses are influenced by the proximity of metallic objects and electrical devices and could provide false information.

Charts and Nautical Publication Regulations

The operator of a vessel not propelled by oars (or paddles) is required to carry on board the most recent edition of the following publications, as described in the *Charts and Nautical Publications Regulations*:

1. the largest scale charts available, authorized by the Canadian Hydrographic Service (CHS), for the immediate areas to be operated,
2. the reference catalogue of available charts,

3. the annual edition of the *Notice to Mariners*, published by the Department of Fisheries and Oceans,
4. *Sailing Directions*, published by the CHS,
5. the tide and current tables, published by CHS,
6. *List of Lights, Buoys and Fog Signals*, published by the Department of Fisheries and Oceans, and
7. *Radio Aids to Marine Navigation*, published by the Department of Fisheries and Oceans, where the vessel is required to be fitted with radio equipment.

The operator of a vessel shall ensure that the charts, documents and publications required are, before being used for navigation, correct and up-to-date, based on information that is contained in the *Notice to Mariners*.

CONFIRMATION OF TEACHING POINT 4

QUESTIONS

- Q1. What regulations describe the publications that are required to be carried on board?
- Q2. What must an operator of a vessel ensure before using any charts, documents or publications for navigation?

ANTICIPATED ANSWERS

- A1. *Charts and Nautical Publications Regulations.*
- A2. They must be correct and up-to-date.

END OF LESSON CONFIRMATION

QUESTIONS

- Q1. What factors must be taken into account when determining a safe speed?
- Q2. Where is a masthead light visible?
- Q3. What is a north cardinal buoy used for?

ANTICIPATED ANSWERS

- A1. The factors that must be taken into account when determining a safe speed are:
 - state of visibility,
 - traffic density including the concentrations of fishing vessels and/or other vessels,
 - state of wind,
 - sea state and current, and
 - proximity to navigational hazards.
- A2. Over an arc of the horizon of 225 degrees and so fixed as to show the light from right ahead to 22.5 degrees abaft the beam on either side of the vessel.
- A3. To indicate that the safe water is to the north of the buoy.

CONCLUSION

HOMEWORK/READING/PRACTICE

N/A.

METHOD OF EVALUATION

This EO is assessed IAW *Pleasure Craft Operator Competency Test Protocol*, Directorate of Cadets (DND), as approved by Transport Canada.

CLOSING STATEMENT

The navigation of a pleasure craft in an unfamiliar body of water can be a very confusing experience. Having an understanding of the navigation rules, regulations and aids that govern boating safety will help create a positive boating experience.

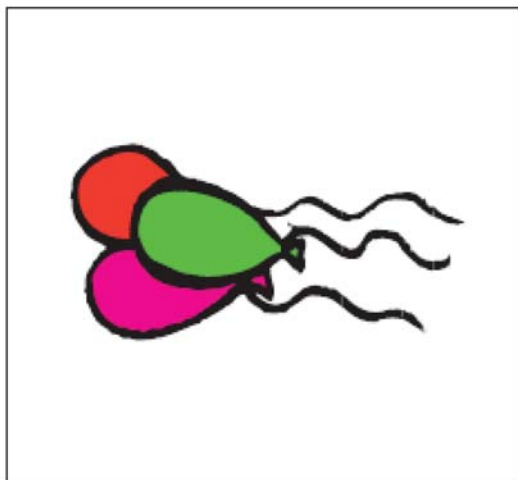
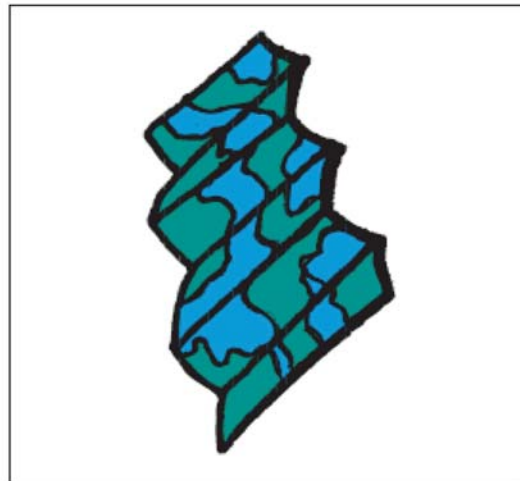
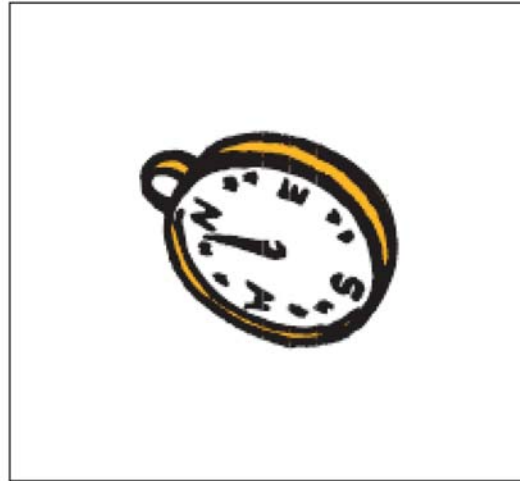
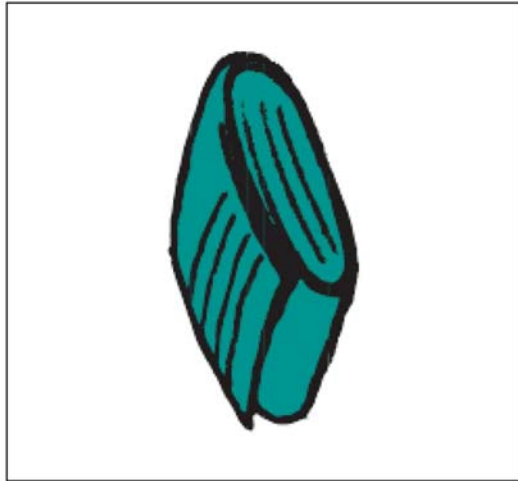
INSTRUCTOR NOTES/REMARKS

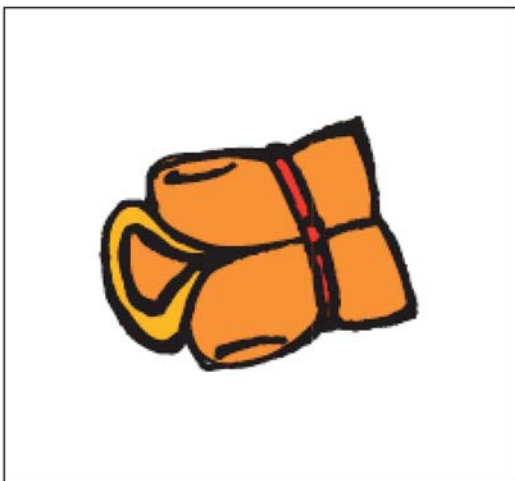
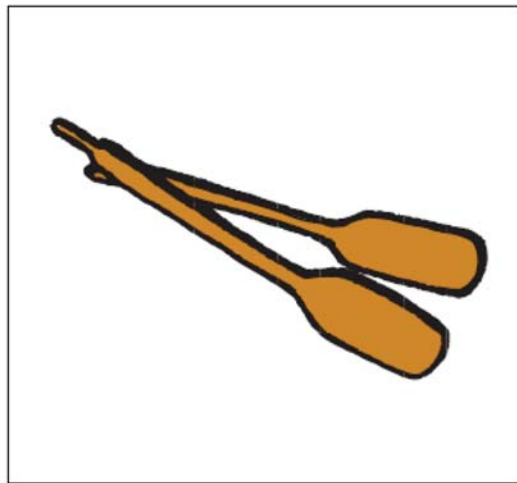
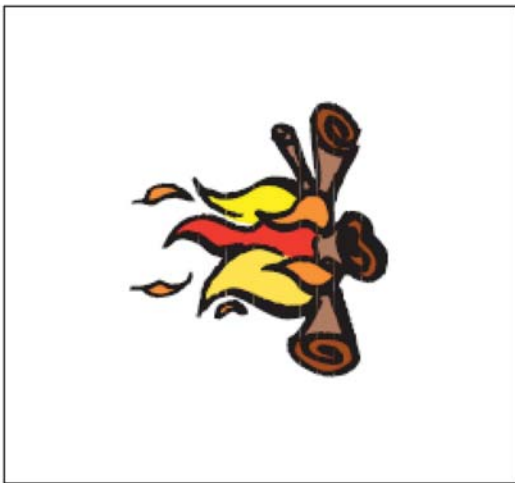
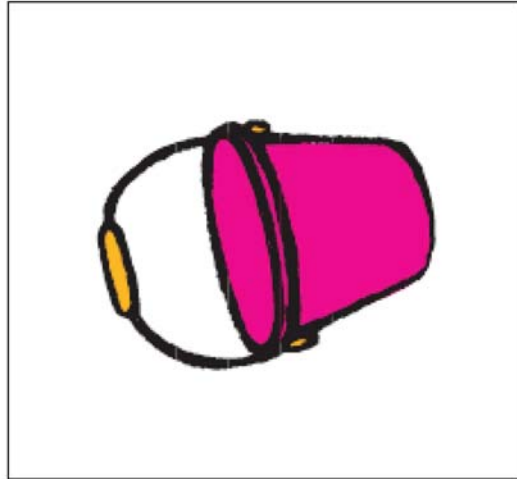
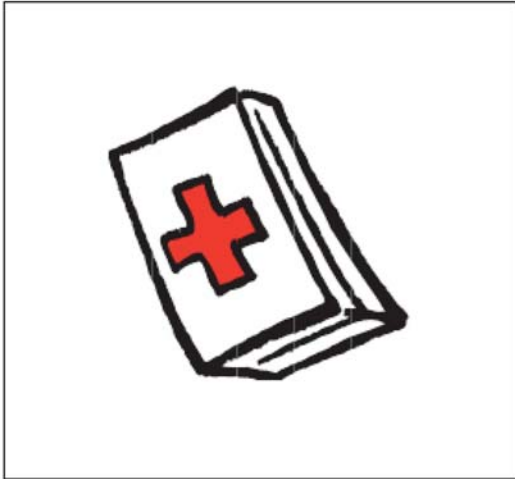
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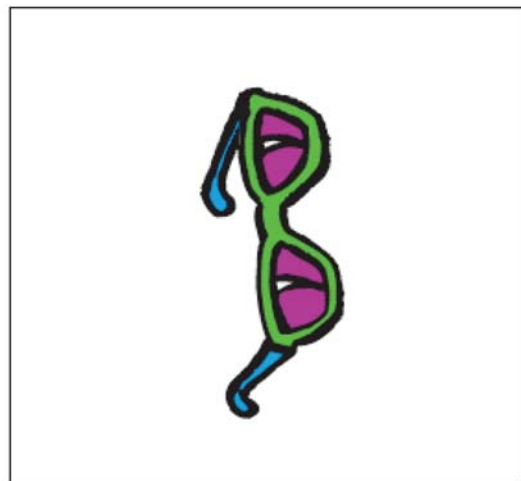
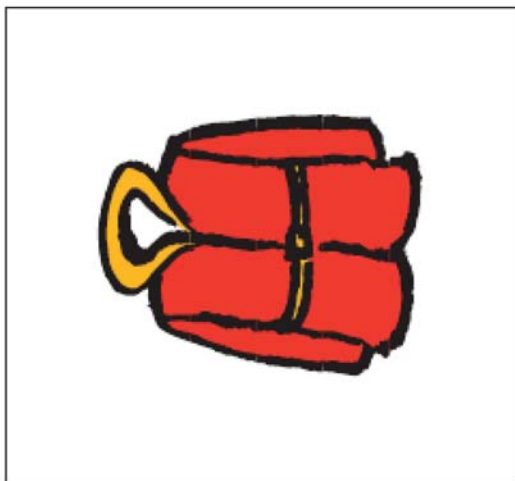
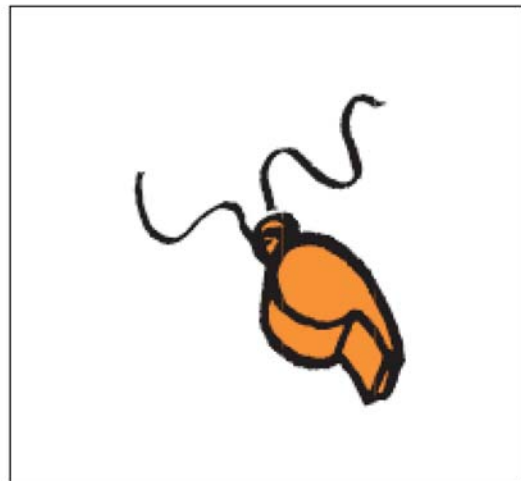
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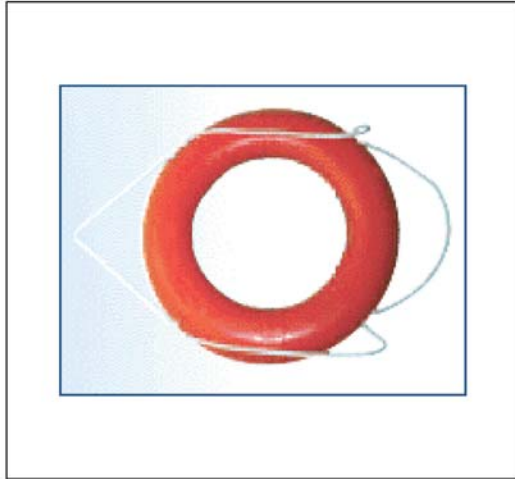
- C1-098 (ISBN 0-662-42286-4) Office of Boating Safety (2006). *Safe Boating Guide*. Ottawa, ON: Her Majesty the Queen of Right of Canada, as represented by Transport Canada.
- C1-103 Transport Canada. *Cardinal Buoys and Special Suoys*. (2007). Retrieved April 18, 2008, from <http://www.tc.gc.ca/Publications/bil/TP14352/PDF/HR/TP14542EF.pdf>.
- C1-103 Transport Canada. *Charts and Nautical Publications Regulations*. (2001). Retrieved April 03, 2008, from <http://www.tc.gc.ca/acts-regulations/GENERAL/C/csa/regulations/010/csa011/csa11.html>.
- C1-103 Transport Canada. *Lateral Buoys and Standard Daybeacons*. (2007). Retrieved April 18, 2008, from <http://www.tc.gc.ca/Publications/bil/TP14351/PDF/HR/TP14541EF.pdf>.
- C1-103 Transport Canada. *Rules of the Road*. (2007). Retrieved April 18, 2008, from <http://www.tc.gc.ca/Publications/bil/TP14352/PDF/HR/TP14352EF.pdf>.

EMERGENCY KIT FLASH CARDS









OVERBOARD RECOVERY ACTIVITY CARDS

SOUND THE ALARM

WHAT SHOULD YOU SHOUT OUT?

THROW SOMETHING BUOYANT

WHY?

ASSIGN SOMEONE TO MONITOR

WHY MUST THEY ALWAYS BE KEPT IN SIGHT?

MANOEUVRE THE VESSEL

WHAT SIDE OF THE VESSEL SHOULD THE PERSON BE KEPT ON?

SWITCH THE ENGINE OFF

WHY?

THROW A BUOYANT HEAVING LINE

WHAT IS THIS USED FOR?

BRING THE PERSON ON BOARD

WHERE?

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OVERBOARD RECOVERY ACTIVITY SUMMARY SHEET

1. **Sound the alarm.**

Q1. What should you shout out?

R1. "Person Overboard"

2. **Throw something buoyant.**

Q1. Why?

R1. To assist them in staying afloat or mark their general position if they submerge.

3. **Assign someone to monitor.**

Q1. Why must they always be kept in sight?

R1. The person may submerge.

4. **Manoeuvre the vessel.**

Q1. What side of the vessel should the person be kept on?

R1. Windward.

5. **Switch the engine off.**

Q1. Why?

R1. To prevent the possibility of injury from the propellers.

6. **Throw a buoyant heaving line.**

Q1. What is this used for?

R1. To pull the person toward the side of the vessel.

7. **Bring the person on board.**

Q1. Where?

R1. Over the transom or the point of lowest freeboard on the windward side.

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PLEASURE CRAFT SAFETY EQUIPMENT REQUIREMENTS REFERENCE SHEETS

Having the right safety equipment on board a pleasure craft will aid in quickly responding to an emergency. Make sure the equipment is easily accessible and can be properly used by everyone on board.



Ensuring that all lifesaving and navigation equipment is in good working order is the law.

The *Small Vessel Regulations* identify the minimum equipment required on board a pleasure craft according to vessel length. To determine the length of a vessel, refer to the manufacturer's product information or measure from the forward of the foremost outside surface to the aftermost outside surface of the hull.



Manual Propelling Device. Apparatus that can be used manually by a person to propel a vessel.


Unpowered—Less Than 6 m in Length	
Personal Protection Equipment	<ul style="list-style-type: none"> • One Transport Canada approved personal floatation device or lifejacket of appropriate size for each person on board. • One buoyant heaving line no less than 15 m in length.
Safety Equipment	<ul style="list-style-type: none"> • One manual propelling device, or an anchor with no less than 15 m of cable and/or chain in any combination. • One Class 5BC fire extinguisher, if the pleasure craft is equipped with a fuel-burning cooking, heating or refrigerating appliance. • One bailer, or manual water pump fitted with, or accompanied by sufficient hose to enable a person using the pump to discharge water from the bilge of the vessel over the side of the vessel.
Distress Equipment	<ul style="list-style-type: none"> • N/A.
Navigation Equipment	<ul style="list-style-type: none"> • A sound-signalling device or a sound-signalling appliance. • Navigation lights that meet the applicable standards set out in the <i>Collision Regulations</i> if the pleasure craft is operated after sunset and before sunrise or in periods of restricted visibility. • Compass (not required if within sight of navigational marks).



A bailer or manual pump is not required for self-bailed sealed hull sailing vessel fitted with a recess-type cockpit that cannot contain a sufficient quantity of water to make the vessel capsize or a multi-hull vessel that has subdivided multiple-sealed hull construction.

Powered—Less Than 6 m in Length	
Personal Protection Equipment	<ul style="list-style-type: none"> • One Transport Canada approved personal floatation device or lifejacket of appropriate size for each person on board. • One buoyant heaving line no less than 15 m in length.


Powered—Less Than 6 m in Length	
Safety Equipment	<ul style="list-style-type: none"> • One manual propelling device, or an anchor with no less than 15 m of cable and/or chain in any combination. • One Class 5BC fire extinguisher, if the pleasure craft is equipped with an inboard engine, a fixed fuel tank of any size, or a fuel-burning cooking, heating or refrigerating appliance. • One bailer, or manual water pump fitted with, or accompanied by sufficient hose to enable a person using the pump to discharge water from the bilge of the vessel over the side of the vessel.
Distress Equipment	<ul style="list-style-type: none"> • A watertight flashlight, or • Three Transport Canada approved flares of Type A, B or C.
Navigation Equipment	<ul style="list-style-type: none"> • A sound-signalling device or a sound-signalling appliance. • Navigation lights that meet the applicable standards set out in the <i>Collision Regulations</i> if the pleasure craft is operated after sunset and before sunrise or in periods of restricted visibility. • Compass (not required if within sight of navigational marks).



Pyrotechnic distress signals that must be carried on board a pleasure craft, must be approved by the DOT, as described in the *Small Vessel Regulations*.

Required pyrotechnic distress signals are not regarded as meeting the carriage requirements if four years or more have elapsed since the date of their manufacture.

The operator of a pleasure craft should read manufacturer instructions before using pyrotechnic distress signals.



The following are the four types of flares approved by Transport Canada:

Type A. Single red star. When launched it reaches a height of 300 m and with the aid of a parachute comes down slowly. The flare is easily observed from the surface or air and burn for 40 seconds.

Type B. Two or more red stars. When launched they reach a height of 100 m and burns for four or five seconds each. The flares are easily observed from the surface or air.

Type C. Red flame torch held by hand. Is best used for pinpointing location during an air search but has limited surface visibility. Burns for at least one minute.

Type D. Produces a dense orange smoke for three minutes. Used only as a day signal.

Greater Than 6 m but Not Greater Than 8 m in Length	
Personal Protection Equipment	<ul style="list-style-type: none"> • One Transport Canada approved personal floatation device or lifejacket of appropriate size for each person on board. • One buoyant heaving line no less than 15 m in length, or • One lifebuoy with an outside diameter of 610 mm or 762 mm that is attached to a buoyant line no less than 15 m in length.

Greater Than 6 m but Not Greater Than 8 m in Length	
	<ul style="list-style-type: none"> • A reboarding device if the freeboard of the vessel is greater than 0.5 m.
Safety Equipment	<ul style="list-style-type: none"> • One manual propelling device, or an anchor with no less than 15 m of cable and/or chain in any combination. • One Class 5BC fire extinguisher, if the pleasure craft is a power-driven vessel. • One Class 5BC fire extinguisher, if the pleasure craft is equipped with an inboard engine, a fixed fuel tank of any size, or a fuel-burning cooking, heating or refrigerating appliance. • One bailer, or manual water pump fitted with, or accompanied by sufficient hose to enable a person using the pump to discharge water from the bilge of the vessel over the side of the vessel.
Distress Equipment	<ul style="list-style-type: none"> • A watertight flashlight. • Six Transport Canada approved flares of Type A, B or C.
Navigation Equipment	<ul style="list-style-type: none"> • A sound-signalling device or a sound-signalling appliance. • Navigation lights that meet the applicable standards set out in the <i>Collision Regulations</i> if the pleasure craft is operated after sunset and before sunrise or in periods of restricted visibility. • Compass (not required if within sight of navigational marks).




A pleasure craft is exempt from carrying pyrotechnic distress signals if:

- it is operating in a river, canal or like in which it can at no time be more than one nautical mile (1.852 km) from shore, or
- it is engaged in an official competition or in final preparation for an official competition and has no sleeping arrangements.

Greater Than 8 m but Not Greater Than 12 m in Length	
Personal Protection Equipment	<ul style="list-style-type: none"> • One Canadian-Approved personal floatation device or lifejacket of appropriate size for each person on board. • One buoyant heaving line no less than 15 m in length. • One lifebuoy with an outside diameter of 610 mm or 762 mm that is attached to a buoyant line no less than 15 m in length. • A reboarding device if the freeboard of the vessel is greater than 0.5 m.
Safety Equipment	<ul style="list-style-type: none"> • An anchor with no less than 30 m of cable and/or chain in any combination. • One Class 10BC fire extinguisher, if the pleasure craft is a power-driven vessel. • One Class 10BC fire extinguisher, if the pleasure craft is equipped with an inboard engine, a fixed fuel tank of any size, or a fuel-burning cooking, heating or refrigerating appliance. • One bailer.

Greater Than 8 m but Not Greater Than 12 m in Length	
	<ul style="list-style-type: none"> One manual water pump fitted with, or accompanied by sufficient hose to enable a person using the pump to discharge water from the bilge of the vessel over the side of the vessel.
Distress Equipment	<ul style="list-style-type: none"> A watertight flashlight. 12 Transport Canada approved flares of Type A, B, C or D, no more than six of which are Type D.
Navigation Equipment	<ul style="list-style-type: none"> A sound-signalling device or a sound signalling appliance. Navigation lights that meet the applicable standards set out in the <i>Collision Regulations</i>. Compass (not required if voyage is less than 20 nautical miles [37 km] from shore).

Greater Than 12 m but Not Greater Than 20 m in Length	
Personal Protection Equipment	<ul style="list-style-type: none"> One Transport Canada approved personal floatation device or lifejacket of appropriate size for each person on board. One buoyant heaving line no less than 15 m in length. One lifebuoy with an outside diameter of 610 mm or 762 mm that is attached to a buoyant line no less than 15 m in length. A reboarding device.
Safety Equipment	<ul style="list-style-type: none"> An anchor with no less than 50 m of cable and/or chain in any combination. Bilge pumping arrangements. One Class 10BC fire extinguisher, at each of the following locations: <ul style="list-style-type: none"> at each access to any space where a fuel-burning cooking, heating or refrigerating appliance is fitted, at the entrance to any accommodation space, and at the entrance to the engine room space. Two buckets, each with a capacity of 10 L or more. One axe.
Distress Equipment	<ul style="list-style-type: none"> A watertight flashlight. 12 Transport Canada approved flares of Type A, B, C or D, no more than six of which are Type D.
Navigation Equipment	<ul style="list-style-type: none"> A sound-signalling device or a sound-signalling appliance. Navigation lights that meet the applicable standards set out in the <i>Collision Regulations</i>. Compass (not required if voyage is less than 20 nautical miles [37 km] from shore).

 A vessel greater than 12 m shall carry pyrotechnic distress signals and is not exempt under the conditions listed for smaller vessels.

Greater Than 20 m in Length	
Personal Protection Equipment	<ul style="list-style-type: none"> • One Transport Canada approved personal floatation device or lifejacket of appropriate size for each person on board. • One buoyant heaving line no less than 30 m in length. • Two lifebuoys, each with an outside diameter 762 mm that are attached to a buoyant line no less than 30 m in length, and one of which is equipped with a self-igniting light. • A lifting harness with rigging. • A reboarding device.
Safety Equipment	<ul style="list-style-type: none"> • An anchor with no less than 50 m of cable and/or chain in any combination. • Bilge pumping arrangements. • One power-driven fire pump located outside the machinery space, with one firehose and nozzle positioned so that a jet of water can be directed into any part of the vessel. • One Class 10BC fire extinguisher, at each of the following locations: <ul style="list-style-type: none"> ○ at each access to any space where a fuel-burning cooking, heating or refrigerating appliance is fitted, ○ at the entrance to any accommodation space, and ○ at the entrance to the engine room space. • Four buckets, each with a capacity of 10 L or more. • Two axes.
Distress Equipment	<ul style="list-style-type: none"> • A watertight flashlight. • 12 Transport Canada approved flares of Type A, B, C or D, no more than six of which are Type D.
Navigation Equipment	<ul style="list-style-type: none"> • Two sound-signalling appliances. • Navigation lights that meet the applicable standards set out in the <i>Collision Regulations</i>. • Compass (not required if voyage is less than 20 nautical miles [37 km] from shore).

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PLEASURE CRAFT TYPE CARDS

Unpowered: 3.6 m pleasure craft

Unpowered: 7 m pleasure craft with an alcohol stove, freeboard of 1 m

Powered: 9 m pleasure craft, diesel stove, crossing Lake Superior

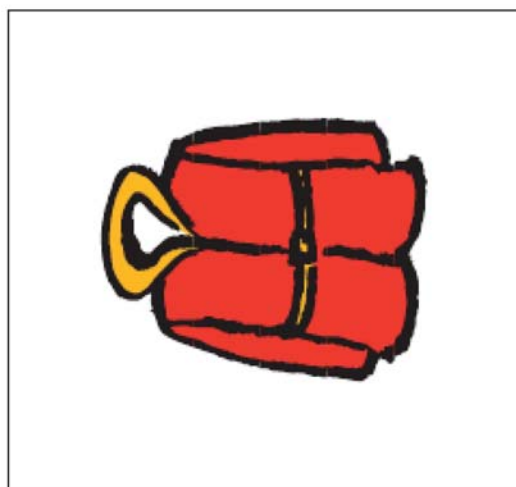
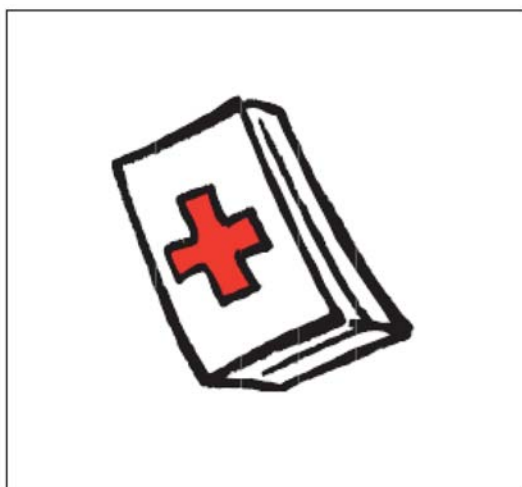
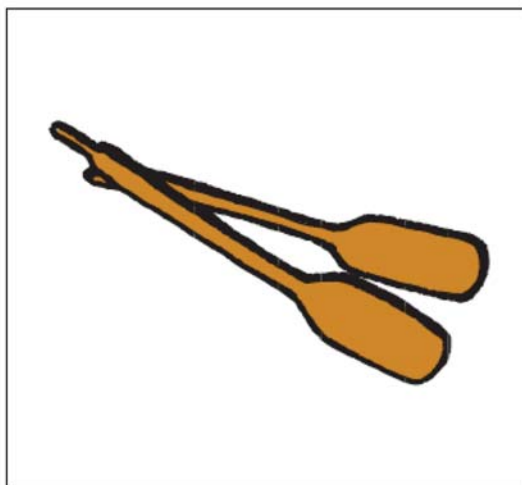
Powered: 23 m pleasure craft, diesel stove, electric heat

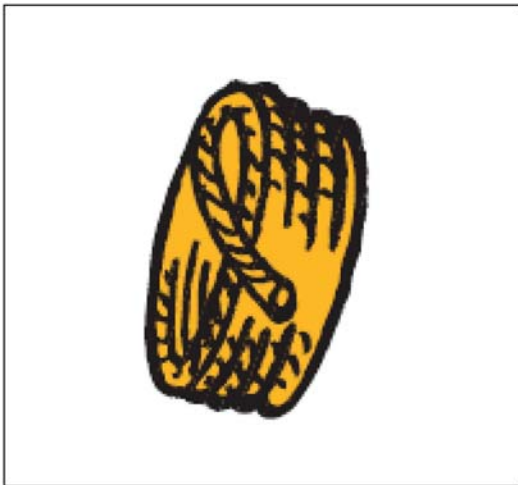
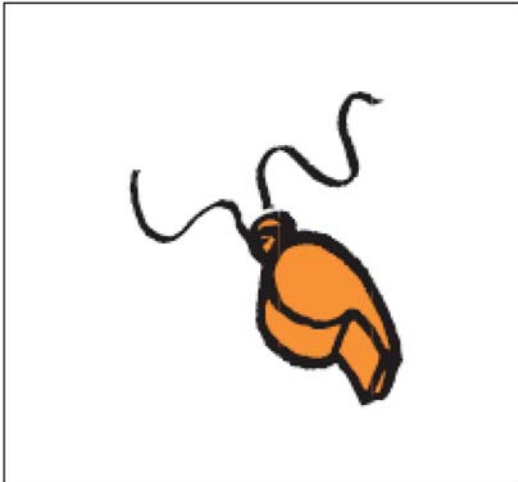
Unpowered: 16 m pleasure craft, microwave oven

Unpowered: 8.3 m pleasure craft, under oars, daylight

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PLEASURE CRAFT SAFETY EQUIPMENT FLASH CARDS





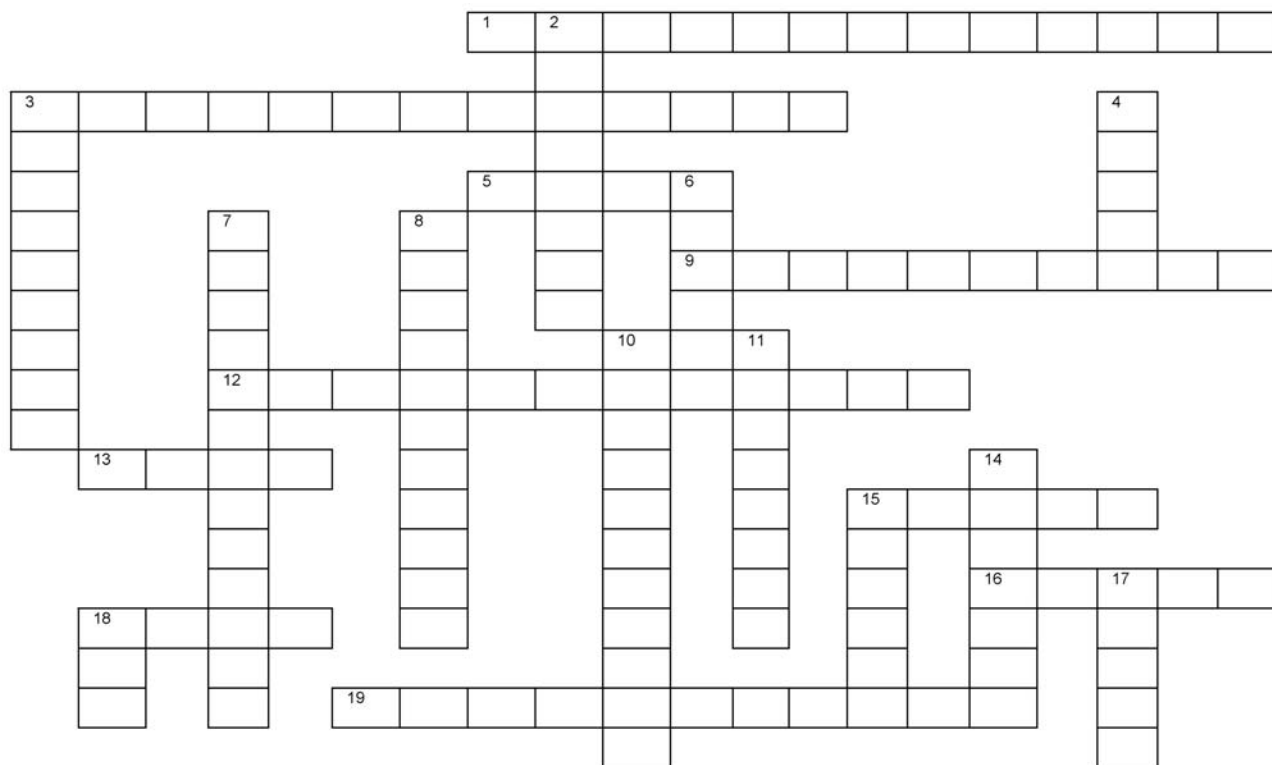






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TERMINOLOGY CROSSWORD HANDOUT



ACROSS

DOWN

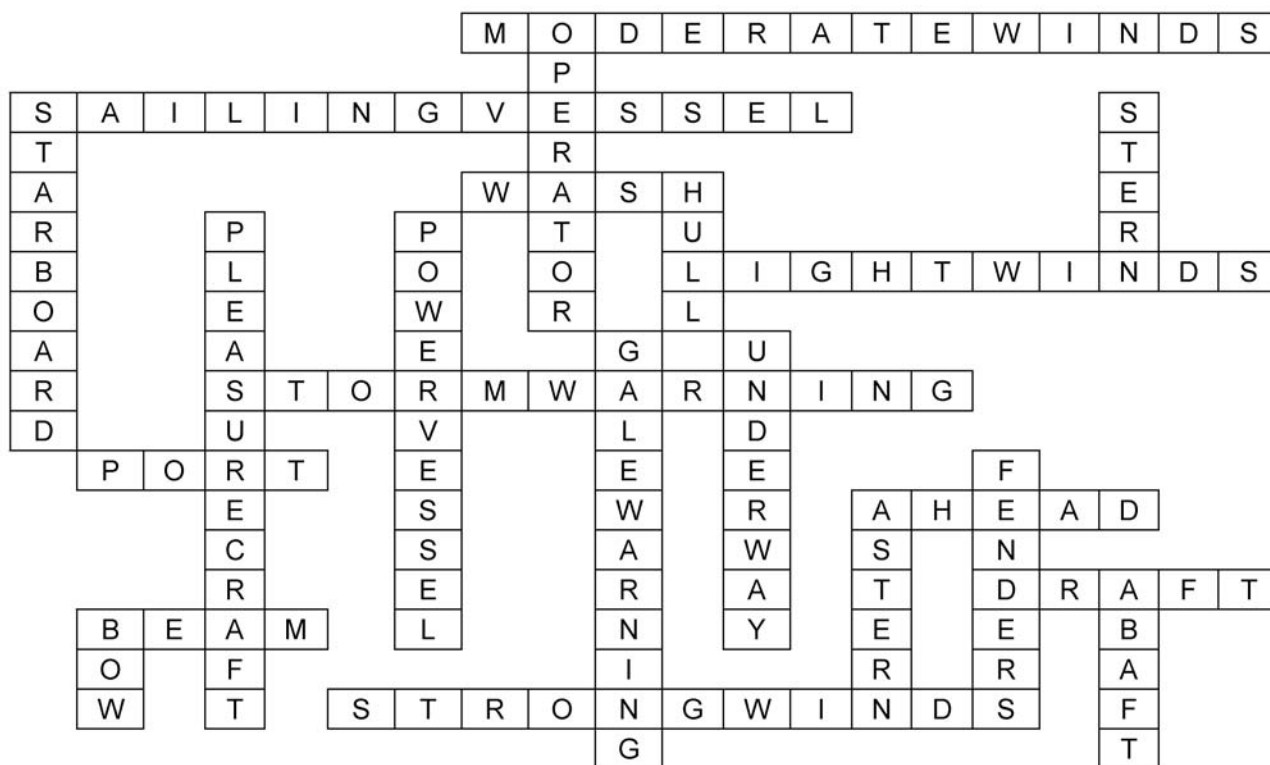
- | | |
|---|--|
| <p>1. Wind speeds in the range of 15 to 19 knots.</p> <p>3. Any vessel under sail, not using propelling machinery.</p> <p>5. Loose or broken water left behind a pleasure craft as it moves through the water.</p> <p>9. Wind speeds less than 15 knots.</p> <p>12. Wind speeds in the range of 48 to 63 knots.</p> <p>13. The left side of the vessel facing forward.</p> <p>15. In a direction or position pointing forward of a vessel.</p> <p>16. The distance a vessel extends below the waterline.</p> <p>18. The widest distance from side to side of a vessel.</p> <p>19. Wind speeds in the range of 20 to 33 knots.</p> | <p>2. Person in direct charge and control of the pleasure craft.</p> <p>3. The right side of the vessel looking forward.</p> <p>4. The after part of the vessel.</p> <p>6. The shell of the vessel.</p> <p>7. A vessel used for pleasure that does not carry passengers for profit.</p> <p>8. Any vessel propelled by machinery.</p> <p>10. Wind speeds in the range of 34 to 47 knots.</p> <p>11. Not at anchor or made fast to the shore.</p> <p>14. Device used to protect the sides of a vessel.</p> <p>15. In the direction or position pointing aft of a vessel.</p> <p>17. Further aft of.</p> <p>18. The forward part of the vessel.</p> |
|---|--|

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Figure 13G-1 Terminology Crossword

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TERMINOLOGY CROSSWORD ANSWER KEY



ACROSS

DOWN

- | | |
|--|---|
| <ol style="list-style-type: none"> 1. Wind speeds in the range of 15 to 19 knots. 3. Any vessel under sail, not using propelling machinery. 5. Loose or broken water left behind a pleasure craft as it moves through the water. 9. Wind speeds less than 15 knots. 12. Wind speeds in the range of 48 to 63 knots. 13. The left side of the vessel facing forward. 15. In a direction or position pointing forward of a vessel. 16. The distance a vessel extends below the waterline. 18. The widest distance from side to side of a vessel. 19. Wind speeds in the range of 20 to 33 knots. | <ol style="list-style-type: none"> 2. Person in direct charge and control of the pleasure craft. 3. The right side of the vessel looking forward. 4. The after part of the vessel. 6. The shell of the vessel. 7. A vessel used for pleasure that does not carry passengers for profit. 8. Any vessel propelled by machinery. 10. Wind speeds in the range of 34 to 47 knots. 11. Not at anchor or made fast to the shore. 14. Device used to protect the sides of a vessel. 15. In the direction or position pointing aft of a vessel. 17. Further aft of. 18. The forward part of the vessel. |
|--|---|

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Figure 13H-1 Terminology Crossword Answer Key

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TRIP PLAN WORKSHEET

Owner's Name & Address:		Telephone Number:	
Vessel Name & License Number:		Sail <input type="checkbox"/>	Power <input type="checkbox"/>
Size & Type:			
Colour:	Hull	Deck	Cabin
Type of Engine:		Other Distinguishing Features:	
Radio Channels Monitored:	HF	VHF	MF
Safety Equipment Onboard:			
Life Rafts:		Dinghy or Small Boat (Include colour):	
Flares (Include number & type):		Lifejackets or PFDs (Include number):	
Other Equipment:			
Search & Rescue Telephone Numbers:			
Rescue Co-ordination Centre Victoria		1-800-567-5111 or Channel 16 (156.8 MHz)	
Rescue Co-ordination Centre Trenton		1-800-267-7270 or Channel 16 (156.8 MHz)	
Rescue Co-ordination Centre Quebec		1-800-463-4393 or Channel 16 (156.8 MHz)	
Rescue Co-ordination Centre Halifax		1-800-565-1582 or Channel 16 (156.8 MHz)	
Marine Rescue Sub-Centre St John's		1-800-563-2444 or Channel 16 (156.8 MHz)	
Trip Details (Include these details for every trip):			
Date of Departure:		Time of Departure:	
Leaving From:		Heading To:	
Proposed Route:		Estimated Date & Time of Arrival:	
Stop Over Point:		Number of Persons On Board:	
Stop Over Point:			

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Figure 13I-1 Trip Plan

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TRIP PLAN SCENARIO CARDS

Scenario Card #1

Use the following information to fill in a trip plan for the trip described. Use your knowledge of the DOT requirements to fill in the safety equipment on board.

You have just bought a 30-foot power vessel with a 150 hp inboard engine. Your vessel is affectionately named the "Happy Hour" and has a red and white hull with a black cabin and purple deck. There is a large green star painted on the transom of the boat. Your wife has her radio operator's license and you have a VHF radio onboard. You have decided to take your neighbours out for a day cruise to Keener Island. The cruise should take approximately 10 hours-return trip. You will be arriving home at 8:00 pm. You have decided to leave your trip information with your friend who owns the local drug store. You have all of the required safety equipment onboard the vessel and you have packed extra food in case of an emergency.

Scenario Card #2

Use the following information to fill in a trip plan for the trip described. Use your knowledge of the DOT requirements to fill in the safety equipment on board.

Your grandparents own a skiff 12 feet in length. Your grandfather uses the vessel to haul driftwood off of the beaches. You and a friend decide that you want to borrow the vessel and go sun tanning in the middle of the lake. The skiff has a 5 hp trolling engine. The skiff is made of wood and has not been painted. There is no VHF radio on board. The skiff is very low to the water and does not take wavy conditions well. You plan to depart for the middle of the lake at 10:00 am and have told your grandfather that you will be back at 3:00 pm. You have all of the required DOT equipment on board and have packed a light lunch and some water to drink.

Scenario Card #3

Use the following information to fill in a trip plan for the trip described. Use your knowledge of the DOT requirements to fill in the safety equipment on board.

You are an avid sailor and have rented a 25 foot keel boat from a rental agency while on holidays in Mexico. You plan to cruise the shoreline for a few days and return the boat by the end of the week. The vessel is orange with a hunter green pinstripe. The vessel is a sloop rig and does not have a spinnaker. There is a picture of a mermaid painted on the main sail. You have completed your radio operator's certification and the rental agency has supplied you with an old VHF radio. When completing your signal check the agency says that you have a readability of 3. You believe that this is good enough seeing as you will not be travelling to far from shore. The rental agency has assured you that the required DOT equipment is onboard. You have packed food and water for one week.

Scenario Card #4

Use the following information to fill in a trip plan for the trip described. Use your knowledge of the DOT requirements to fill in the safety equipment on board.

You have signed up to attend a fund raiser cruise to Kind Harbour. All boats registered to attend the cruise are to meet at 6:00 am and are planning to travel in a group to Kind Harbour. Your 40-foot houseboat travels fairly slowly despite the twin 150 hp (112 kW) outboard engines. You have decided to make the trip an overnight outing. If you leave at 6:00 am with the other vessels you should arrive at Kind Harbour before dusk and can moor for the night in the harbour. You plan to return the next day and should be home before dusk. Your family has decided that this will be a nice way to spend the weekend. All 6 family members have packed appropriate overnight bags and you have checked to ensure that all DOT equipment is onboard. Your VHF radio was tested with the local gas barge where you filled up in the morning.

SAFE FUELLING FLASH CARDS

MOOR THE VESSEL

SHUT DOWN ALL ENGINES

SEND ALL PERSONS ASHORE

EXTINGUISH ALL OPEN FLAMES

DO NOT SMOKE WHILE FUELLING

**TURN OFF ALL ELECTRICAL
SWITCHES**

**CLOSE ALL DOORS, PORTHOLES,
HATCHES AND CABIN DOORS**

REMOVE ALL PORTABLE TANKS

**GROUND NOZZLE AGAINST THE
FILLER PIPE**

DO NOT OVERFILL THE TANK

CLEAN UP SPILLAGE

**TURN ON THE ENGINE
COMPARTMENT BLOWER**

CHECK FOR FUEL VAPOUR ODOURS

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SAFE FUELLING WALLET CARDS


<p>Safe Fuelling Procedure</p> <ol style="list-style-type: none"> 1. Moor the vessel. 2. Shut down all engines. 3. Send all persons ashore. 4. Extinguish all open flames. 5. Do not smoke while fuelling. 6. Turn off all electrical switches. 7. Close all doors, portholes, hatches and cabin doors. 8. Remove all portable tanks. 9. Ground nozzle against the filler pipe. 10. Do not overfill the tank. 11. Clean up spillage. 12. Turn on the engine compartment blower. 13. Check for fuel vapour odours. 	<p>Safe Fuelling Procedure</p> <ol style="list-style-type: none"> 1. Moor the vessel. 2. Shut down all engines. 3. Send all persons ashore. 4. Extinguish all open flames. 5. Do not smoke while fuelling. 6. Turn off all electrical switches. 7. Close all doors, portholes, hatches and cabin doors. 8. Remove all portable tanks. 9. Ground nozzle against the filler pipe. 10. Do not overfill the tank. 11. Clean up spillage. 12. Turn on the engine compartment blower. 13. Check for fuel vapour odours. 	<p>Safe Fuelling Procedure</p> <ol style="list-style-type: none"> 1. Moor the vessel. 2. Shut down all engines. 3. Send all persons ashore. 4. Extinguish all open flames. 5. Do not smoke while fuelling. 6. Turn off all electrical switches. 7. Close all doors, portholes, hatches and cabin doors. 8. Remove all portable tanks. 9. Ground nozzle against the filler pipe. 10. Do not overfill the tank. 11. Clean up spillage. 12. Turn on the engine compartment blower. 13. Check for fuel vapour odours. 	<p>Safe Fuelling Procedure</p> <ol style="list-style-type: none"> 1. Moor the vessel. 2. Shut down all engines. 3. Send all persons ashore. 4. Extinguish all open flames. 5. Do not smoke while fuelling. 6. Turn off all electrical switches. 7. Close all doors, portholes, hatches and cabin doors. 8. Remove all portable tanks. 9. Ground nozzle against the filler pipe. 10. Do not overfill the tank. 11. Clean up spillage. 12. Turn on the engine compartment blower. 13. Check for fuel vapour odours.
<p>Safe Fuelling Procedure</p> <ol style="list-style-type: none"> 1. Moor the vessel. 2. Shut down all engines. 3. Send all persons ashore. 4. Extinguish all open flames. 5. Do not smoke while fuelling. 6. Turn off all electrical switches. 7. Close all doors, portholes, hatches and cabin doors. 8. Remove all portable tanks. 9. Ground nozzle against the filler pipe. 10. Do not overfill the tank. 11. Clean up spillage. 12. Turn on the engine compartment blower. 13. Check for fuel vapour odours. 	<p>Safe Fuelling Procedure</p> <ol style="list-style-type: none"> 1. Moor the vessel. 2. Shut down all engines. 3. Send all persons ashore. 4. Extinguish all open flames. 5. Do not smoke while fuelling. 6. Turn off all electrical switches. 7. Close all doors, portholes, hatches and cabin doors. 8. Remove all portable tanks. 9. Ground nozzle against the filler pipe. 10. Do not overfill the tank. 11. Clean up spillage. 12. Turn on the engine compartment blower. 13. Check for fuel vapour odours. 	<p>Safe Fuelling Procedure</p> <ol style="list-style-type: none"> 1. Moor the vessel. 2. Shut down all engines. 3. Send all persons ashore. 4. Extinguish all open flames. 5. Do not smoke while fuelling. 6. Turn off all electrical switches. 7. Close all doors, portholes, hatches and cabin doors. 8. Remove all portable tanks. 9. Ground nozzle against the filler pipe. 10. Do not overfill the tank. 11. Clean up spillage. 12. Turn on the engine compartment blower. 13. Check for fuel vapour odours. 	<p>Safe Fuelling Procedure</p> <ol style="list-style-type: none"> 1. Moor the vessel. 2. Shut down all engines. 3. Send all persons ashore. 4. Extinguish all open flames. 5. Do not smoke while fuelling. 6. Turn off all electrical switches. 7. Close all doors, portholes, hatches and cabin doors. 8. Remove all portable tanks. 9. Ground nozzle against the filler pipe. 10. Do not overfill the tank. 11. Clean up spillage. 12. Turn on the engine compartment blower. 13. Check for fuel vapour odours.

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RULES OF THE ROAD HANDOUT

Rules of the Road

Port



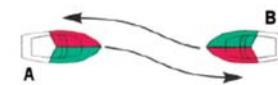
Starboard

Stern

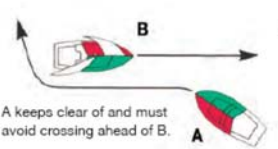
Port
If a power-driven vessel approaches within this sector, maintain your course and speed with caution.

Starboard
If any vessel approaches within this sector, keep out of its way. (Note: This rule may not always apply if one or both vessels are sailboats.)

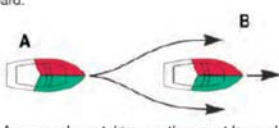
Stern
If any vessel approaches this sector, maintain your course and speed with caution.



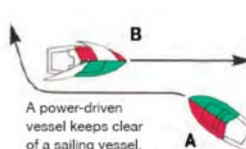
A blows one blast and alters course to starboard.
B blows one blast and alters course to starboard.



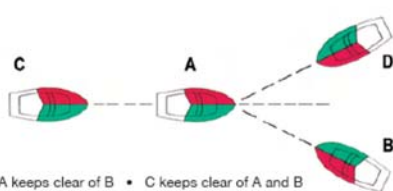
A keeps clear and must avoid crossing ahead of B.



Any vessel overtaking another must keep clear.




A power-driven vessel keeps clear of a sailing vessel.





A keeps clear of B • C keeps clear of A and B
B keeps clear of D • D keeps clear of A and C

TC 1001824



TP 14352 (03/2007)

Règles de route

Tribord

Bâbord

Arrière

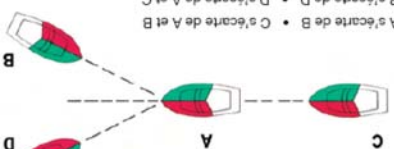
Tribord : Écartez-vous de la route et votre vitesse, mais maintenez votre route et votre vitesse, mais procédez avec prudence.

Bâbord : Si une embarcation à moteur s'approche dans cette zone, s'écarterez-vous de la route et votre vitesse, mais maintenez votre route et votre vitesse, mais procédez avec prudence.

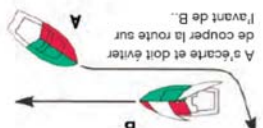
Arrière : Si un bâtiment s'approche dans cette zone, s'écarterez-vous de la route et votre vitesse, mais maintenez votre route et votre vitesse, mais procédez avec prudence.

Arrière : Si un bâtiment s'approche dans cette zone, s'écarterez-vous de la route et votre vitesse, mais maintenez votre route et votre vitesse, mais procédez avec prudence.


Arrière : Si un bâtiment s'approche dans cette zone, s'écarterez-vous de la route et votre vitesse, mais maintenez votre route et votre vitesse, mais procédez avec prudence.



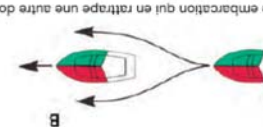
A s'écartere de B • C s'écartere de A et B
B s'écartere de D • D s'écartere de A et C



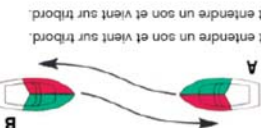
A s'écartere et doit éviter de couper la route sur l'avant de B.



Une embarcation à voile doit s'écarter d'un voilier.




Toute embarcation qui en rattrape une autre doit s'écarter de celle-ci.





A fait entendre un son et vient sur tribord.
B fait entendre un son et vient sur bâbord.

TC 1001824



TP 14352 (03/2007)


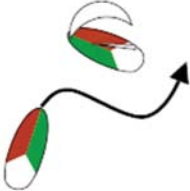


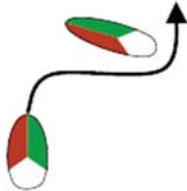
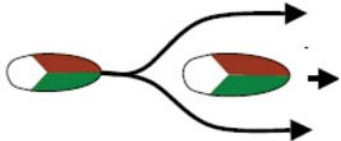
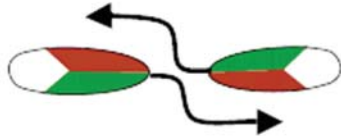
Rules of the Road, Vessel Navigation, Copyright 2007 by Transport Canada. Retrieved April 18, 2008, from <http://www.tc.gc.ca/Publications/bil/TP14352/PDF/HR/TP14352EF.pdf>

Figure 13M-1 Rules of the Road

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COLLISION REGULATIONS EXERCISE

Instructions: Match the diagram with the statement.

Statement	Answer	Diagram
<p>1. Both sail and power vessels must give way to a vessel actively engaged in fishing exercises.</p>	<p>()</p>	<p>A</p> 
<p>2. Both vessels must alter course to starboard and pass port on port.</p>	<p>()</p>	<p>B</p> 
<p>3. Overtaking vessel must keep clear.</p>	<p>()</p>	<p>C</p> 
<p>4. A power vessel must keep clear of a sailing vessel under sail.</p>	<p>()</p>	<p>D</p> 
<p>5. The vessel on the others starboard side has right of way.</p>	<p>()</p>	<p>E</p> 
<p>6. "I have a diver down. Keep well clear."</p>	<p>()</p>	<p>F</p> 
<p>7. "I am in distress and need assistance."</p>	<p>()</p>	<p>G</p> 


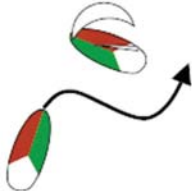

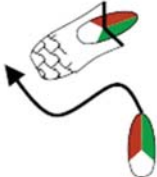
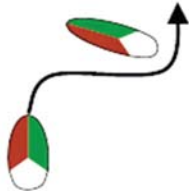
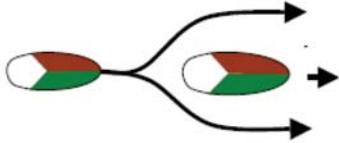
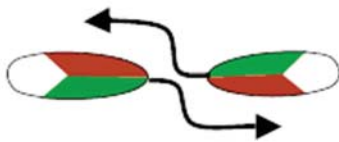
Director Cadets 3, 2008, Ottawa, ON: Department of National Defence

Figure 13N-1 Collision Regulations Exercise

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COLLISION REGULATIONS EXERCISE ANSWER KEY

Instructions: Match the diagram with the statement.

Statement	Answer	Diagram
1. Both sail and power vessels must give way to a vessel actively engaged in fishing exercises.	(<u> D</u>)	A 
2. Both vessels must alter course to starboard and pass port on port.	(<u> G</u>)	B 
3. Overtaking vessel must keep clear.	(<u> F</u>)	C 
4. A power vessel must keep clear of a sailing vessel under sail.	(<u> B</u>)	D 
5. The vessel on the others starboard side has right of way.	(<u> E</u>)	E 
6. "I have a diver down. Keep well clear."	(<u> C</u>)	F 
7. "I am in distress and need assistance."	(<u> A</u>)	G 

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Figure 13O-1 Collision Regulations Exercise Answer Key

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LATERAL BUOYS AND STANDARD DAYBEACONS HANDOUT

TP 14541 (03/2007)

Lateral Buoys and Standard Daybeacons

Lateral Buoys

Bifurcation (red and green bands)
You may pass this buoy on either side when proceeding in the upstream direction, but the main or preferred channel is indicated by the colour of the topmost band. For example: keep this buoy on your starboard (right) side.

Port (green can)
Keep this buoy on your port (left) side when proceeding in the upstream direction.

Port (green pillar)
Keep this buoy on your port (left) side when proceeding in the upstream direction.

Port (green spar)
Keep this buoy on your port (left) side when proceeding in the upstream direction.

Starboard (red spar)
Keep this buoy on your starboard (right) side when proceeding in the upstream direction.

Starboard (red conical)
Keep this buoy on your starboard (right) side when proceeding in the upstream direction.

Starboard (red pillar)
Keep this buoy on your starboard (right) side when proceeding in the upstream direction.

Standard Daybeacons

Port hand
When proceeding upstream, a port hand daybeacon must be kept on the vessel's port (left) side.

Junction (Preferred Channel to right)
Marks a point where the channel divides and may be passed on either side. If the preferred channel is desired, the daybeacon should be kept on the vessel's port (left) side.

Junction (Preferred Channel to left)
Marks a point where the channel divides and may be passed on either side. If the preferred channel is desired, the daybeacon should be kept on the vessel's starboard (right) side.

Starboard
When proceeding upstream, a starboard hand daybeacon must be kept on the vessel's starboard (right) side.

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Bouées latérales et balises de jour ordinaires

Mi-channel
Cette bouée indique une zone d'eau sécuritaire et l'entrée ou le milieu des chenaux. Les navires peuvent circuler de chaque côté mais est préférable de la laisser sur bâbord (à gauche).

Danger isolé
Une bouée de danger isolé est amarrée à un danger isolé, ou au-dessus de se dernier qui est entouré d'eau navigable sécuritaire. Consulter la carte marine pour tout renseignement concernant le danger (dimensions, profondeurs, etc.) Peut être utilisée pour baliser des dangers naturels comme de petits hauts-fonds ou de petits obstacles, tels que des épaves.

Tribord
Un navire se dirigeant vers l'amont doit laisser sur tribord (à droite) une balise de jour de chenal et peut être laissé sur bâbord ou sur tribord, si on désire emprunter le chenal préféré, la balise de jour devrait être laissée sur tribord (à droite).

Bâbord
Un navire se dirigeant vers l'amont doit laisser sur bâbord (à gauche) une balise de jour de chenal et peut être laissé sur tribord, si on désire emprunter le chenal préféré, la balise de jour devrait être laissée sur bâbord (à gauche).

Jonction
(Chenal préféré à gauche)
Marque le point d'embranchement d'un chenal et peut être laissé sur tribord, si on désire emprunter le chenal préféré, la balise de jour devrait être laissée sur tribord (à droite).

TP 14541 (03/2007)

Bouées latérales et balises de jour ordinaires

De bifurcation (bandes rouges et vertes)
Bouée que l'on peut laisser sur bâbord ou tribord lorsqu'on se dirige vers l'amont. Le chenal se dirige vers l'amont. Le chenal principal ou préféré est indiqué par la bande de couleur supérieure de la bouée, par exemple bouée à laisser sur tribord (droite).

De bâbord (cylindre verte)
Bouée à laisser sur bâbord (gauche) lorsqu'on se dirige vers l'amont.

De tribord (cylindre rouge)
Bouée à laisser sur tribord (droite) lorsqu'on se dirige vers l'amont.

De tribord (conique rouge)
Bouée à laisser sur tribord (droite) lorsqu'on se dirige vers l'amont.

De tribord (charpente verte)
Bouée à laisser sur tribord (droite) lorsqu'on se dirige vers l'amont.

De tribord (charpente rouge)
Bouée à laisser sur tribord (droite) lorsqu'on se dirige vers l'amont.

De tribord (spar rouge)
Bouée à laisser sur tribord (droite) lorsqu'on se dirige vers l'amont.

De tribord (spar vert)
Bouée à laisser sur tribord (droite) lorsqu'on se dirige vers l'amont.

Bâbord (charpente verte)
Bouée à laisser sur bâbord (gauche) lorsqu'on se dirige vers l'amont.

Bâbord (conique rouge)
Bouée à laisser sur bâbord (gauche) lorsqu'on se dirige vers l'amont.

Bâbord (charpente rouge)
Bouée à laisser sur bâbord (gauche) lorsqu'on se dirige vers l'amont.

Bâbord (spar rouge)
Bouée à laisser sur bâbord (gauche) lorsqu'on se dirige vers l'amont.

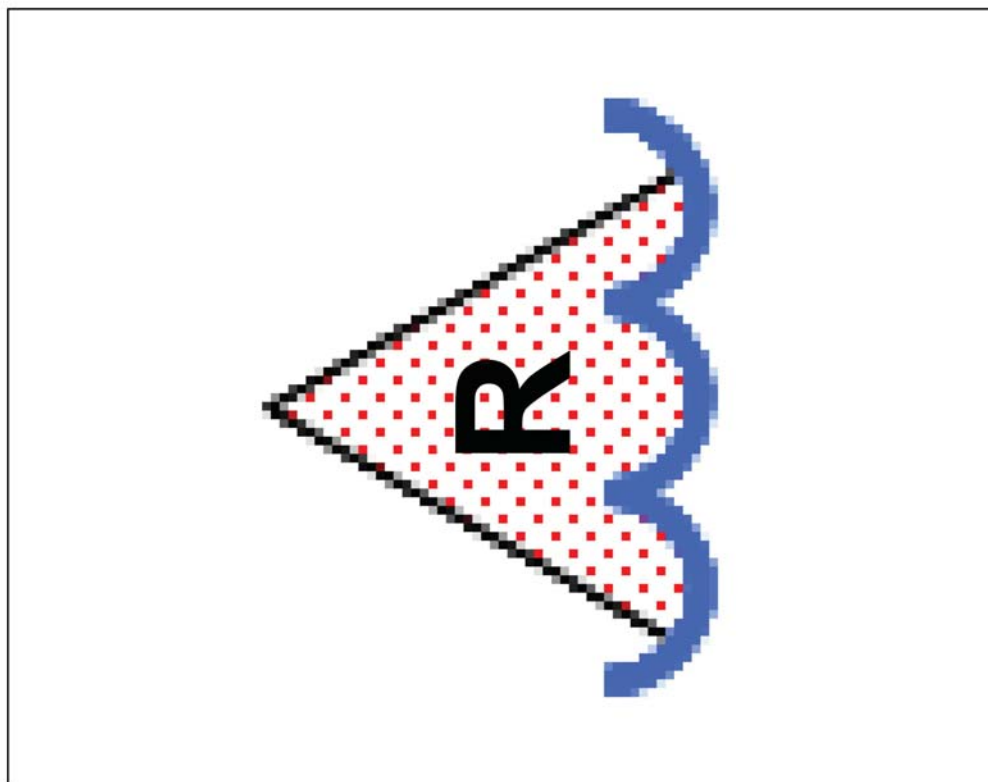
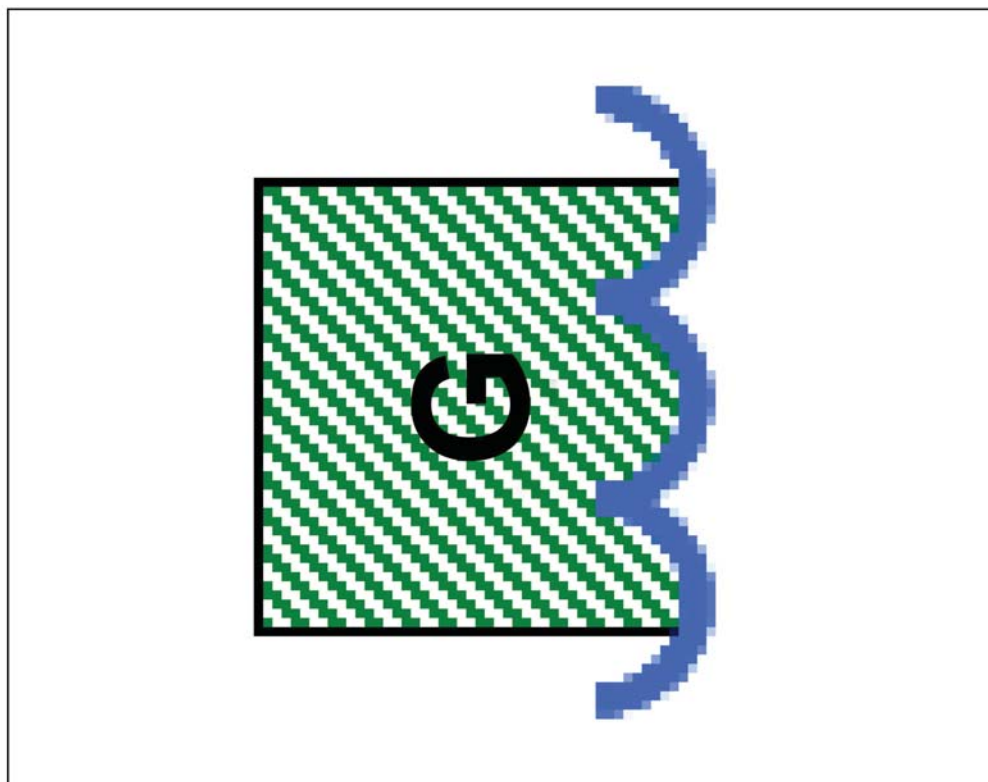
Bâbord (spar vert)
Bouée à laisser sur bâbord (gauche) lorsqu'on se dirige vers l'amont.

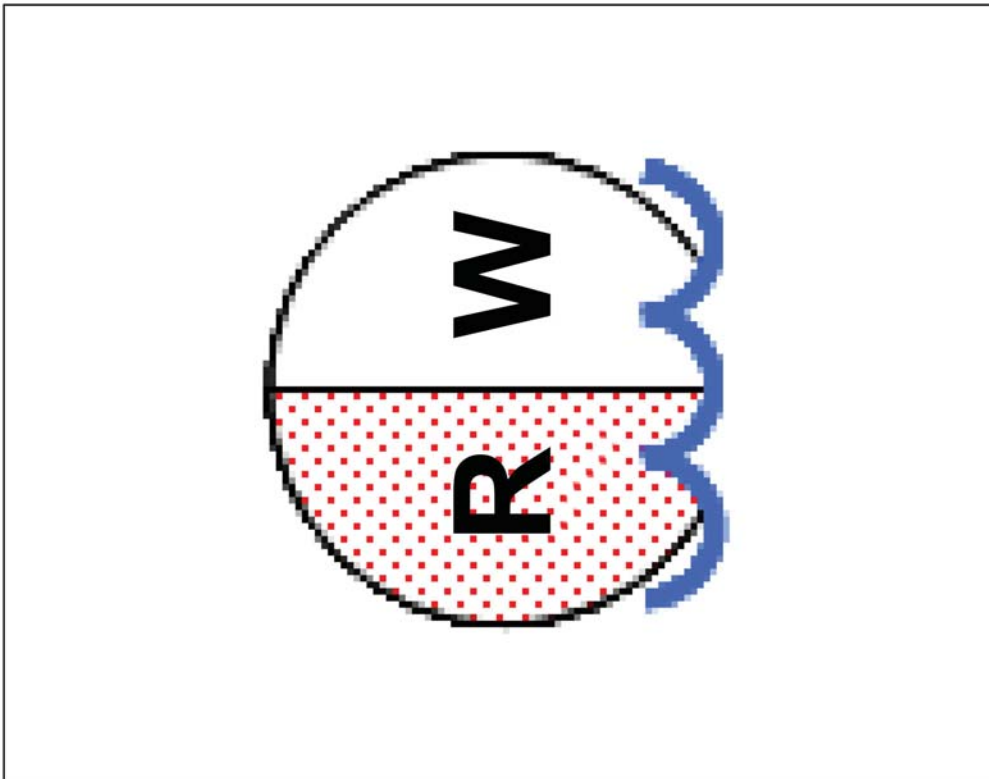
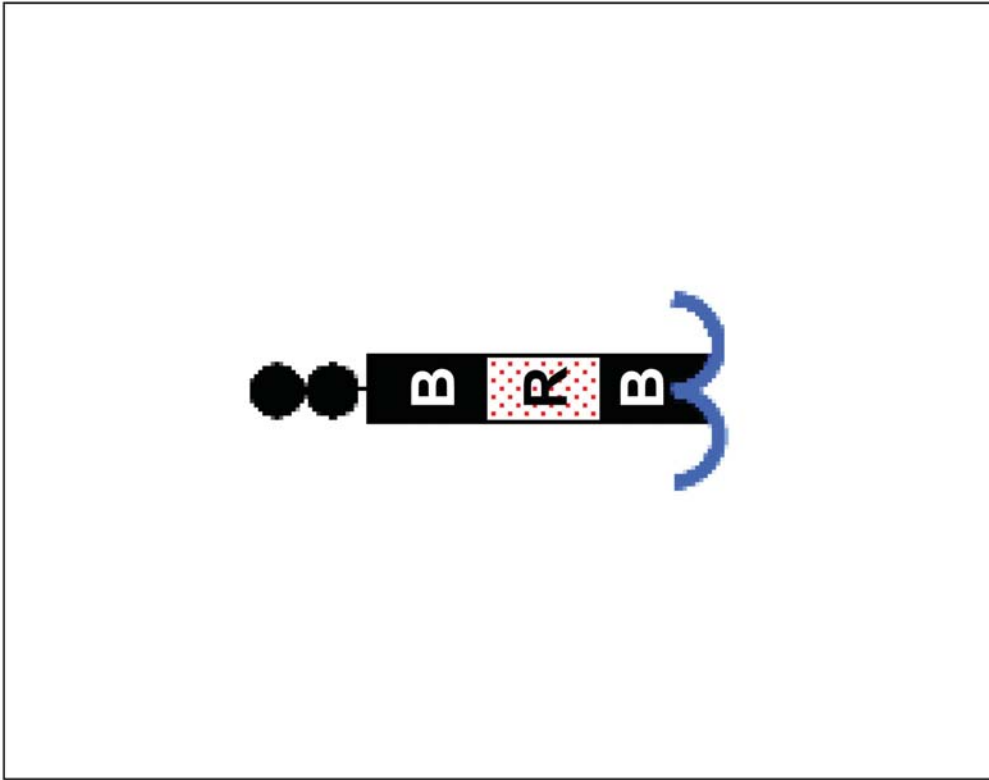
Lateral Buoys and Standard Daybeacons, Vessel Navigation, Copyright 2007 by Transport Canada. Retrieved April 18, 2008, from <http://www.tc.gc.ca/Publications/bil/TP14541/PDF/HR/TP14541EF.pdf>

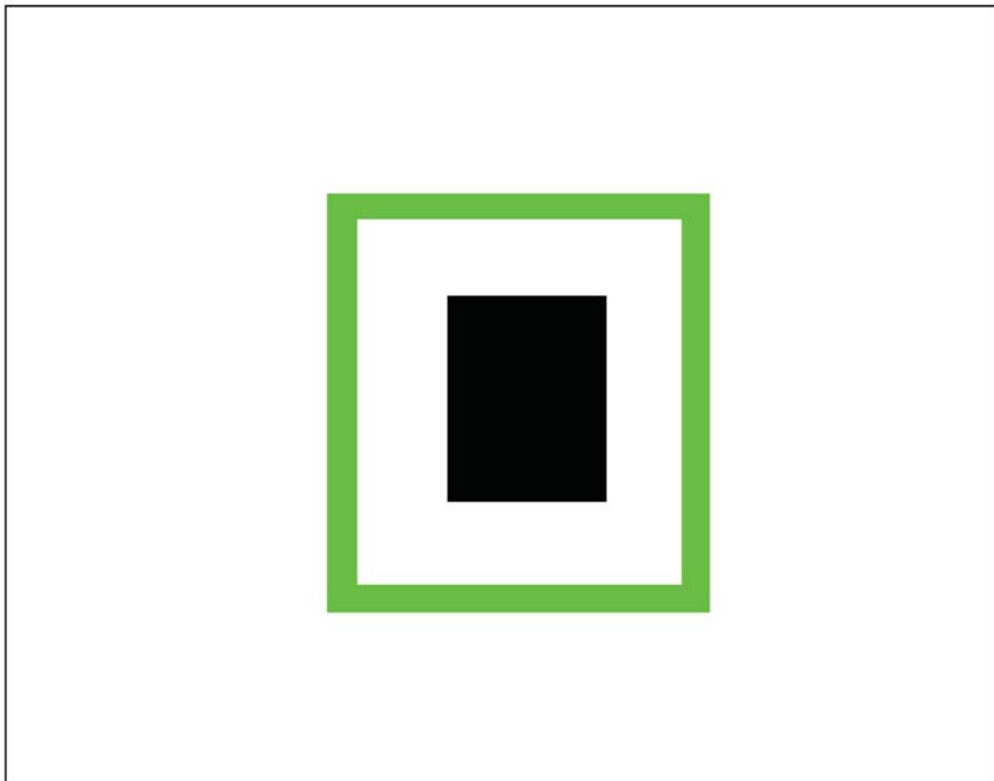
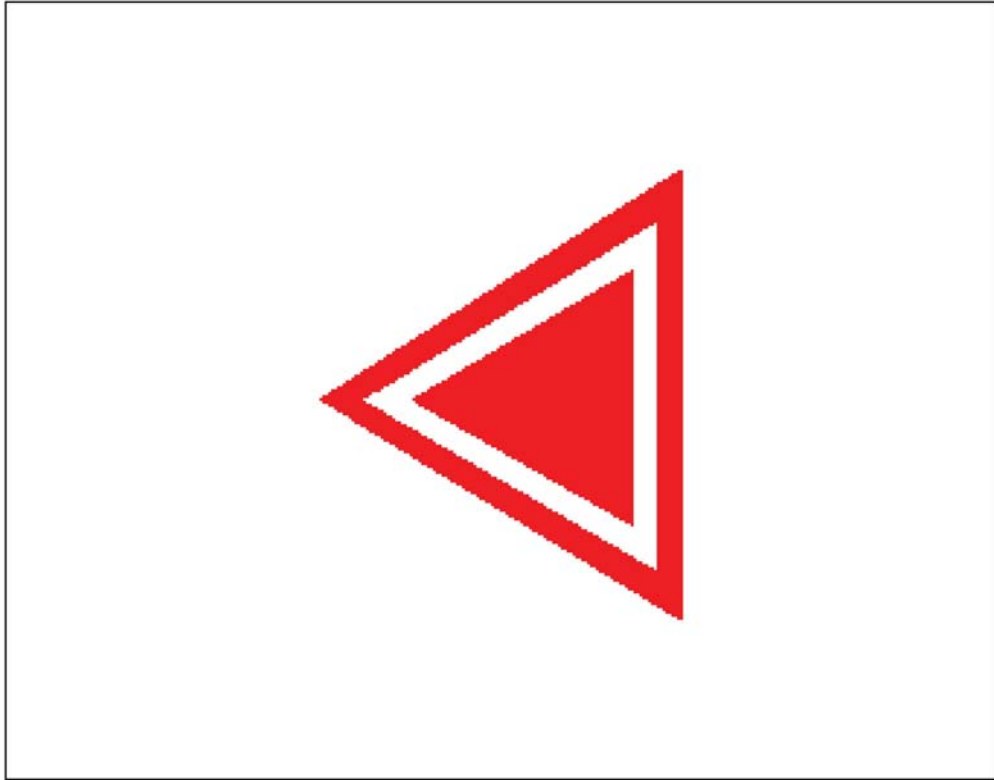
Figure 13P-1 Lateral Buoys and Standard Daybeacons

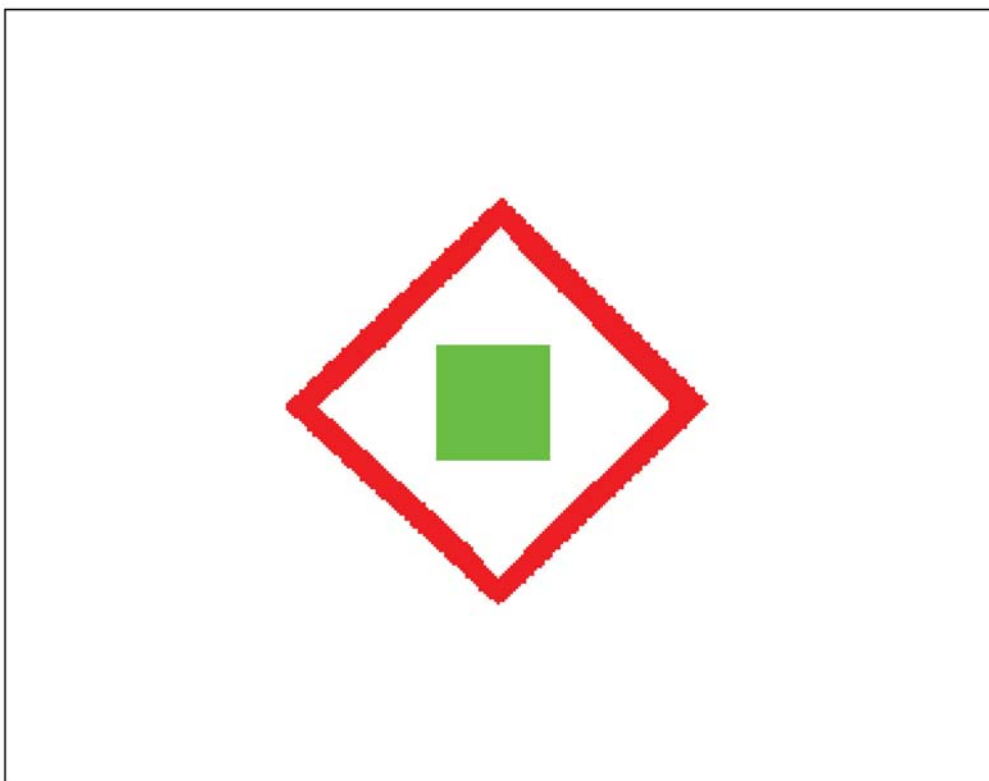
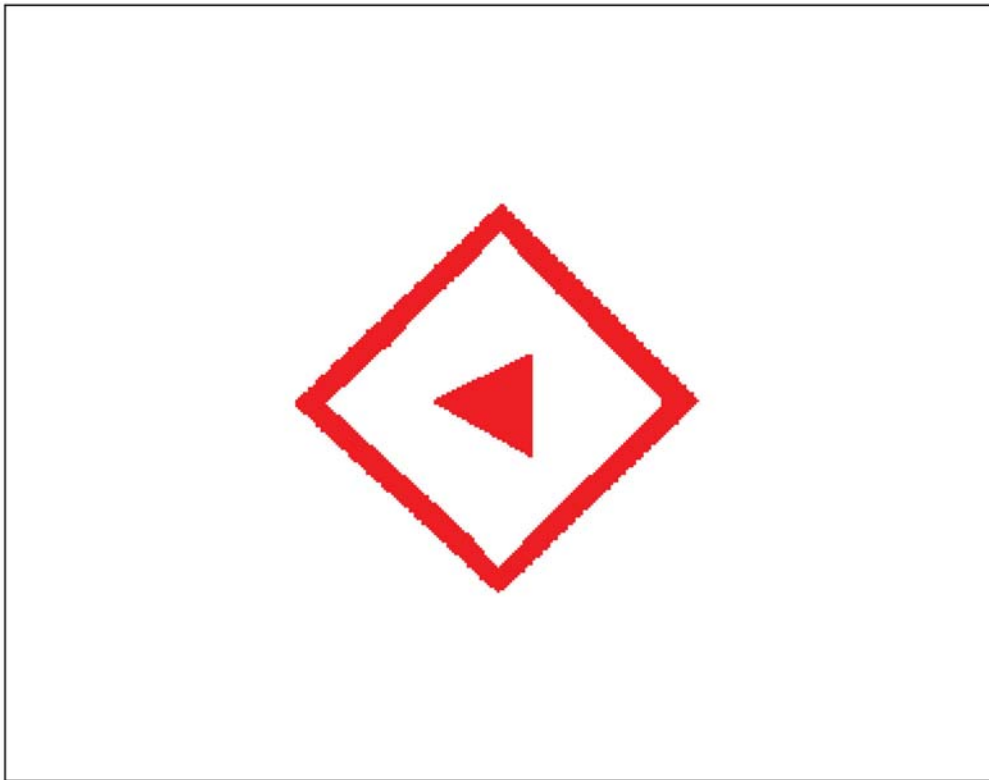
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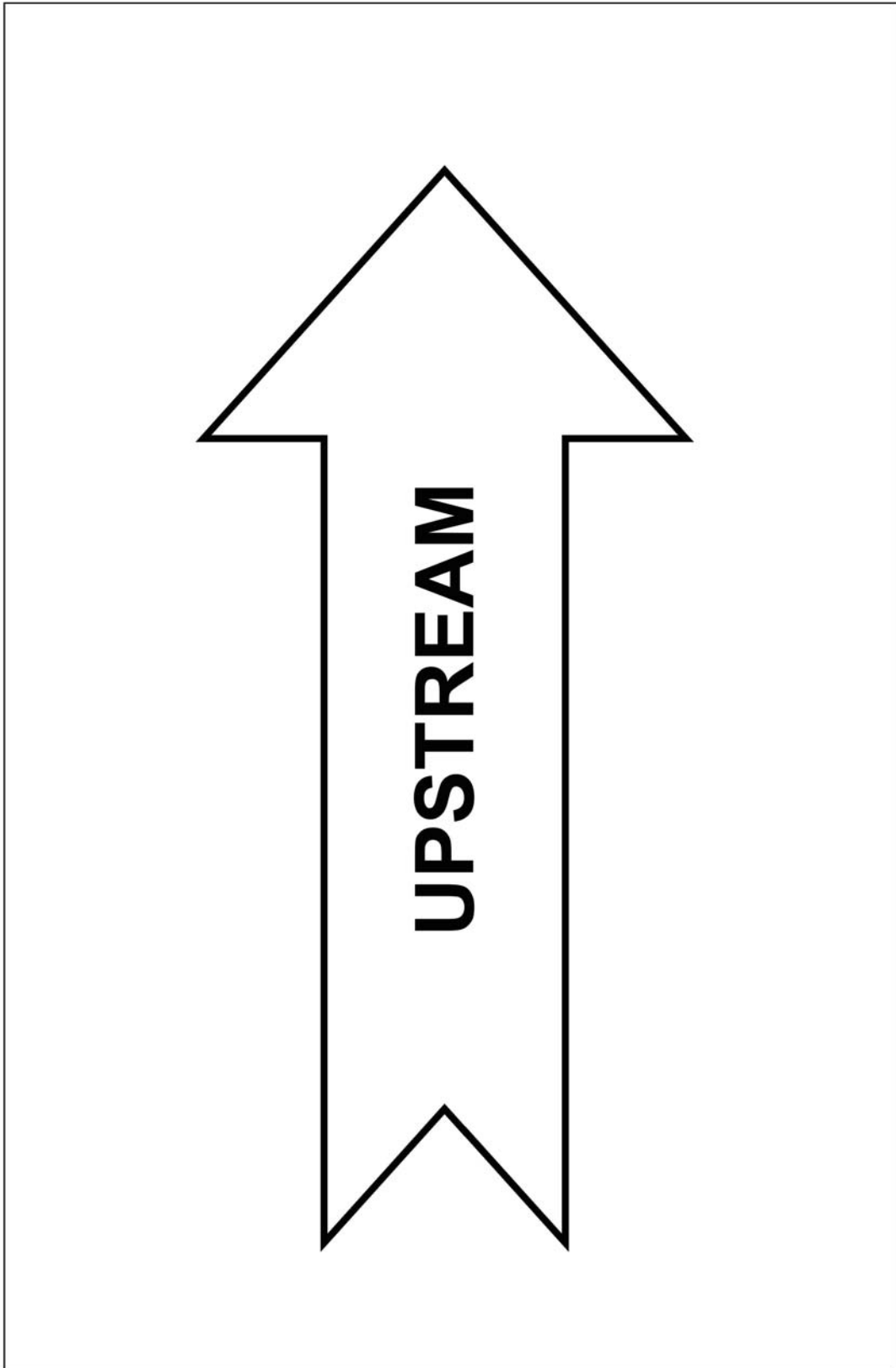
LATERAL BUOYS EXERCISE HANDOUT











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CARDINAL AND SPECIAL BUOYS HANDOUT

Cardinal Buoys and Special Buoys

Cardinal Buoys

Topmarks

Flash Groups

Description

- Yellow and black
- White lights - flash characters indicated below (if equipped)
- Direction of points of the 2 topmark cones signify the location of safe water.
- Topmark cones point in direction of black bands of the buoy.
- Letterhead - no numbers
- White retroreflective material

North **East** **South** **West**

Special Buoys

Description

- Shapes have no significance
- May be lettered - no numbers
- Cautionary, scientific and anchorage buoys may display a yellow 'X' topmark
- Yellow lights - flash characters (if equipped)
- Retroreflective material of the same colour as required markings, white buoys will display yellow material

<p>Cautionary</p> <p>A cautionary buoy marks dangers such as firing ranges, underwater pipelines, race courses, seaplane bases and areas where no through channel exists.</p>	<p>Anchorage</p> <p>An anchorage buoy marks the perimeter of designated anchorage areas; consult the chart for water depth.</p>	<p>Mooring</p> <p>A mooring buoy is used for mooring or securing vessels; Be aware that a vessel may be secured to such a buoy.</p>
<p>Information</p> <p>An information buoy displays information such as locality, marina, campsite, etc. Be guided by the information illustrated within the orange square.</p>	<p>Hazard</p> <p>A hazard buoy marks random hazards such as shoals and rocks. Information concerning the hazards is illustrated within the orange diamond.</p>	<p>Control</p> <p>A control buoy indicates speed limits, wash restrictions, etc.; Obey the restrictions illustrated within the orange circle.</p>
<p>Keep out</p> <p>A keep out buoy marks areas in which boats are prohibited.</p>	<p>Scientific (ODAS)</p> <p>An ocean data acquisition system buoy collects meteorological and other scientific data.</p>	<p>Diving</p> <p>A diving buoy marks an area where scuba or other such diving activity is in progress. Not normally charted.</p>
		<p>Swimming</p> <p>A swimming buoy marks the perimeter of swimming areas. May not be charted.</p>

TP-14542 (02/2007) TC-1001822

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Bouées Cardinales et Bouées Spéciales

Bouées Cardinales

Topmarks

Description

- Feuix jaunes - caractéristique du feu équipé
- Matière réfléchissante de même couleur si possible
- Feuix blancs - caractéristique du feu non équipé

Voynants

Flash

- La direction vers laquelle pointe les 2 marques de forme conique
- Le feu(s) - aucun nombre
- Le feu(s) - aucun nombre
- Matière et le flash

Description

- Feuix jaunes - caractéristique du feu équipé
- Matière réfléchissante de même couleur si possible
- Feuix blancs - caractéristique du feu non équipé

Bouées Spéciales

Description

- La forme n'a aucune signification
- Peut porter des lettres - aucun nombre
- Les bouées d'avertissement, contrairement aux bouées de mouillage, peuvent avoir un point de vue qui n'est pas orienté
- Les bouées d'avertissement, contrairement aux bouées de mouillage, peuvent avoir un point de vue qui n'est pas orienté

<p>Nation</p> <p>Une bouée de nation indique la limite d'une zone de pêche ou d'une zone réservée à la pêche.</p>	<p>Plongée</p> <p>Une bouée de plongée indique une zone où des activités de plongée en scaphandre autonome ou autres sont autorisées.</p>	<p>Scientifique (SADO)</p> <p>Une bouée de système d'acquisition de données océaniques recueille des données relatives à l'état de la mer, à la température, à la salinité, etc.</p>	<p>Endroit interdit</p> <p>Une bouée d'endroit interdit signale une zone interdite aux embarcations.</p>
<p>Contrôle</p> <p>Une bouée de contrôle indique la limite d'une zone de vitesse ou de restrictions de vitesse, etc.</p>	<p>Obstacle</p> <p>Une bouée d'obstacle indique la présence d'un obstacle.</p>	<p>Renseignements</p> <p>Une bouée de renseignements présente des renseignements relatifs à l'endroit, au lieu, etc.</p>	<p>Avertissement</p> <p>Une bouée d'avertissement indique des zones où il existe un danger.</p>
<p>Amarrage</p> <p>Une bouée d'amarrage est utilisée pour amarrer un bateau.</p>	<p>Mouillage</p> <p>Une bouée de mouillage indique la limite d'une zone de mouillage.</p>		

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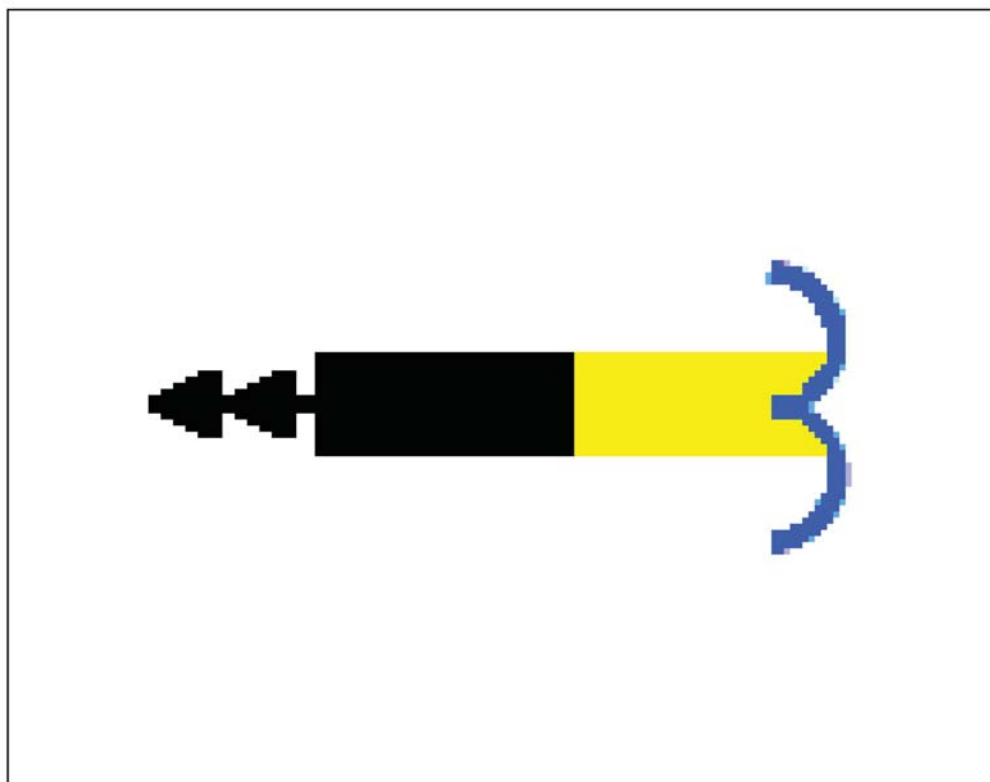
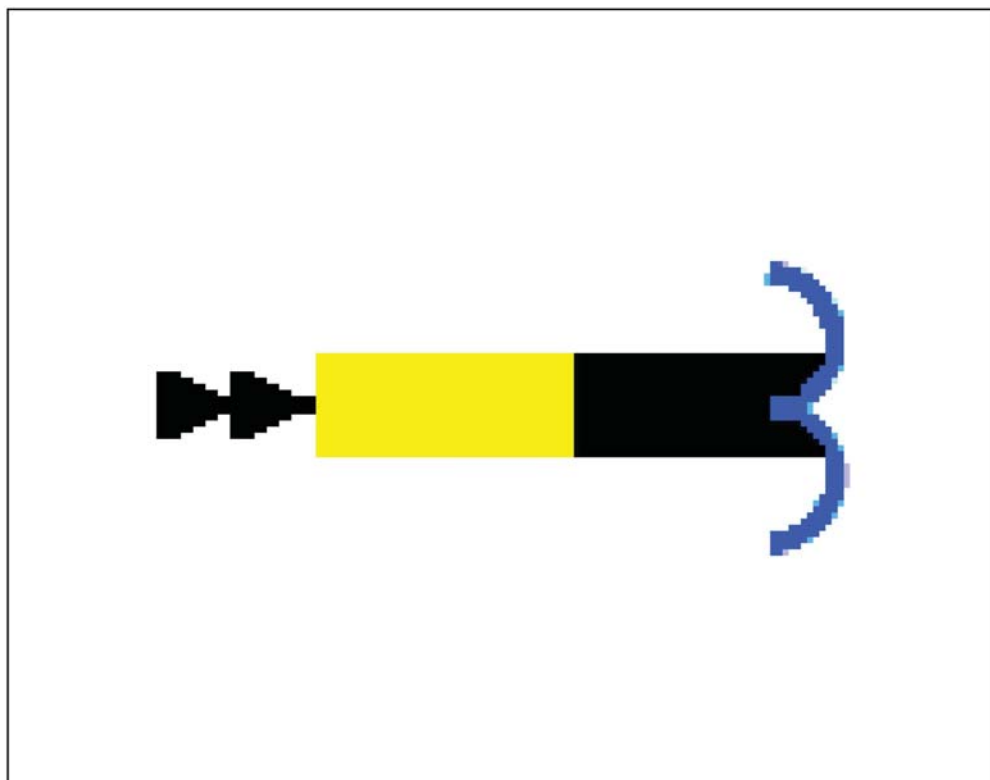
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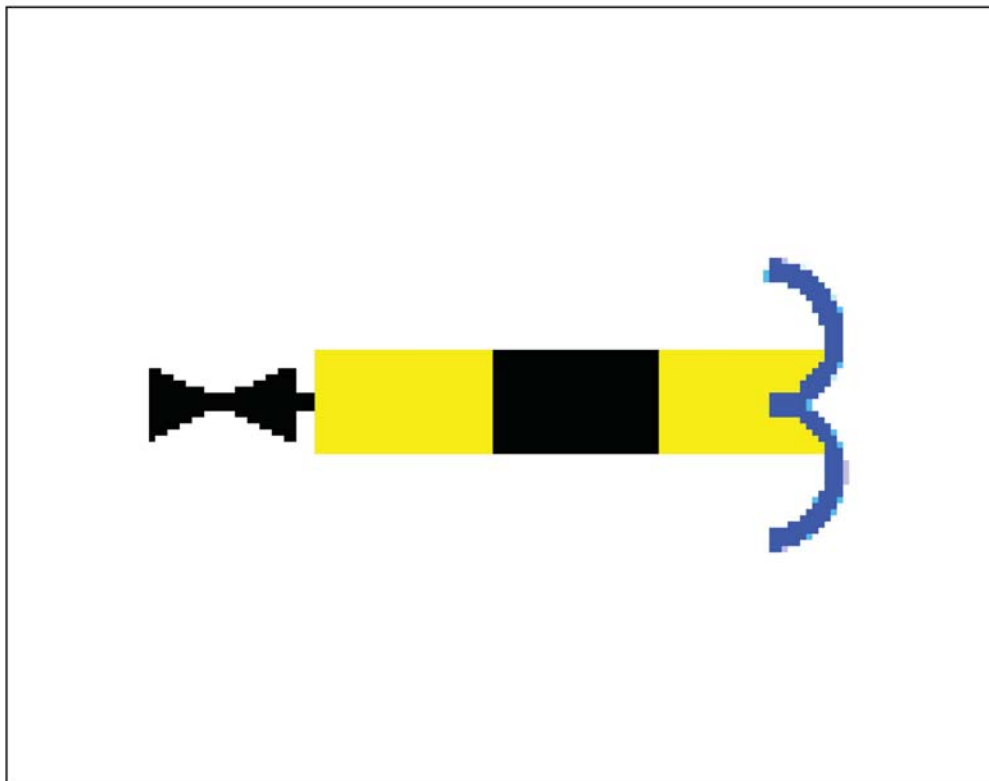
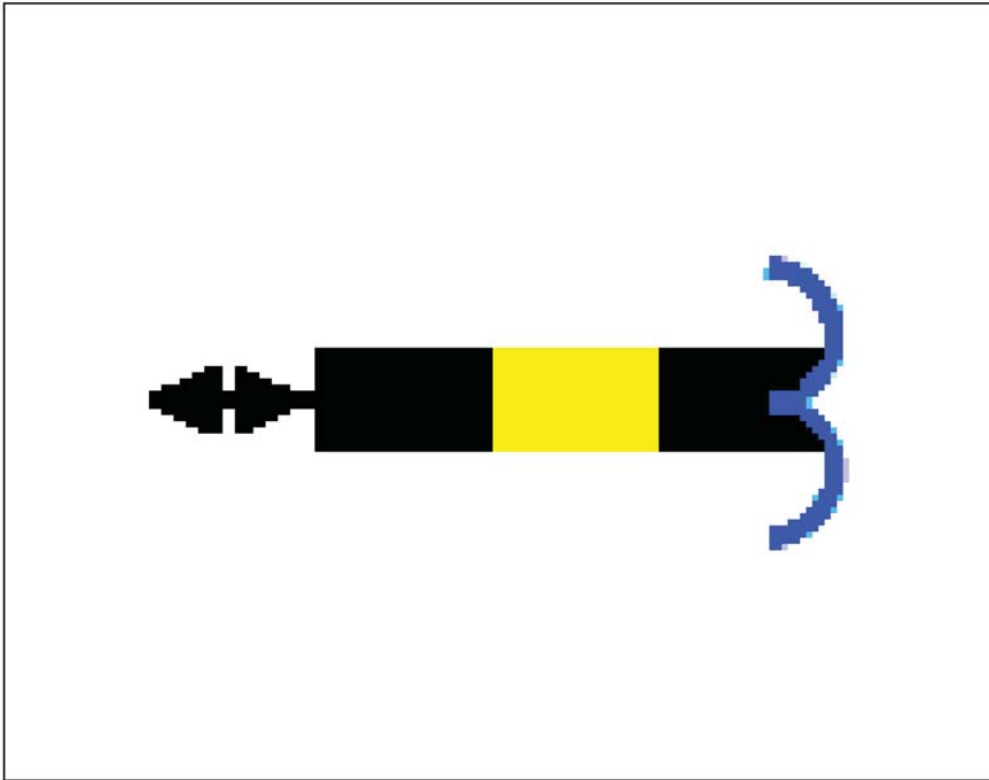
Cardinal Buoys and Special Buoys, Vessel Navigation, Copyright 2007 by Transport Canada. Retrieved April 18, 2008, from <http://www.tc.gc.ca/Publications/bil/TP14542/PDF/HR/TP14542EF.pdf>

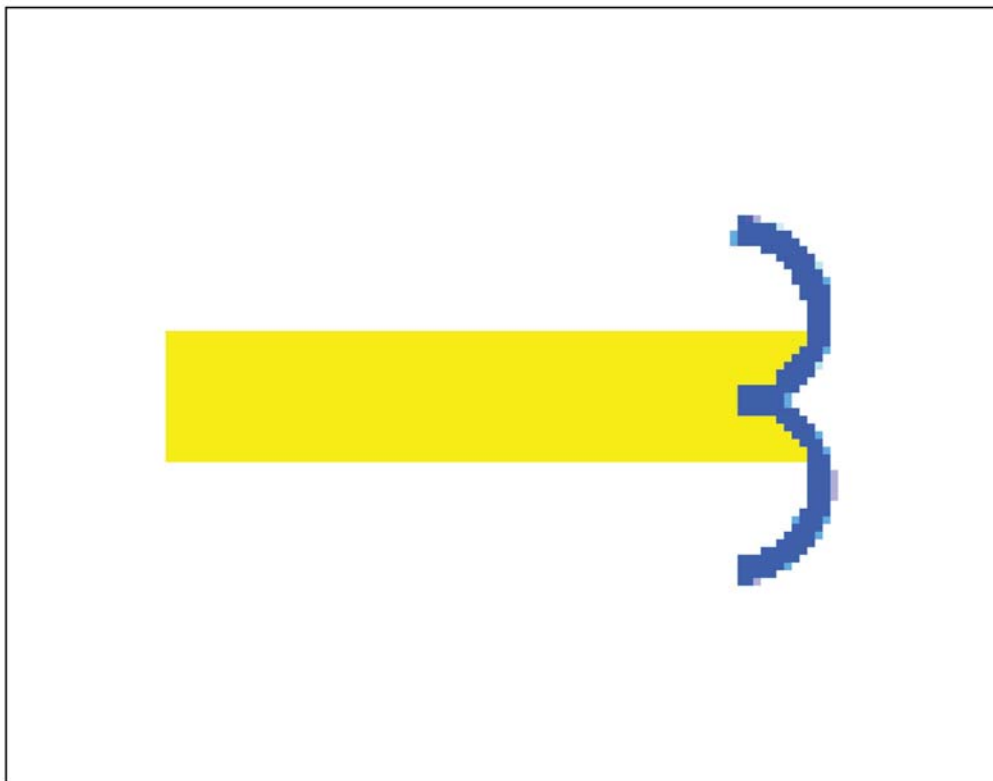
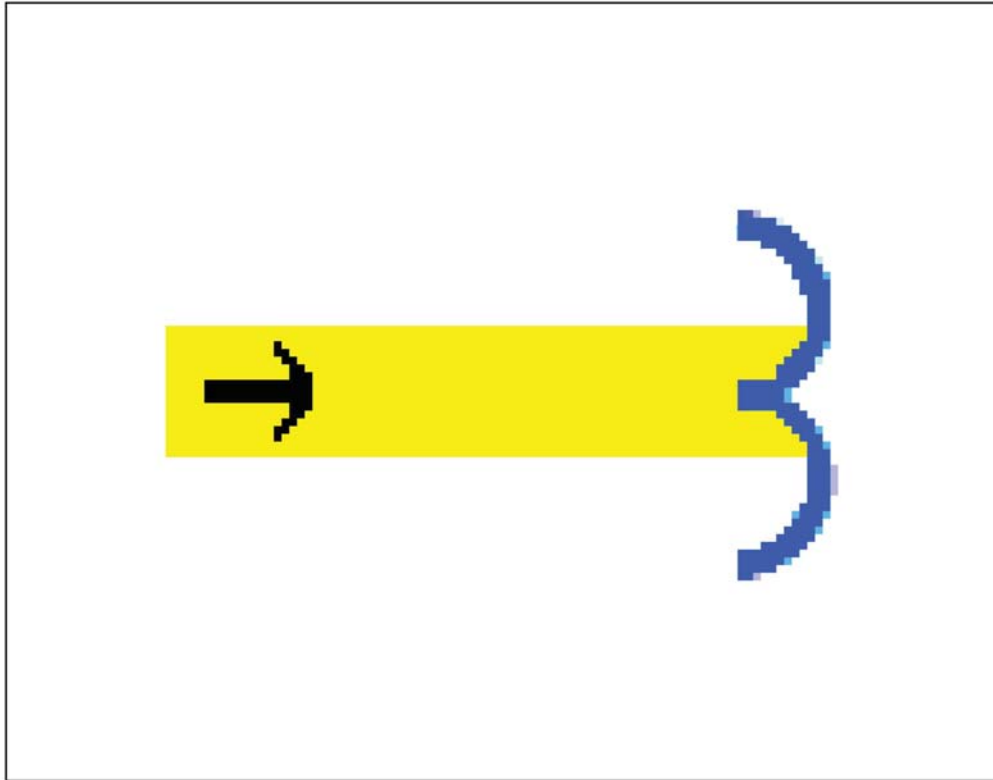
Figure 13R-1 Cardinal and Special Buoys

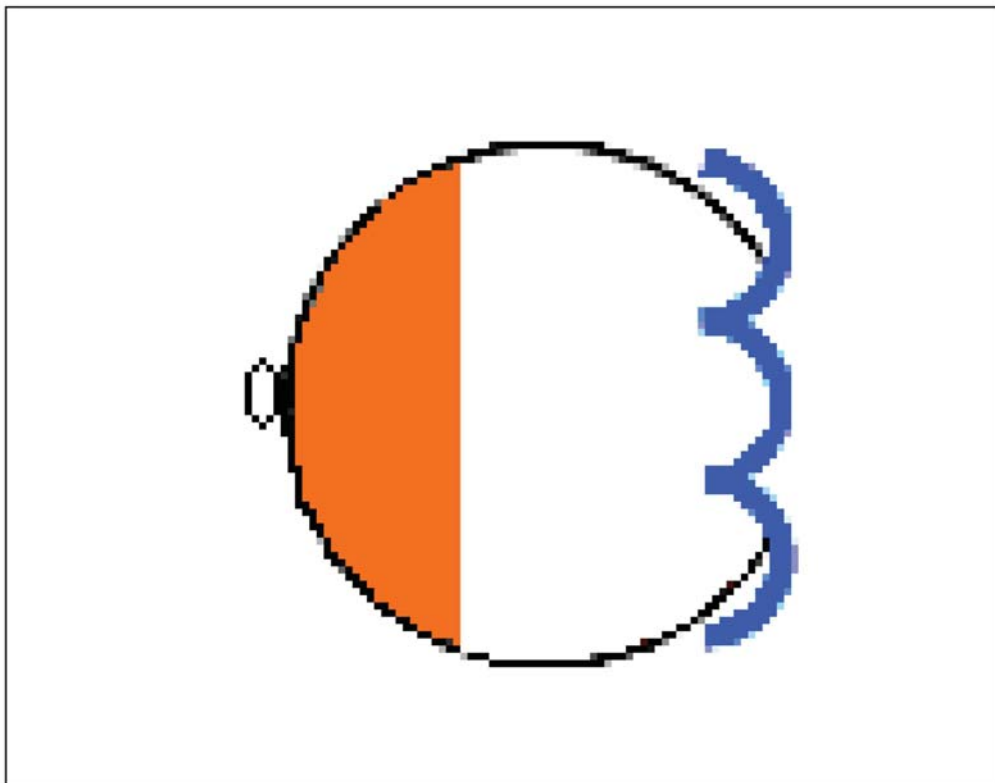
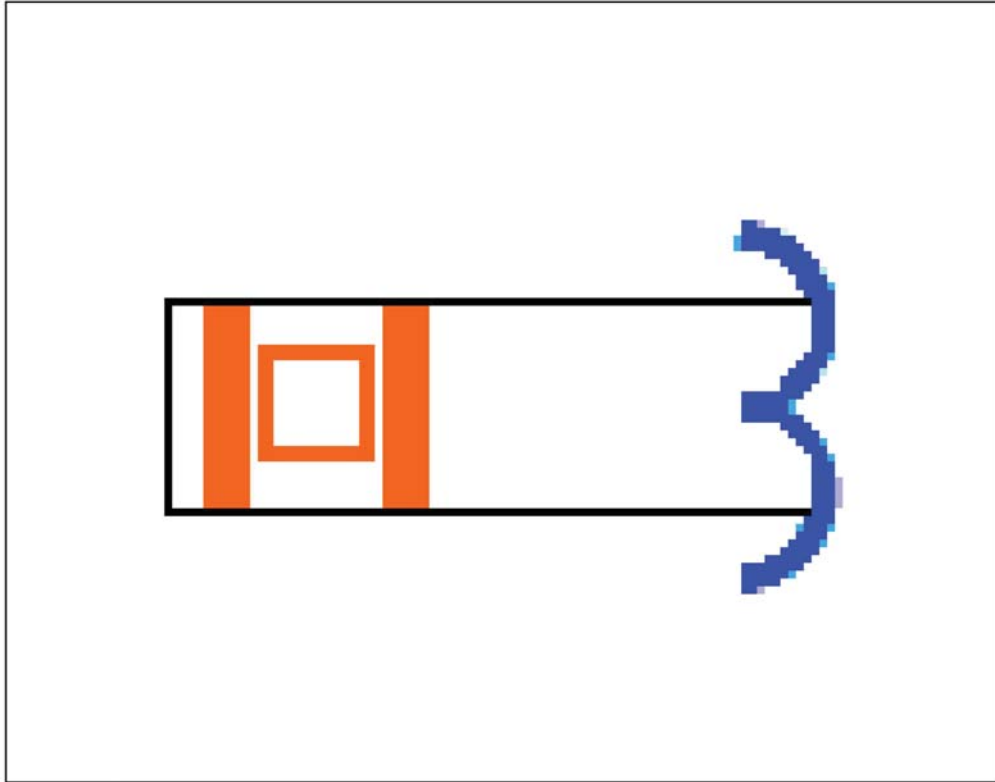
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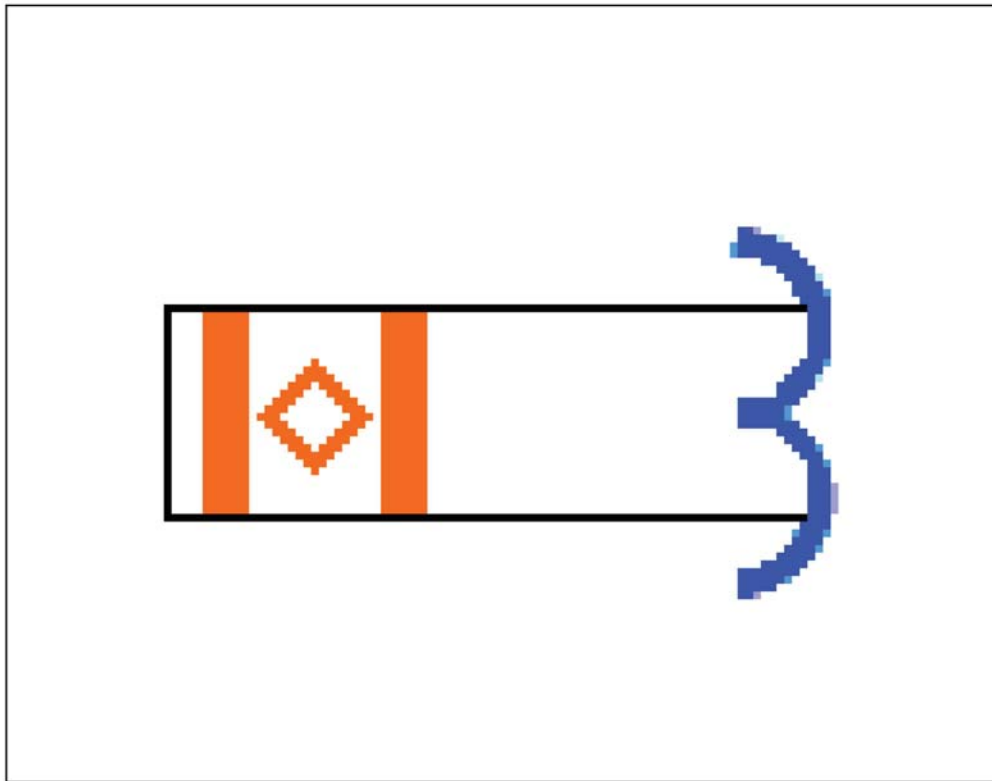
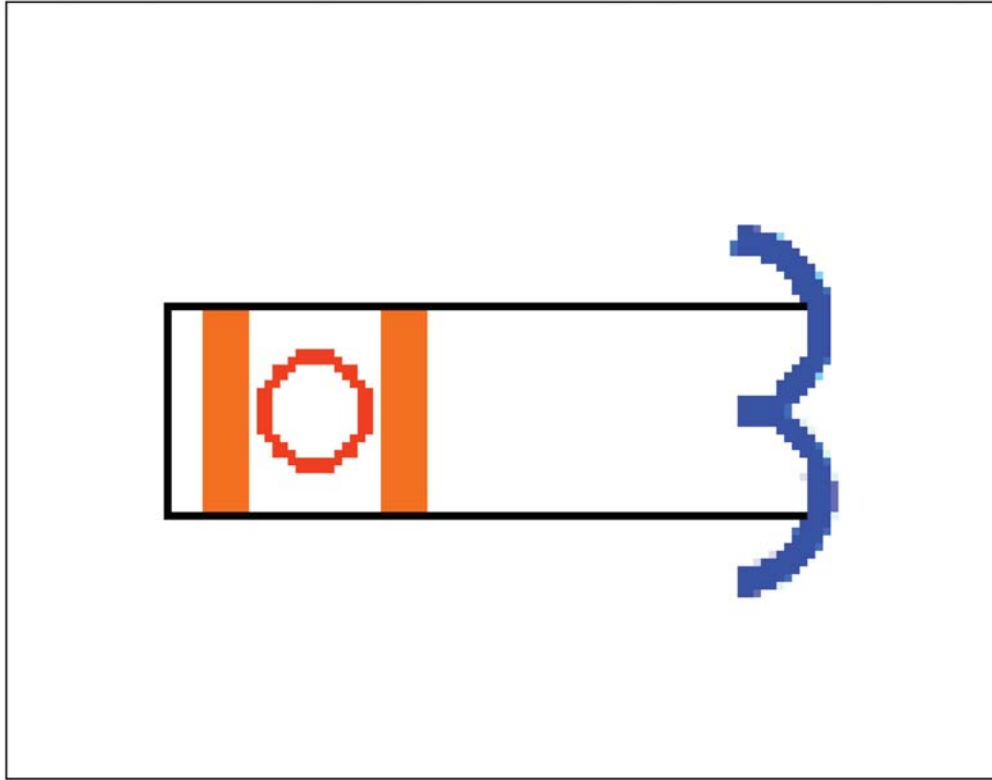
CARDINAL AND SPECIAL BUOYS EXERCISE HANDOUT

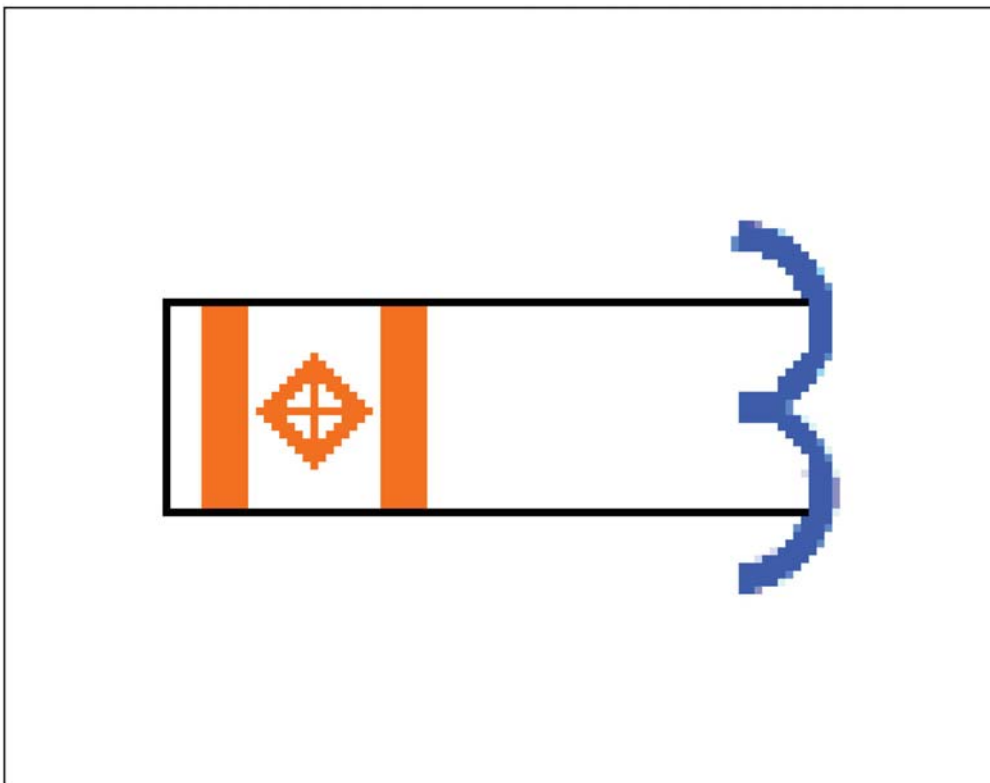
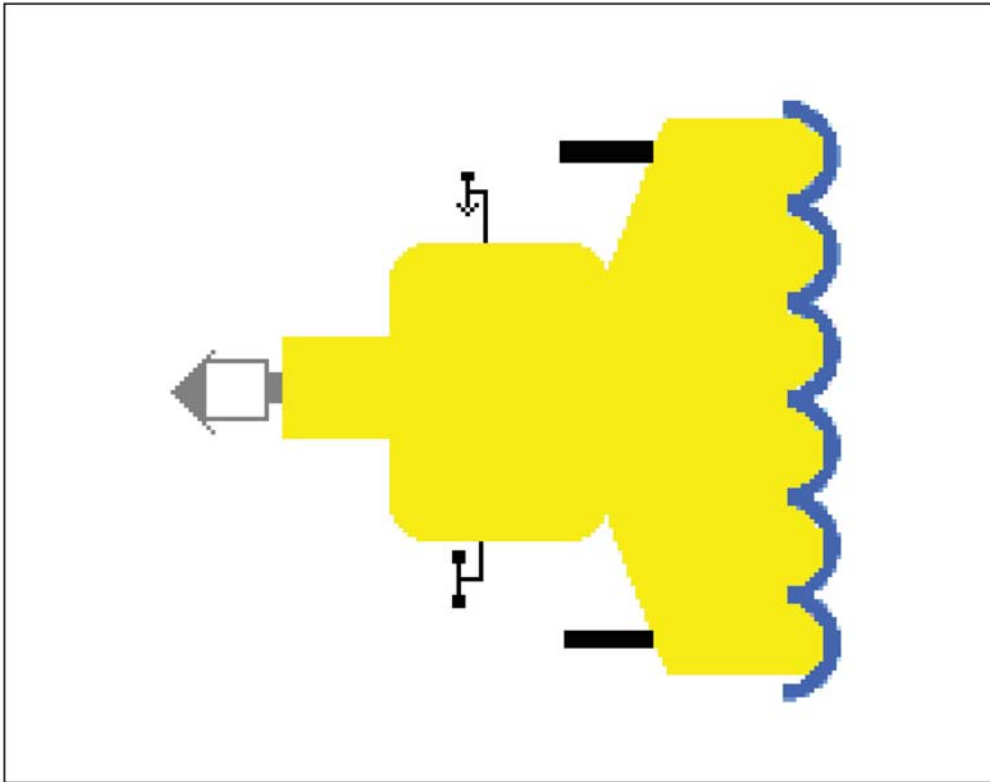


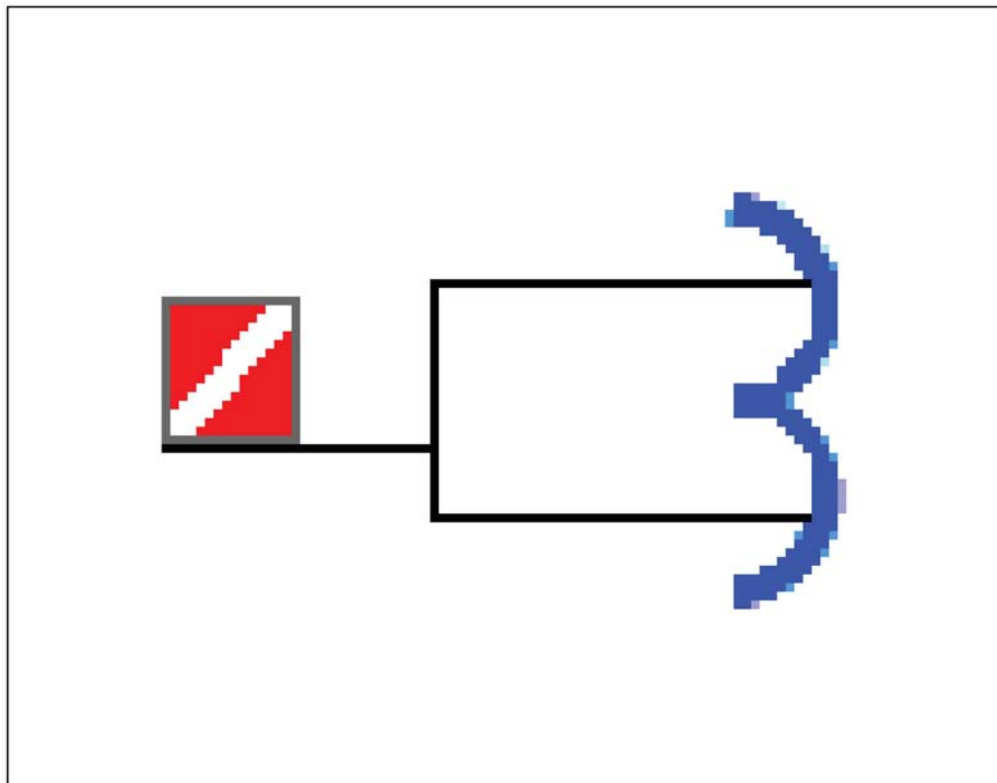
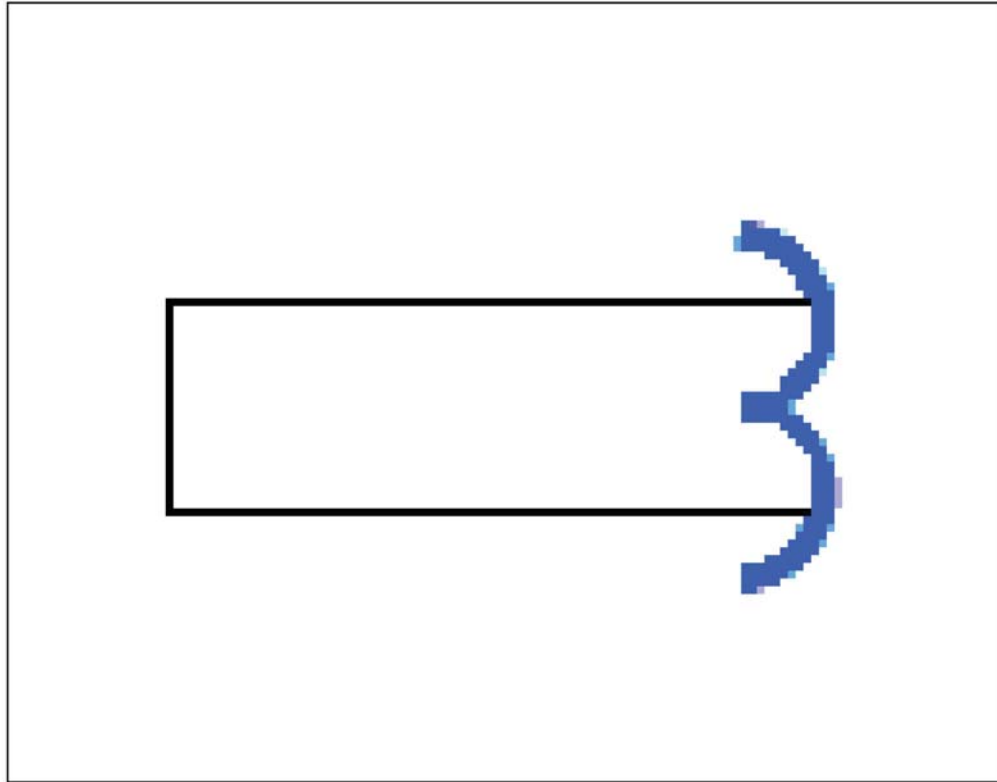












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CHAPTER 14
PO 323 – SERVE IN A NAVAL ENVIRONMENT



ROYAL CANADIAN SEA CADETS

PHASE THREE

INSTRUCTIONAL GUIDE



SECTION 1

EO M323.01 – PERFORM CORPS DUTIES

Total Time:

60 min

PREPARATION

PRE-LESSON INSTRUCTIONS

Resources needed for the delivery of this lesson are listed in the lesson specification located in A-CR-CCP-603/PG-001, Chapter 4. Specific uses for said resources are identified throughout the instructional guide within the TP for which they are required.

Review the lesson content and become familiar with the material prior to delivering the lesson.

The activity in TP 3 uses learning stations. Learning stations are a form of group work where the cadets learn by sorting through the information presented. When setting up learning stations, ensure there is enough room for each cadet to be comfortable and have adequate space to perform each duty. When the cadets arrive at a learning station, all required information shall be available. These stations should be placed closely together to minimize time for movement; however, far enough apart to avoid interruptions from other groups. For this lesson, set up three learning stations for the duties of a Quartermaster.

Photocopy the organizational charts located at Annexes A to C and the Quartermaster terms of reference located at Annex D for each cadet.

Photocopy the Quartermaster reference guide located at Annex E.

PRE-LESSON ASSIGNMENT

N/A.

APPROACH

An interactive lecture was chosen for TPs 1 and 2 as it allows the instructor to deliver new information on the duties of a Quartermaster and to involve the cadets by encouraging them to ask and respond to questions.

An in-class activity was chosen for TP 3 as it is an interactive way to allow the cadets to perform the duties of a Quartermaster under supervision.

INTRODUCTION

REVIEW

N/A.

OBJECTIVES

By the end of this lesson the cadet shall have described the corps structure and practiced the duties of Quartermaster.

IMPORTANCE

It is important for cadets to describe the corps structure and become familiar with their chain of command as they become more involved in the ships' routine. The Quartermaster is an important role within the duty personnel organization and will ensure the conduct of corps' operations in an efficient manner.

Teaching Point 1

Explain the Corps' Structure

Time: 10 min

Method: Interactive Lecture



Distribute the organizational charts located at Annexes A to C.

CORPS STRUCTURE

A corps is divided into three organizations. These organizations work co-operatively to delegate work and responsibility to the officers and cadets of the corps. This helps to ensure that no member is over-tasked or under-tasked and that no area of the corps is neglected.

Functional Organization

The functional organization outlines the administrative responsibilities of the corps and is based upon the divisional system.

Duty Personnel Organization

The duty personnel are a group of carefully selected officers and cadets. The duty personnel serve on a rotational basis to look after the safety, conduct and appearance of the corps and its ship's company.

Training Organization

The training organization (as illustrated in Annex C) is responsible for the implementation of the Royal Canadian Sea Cadet Corps Training Program, as directed by the Director Cadets. Based on the size of the corps and the available instructors, the training organization may be structured in different ways. Two possible ways are:

- **Option One.** The Phase Course Officers serve as standards officers for each phase and complete any administration as required by the Training Officer. Each Phase Course Officer has a group of Phase instructors that instruct only one phase over the course of the training year. The instructors have a wide range of training backgrounds and collectively, are qualified to instruct all of the training.
- **Option Two.** The Phase Course Officers serve as standards officers for each phase and complete any administration as required by the Training Officer. Instructors are not dedicated to any one phase, but are organized into training departments based on their training backgrounds and are tasked by the Training Officer as required.



Discuss both training organization options with the cadets. Focus on the option used at the corps.

CONFIRMATION OF TEACHING POINT 1

QUESTIONS

- Q1. What are the three organizations of a corps?
- Q2. What is the functional organization based upon?
- Q3. What is the function of the duty personnel?

ANTICIPATED ANSWERS

- A1. The three organizations of a corps are:
- functional organization,
 - duty personnel organization, and
 - training organization.
- A2. The divisional system.
- A3. To look after the safety, conduct and appearance of the corps and its ship's company.

Teaching Point 2

Describe the Duties of a Quartermaster

Time: 10 min

Method: Interactive Lecture



Distribute the Quartermaster terms of reference located at Annex D.

DUTIES OF A QUARTERMASTER

The Quartermaster serves an important role within the duty organization. This role along with the rest of the duty personnel helps to ensure the safety, conduct and appearance of the corps and its ship's company.



The following are some common abbreviations and terms used by duty personnel:

- **OOD.** Officer of the Day.
- **Coxn.** Coxswain.
- **POOD.** Petty Officer of the Day.
- **QM.** Quartermaster.



The cadets will have been introduced to the pipes required to carry out the duties of a QM in EO M223.04 (Pipe the General Call, A-CR-CCP-602/PF-001, Chapter 12, Section 4), EO M223.05 (Pipe the Still, A-CR-CCP-602/PF-001, Chapter 12, Section 5) and EO M223.06 (Pipe the Carry On, A-CR-CCP-602/PF-001, Chapter 12, Section 6).

Running Colours and Sunset

The QM will prepare the ensign and organize the flag party at the beginning and end of each night. Corps may organize the flag party in one of the following ways:

- the Coxn maintains a schedule of Phase One and Two cadets, or
- Phase One and Two cadets are selected from the duty division.

As part of colours and sunset, the QM will be expected to address the Commanding Officer (CO) and pipe the Still and Carry On.



Colours and sunset ceremonies will vary at each corps depending on the layout of the parade square and the position of the ensign. The Coxn should brief the QM about the conduct of colours and sunset prior to their commencement.

Maintaining the Corps' Routine and Controlling of the Corps' Broadcast System

The ship's routine relies on various sound signals and commands. As directed by the Coxn, the QM will ring the ship's bell and make general announcements such as hands to classes by making pipes or by using the corps' broadcast system.



The cadets were introduced to ringing the ship's bell in EO M123.03 (Ring a Ship's Bell, A-CR-CCP-601/PF-001, Chapter 11, Section 3) and may have been introduced to the 24-hour clock in EO C123.01 (Read the 24-Hour Clock, A-CR-CCP-601/PF-001, Chapter 11, Section 5).

Controlling the Brow

While performing duties at the brow the QM will be responsible for the following:

- identifying all personnel coming aboard or leaving the ship (training location), to include:
 - saluting passing officers;
 - controlling the CO's and senior officer's absentee indicators; and
 - greeting visitors and directing them to the ship's office;
- ensuring that no unauthorized material is taken ashore; and
- controlling the ship's log, to include:
 - signing the logbook at the commencement and completion of duties;
 - recording when an individual enters or leaves the ship;
 - recording events in the logbook as directed by the OOD; and

- o ensuring the logbook does not go missing.

Ensuring the Cleanliness of the Brow Area

The brow is a visitor's first impression of a corps. The QM will be responsible for ensuring the cleanliness of the brow area. The brow should be kept clear of any gash and clutter. The brow is not an area for cadets to muster or socialize.

CONFIRMATION OF TEACHING POINT 2

QUESTIONS

- Q1. How does the corps organize which cadets are in the flag party?
- Q2. How is the QM responsible for running the corps' routine?
- Q3. Where should the QM direct visitors?

ANTICIPATED ANSWERS

- A1. Answers will vary depending on the corps.
- A2. The QM will be responsible to ring the ship's bell and make general announcements, such as hands to classes, by making pipes or by using the corps' broadcast system.
- A3. To the ship's office.

Teaching Point 3

Conduct an Activity Where the Cadets Will Practice the Duties of a Quartermaster

Time: 30 min

Method: In-Class Activity

ACTIVITY

OBJECTIVE

The objective of this activity is to have the cadets perform the duties of a QM.

RESOURCES

- Boatswain's call,
- Cleaning supplies,
- Corps' broadcast system (if available),
- Ensign (or other flag),
- Ship's bell, and
- Quartermaster reference guide located at Annex E.

ACTIVITY LAYOUT

Set up three learning stations, to simulate:

- the brow,

- flag mast, and
- corps' broadcast system or a suitable training area to make pipes.



One instructor will be required at each of the learning stations. If the group of cadets is small, the instructor may take the cadets to each of the learning stations as one group.



Post the Quartermaster reference guide located at Annex E at the brow. Cadets will be able to refer to this when performing duties of the QM.

ACTIVITY INSTRUCTIONS

1. Divide the cadets into three groups and place each group at one of the learning stations.



The exact duties of the Quartermaster will vary depending on the corps.

2. Using the Quartermaster reference guide and Quartermaster terms of reference as guides, have the cadets perform the duties required at the learning station.
3. After 10 minutes, have the groups rotate clockwise and perform the duties required at the next learning station.
4. Rotate the groups to the remaining station.
5. When the activity is completed, debrief the cadets and answer any questions.

SAFETY

N/A.

CONFIRMATION OF TEACHING POINT 3

The cadets' participation in the activity will serve as the confirmation of this TP.

END OF LESSON CONFIRMATION

The cadets' participation in the duties of a QM learning stations will serve as the confirmation of this lesson.

CONCLUSION

HOMEWORK/READING/PRACTICE

N/A.

METHOD OF EVALUATION

This EO is assessed IAW A-CR-CCP-603/PG-001, Chapter 3, Annex B, Appendix 5 (323 EC 01) and Chapter 3, Annex B, Appendix 6 (323 PC).

CLOSING STATEMENT

The ability to describe the corps structure and being familiar with the chain of command will become a requirement as the cadets become more involved in the ships' routine. The QM is an important role within the duty personnel organization and helps ensure the conduct of operations in a timely and efficient manner.

INSTRUCTOR NOTES/REMARKS

This EO should be conducted early in the year to allow the cadets to perform the duties of the Quartermaster during the training year.

REFERENCES

- A1-047 Director Cadets 4. (1994). CATO 31-01, *Sea Cadets Corps' Standardized Standing Orders*. Ottawa, ON: Department of National Defence.

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ROYAL CANADIAN SEA CADETS

PHASE THREE

INSTRUCTIONAL GUIDE



SECTION 2

EO C323.01 – COMMUNICATE USING FLAGS AND PENNANTS

Total Time:

120 min

PREPARATION

PRE-LESSON INSTRUCTIONS

Resources needed for the delivery of this lesson are listed in the lesson specification located in A-CR-CCP-603/PG-001, Chapter 4. Specific uses for said resources are identified throughout the instructional guide within the TP for which they are required.

Review the lesson content and become familiar with the material prior to delivering the lesson.

Make five colour copies of the flag flash cards located at Annex F. Cut out and paste the flag flash cards onto card stock or heavy paper.

Photocopy and cut out the flag flash card results sheet located at Annex G for each group of five cadets.

Photocopy the signal mast handout located at Annex H for each cadet.

Photocopy two sets of the signal hoist cue cards located at Annex I. Cut out and paste them onto card stock or heavy paper.

Photocopy two signal hoist results sheet located at Annex J.

Photocopy the signal hoist answer key located at Annex K.

PRE-LESSON ASSIGNMENT

N/A.

APPROACH

An interactive lecture was chosen for TPs 1, 2, 4 and 5 to introduce the flags and pennants commonly used in sea cadet training.

An in-class activity was chosen for TPs 3 and 6 as it is an interactive way to confirm the cadets' knowledge of flags and pennants.

INTRODUCTION

REVIEW

N/A.

OBJECTIVES

By the end of this lesson the cadet shall have communicated a message using the given flags and pennants.

IMPORTANCE

Flags and pennants are used extensively in the nautical environment as a means of visually communicating information to the vessel's crew, shore stations and other ships that are in sight. It is important for the cadets to recognize the meanings of flags and pennants as they may be the first person at a sail centre or on-water weekend to see signals from a vessel which could indicate distress or urgent situations.

Teaching Point 1

Explain Flags and Pennants

Time: 5 min

Method: Interactive Lecture

PURPOSE

Before the invention of the radio, the only way mariners could pass messages from one ship to another was by means of visual signals. Strips of coloured cloth would be hoisted up the mast to send a predetermined signal which saved considerable time while afloat. These pieces of cloth have evolved into the distinctive shapes and patterns that make up the flags and pennants used today.



Flags, both alphabetical and numerical, are identifiable by their square shape. Flag ALPHA and BRAVO are actually burgees due to their distinctive V-shaped indentation but are referred to as flags due to their overall square shape.

Pennants are long and narrow and can be either triangular (three-sided) or quadrangular (four-sided).

In the present day, most communication between ships is accomplished electronically but flags and pennants are still used to communicate intentions, movements and general information to ships within visual range.



The meanings of the individual flags and pennants are referred to as signals or signal hoists when communicating to others.

When recording signals, the flags and pennants are written out in capital letters. Whenever possible, the abbreviation of the flag or pennant should be used.

CALL SIGN

The call sign is a combination of an alphabetical designator that denotes the type or class of ship and a series of numerals that denote the hull designation within that class. Each call sign is unique and identifies the ship to other ships within sight. When sending signals within a group of ships, the use of a call sign will designate the addressee or whom the signal is addressed to.

An example of a call sign for *Raven 56* would be PAPA FIVE SIX, where:

- *PAPA* denotes the class of vessel is a patrol craft;
- *FIVE SIX* is the hull designation that denotes hull 56 within that class; and
- Hull 56 in the patrol craft class is named *Raven 56*.

TACK LINE

A tack line (TACK) is a length of halyard approximately 2 m (6 feet) long; the exact length depends upon the size of flags in use. It is used:

- to avoid ambiguity by separating signals or groups of numerals on the same hoist which, if not separated, could convey a different meaning from that intended; or
- when, for the needs of a particular signal, the instructions order that a tack line be used.

An example of using a tack line is in the signal ALPHA TACK TWO where the ALPHA flag is followed by a tack line and the numerical flag TWO on the same hoist. The ALPHA flag is used to denote that friendly divers are working in the water. The addition of the tack line, followed by the numeral flag TWO denotes that the divers are working within 200 yards of the vessel. If the ALPHA flag and the TWO flag were hoisted together, they would be interpreted as another signal.

COMBINING SIGNALS

Signals may be combined together in a group to send a specific meaning that is different than the individual flag or pennant's meaning. If the signals are not to be interpreted as a group, they must be separated by a tack line or hoisted on separate halyards.

A call sign is an example of where signals can be combined on one hoist.

CONFIRMATION OF TEACHING POINT 1

QUESTIONS

- Q1. What shape is a flag?
- Q2. What signal is used to designate an addressee?
- Q3. What must be used to separate signals on a single halyard if they are not to be interpreted as a group?

ANTICIPATED ANSWERS

- A1. Square.
- A2. Call sign.
- A3. Tack line.

Teaching Point 2

Time: 5 min

Explain Signal Hoist Terms

Method: Interactive Lecture

SIGNAL HOIST TERMS

Bent on. The signal flag is attached to the halyard, secured to a cleat and ready to be hoisted.

Hoist. To raise the signal flag.

Close Up. The signal flag is hoisted to the full extent of the halyard with the head of the flag touching the block.

At the Dip. The signal flag is hoisted to a position one-third of the halyard length from the top.

Haul Down (Strike). To lower the signal flag and remove from the halyard.

CONFIRMATION OF TEACHING POINT 2

QUESTIONS

- Q1. Where should a signal flag be if it is at the dip?
- Q2. What is the term used for lowering a signal flag?
- Q3. What does hoist mean?

ANTICIPATED ANSWERS

- A1. One-third of the halyard length from the top.
- A2. Haul down (strike).
- A3. To raise the signal flag.

Teaching Point 3

Conduct an Activity Where the Cadets Will Identify and Describe the Meaning of Flags and Pennants

Time: 40 min

Method: In-Class Activity



Introduce the flags and pennants from Figure 14-2-1 and conduct the activity to confirm the cadet's recognition of them.

FLAG AND PENNANTS

There are 14 common signals used in sea cadet training (as illustrated in Figure 14-2-1). Each signal may have a military and an International Code of Signals (INTERCO) meaning. When signals are hoisted on a military ship, the military meaning is assumed unless the CODE or ANSWER pennant (ANS) is also hoisted indicating to use the INTERCO meanings.





Signal	Example	Meaning	SCTV Use
<p>A</p> <p>ALPHA</p>		<p>Military—Divers or friendly explosive ordnance disposal personnel down.</p> <p>INTERCO—Diver down. Keep well clear at slow speed.</p>	<p>Close Up. Divers or friendly explosive ordnance disposal personnel down. A numeral group following will indicate the radius in hundreds of yards inside which personnel are operating. All vessels are to remain clear.</p>
<p>B</p> <p>BRAVO</p>		<p>Military—Fuelling or transferring explosives or inflammable material.</p> <p>INTERCO—Taking in, discharging or carrying dangerous goods.</p>	<p>At the Dip. Temporarily stopped fuelling or transferring.</p> <p>Close Up. Fuel, explosives or inflammable material is being transferred.</p>
<p>G</p> <p>GOLF</p>		<p>Military—Guide.</p> <p>INTERCO—I require a pilot.</p>	<p>Close Up. This ship is to be the lead ship, follow me. When G TACK plus CALL SIGN is hoisted, it indicates that the ship denoted by the call sign is to be the lead ship.</p>
<p>I</p> <p>INDIA</p>		<p>Military—Going alongside (in port or at anchor).</p> <p>INTERCO—Altering my course to port.</p>	<p>SHIP GOING ALONGSIDE</p> <p>At the Dip. I am preparing to come alongside you.</p> <p>Close Up. I am ready to come alongside you.</p> <p>Hauled Down. First line is secured.</p>
			<p>RECEIVING SHIP</p> <p>At the Dip. I am preparing to receive you on the side indicated.</p> <p>Close Up. I am ready to receive you on the side indicated.</p> <p>Hauled Down. First line is secured.</p>
<p>Memory aid: When preparing to tie, remember to dot your “i”.</p>			

Figure 14-2-1 (Sheet 1 of 3) Common Flags and Pennants

Director Cadets 3, 2008, Ottawa, ON: Department of National Defence






Signal	Example	Meaning	SCTV Use
J JULIETT		Military—Semaphore message.	Close Up. My vessel is on fire. Keep well clear. The INTERCO meaning is assumed on an Sea Cadet Training Vessel and is used here without hoisting ANS.
		INTERCO—I am on fire.	
Memory aid: White hot, need lots of water.			
O OSCAR		Military—Man overboard.	Close Up. Man overboard.
		INTERCO—Man overboard.	
Memory aid: Yellow and red will flash, after you hear the splash.			
P PAPA		Military—General recall.	Close Up. All personnel belonging to this ship must return immediately.
		INTERCO—Recall. Vessel about to sail.	
Memory aid: White on blue, the boat will sail without you.			
Q QUEBEC		Military—Boat recall.	Close Up. All boats belonging to this ship must return immediately. (Used by vessels entering a foreign port to denote that they are healthy but have not cleared through customs or immigration).
		INTERCO—Vessel is healthy. Request free pratique (ability to manoeuvre).	
Memory aid: When flying quebec, all boats back on deck.			
U UNIFORM		Military—Anchoring.	At the Dip. Anchor let go, veering cable.
		INTERCO—You are running into danger.	Close Up. Cable veered, working cable.
			Hauled Down. Ship has her anchor.
		Military—Mooring.	At the Dip. Mooring cable let go.
	Close Up. Cable middled.		
	Hauled down. Cable secured.		
	Military—Weighing.	At the Dip. Heaving in anchor cable.	
	Close Up. Anchor aweigh.		
	Hauled Down. I am ready to proceed.		
Memory aid: With the red and white, the anchor takes a bite.			

Figure 14-2-1 (Sheet 2 of 3) Common Flags and Pennants
 Director Cadets 3, 2008, Ottawa, ON: Department of National Defence





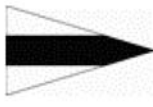
Signal	Example	Meaning	SCTV Use
X X-RAY		Military—Exercising. INTERCO—Stop carrying out your intentions and watch for my signals.	Close Up. Exercises completed. When X TACK (signal) is hoisted, it indicates that the meaning denoted by the signal is being exercised. For simplicity, the tack line may be left out.
	Memory aid: Exercise avast when x-ray is on the mast.		
Z ZULU		Military—Communication guard. INTERCO—I require a tug.	Close Up. I require a tug (tow). The INTERCO meaning is assumed on an SCTV and is used without hoisting ANS.
	Memory aid: When many colours flow, I need a tow.		
5 FIVE		Military—Breakdown. INTERCO—Numeral 5.	Close Up. I have a breakdown.
	Memory aid: Pieces of the flag are broken apart.		
PREPARATIVE		Military—Morning and evening ceremonies/Colours (as appropriate). INTERCO—No meaning.	Close Up. Five minutes until the Ceremony/Colours. At the Dip. Commence Ceremony/Colours. Hauled Down. Ceremony/Colours completed.
	Memory aid: Yellow and green, caution before go.		
3rd SUBSTITUTE		Military—Absentee indicator (CO/XO) (used in port only). INTERCO—Substitute the third flag in this hoist for this flag.	Close Up. Absence of the Commanding Officer (CO). Its use immediately shifts to the Executive Officer (XO) when the CO departs for a known period of time in excess of 72 hours.
	Memory aid: If the CO is gone for the night, put up the black and white.		

Figure 14-2-1 (Sheet 3 of 3) Common Flags and Pennants

*Director Cadets 3, 2008, Ottawa, ON: Department of National Defence***ACTIVITY**

Time: 20 min


OBJECTIVE

The objective of this activity is to have the cadets practice flag recognition skills.

RESOURCES

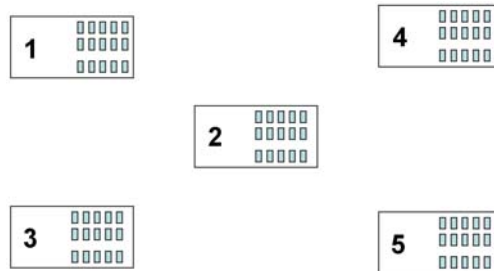
- Flag flash cards located at Annex F (five sets),
- Flash card results sheet located at Annex G (one per cadet), and
- Five small tables.

ACTIVITY LAYOUT



This activity can be scaled down to accommodate a smaller class size by setting up fewer stations.

1. Set up tables in an area large enough to accommodate all of the cadets (as illustrated in Figure 14-2-2).



Director Cadets 3, 2007, Ottawa, ON: Department of National Defence

Figure 14-2-2 Layout for Flag Flash Card Activity

2. Lay a set of flag flash cards face down on each table.

ACTIVITY INSTRUCTIONS

1. Brief the cadets on the rules of the activity, to include:
 - a. No talking unless asking a question.
 - b. No signalling to other players.
 - c. Questions must have yes or no answers.
 - d. Questions must be asked to one other cadet only.
 - e. Only one question or guess per turn.
 - f. Cards must be visible to other players at all times.
2. Divide the cadets into five equal groups, not to exceed 10 cadets per group.
3. Have each group stand around a table.
4. Select a cadet from each table that will start the round.
5. Give each cadet a results sheet.
6. On the word “Go”, all cadets will pick up a card from the table without looking at it and hold it on the forehead with one finger.

7. The cadet designated to start the round will ask one other cadet in the group a question about the card they hold.
8. Play continues with the cadet on the right, who may ask a question or guess at the card they hold.
9. If a cadet's guess is incorrect, they will place the card face down on the table and pick up another card. If the cadet's guess is correct, they will place the card face down on the table and record a check mark on the results sheet. That cadet will proceed to another table, pick up another card and continue playing. Play at the previous table will continue with the cadet on the right of the space just vacated.
10. The activity continues around the tables until all cadets have five check marks.

SAFETY

N/A.

CONFIRMATION OF TEACHING POINT 3

The cadets' participation in the activity will serve as the confirmation of this TP.

Teaching Point 4

Identify the Parts of a Signal Mast

Time: 5 min

Method: Interactive Lecture

PARTS OF A SIGNAL MAST



Distribute the signal mast handout located at Annex H to the cadets.

Identify the parts on an actual signal mast (as illustrated in Figure 14-2-3). If a signal mast is not available, identify the parts using the signal mast handout located at Annex H.

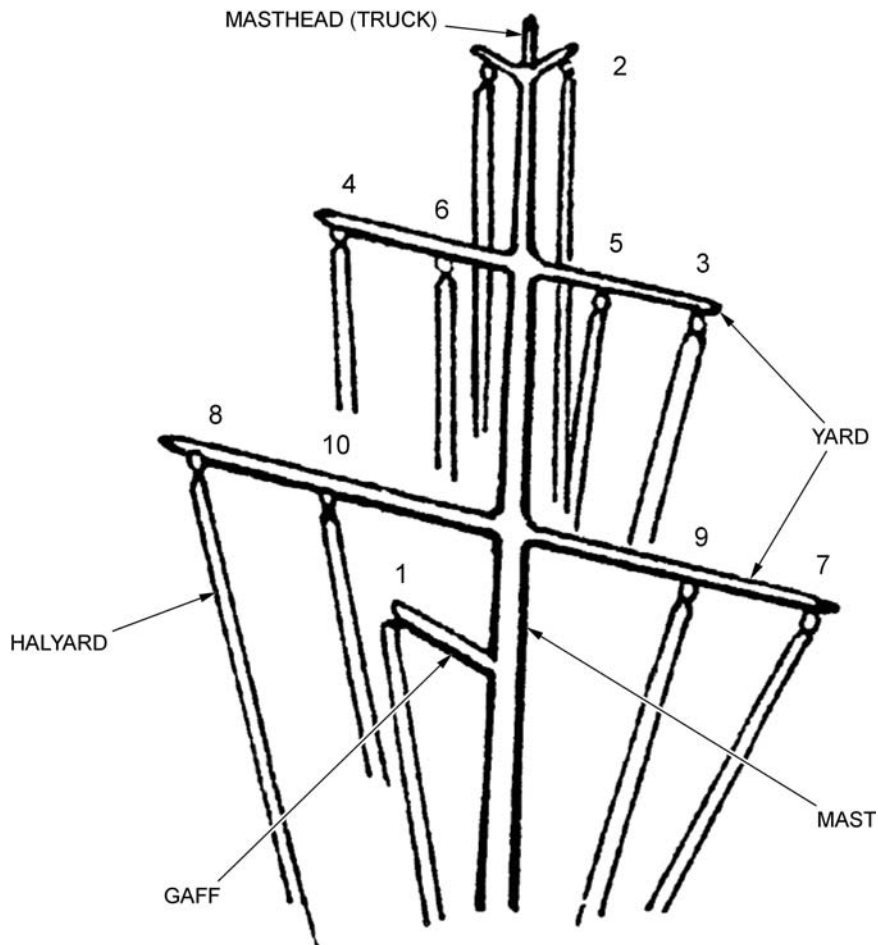
Mast. A long, upright pole erected on a vessel or shore.

Masthead (Truck). Top portion of a mast.

Yard. The horizontal spars fitted on a mast to carry sails, rigging or signals.

Gaff. A spar projecting aft from the mast and angled up at approximately 45 degrees.

Halyard. The line which raises or lowers a signal flag.



Chief of Maritime Staff/Staff Officer Heritage, Manual of Ceremony for HMC Ships, Submarines and Naval Reserve Divisions, Department of National Defence (p. 2A-3)

Figure 14-2-3 Parts of a Signal Mast and Superior Positions

CONFIRMATION OF TEACHING POINT 4

QUESTIONS

- Q1. What is the top of the mast called?
- Q2. What are the horizontal spars on a mast called?
- Q3. What is a halyard used for?

ANTICIPATED ANSWERS

- A1. Masthead (truck).
- A2. Yards.
- A3. To raise or lower a signal flag.

Teaching Point 5**Identify the Superior Positions on a Signal Mast**

Time: 5 min

Method: Interactive Lecture

SUPERIOR POSITIONS

Identify the superior positions on an actual signal mast (as illustrated in Figure 14-2-3). If a signal mast is not available, identify the positions using the signal mast handout located at Annex H.

Flags of a single hoist are to be read from the top down and adjacent hoists are to be read from the outboard to inboard or from forward to aft. When two flag hoists are flying simultaneously, the one to be read first is said to be in a “superior” position. Conversely, a flag hoist which is to be read after another is referred to as being in an “inferior” position.

On a signal mast, the superior position is the gaff, if fitted, followed by the masthead (truck). On a yard, the signals are read from the outer halyards first and then the inner halyards starting with the starboard side (as illustrated in Figure 14-2-3).

CONFIRMATION OF TEACHING POINT 5**QUESTIONS**

- Q1. What position on a signal mast is superior to the masthead (truck) position?
- Q2. Which side of a yard is the superior side?
- Q3. What does it mean when a signal is in a superior position?

ANTICIPATED ANSWERS

- A1. The gaff position, if fitted.
- A2. Starboard side.
- A3. It is to be read before other signals.

Teaching Point 6**Conduct Activities Where the Cadets Will Communicate Using Flags And Pennants**

Time: 50 min

Method: In-Class Activity



The activities in this TP offer the cadets the opportunity to practice signal hoist skills previously learned in this lesson.

ACTIVITY 1

Time: 30 min

OBJECTIVE

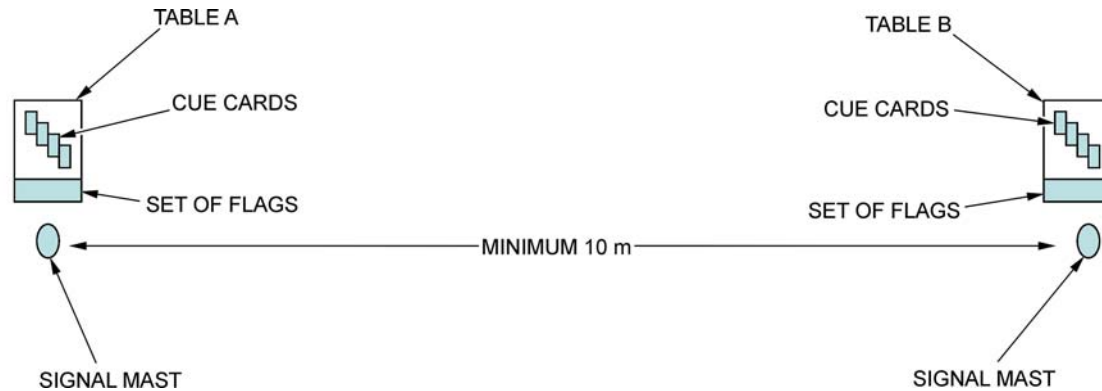
The objective of this activity is to have the cadets practice signal hoist skills.

RESOURCES

- Flags and pennants (two sets), to include:
 - alpha,
 - bravo,
 - golf,
 - india,
 - juliet,
 - oscar,
 - papa,
 - quebec,
 - uniform,
 - x-ray,
 - zulu,
 - flag '5',
 - preparative, and
 - 3rd substitute;
- One-metre tack lines (two),
- Signal masts or halyards (two),
- Signal hoist cue cards located at Annex I (two sets),
- Signal hoist results sheet located at Annex J (two), and
- Signal hoist answer key located at Annex K (two).

ACTIVITY LAYOUT

The instructor will set up two tables beside the signal masts with one set of cue cards on each table (as illustrated in Figure 14-2-4).



Director Cadets 3, 2007, Ottawa, ON: Department of National Defence

Figure 14-2-4 Layout for Flag Hoist Activity

ACTIVITY INSTRUCTIONS

1. Brief the cadets on the rules of the activity, to include:
 - a. Each cadet has 30 seconds to complete the hoist as indicated on the cue card before the team can assist.
 - b. Each team has 30 seconds from the time the cadet requests assistance to complete the hoist as indicated on the cue card.
 - c. Ten points are awarded for a correct, unassisted hoist.
 - d. Five points are awarded for a correct, team-assisted hoist.
 - e. Ten points are awarded for a correctly decoded signal.
 - f. No discussion is allowed until assistance is requested.
2. Divide the cadets into two equal groups.
3. Decide which team will go first.
4. One cadet from the team will select a cue card and proceed to hoist the signals as indicated on the card. If they are unsure as to the correct hoist, they may ask another cadet on the team for assistance in hoisting the correct signal.
5. The opposite team will decode the signal and record the results on the results sheet.
6. Teams will alternate sending and receiving until all cadets have had a turn hoisting a signal.
7. Debrief the cadets on the results before continuing on to the next activity.

SAFETY

N/A.

ACTIVITY 2

Time: 20 min

OBJECTIVE

The objective of this activity is to have the cadets practice signal flag recognition skills.

RESOURCES

- Flags and pennants, to include:
 - alpha,
 - bravo,
 - golf,
 - india,
 - juliet,
 - oscar,
 - papa,
 - quebec,
 - uniform,
 - x-ray,
 - zulu,
 - flag '5',
 - preparative, and
 - 3rd substitute; and
- Large sack/bag.

ACTIVITY LAYOUT

The instructor will place all the flags and pennants in the large sack.

ACTIVITY INSTRUCTIONS

1. Brief the cadets on the rules of the activity, to include:
 - a. Pick only one flag from the sack.
 - b. Each cadet has 15 seconds to identify the flag.
 - c. The cadets will continue the activity until they correctly identify a picked flag.
2. Have the cadets line up in three lines around the sack.
3. Each cadet reaches into the sack, picks one flag and identifies which flag it is.
4. The flag is placed back into the bag.

5. The activity will continue until all cadets have picked a flag and correctly identified it.
6. Debrief the cadets on the results observed in the activity.

SAFETY

N/A.

CONFIRMATION OF TEACHING POINT 6

The cadets' participation in the activities will serve as the confirmation of this TP.

END OF LESSON CONFIRMATION

The cadets' participation in the activities in TP 6 will serve as the confirmation of this lesson.

CONCLUSION

HOMEWORK/READING/PRACTICE

N/A.

METHOD OF EVALUATION

N/A.

CLOSING STATEMENT

Flags and pennants are used extensively in the nautical environment as a means of visually communicating information to the vessel's crew, shore stations and other ships that are in sight. It is important to understand how to communicate using flags and pennants as the cadets may be required to receive signals from a vessel which could indicate distress or urgent situations at a sail centre or on-water weekend.

INSTRUCTOR NOTES/REMARKS

This lesson may be taught in four periods during a weekend training day or four periods over two training nights consisting of TPs 1–4 on the first night and TPs 5 and 6 on the second night.

If time permits, the cadets can qualify for the *Sea Cadet Flag and Pennant Certificate*. This can be achieved by identifying and describing the meaning of all flags and pennants used by the Canadian Navy with an accuracy of 80 percent and reciting the phonetic alphabet with an accuracy of 90 percent. Remaining flags and pennants can be found in reference A1-020 (pp. 2-1 to 2-12).

REFERENCES

- | | |
|--------|---|
| A1-002 | Chief of Maritime Staff/Staff Officer Heritage. (2004). <i>Manual of Ceremony for HMC Ships, Submarines and Naval Reserve Divisions</i> . Ottawa, ON: Department of National Defence. |
| A1-004 | B-GN-181-105/FP-E00 Chief of the Maritime Staff. (2000). <i>CFCD 105 Fleet Seamanship Rigging and Procedures Manual</i> . Ottawa, ON: Department of National Defence. |
| A1-020 | North American Treaty Organization. (2003). MTP 1(D), <i>Multinational Maritime Tactical Signal and Manoeuvring Book</i> (Vol. 2). Washington, DC: Custodian North American Treaty Organization Standardization Agency. |

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ROYAL CANADIAN SEA CADETS

PHASE THREE

INSTRUCTIONAL GUIDE



SECTION 3

EO C323.02 – PIPE WAKEY WAKEY

Total Time:

60 min

PREPARATION

PRE-LESSON INSTRUCTIONS

Resources needed for the delivery of this lesson are listed in the lesson specification located in A-CR-CCP-603/PG-001, Chapter 4. Specific uses for said resources are identified throughout the instructional guide within the TP for which they are required.

Review the lesson content and become familiar with the material prior to delivering the lesson.

Photocopy the Wakey Wakey diagram located at Annex L for each cadet. Ensure a sufficient number of boatswain's calls are available for the class. If there is not one per cadet, ensure cleaning solution is available to disinfect the boatswain's calls after each use.

PRE-LESSON ASSIGNMENT

N/A.

APPROACH

An interactive lecture was chosen for TP 1 to introduce piping Wakey Wakey and to provide an overview of its purpose.

Demonstration and performance was chosen for TP 2 as it allows the instructor to demonstrate piping Wakey Wakey while providing an opportunity for the cadets to practice making the pipe under supervision.

INTRODUCTION

REVIEW

N/A.

OBJECTIVES

By the end of this lesson the cadet shall have piped Wakey Wakey.

IMPORTANCE

The boatswain's call is used as a naval form of communication. It is important for the cadets to know how to respond to Wakey Wakey and to execute the notes required using the boatswain's call.

Teaching Point 1**Explain the Purpose of Wakey Wakey**

Time: 5 min

Method: Interactive Lecture

WAKEY WAKEY

Wakey Wakey is used to wake the Ship's Company in the morning. In the hours between Pipe Down and Wakey Wakey, pipes should only be made in emergency situations.

CONFIRMATION OF TEACHING POINT 1**QUESTIONS**

- Q1. What is the purpose of Wakey Wakey?
- Q2. In the hours between Pipe Down and Wakey Wakey, when should pipes be made?

ANTICIPATED ANSWERS

- A1. To wake the Ship's Company in the morning.
- A2. Only in an emergency situation.

Teaching Point 2**Demonstrate and Have the Cadets Practice Piping Wakey Wakey**

Time: 45 min

Method: Demonstration and Performance

WAKEY WAKEY

Audio samples of Wakey Wakey can be found at http://www.navy.forces.gc.ca/cms_youth/youth_articles_e.asp?id=506.



Distribute the Wakey Wakey diagram located at Annex L to each cadet.

Wakey Wakey is a 21-second pipe made as follows:

1. The low note is produced sharply ascending to the high note at one second. This is followed by nine short blasts of the high note that last three seconds, the first four blasts being slightly longer than the next five.
2. At four seconds the high note is produced for one second which sharply descends to the low note for one second.
3. At six seconds there is a sharp break. The high note is then produced for one second which sharply descends to the low note for one second. This is followed by a quick break.

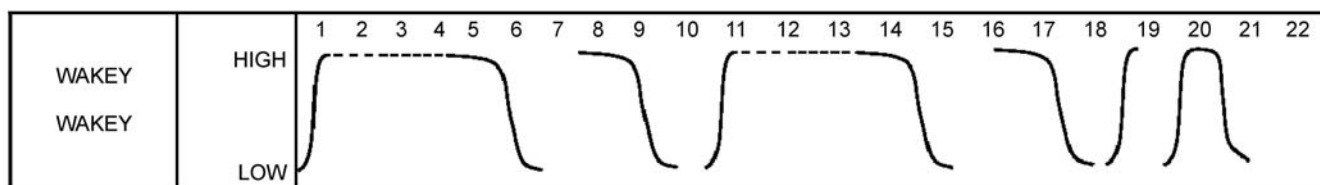
4. At 10 seconds, the low note is produced sharply ascending to the high note with a sharp finish. This is followed by nine short blasts of the high note that last three seconds, the first four blasts being slightly longer than the next five.
5. At 13 seconds the high note is produced for one second which sharply descends to the low note for one second.
6. At 15 seconds there is a quick break. The high note is then produced for one second which sharply descends to the low note for one second. This is followed by a sharp break.
7. At 18 seconds the low note is produced with a sharp ascent to the high note, followed by a sharp break.
8. At 19 seconds the low note is produced, sharply ascending to the high note for one second, then sharply descending to the low note with a sharp finish at 21 seconds.



Pass out the boatswain's calls at this point and explain to the cadets that they are only to be used when instructed.



Placing the teeth on the ridges at the mouth of the boatswain's call will assist in controlling the pipes as the tongue can be used to stop the air flow. This will help to keep the notes sharp.



Director Cadets 3, 2007, Ottawa, ON: Department of National Defence

Figure 14-3-1 Wakey Wakey



Demonstrate and have the cadets practice piping Wakey Wakey.

CONFIRMATION OF TEACHING POINT 2

The cadets' practicing piping Wakey Wakey will serve as the confirmation of this TP.

END OF LESSON CONFIRMATION

The cadets' piping Wakey Wakey will serve as the confirmation of this lesson.

CONCLUSION

HOMEWORK/READING/PRACTICE

N/A.

METHOD OF EVALUATION

N/A.

CLOSING STATEMENT

Sounding pipes on the boatswain's call is a tradition that has been maintained for hundreds of years. Using pipes to deliver orders is a large part of what makes naval institutions unique. It is important to know how to respond to the various pipes and to execute notes using the boatswain's call in order to serve in a naval environment.

INSTRUCTOR NOTES/REMARKS

Instructors can find audio samples of Wakey Wakey at reference A1-022 which may be played for the cadets during this lesson.

Ensure the boatswain's calls are cleaned with a cleaning solution between uses.

REFERENCES

A1-022 Canadian Navy. (2006). *Youth Section–Pipe Sounds*. Retrieved February 28, 2007, from http://www.navy.forces.gc.ca/cms_youth/youth_articles_e.asp?id=506.



ROYAL CANADIAN SEA CADETS

PHASE THREE

INSTRUCTIONAL GUIDE



SECTION 4

EO C323.03 – PIPE HANDS TO DINNER

Total Time:

90 min

PREPARATION

PRE-LESSON INSTRUCTIONS

Resources needed for the delivery of this lesson are listed in the lesson specification located in A-CR-CCP-603/PG-001, Chapter 4. Specific uses for said resources are identified throughout the instructional guide within the TP for which they are required.

Review the lesson content and become familiar with the material prior to delivering the lesson.

Photocopy the Hands to Dinner diagram located at Annex M for each cadet. Ensure a sufficient number of boatswain's calls are available for the class. If there is not one per cadet, ensure cleaning solution is available to disinfect the boatswain's calls after each use.

PRE-LESSON ASSIGNMENT

N/A.

APPROACH

An interactive lecture was chosen for TP 1 to introduce piping Hands to Dinner and to provide an overview of its purpose.

Demonstration and performance was chosen for TPs 2 and 3 as it allows the instructor to demonstrate the warble, the trill and Hands to Dinner while providing an opportunity for the cadets to practice making the pipe under supervision.

INTRODUCTION

REVIEW

N/A.

OBJECTIVES

By the end of this lesson the cadet shall have piped Hands to Dinner.

IMPORTANCE

The boatswain's call is used as a naval form of communication. It is important for the cadets to know how to respond to Hands to Dinner and to execute the notes required using the boatswain's call.

Teaching Point 1**Explain the Purpose of Hands to Dinner**

Time: 5 min

Method: Interactive Lecture

HANDS TO DINNER

Hands to Dinner is piped at noon when the Ship's Company secures and commences the mid-day meal. The pipe is an order itself and does not require any verbal addition. At noon, when the pipe is made, the galley is open for the general population of the ship's company. Prior to this, at 1115 hours, the General Call is piped and the announcement is made for the afternoon watch to eat.

Noon hour is the only time Hands to Dinner is piped. At breakfast and supper an announcement is made for hands to breakfast/supper respectively following a General Call.

CONFIRMATION OF TEACHING POINT 1**QUESTIONS**

- Q1. When is Hands to Dinner piped?
 Q2. What is the purpose of the pipe?
 Q3. Are any verbal orders necessary to follow the pipe?

ANTICIPATED ANSWERS

- A1. Noon.
 A2. For the Ship's Company to secure and commence the mid-day meal.
 A3. No, the pipe is an order itself.

Teaching Point 2**Demonstrate and Have the Cadets Practice Tones**

Time: 20 min

Method: Demonstration and Performance

TONES

There are three tones used when making pipes. The tones are plain (which was taught in Phase Two of the corps program), the warble and the trill.



Pass out the boatswain's calls at this point and explain to the cadets that they are only to be used when instructed.



Placing the teeth on the ridges at the mouth of the boatswain's call will assist in controlling the pipes as the tongue can be used to stop the air flow. This will help keep the notes sharp.

Warble. Produced by repeatedly moving the hand quickly from the high to the low position.



It results in a warble sound similar to that of a canary.

Trill. Produced by vibrating the tongue while blowing into the pipe, as in rolling the letter 'R'.



Demonstrate and have the cadets practice the warble and the trill.

CONFIRMATION OF TEACHING POINT 2

The cadets' practicing the warble and the trill will serve as the confirmation of this TP.

Teaching Point 3

Demonstrate and Have the Cadets Practice Piping Hands to Dinner

Time: 55 min

Method: Demonstration and Performance



Hands to Dinner is a difficult pipe to make. The cadets are expected to be given an opportunity to practice this pipe, not to become proficient at it, during this lesson.

HANDS TO DINNER



Audio samples of Hands to Dinner can be found at http://www.navy.forces.gc.ca/cms_youth/youth_articles_e.asp?id=506.

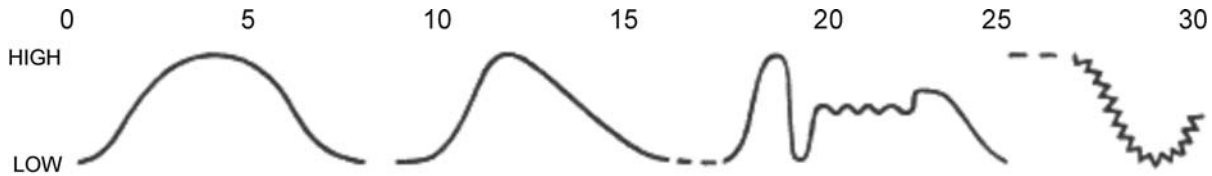


Distribute the Hands to Dinner diagram located at Annex M to each cadet.

Hands to Dinner is a 30-second pipe made as follows:

1. The low note is produced and gradually ascends to the high note at five seconds, then gradually descends back to the low note at eight seconds.
2. At eight seconds there is a sharp break. The low note is then produced, ascending sharply to the high note at 11 seconds and descending gradually to the low note with a sharp finish at 15 seconds.

- Two sharp blasts of the low note follow, then the low note ascends sharply to the high note for one second and back to the low note at 20 seconds.
- This is followed by a five second warble which cuts off on the low note at 25 seconds.
- Two sharp blasts of the high note are then produced followed by a trill that starts at the high note and gradually descends to the low note with a slight ascent toward the high note and a sharp finish at 30 seconds.



Royal Navy, Admiralty Manual of Seamanship 1964 (Vol. 1), Her Majesty's Stationery Office (p. 340)

Figure 14-4-1 Hands to Dinner



Demonstrate and have the cadets practice piping Hands to Dinner.

As this pipe is 30 seconds long, it will take a lot of practice and may be easier to teach in steps as broken out above before practicing the entire pipe.

CONFIRMATION OF TEACHING POINT 3

The cadets' practicing piping Hands to Dinner will serve as the confirmation of this TP.

END OF LESSON CONFIRMATION

The cadets' piping the warble, the trill and Hands to Dinner will serve as the confirmation of this lesson.

CONCLUSION

HOMEWORK/READING/PRACTICE

N/A.

METHOD OF EVALUATION

N/A.

CLOSING STATEMENT

Sounding pipes on the boatswain's call is a tradition that has been maintained for hundreds of years. Using pipes to deliver orders is a large part of what makes naval institutions unique. It is important to know how to respond to the various pipes and execute notes using the boatswain's call in order to serve in a naval environment.

INSTRUCTOR NOTES/REMARKS

Instructors can find audio samples of Hands to Dinner at reference A1-022 that may be played for the cadets during this lesson.

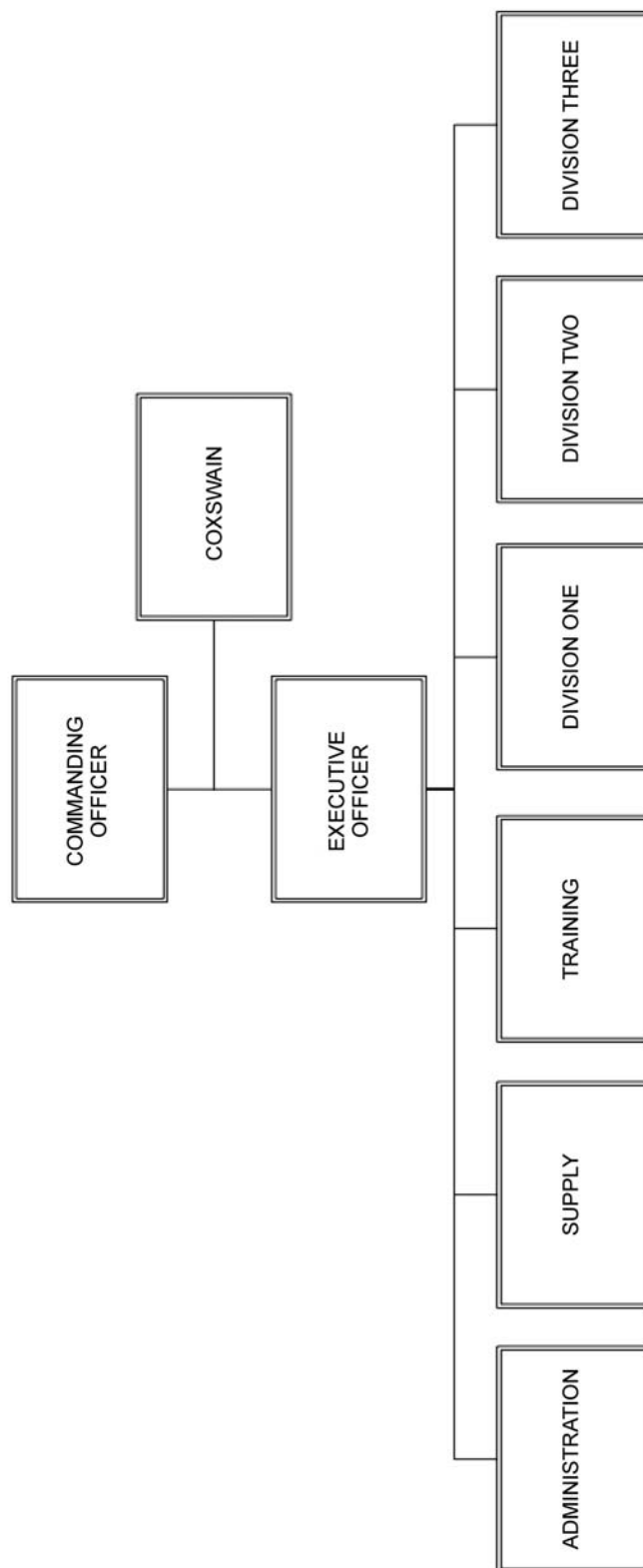
Ensure the boatswain's calls are cleaned with a cleaning solution between uses.

REFERENCES

- A1-022 Canadian Navy. (2006). *Youth Section—Pipe Sounds*. Retrieved February 29, 2007, from http://www.navy.forces.gc.ca/cms_youth/youth_articles_e.asp?id=506.
- C1-003 (ISBN 11-770973-5) Royal Navy. (1972). *Admiralty Manual of Seamanship 1964* (Vol. 1). London, England: Her Majesty's Stationery Office.
- C1-043 Ready Aye Ready. (n.d.). *The Boatswain's Call*. Retrieved February 19, 2007, from <http://www.readyayeready.com/navy-life/boatswains-call.htm>.

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FUNCTIONAL ORGANIZATION

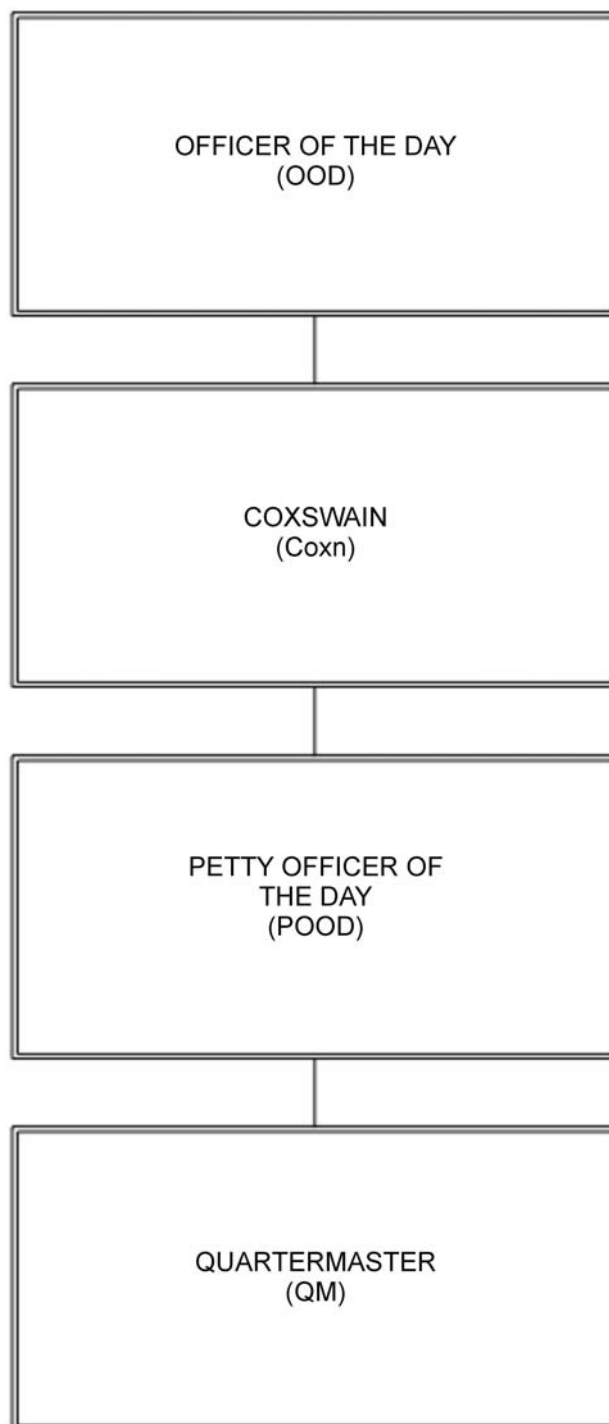


Director Cadets 3, 2008, Ottawa, ON: Department of National Defence

Figure 14A-1 Functional Organization

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DUTY PERSONNEL ORGANIZATION

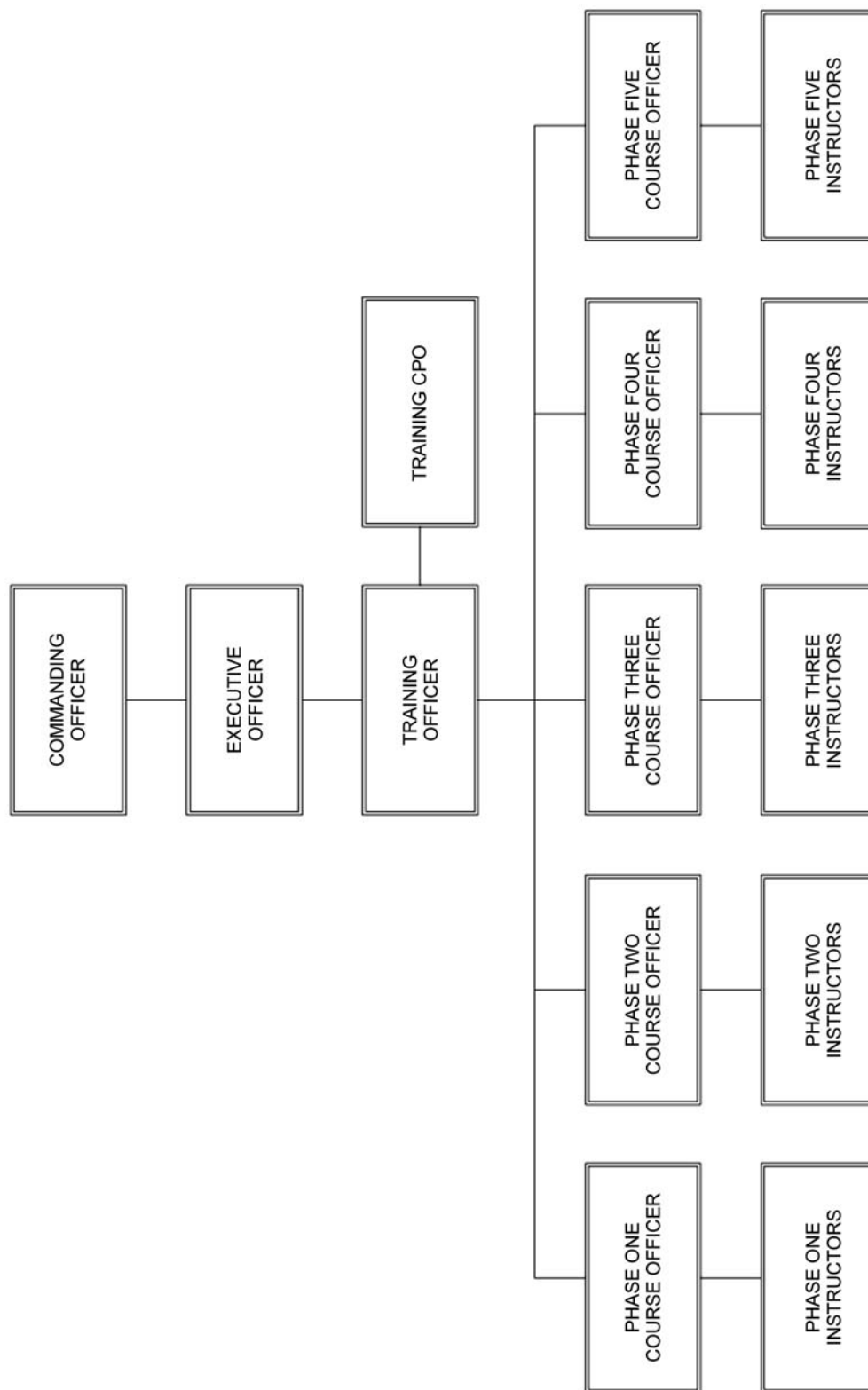


Director Cadets 3, 2008, Ottawa, ON: Department of National Defence

Figure 14B-1 Duty Personnel Organization

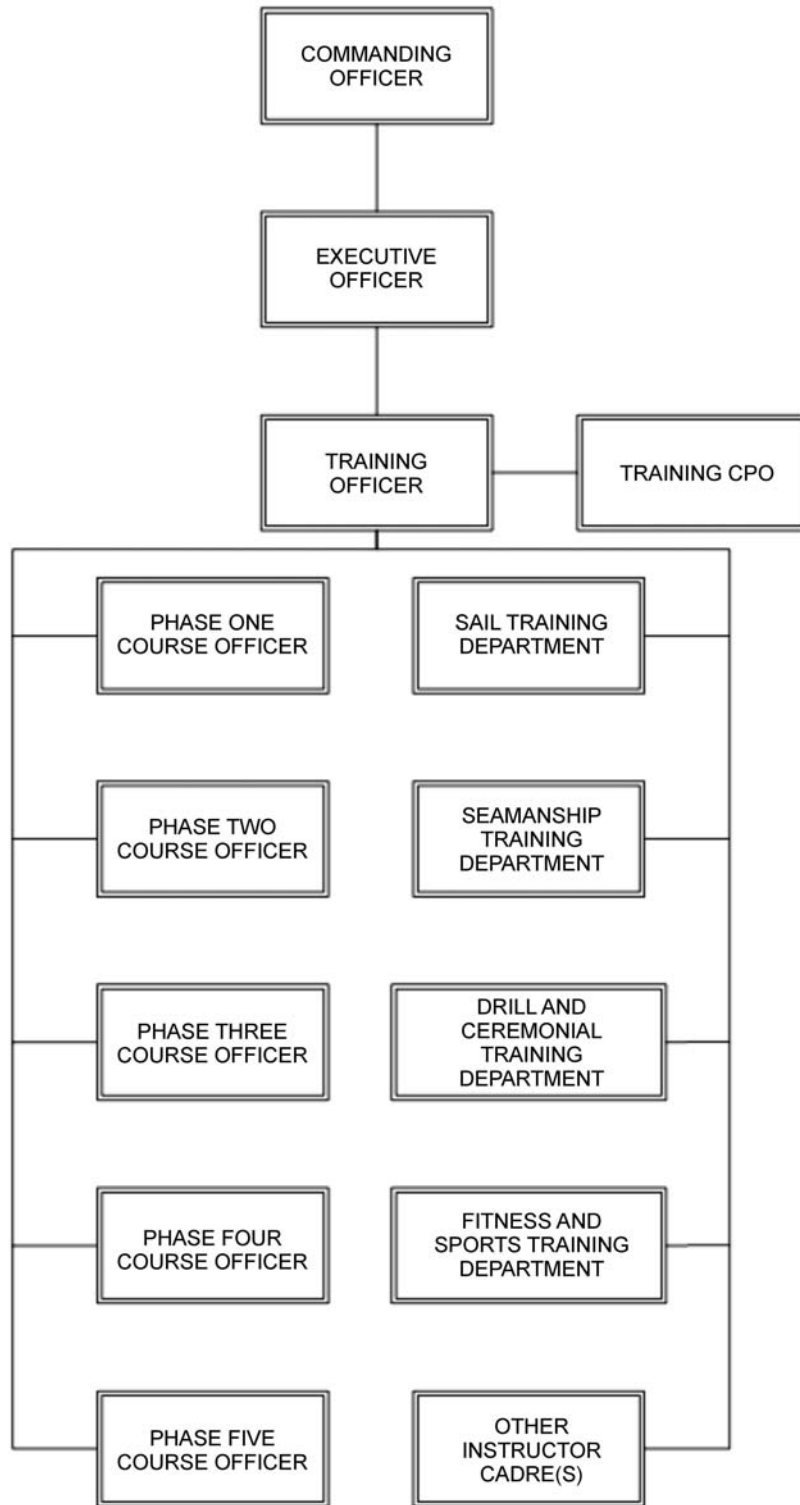
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TRAINING ORGANIZATIONS



Director Cadets 3, 2008, Ottawa, ON: Department of National Defence

Figure 14C-1 Training Organization – Option One



Director Cadets 3, 2008, Ottawa, ON: Department of National Defence

Figure 14C-2 Training Organization – Option Two

QUATERMASTER TERMS OF REFERENCE

Position:	Quartermaster.
Short Title:	QM.
Established Rank:	Leading Seaman/Master Seaman.
Responsible to:	Petty Officer of the Day.
Responsible for:	The QM shall stand duty in the immediate vicinity of the brow (main entrance). The QM shall not leave the area except to carry out other Quartermaster duties, attend classes or in the case of an emergency when they will inform the OOD of their action.
Primary Duties:	The QM is responsible to the POOD. Normally they will exercise this responsibility through the POOD or Coxn, but should not hesitate to report directly to the OOD when it is considered necessary. If a report is made to the OOD, the QM shall inform the POOD as soon as possible.

The Quartermaster is specifically responsible for:

- running colours and sunset, to include:
 - organizing the flag party;
 - piping the still; and
 - piping the carry on;
- maintaining the corps' routine and controlling of the corps' broadcast system, to include:
 - ringing the ship's bell; and
 - making pipes or using the corps' broadcast system;
- controlling the brow, to include:
 - identifying all personnel coming aboard or leaving the ship (training location);
 - ensuring that no unauthorized material is taken ashore; and
 - controlling the log; and
- ensuring the cleanliness of the brow area.

Secondary Duties: As assigned by the OOD and the Commanding Officer.

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QUARTERMASTER REFERENCE GUIDE

PAYING COMPLIMENTS

Addressing Cadet NCOs and Subordinate Officers

When addressing a cadet NCO or a subordinate officer, the cadet will stand at the position of attention.

Addressing Commissioned Officers

When addressing commissioned officers, the same procedures are followed as when addressing NCOs and subordinate officers except a salute shall be given.

The cadet shall stand at the position of attention after approaching the commissioned officer. The cadet will then give the salute.

THE 24-HOUR CLOCK

The 24-hour clock uses the numbers 0–24. To convert conventional time into 24-hour time in the pm, simply add 12 to the conventional time. For example, if it is 7:00 pm, add 12 (7+12), which equals 19, therefore it is 1900 hours.

Conventional Time	24-Hour Time	Conventional Time	24-Hour Time
12:00 am	0000	12:00 pm	1200
1:00 am	0100	1:00 pm	1300
2:00 am	0200	2:00 pm	1400
3:00 am	0300	3:00 pm	1500
4:00 am	0400	4:00 pm	1600
5:00 am	0500	5:00 pm	1700
6:00 am	0600	6:00 pm	1800
7:00 am	0700	7:00 pm	1900
8:00 am	0800	8:00 pm	2000
9:00 am	0900	9:00 pm	2100
10:00 am	1000	10:00 pm	2200
11:00 am	1100	11:00 pm	2300

HOW TO RING THE SHIP'S BELL

The bell is rung with two strokes of the clapper in quick succession, followed by a one-second pause between rings. For example, five bells will sound “ding-ding”, pause, “ding-ding”, pause, “ding”. This is done to make it easier to count the number.

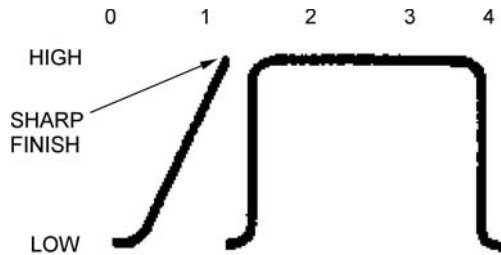
On the hour, the bells are rung in even numbers; on the half hour the bells are rung in odd numbers as follows

- eight bells at 0800 hours;
- one bell at 0830 hours;
- two bells at 0900 hours;
- three bells at 0930 hours;
- four bells at 1000 hours;
- five bells at 1030 hours;
- six bells at 1100 hours;

- seven bells at 1130 hours; and
- eight bells at 1200 hours at which point the cycle repeats itself.

THE GENERAL CALL

The General Call is produced by blowing the pipe for one second with a short blast of a low to high note, followed by a short pause. A low note is then piped for a half-second with a sharp accent to a high note, lasting for two seconds, followed by a sharp descent to a low note for a half-second. The pipe lasts a total of four seconds.

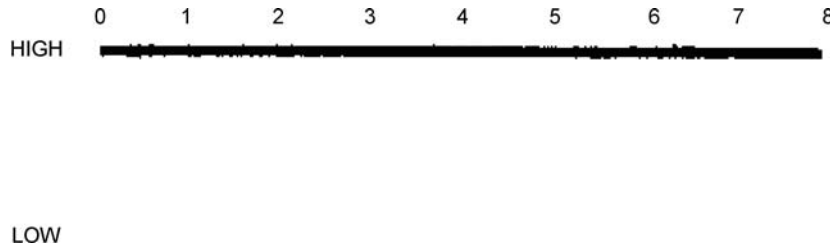


Royal Navy, Admiralty Manual of Seamanship 1964 (Vol. 1), Her Majesty's Stationery Office (p. 340)

Figure 14E-1 The General Call

THE STILL

The Still is produced by holding the high note for eight seconds with a sharp finish.

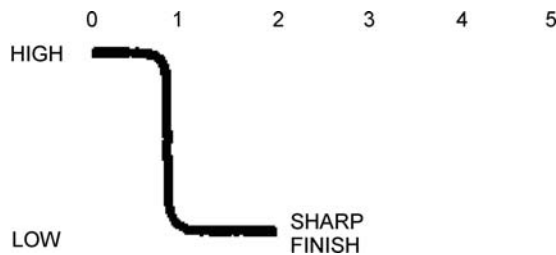


Royal Navy, Admiralty Manual of Seamanship 1964 (Vol. 1), Her Majesty's Stationery Office (p. 340)

Figure 14E-2 The Still

THE CARRY ON

The Carry On is produced by blowing a high note for one second, followed by a sharp descent to a one second low note with a sharp finish. The Carry On lasts a total of two seconds.






Royal Navy, Admiralty Manual of Seamanship 1964 (Vol. 1), Her Majesty's Stationery Office (p. 340)

Figure 14E-3 The Carry On

FLAG FLASH CARDS

 INDIA	 QUEBEC
 GOLF	 PAPA
 BRAVO	 OSCAR
 ALPHA	 JULIETT

 <p>ZULU</p>	 <p>3rd SUBSTITUTE</p>
 <p>X-RAY</p>	 <p>PREPARATIVE</p>
 <p>UNIFORM</p>	 <p>5</p>

FLAG FLASH CARDS RESULTS SHEET

NAME:				

NAME:				

NAME:				

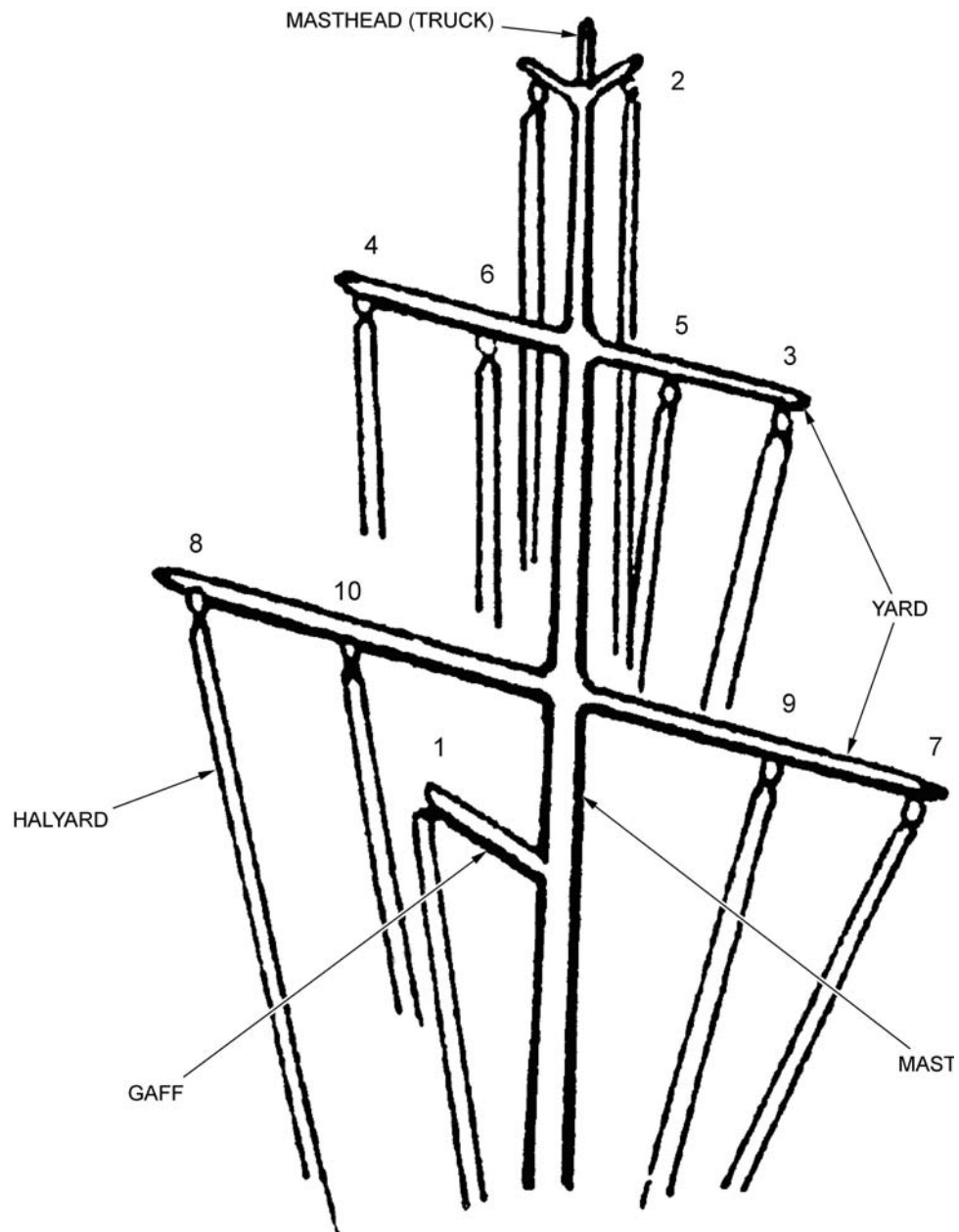
NAME:				

NAME:				

(Cut out and distribute one per cadet)

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SIGNAL MAST HANDOUT



Chief of Maritime Staff/Staff Officer Heritage, Manual of Ceremony for HMC Ships, Submarines and Naval Reserve Divisions, Department of National Defence (p. 2A-3)

Figure 14H-1 Parts of a Signal Mast and Superior Positions

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SIGNAL HOIST CUE CARDS

1

I am on fire.

2

**The engineer fell in the
water.**

3

**My divers are within
200 yards of my ship.**

4

Time to fuel up.

5

**I'm preparing to receive you
on my starboard side.**

6

I'll take the lead.

7

Everybody back to the ship.

8

Anchor let go.

9

Tow me.

10

Colours, Sir/Ma'am.

11

Man overboard exercise.

12

Captain is not on board.

13

My rudders do not work.

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SIGNAL HOIST RESULTS SHEET

1.	
2.	
3.	
4.	
5.	
6.	
7.	
8.	
9.	
10.	
11.	
12.	
13.	

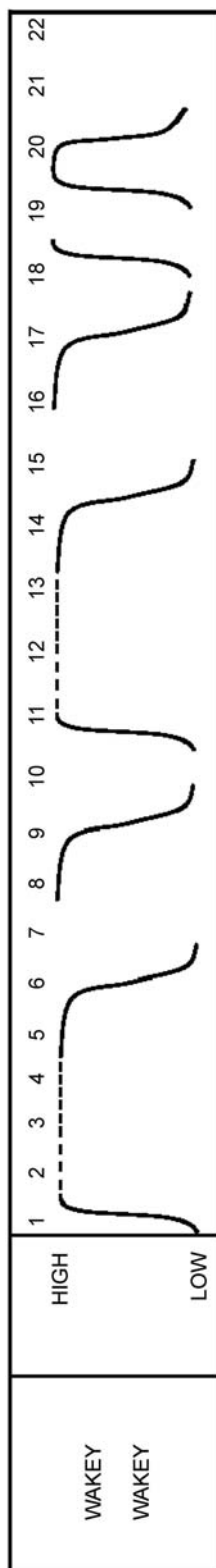
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SIGNAL HOIST ANSWER KEY

1.	JULIETT
2.	OSCAR
3.	ALPHA TACK TWO
4.	BRAVO
5.	INDIA (at the dip, starboard side)
6.	GOLF
7.	PAPA
8.	UNIFORM (at the dip)
9.	ZULU
10.	PREPARATIVE (at the dip)
11.	X-RAY TACK OSCAR
12.	3 rd SUBSTITUTE
13.	5

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WAKEY WAKEY DIAGRAM

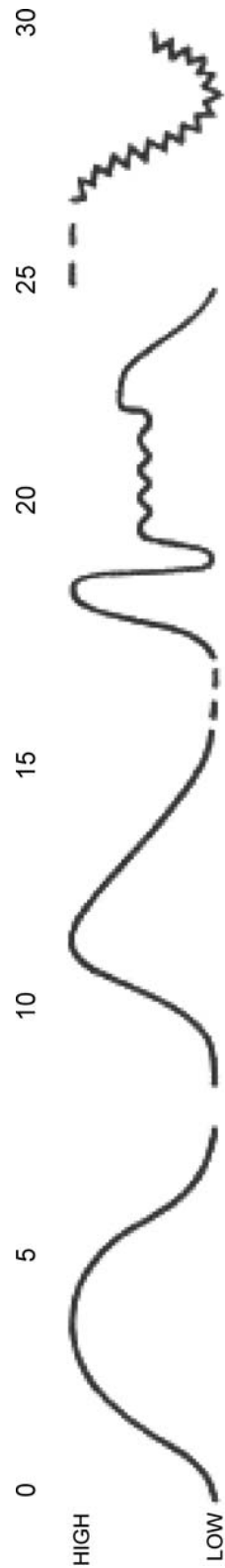


Director Cadets 3, 2007, Ottawa, ON: Department of National Defence

Figure 14L-1 Wakey Wakey

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HANDS TO DINNER DIAGRAM



Royal Navy, Admiralty Manual of Seamanship 1964 (Vol. 1), Her Majesty's Stationery Office (p. 340)

Figure 14M-1 Hands to Dinner

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CHAPTER 15

**PO 324 – SAIL A SAILBOAT IAW THE CANADIAN
YACHTING ASSOCIATION (CYA) WHITE SAIL LEVEL II**



ROYAL CANADIAN SEA CADETS

PHASE THREE

INSTRUCTIONAL GUIDE



SECTION 1

EO M324.01 – PREPARE FOR A SAIL WEEKEND

Total Time:

30 min

PREPARATION

PRE-LESSON INSTRUCTIONS

Resources needed for the delivery of this lesson are listed in the lesson specification located in A-CR-CCP-603/PG-001, Chapter 4. Specific uses for said resources are identified throughout the instructional guide within the TP for which they are required.

Review the lesson content and become familiar with the material prior to delivering the lesson.

Contact the local sail centre and obtain a copy of the Standard Operating Procedures (SOPs) and determine the timings required for the sail weekend training.

Photocopy the *CYA White Sail II Practical Skills Checklist* located at reference C1-008 for each cadet.

If the corps prepares a letter regarding the sail weekend, photocopy for each cadet.

Photocopy the suggested clothing and footwear for a sail weekend handout at Annex A for each cadet (if required).

PRE-LESSON ASSIGNMENT

N/A.

APPROACH

An interactive lecture was chosen for this lesson to introduce the skills required to obtain CYA White Sail Level II, to discuss the expectations of a sail weekend and to give direction on procedures that will be followed during training.

INTRODUCTION

REVIEW

N/A.

OBJECTIVES

By the end of this lesson the cadet shall have identified the sailing skills required to achieve the CYA White Sail Level II, the weekend schedule, expectations, and rules and regulations to prepare for a sail weekend.

IMPORTANCE

It is important for cadets to know the sail weekend structure, as well as the skills associated with the CYA White Sail Level II, to assist in preparing them for the sail weekend activities and in turn, to have a positive experience.

Teaching Point 1

Review the Skills Found in the *CYA White Sail II Practical Skills Checklist*

Time: 15 min

Method: Interactive Lecture



The skills found in the checklist will be reviewed in greater detail during the sail weekend. Briefly review each section, answering any questions that the cadets may have.

Distribute copies of the *CYA White Sail II Practical Skills Checklist* to each cadet.

CYA WHITE SAIL II PRACTICAL SKILLS CHECKLIST

The *CYA White Sail II Practical Skills Checklist* is divided into two sections with numerous subsections. In order to achieve CYA White Sail Level II, all skills are to be completed.

The following sections and the associated skills can be found in the checklist:

Ashore Skills

- Identifying parts of the hull, to include:
 - hull,
 - bow,
 - stern,
 - transom,
 - fairlead,
 - rudder,
 - daggerboard/centreboard,
 - tiller,
 - tiller extension,
 - auto bailer,
 - painter, and
 - hiking strap.
- Identifying rigging items, to include:
 - mast,
 - boom,
 - block,

- shackle,
- cleat,
- shroud,
- boom vang,
- traveller/bridle,
- spreader,
- forestay, and
- goose neck.
- Identifying the sails, to include:
 - mainsail,
 - jib sail,
 - mainsheet,
 - jib sheet,
 - main halyard, and
 - jib halyard.
- Tying knots, to include:
 - rolling hitch, and
 - sheet bend.

Afloat Skills

- Leaving from a dock, to include:
 - the skipper identifying the wind direction,
 - ensuring a good route and planning,
 - giving proper skipper commands, and
 - the crew assisting the skipper.
- Returning to a dock, to include:
 - ensuring a good route and planning,
 - giving proper skipper commands,
 - ensuring sails are lowered prior to docking,
 - approaching head to wind, and
 - ensuring soft contact with dock.

- Demonstrating helming skills, to include:
 - beating;
 - running;
 - tacking;
 - gybing;
 - stopping;
 - hiking;
 - luffing;
 - sailing on a close reach;
 - sailing on a beam reach;
 - sailing on a broad reach;
 - sailing on a starboard tack;
 - sailing on a port tack;
 - bearing away; and
 - heading up.
- Demonstrating crewing skills, to include:
 - maintaining sail trim;
 - maintaining boat trim;
 - adjusting the daggerboard/centreboard; and
 - maintaining a lookout.
- Describing sailing by the lee, to include:
 - skipper maintaining a straight course; and
 - crew preventing the boom from gybing.
- Identifying wind speed using waves, to include:
 - the four general types of wave conditions, and
 - the wind speed, given the wave conditions.
- Applying sailing terminology by:
 - pointing to windward;
 - pointing to leeward;
 - pointing to the skipper; and
 - pointing to the crew.

- Recovering a turtled sailboat, to include:
 - checking the crew;
 - maintaining a grasp of the sailboat;
 - the crew swimming to the bow;
 - the skipper grasping the jib sheet to help right the sailboat;
 - the skipper swimming to the daggerboard/centreboard;
 - keeping the sailboat head to wind;
 - righting the sailboat under control;
 - quickly entering over the transom area;
 - bailing the sailboat; and
 - recovering the paddles and bailer.



The skills found in the checklist are to be performed over multiple sail weekends.

ACHIEVING WHITE SAIL LEVEL II

To achieve White Sail Level II, cadets must demonstrate an ability to perform the skills outlined on the checklist. Cadets will be required to either “demonstrate” or “demonstrate consistently” skills. There are three possible scenarios, determining whether a level has been achieved:

1. If the skills are all “demonstrated consistently”, the cadet will be awarded the sail level regardless of the amount of time spent practicing the skills.
2. If any skills are at a minimum of “demonstrated”, the cadet will be required to complete a pre-determined amount of training time. For White Sail Level II, 20 hours of training time is required. Cadets can also continue to practice until the criteria for scenario one has been met.
3. Any skill that is not demonstrated will result in no level being awarded until the criteria for scenarios one or two have been met.



The *CYA White Sail II Practical Skills Checklist* is not a complete description of the White Sail Level II standard, but rather a tool used to track skills that must be demonstrated. The standard for White Sail Level II can be found in the Canadian Yachting Association, *Canadian Yachting Association Sailing Logbook*, Canadian Yachting Association, located at reference C1-099.

CONFIRMATION OF TEACHING POINT 1

QUESTIONS

- Q1. What are three skills found *CYA White Sail II Practical Skills Checklist*?

Q2. What are the two ways of achieving White Sail Level II?

ANTICIPATED ANSWERS

A1. Refer to the *CYA White Sail II Practical Skills Checklist* for anticipated answers.

A2. The two ways of achieving White Sail Level II are:

1. If the skills are all “demonstrated consistently”, the cadet will be awarded the sail level regardless of the amount of time spent practicing the skills.
2. If any skills are at a minimum of “demonstrated”, the cadet will be required to complete a pre-determined amount of training time. For White Sail Level II, 20 hours of training time is required. Cadets can also continue to practice until the criteria for scenario one has been met.

Teaching Point 2

Give an Overview of the Sail Weekend Schedule

Time: 5 min

Method: Interactive Lecture



Distribute the sail weekend letter to the cadets (if prepared by the corps). Review its content and answer any questions.

TIMINGS

Each corps and sail centre will have different timings for cadet pick up and drop-off. Some corps will use a bus to transport the cadets to and from the sail centre.

Review the pick up time and location for cadets who are attending the sail weekend if a bus is being used.

If cadets are being dropped off, review the drop-off times and the exact location of the sail centre.

DAILY ROUTINE

Each sail centre will have a different daily routine based on its facilities and resources. Some of the areas that should be highlighted in the schedule are as follows:

- wakey wakey,
- lights-out time,
- meal times,
- downtime, and
- on the water time.

CONFIRMATION OF TEACHING POINT 2

QUESTIONS

Q1. When and where do you have to be dropped off?

Q2. What time is wakey wakey?

Q3. What time and where do you have to be picked up?

ANTICIPATED ANSWERS

A1. Answers will vary depending on the sail centre.

A2. Answers will vary depending on the sail centre.

A3. Answers will vary depending on the sail centre.

Teaching Point 3

Review the Sail Centre SOPs

Time: 5 min

Method: Interactive Lecture



Highlight the sections of the local sail centre SOPs that the cadets need to know to prepare for the sail weekend. The following sections are common areas that are found in all SOPs.

LOCATION

Some cadets may not have visited the sail centre before. Review the following details:

- the general location of the sail centre, and
- directions on how to get to the sail centre (if required).

BASIC RULES

Each sail centre will have SOPs. Some of the common sections found in SOPs will include:

- out-of-bounds areas,
- clothing and equipment,
- Personal floatation devices (PFDs),
- accommodation rules, and
- on the water rules.



Include any other important rules that are specific to the sail centre. The sail centre staff will review the rules in more detail at the sail centre, but it is important that the cadets know what to expect prior to arrival.

WEEKEND EXPECTATIONS

Cadets attending a sail weekend are expected to participate in on the water training. Cadets will be required to follow the sail centre routine and participate in all activities that are conducted by the sail centre staff.

Cadets shall be prepared to get wet, as they will be expected to turtle their sailboat IAW the checklist.

SUGGESTED CLOTHING AND FOOTWEAR FOR A SAIL WEEKEND

If the local sail centre does not provide a list of clothing for the sail weekend, Annex A may be used as an example.



Weather permitting; cadets will spend as much time on the water as possible. The more time spent on the water, the more skills that can be developed.

CONFIRMATION OF TEACHING POINT 3

QUESTIONS

- Q1. What is the general location of the sail centre?
- Q2. What are some of the out-of-bounds areas at the sail centre?
- Q3. What shall cadets always be prepared for during the sailing weekend?

ANTICIPATED ANSWERS

- A1. Answers will vary depending on the sail centre.
- A2. Answers will vary depending on the sail centre.
- A3. Getting wet.

END OF LESSON CONFIRMATION

QUESTIONS

- Q1. In order for the 20 hours of training time (required to achieve the White Sail Level II) to be waived, what must a cadet do?
- Q2. What time will you go on the water?
- Q3. What is the general location of the sail centre?

ANTICIPATED ANSWERS

- A1. Demonstrate all the skills consistently.
- A2. Answers will vary depending on the sail centre.
- A3. Answers will vary depending on the sail centre.

CONCLUSION

HOMEWORK/READING/PRACTICE

N/A.

METHOD OF EVALUATION

N/A.

CLOSING STATEMENT

The sail weekend is designed to introduce the basic skills associated with the *CYA White Sail II Practical Skills Checklist*. Being familiar with the skills associated with the *CYA White Sail II Practical Skills Checklist* and weekend expectations will help to prepare for the sail weekend activities.

INSTRUCTOR NOTES/REMARKS

This EO is to be scheduled at the corps during regular training. All proceeding EOs will be taught at the local sail centre.

Corps should contact the local sail centre to obtain a copy of the centre's SOPs.

REFERENCES

- C1-007 (ISBN 0-920232-17-5/A-CR-CCP-009/PT-001) Donaldson, S. (2001). *Basic Sailing Skills*. Kingston, ON: Canadian Yachting Association.
- C1-008 Canadian Yachting Association. (2006). *Canadian Yachting Association White Sail II Practical Skills Checklist*. Retrieved October 5, 2007, from <http://www.sailing.ca/cbet/content/WIIChecklist.doc>.
- C1-099 (ISBN 0-920232-26-4) Canadian Yachting Association. (2003). *Canadian Yachting Association Sailing Logbook*. Kingston, ON: Canadian Yachting Association.

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ROYAL CANADIAN SEA CADETS

PHASE THREE

INSTRUCTIONAL GUIDE



SECTION 2

EO M324.02 – PREPARE FOR SAILING

Total Time:

60 min

PREPARATION

PRE-LESSON INSTRUCTIONS

Resources needed for the delivery of this lesson are listed in the lesson specification located in A-CR-CCP-603/PG-001, Chapter 4. Specific uses for said resources are identified throughout the instructional guide within the TP for which they are required.

Review the lesson content and become familiar with the material prior to delivering the lesson.

Photocopy the sailing terminology handout located at Annex B for each pair of cadets.

PRE-LESSON ASSIGNMENT

N/A.

APPROACH

An interactive lecture was chosen for TPs 1 and 3 to present basic material and to orient the cadets to aspects of sail training prior to participating in practical training.

An in-class activity was chosen for TP 2 as it is an interactive way to provoke thought, stimulate interest and present basic sailing terminology.

INTRODUCTION

REVIEW

N/A.

OBJECTIVES

By the end of this lesson the cadet shall have identified wind speeds using wave conditions, defined sailing terminology and identified the methods used for capsizing avoidance.

IMPORTANCE

It is important for cadets to know how to identify wind speeds using wave conditions, define sailing terminology and describe the steps involved in avoiding a capsizing in order to gain a foundation for future sail training.

Teaching Point 1**Explain How to Identify Wind Speeds Using Wave Conditions**

Time: 15 min

Method: Interactive Lecture

IDENTIFYING WIND SPEED USING WAVE CONDITIONS

Identifying wind speeds using wave conditions is a skill necessary to make informed decisions prior to heading out onto the water. The following are guidelines that can assist in determining wind speed using wave conditions:

Wave Conditions	Approximate Wind Speed
Small ripples	2–4 knots (3–7 km/h)
Wavelets	5–8 knots (8–15 km/h)
Small waves with occasional whitecaps	9–11 knots (16–20 km/h)
Substantial waves with abundant whitecaps	12 knots and above (21 km/h and above)

Director Cadets 3, 2007, Ottawa, ON: Department of National Defence

Figure 15-2-1 Wave Conditions and Wind Speeds



Bring the cadets to the beachfront/water line to identify current wind speeds.

CONFIRMATION OF TEACHING POINT 1**QUESTIONS**

- Q1. What is the approximate wind speed for small ripples?
- Q2. What is the approximate wind speed for wavelets?
- Q3. What are the wave conditions for 9–11 knots?

ANTICIPATED ANSWERS

- A1. 2–4 knots.
- A2. 5–8 knots.
- A3. Small waves with occasional whitecaps.

Teaching Point 2**Conduct an Activity Where the Cadets Will Define Sailing Terminology**

Time: 25 min

Method: In-Class Activity

Sailing is an activity that uses a unique language. Sailors have given many objects and actions alternative names and phrases. To effectively communicate with coaches and other sailors, it is important to understand and use basic sailing terminology.



The cadets may have been introduced to some of these terms as part of EO M224.04 (Sail a Sailboat, A-CR-CCP-602/PF-001, Chapter 13, Section 4). Ask the cadets to define these terms and write down the responses. Compare the class list to the list below.



Distribute the sailing terminology handout located at Annex B.

SAILING TERMINOLOGY

Heading Up. Altering course toward the wind.

Luffing. To steer or trim the sail so it flutters, either near its leading edge or over the whole sail.

Head to Wind. Aiming the bow of the sailboat directly toward the source of the wind.

Heel/Heeling. Sideways leaning or tipping of the sailboat, usually caused by the force of the wind on the sails.

Hiking. Leaning backwards over the windward gunwale to counteract heel.

Tacking. Act of moving the tiller to leeward to turn the sailboat into the wind until the sails refill on the other side (also known as coming about).

Beating. Sailing to windward using a series of tacks, close hauled first on one tack, and then the other.

Bearing Away. Turning the sailboat away from the source of the wind (also known as heading down).

Gybing. Act of moving the tiller to windward to turn the sailboat away from the wind until the sails swing to the other side.

Windward. Toward the source of the wind.

Leeward. Away from the source of the wind.

Skipper. The person who is in charge of the sailboat.

Crew. Person or people who help the skipper sail the sailboat.

Helmsman. The person who steers the sailboat.



Typically when dinghy sailing, the person steering is referred to as the skipper.

ACTIVITY

Time: 15 min

OBJECTIVE

The objective of this activity is to have the cadets define sailing terminology.

RESOURCES

- Chair (one per cadet),
- Line (one per cadet),
- Spar (one per pair), and
- “Sailor Says” list located at Annex C.

ACTIVITY LAYOUT

1. Set up two chairs per pair, one behind the other.
2. Place a spar and a piece of line on the rear chair, and a piece of line on the front chair.

ACTIVITY INSTRUCTIONS

1. Divide the cadets into pairs; one acting as the skipper in the rear chair and the other acting as crew in the front chair.
2. Have the cadets sit sideways in the chairs as they would in a sailboat.
3. Identify the wind direction in the training area; orient the chairs so that they are perpendicular to the wind direction to begin the activity.
4. Review the “Sailor Says” sailing terminology and responses list located at Annex C, with the cadets.
5. To begin the activity, read aloud from the “Sailor Says” sailing terminology and responses list located at Annex C. Read only the definition or the root word.
6. Start each sentence with “Sailor Says.” Pairs should not respond if the sentence does not begin with “Sailor Says.”
7. Have the cadets continue the activity until all terms have been read. Repeat any terms that pairs have difficulty with.
8. If a pair is unable to respond correctly or a team responds without the instructor starting a sentence with the phrase “Sailor Says”, they are eliminated.
9. Within each pair have the cadets switch positions as skipper and crew midway through the activity.
10. Continue the activity until only one pair remains.

SAFETY

This activity must be conducted in a large area that is free of obstructions.

CONFIRMATION OF TEACHING POINT 2

The cadets' participation in the activity will serve as the confirmation of this TP.

Teaching Point 3

Explain Methods of Capsize Avoidance

Time: 10 min

Method: Interactive Lecture

METHODS OF CAPSIZE AVOIDANCE

Effective communication between the skipper and crew, and watching the water for changes in wind speed, are essential skills to avoid capsizing. An increase of wind speed is typically indicated by darker water, while a decrease of wind is indicated by flat or smoother water. The following actions can be taken to level the sailboat if it begins to heel excessively and there is a possibility of capsizing:

- **Hike.** Hook feet under the hiking straps at the bottom of the cockpit and begin to hike. Lean the upper body backwards to shift weight to windward. It is important to stay alert and be ready to quickly shift inboard to maintain boat balance should the wind speed suddenly decrease.
- **Sail Trim.** Begin by easing the mainsheet slightly – about 15 cm. If the sailboat continues to heel, the skipper can ease the mainsheet by an additional 15 cm. The crew can also ease the jib sheet using the same method.



When sailing downwind, the skipper should be aware that easing the mainsheet excessively may result in the boom touching the water. Should this occur, a pivot point will be created which will cause the sailboat to bear away and may result in capsizing.

- **Tiller Control.** Avoid using the tiller to maintain boat balance under normal circumstances because of its effect on boat speed. If the skipper and crew cannot maintain boat balance using hiking and sail trim the following techniques involving tiller control can be applied:
 - **Pinching.** In cases where wind speed is consistently strong the skipper can turn the sailboat toward the wind until the sails are on the verge of luffing. Although the sailboat will slow down, it will not heel as much.
 - **Heading Up.** In a case where the wind speed is patchy and inconsistent, the skipper can turn the sailboat toward the wind until the sailboat is level again. Skippers need to be aware not to head up to the point that the sailboat is head to wind.

CONFIRMATION OF TEACHING POINT 3

QUESTIONS

- Q1. Why is it important to stay alert and be ready to quickly shift inboard while hiking?
- Q2. How much should the skipper ease the mainsheet to avoid capsizing?
- Q3. What will happen if the boom touches the water?

ANTICIPATED ANSWERS

- A1. To maintain boat balance should the wind speed suddenly decrease.
- A2. 15 cm increments.

A3. A pivot point is created which will cause the sailboat to bear away and may result in capsizing.

END OF LESSON CONFIRMATION

QUESTIONS

- Q1. What are the wave conditions for 5–8 knots?
Q2. What is the difference between windward and leeward?
Q3. What must the crew always be ready to do, while hiking?

ANTICIPATED ANSWERS

- A1. Wavelets.
A2. Windward is toward the source of the wind and leeward is away from the source of the wind.
A3. Quickly move inboard to maintain boat balance.

CONCLUSION

HOMEWORK/READING/PRACTICE

N/A.

METHOD OF EVALUATION

This EO will be assessed IAW A-CR-CCP-603/PG-001, Chapter 3, Annex B, Appendix 7 (324 EC 01).

CLOSING STATEMENT

Identifying wind speeds and defining sailing terminology and how it is used will make sail training enjoyable and successful. The ability to avoid capsizing will provide a safe learning experience, allowing more time to be spent developing other sailing skills.

INSTRUCTOR NOTES/REMARKS

N/A.

REFERENCES

- C1-007 (ISBN 0-920232-17-5/A-CR-CCP-009/PT-001) Donaldson, S. (2001). *Basic Sailing Skills*. Kingston, ON: Canadian Yachting Association.
- C1-008 Canadian Yachting Association. (2006). *Canadian Yachting Association White Sail II Practical Skills Checklist*. Retrieved October 5, 2007, from <http://www.sailing.ca/cbet/content/WIIChecklist.doc>.
- C1-099 (ISBN 0-920232-26-4) Canadian Yachting Association. (2003). *Canadian Yachting Association Sailing Logbook*. Kingston, ON: Canadian Yachting Association.
- C1-105 (ISBN 0-920232-27-2) West, G. (n.d.). *Basic Cruising Skills*. Kingston, ON: Canadian Yachting Association.



ROYAL CANADIAN SEA CADETS

PHASE THREE

INSTRUCTIONAL GUIDE



SECTION 3

EO M324.03 – TIE A HITCH AND A BEND

Total Time:

30 min

PREPARATION

PRE-LESSON INSTRUCTIONS

Resources needed for the delivery of this lesson are listed in the lesson specification located in A-CR-CCP-603/PG-001, Chapter 4. Specific uses for said resources are identified throughout the instructional guide within the TP for which they are required.

Review the lesson content and become familiar with the material prior to delivering the lesson.

Photocopy the handouts located at Annexes D and E for each cadet.

PRE-LESSON ASSIGNMENT

N/A.

APPROACH

An interactive lecture was chosen for TPs 1 and 3 as it allows the instructor to explain the basic use and application of the rolling hitch and sheet bend, and allows the cadet to ask questions prior to participating in practical training.

Demonstration and performance was chosen for TPs 2 and 4 as it allows the instructor to explain and demonstrate how to tie the rolling hitch and the sheet bend while providing an opportunity for the cadets to practice these skills under supervision.

INTRODUCTION

REVIEW

N/A.

OBJECTIVES

By the end of this lesson the cadet shall have tied a rolling hitch and a sheet bend.

IMPORTANCE

It is important for cadets to learn the basic seamanship skills required for sail training. The rolling hitch and sheet bend are used while under tow, securing alongside and de-rigging a sailboat.



Determine if the cadets have been previously taught the sheet bend and rolling hitch in EO M121.01 (Tie Knots, Bends, and Hitches, A-CR-CCP-601/PF-001, Chapter 10, Section 1) and EO C121.03 (Complete a Rolling Hitch, A-CR-CCP-601/PF-001, Chapter 10, Section 6) and shorten this EO accordingly.

Teaching Point 1

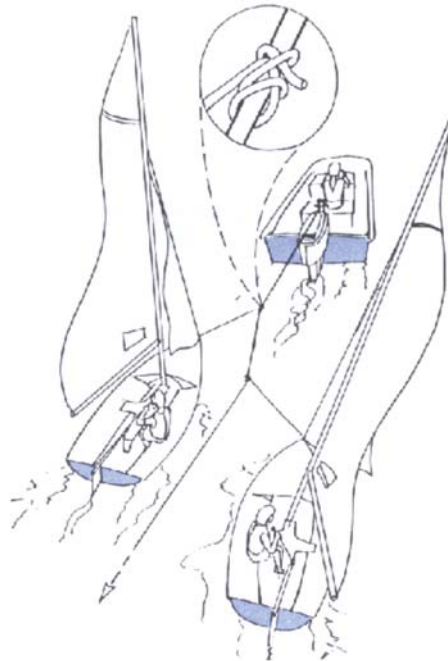
Explain the Use of a Rolling Hitch

Time: 5 min

Method: Interactive Lecture

ROLLING HITCH

A rolling hitch is used to secure a line to another line, spar, rail or similar fitting when the pull is expected to be from the side. The two turns should always be on the side from which the pull is expected. A rolling hitch is commonly used in sailing to secure a painter to a tow line.



S. Donaldson, Basic Sailing Skills Manual, Canadian Yachting Association (p. 101)

Figure 15-3-1 Rolling Hitch

CONFIRMATION OF TEACHING POINT 1

QUESTIONS

- Q1. Name three things to which a rolling hitch may be tied.
- Q2. On what side should the two turns of a rolling hitch be?

ANTICIPATED ANSWERS

- A1. A rolling hitch may be tied to:
- another line,

- a spar,
- a rail, or
- a fitting similar to a spar or rail.

A2. On the side from which the pull is expected.

Teaching Point 2

Demonstrate and Have the Cadets Tie a Rolling Hitch

Time: 10 min

Method: Demonstration and Performance



The following suggestions can make TPs 2 and 4 more enjoyable for the cadets:

- Use different coloured line.
- Shoestring licorice can be used as a substitute for line. The cadets can eat the licorice as a reward for successfully tying the hitch or bend.



Pass around a completed rolling hitch for the cadets to view. Explain and demonstrate the steps to tying it prior to having the cadets complete their own.

Circulate around the class to check the cadets' progress.

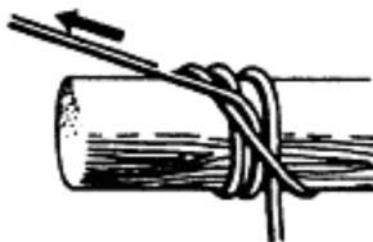


The following terminology will assist with tying hitches and bends:

Standing Part. The part of the line that is usually attached to the sailboat and is not used in the tying of a knot.

Working End. The end of the line used during the tying of a knot.

STEPS TO TYING A ROLLING HITCH



B-GN-181-105/FP-E00 (p. 5-31)

Figure 15-3-2 Completed Rolling Hitch


The rolling hitch is tied using the following steps:

1. Wrap the line around the spar, take a second turn around and cross over the standing part to trap it.
2. Take another full turn around the spar, but on the other side of the standing part.
3. Bring the working part up underneath itself to make a half hitch, and pull tight.



B-GN-181-105/FP-E00 (p. 5-31)

Figure 15-3-3 Steps to Tying a Rolling Hitch

 Use these steps when tying a rolling hitch to a post or tow line.

CONFIRMATION OF TEACHING POINT 2

The cadets' tying a rolling hitch will serve as the confirmation of this TP.

Teaching Point 3

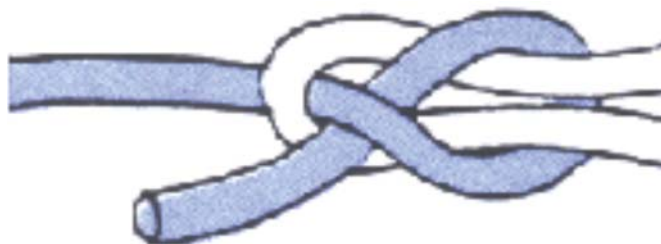
Explain the Use of a Sheet Bend

Time: 5 min

Method: Interactive Lecture

SHEET BEND

A sheet bend is used to join two lines of different diameters. The sheet bend is more reliable than the reef knot if the lines are slippery. A sheet bend is commonly used in sailing to join the main halyard and outhaul together when de-rigging a sailboat.



S. Donaldson, Basic Sailing Skills Manual, Canadian Yachting Association (p. 39)

Figure 15-3-4 Sheet Bend

CONFIRMATION OF TEACHING POINT 3

QUESTIONS

- Q1. What is the purpose of a sheet bend?
- Q2. When is a sheet bend more reliable than a reef knot?

ANTICIPATED ANSWERS

- A1. To join two lines of different diameters.
- A2. When the lines are slippery.

Teaching Point 4**Demonstrate and Have the Cadets Tie a Sheet Bend**

Time: 5 min

Method: Demonstration and Performance



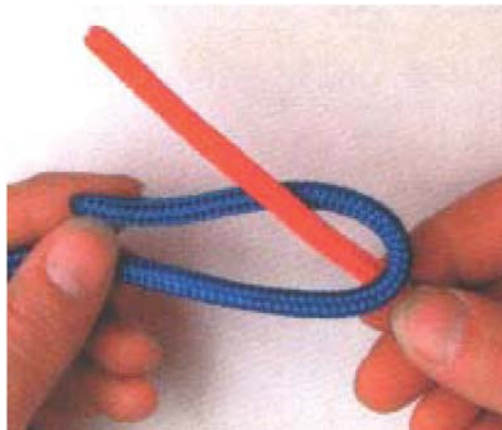
Pass around a completed sheet bend for the cadets to view. Explain and demonstrate the steps to tying it prior to having the cadets complete their own.

Circulate around the class to check the cadets' progress.

SHEET BEND

The sheet bend is tied using the following steps:

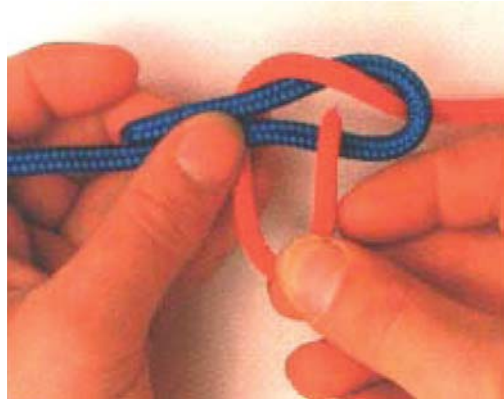
1. Form a bight at the end of a line. If the lines to be joined are of different diameters then the bight should be formed using the larger of the two (as illustrated in Figure 15-3-5).
2. Pass the working end of the second line up through the bight, around the shorter end of the first line and behind the standing part (as illustrated in Figures 15-3-5 and 15-3-6).



D. Pawson, Pocket Guide to Knots and Splices, Chartwell Books, Inc. (p. 112)

Figure 15-3-5 Sheet Bend – Steps 1 and 2

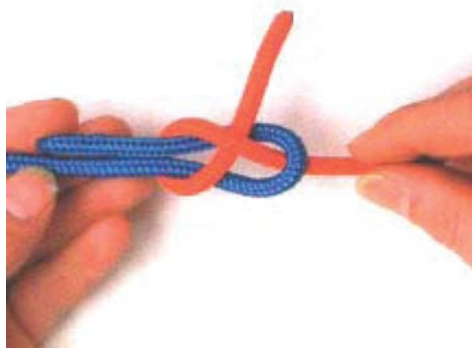
3. Tuck the working end of the second piece of line under itself (as illustrated in Figure 15-3-6).



D. Pawson, Pocket Guide to Knots and Splices, Chartwell Books, Inc. (p. 112)

Figure 15-3-6 Sheet Bend – Step 3

4. Finish the sheet bend by holding the bight while pulling on the standing part of the tucked line (as illustrated in Figure 15-3-7).



D. Pawson, Pocket Guide to Knots and Splices, Chartwell Books, Inc. (p. 112)

Figure 15-3-7 Finished Sheet Bend

CONFIRMATION OF TEACHING POINT 4

The cadets' tying a sheet bend will serve as the confirmation of this TP.

END OF LESSON CONFIRMATION

The cadets' tying a rolling hitch and a sheet bend will serve as the confirmation of this lesson.

CONCLUSION

HOMEWORK/READING/PRACTICE

The cadets should be encouraged to practice the rolling hitch and sheet bend on their own time. Provide the cadets with the rolling hitch handout located at Annex D and the sheet bend handout located at Annex E.

METHOD OF EVALUATION

This EO is assessed IAW A-CR-CCP-603/PG-001, Chapter 3, Annex B, Appendix 8 (324 EC 02).

CLOSING STATEMENT

The use of bends and hitches are necessary components of the seamanship skills used in sailing. A rolling hitch and sheet bend will be used for towing, de-rigging a sailboat and securing a sailboat alongside a dock to a spar, rail or similar fitting. These skills will be useful during sail training.

INSTRUCTOR NOTES/REMARKS

N/A.

REFERENCES

- A1-004 B-GN-181-105/FP-E00 Chief of the Maritime Staff. (2000). *CFCD 105 Fleet Seamanship Rigging and Procedures Manual*. Ottawa, ON: Department of National Defence.
- C1-002 (ISBN 0-7858-1446-9) Pawson, D. (2001). *Pocket Guide to Knots and Splices*. Edison, NJ: Chartwell Books, Inc.
- C1-007 (ISBN 0-920232-17-5/A-CR-CCP-009/PT-001) Donaldson, S. (2001). *Basic Sailing Skills*. Kingston, ON: Canadian Yachting Association.
- C1-008 Canadian Yachting Association. (2006). *Canadian Yachting Association White Sail II Practical Skills Checklist*. Retrieved October 5, 2007, from <http://www.sailing.ca/cbet/content/WIIChecklist.doc>.
- C1-099 (ISBN 0-920232-26-4) Canadian Yachting Association. (2002). *Canadian Yachting Association Sailing Logbook*. Kingston, ON: Canadian Yachting Association.

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ROYAL CANADIAN SEA CADETS

PHASE THREE

INSTRUCTIONAL GUIDE



SECTION 4

EO M324.04 – RIG A SAILBOAT

Total Time:

30 min

PREPARATION

PRE-LESSON INSTRUCTIONS

Resources needed for the delivery of this lesson are listed in the lesson specification located in A-CR-CCP-603/PG-001, Chapter 4. Specific uses for said resources are identified throughout the instructional guide within the TP for which they are required.

Review the lesson content and become familiar with the material prior to delivering the lesson.

Photocopy the sailboat construction scoresheet located at Annex F for each group.

PRE-LESSON ASSIGNMENT

N/A.

APPROACH

An interactive lecture was chosen for TPs 1–3 to introduce the sails, parts included in the running rigging, parts of the hull and parts of the standing rigging.

An in-class activity was chosen for TP 4 as it is an interactive way to provoke thought, stimulate interest and present the basic sailboat parts and functions.

INTRODUCTION

REVIEW

N/A.

OBJECTIVES

By the end of this lesson the cadet shall be expected to rig a sailboat while identifying and locating the sails, parts included in the running rigging, parts of the hull and parts of the standing rigging.

IMPORTANCE

It is important for the cadets to know the parts of a sailboat as it is a fundamental component of sailing. Quickly identifying the location and function of sails, parts included in the running rigging, parts of the hull and parts on the standing rigging will aid in rigging a sailboat. These skills will also help when communicating with instructors and other sailors while participating in sail training.

Teaching Point 1

Identify the Location and Explain the Functions of the Sails and Parts Included in the Running Rigging

Time: 5 min

Method: Interactive Lecture



Use the type of sailboat the cadets will sail to identify the location of the parts taught in this lesson.



The cadets have been introduced to some of these parts in EO M224.03 (Rig a Sailboat, A-CR-CCP-602/PF-001, Chapter 13, Section 3). Ask the cadets to identify the sails and parts included in the running rigging and write down the responses. Compare the class list to the list below.

SAILS AND PARTS INCLUDED IN THE RUNNING RIGGING

Main Halyard. Control line used to hoist the mainsail and hold it up.

Jib Halyard. Control line used to hoist the jib sail and hold it up.

Boom Vang. Tackle leading downward from the boom which controls the mainsail shape by adjusting the tension on the trailing edge. Boom vang tension will also prevent the boom from slipping off the gooseneck.

Outhaul. Control line that attaches the clew of the mainsail to the boom and tensions the bottom of the mainsail.

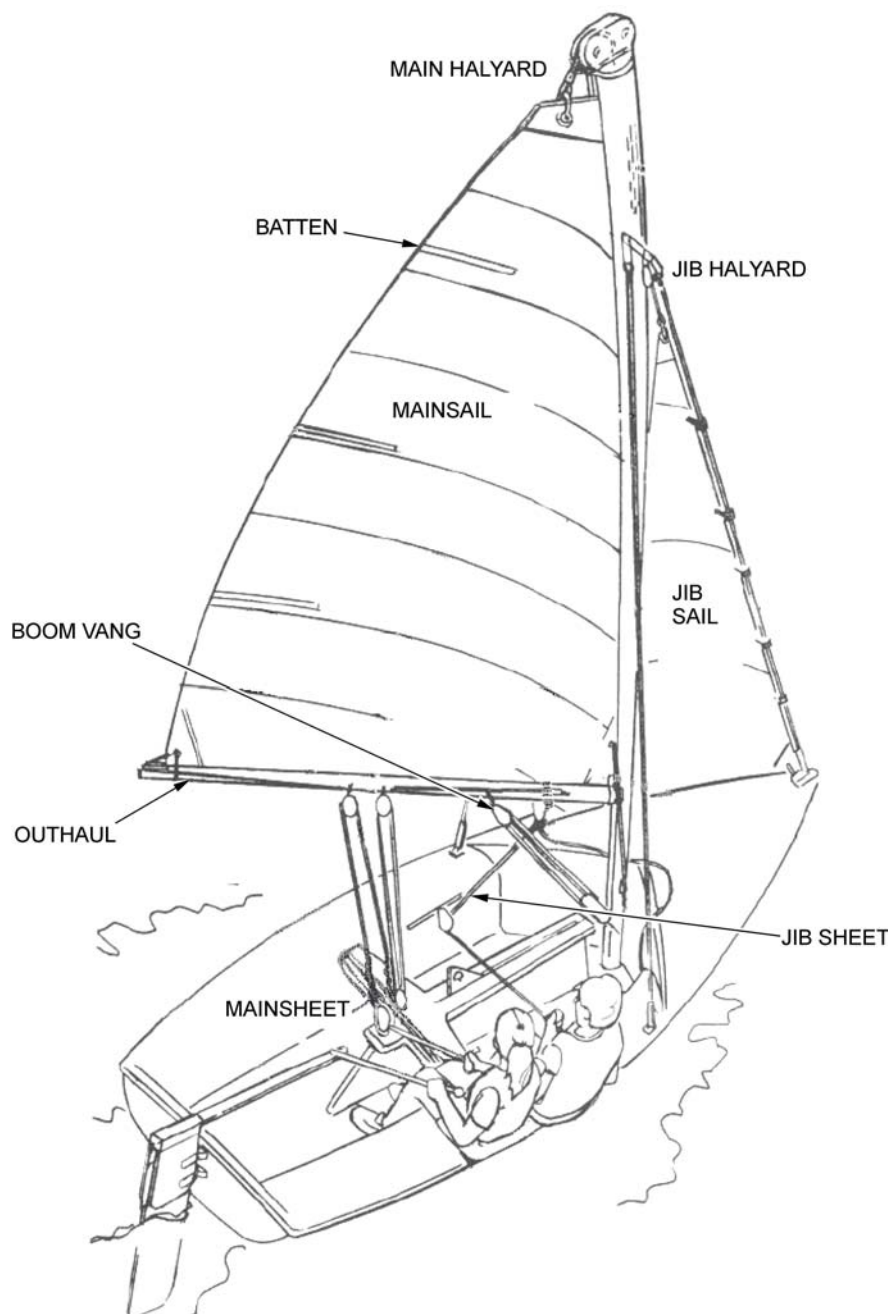
Mainsail. Large sail set behind the mast.

Batten. Stiff wood or plastic strip used to support the trailing edge of a sail.

Jib Sail. Small sail set ahead of the mast.

Mainsheet. Line used to control the mainsail. The mainsheet can be pulled in or eased out to trim the mainsail.

Jib Sheet. Line used to control the jib sail. The jib sheet can be pulled in or eased out to trim the jib sail.



Canadian Yachting Association, White Sail Workbook (Manuscript in preparation)

Figure 15-4-1 Sails and Parts Included in the Running Rigging

CONFIRMATION OF TEACHING POINT 1

QUESTIONS

- Q1. What is the function of the main halyard?
- Q2. To what part of the mainsail is the outhaul attached?
- Q3. What will tightening the boom vang prevent?

ANTICIPATED ANSWERS

- A1. Used to hoist the mainsail and hold it up.
- A2. The clew.
- A3. The boom slipping off the gooseneck.

Teaching Point 2

Identify the Location and Explain the Functions of the Parts of the Hull

Time: 5 min

Method: Interactive Lecture



The cadets have been introduced to some of these parts in EO M224.03 (Rig a Sailboat, A-CR-CCP-602/PF-001, Chapter 13, Section 3). Ask the cadets to identify parts of the hull and write down the responses. Compare the class list to the list below.

PARTS OF THE HULL

Bow. Front of the sailboat.

Stern. Back of the sailboat.

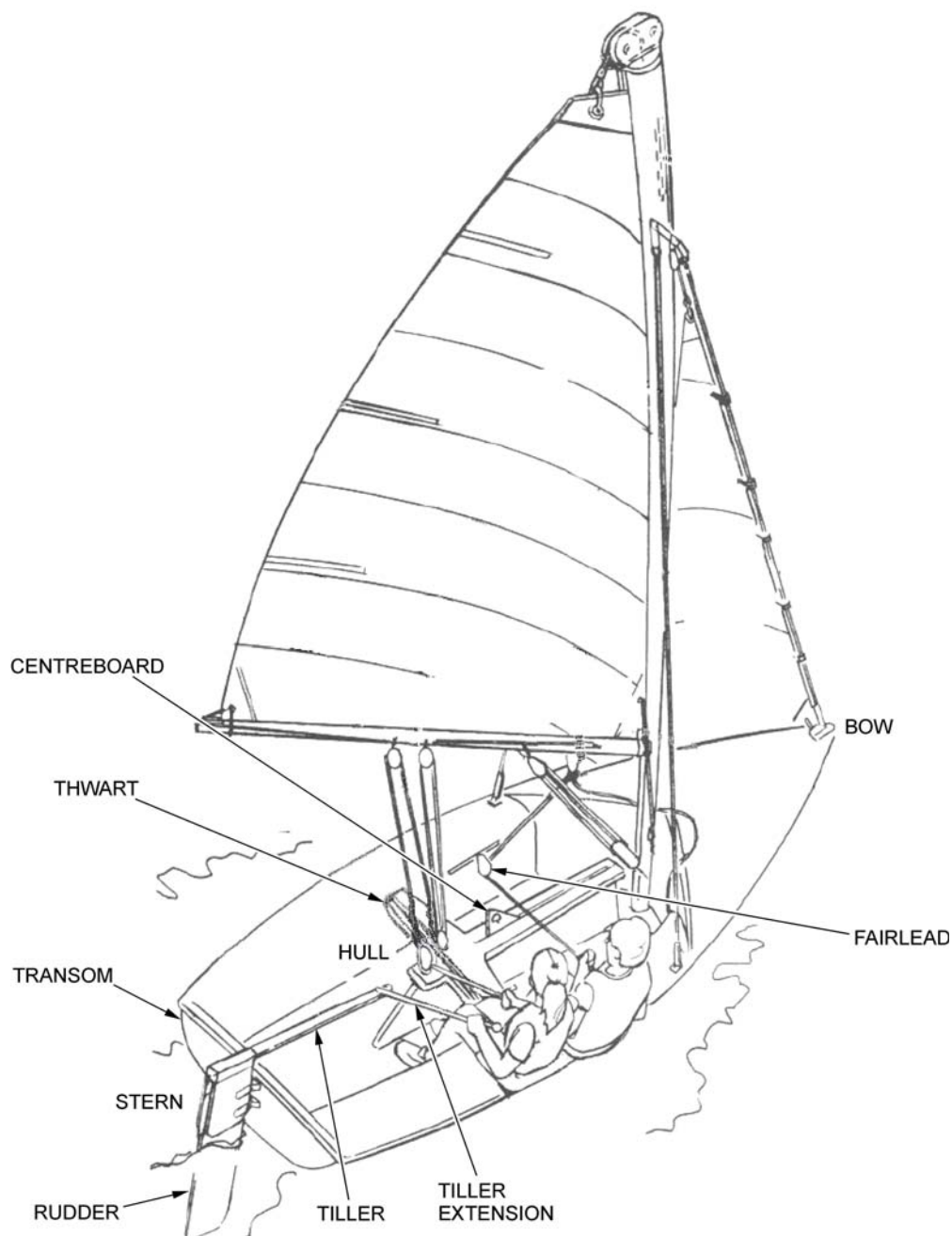
Transom. Flat portion of the hull that spans the stern of the sailboat.

Rudder. Hinged blade mounted on the transom which is used for steering.

Tiller. Handle attached to the top of the rudder which is used to steer the sailboat.

Tiller Extension. Handle attached to the end of the tiller that allows the skipper to sit further ahead and outboard to help stabilize the sailboat.

Fairlead. Ring or U-shaped fitting which guides a control line and helps prevent tangles.

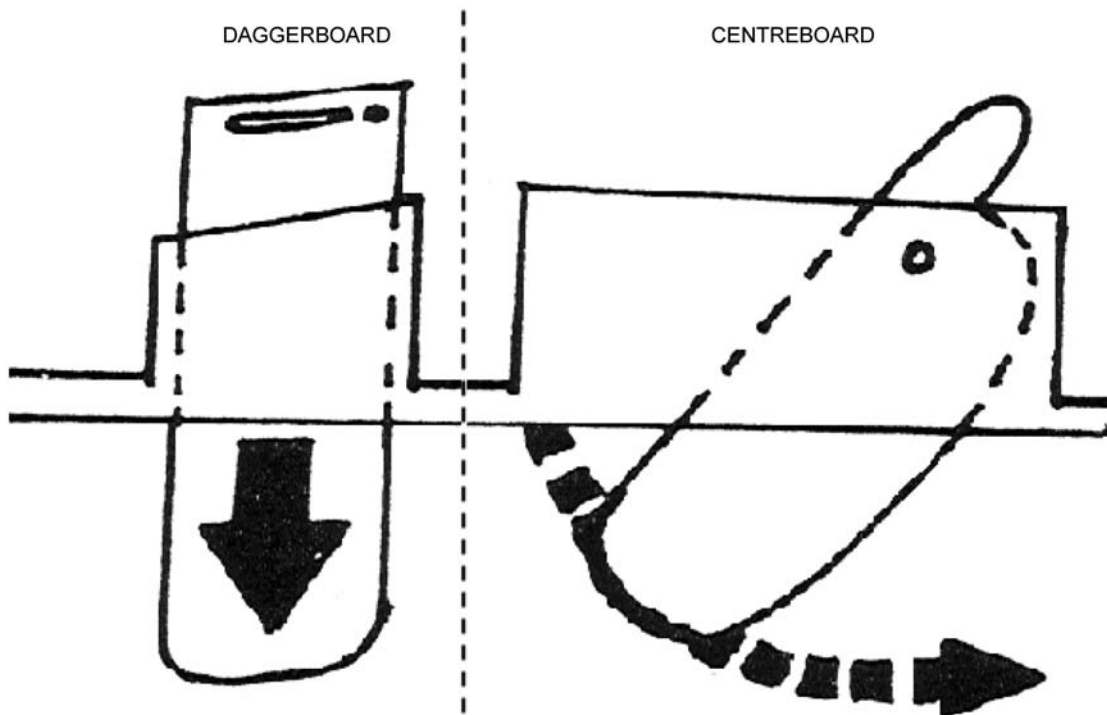


Canadian Yachting Association, White Sail Workbook (Manuscript in preparation)

Figure 15-4-2 Parts of the Hull

Centreboard. A blade of wood, fibreglass or metal fixed to the sailboat that pivots through a slot in the bottom of the sailboat to prevent sideslipping while sailing. It is similar in function to a daggerboard.

Daggerboard. A blade of wood, fibreglass or metal that extends and retracts vertically through a slot in the bottom of the sailboat to prevent sideslipping while sailing. It is similar in function to a centreboard.

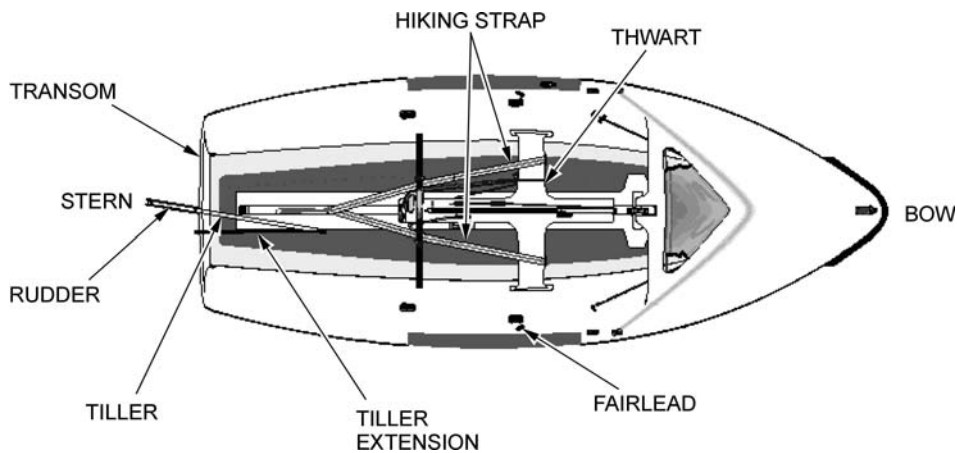


S. Donaldson, Basic Sailing Skills Manual, Canadian Yachting Association (p. 17)

Figure 15-4-3 Daggerboard/Centreboard

Thwart. Supports the top of the centreboard housing and provides a seat.

Hiking Strap. Foot straps which enable the skipper and crew to lean back without falling overboard.



Canadian Yachting Association, Bronze Sail Workbook, Canadian Yachting Association (p. 17)

Figure 15-4-4 Aerial View of the Hull

CONFIRMATION OF TEACHING POINT 2

QUESTIONS

Q1. What is the transom?

- Q2. What is the handle attached to the top of the rudder called?
- Q3. What can the skipper and crew use to lean back without falling overboard?

ANTICIPATED ANSWERS

- A1. Flat portion of the hull that spans the stern of the sailboat.
- A2. Tiller.
- A3. Hiking strap.

Teaching Point 3

Identify the Location and Explain the Functions of the Parts of the Standing Rigging

Time: 5 min

Method: Interactive Lecture



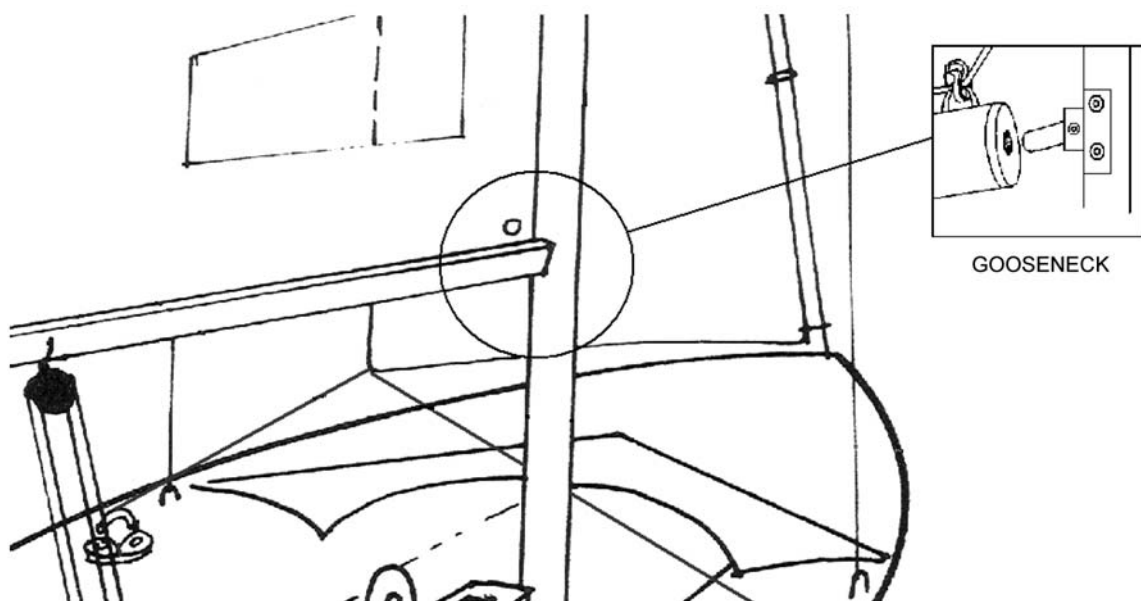
The cadets have been introduced to some of these parts in EO M224.03 (Rig a Sailboat, A-CR-CCP-602/PF-001, Chapter 13, Section 3). Ask the cadets to identify parts of the standing rigging and write down the responses. Compare the class list to the list below.

PARTS OF THE STANDING RIGGING

Mast. Vertical spar that holds up the sails.

Boom. Horizontal spar that supports the bottom of the mainsail.

Gooseneck. Hinged fitting which connects the boom to the mast.



S. Donaldson, Basic Sailing Skills Manual, Canadian Yachting Association (p. 17–18)

Figure 15-4-5 Gooseneck

Cleats. Mechanical device which grips or holds lines.



Canadian Yachting Association, White Sail Workbook (Manuscript in preparation)

Figure 15-4-6 Cam Cleat



Canadian Yachting Association, Bronze Sail Workbook, Canadian Yachting Association (p. 20)

Figure 15-4-7 Clam Cleat



Canadian Yachting Association, Bronze Sail Workbook, Canadian Yachting Association (p. 20)

Figure 15-4-8 Tube Cleat



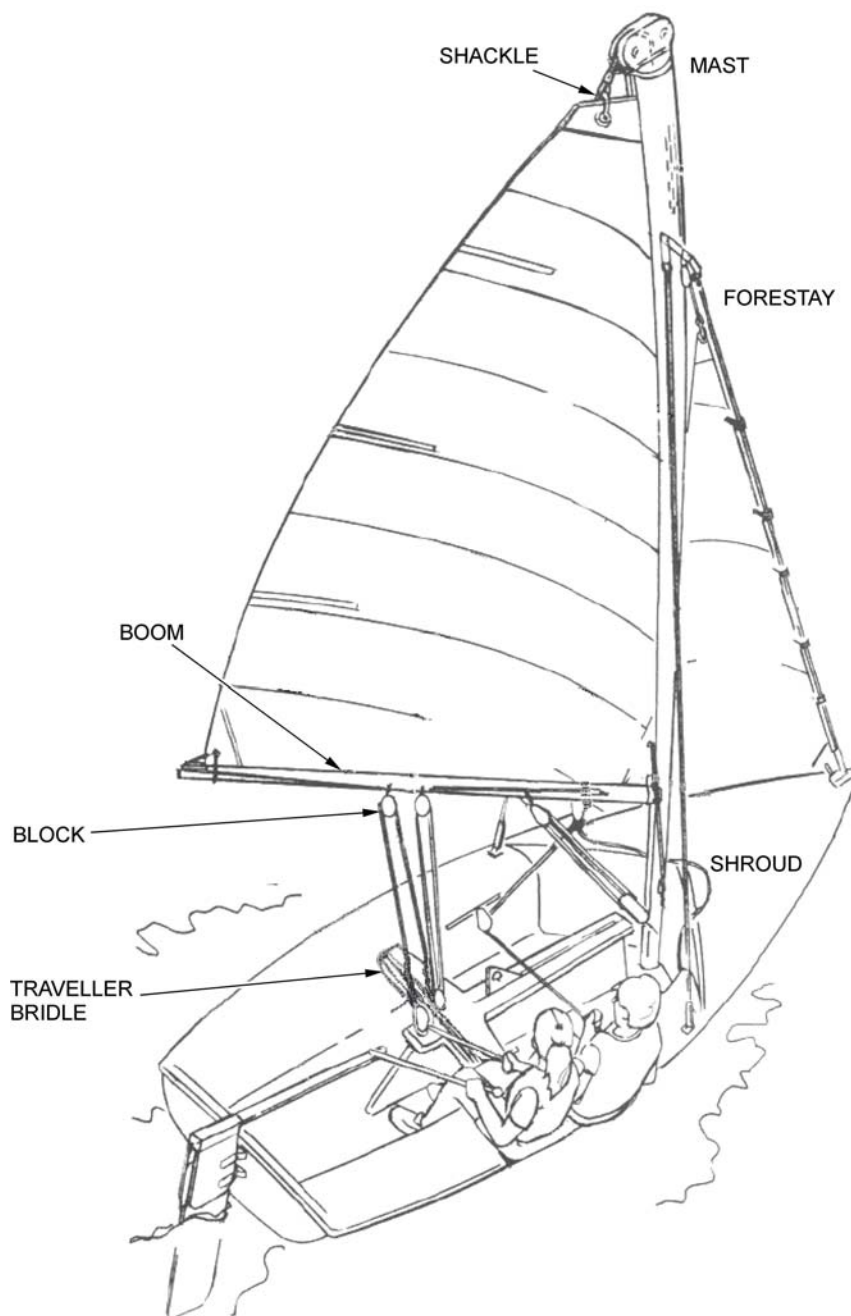
Canadian Yachting Association, Bronze Sail Workbook, Canadian Yachting Association (p. 20)

Figure 15-4-9 Horn Cleat

Traveller/Bridle. A track or rope used to control the side-to-side position of where the mainsheet attaches to the hull.

Forestay. Support wire which prevents the mast from falling backward.

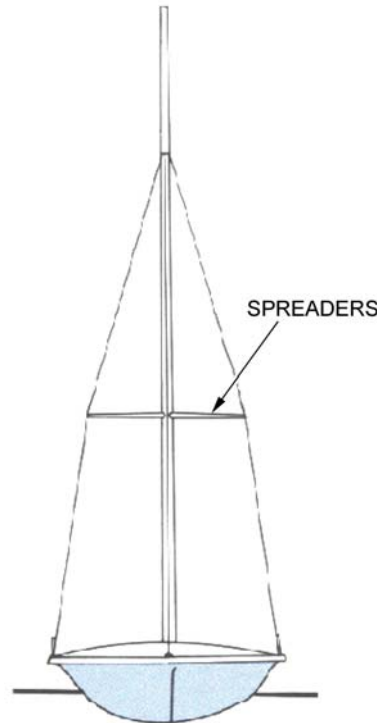
Shrouds. Wire ropes which support the mast from side to side.



Canadian Yachting Association, White Sail Workbook (Manuscript in preparation)

Figure 15-4-10 Parts of Standing Rigging

Spreaders. Short struts projecting from the sides of the mast, used to increase the shroud angles or add support to the middle of the mast.



S. Donaldson, Advanced Sailing Skills Manual, Canadian Yachting Association (p. 39)

Figure 15-4-11 Spreaders

Block. Sailor's term for a pulley, used for reeving control lines.

Shackle. U-shaped metal link that is closed with a removable pin. It is often used to join lines, sails and fittings.

CONFIRMATION OF TEACHING POINT 3

QUESTIONS

- Q1. What is the hinged fitting which links the boom to the mast?
- Q2. Name four types of cleats.
- Q3. What is a block and what is it used for?

ANTICIPATED ANSWERS

- A1. Gooseneck.
- A2. Four types of cleats are:
- cam,
 - clam,
 - tube, and
 - horn.
- A3. Sailor's term for a pulley, used for reeving control lines.

Teaching Point 4**Conduct an Activity Where the Cadets Will Identify the Basic Parts and Functions of a Sailboat**

Time: 10 min

Method: In-Class Activity

ACTIVITY

OBJECTIVE

The objective of this activity is to have the cadets identify the location of the sails, parts included in the running rigging, parts of the hull and parts of the standing rigging.

RESOURCES

Miscellaneous objects found at a sail training facility, which may include:

- Personal floatation device (PFD),
- Spinnaker poles,
- Broomsticks,
- Flutter boards,
- Garbage bags,
- Old sails,
- Battens,
- Sailboat dollies,
- Tires,
- Lengths of line, and
- Sailboat construction scoresheet.

ACTIVITY LAYOUT

N/A.

ACTIVITY INSTRUCTIONS

1. Gather a number of objects commonly found at a sail training facility.
2. Divide the objects into two piles, one for each group.
3. Divide the cadets into two groups.
4. Have each group choose a name.
5. Have each group choose a skipper.
6. Have each group construct a sailboat out of the materials provided.

7. The sailboat must include the following parts:
 - a. hull,
 - b. mast,
 - c. boom,
 - d. mainsail,
 - e. jib sail,
 - f. tiller, and
 - g. rudder.
8. Use the sailboat construction scoresheet, located at Annex F, to evaluate each sailboat. The group that scores the highest is the winner.

SAFETY

This activity must be conducted in a large area that is free of obstructions.

CONFIRMATION OF TEACHING POINT 4

The cadets' participation in the activity will serve as the confirmation from this TP.

END OF LESSON CONFIRMATION

The cadets' constructing a sailboat will serve as the confirmation of this lesson.

CONCLUSION

HOMEWORK/READING/PRACTICE

N/A.

METHOD OF EVALUATION

This EO is assessed IAW A-CR-CCP-603/PG-001, Chapter 3, Annex B, Appendix 7 (324 EC 01).

CLOSING STATEMENT

Identifying the parts of a sailboat is a fundamental component of sailing. Quickly identifying the location and function of sails, parts included in the running rigging, parts of the hull and parts on the standing rigging will aid in rigging a sailboat. These skills will also help when communicating with instructors and other sailors while participating in sail training.

INSTRUCTOR NOTES/REMARKS

This EO shall be conducted on a mock-up or a sailboat alongside.

REFERENCES

- C1-007 (ISBN 0-920232-17-5/A-CR-CCP-009/PT-001) Donaldson, S. (2001). *Basic Sailing Skills*. Kingston, ON: Canadian Yachting Association.

- C1-008 Canadian Yachting Association. (2006). *Canadian Yachting Association White Sail II Practical Skills Checklist*. Retrieved October 5, 2007, from <http://www.sailing.ca/cbet/content/WIIChecklist.doc>.
- C1-099 (ISBN 0-920232-26-4) Canadian Yachting Association. (2002). *Canadian Yachting Association Sailing Logbook*. Kingston, ON: Canadian Yachting Association.
- C1-106 (ISBN 0-920232-19-1) Donaldson, S. (2001). *Advanced Sailing Skills*. Kingston, ON: Canadian Yachting Association.

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ROYAL CANADIAN SEA CADETS

PHASE THREE

INSTRUCTIONAL GUIDE



SECTION 5

EO M324.05 – DOCK A SAILBOAT

Total Time:

90 min

PREPARATION

PRE-LESSON INSTRUCTIONS

Resources needed for the delivery of this lesson are listed in the lesson specification located in A-CR-CCP-603/PG-001, Chapter 4. Specific uses for said resources are identified throughout the instructional guide within the TP for which they are required.

Review the lesson content and become familiar with the material prior to delivering the lesson.

Prepare the briefings located at Annexes G and H.

PRE-LESSON ASSIGNMENT

N/A.

APPROACH

An interactive lecture was chosen for TPs 1 and 2 to give direction on procedures to use when docking a sailboat in various wind directions, prior to practical application.

A practical activity was chosen for TP 3 as it is an interactive way to allow the cadets to experience docking a sailboat in a safe and controlled environment. This activity contributes to the development of boat handling skills in a fun and challenging setting.

INTRODUCTION

REVIEW

N/A.

OBJECTIVES

By the end of this lesson the cadet shall have left and returned to a dock.

IMPORTANCE

It is important for cadets to know how to leave and return to a dock in order to prevent boat damage and to reach courses quickly, increasing water time.

Teaching Point 1**Explain the Procedure for Leaving a Dock**

Time: 10 min

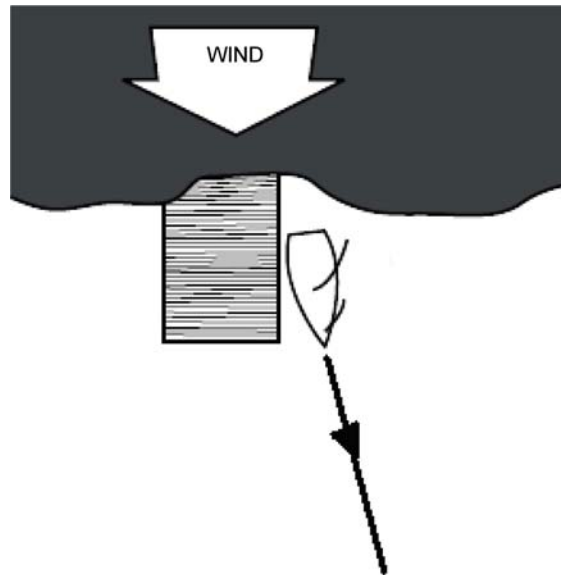
Method: Interactive Lecture

When leaving a dock the skipper must determine a safe path to ensure no damage to the sailboat will occur. The way a sailboat will leave a dock will be determined by the orientation of the dock to the direction of the wind.

LEAVING THE LEEWARD SIDE OF A DOCK

When leaving the leeward side of a dock, use the following steps:

1. **Rig the Sailboat.** Lower the centreboard/daggerboard, raise the sails and attach the rudder. Ensure the sails remain loose until ready to leave the dock.
2. **Pull In on the Painter.** The crew will pull in on the painter to bring the sailboat closer to the dock.
3. **Untie the Painter.** The crew will untie the painter from the dock when the skipper is ready.
4. **Push Away From a Dock.** The crew will push the sailboat away from the dock to prevent the sailboat from touching it. The skipper will take control of the tiller.
5. **Sheet In.** The skipper and crew will begin to sheet in the sails, speeding up as they sail away.



Canadian Yachting Association, White Sail Workbook (Manuscript in preparation)

Figure 15-5-1 Leaving the Leeward Side of a Dock

LEAVING THE WINDWARD SIDE OF A DOCK

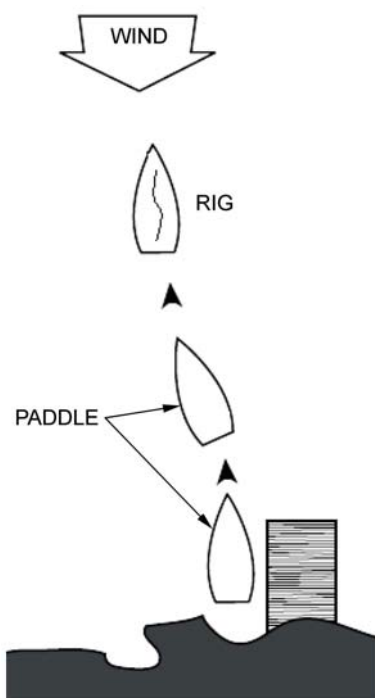
When leaving the windward side of a dock use the following steps:

1. **Pull In on the Painter.** The crew will pull the painter to bring the sailboat closer to the dock.
2. **Untie the Painter.** The crew will untie the painter from the dock when the skipper is ready.
3. **Push Away From the Dock.** The crew will push the sailboat away from the dock to prevent the sailboat from touching it.
4. **Paddle.** The skipper/crew will paddle away from the dock to a safe distance.

5. **Point the Bow Into Irons.** Point the bow into irons to ensure the sails do not fill with wind while rigging.
6. **Rig the Sailboat.** Lower the centreboard/daggerboard, raise the sails and attach the rudder.

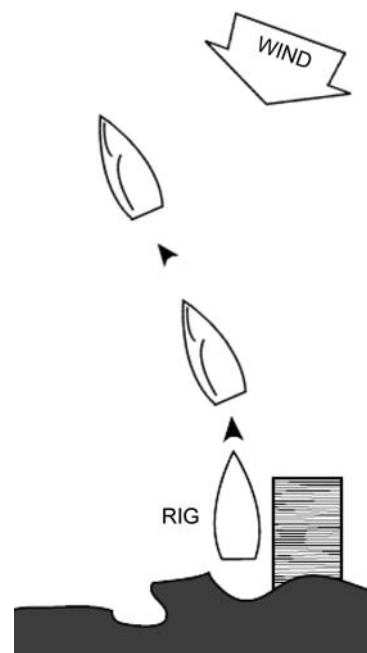


If the wind direction is not directly windward of the dock, sailboats may be able to bear away and sail away from the dock under sail. This does and not require paddling (as illustrated in Figure 15-5-3).



Canadian Yachting Association, *White Sail Workbook (Manuscript in preparation)*

Figure 15-5-2 Directly Windward



Canadian Yachting Association, *White Sail Workbook (Manuscript in preparation)*

Figure 15-5-3 Not Directly Windward

CONFIRMATION OF TEACHING POINT 1

QUESTIONS

- Q1. What is the first step when leaving the leeward side of a dock?
- Q2. Why does the crew push off the dock when leaving?
- Q3. Before rigging, where should the sailboat be pointed when leaving the windward side of a dock?

ANTICIPATED ANSWERS

- A1. Rig the sailboat.
- A2. To prevent the sailboat from touching it.
- A3. Into irons.

Teaching Point 2**Explain the Procedure for Returning to a Dock**

Time: 10 min

Method: Interactive Lecture



Approaches will be slow to ensure the crew will not be injured when touching the dock upon arrival.

If the sailboat is sailing too fast, the skipper will turn around and make another approach.

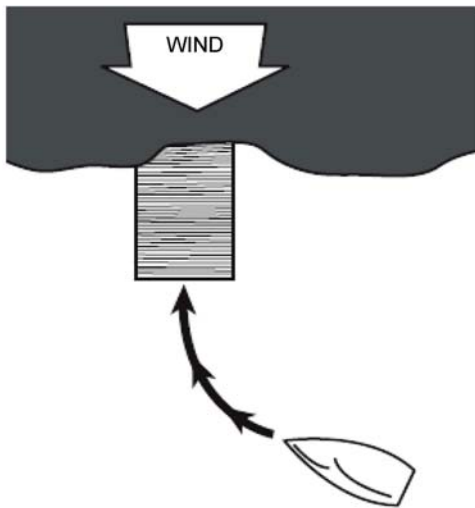
RETURNING TO THE LEEWARD SIDE OF A DOCK

When returning to the leeward side of a dock use the following steps:

1. **Determine the Leeward Side.** The skipper must determine the wind orientation to the dock in order to position the sailboat for the approach.
2. **Position the Sailboat for the J-Approach.** The skipper positions the sailboat away from the dock to make an angle of approach of approximately 45 degrees.
3. **Approach a Dock.** The speed of the sailboat will be monitored as it sails towards the dock. Sails will be eased out in order to spill the air and slow the sailboat. When the sailboat is approximately two boat lengths from the dock, begin to slowly head into irons.
4. **Secure the Painter to a Dock.** The crew will tie the painter to the dock. Once secured to the dock, lower the sails immediately.

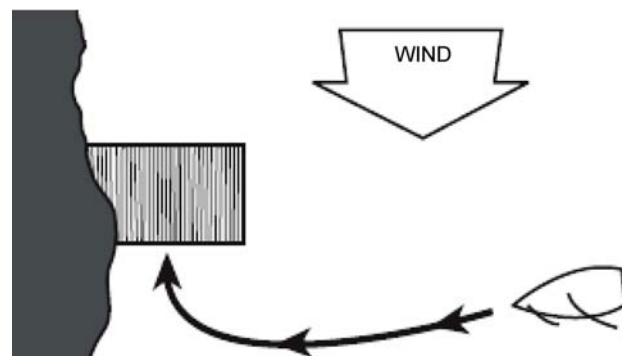


The approach angle will differ depending on the orientation of the dock to the wind direction (as illustrated in Figures 15-5-4 and 15-5-5).



Canadian Yachting Association, White
Sail Workbook (Manuscript in preparation)

Figure 15-5-4 Leeward Side of a Dock (180 Degrees)



Canadian Yachting Association, White
Sail Workbook (Manuscript in preparation)

Figure 15-5-5 Returning to the
Leeward Side of a Dock (90 Degrees)

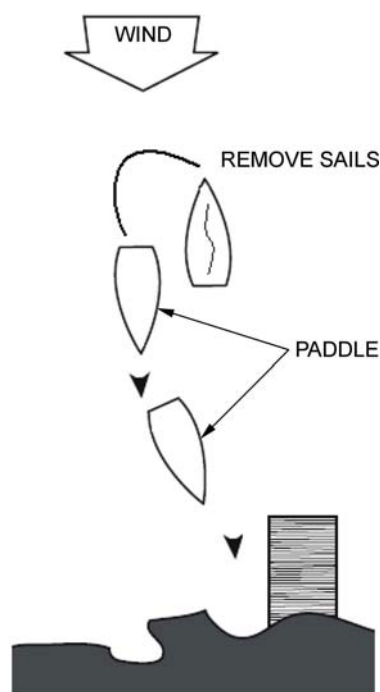
RETURNING TO THE WINDWARD SIDE OF A DOCK

When returning to the windward side of a dock use the following steps:

1. **Determine the Windward Side.** The skipper must determine the wind orientation to the dock in order to position the sailboat for the approach.
2. **Sail to a Point Upwind of the Dock.** The skipper sails upwind of the dock.
3. **Point the Bow Into Irons.** The skipper turns the bow into irons allowing the sails to luff.
4. **Lower the Sails.** Lower both sails in preparation for paddling the sailboat to the dock.
5. **Paddle.** Paddle the sailboat to the dock.
6. **Secure the Painter to a Dock.** The crew will tie the painter to the dock.

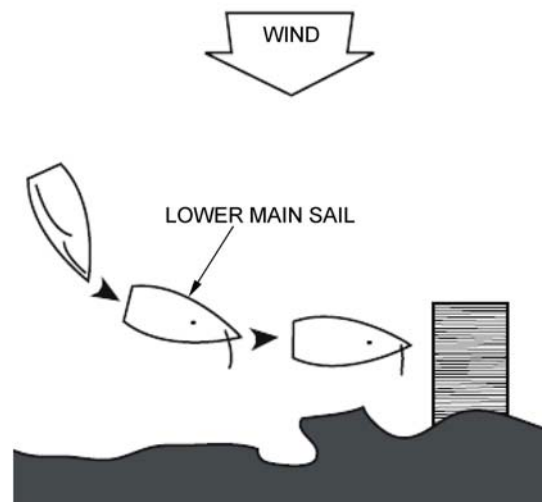


If the winds are not strong, the sailboats can sail to the dock using only the jib sail instead of paddling (as illustrated in Figure 15-5-7).



Canadian Yachting Association, White
Sail Workbook (Manuscript in preparation)

Figure 15-5-6 Windward Side of a Dock (Paddling)



Canadian Yachting Association, White
Sail Workbook (Manuscript in preparation)

Figure 15-5-7 Windward
Side of a Dock (Jib Sail Only)

CONFIRMATION OF TEACHING POINT 2

QUESTIONS

- Q1. What is the first step when returning to the leeward side of a dock?
- Q2. What is the name of the approach used when approaching the leeward side of a dock?

Q3. Aside from paddling, what other option can you use to get to the windward side of the dock?

ANTICIPATED ANSWERS

- A1. Determine the leeward side.
- A2. J-approach.
- A3. Sail using only the jib sail.

Teaching Point 3

Conduct Activities Where the Cadet Will Practice Leaving and Returning to a Dock

Time: 60 min

Method: Practical Activity

ACTIVITY 1

Time: 20 min

OBJECTIVE

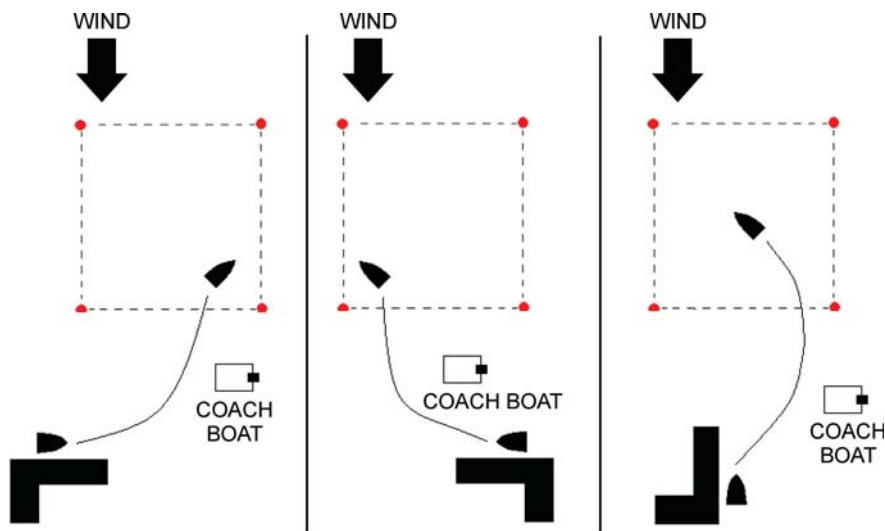
The objective of this activity is to have the cadets practice leaving a dock.

RESOURCES

- Fully equipped sailboat,
- Helmet (one per cadet),
- Personal floatation device (PFD) (one per cadet),
- Coach boat (minimum of one per eight sailboats),
- Four buoys with lines and weights,
- Paddle (one per sailboat), and
- Whistle.

ACTIVITY LAYOUT

The coach boat operator will set buoys in a square formation (as illustrated in Figure 15-5-8). The orientation of the dock to the square will depend on the sail centre. Lay the buoys for the square as close to the dock as possible and be sure the square is large enough to prevent collisions.



Director Cadets 3, 2007, Ottawa, ON: Department of National Defence

Figure 15-5-8 A Safe Departure



Cadets will have an opportunity to practice this skill in various wind directions and speeds throughout the sail weekend(s).

ACTIVITY INSTRUCTIONS

1. Conduct the briefing for Drill 1, located at Annex G, prior to conducting this activity.
2. While all the sailboats are tied to the dock, quickly restate the drill, its objective and key points.
3. Using a whistle, indicate when a sailboat is permitted to leave the dock.
4. The coach boat shall focus on the following:
 - a. **Course Control.** Have the skipper maintain a straight course by asking the skipper to place the tiller in the middle of the sailboat. Have the crew push the boat off the dock, preventing it from hitting the dock along the way.
 - b. **Sail Control.** Ensure the sails remain loose until ready to leave the dock. Have the skipper and crew slowly sheet in the sails to gain speed as they sail away from the dock.
5. When the sailboat arrives at the square, return to the dock and indicate that the next sailboat can depart from the dock.
6. While the sailboats are inside the square, have the cadets try to remain in the upper section of the square, away from the dock, to allow room for other sailboats leaving the dock.
7. Once all the sailboats have left the dock, switch the skipper and crew. Have the sailboats return to the dock.
8. Repeat Steps 3. to 6.
9. When the drill is completed, have the sailboats sail into a control position and quickly debrief the cadets on the drill conducted before beginning the next drill.



COMMON ERRORS

It is common for novice sailors to make the following errors when developing these basic skills:

- course control, to include hitting the hull against the dock; and
- sail control, to include:
 - not knowing the wind direction when departing; and
 - gaining speed too quickly.



If an alternative drill is used, focus on the key points outlined in the briefing, located at Annex G.

SAFETY

- Ensure a coach boat is present at all times.
- Ensure the size of the course is large enough to prevent collisions.
- Ensure A-CR-CCP-030/PT-001 is adhered to throughout the activity.

ACTIVITY 2

Time: 40 min

OBJECTIVE

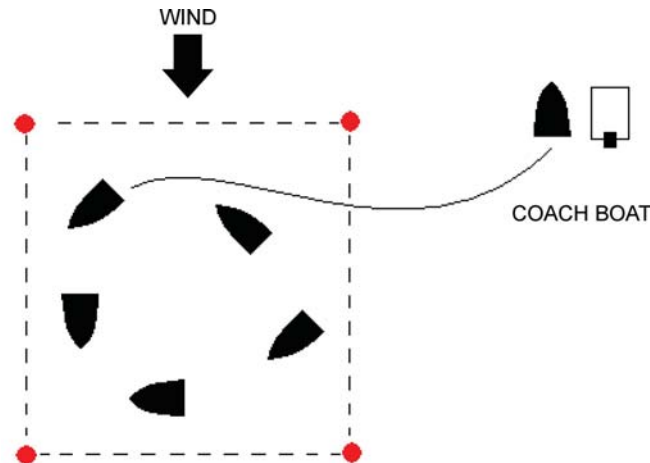
The objective of this activity is to have the cadets practice returning to a dock.

RESOURCES

- Fully equipped sailboat,
- Helmet (one per cadet),
- PFD (one per cadet),
- Coach boat (minimum of one per eight sailboats),
- Four buoys with lines and weights,
- Paddle (one per sailboat), and
- Whistle.

ACTIVITY LAYOUT

The coach boat operator will set buoys in a square formation (as illustrated in Figure 15-5-9).



Director Cadets 3, 2007, Ottawa, ON: Department of National Defence

Figure 15-5-9 A Cautious Approach

ACTIVITY INSTRUCTIONS

1. Conduct the briefing for Drill 2, located at Annex H, prior to conducting this activity.
2. Have the sailboats sail into a control position and restate the drill, its objectives and key points.
3. Have the sailboats stay within the square outlined by the marks.
4. While the sailboats are inside the square, have the cadets focus on course control and crew lookout.
5. The coach boat shall have each sailboat, one at a time, leave the square and dock alongside, focusing on the following:
 - a. **Course.** With the coach boat acting as a dock, have each sailboat sail and attempt the J-approach alongside. Have the skipper head the sailboat into irons just before reaching the coach boat. When practicing returning to a windward side of the dock, ensure the skipper heads into irons before de-rigging the sailboat.
 - b. **Sail control.** Have the skipper and crew sheet out the mainsail as they get closer to the coach boat. Boat speed should be slow and steady.



If the gunwale of the coach boat is not made of rubber material, be sure to use fenders to protect the hulls of both the sailboat and the coach boat.

6. When the cadets have successfully docked alongside the coach boat, have them return to the square and choose another sailboat. Ensure any sailboat that does not complete it correctly is provided another opportunity to complete this drill.
7. Once all the sailboats have docked alongside the coach boat, switch the skipper and crew.
8. Repeat Steps 3. to 6.
9. When the drill is completed, have the sailboats sail into a control position and quickly debrief the cadets on the drill conducted before beginning the next drill.



COMMON ERRORS

It is common for novice sailors to make the following errors when developing these basic skills:

- course control, to include:
 - incorrect angle of approach;
 - the sailboat does not head up into irons; and
- sail control, to include:
 - the sailboat speed is too fast; and
 - the sails are not luffing.



If an alternative drill is used, focus on the key points outlined in the briefing, located at Annex H.

SAFETY

- Ensure a coach boat is present at all times.
- Ensure the size of the course is large enough to prevent collisions.
- Ensure A-CR-CCP-030/PT-001 is adhered to throughout the activity.



Practice different approaches by orienting the coach boat differently to the wind.

When the cadets can safely dock alongside the coach boat, the same drill can be conducted using the actual dock.

CONFIRMATION OF TEACHING POINT 3

The cadets' participation in the activities will serve as the confirmation of this TP.

END OF LESSON CONFIRMATION

The cadets' leaving and returning to a dock will serve as the confirmation of this lesson.

CONCLUSION

HOMEWORK/READING/PRACTICE

N/A.

METHOD OF EVALUATION

This EO is assessed IAW A-CR-CCP-603/PG-001, Chapter 3, Annex B, Appendix 10 (324 PC).

CLOSING STATEMENT

Leaving and returning to a dock is a fundamental skill of sailing. This skill will be practiced throughout the sail weekend(s). Once perfected, this skill will prevent unnecessary boat damage allowing for more time to be spent developing other sailing skills.

INSTRUCTOR NOTES/REMARKS

The cadets will have several opportunities to practice docking a sailboat throughout the sail weekend(s).

If the cadets have difficulty performing a skill, the coach should focus more time on that skill.

REFERENCES

- C1-007 (ISBN 0-920232-17-5/A-CR-CCP-009/PT-001) Donaldson, S. (2001). *Basic Sailing Skills*. Kingston, ON: Canadian Yachting Association.
- C1-008 Canadian Yachting Association. (2006). *Canadian Yachting Association White Sail Level II Practical Skills Checklist*. Retrieved April 3, 2006, from <http://www.sailing.ca/cbet/content/WIIChecklist.doc>.
- C1-099 (ISBN 0-920232-26-4) Canadian Yachting Association. (2003). *Canadian Yachting Association Sailing Logbook*. Kingston, ON: Canadian Yachting Association.

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ROYAL CANADIAN SEA CADETS

PHASE THREE

INSTRUCTIONAL GUIDE



SECTION 6

EO M324.06 – BEACH A SAILBOAT

Total Time:

90 min

PREPARATION

PRE-LESSON INSTRUCTIONS

Resources needed for the delivery of this lesson are listed in the lesson specification located in A-CR-CCP-603/PG-001, Chapter 4. Specific uses for said resources are identified throughout the instructional guide within the TP for which they are required.

Review the lesson content and become familiar with the material prior to delivering the lesson.

Prepare the briefings located at Annexes I to K.

PRE-LESSON ASSIGNMENT

N/A.

APPROACH

An interactive lecture was chosen for TPs 1 and 2 to give direction on procedures for beaching a sailboat in various wind directions, prior to practical application.

A practical activity was chosen for TP 3 as it is an interactive way to allow the cadets to experience beaching a sailboat in a safe and controlled environment. This activity contributes to the development of boat handling skills in a fun and challenging setting.

INTRODUCTION

REVIEW

N/A.

OBJECTIVES

By the end of this lesson the cadet shall have left and returned to a beach.

IMPORTANCE

It is important for cadets to learn how to leave and return to a beach in order to prevent unnecessary sailboat damage and to maximize the amount of training time on the water. Leaving and returning to a beach is common when sailing and should be a skill developed by all sailors.

Teaching Point 1**Explain the Procedure for Leaving a Beach**

Time: 5 min

Method: Interactive Lecture

LEAVING A BEACH WITH AN OFFSHORE WIND

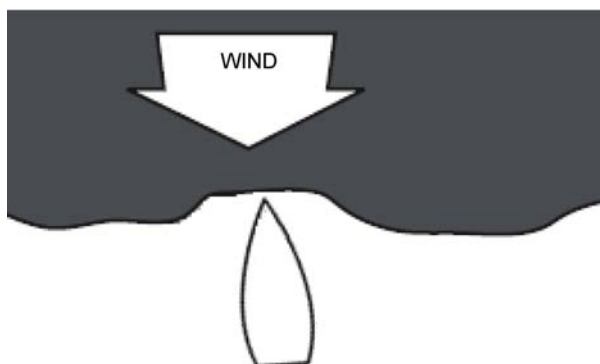
When leaving a beach with an offshore wind, use the following steps:

1. **Rig.** With the bow pointed into irons, raise the sails and attach the rudder.
2. **Ease the Sheets.** Ensure the sheets are loose.
3. **Lower the Centreboard/Daggerboard Halfway.** Depending on the depth of water the centreboard/daggerboard may not be able to be lowered all the way. Ensure some of the centreboard/daggerboard is lowered to provide stability when leaving the beach.
4. **Lower the Rudder Blade Halfway.** Depending on the depth of water the rudder may not be able to be lowered all the way. Ensure some of the rudder is lowered to provide steerage when leaving the beach.
5. **Steady the Sailboat.** The crew shall steady the sailboat for the skipper to enter.
6. **Skipper Climbs In.** The skipper climbs in the sailboat. The skipper takes position in the cockpit of the sailboat.
7. **Turn the Sailboat Sideways.** The crew turns the sailboat sideways to the direction of the wind.
8. **Crew Climbs In.** The crew quickly climbs in the sailboat, taking position on the jib sheets.
9. **Sheet In.** Both the skipper and crew begin to sheet in the sails, gradually gaining speed.
10. **Set the Fastest Course to Deeper Water.** The skipper steers a course to the deepest water and lowers the centreboard/daggerboard and rudder blade all the way.



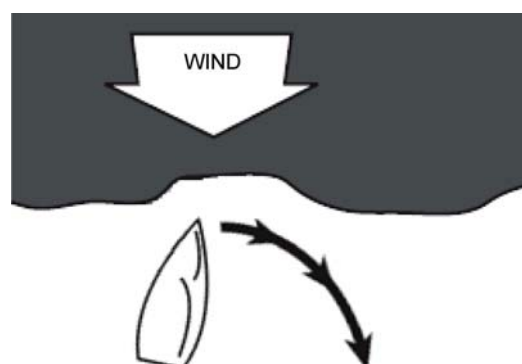
The centreboard/daggerboard and rudder blade should be lowered at the earliest opportunity.

When using a dolly, the sailboat can be partly rigged prior to placing the sailboat in the water.



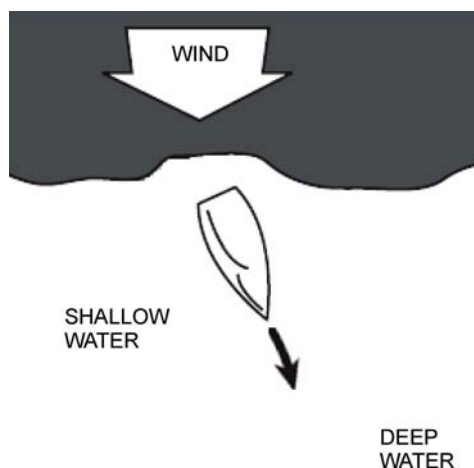
Canadian Yachting Association, *White Sail Workbook (Manuscript in preparation)*

Figure 15-6-1 Leaving a Beach With an Offshore Wind – Steps 1–6



Canadian Yachting Association, *White Sail Workbook (Manuscript in preparation)*

Figure 15-6-2 Leaving a Beach With an Offshore Wind – Steps 7–9



Canadian Yachting Association, *White Sail Workbook (Manuscript in preparation)*

Figure 15-6-3 Leaving a Beach With an Offshore Wind – Step 10

LEAVING A BEACH WITH AN ONSHORE WIND

When leaving a beach with an onshore wind, use the following steps:

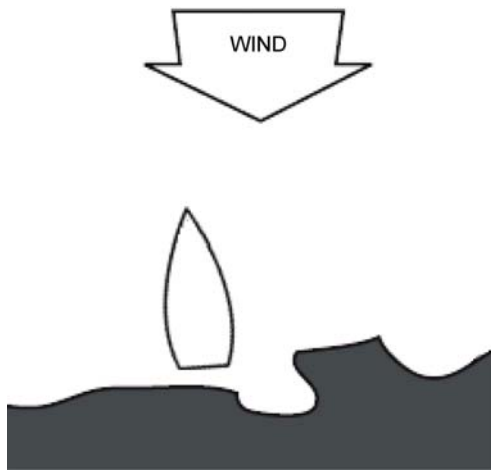
1. **Rig.** With the bow pointed into irons, raise the sails and attach the rudder.
2. **Ease the Sheets.** Ensure the sheets are loose.
3. **Lower the Centreboard/Daggerboard Halfway.** Depending on the depth of water the centreboard/daggerboard may not be able to be lowered all the way. Ensure some of the centreboard/daggerboard is lowered to provide stability when leaving the beach.
4. **Lower the Rudder Blade Halfway.** Depending on the depth of water the rudder may not be able to be lowered all the way. Ensure some of the rudder is lowered to provide steerage when leaving the beach.
5. **Turn the Sailboat Onto the Desired Tack.** Before climbing in the sailboat, point the bow of the sailboat onto the desired tack, heading to deepest water as soon as possible.

6. **Push Off the Beach.** When the skipper and crew are climbing in they will push the sailboat away from the beach.
7. **Skipper and Crew Climb In Quickly.** The skipper and crew must quickly climb in the sailboat and take position on the tiller, mainsheet and jib sail.
8. **Sheet In.** The skipper and crew begin to sheet in the sails, gradually gaining speed.
9. **Set the Fastest Course to Deeper Water.** The skipper steers a course to the deepest water and lowers the centreboard/daggerboard and rudder blade all the way as soon as possible.



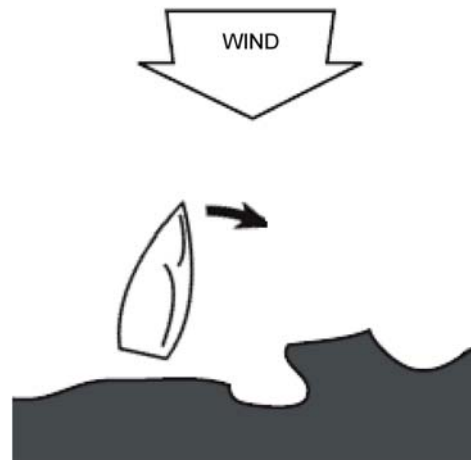
The centreboard/daggerboard and rudder blade should be lowered at the earliest opportunity.

When using a dolly, the sailboat can be partly rigged prior to placing the sailboat in the water.



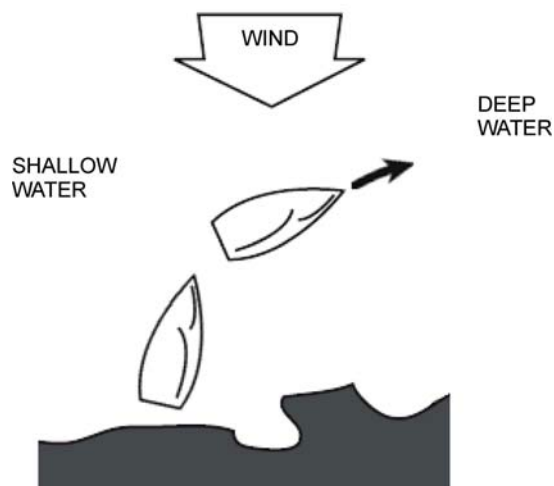
Canadian Yachting Association, *White Sail Workbook (Manuscript in preparation)*

Figure 15-6-4 Leaving a Beach With an Onshore Wind – Steps 1–4



Canadian Yachting Association, *White Sail Workbook (Manuscript in preparation)*

Figure 15-6-5 Leaving a Beach With an Onshore Wind – Steps 5–8



Canadian Yachting Association, *White Sail Workbook* (Manuscript in preparation)

Figure 15-6-6 Leaving a Beach With an Onshore Wind – Step 9

CONFIRMATION OF TEACHING POINT 1

QUESTIONS

- Q1. When rigging a sailboat on a beach what must you ensure?
- Q2. When should the centreboard/daggerboard be lowered when leaving a beach?
- Q3. What is the last step when leaving a beach?

ANTICIPATED ANSWERS

- A1. The sailboat must be pointed into irons.
- A2. At the earliest opportunity.
- A3. Setting the fastest course to deeper water.

Teaching Point 2

Explain the Procedure for Returning to a Beach

Time: 10 min

Method: Interactive Lecture



Approaches should be slow enough to ensure the crew will not be injured when exiting the sailboat upon reaching the beach.

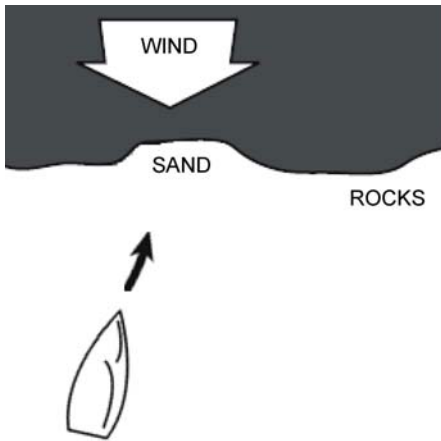
If the sailboat is sailing too fast, the skipper should turn around and make another approach.

RETURNING TO A BEACH WITH AN OFFSHORE WIND

When returning to a beach with an offshore wind, use the following steps:

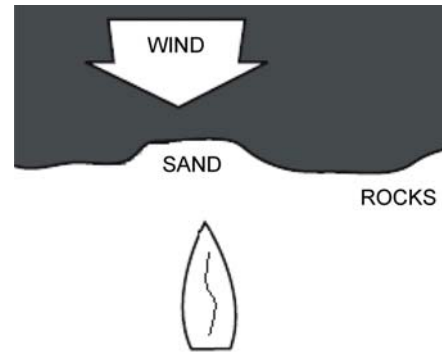
1. **Select an Approach.** The skipper must decide where to land on the beach and the approach to be made. The location should be free of rocks, shoals or any other geographical hazard.

2. **Sail Towards the Beach.** The skipper steers a course to the beach which will place the sailboat in the desired location.
3. **Luff the Sails.** The skipper and crew will begin to ease the sheets, slowing down the sailboat.
4. **Raise the Centreboard/Daggerboard.** To prevent damage to the centreboard/daggerboard, the crew should raise it as they get closer to the beach.
5. **Raise the Rudder Blade.** To prevent damage to the rudder blade the skipper should raise it as they get closer to the beach.
6. **Crew Exits the Sailboat.** The crew will exit the sailboat just before the hull reaches the beach.
7. **Skipper Exits the Sailboat.** The skipper will exit the sailboat assisting the crew.
8. **Lower the Sails.** Lower the mainsail and jib sail as soon as possible.
9. **Remove the Sailboat From the Water.** The skipper and crew work together to remove the sailboat from the water.



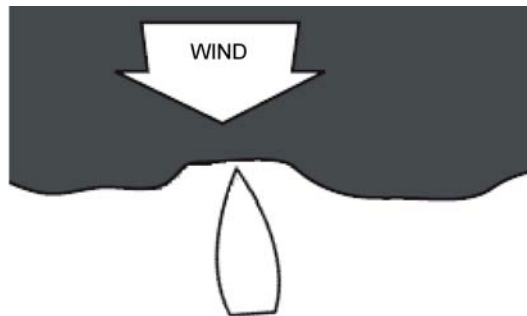
Canadian Yachting Association, White Sail Workbook (Manuscript in preparation)

Figure 15-6-7 Returning to a Beach With an Offshore Wind – Steps 1 and 2



Canadian Yachting Association, White Sail Workbook (Manuscript in preparation)

Figure 15-6-8 Returning to a Beach With an Offshore Wind – Steps 3–5



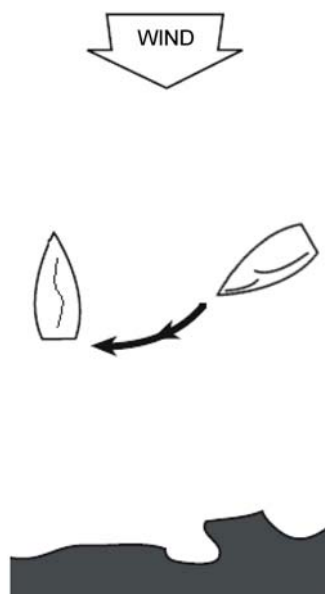
Canadian Yachting Association, White Sail Workbook (Manuscript in preparation)

Figure 15-6-9 Returning to a Beach With an Offshore Wind – Steps 6–8

RETURNING TO A BEACH WITH AN ONSHORE WIND

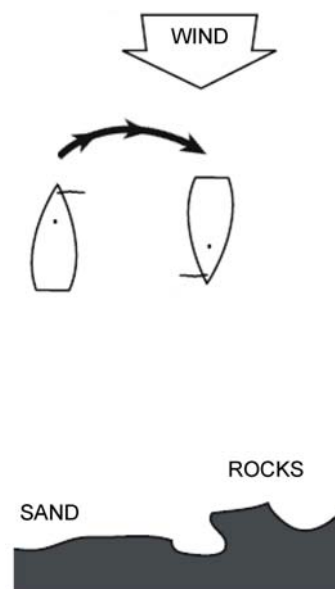
When returning to a beach with an onshore wind, use the following steps:

1. **Select an Approach.** The skipper must decide where to land on the beach and the approach to be made. The location should be free of rocks, shoals or any other geographical hazard.
2. **Point the Sailboat Into Irons.** The skipper shall point the bow of the sailboat into irons at a safe distance away from the beach.
3. **Lower the Mainsail.** Lower only the mainsail.
4. **Sail Towards the Beach.** Using only the jib sail, the skipper shall bear away and steer a course to the beach at a slow and steady speed.
5. **Raise the Centreboard/Daggerboard.** To prevent damage to the centreboard/daggerboard, the crew should raise it as they get closer to the beach.
6. **Raise the Rudder Blade.** To prevent damage to the rudder blade the skipper should raise it as they get closer to the beach.
7. **Crew Exits the Sailboat.** The crew will exit the sailboat just before the hull reaches the beach.
8. **Skipper Exits the Sailboat.** The skipper will exit the sailboat assisting the crew.
9. **Lower the Jib Sail.** Lower the jib sail as soon as possible.
10. **Remove the Sailboat From the Water.** The skipper and crew work together to remove the sailboat from the water.



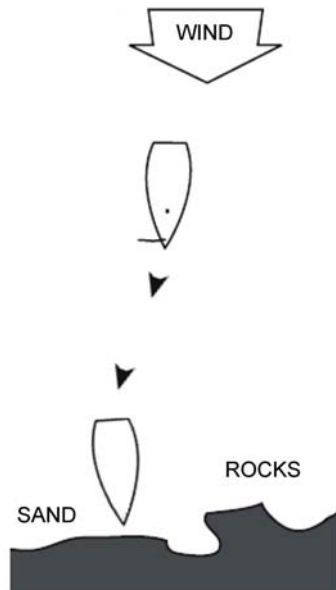
Canadian Yachting Association, *White Sail Workbook (Manuscript in preparation)*

Figure 15-6-10 Returning to a Beach With an Onshore Wind – Steps 1 and 2



Canadian Yachting Association, *White Sail Workbook (Manuscript in preparation)*

Figure 15-6-11 Returning to a Beach With an Onshore Wind – Steps 3 and 4



Canadian Yachting Association, White Sail Workbook (Manuscript in preparation)

Figure 15-6-12 Returning to a Beach With an Onshore Wind – Steps 5–10

CONFIRMATION OF TEACHING POINT 2

QUESTIONS

- Q1. What must the skipper consider when selecting a location on a beach?
- Q2. Who is first to exit the sailboat when returning to a beach?
- Q3. Under what wind condition should you lower your mainsail when returning to a beach?

ANTICIPATED ANSWERS

- A1. The location should be free of rocks, shoals and other geographical hazards.
- A2. The crew.
- A3. When returning to a beach with an onshore wind.

Teaching Point 3

Conduct Activities Where the Cadets Will Practice Leaving and Returning to a Beach

Time: 65 min

Method: Practical Activity

ACTIVITY 1

Time: 20 min

OBJECTIVE

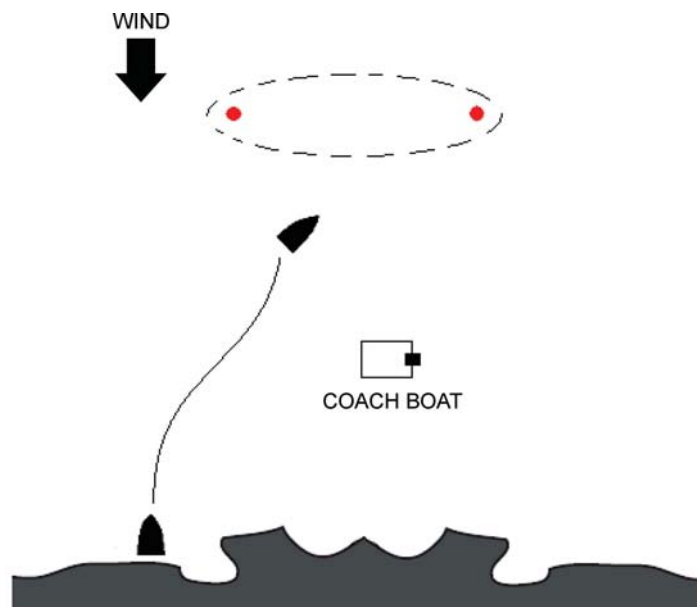
The objective of this activity is to have the cadets practice leaving a beach.

RESOURCES

- Fully equipped sailboat,
- Helmet (one per cadet),
- Personal Floatation Device (PFD) (one per cadet),
- Coach boat (minimum of one per eight sailboats),
- Two buoys with lines and weights, and
- Whistle.

ACTIVITY LAYOUT

The coach boat operator will set buoys in a sausage formation (as illustrated in Figure 15-6-13), large enough to accommodate all the sailboats.



Director Cadets 3, 2007, Ottawa, ON: Department of National Defence

Figure 15-6-13 Get Off the Beach



Cadets will have an opportunity to practice this skill in various wind directions and speeds throughout the weekend(s).

ACTIVITY INSTRUCTIONS

1. Conduct the briefing for Drill 1, located at Annex I, prior to conducting this activity.
2. Have the cadets, one crew at a time, prepare the sailboats on the beach.
3. Using a whistle, indicate when the first sailboat is permitted to leave the beach.
4. The coach boat will focus on the following:

- a. **Rigging.** Ensure the cadets are raising the sails with the bow of the sailboat pointed into irons. Have the skipper and crew lower the centreboard/daggerboard and rudder blade at the earliest opportunity.
 - b. **Course Control.** Ensure the skipper is sailing toward deep water at the earliest opportunity.
5. As each sailboat sails away from the beach, direct them to the sausage collector.
 6. Once all the sailboats have left the beach, switch the skipper and crew. Have the sailboats return to the beach.
 7. Repeat steps 3. to 5.
 8. When the drill is complete, have the sailboats sail into a control position and quickly debrief the cadets on the drill conducted before beginning the next drill.



COMMON ERRORS

It is common for novice sailors to make the following errors when developing these basic skills:

- rigging, to include not keeping the bow pointed into irons, leading to the sails filling with wind prematurely; and
- course control, to include:
 - not lowering the centreboard/daggerboard resulting in side slipping; and
 - not lowering the rudder blade at the earliest opportunity resulting in a lack of steerage.



If an alternative drill is to be used, focus on the key points outlined in the briefing located at Annex I.

SAFETY

- Ensure a coach boat is present at all times.
- Ensure the size of the course is large enough to prevent collisions.
- Ensure A-CR-CCP-030/PT-001 is adhered to throughout the activity.

ACTIVITY 2

Time: 15 min

OBJECTIVE

The objective of this activity is to have the cadets practice returning to a beach with an offshore wind.

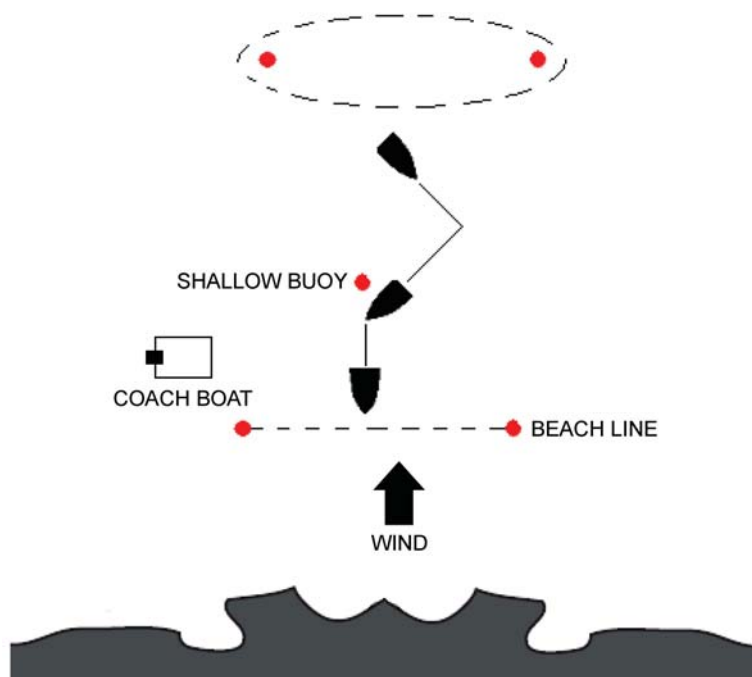
RESOURCES

- Fully equipped sailboat,
- Helmet (one per cadet),

- PFD (one per cadet),
- Coach boat (minimum of one per eight sailboats),
- Five buoys with lines and weights, and
- Whistle.

ACTIVITY LAYOUT

The coach boat operator will set buoys in the “X” formation (as illustrated in Figure 15-6-14), large enough to accommodate all the sailboats.



Director Cadets 3, 2007, Ottawa, ON: Department of National Defence

Figure 15-6-14 Exit Strategy

ACTIVITY INSTRUCTIONS

1. Conduct the briefing for Drill 2, located at Annex J, prior to conducting this activity.
2. Have the sailboats sail into a control position and restate the drill, its objectives and key points.
3. Have the cadets sail a sausage course rounding the marks to starboard.
4. Select three sailboats and have the cadets sail towards the beach line.
5. On “Go” have the cadets sail towards the beach line, focusing on the following:
 - a. **Sail Control.** Have the skipper and crew ease the sails, decreasing speed, in order to come to a near stop at the beach line. Sails shall be luffing upon arrival at the beach line.
 - b. **Course Control.** Have the skipper sail between the two marks identifying the beach line. The skipper will be required to complete a series of tacks to make it to the beach line.

- c. **Adjustments.** When the sailboats arrive to the shallow mark the cadets should be prepared to raise the centreboard/daggerboard and rudder blade. Have the skipper and crew loosen all pennants at this point.



Do not actually raise the centreboard/daggerboard or rudder blade, due to a risk of going off course and capsizing.

6. Once all the sailboats have practiced beaching on the line, switch the skipper and crew.
7. Repeat steps 3. to 6.
8. When the drill is completed, have the sailboats sail into a control position and quickly debrief the cadets on the drill conducted before beginning the next drill.



COMMON ERRORS

It is common for novice sailors to make the following errors when developing these basic skills:

- sail control, to include sails not luffing;
- course control, to include not remaining between the two marks outlining the beach line; and
- adjustment, to include not preparing to raise centreboard/daggerboard and rudder blade before arriving at shallow water.



If an alternative drill is to be used, focus on the key points outlined in the briefing located at Annex J.

SAFETY

- Ensure a coach boat is present at all times.
- Ensure the size of the course is large enough to prevent collisions.
- Ensure A-CR-CCP-030/PT-001 is adhered to throughout the activity.

ACTIVITY 3

Time: 30 min

OBJECTIVE

The objective of this activity is to have the cadets practice returning to a beach with an offshore wind.

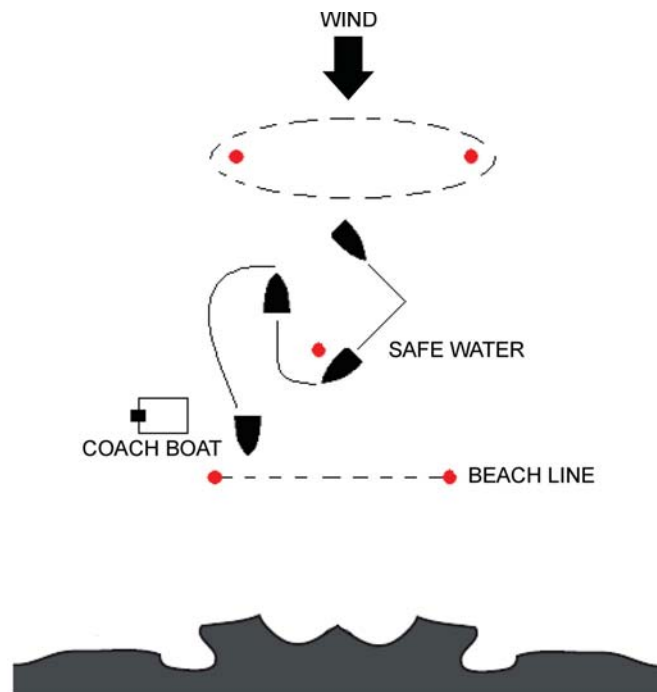
RESOURCES

- Fully equipped sailboat,
- Helmet (one per cadet),

- PFD (one per cadet),
- Coach boat (minimum of one per eight sailboats),
- Five buoys with lines and weights, and
- Whistle.

ACTIVITY LAYOUT

The coach boat operator will set buoys in the “X” formation (as illustrated in Figure 15-6-15), large enough to accommodate all the sailboats.



Director Cadets 3, 2007, Ottawa, ON: Department of National Defence

Figure 15-6-15 Beach Party

ACTIVITY INSTRUCTIONS

1. Conduct the briefing for Drill 3, located at Annex K, prior to conducting this activity.
2. Have the sailboats sail into a control position and restate the drill, its objectives and key points.
3. Have the cadets sail a sausage course rounding the marks to starboard.
4. On “Go” have the cadets sail towards the beach line, focusing on the following:
 - a. **Sail Control.** Have the skipper and crew ease the sails, decreasing speed, in order to come to a near stop at the beach line. Sails shall be luffing upon arrival at the beach line.
 - b. **Course Control.** Have the skipper sail towards the safe water mark. Upon arrival the skipper has to head the bow into irons allowing the sails to luff. The cadets will lower the mainsail. Once the mainsail is lowered the skipper will bear away and sail toward the beach line using only the jib sail. Have the skipper sail between the two marks identifying the beach line.

- c. **Adjustments.** When the sailboat is in the area surrounding the safe water mark the cadets should be prepared to raise the centreboard/daggerboard and rudder blade. Have the skipper and crew loosen all pennants at this point.



Do not actually raise the centreboard/daggerboard or rudder blade, due to a risk of going off course and capsizing.

5. Once all the sailboats have practiced beaching on the line, switch the skipper and crew.
6. Repeat steps 3. and 4.
7. When the drill is completed, have the sailboats sail into a control position and quickly debrief the cadets on the drill conducted before beginning the next drill.



COMMON ERRORS

It is common for novice sailors to make the following errors when developing these basic skills:

- sail control, to include sails not luffing;
- course control, to include:
 - not remaining between the two marks outlining the beach line; and
 - not remaining in irons while lowering the mainsail; and
- adjustment, to include not preparing to raise the centreboard/daggerboard and rudder blade before arriving in shallow water.



If an alternative drill is to be used, focus on the key points outlined in the briefing located at Annex K.

SAFETY

- Ensure a coach boat is present at all times.
- Ensure the size of the course is large enough to prevent collisions.
- Ensure A-CR-CCP-030/PT-001 is adhered to throughout the activity.



When the cadets are comfortable beaching a sailboat using the beach line, have them practice beaching on an actual beach/shoreline.

CONFIRMATION OF TEACHING POINT 3

The cadets' participation in the activities will serve as the confirmation of this TP.

END OF LESSON CONFIRMATION

The cadets' beaching a sailboat will serve as the confirmation of this lesson.

CONCLUSION

HOMEWORK/READING/PRACTICE

N/A.

METHOD OF EVALUATION

This EO is assessed IAW A-CR-CCP-603/PG-001, Chapter 3, Annex B, Appendix 10 (324 PC).

CLOSING STATEMENT

Beaching a sailboat is a fundamental skill. This skill will be practiced throughout the weekend(s). Once perfected, this skill will prevent unnecessary boat damage allowing for more time to be spent developing other sailing skills.

INSTRUCTOR NOTES/REMARKS

The cadets will have several opportunities to practice beaching a sailboat throughout the sail weekend(s).

If the cadets have difficulty performing a skill, the coach should focus more time on that skill.

REFERENCES

- C1-007 (ISBN 0-920232-17-5/A-CR-CCP-009/PT-001) Donaldson, S. (2001). *Basic Sailing Skills*. Kingston, ON: Canadian Yachting Association.
- C1-008 Canadian Yachting Association. (2006). *Canadian Yachting Association White Sail Level II Practical Skills Checklist*. Retrieved April 3, 2006, from <http://www.sailing.ca/cbet/content/WIIChecklist.doc>.
- C1-099 (ISBN 0-920232-26-4) Canadian Yachting Association. (2003). *Canadian Yachting Association Sailing Logbook*. Kingston, ON: Canadian Yachting Association.

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ROYAL CANADIAN SEA CADETS

PHASE THREE

INSTRUCTIONAL GUIDE



SECTION 7

EO M324.07 – RIGHT A TURTLED SAILBOAT

Total Time:

60 min

PREPARATION

PRE-LESSON INSTRUCTIONS

Resources needed for the delivery of this lesson are listed in the lesson specification located in A-CR-CCP-603/PG-001, Chapter 4. Specific uses for said resources are identified throughout the instructional guide within the TP for which they are required.

Review the lesson content and become familiar with the material prior to delivering the lesson.

Prepare the briefing located at Annex L.

PRE-LESSON ASSIGNMENT

N/A.

APPROACH

An interactive lecture was chosen for TPs 1 and 2 to present basic material and to orient the cadets to the steps for righting a turtled sailboat, prior to sailing.

A demonstration was chosen for TP 3 as it allows the instructor to explain and demonstrate the steps to righting a turtled sailboat.

A practical activity was chosen for TP 4 as it is an interactive way to allow the cadets to experience righting a turtled sailboat in a safe and controlled environment.

INTRODUCTION

REVIEW

N/A.

OBJECTIVES

By the end of this lesson the cadet shall have righted a turtled sailboat.

IMPORTANCE

It is important for the cadets to know how to right a turtled sailboat as it is a common occurrence while sailing. Understanding and performing the steps to righting a turtled sailboat will provide the cadets the knowledge to deal with such a situation comfortably and independently.

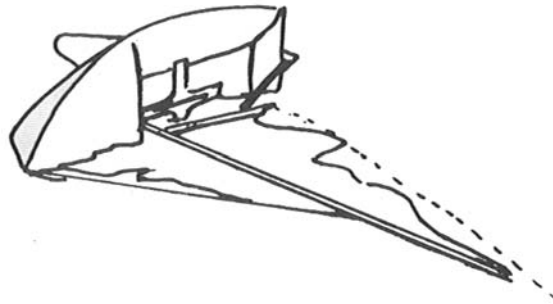
Teaching Point 1**Explain the Difference Between a Capsized and a Turtled Sailboat**

Time: 5 min

Method: Interactive Lecture

CAPSIZED SAILBOAT

When a sailboat tips over and its sails and centreboard/daggerboard are sitting horizontally on the water, it is capsized. The sailboat is sitting on its side with approximately half of the hull out of the water (as illustrated in Figure 15-7-1).



S. Donaldson, Basic Sailing Skills Manual, Canadian Yachting Association (p. 91)

Figure 15-7-1 Capsized Sailboat

TURTLED SAILBOAT

When a sailboat tips over and its sails are sitting vertically in the water, it is turtled. The centreboard is straight up and down and the sailboat is sitting upside down with the entire hull exposed (as illustrated in Figure 15-7-2).



S. Donaldson, Basic Sailing Skills Manual, Canadian Yachting Association (p. 93)

Figure 15-7-2 Turtled Sailboat

CONFIRMATION OF TEACHING POINT 1

QUESTIONS

- Q1. How are the sails oriented to the water when a sailboat is capsized?
- Q2. How much of the hull is exposed when a sailboat has capsized?

Q3. What is a sailboat known as if it has tipped over and the sails are sitting vertically in the water?

ANTICIPATED ANSWERS

- A1. Horizontal.
 A2. Approximately half.
 A3. Turtled.

Teaching Point 2

Discuss Safety

Time: 5 min

Method: Interactive Lecture

When a sailboat capsizes, the crew will be forced to enter the water. Although crews are wearing personal floatation devices (PFDs), they will observe a number of additional safety precautions, to include:

- **Staying With the Sailboat.** Never leave the sailboat for any reason (eg, retrieve a bailer, paddle, etc), unless instructed to by a sail coach.
- **Remaining Calm.** Safety boats and qualified staff are always present and will assist the cadets when a sailboat capsizes.
- **Using the “Hand Over Hand” Method When Manoeuvring Around the Sailboat.** Never attempt to swim around the sailboat. Maintain contact with a part of the hull at all times. This will ensure that the sailboat and crew do not drift apart.
- **Using a PFD to Keep Afloat.** One of the biggest concerns cadets have when they capsize is keeping their head above the water. PFDs are designed to keep individuals afloat, so the cadets should relax and take a deep breath.
- **Communicating.** Maintain verbal communication among all crew members.

CONFIRMATION OF TEACHING POINT 2

QUESTIONS

- Q1. True or False? You should always leave your sailboat to retrieve the bailer as it is required when the sailboat is righted.
- Q2. What method should you use to manoeuvre around the sailboat?
- Q3. What should crew members ensure is always maintained?

ANTICIPATED ANSWERS

- A1. False.
 A2. The “hand over hand” method.
 A3. Communication.

Teaching Point 3**Explain and Demonstrate the Steps to Righting a Turtled Sailboat**

Time: 15 min

Method: Demonstration



This demonstration should be conducted in a sailboat that is underway, whenever possible. Ideally, an area close to the shore or to a dock should be chosen. During the demonstration, explain each step as it is occurring. These steps are highlighted below.

If a demonstration on the water is not possible, a mock-up, model or detailed discussion is recommended. The demonstration is to be as close to a real turtle as possible.

STEPS TO RIGHT A TURTLED SAILBOAT

1. **Check Yourself.** Check for lines, tangles and injuries.
2. **Check Your Crew.** Communicate with the crew and ensure they are okay.
3. **Release Any Cleated Sheets.** If any sheets are cleated, release the sheet so the wind does not fill the sail once the boat is righted.
4. **The Crew Manoeuvres to the Bow.** Using the “hand over hand” method, the crew will move to the bow of the sailboat.
5. **The Skipper Manoeuvres to the Centre of the Hull.** Using the “hand over hand” method, the skipper will move to the centre of the hull.
6. **The Crew Swims the Sailboat Head to Wind (Irons).** By using the painter the crew will pull the bow of the boat head to wind.
7. **The Skipper Holds the Centreboard/Daggerboard and Leans Back Until the Sailboat Is in the Capsize Position.** The skipper will stand on top of the underside of the gunwales while leaning back and pulling on the centreboard/daggerboard.



If the sailboat is difficult to bring to the capsize position, the skipper or crew can reach under the sailboat and use a jib sheet for extra leverage in righting the sailboat.

8. **Complete the Capsize Procedure.**
9. **Bail the Water and Continue Sailing.**



S. Donaldson, Basic Sailing Skills Manual, Canadian Yachting Association (p. 93)

Figure 15-7-3 Righting a Turtled Sailboat

CONFIRMATION OF TEACHING POINT 3

QUESTIONS

- Q1. What is the first step to righting a turtled sailboat?
- Q2. Who swims the bow into irons?
- Q3. If you are having difficulty righting the turtled sailboat, what can the skipper or crew use for extra leverage?

ANTICIPATED ANSWERS

- A1. Check yourself.
- A2. The crew.
- A3. A jib sheet.

Teaching Point 4

Conduct an Activity Where the Cadets Will Right a Turtled Sailboat

Time: 25 min

Method: Practical Activity

ACTIVITY

OBJECTIVE

The objective of this activity is for the cadets to practice righting a turtled sailboat.

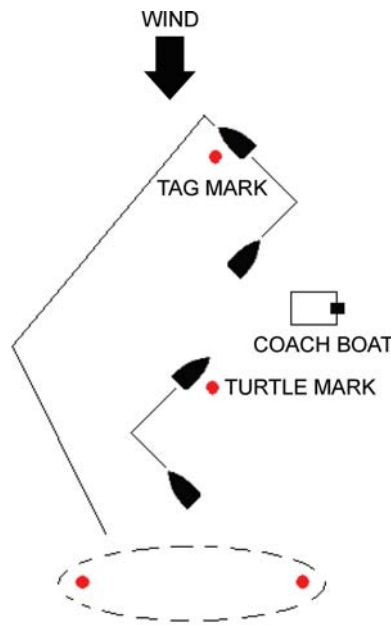
RESOURCES

- Fully equipped sailboat,
- Helmet (one per cadet),

- PFD (one per cadet),
- Coach boat (minimum of one per eight sailboats),
- Four buoys with lines and weights,
- Whistle, and
- Stopwatch.

ACTIVITY LAYOUT

The coach boat operator will set buoys in a “T” formation (as illustrated in Figure 15-7-4), large enough to accommodate all the sailboats.



Director Cadets 3, 2007, Ottawa, ON: Department of National Defence

Figure 15-7-4 Slow As a Turtle

ACTIVITY INSTRUCTIONS

1. Conduct the briefing for Drill 1, located at Annex L, prior to conducting this activity.
2. Have the sailboats sail into a control position and restate the drill, its objectives and key points.
3. Using a whistle, indicate when a sailboat is permitted to leave the sausage collector.
4. The sailboat will sail toward the turtle mark and capsize. The cadets will allow time for the sailboat to turtle.
5. Once the sailboat is turtled, begin the stopwatch.
6. While the cadets are righting the turtled sailboat, focus on the following:
 - a. **Communication.** Ensure the skipper and crew maintain open communication at all times. The skipper shall ensure the crew is fine by simply talking and asking questions.
 - b. **Self Recovery.** Encourage the skipper and crew to swim quickly to the centreboard/daggerboard and bow respectively. Once the skipper is on the gunwale, have the crew swim the sailboat head to wind. It is easier if the crew uses the painter to swim the sailboat toward the wind. When the sailboat is head

to wind, the skipper shall begin to lean back on the centreboard/daggerboard attempting to bring the sailboat to the capsized position. If the skipper requires assistance, the crew may leave the bow to help.

7. Once the sailboat is righted and bailed the skipper and crew will enter the sailboat and sail to the tag mark.
8. When the sailboat reaches the tag mark, stop the time and record it on a sheet of paper.
9. Once all the sailboats have practiced righting a turtled sailboat, switch the skipper and crew.
10. Repeat steps 3. to 8.
11. Have the sailboats sail into a control position and quickly debrief the cadets on the drill conducted. Review the recorded times and announce the skipper and crew with the fastest time.



COMMON ERRORS

It is common for novice sailors to make the following errors when developing these basic skills:

- communication, to include:
 - panicking, due to cold water, tangles, etc; and
 - not speaking loud enough for the skipper and crew to hear each other; and
- self recovery, to include:
 - pushing the bow into the wind instead of pulling it using the painter;
 - not getting on the very end of the centreboard/daggerboard; and
 - not being able to get in over the stern.



A second coach boat is recommended for this activity.



If an alternative drill is to be used, focus on the key points outlined in the briefing located at Annex L.

SAFETY

- Ensure a coach boat is present at all times.
- The coach boat shall remain in sight of the cadets in the water at all times.
- Ensure the size of the course is large enough to prevent collisions.
- Ensure A-CR-CCP-030/PT-001 is adhered to throughout the activity.

CONFIRMATION OF TEACHING POINT 4

The cadets' participation in the activity will serve as the confirmation of this TP.

END OF LESSON CONFIRMATION

The cadets' righting a turtled sailboat will serve as the confirmation of this lesson.

CONCLUSION

HOMEWORK/READING/PRACTICE

N/A.

METHOD OF EVALUATION

This EO is assessed IAW A-CR-CCP-603/PG-001, Chapter 3, Annex B, Appendix 10 (324 PC).

CLOSING STATEMENT

Turtling is a common occurrence while sailing. The ability to right a turtled sailboat quickly, increases the amount of time spent in the water, builds confidence and prevents panicking. It is a fundamental skill that ensures everyone is safe in the event a sailboat turtles.

INSTRUCTOR NOTES/REMARKS

Instructors shall ensure cadets are properly dressed, according to the weather, prior to participating in this EO. The cadets will have several opportunities to practice righting a turtled sailboat throughout the sail weekend(s).

REFERENCES

- C1-007 (ISBN 0-920232-17-5/A-CR-CCP-009/PT-001) Donaldson, S. (2001). *Basic Sailing Skills*. Kingston, ON: Canadian Yachting Association.
- C1-008 Canadian Yachting Association. (2006). *Canadian Yachting Association White Sail Level II Practical Skills Checklist*. Retrieved April 3, 2006, from www.sailing.ca/cbet/content/WIIChecklist.doc.
- C1-099 (ISBN 0-920232-26-4) Canadian Yachting Association. (2003). *Canadian Yachting Association Sailing Logbook*. Kingston, ON: Canadian Yachting Association.



ROYAL CANADIAN SEA CADETS

PHASE THREE

INSTRUCTIONAL GUIDE



SECTION 8

EO M324.08 – ADJUST TO POINTS OF SAIL

Total Time:

210 min

PREPARATION

PRE-LESSON INSTRUCTIONS

Resources needed for the delivery of this lesson are listed in the lesson specification located in A-CR-CCP-603/PG-001, Chapter 4. Specific uses for said resources are identified throughout the instructional guide within the TP for which they are required.

Review the lesson content and become familiar with the material prior to delivering the lesson.

Photocopy the points of sail handout at Annex M for each cadet.

Prepare the briefings located at Annexes O to S.

PRE-LESSON ASSIGNMENT

N/A.

APPROACH

An interactive lecture was chosen for TPs 1, 3, 4 and 5 to present basic material and to orient the cadets to aspects of the points of sail required prior to participating in practical training.

An in-class activity was chosen for TP 2 as it is an interactive way to provoke thought, stimulate interest and present basic boat handling skills.

A practical activity was chosen for TP 6 as a way for the cadets to practice sailing on the various points of sail in a safe and controlled environment. This activity contributes to the development of boat handling, boat balance and sail adjustment skills in a fun and challenging setting.

INTRODUCTION

REVIEW

N/A.

OBJECTIVES

By the end of this lesson the cadet shall have sailed on each point of sail and made the appropriate adjustments to sail trim and centreboard/daggerboard.

IMPORTANCE

It is important for the cadets to learn how to adjust to the points of sail as it is a basis for other skills such as sail trim, boat balance and centreboard/daggerboard adjustments which will result in more efficient boat handling skills and faster boat speeds.

Teaching Point 1

Explain How to Determine the Tack a Sailboat Is Sailing

Time: 5 min

Method: Interactive Lecture

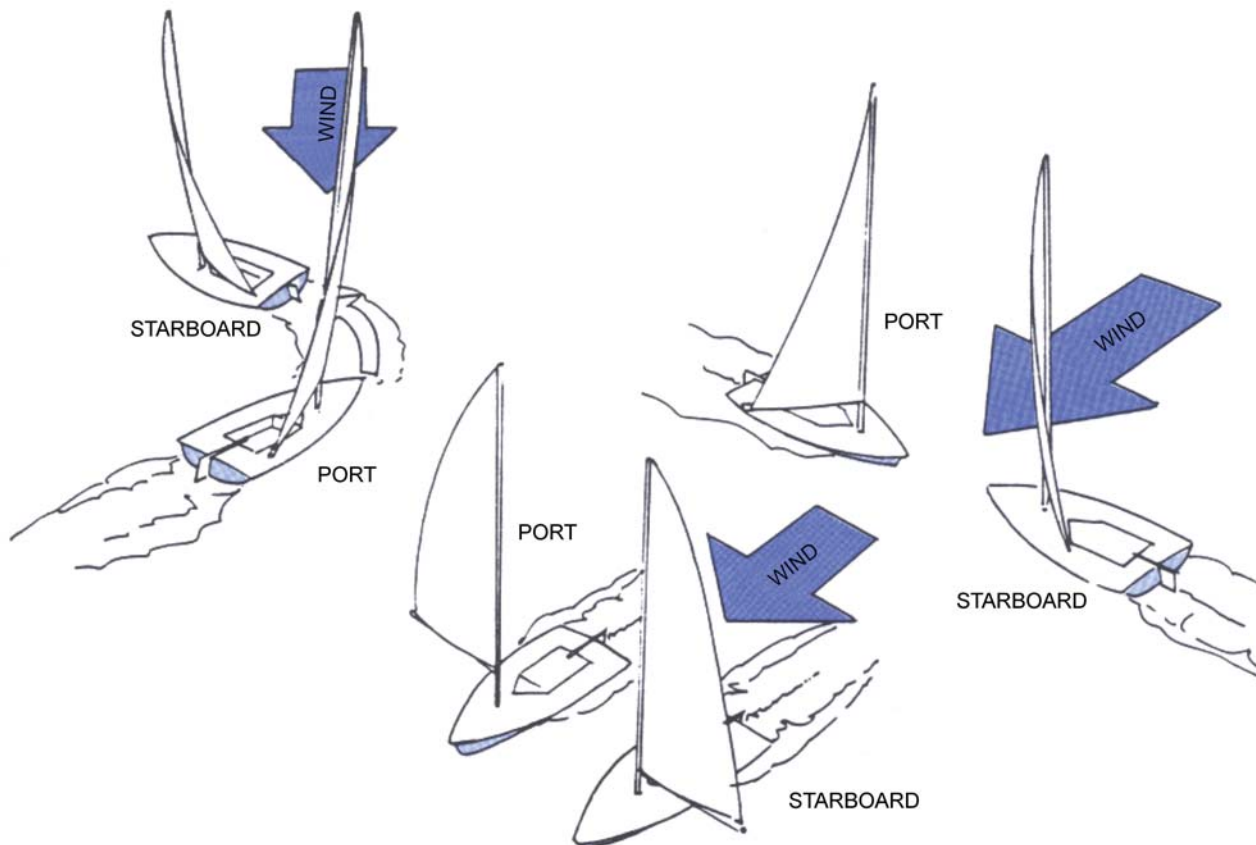
PORT AND STARBOARD TACK

Identifying the tack a sailboat is sailing is a fundamental skill that will be applied every time the cadets go on the water. The following are definitions that can assist in determining whether a sailboat is on a port tack or a starboard tack.

Tack. The side of the sailboat opposite the boom.

Port Tack. Sailing with the boom on the starboard side.

Starboard Tack. Sailing with the boom on the port side.



S. Donaldson, Basic Sailing Skills Manual, Canadian Yachting Association (p. 74)

Figure 15-8-1 Port and Starboard Tack

CONFIRMATION OF TEACHING POINT 1

QUESTIONS

- Q1. What is the side of the sailboat opposite the boom?
- Q2. What tack is a sailboat sailing when the boom is on the starboard side?
- Q3. What tack is a sailboat sailing when the boom is on the port side?

ANTICIPATED ANSWERS

- A1. The tack.
- A2. Port tack.
- A3. Starboard tack.

Teaching Point 2**Conduct an Activity Where the Cadets Will Identify the Points of Sail**

Time: 10 min

Method: In-Class Activity



Distribute the points of sail handout located at Annex M to each cadet.

POINTS OF SAIL

Identifying the points of sail is a skill on which the foundation is laid for future on-the-water sail training. The points of sail are as follows:

Irons. The bow of the sailboat is pointed directly into the wind and temporarily unable to turn onto either tack.



Irons is often referred to as “head to wind”.

Close Hauled. Sailing as close to the wind as possible with sails filling in order to approach an upwind destination.




No-Go Zone. The area in which a sailboat cannot sail upwind even when sailing close hauled. Typically, this would extend 45 degrees from either side of irons.


Close Reach. Sailing on a point of sail above a beam reach (90 degrees to the wind), but lower than the close hauled position.

Beam Reach. Sailing a course approximately 90 degrees to the wind.

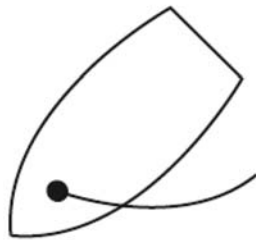
Broad Reach. Sailing with the wind coming over one corner of the stern.

 A broad reach is considered to be the fastest point of sail.

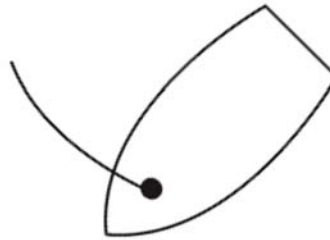
Running Free. Sailing directly away from the wind.

 A sailboat that is running free is often referred to as being “on a run”.

Sailing by the Lee. Sailing on a point of sail above a run with the wind on the same side as the boom.




BROAD REACH




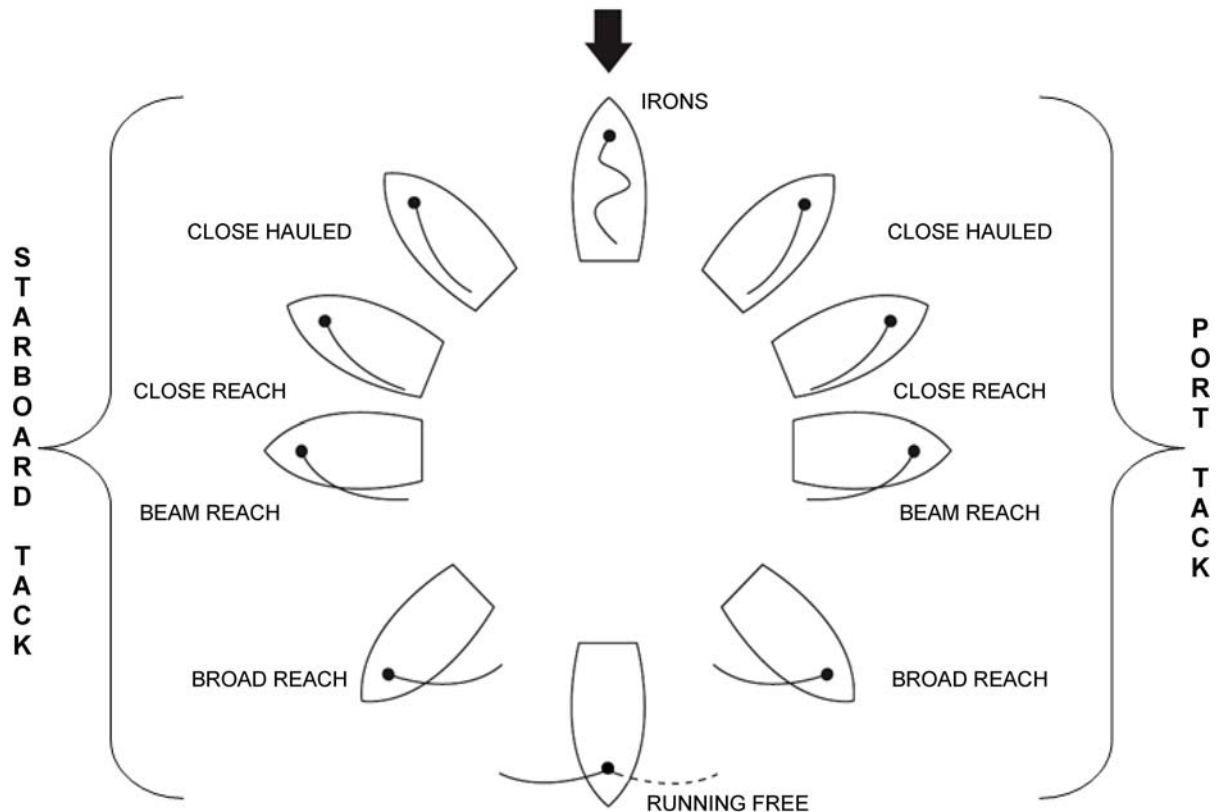
SAILING BY THE LEE

Canadian Yachting Association, White Sail Workbook (Manuscript in preparation)

Figure 15-8-2 Sailing by the Lee

 Sailing by the lee can be dangerous due to the possibility of an accidental gybe.

 The points of sail are the same on both port and starboard tacks (as illustrated in Figure 15-8-3).



Canadian Yachting Association, White Sail Workbook, Manuscript in preparation

Figure 15-8-3 Points of Sail

ACTIVITY

Time: 5 min

OBJECTIVE

The objective of this activity is to have the cadets identify the points of sail.

RESOURCES

- Flip chart paper,
- Markers,
- Tape,
- CD Player, and
- Points of sail list located at Annex N.

ACTIVITY LAYOUT

1. Draw the overhead view of the points of sail (as illustrated in Figure 15-8-3) – one sailboat per flip chart sheet. If the group of cadets is large, several pieces of flip chart paper can be taped together, allowing the drawings to be made large enough to accommodate all participants.

2. Draw a large arrow to indicate wind direction.
3. Arrange the sailboats in a large circle (as illustrated in Figure 15-8-3).
4. Place the arrow in the centre of the circle and tape the drawings to the floor.
5. Set up a stereo in the area of the activity.

ACTIVITY INSTRUCTIONS

1. Review the points of sail list located at Annex N.
2. Identify which sailboat drawing on the floor represents which point of sail.
3. Play music from the stereo and have the cadets walk around the edge of the circle.
4. At random intervals, stop the music and read an item from the points of sail list.
5. Have the cadets hop on one foot to the sailboat drawing that corresponds with the point of sail read.
6. If a cadet is unable to reach the drawing in a reasonable amount of time or chooses the wrong drawing, the cadet is eliminated.
7. Continue until only one cadet remains.

SAFETY

This activity must be conducted in a large area that is free of obstructions.

CONFIRMATION OF TEACHING POINT 2

The cadets' participation in the activity will serve as the confirmation of this TP.

Teaching Point 3

Explain How to Adjust Sail Trim for Each Point of Sail

Time: 5 min

Method: Interactive Lecture

TRIMMING THE SAILS

Each point of sail requires that the sails be properly trimmed to maximize boat speed. The general rule for trimming sails is to position them at the "point of almost luffing" or where the forward section of the sail just begins to flutter. The following are guidelines that can assist in positioning sails for each point of sail:

Close Hauled. The sails are trimmed as close (tightly) as possible.

Close Reach. The sails are trimmed almost all of the way in.

Beam Reach. The sails are trimmed halfway out.

Broad Reach. The sails are trimmed three quarters of the way out.

Running Free. The sails are trimmed all the way out, with the jib on the side opposite the mainsail.

Sailing by the Lee. The sails are trimmed all the way out, with the jib on the side opposite the mainsail.



As the cadets become more comfortable with sail trim they can practice sailing using the ticklers to correct sail trim or to maintain a close hauled course at the correct angle to the wind.

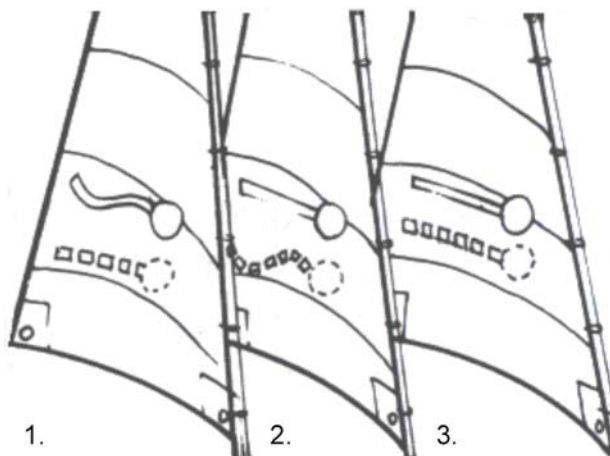
Ticklers. Pieces of yarn or tape attached near the luff of the sail to show air flow.

When on a close hauled course the crew should cleat the jib sheet. Cleating the jib sheet allows the skipper to watch the ticklers and stay on a close hauled course by altering course as the wind shifts. When sailing on a close reach or lower, the skipper and crew should trim the sails by the ticklers and not by altering course.

If the windward or inside tickler is flying erratically, the skipper should bear away or the crew should sheet in the jib sail and the skipper should adjust the mainsail trim accordingly (as illustrated in number 1. of Figure 15-8-4).

If the leeward or outside tickler is flying erratically the skipper should head up or the crew should sheet out the jib sail and the skipper should adjust the mainsail trim accordingly (as illustrated in number 2. of Figure 15-8-4).

If both ticklers are flying straight back, the sail is trimmed correctly for the point of sail (as illustrated in number 3. of Figure 15-8-4).



S. Donaldson, Basic Sailing Skills Manual, Canadian Yachting Association (p. 48)

Figure 15-8-4 Ticklers

A demonstration of tickler use can easily be conducted using a fully rigged sailboat on a dolly or mock up.

Crews should be encouraged to relay information concerning the ticklers and sail trim back to the skipper on a regular basis.

CONFIRMATION OF TEACHING POINT 3

QUESTIONS

- Q1. How are the sails positioned on a close reach?
- Q2. How are the sails positioned while on a beam reach?

Q3. What is unique about the sails while running free and sailing by the lee?

ANTICIPATED ANSWERS

A1. Trimmed almost all of the way in.

A2. Trimmed halfway out.

A3. The mainsail and jib sail are positioned on different sides of the sailboat.

Teaching Point 4

Explain How to Adjust the Centreboard/Daggerboard for Each Point of Sail

Time: 5 min

Method: Interactive Lecture

CENTREBOARD/DAGGERBOARD ADJUSTMENTS

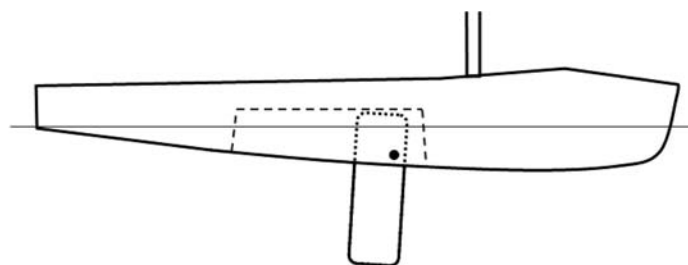


Leeway. Side-slipping motion of a sailboat.

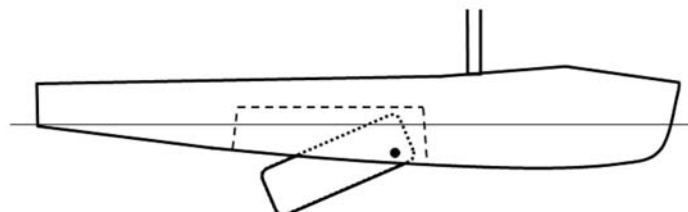
Leeway occurs, most evidently, when a sailboat is sailing on a close hauled course. As a result of the wind blowing from the side, the sailboat will side slip to leeward or away from the wind. As the sailboat bears away from the wind and onto a beam reach, the sailboat will experience less leeway and even less while on a broad reach or while running free. While on a beam reach, broad reach and run, raising the centreboard/daggerboard out of the water (as illustrated in Figures 15-8-5 and 15-8-6) will reduce drag, allowing the sailboat to go faster.



It is important not to raise the centreboard/daggerboard all the way out of the water as steering will become difficult. As well, the sailboat will be more difficult to right if it capsizes.



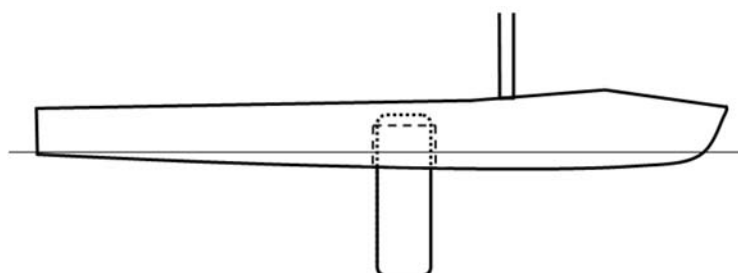
CENTREBOARD IS ALL THE WAY DOWN



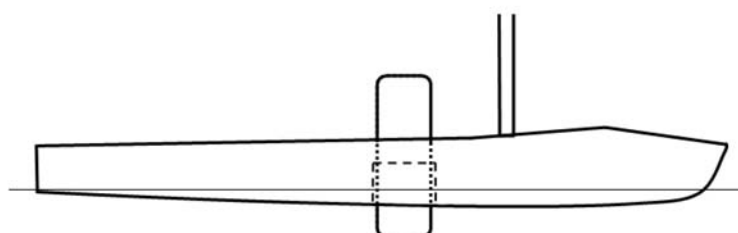
CENTREBOARD IS RAISED HALFWAY

Director Cadets 3, 2007, Ottawa, ON: Department of National Defence

Figure 15-8-5 Centreboard Adjustments



DAGGERBOARD IS ALL THE WAY DOWN



DAGGERBOARD IS RAISED THREE QUARTERS OF THE WAY

Director Cadets 3, 2007, Ottawa, ON: Department of National Defence

Figure 15-8-6 Daggerboard Adjustments

The centreboard/daggerboard adjustments to make while on different points of sail are as follows:

Close Hauled. Centreboard/daggerboard is all the way down.

Close Reach. Centreboard/daggerboard is all the way down.

Beam Reach. Centreboard/daggerboard is raised halfway.

Broad Reach. Centreboard/daggerboard is raised three quarters of the way.

Running Free. Centreboard/daggerboard is raised three quarters of the way.

Sailing by the Lee. Centreboard/daggerboard is raised three quarters of the way.

CONFIRMATION OF TEACHING POINT 4

QUESTIONS

- Q1. What is the centreboard/daggerboard position for close hauled?
- Q2. What is the centreboard/daggerboard position for beam reach?
- Q3. What is the centreboard/daggerboard position for broad reach?

ANTICIPATED ANSWERS

- A1. All the way down.
- A2. Raised halfway.
- A3. Raised three quarters of the way.

Teaching Point 5

Explain the Steps to Heading Up and Bearing Away

Time: 5 min

Method: Interactive Lecture

HEADING UP

The steps to heading up are as follows:

1. The skipper will say, "Heading up."
2. The crew will reply, "Ready."
3. The skipper will push the tiller slightly toward the mainsail, causing the sailboat to turn toward the wind.
4. The skipper and crew will sheet in the mainsail and jib sail as the sailboat turns.
5. The crew will move to the windward gunwale, as required, to hike.
6. When the bow reaches the new desired course, the skipper will straighten the tiller and continue sailing.

BEARING AWAY

The steps to bearing away are as follows:

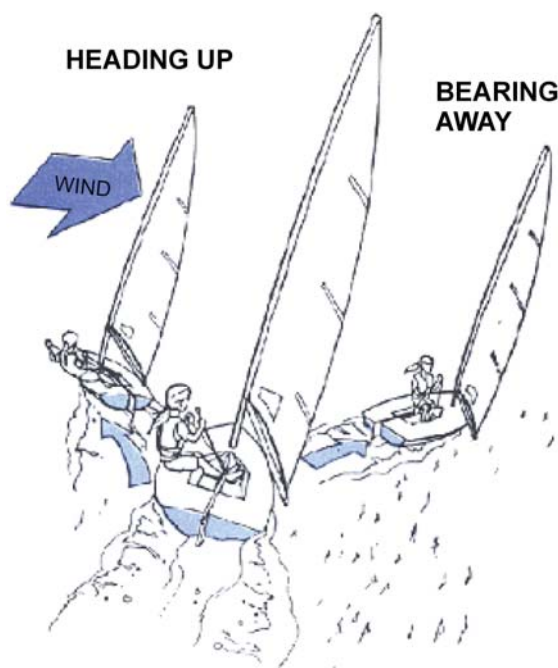
1. The skipper will say, "Bearing away."
2. The crew will reply, "Ready."
3. The skipper will pull the tiller slightly toward the windward side, causing the sailboat to turn away from the wind.
4. The skipper and crew will sheet out the mainsail and jib sail as the sailboat turns.
5. The crew will move inboard to maintain boat balance as required.

6. When the bow reaches the new desired course, the skipper will straighten the tiller and continue sailing.



Common phrases used by the coach when providing immediate feedback regarding sail trim are:

- **“Ease Your Sails.”** Slowly sheet out the mainsail and jib sail.
- **“Dump Your Sails.”** Aggressively sheet out the mainsail and jib sail.
- **“Trim Your Sails.”** Sheet in the mainsail and jib sail until the sails are on the proper angle to the wind.



S. Donaldson, Basic Sailing Skills Manual, Canadian Yachting Association (p. 56)

Figure 15-8-7 Heading Up and Bearing Away

CONFIRMATION OF TEACHING POINT 5

QUESTIONS

- Q1. What direction is the tiller moved when heading up?
- Q2. What direction is the tiller moved when bearing away?
- Q3. Do the skipper and crew sheet in or sheet out the sails when bearing away?

ANTICIPATED ANSWERS

- A1. Slightly toward the mainsail.
- A2. Slightly toward the windward side.
- A3. Sheet out.

Teaching Point 6**Conduct Activities Where the Cadets Will Sail on the Various Points of Sail While Heading Up and Bearing Away**

Time: 160 min

Method: Practical Activity

ACTIVITY 1

Time: 30 min

OBJECTIVE

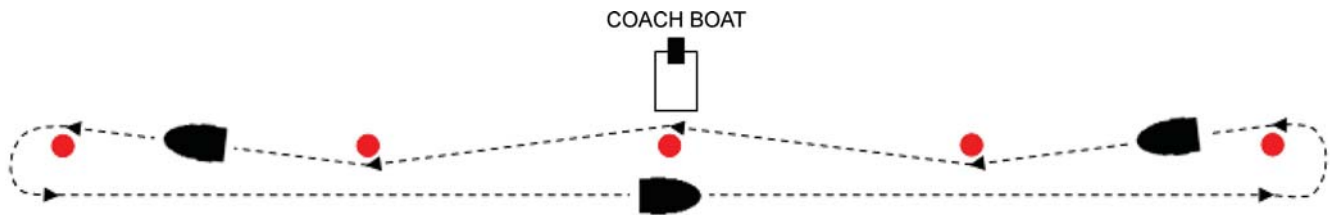
The objective of this activity is to have the cadets practice heading up and bearing away.

RESOURCES

- Fully equipped sailboat,
- Helmet (one per cadet),
- Personal Floatation Device (PFD) (one per cadet),
- Coach boat (minimum of one per eight sailboats),
- Five buoys with lines and weights, and
- Whistle.

ACTIVITY LAYOUT

The coach boat operator will set buoys in a sausage formation, large enough to accommodate all the sailboats (as illustrated in Figure 15-8-8).



Director Cadets 3, 2008, Ottawa, ON: Department of National Defence

Figure 15-8-8 The Nile



It is important for the coach boat to circulate around the course coaching the cadets on the specific skills being practiced.

ACTIVITY INSTRUCTIONS

1. Conduct the briefing for Drill 1, located at Annex O, prior to conducting this activity.
2. Have the sailboats sail into a control position and restate the drill, its objectives and key points.
3. Have the sailboats weave through a sausage course rounding the marks to starboard.

4. The coach boat shall focus on the following:
 - a. **Course Control.** Have the skipper perform smooth tiller adjustments while heading up, bearing away and avoiding collisions.
 - b. **Sail Trim.** Have the skipper and crew make sheet adjustments to maintain sail trim while heading up and bearing away.
 - c. **Look Out.** The crew shall constantly inform the skipper of sailboats in the immediate area around the sailboat. The crew will also make suggestions for course headings to prevent collisions.



Have the cadets switch positions as skipper and crew midway through the activity.

5. Once the cadets are comfortable rounding the marks to starboard have the sailboats change direction and round the marks to port.
6. When the drill is completed, have the sailboats sail into a control position and quickly debrief the cadets on the drill conducted before beginning the next drill.



COMMON ERRORS

It is common for novice sailors to make the following errors when learning to head up and bear away:

- course control, to include:
 - making too much of a course change when heading to the next mark, resulting in sudden tiller movements to compensate; and
 - accidentally tacking or gybing;
- sail control, to include:
 - not trimming the sails according to the course adjustments; and
 - not using the proper jib sheet after an accidental tack/gybe.



If an alternative drill is to be used, focus on the key points outlined in the briefing located at Annex O.

SAFETY

- Ensure a coach boat is present at all times.
- Ensure the size of the course is large enough to prevent collisions.
- Ensure A-CR-CCP-030/PT-001 is adhered to throughout the activity.

ACTIVITY 2

Time: 35 min

OBJECTIVE

The objective of this activity is to have the cadets practice heading up and bearing away, while making adjustments for the following points of sail:

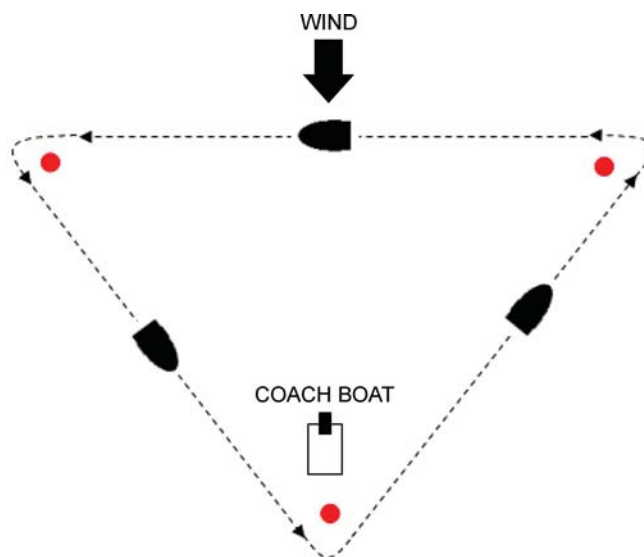
- close hauled,
- beam reach, and
- broad reach.

RESOURCES

- Fully equipped sailboat,
- Helmet (one per cadet),
- PFD (one per cadet),
- Coach boat (minimum of one per eight sailboats),
- Three buoys with lines and weights, and
- Whistle.

ACTIVITY LAYOUT

The coach boat operator will set buoys in a triangle formation, large enough to accommodate all the sailboats (as illustrated in Figure 15-8-9).



Director Cadets 3, 2007, Ottawa, ON: Department of National Defence

Figure 15-8-9 Upside Down Pyramid



It is important for the coach boat to circulate around the course coaching the cadets on the specific skills being practiced.

ACTIVITY INSTRUCTIONS

1. Conduct the briefing for Drill 2, located at Annex P, prior to conducting this activity.
2. Have the sailboats sail into a control position and restate the drill, its objectives and key points.
3. Have the sailboats sail around a triangle course rounding the marks to starboard.
4. The coach boat shall focus on the following:
 - a. **Course Control.** Have the skipper perform smooth tiller adjustments while heading up, bearing away and avoiding collisions.
 - b. **Sail Trim.** Have the skipper and crew make sheet adjustments to maintain sail trim while heading up and bearing away.
 - c. **Centreboard/Daggerboard Adjustments.** Have the crew make adjustments to the centreboard/daggerboard position while heading up and bearing away onto different points of sail.
 - d. **Look Out.** The crew shall constantly inform the skipper of sailboats in the immediate area around the sailboat. The crew will also make suggestions for course headings to prevent collisions.



Have the cadets switch positions as skipper and crew midway through the activity.

5. Once the cadets are comfortable rounding the marks to starboard have the sailboats change direction and round the marks to port.
6. When the drill is completed, have the sailboats sail into a control position and quickly debrief the cadets on the drill conducted before beginning the next drill.



COMMON ERRORS

It is common for novice sailors to make the following errors when learning to head up and bear away:

- course control, to include:
 - making too much of a course change when heading to the next mark, resulting in sudden tiller movements to compensate; and
 - accidentally tacking or gybing;
- sail control, to include:
 - not trimming the sails according to the course adjustments; and
 - not using the proper jib sheet after an accidental tack/gybe; and
- centreboard/daggerboard adjustments, to include:
 - raising the centreboard/daggerboard too far out of the water while bearing away, resulting in steering difficulty; and
 - not lowering the centreboard/daggerboard while heading up, resulting in excessive leeway.



If an alternative drill is to be used, focus on the key points outlined in the briefing located at Annex P.

SAFETY

- Ensure a coach boat is present at all times.
- Ensure the size of the course is large enough to prevent collisions.
- Ensure A-CR-CCP-030/PT-001 is adhered to throughout the activity.

ACTIVITY 3

Time: 35 min

OBJECTIVE

The objective of this activity is to have the cadets practice heading up and bearing away, while making adjustments for the following points of sail:

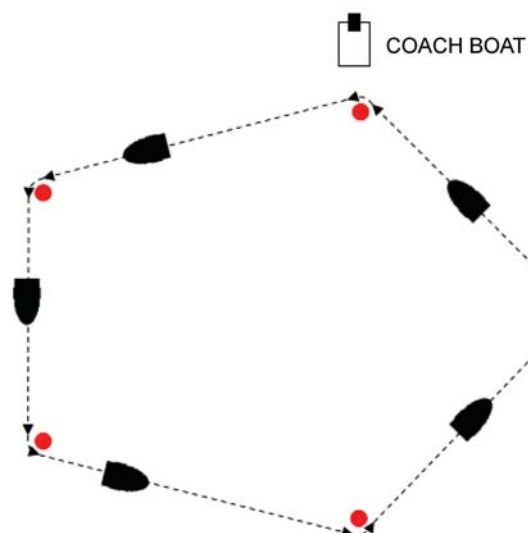
- close hauled,
- broad reach, and
- running free.

RESOURCES

- Fully equipped sailboat,
- Helmet (one per cadet),
- PFD (one per cadet),
- Coach boat (minimum of one per eight sailboats),
- Five buoys with lines and weights, and
- Whistle.

ACTIVITY LAYOUT

The coach boat operator will set buoys in a pentagon formation, large enough to accommodate all the sailboats (as illustrated in Figure 15-8-10).



Director Cadets 3, 2008, Ottawa, ON: Department of National Defence

Figure 15-8-10 Mummies' Coffin



It is important for the coach boat to circulate around the course coaching the cadets on the specific skills being practiced.

ACTIVITY INSTRUCTIONS

1. Conduct the briefing for Drill 3, located at Annex Q, prior to conducting this activity.
2. Have the sailboats sail into a control position and restate the drill, its objectives and key points.
3. Have the sailboats sail around a pentagon course rounding the marks to starboard.

4. The coach boat shall focus on the following:
- Course Control.** Have the skipper perform smooth tiller adjustments while heading up, bearing away and avoiding collisions.
 - Sail Trim.** Have the skipper and crew make sheet adjustments to maintain sail trim while heading up and bearing away.
 - Centreboard/Daggerboard Adjustments.** Have the crew make adjustments to the centreboard/daggerboard position while heading up and bearing away onto different points of sail.
 - Look Out.** The crew shall constantly inform the skipper of sailboats in the immediate area around the sailboat. The crew will also make suggestions for course headings to prevent collisions.



Have the cadets switch positions as skipper and crew midway through the activity.

5. When the drill is completed, have the sailboats sail into a control position and quickly debrief the cadets on the drill conducted before beginning the next drill.



COMMON ERRORS

It is common for novice sailors to make the following errors when learning to head up and bear away:

- course control, to include:
 - making too much of a course change when heading to the next mark, resulting in sudden tiller movements to compensate; and
 - accidentally tacking or gybing;
- sail control, to include:
 - not trimming the sails according to the course adjustments; and
 - not using the proper jib sheet after an accidental tack/gybe; and
- centreboard/daggerboard adjustments, to include:
 - raising the centreboard/daggerboard too far out of the water while bearing away, resulting in steering difficulty; and
 - not lowering the centreboard/daggerboard while heading up, resulting in excessive leeway.



If an alternative drill is to be used, focus on the key points outlined in the briefing located at Annex Q.

SAFETY

- Ensure a coach boat is present at all times.
 - Ensure the size of the course is large enough to prevent collisions.
 - Ensure A-CR-CCP-030/PT-001 is adhered to throughout the activity.
-

ACTIVITY 4

Time: 35 min

OBJECTIVE

The objective of this activity is to have the cadets practice heading up and bearing away, while making adjustments for the following points of sail:

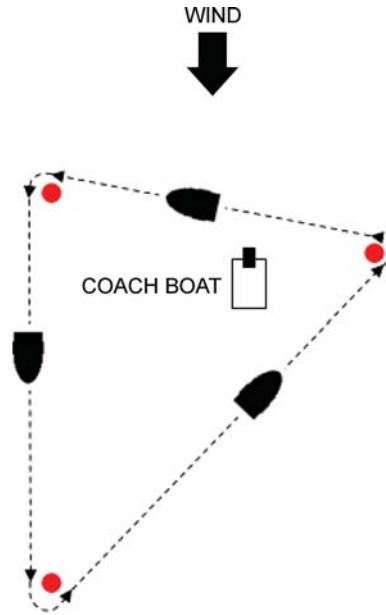
- close hauled,
- close reach, and
- running free.

RESOURCES

- Fully equipped sailboat,
- Helmet (one per cadet),
- PFD (one per cadet),
- Coach boat (minimum of one per eight sailboats),
- Three buoys with lines and weights, and
- Whistle.

ACTIVITY LAYOUT

The coach boat operator will set buoys in a triangle formation, large enough to accommodate all the sailboats (as illustrated in Figure 15-8-11).



Director Cadets 3, 2007, Ottawa, ON: Department of National Defence

Figure 15-8-11 Heeling Pyramid



It is important for the coach boat to circulate around the course coaching the cadets on the specific skills being practiced.

ACTIVITY INSTRUCTIONS

1. Conduct the briefing for Drill 4, located at Annex R, prior to conducting this activity.
2. Have the sailboats sail into a control position and restate the drill, its objectives and key points.
3. Have the sailboats sail around a triangle course rounding the marks to starboard.
4. The coach boat shall focus on the following:
 - a. **Course Control.** Have the skipper perform smooth tiller adjustments while heading up, bearing away and avoiding collisions.
 - b. **Sail Trim.** Have the skipper and crew make sheet adjustments to maintain sail trim while heading up and bearing away.
 - c. **Centreboard/Daggerboard Adjustments.** Have the crew make adjustments to the centreboard/daggerboard position while heading up and bearing away onto different points of sail.
 - d. **Look Out.** The crew shall constantly inform the skipper of sailboats in the immediate area around the sailboat. The crew will also make suggestions for course headings to prevent collisions.



Have the cadets switch positions as skipper and crew midway through the activity.

5. When the drill is completed, have the sailboats sail into a control position and quickly debrief the cadets on the drill conducted before beginning the next drill.



COMMON ERRORS

It is common for novice sailors to make the following errors when learning to head up and bear away:

- course control, to include:
 - making too much of a course change when heading to the next mark, resulting in sudden tiller movements to compensate; and
 - accidentally tacking or gybing;
- sail control, to include:
 - not trimming the sails according to the course adjustments; and
 - not using the proper jib sheet after an accidental tack/gybe; and
- centreboard/daggerboard adjustments, to include:
 - raising the centreboard/daggerboard too far out of the water while bearing away, resulting in steering difficulty; and
 - not lowering the centreboard/daggerboard while heading up, resulting in excessive leeway.



If an alternative drill is to be used, focus on the key points outlined in the briefing located at Annex R.

SAFETY

- Ensure a coach boat is present at all times.
- Ensure the size of the course is large enough to prevent collisions.
- Ensure A-CR-CCP-030/PT-001 is adhered to throughout the activity.

ACTIVITY 5

Time: 30 min

OBJECTIVE

The objective of this activity is to have the cadets practice heading up and bearing away, while making adjustments for the following points of sail:

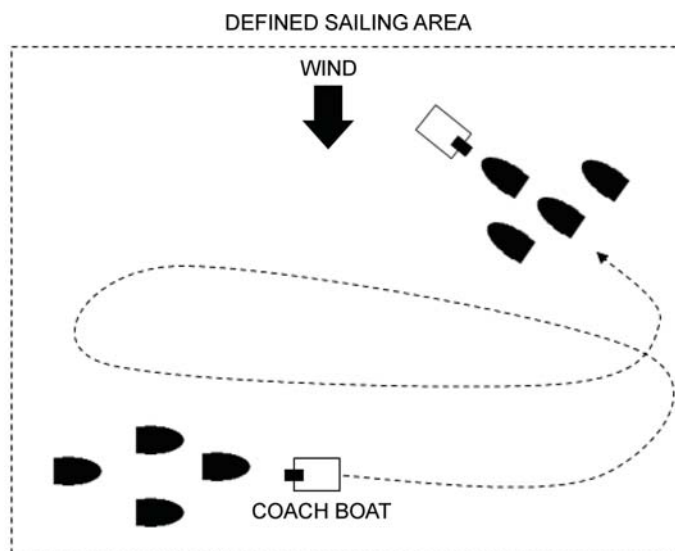
- close hauled,
- close reach,
- beam reach,
- broad reach, and
- running free.

RESOURCES

- Fully equipped sailboat,
- Helmet (one per cadet),
- PFD (one per cadet),
- Coach boat (minimum of one per eight sailboats), and
- Whistle.

ACTIVITY LAYOUT

The coach boat operator will identify the defined sailing area (as illustrated in Figure 15-8-12).



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Figure 15-8-12 Search for Building Blocks



It is important for the coach boat to circulate around the fleet coaching the cadets on the specific skills being practiced.

ACTIVITY INSTRUCTIONS

1. Conduct the briefing for Drill 5, located at Annex S, prior to conducting this activity.
2. Have the sailboats sail into a control position and restate the drill, its objectives and key points.
3. Instruct the sailboats to play follow-the-leader with the coach boat.
4. Take the sailboats around the sailing area while frequently changing direction, forcing the sailboats to sail on as many points of sail as possible.
5. Throughout the activity, have a sailboat in front of the fleet act as the leader so that coaching can take place with all of the sailboats.
6. The coach boat shall focus on the following:
 - a. **Course Control.** Have the skipper perform smooth tiller adjustments while heading up, bearing away and avoiding collisions.
 - b. **Sail Trim.** Have the skipper and crew make sheet adjustments to maintain sail trim while heading up and bearing away.
 - c. **Centreboard/Daggerboard Adjustments.** Have the crew make adjustments to the centreboard/daggerboard position while heading up and bearing away onto different points of sail.
 - d. **Look Out.** The crew shall constantly inform the skipper of sailboats in the immediate area around the sailboat. The crew will also make suggestions for course headings to prevent collisions.



Have the cadets switch positions as skipper and crew midway through the activity.

7. When the drill is completed, have the sailboats sail into a control position and quickly debrief the cadets on the drill conducted before beginning the next drill.



COMMON ERRORS

It is common for novice sailors to make the following errors when learning to head up and bear away:

- course control, to include:
 - making too much of a course change when heading to the next mark, resulting in sudden tiller movements to compensate; and
 - accidentally tacking or gybing;
- sail control, to include:
 - not trimming the sails according to the course adjustments; and
 - not using the proper jib sheet after an accidental tack/gybe; and
- centreboard/daggerboard adjustments, to include:
 - raising the centreboard/daggerboard too far out of the water while bearing away, resulting in steering difficulty; and
 - not lowering the centreboard/daggerboard while heading up, resulting in excessive leeway.



If an alternative drill is to be used, focus on the key points outlined in the briefing located at Annex S.



It is common for coaches to make the following course control errors when conducting a follow-the-leader activity:

- **Sharp Turning Angles.** Sharp turning angles will result in the sailboats becoming congested as all skippers attempt to make the turn at the same time.
- **Leaving the Stragglers.** Often sailboats can be left behind when beginning in a follow-the-leader activity. Performing a large circle with the fleet will rejoin the sailboats in the front with the sailboats in the rear.
- **Unprepared for Capsizes.** Inform the cadets that should a sailboat capsize during the activity, sailboats should automatically luff together in a group on the lead sailboat.
- **Not Coaching.** Often coaches neglect to coach while conducting a follow-the-leader drill. Throughout the activity, nominate a sailboat in front of the fleet to act as the leader so that coaching can take place with all of the sailboats.



If two coach boats are available, one shall act as the leader and the second shall coach throughout the fleet.

SAFETY

- Ensure a coach boat is present at all times.
- Ensure the size of the course is large enough to prevent collisions.
- Ensure A-CR-CCP-030/PT-001 is adhered to throughout the activity.

CONFIRMATION OF TEACHING POINT 6

The cadets' participation in the activities will serve as the confirmation of this TP.

END OF LESSON CONFIRMATION

The cadets' participation in the heading up and bearing away drills will serve as the confirmation of this lesson.

CONCLUSION

HOMEWORK/READING/PRACTICE

N/A.

METHOD OF EVALUATION

This EO is assessed IAW A-CR-CCP-603/PG-001, Chapter 3, Annex B, Appendix 9 (324 EC 03) and Chapter 3, Annex B, Appendix 10 (324 PC).

CLOSING STATEMENT

Attaining faster boat speed is a common goal among sailors. Understanding how a sailboat reacts on different points of sail and knowing what adjustments to make while altering course and changing from one point of sail to another will make sail training more enjoyable, while achieving faster boat speeds.

INSTRUCTOR NOTES/REMARKS

The cadets will have several opportunities to practice heading up and bearing away throughout the sail weekend(s).

If cadets have difficulty attaining a skill, the instructor should focus more time in that area.

REFERENCES

- C1-007 (ISBN 0-920232-17-5/A-CR-CCP-009/PT-001) Donaldson, S. (2001). *Basic Sailing Skills*. Kingston, ON: Canadian Yachting Association.
- C1-008 Canadian Yachting Association. (2006). *Canadian Yachting Association White Sail II Practical Skills Checklist*. Retrieved October 5, 2007 from <http://www.sailing.ca/cbet/content/WIIChecklist.doc>.
- C1-099 (ISBN 0-920232-26-4) Canadian Yachting Association. (2003). *Canadian Yachting Association Sailing Logbook*. Kingston, ON: Canadian Yachting Association.

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ROYAL CANADIAN SEA CADETS

PHASE THREE

INSTRUCTIONAL GUIDE



SECTION 9

EO M324.09 – SAIL UPWIND

Total Time:

330 min

PREPARATION

PRE-LESSON INSTRUCTIONS

Resources needed for the delivery of this lesson are listed in the lesson specification located in A-CR-CCP-603/PG-001, Chapter 4. Specific uses for said resources are identified throughout the instructional guide within the TP for which they are required.

Review the lesson content and become familiar with the material prior to delivering the lesson.

Prepare the briefings located at Annexes T to AD.

Photocopy the race finish sheet for each race located at Annex AE and the racing scoresheet located at Annex AF.

PRE-LESSON ASSIGNMENT

N/A.

APPROACH

An interactive lecture was chosen for TPs 1 and 5 to introduce the procedure of stopping a sailboat and beating.

A practical activity was chosen for TPs 2, 4 and 6 to allow the cadets to practice sailing upwind in a safe and controlled environment. This activity contributes to the development of boat handling, boat balance and sail adjustment skills in a fun and challenging setting.

An in-class activity was chosen for TP 3 as it is an interactive way to present basic upwind boat handling skills, provoke thought and stimulate interest among cadets.

INTRODUCTION

REVIEW

N/A.

OBJECTIVES

By the end of this lesson the cadet shall have stopped a sailboat and demonstrated various helming and crewing skills while sailing upwind.

IMPORTANCE

It is important for each cadet to sail upwind as it provides the cadets the experience involved in stopping a sailboat and sailing against the wind in a controlled environment. Sailing upwind will introduce the cadets to skills that will be practiced more in-depth in future sail training.

Teaching Point 1

Explain How to Stop a Sailboat

Time: 5 min

Method: Interactive Lecture

STOP A SAILBOAT

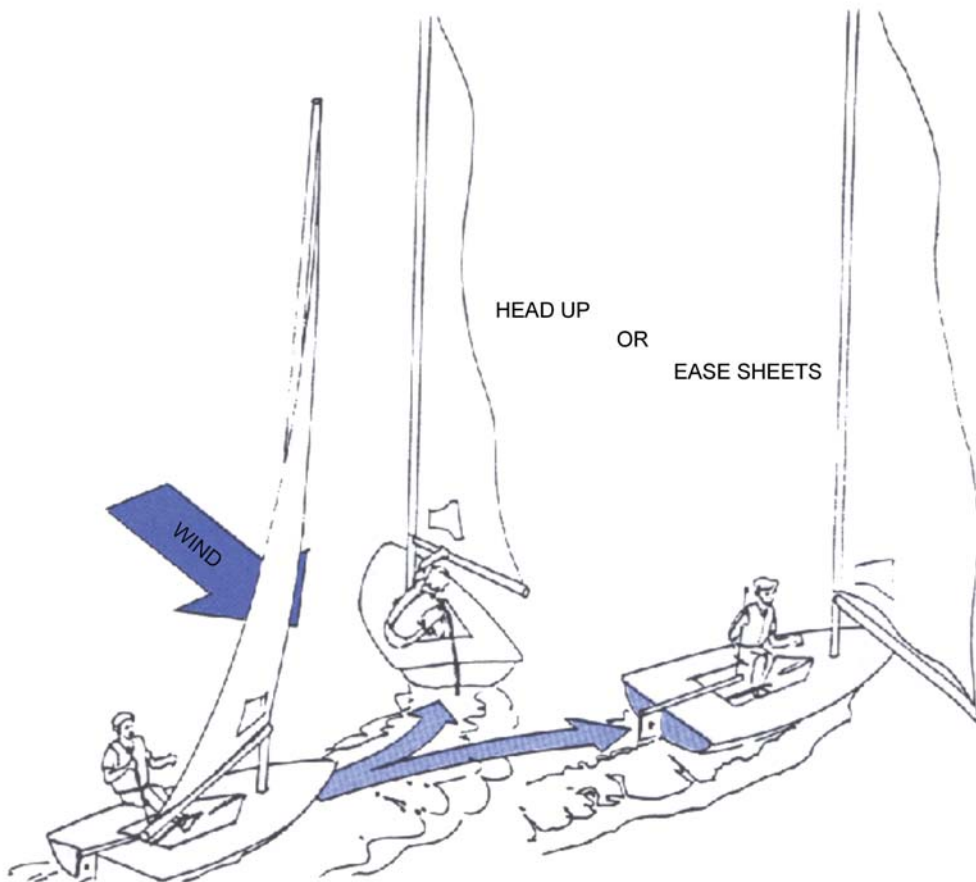
Stopping is performed so a skipper can stop the sailboat at a predetermined point such as at a control position, at a mooring ball, or when recovering a crew overboard.



The act of stopping a sailboat is often referred to as “luffing up”.

Luff. To cause a sail to flutter by heading up or easing the sheet.

Luff Up. To head up, causing the sails to flutter.



S. Donaldson, Basic Sailing Skills Manual, Canadian Yachting Association (p. 49)

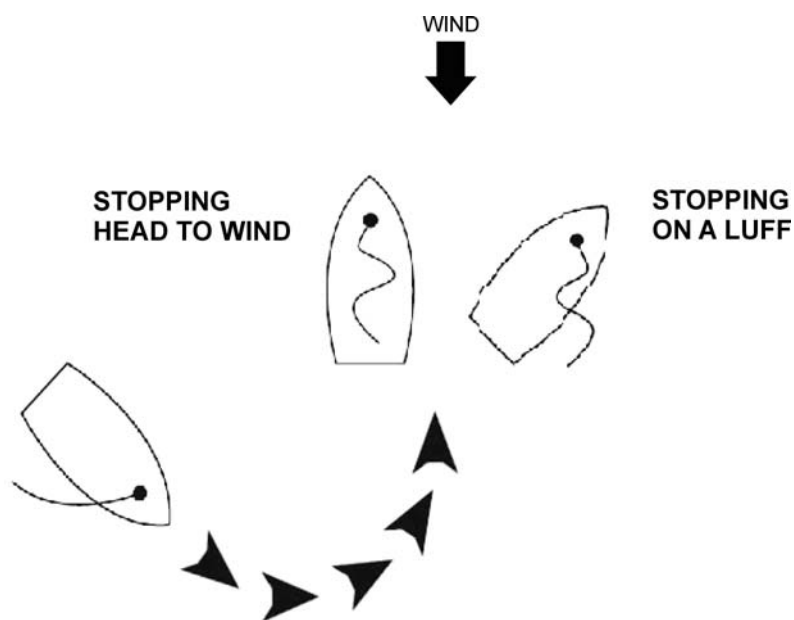
Figure 15-9-1 Luffing Up and Luffing

The steps to stopping are as follows:

1. The skipper will say, "Prepare to luff up."
2. The crew will reply, "Ready."
3. The skipper will say, "Luffing."
4. The skipper will push the tiller toward the mainsail, causing the sailboat to turn toward the wind.
5. The skipper and crew will ease the sheets all of the way out.
6. The crew will move inboard to maintain boat balance as required.
7. When the bow of the sailboat reaches head to wind, the sailboat will slow to a stop.
8. Unless mooring, when the sailboat comes to a complete stop, the skipper will pull the tiller slightly to windward, to ensure the sailboat does not become stuck in irons.



Luffing up from a reach to stop a sailboat is often referred to as a "J-approach".



Canadian Yachting Association, White Sail Workbook (Manuscript in preparation)

Figure 15-9-2 J-Approach



Canadian Yachting Association, White Sail Workbook (Manuscript in preparation)

Figure 15-9-3 Head to Wind (Irons)



Canadian Yachting Association, White Sail Workbook (Manuscript in preparation)

Figure 15-9-4 Luffing

CONFIRMATION OF TEACHING POINT 1

QUESTIONS

- Q1. What is luffing up?
- Q2. What are three situations in which a skipper may stop a sailboat?
- Q3. Why should the skipper pull the tiller slightly to windward as the sailboat comes to a stop?

ANTICIPATED ANSWERS

- A1. Heading up, causing the sails to flutter, so that the sailboat comes to a stop.
- A2. A skipper may stop a sailboat:
- for a control position,
 - at a mooring ball, and
 - when recovering a crew overboard.
- A3. To prevent the sailboat from becoming stuck in irons.

Teaching Point 2**Conduct Activities Where the Cadets Will Stop a Sailboat**

Time: 30 min

Method: Practical Activity

ACTIVITY 1

Time: 20 min

OBJECTIVE

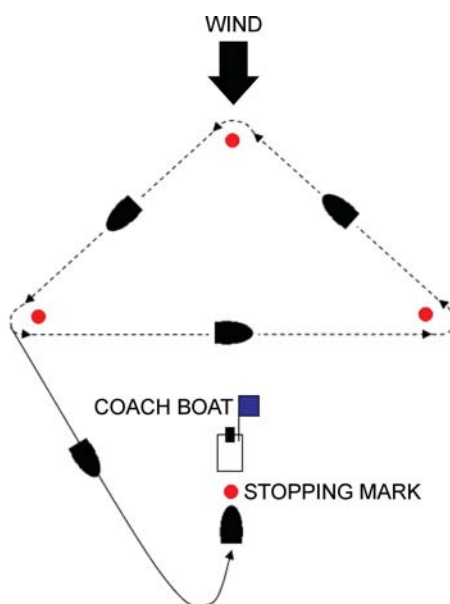
The objective of this activity is to have the cadets practice stopping a sailboat.

RESOURCES

- Fully equipped sailboat,
- Helmet (one per cadet),
- Personal floatation device (PFD) (one per cadet),
- Coach boat (minimum of one per eight sailboats),
- Four buoys with lines and weights,
- Blue flag, and
- Whistle.

ACTIVITY LAYOUT

The coach boat operator will set buoys in a diamond formation, large enough to accommodate all the sailboats (as illustrated in Figure 15-9-5).



Director Cadets 3, 2007, Ottawa, ON: Department of National Defence

Figure 15-9-5 Luffing Round the Corner

ACTIVITY INSTRUCTIONS

1. Conduct the briefing for Drill 1, located at Annex T, prior to conducting this activity.
2. Have the sailboats sail into a control position and restate the drill, its objectives and key points.
3. Have the sailboats sail a triangle course around the top three marks rounding the marks to starboard.
4. Using a blue flag, signal a sailboat as it rounds the gybe mark, to sail downwind toward the stopping mark where the coach boat is located.



When a sailboat is sailing to the stopping mark lower the blue flag so other sailboats remain on the triangle course.

5. Have the sailboat sail past the stopping mark, perform a J-approach and stop.
6. The coach boat shall focus on the following:
 - a. **Course Control.** Have the skipper move the tiller smoothly toward the mainsail while luffing up and coming to a stop to gain experience in how much tiller movement is required. Have the skipper pull the tiller slightly to windward to ensure the sailboat does not become stuck in irons.
 - b. **Sail Trim.** Have the skipper and crew ease the sheets to gain experience in identifying how much distance a sailboat requires to come to a stop.
 - c. **Lookout.** Have the crew constantly inform the skipper of sailboats in the immediate area around the sailboat. The crew will also make suggestions for course headings to prevent collisions.
7. Have the sailboat sail back to the triangle.
8. Repeat steps 4. to 7. for each sailboat.
9. Once all the sailboats have stopped at the stopping mark, switch skipper and crew and repeat steps 4. to 8.
10. When the drill is completed, have the sailboats sail into a control position and quickly debrief the cadets on the drill conducted before beginning the next drill.



COMMON ERRORS

It is common for novice sailors to make the following errors when learning to stop a sailboat:

- course control, to include:
 - pushing the tiller too far away, resulting in an accidental tack;
 - heading up too early and stopping short of the stopping mark; and
 - heading up too late and sailing past the stopping mark; and
- sail trim, to include:
 - easing the sails too early resulting in insufficient boat speed to make it to the mark; and
 - easing the sails too late resulting in excessive boat speed and sailing past the mark.



If an alternative drill is to be used, focus on the key points outlined in the briefing located at Annex T.

SAFETY

- Ensure a coach boat is present at all times.
- Ensure the size of the course is large enough to prevent collisions.
- Ensure A-CR-CCP-030/PT-001 is adhered to throughout the activity.

ACTIVITY 2

Time: 10 min

OBJECTIVE

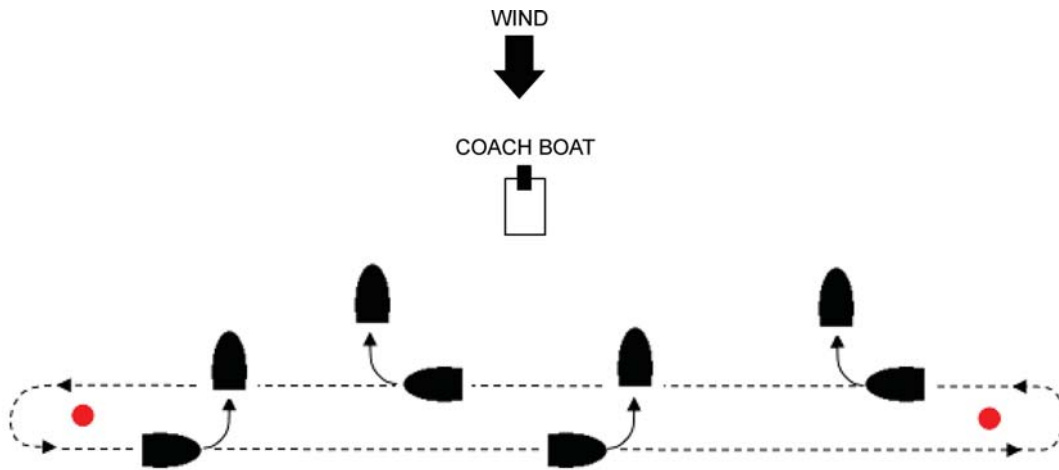
The objective of this activity is to have the cadets practice stopping a sailboat.

RESOURCES

- Fully equipped sailboat,
- Helmet (one per cadet),
- PFD (one per cadet),
- Coach boat (minimum of one per eight sailboats),
- Two buoys with lines and weights, and
- Whistle.

ACTIVITY LAYOUT

The coach boat operator will set buoys in a sausage formation large enough to accommodate all the sailboats (as illustrated in Figure 15-9-6).



Director Cadets 3, 2007, Ottawa, ON: Department of National Defence

Figure 15-9-6 Red Light Green Light



It is important for the coach boat to circulate around the course coaching the cadets on the specific skills being practiced.

ACTIVITY INSTRUCTIONS

1. Conduct the briefing for Drill 2 located at Annex U prior to conducting this activity.
2. Have the sailboats sail into a control position and restate the drill, its objectives and key points.
3. Have the sailboats sail the sausage course rounding the marks to starboard.
4. Using a whistle, sound one blast to have the sailboats head up and come to a stop.
5. Using a whistle, sound two blasts to have the sailboats bear away and continue on the sausage course.
6. The coach boat shall focus on the following:
 - a. **Course Control.** Have the skipper move the tiller smoothly toward the mainsail while luffing up and coming to a stop to gain experience in how much tiller movement is required. Have the skipper pull the tiller slightly to windward to ensure the sailboat does not become stuck in irons.
 - b. **Sail Trim.** Have the skipper and crew ease the sheets to gain experience in identifying how much distance a sailboat requires to come to a stop.
 - c. **Lookout.** Have the crew constantly inform the skipper of sailboats in the immediate area around the sailboat. The crew may also make suggestions for course headings to prevent collisions.



Have the cadets switch positions as skipper and crew midway through the activity.

7. When the drill is completed, have the sailboats sail into a control position and quickly debrief the cadets on the drill conducted before beginning the next drill.



COMMON ERRORS

It is common for novice sailors to make the following errors when learning to stop a sailboat:

- course control, to include:
 - pushing the tiller too far away, resulting in an accidental tack;
 - not heading up enough resulting in the sailboat maintaining boat speed and going off course; and
 - not bearing off slightly once the sailboat has come to a stop and becoming stuck in irons; and
- sail trim, to include not trimming sails out far enough resulting in the sailboat maintaining boat speed and going off course.



If an alternative drill is to be used, focus on the key points outlined in the briefing located at Annex U.

SAFETY

- Ensure a coach boat is present at all times.
- Ensure the size of the course is large enough to prevent collisions.
- Ensure A-CR-CCP-030/PT-001 is adhered to throughout the activity.

CONFIRMATION OF TEACHING POINT 2

The cadets' participation in the activities will serve as the confirmation of this TP.

Teaching Point 3**Conduct an Activity Where the Cadets Will Identify How to Tack a Sailboat**

Time: 10 min

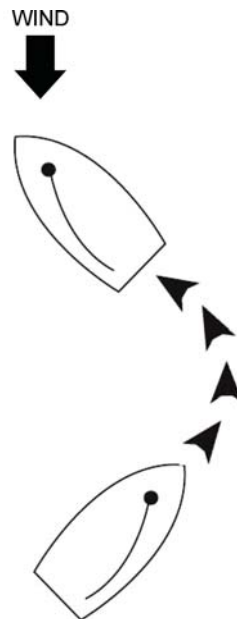
Method: In-Class Activity



Provide the cadets with this material prior to conducting the activity.

TACKING

Tacking is performed when sailing upwind. To complete a tack, the skipper pushes the tiller toward the mainsail, causing the bow of the sailboat to turn toward the wind eventually passing the bow through it. The sails, skipper and crew will switch sides.



Canadian Yachting Association, White Sail Workbook (Manuscript in preparation)

Figure 15-9-7 Tacking

How to Tack

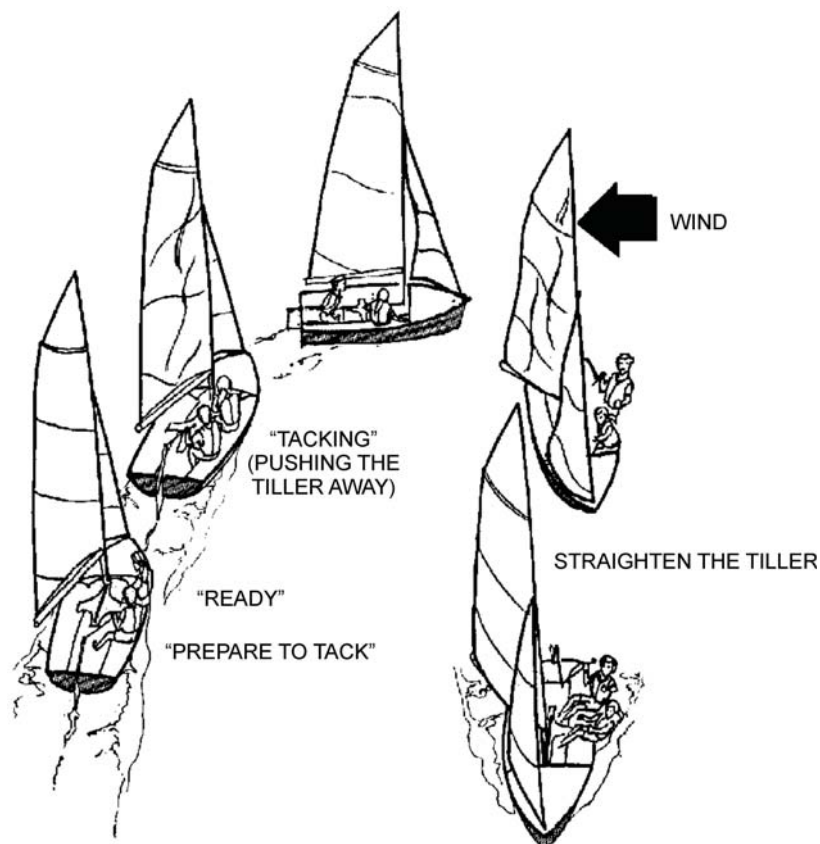
The steps to tacking are as follows:

1. The skipper will say, "Prepare to Tack."
2. The crew will reply, "Ready."
3. The skipper will say, "Tacking."
4. The skipper will push the tiller toward the mainsail, causing the sailboat to turn toward the wind. When the sailboat's bow passes through head to wind, the sails will begin to switch sides.
5. The skipper and crew will switch sides, with the skipper switching the tiller and the mainsheet behind their back, so they remain facing forward, and the crew switching the jib sheets as the jib switches sides.

6. The skipper will straighten the tiller and continue sailing.



The crew will maintain a lookout throughout the tack.



S. Donaldson, Basic Sailing Skills Manual, Canadian Yachting Association (p. 59)

Figure 15-9-8 Skipper Commands

ACTIVITY

Time: 10 min

OBJECTIVE

The objective of this activity is to have the cadets identify how to tack a sailboat by participating in a simulated activity on shore.

RESOURCES

- A fully rigged sailboat, and
- Helmet (one per cadet),

- PFD (one per cadet),
- A mock-up or dolly.

ACTIVITY LAYOUT

Set up a fully rigged sailboat pointed on a close hauled course on a mock-up or dolly.

ACTIVITY INSTRUCTIONS

1. Divide the cadets into pairs.
2. Have each group enter the fully rigged sailboat.
3. Have each group practice the steps of tacking a sailboat.
4. As the skipper pushes the tiller toward the mainsail, move the sailboat's bow through head to wind. Continue to move the sailboat until the sails switch sides and refill, and the skipper straightens the tiller.
5. Have each cadet practice the steps of tacking as a skipper and crew at least once, or until the cadet feels comfortable with the skill.



If multiple sail coaches and sailboats are available, additional groups can participate in the activity simultaneously.

SAFETY

This activity must be conducted in a large area that is free of obstructions.

CONFIRMATION OF TEACHING POINT 3

The cadets' participation in the activity will serve as the confirmation of this TP.

Teaching Point 4

Conduct Activities Where the Cadets Will Sail on a Close Reach, Sail Close Hauled and Tack a Sailboat

Time: 120 min

Method: Practical Activity

ACTIVITY 1

Time: 20 min

OBJECTIVE

The objective of this activity is to have the cadets practice tacking and sailing on a close reach.

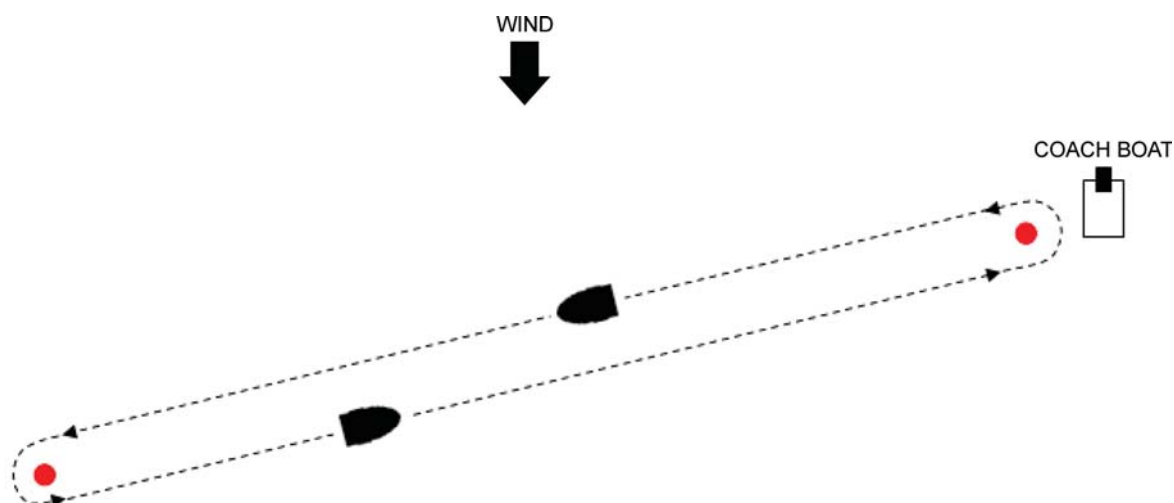
RESOURCES

- Fully equipped sailboat,
- Helmet (one per cadet),
- PFD (one per cadet),

- Coach boat (minimum of one per eight sailboats),
- Two buoys with lines and weights, and
- Whistle.

ACTIVITY LAYOUT

The coach boat operator will set buoys in a sausage formation, large enough to accommodate all the sailboats (as illustrated in Figure 15-9-9).



Director Cadets 3, 2007, Ottawa, ON: Department of National Defence

Figure 15-9-9 Saucy Sausage



It is important for the coach boat to circulate around the course coaching the cadets on the specific skills being practiced.

ACTIVITY INSTRUCTIONS

1. Conduct the briefing for Drill 3, located at Annex V, prior to conducting this activity.
2. Have the sailboats sail into a control position and restate the drill, its objectives and key points.
3. Have the sailboats sail around the sausage course rounding the marks to starboard.
4. The coach boat shall focus on the following:
 - a. **Tacking.** Have the sailboats sail an upwind course between the two marks. Coach the sailboats as they tack having the skipper slowly push the tiller away. As the sailboat begins to head through the wind, the sails will begin to luff. The skipper and crew should begin to switch sides of the sailboat, ducking below the swinging boom. The skipper should move swiftly from one side to the other by moving the aft foot first, ducking and sitting on the other side of the sailboat.



The tiller extension and mainsheet should never leave the hands of the skipper.
The skipper shall always face the bow of the sailboat, never the stern.

After sitting on the other side of the sailboat, the skipper shall switch the tiller extension and mainsheet to the opposite hand. As the skipper is moving from side to side, the crew shall switch sides, along with switching the jib sheets. When the bow of the sailboat has passed through head to wind, the skipper should immediately place the tiller in the centre of the sailboat to resume a straight course.

- b. **Course Control.** Have the skipper perform small tiller adjustments in order to maintain a straight course while sailing on a close reach.
- c. **Sail Trim.** Have the skipper and crew make sheet adjustments to maintain sail trim while sailing upwind.
- d. **Lookout.** Have the crew constantly inform the skipper of sailboats in the immediate area around the sailboat prior to tacking. The crew will also make suggestions for course headings to prevent collisions.



Have the cadets switch positions as skipper and crew midway through the activity.

- 5. Once the cadets are comfortable rounding the marks to starboard, have the sailboats change direction and round the marks to port.
- 6. When the drill is completed, have the sailboats sail into a control position and quickly debrief the cadets on the drill conducted before beginning the next drill.



COMMON ERRORS

It is common for novice sailors to make the following errors when learning to tack and sail on a close reach:

- tacking, to include:
 - pulling the tiller instead of pushing;
 - looking toward the stern;
 - letting go of the tiller extension;
 - letting go of the mainsheet; and
 - not ducking;
- course control, to include:
 - not maintaining a straight course while sailing upwind; and
 - accidentally tacking or heading up into irons; and
- sail trim, to include:
 - not trimming the sails according to the course adjustments; and
 - cleating the mainsheet, resulting in an accidental capsize.



If an alternative drill is to be used, focus on the key points outlined in the briefing located at Annex V.

SAFETY

- Ensure a coach boat is present at all times.
- Ensure the size of the course is large enough to prevent collisions.
- Ensure A-CR-CCP-030/PT-001 is adhered to throughout the activity.

ACTIVITY 2

Time: 20 min

OBJECTIVE

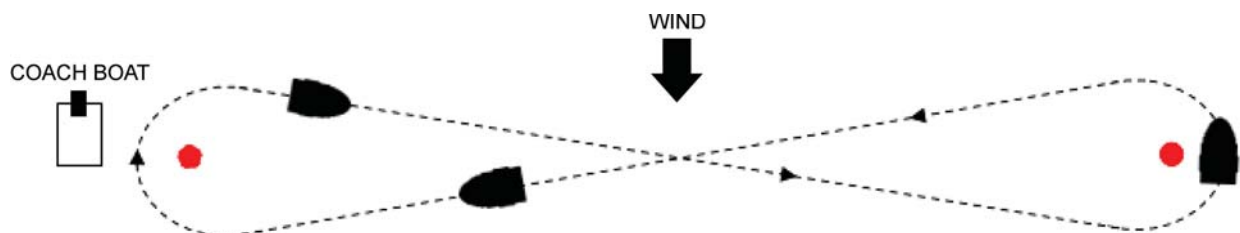
The objective of this activity is to have the cadets practice tacking.

RESOURCES

- Fully equipped sailboat,
- Helmet (one per cadet),
- PFD (one per cadet),
- Coach boat (minimum of one per eight sailboats),
- Two buoys with lines and weights, and
- Whistle.

ACTIVITY LAYOUT

The coach boat operator will set buoys in a sausage formation, large enough to accommodate all the sailboats (as illustrated in Figure 15-9-10).



Director Cadets 3, 2008, Ottawa, ON: Department of National Defence

Figure 15-9-10 Double Donuts



It is important for the coach boat to circulate around the course coaching the cadets on the specific skills being practiced.

ACTIVITY INSTRUCTIONS

1. Conduct the briefing for Drill 4, located at Annex W, prior to conducting this activity.
2. Have the sailboats sail into a control position and restate the drill, its objectives and key points.
3. Have the sailboats sail a figure-of-eight course around the two marks.
4. The coach boat shall focus on the following:
 - a. **Tacking.** Ensure the skipper does not let go of the tiller extension and that the mainsheet is tight throughout the tack. Ensure the skipper does not face the stern while exchanging the tiller extension and mainsheet.
 - b. **Course Control.** Have the skipper perform smooth tiller adjustments while tacking around the marks and bearing away.
 - c. **Sail Trim.** Have the skipper and crew make sheet adjustments to maintain sail trim while sailing upwind.
 - d. **Lookout.** Have the crew constantly inform the skipper of sailboats in the immediate area around the sailboat prior to tacking. The crew will also make suggestions for course headings to prevent collisions.



Have the cadets switch position as skipper and crew midway through the activity.

5. Once the cadets are comfortable rounding the marks to starboard, have the sailboats change direction and round the marks to port.
6. When the drill is completed, have the sailboats sail into a control position and quickly debrief the cadets on the drill conducted before beginning the next drill.



COMMON ERRORS

It is common for novice sailors to make the following errors when learning to tack:

- course control, to include:
 - too much tiller movement and tacking too fast resulting in the sailboat uncontrollably bearing off; and
 - accidentally tacking or heading up into irons; and
- sail trim, to include, not trimming the sails according to the course adjustments.



If an alternative drill is to be used, focus on the key points outlined in the briefing located at Annex W.

SAFETY

- Ensure a coach boat is present at all times.
- Ensure the size of the course is large enough to prevent collisions.
- Ensure A-CR-CCP-030/PT-001 is adhered to throughout the activity.

ACTIVITY 3

Time: 25 min

OBJECTIVE

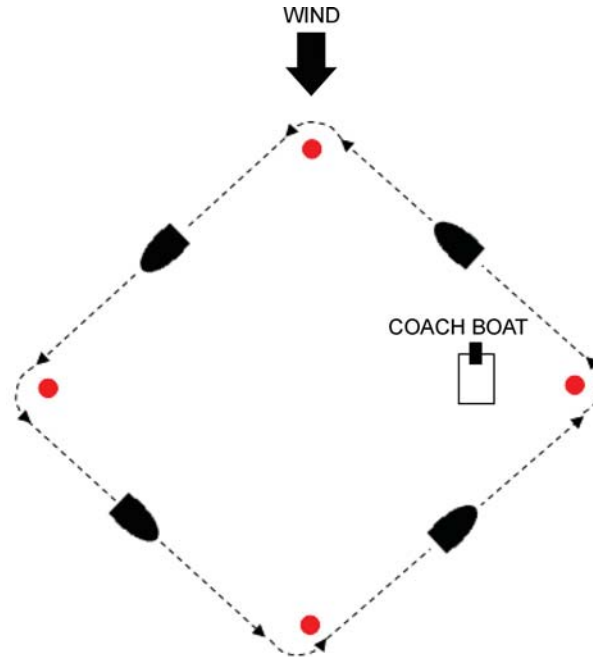
The objective of this activity is to have the cadets practice tacking and sailing on a close reach.

RESOURCES

- Fully equipped sailboat,
- Helmet (one per cadet),
- PFD (one per cadet),
- Coach boat (minimum of one per eight sailboats),
- Four buoys with lines and weights, and
- Whistle.

ACTIVITY LAYOUT

The coach boat operator will set buoys in a diamond formation, large enough to accommodate all the sailboats (as illustrated in Figure 15-9-11).



Director Cadets 3, 2007, Ottawa, ON: Department of National Defence

Figure 15-9-11 Crispy Cracker



It is important for the coach boat to circulate around the course coaching the cadets on the specific skills being practiced.

ACTIVITY INSTRUCTIONS

1. Conduct the briefing for Drill 5, located at Annex X, prior to conducting this activity.
2. Have the sailboats sail into a control position and restate the drill, its objectives and key points.
3. Have the sailboats sail around the diamond course rounding the marks to starboard.
4. The coach boat shall focus on the following:
 - a. **Tacking.** Ensure the skipper does not let go of the tiller extension and that the mainsheet is tight throughout the tack. Ensure the skipper does not face the stern while exchanging the tiller extension and mainsheet. The sailboat should not sail past a close reach after completing the tack.
 - b. **Course Control.** Have the skipper perform small tiller adjustments in order to maintain a straight course while sailing on a close reach.
 - c. **Sail Trim.** Have the skipper and crew make sheet adjustments to maintain sail trim while sailing upwind.
 - d. **Lookout.** Have the crew constantly inform the skipper of sailboats in the immediate area around the sailboat prior to tacking. The crew will also make suggestions for course headings to prevent collisions.



Have the cadets switch positions as skipper and crew midway through the activity.

5. Once the cadets are comfortable rounding the marks to starboard, have the sailboats change direction and round the marks to port.
6. When the drill is completed, have the sailboats sail into a control position and quickly debrief the cadets on the drill conducted before beginning the next drill.



COMMON ERRORS

It is common for novice sailors to make the following errors when learning to tack and sail on a close reach:

- course control, to include:
 - too much tiller movement and tacking too fast resulting in the sailboat bearing off past a close reach; and
 - accidentally tacking or heading up into irons; and
- sail trim, to include, not trimming the sails according to the course adjustments.



If an alternative drill is to be used, focus on the key points outlined in the briefing located at Annex X.

SAFETY

- Ensure a coach boat is present at all times.
- Ensure the size of the course is large enough to prevent collisions.
- Ensure A-CR-CCP-030/PT-001 is adhered to throughout the activity.

ACTIVITY 4

Time: 25 min

OBJECTIVE

The objective of this activity is to have the cadets practice tacking, sailing close hauled and sailing on a close reach.

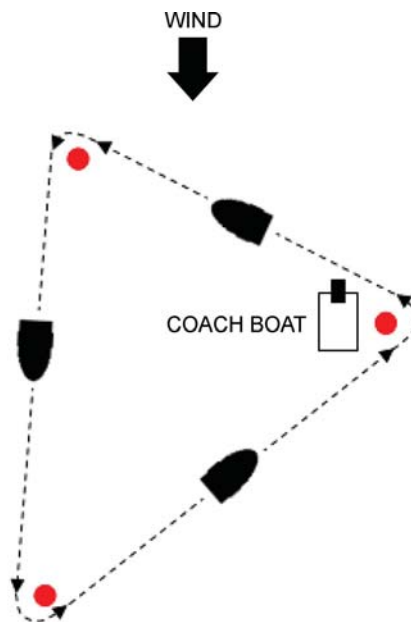
RESOURCES

- Fully equipped sailboat,
- Helmet (one per cadet),
- PFD (one per cadet),

- Coach boat (minimum of one per eight sailboats),
- Three buoys with lines and weights, and
- Whistle.

ACTIVITY LAYOUT

The coach boat operator will set buoys in a triangle formation, large enough to accommodate all the sailboats(as illustrated in Figure 15-9-12).



Director Cadets 3, 2007, Ottawa, ON: Department of National Defence

Figure 15-9-12 Gnarly Nacho



It is important for the coach boat to circulate around the course coaching the cadets on the specific skills being practiced.

ACTIVITY INSTRUCTIONS

1. Conduct the briefing for Drill 6, located at Annex Y, prior to conducting this activity.
2. Have the sailboats sail into a control position and restate the drill, its objectives and key points.
3. Have the sailboats sail around the triangle course rounding the marks to starboard.
4. The coach boat shall focus on the following:
 - a. **Tacking.** Ensure the skipper does not let go of the tiller extension and that the mainsheet is tight throughout the tack. Ensure the skipper does not face the stern while exchanging the tiller extension and mainsheet. The sailboat should not sail past a close reach after completing the tack.
 - b. **Course Control.** Have the skipper perform small tiller adjustments in order to maintain a straight course while sailing close hauled and sailing on a close reach.

- c. **Sail Trim.** Have the skipper and crew make sheet adjustments to maintain sail trim while sailing upwind.
- d. **Lookout.** Have the crew constantly inform the skipper of sailboats in the immediate area around the sailboat prior to tacking. The crew will also make suggestions for course headings to prevent collisions.



Have the cadets switch positions as skipper and crew midway through the activity.

5. When the drill is completed, have the sailboats sail into a control position and quickly debrief the cadets on the drill conducted before beginning the next drill.



COMMON ERRORS

It is common for novice sailors to make the following errors when learning to tack, sail close hauled and sail on a close reach:

- course control, to include:
 - too much tiller movement and tacking too fast resulting in the sailboat bearing off past a close reach; and
 - accidentally tacking or heading up into irons; and
- sail trim, to include:
 - not trimming the sails according to the course adjustments; and
 - not cleating the jib sheet, sometimes resulting in the skipper sailing below close hauled.



If an alternative drill is to be used, focus on the key points outlined in the briefing located at Annex Y.

SAFETY

- Ensure a coach boat is present at all times.
- Ensure the size of the course is large enough to prevent collisions.
- Ensure A-CR-CCP-030/PT-001 is adhered to throughout the activity.

ACTIVITY 5

Time: 30 min

OBJECTIVE

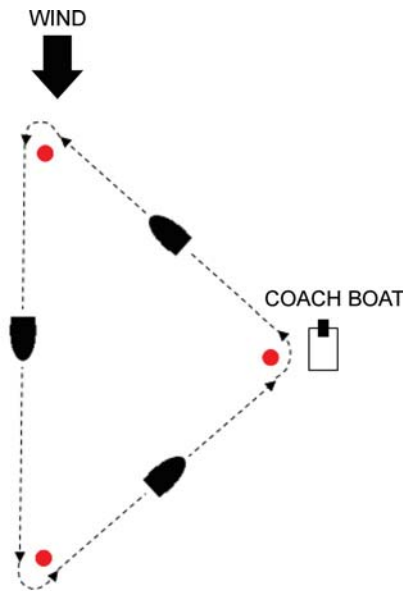
The objective of this activity is to have the cadets practice tacking and sailing on a close hauled course.

RESOURCES

- Fully equipped sailboat,
- Helmet (one per cadet),
- PFD (one per cadet),
- Coach boat (minimum of one per eight sailboats),
- Three buoys with lines and weights, and
- Whistle.

ACTIVITY LAYOUT

The coach boat operator will set buoys in a triangle formation, large enough to accommodate all the sailboats (as illustrated in Figure 15-9-13).



Director Cadets 3, 2007, Ottawa, ON: Department of National Defence

Figure 15-9-13 Corny Corn Chip



It is important for the coach boat to circulate around the course coaching the cadets on the specific skills being practiced.

ACTIVITY INSTRUCTIONS

1. Conduct the briefing for Drill 7, located at Annex Z, prior to conducting this activity.
2. Have the sailboats sail into a control position and restate the drill, its objectives and key points.
3. Have the sailboats sail around the triangle course rounding the marks to starboard.
4. The coach boat shall focus on the following:
 - a. **Tacking.** Ensure the skipper does not let go of the tiller extension and that the mainsheet is tight throughout the tack. Ensure the skipper does not face the stern while exchanging the tiller extension and mainsheet. The sailboat should not sail past a beam reach after completing the tack.
 - b. **Course Control.** Have the skipper perform small tiller adjustments in order to maintain a straight course while sailing close hauled.
 - c. **Sail Trim.** Have the skipper and crew make sheet adjustments to maintain sail trim while sailing upwind.
 - d. **Lookout.** Have the crew constantly inform the skipper of sailboats in the immediate area around the sailboat prior to tacking. The crew will also make suggestions for course headings to prevent collisions.



Have the cadets switch as skipper and crew midway through the activity.

5. When the drill is completed, have the sailboats sail into a control position and quickly debrief the cadets on the drill conducted before beginning the next drill.



COMMON ERRORS

It is common for novice sailors to make the following errors when learning to tack and sail close hauled:

- course control, to include:
 - too much tiller movement and tacking too fast resulting in the sailboat bearing off past a close reach; and
 - accidentally tacking or heading up into irons; and
- sail trim, to include:
 - not trimming the sails according to the course adjustments; and
 - not cleating the jib sheet, sometimes resulting in the skipper sailing below close hauled.



If an alternative drill is to be used, focus on the key points outlined in the briefing located at Annex Z.

SAFETY

- Ensure a coach boat is present at all times.
- Ensure the size of the course is large enough to prevent collisions.
- Ensure A-CR-CCP-030/PT-001 is adhered to throughout the activity.

CONFIRMATION OF TEACHING POINT 4

The cadets' participation in the activities will serve as the confirmation of this TP.

Teaching Point 5

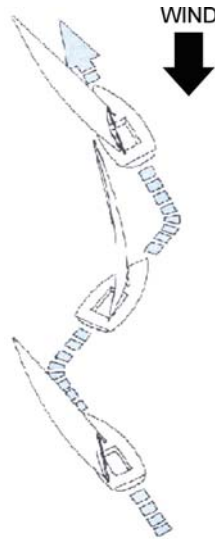
Explain How to Beat Upwind

Time: 5 min

Method: Interactive Lecture

BEATING

Beating is performed when sailing to an upwind destination. To beat upwind, the cadets perform a series of tacks close hauled first on one tack, then the other. This is the quickest way to reach a destination directly upwind.



S. Donaldson, Advanced Sailing Skills Manual, Canadian Yachting Association (p. 21)

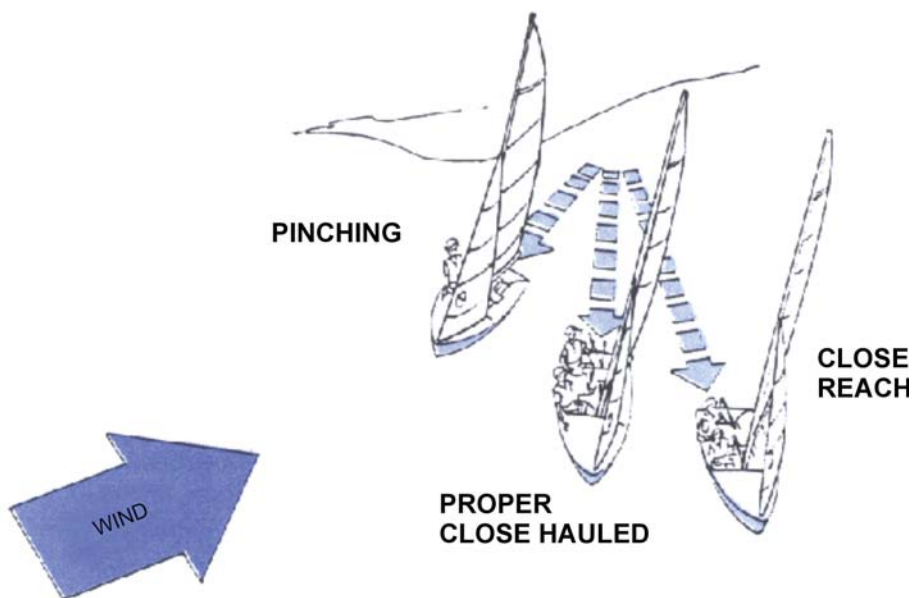
Figure 15-9-14 Beating

The following tips will assist a sailboat in reaching an upwind destination while beating:

Sailing Close Hauled. Pinching for extended periods will result in slowing the boat speed and increasing leeway. Sailing on a close reach will result in the sailboat going further than required to reach an upwind destination.

Sailing by the Ticklers. The crew cleating the jib sheet, while trimming for close hauled, will allow the skipper to sail using the ticklers to guide course adjustments.

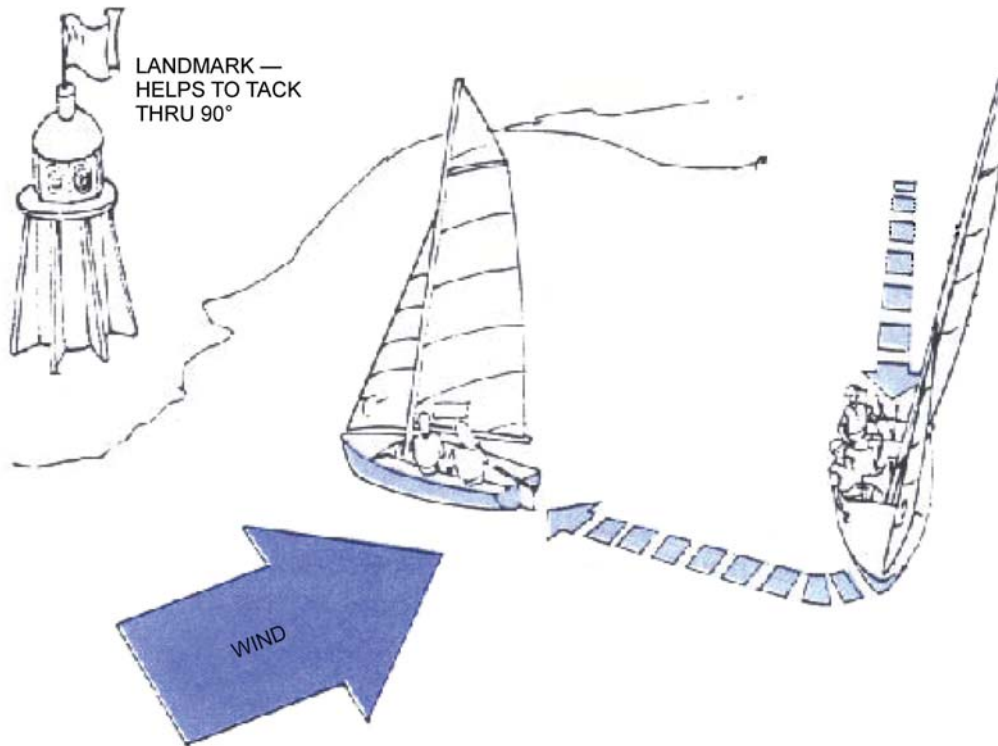
Sailing by the Luff. If the jib sail does not have ticklers, the crew can cleat the jib sail while trimming for close hauled. The skipper heads up until the forward edge of the jib sail just begins to luff and bears away just until the sails re-fill. This must be done frequently to ensure the sailboat is neither on a close reach or pinching.



S. Donaldson, Basic Sailing Skills Manual, Canadian Yachting Association (p. 78)

Figure 15-9-15 Close Hauled

Landmarking. The skipper choosing a landmark 90 degrees to windward of the sailboat, just prior to tacking, will help avoid tacking close hauled to close reach or becoming stuck in irons.



S. Donaldson, Basic Sailing Skills Manual, Canadian Yachting Association (p. 78)

Figure 15-9-16 Landmarking

CONFIRMATION OF TEACHING POINT 5

QUESTIONS

- Q1. When is beating performed?
- Q2. What three tips will assist a sailboat in reaching an upwind destination while beating?
- Q3. What should the skipper do prior to tacking, to avoid tacking close hauled to close reach or becoming stuck in irons.

ANTICIPATED ANSWERS

- A1. When sailing to an upwind destination.
- A2. Three tips will assist a sailboat in reaching an upwind destination while beating are:
- sailing close hauled;
 - sailing by the ticklers; and
 - sailing by the luff.
- A3. Choose a landmark 90 degrees to windward of the sailboat.

Teaching Point 6**Conduct Activities Where the Cadets Will Beat Upwind**

Time: 125 min

Method: Practical Activity

ACTIVITY 1

Time: 25 min

OBJECTIVE

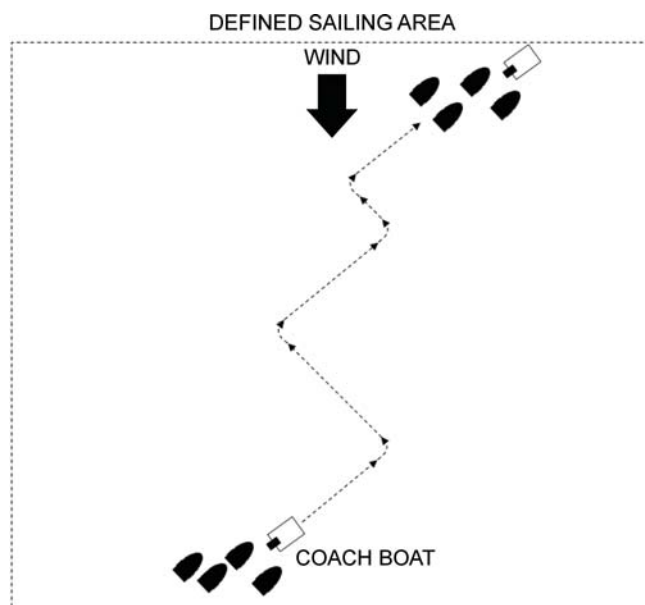
The objective of this activity is to have the cadets practice beating.

RESOURCES

- Fully equipped sailboat,
- Helmet (one per cadet),
- PFD (one per cadet), and
- Coach boat (minimum of one per eight sailboats).

ACTIVITY LAYOUT

The coach boat operator will identify the defined sailing area (as illustrated in Figure 15-9-17).



Director Cadets 3, 2007, Ottawa, ON: Department of National Defence

Figure 15-9-17 Climbing the Mountain



It is important for the coach boat to circulate around the course coaching the cadets on the specific skills being practiced.

ACTIVITY INSTRUCTIONS

1. Conduct the briefing for Drill 8, located at Annex AA, prior to conducting this activity.
2. Have the sailboats sail into a control position and restate the drill, its objectives and key points.
3. Instruct the sailboats to play follow-the-leader with the coach boat.
4. Take the sailboats around the sailing area, frequently altering the direction of the coach boat, forcing the sailboats to tack back and forth from close hauled to close hauled.
5. Throughout the activity assign a sailboat in front of the fleet to act as the leader so that coaching can take place with all of the sailboats.
6. The coach boat shall focus on the following:
 - a. **Tacking.** Ensure the skipper does not let go of the tiller extension and that the mainsheet stays sheeted in tight throughout the tack while facing the bow of the sailboat. The sailboat should not turn past a close hauled course after completing a tack.
 - b. **Course Control.** Have the skipper perform small tiller adjustments in order to maintain a straight course while sailing close hauled.
 - c. **Sail Trim.** Have the crew cleat the jib sheet while sailing on a close hauled course.
 - d. **Lookout.** Have the crew constantly inform the skipper of sailboats in the immediate area around the sailboat prior to tacking. The crew will also make suggestions for course headings to prevent collisions.



Have the cadets switch positions as skipper and crew midway through the activity.

7. When the drill is completed, have the sailboats sail into a control position and quickly debrief the cadets on the drill conducted before beginning the next drill.



COMMON ERRORS

It is common for novice sailors to make the following errors when learning to beat upwind:

- course control, to include:
 - too much tiller movement and tacking too fast resulting in the sailboat bearing off past close hauled;
 - not heading up in gusts to avoid capsizing; and
 - accidentally tacking or heading up into irons; and
- sail control, to include:
 - not easing the sails in gusts, resulting in an accidental capsize; and
 - not cleating the jib sheet, sometimes resulting in the skipper sailing below close hauled.



If an alternative drill is to be used, focus on the key points outlined in the briefing located at Annex AA.

SAFETY

- Ensure a coach boat is present at all times.
- Ensure the size of the course is large enough to prevent collisions.
- Ensure A-CR-CCP-030/PT-001 is adhered to throughout the activity.

ACTIVITY 2

Time: 30 min

OBJECTIVE

The objective of this activity is to have the cadets practice beating.

RESOURCES

- Fully equipped sailboat,
- Helmet (one per cadet),
- PFD (one per cadet),
- Coach boat (minimum of one per eight sailboats),
- Two buoys with lines and weights, and
- Whistle.

ACTIVITY LAYOUT

The coach boat operator will set buoys in a windward-leeward formation, large enough to accommodate all the sailboats (as illustrated in Figure 15-9-18).



Director Cadets 3, 2007, Ottawa, ON: Department of National Defence

Figure 15-9-18 Snakes and Ladders



It is important for the coach boat to circulate around the course coaching the cadets on the specific skills being practiced.

ACTIVITY INSTRUCTIONS

1. Conduct the briefing for Drill 9, located at Annex AB, prior to conducting this activity.
2. Have the sailboats sail into a control position and restate the drill, its objectives and key points.
3. Have the sailboats sail around the windward-leeward course rounding the marks to starboard.
4. Have the sailboats complete one tack before reaching the windward mark. Instruct the cadets to increase the number of tacks by two, every second time around the course.
5. The coach boat shall focus on the following:
 - a. **Tacking.** Ensure the skipper does not let go of the tiller extension and that the mainsheet is tight throughout the tack. Ensure the skipper does not face the stern while exchanging the tiller extension and mainsheet. The sailboat should not sail past a close hauled after completing the tack.
 - b. **Course Control.** Have the skipper perform small tiller adjustments in order to maintain a straight course while sailing close hauled.
 - c. **Sail Trim.** Have the crew cleat the jib sheet while sailing upwind.

- d. **Lookout.** Have the crew constantly inform the skipper of sailboats in the immediate area around the sailboat prior to tacking. The crew will also make suggestions for course headings to prevent collisions.



Have the cadets switch positions as skipper and crew midway through the activity.

6. When the drill is completed, have the sailboats sail into a control position and quickly debrief the cadets on the drill conducted before beginning the next drill.



COMMON ERRORS

It is common for novice sailors to make the following errors when learning to beat upwind:

- course control, to include:
 - too much tiller movement and tacking too fast resulting in the sailboat bearing off past close hauled;
 - not heading up in gusts to avoid capsizing; and
 - accidentally tacking or heading up into irons; and
- sail trim, to include:
 - not easing the sails in gusts, resulting in an accidental capsize; and
 - not cleating the jib sheet, sometimes resulting in the skipper sailing below close hauled.



If an alternative drill is to be used, focus on the key points outlined in the briefing located at Annex AB.

SAFETY

- Ensure a coach boat is present at all times.
- Ensure the size of the course is large enough to prevent collisions.
- Ensure A-CR-CCP-030/PT-001 is adhered to throughout the activity.

ACTIVITY 3

Time: 30 min

OBJECTIVE

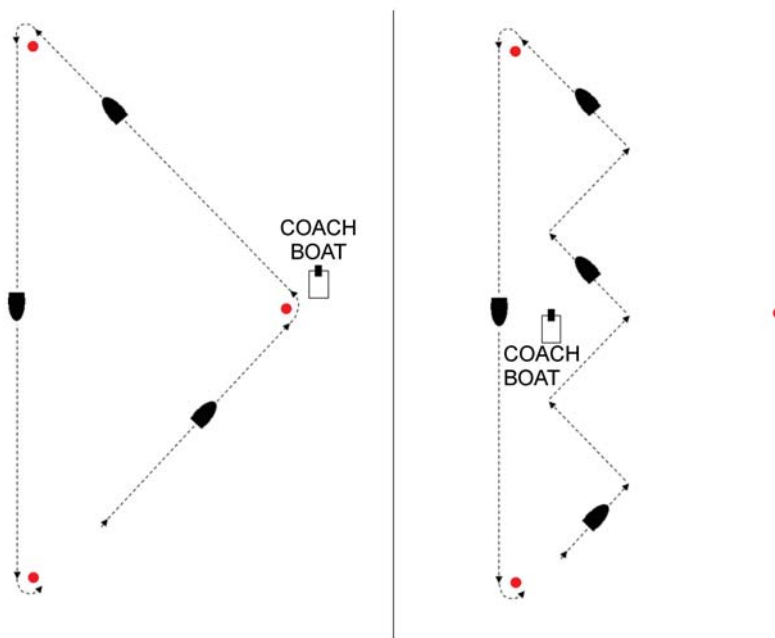
The objective of this activity is to have the cadets practice beating.

RESOURCES

- Fully equipped sailboat,
- Helmet (one per cadet),
- PFD (one per cadet),
- Coach boat (minimum of one per eight sailboats),
- Three buoys with lines and weights, and
- Whistle.

ACTIVITY LAYOUT

The coach boat operator will set buoys in a triangle formation, large enough to accommodate all the sailboats (as illustrated in Figure 15-9-19).



Director Cadets 3, 2008, Ottawa, ON: Department of National Defence

Figure 15-9-19 Pit Lane



It is important for the coach boat to circulate around the course coaching the cadets on the specific skills being practiced.

ACTIVITY INSTRUCTIONS

1. Conduct the briefing for Drill 10, located at Annex AC, prior to conducting this activity.
2. Have the sailboats sail into a control position and restate the drill, its objectives and key points.
3. Have the sailboats sail around the triangle course rounding the marks to starboard.

4. Once around the triangle course have the sailboats sail around the windward-leeward course rounding the marks to starboard.
5. Have the sailboats repeat steps 3. and 4.
6. The coach boat shall focus on the following:
 - a. **Tacking.** Ensure the skipper does not let go of the tiller extension and that the mainsheet is tight throughout the tack. Ensure the skipper does not face the stern while exchanging the tiller extension and mainsheet. The sailboat should not sail past a close hauled after completing the tack.
 - b. **Course Control.** Have the skipper perform small tiller adjustments in order to maintain a straight course while sailing close hauled.
 - c. **Sail Trim.** Have the crew cleat the jib sheet while sailing upwind.
 - d. **Lookout.** Have the crew constantly inform the skipper of sailboats in the immediate area around the sailboat prior to tacking. The crew will also make suggestions for course headings to prevent collisions.



Have the cadets switch positions as skipper and crew midway through the activity.

7. When the drill is completed, have the sailboats sail into a control position and quickly debrief the cadets on the drill conducted before beginning the next drill.



COMMON ERRORS

It is common for novice sailors to make the following errors when learning to beat upwind:

- course control, to include:
 - too much tiller movement and tacking too fast resulting in the sailboat bearing off past close hauled;
 - not heading up in gusts to avoid capsizing; and
 - accidentally tacking or heading up into irons; and
- sail trim, to include:
 - not easing the sails in gusts, resulting in an accidental capsize; and
 - not cleating the jib sheet, sometimes resulting in the skipper sailing below close hauled.



If an alternative drill is to be used, focus on the key points outlined in the briefing located at Annex AC.

SAFETY

- Ensure a coach boat is present at all times.
 - Ensure the size of the course is large enough to prevent collisions.
 - Ensure A-CR-CCP-030/PT-001 is adhered to throughout the activity.
-

ACTIVITY 4

Time: 40 min

OBJECTIVE

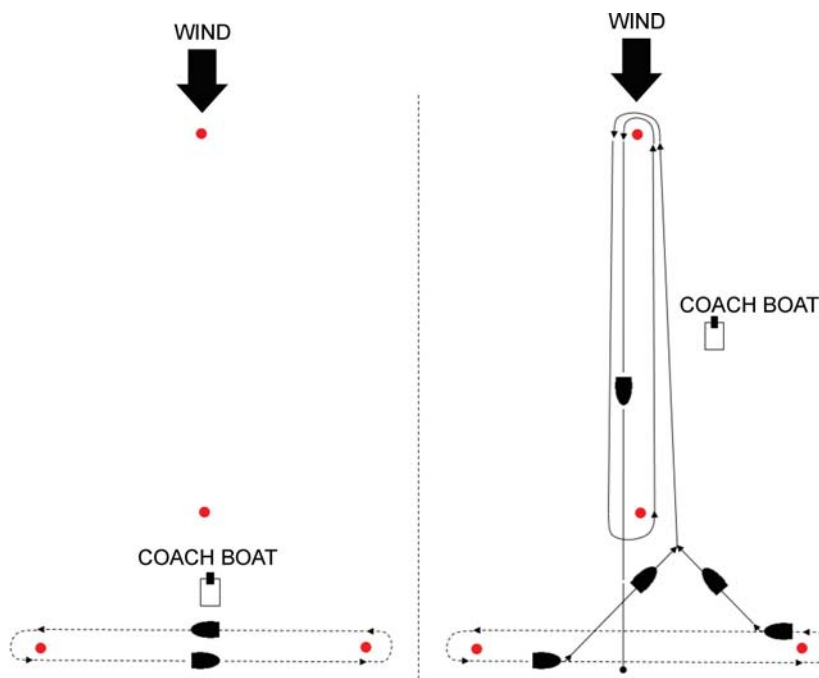
The objective of this activity is to have the cadets participate in races while practicing beating in a fun and competitive environment.

RESOURCES

- Fully equipped sailboat,
- Helmet (one per cadet),
- PFD (one per cadet),
- Coach boat (minimum of one per eight sailboats),
- Four buoys with lines and weights,
- Blue flag,
- Whistle,
- Race finish sheet (one pre race), and
- Racing score sheet.

ACTIVITY LAYOUT

The coach boat operator will set buoys in a sausage formation below a windward-leeward formation, large enough to accommodate all the sailboats (as illustrated in Figure 15-9-20).



Director Cadets 3, 2007, Ottawa, ON: Department of National Defence

Figure 15-9-20 Around the Track



It is important for the coach boat to circulate around the course coaching the cadets on the specific skills being practiced.

ACTIVITY INSTRUCTIONS

The total number of races during the activity will depend on the weather and resources available.

1. Conduct the briefing for Drill 11, located at Annex AD, prior to conducting this activity.
2. Have the sailboats sail into a control position and restate the drill, its objectives and key points.
3. Have the sailboats sail around the sausage course rounding the marks to starboard.
4. Using a whistle, sound one blast and raise a blue flag to indicate the start of a race.
5. Once the race has begun, have the cadets sail toward the windward mark, rounding it to starboard.



Have the cadets switch positions as skipper and crew midway through the activity.

12. When all races are completed, copy the results from the race finish sheets to the regatta score sheet located at Annex AF and calculate the overall placing.



COMMON ERRORS

It is common for novice sailors to make the following errors when learning to beat upwind:

- course control, to include:
 - too much tiller movement and tacking too fast resulting in the sailboat bearing off past close hauled;
 - not heading up in gusts to avoid capsizing; and
 - accidentally tacking or heading up into irons; and
- sail trim, to include:
 - not easing the sails in gusts, resulting in an accidental capsize; and
 - not cleating the jib sheet, sometimes resulting in the skipper sailing below close hauled.



If an alternative drill is to be used, focus on the key points outlined in the briefing located at Annex AD.

SAFETY

- Ensure a coach boat is present at all times.
- Ensure the size of the course is large enough to prevent collisions.
- Ensure A-CR-CCP-030/PT-001 is adhered to throughout the activity.

CONFIRMATION OF TEACHING POINT 6

The cadets' participation in the activities will serve as the confirmation of this TP.

END OF LESSON CONFIRMATION

The cadets' participation in the races will serve as the confirmation of this lesson.

CONCLUSION

HOMEWORK/READING/PRACTICE

N/A.

METHOD OF EVALUATION

This EO is assessed IAW A-CR-CCP-603/PG-001, Chapter 3, Annex B, Appendix 10 (324 PC).

CLOSING STATEMENT

Sailing upwind incorporates attention to sail trim, steady helming, communication and physical endurance. Practicing upwind sailing will result in greater confidence in arriving at an upwind destination in a safe and timely manner.

INSTRUCTOR NOTES/REMARKS

If cadets have difficulty attaining a skill, the instructor should focus more time on that skill.

TP 1 should be scheduled during the same period of instruction as TP 2.

TPs 3 and 4 should be scheduled as four periods throughout the sail weekend(s). The first period of instruction will include TP 3. The remaining three periods will provide additional training time for TP 4.

TPs 5 and 6 should be scheduled as four periods throughout the sail weekend(s). The first period of instruction will include TP 5. The remaining three periods will provide additional training time for TP 6.

REFERENCES

- C1-007 (ISBN 0-920232-17-5/A-CR-CCP-009/PT-001) Donaldson, S. (2001). *Basic Sailing Skills*. Kingston, ON: Canadian Yachting Association.
- C1-008 Canadian Yachting Association. (2006). *Canadian Yachting Association White Sail II Practical Skills Checklist*. Retrieved October 5, 2007, from <http://www.sailing.ca/cbet/content/WIIChecklist.doc>.
- C1-099 (ISBN 0-920232-26-4) Canadian Yachting Association. (2002). *Canadian Yachting Association Sailing Logbook*. Kingston, ON: Canadian Yachting Association.

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ROYAL CANADIAN SEA CADETS

PHASE THREE

INSTRUCTIONAL GUIDE



SECTION 10

EO M324.10 – SAIL DOWNWIND

Total Time:

300 min

PREPARATION

PRE-LESSON INSTRUCTIONS

Resources needed for the delivery of this lesson are listed in the lesson specification located in A-CR-CCP-603/PG-001, Chapter 4. Specific uses for said resources are identified throughout the instructional guide within the TP for which they are required.

Review the lesson content and become familiar with the material prior to delivering the lesson.

Prepare the briefings located at Annexes AG to AP.

PRE-LESSON ASSIGNMENT

N/A.

APPROACH

An interactive lecture was chosen for TP 1 to introduce the cadets to the technique of sailing on a run.

A practical activity was chosen for TPs 2 and 4 as a way to practice sailing downwind in a safe and controlled environment. This activity contributes to the development of boat handling, boat balance and sail adjustments skills in a fun and challenging setting.

An in-class activity was chosen for TP 3 as it is an interactive way to provoke thought, stimulate interest and present basic downwind boat handling skills.

INTRODUCTION

REVIEW

N/A.

OBJECTIVES

By the end of this lesson the cadet shall have demonstrated helming and crewing skills while sailing downwind.

IMPORTANCE

It is important for each cadet to sail downwind as it allows the cadets to experience the challenges involved with downwind sailing in a safe, controlled environment and introduces them to skills that will be practiced more in-depth in future sail training.

Teaching Point 1

Explain How to Sail on a Run

Time: 5 min

Method: Interactive Lecture

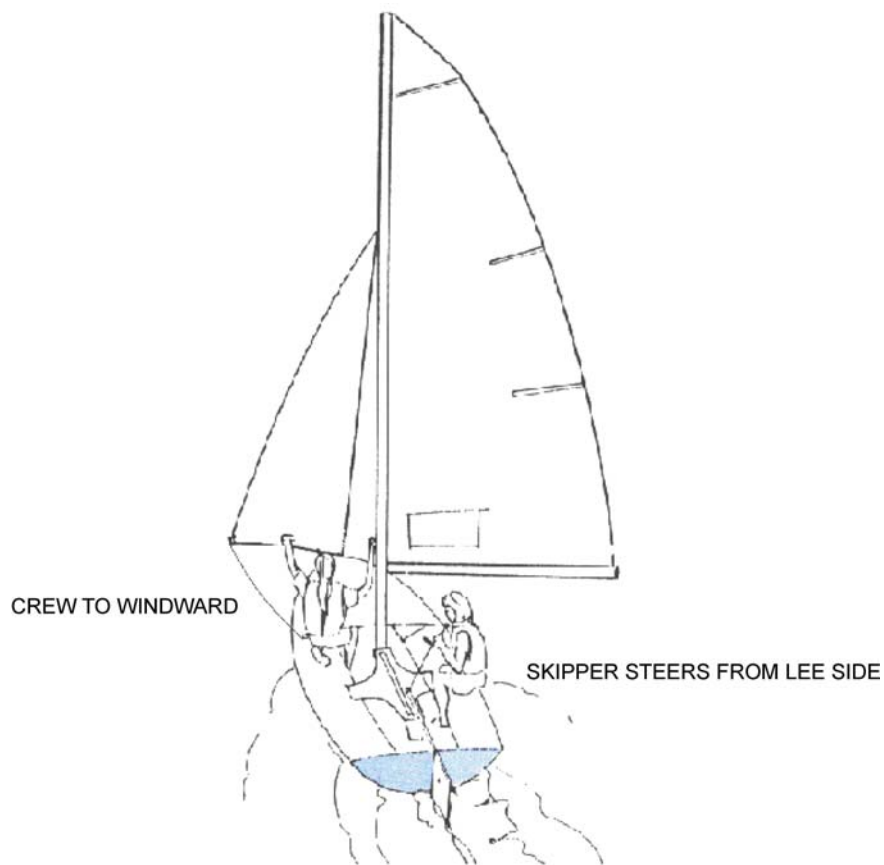
HOW TO SAIL ON A RUN

The steps to running are as follows:

1. The skipper will say, "Bearing away to a run."
2. The crew will reply, "Ready."
3. The skipper will pull the tiller slightly toward the windward side, causing the sailboat to turn away from the wind.
4. The skipper and crew will ease out the mainsheet and jib sheet and the crew will raise the centreboard three-quarters of the way as the sailboat turns.
5. When the jib sail switches to the windward side, the crew will switch the jib sheets and the skipper will straighten the tiller.
6. The skipper and crew will switch sides so the skipper is on the leeward side and the crew is on the windward side.
7. The skipper will maintain a straight course to prevent the boom from swinging while the crew holds the jib sheet out around the windward shroud.



Sailing on a run is often referred to as "wing-on-wing" or "running free."



S. Donaldson, Basic Sailing Skills Manual, Canadian Yachting Association (p. 84)

Figure 15-10-1 Sailing on a Run

CONFIRMATION OF TEACHING POINT 1

QUESTIONS

- Q1. What happens to the jib sail when on a run?
- Q2. Where do the skipper and crew sit while on a run?
- Q3. Why must the skipper maintain a straight course while sailing on a run?

ANTICIPATED ANSWERS

- A1. The jib sail switches to the windward side.
- A2. The skipper sits on the leeward side and the crew sits on the windward side.
- A3. To prevent the boom from swinging.

Teaching Point 2**Conduct Activities Where the Cadets Will Sail on a Run**

Time: 110 min

Method: Practical Activity

ACTIVITY 1

Time: 30 min

OBJECTIVE

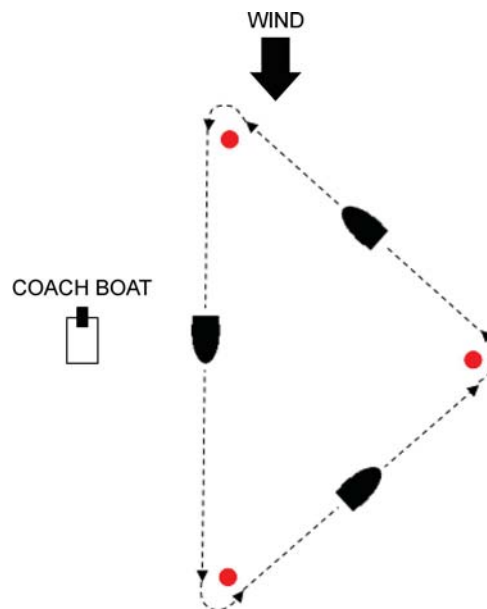
The objective of this activity is to have the cadets practice sailing on a run.

RESOURCES

- Fully equipped sailboat,
- Helmet (one per cadet),
- Personal floatation device (PFD) (one per cadet),
- Coach boat (minimum of one per eight sailboats),
- Three buoys with lines and weights, and
- Whistle.

ACTIVITY LAYOUT

The coach boat operator will set buoys in a triangle formation, large enough to accommodate all the sailboats (as illustrated in Figure 15-10-2).



Director Cadets 3, 2007, Ottawa, ON: Department of National Defence

Figure 15-10-2 Training Day



It is important for the coach boat to circulate around the course coaching the cadets on the specific skills being practiced.

ACTIVITY INSTRUCTIONS

1. Conduct the briefing for Drill 1, located at Annex AG, prior to conducting this activity.
2. Have the sailboats sail into a control position and restate the drill, its objectives and key points.
3. Have the sailboats sail around the triangle course rounding the marks to starboard.
4. The coach boat shall focus on the following:
 - a. **Course Control.** Have the skipper perform small tiller adjustments in order to maintain a straight course while sailing on a run to prevent the boom from swinging.
 - b. **Sail Trim.** Have the crew hold the jib sheet out around the windward shroud.
 - c. **Crew Position.** Have the skipper and crew switch sides so the skipper is on the leeward side and the crew is on the windward side.
 - d. **Centreboard/Daggerboard Adjustments.** Have the crew raise the centreboard/daggerboard three-quarters of the way while bearing away to a run.
 - e. **Lookout.** Have the crew constantly inform the skipper of sailboats in the immediate area around the sailboat. The crew will also make suggestions for course headings to prevent collisions.



Have the cadets switch positions as skipper and crew midway through the activity.

5. When the drill is completed, have the sailboats sail into a control position and quickly debrief the cadets on the drill conducted before beginning the next drill.



COMMON ERRORS

It is common for novice sailors to make the following errors when learning to sail on a run:

- course control, to include too much tiller movement resulting in an accidental gybe;
- sail trim, to include:
 - not holding the jib sheet out around the windward shroud; and
 - not maintaining control of the boom resulting in it swinging across the sailboat; and
- centreboard/daggerboard adjustments, to include:
 - raising the centreboard/daggerboard too far out of the water while on a run, resulting in steering difficulty; and
 - not lowering the centreboard/daggerboard while heading up, resulting in excessive leeway.



If an alternative drill is to be used, focus on the key points outlined in the briefing located at Annex AG.

SAFETY

- Ensure a coach boat is present at all times.
- Ensure the size of the course is large enough to prevent collisions.
- Ensure A-CR-CCP-030/PT-001 is adhered to throughout the activity.

ACTIVITY 2

Time: 30 min

OBJECTIVE

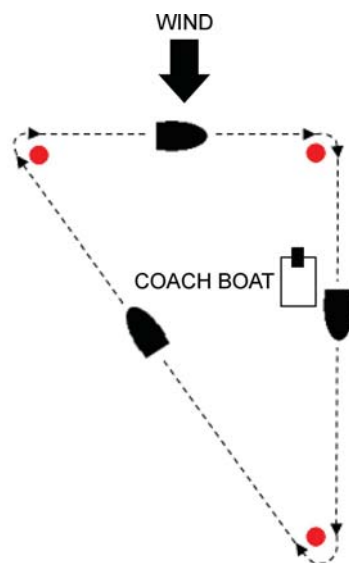
The objective of this activity is to have the cadets practice sailing on a run.

RESOURCES

- Fully equipped sailboat,
- Helmet (one per cadet),
- PFD (one per cadet),
- Coach boat (minimum of one per eight sailboats),
- Three buoys with lines and weights, and
- Whistle.

ACTIVITY LAYOUT

The coach boat operator will set buoys in a triangle formation, large enough to accommodate all the sailboats (as illustrated in Figure 15-10-3).



Director Cadets 3, 2007, Ottawa, ON: Department of National Defence

Figure 15-10-3 One Hundred Metre Dash



It is important for the coach boat to circulate around the course coaching the cadets on the specific skills being practiced.

ACTIVITY INSTRUCTIONS

1. Conduct the briefing for Drill 2, located at Annex AH, prior to conducting this activity.
2. Have the sailboats sail into a control position and restate the drill, its objectives and key points.
3. Have the sailboats sail around the triangle course rounding the marks to port.
4. The coach boat shall focus on the following:
 - a. **Course Control.** Have the skipper perform small tiller adjustments in order to maintain a straight course while sailing on a run to prevent the boom from swinging.
 - b. **Sail Trim.** Have the crew hold the jib sheet out around the windward shroud.
 - c. **Crew Position.** Have the skipper and crew switch sides so the skipper is on the leeward side and the crew is on the windward side.
 - d. **Centreboard/Daggerboard Adjustments.** Have the crew raise the centreboard/daggerboard three-quarters of the way while bearing away to a run.
 - e. **Lookout.** Have the crew constantly inform the skipper of sailboats in the immediate area around the sailboat. The crew will also make suggestions for course headings to prevent collisions.



Have the cadets switch positions as skipper and crew midway through the activity.

- When the drill is completed, have the sailboats sail into a control position and quickly debrief the cadets on the drill conducted before beginning the next drill.



COMMON ERRORS

It is common for novice sailors to make the following errors when learning to sail on a run:

- course control, to include too much tiller movement resulting in an accidental gybe;
- sail trim, to include:
 - not holding the jib sheet out around the windward shroud; and
 - not maintaining control of the boom resulting in it swinging across the sailboat; and
- centreboard/daggerboard adjustments, to include:
 - raising the centreboard/daggerboard too far out of the water while on a run, resulting in steering difficulty; and
 - not lowering the centreboard/daggerboard while heading up, resulting in excessive leeway.



If an alternative drill is to be used, focus on the key points outlined in the briefing located at Annex AH.

SAFETY

- Ensure a coach boat is present at all times.
- Ensure the size of the course is large enough to prevent collisions.
- Ensure A-CR-CCP-030/PT-001 is adhered to throughout the activity.

ACTIVITY 3

Time: 25 min

OBJECTIVE

The objective of this activity is to have the cadets practice sailing on a run.

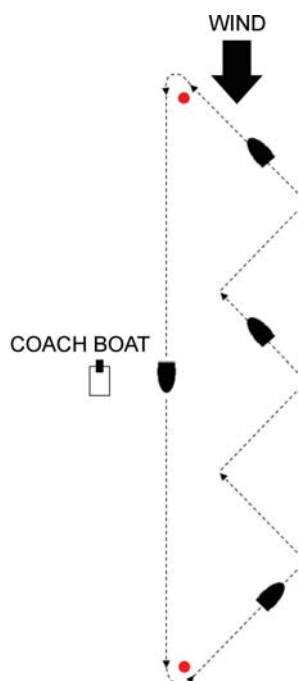
RESOURCES

- Fully equipped sailboat,

- Helmet (one per cadet),
- Personal floatation device (PFD) (one per cadet),
- Coach boat (minimum of one per eight sailboats),
- Two buoys with lines and weights, and
- Whistle.

ACTIVITY LAYOUT

The coach boat operator will set buoys in a windward-leeward formation, large enough to accommodate all the sailboats (as illustrated in Figure 15-10-4).



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Figure 15-10-4 Running Down the Street



It is important for the coach boat to circulate around the course coaching the cadets on the specific skills being practiced.

ACTIVITY INSTRUCTIONS

1. Conduct the briefing for Drill 3, located at Annex AI, prior to conducting this activity.
2. Have the sailboats sail into a control position and restate the drill, its objectives and key points.
3. Have the sailboats sail around the windward-leeward course rounding the marks to starboard.

4. The coach boat shall focus on the following:
 - a. **Course Control.** Have the skipper perform small tiller adjustments in order to maintain a straight course while sailing on a run to prevent the boom from swinging.
 - b. **Sail Trim.** Have the crew hold the jib sheet out around the windward shroud.
 - c. **Crew Position.** Have the skipper and crew switch sides so the skipper is on the leeward side and the crew is on the windward side.
 - d. **Centreboard/Daggerboard Adjustments.** Have the crew raise the centreboard/daggerboard three-quarters of the way while bearing away to a run.
 - e. **Lookout.** Have the crew constantly inform the skipper of sailboats in the immediate area around the sailboat. The crew will also make suggestions for course headings to best prevent collisions.



Have the cadets switch positions as skipper and crew midway through the activity.

5. Once the cadets are comfortable rounding the marks to starboard have the sailboats change direction and round the marks to port.
6. When the drill is completed, have the sailboats sail into a control position and quickly debrief the cadets on the drill conducted before beginning the next drill.



COMMON ERRORS

It is common for novice sailors to make the following errors when learning to sail on a run:

- course control, to include too much tiller movement resulting in an accidental gybe;
- sail trim, to include:
 - not holding the jib sheet out around the windward shroud; and
 - not maintaining control of the boom resulting in it swinging across the sailboat; and
- centreboard/daggerboard adjustments, to include:
 - raising the centreboard/daggerboard too far out of the water while on a run, resulting in steering difficulty; and
 - not lowering the centreboard/daggerboard while heading up from a run, resulting in excessive leeway.



If an alternative drill is to be used, focus on the key points outlined in the briefing located at Annex AI.

SAFETY

- Ensure a coach boat is present at all times.
 - Ensure the size of the course is large enough to prevent collisions.
 - Ensure A-CR-CCP-030/PT-001 is adhered to throughout the activity.
-

ACTIVITY 4

Time: 25 min

OBJECTIVE

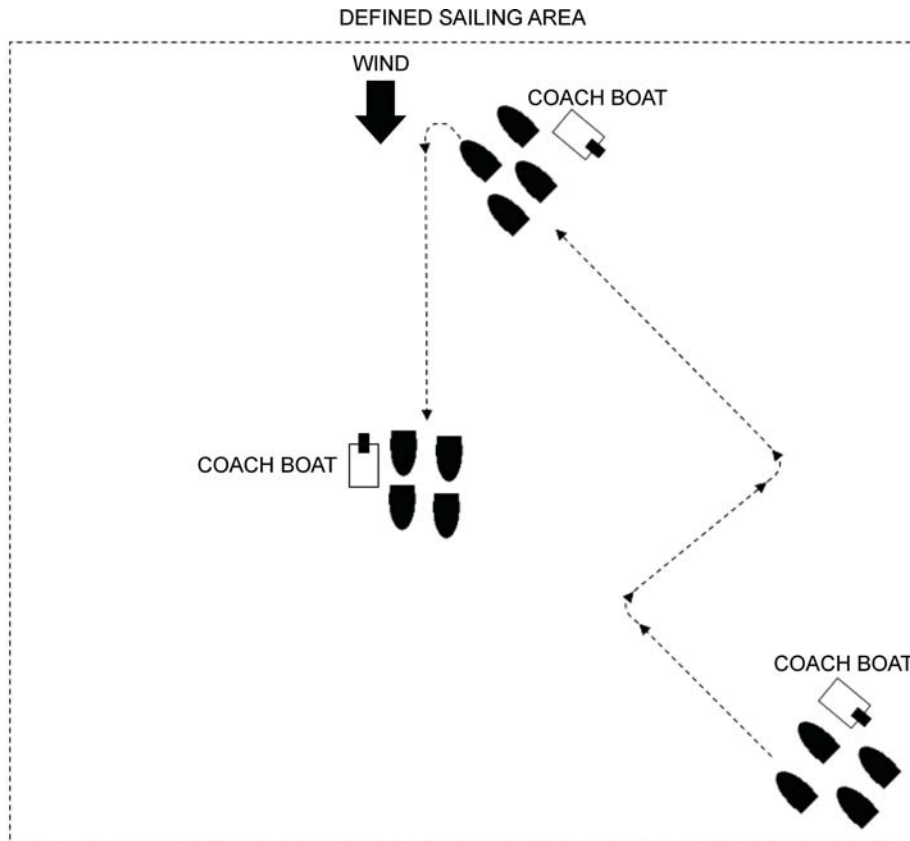
The objective of this activity is to have the cadets practice sailing on a run.

RESOURCES

- Fully equipped sailboat,
- Helmet (one per cadet),
- PFD (one per cadet),
- Coach boat (minimum of one per eight sailboats), and
- Whistle.

ACTIVITY LAYOUT

The coach boat operator will identify the defined sailing area (as illustrated in Figure 15-10-5).



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Figure 15-10-5 Running a Marathon



It is important for the coach boat to circulate around the fleet to isolate and coach the different skills being practiced.

ACTIVITY INSTRUCTIONS

1. Conduct the briefing for Drill 4, located at Annex AJ, prior to conducting this activity.
2. Have the sailboats sail into a control position and restate the drill, its objectives and key points.
3. Have the sailboats sail close hauled, on a starboard tack.
4. Using a whistle, sound one blast to have the sailboats tack back and forth from close hauled to close hauled.
5. Using a whistle, sound two blasts to have the sailboats bear away to a run.
6. Using a whistle, sound two blasts to have the sailboats head up to close hauled.
7. Repeat Steps 4. to 6. to prevent the sailboats from sailing outside the designated sailing area.

8. The coach boat shall focus on the following:
- Course Control.** Have the skipper perform small tiller adjustments in order to maintain a straight course while sailing on a run to prevent the boom from swinging.
 - Sail Trim.** Have the crew hold the jib sheet out around the windward shroud.
 - Crew Position.** Have the skipper and crew switch sides so the skipper is on the leeward side and the crew is on the windward side.
 - Centreboard/Daggerboard Adjustments.** Have the crew raise the centreboard/daggerboard three-quarters of the way while bearing away to a run.
 - Lookout.** Have the crew constantly inform the skipper of sailboats in the immediate area around the sailboat. The crew will also make suggestions for course headings to prevent collisions.



Have the cadets switch positions as skipper and crew midway through the activity.

9. When the drill is completed, have the sailboats sail into a control position and quickly debrief the cadets on the drill conducted before beginning the next drill.



COMMON ERRORS

It is common for novice sailors to make the following errors when learning to sail on a run:

- course control, to include too much tiller movement resulting in an accidental gybe;
- sail trim, to include:
 - not holding the jib sheet out around the windward shroud; and
 - not maintaining control of the boom resulting in it swinging across the sailboat; and
- centreboard/daggerboard adjustments, to include:
 - raising the centreboard/daggerboard too far out of the water while on a run, resulting in steering difficulty; and
 - not lowering the centreboard/daggerboard while heading up, resulting in excessive leeway.



If an alternative drill is to be used, focus on the key points outlined in the briefing located at Annex AJ.

SAFETY

- Ensure a coach boat is present at all times.

- Ensure the size of the course is large enough to prevent collisions.
- Ensure A-CR-CCP-030/PT-001 is adhered to throughout the activity.

CONFIRMATION OF TEACHING POINT 2

The cadets' participation in the activities will serve as the confirmation of this TP.

Teaching Point 3

Conduct an Activity Where the Cadets Will Identify How to Gybe a Sailboat

Time: 10 min

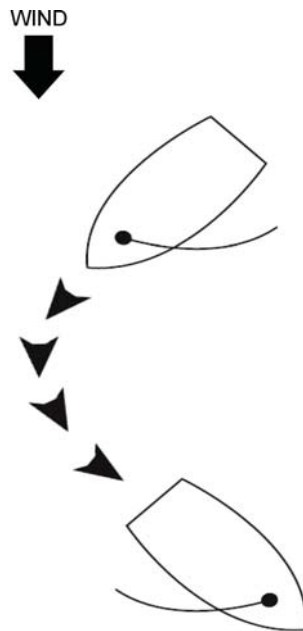
Method: In-Class Activity



Provide the cadets with this material prior to conducting the activity.

GYBING

Gybing is performed when sailing downwind. To complete a gybe, the skipper pulls the tiller away from the mainsail, causing the bow of the sailboat to turn away from the wind eventually passing the stern through it. The sails, skipper and crew will switch sides.



Canadian Yachting Association, White Sail Workbook (Manuscript in preparation)

Figure 15-10-6 Gybing

How to Gybe

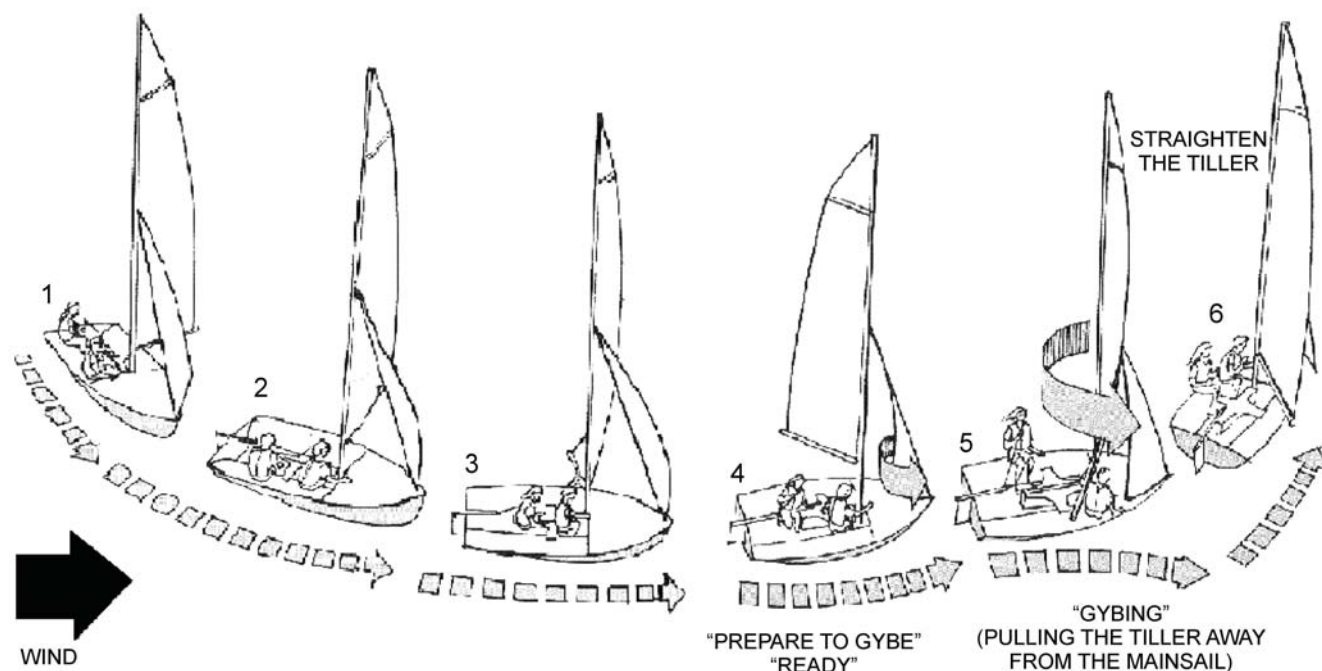
The steps to gybing are as follows:

1. The skipper will say, "Prepare to gybe."

2. The crew will reply, "Ready."
3. The skipper will say, "Gybing."
4. The skipper will pull the tiller away from the mainsail, causing the sailboat to turn away from the wind.
5. When the sailboat's stern passes through head to wind, the sails will begin to switch sides.
6. As the boom begins to move, the crew will guide it safely across the sailboat.
7. The skipper and crew will switch sides, with the skipper switching the tiller and the mainsheet behind their back, so they remain facing forward, and the crew switching the jib sheets as the jib switches sides.
8. The skipper will straighten the tiller and continue sailing.



The crew will maintain a lookout throughout the gybe.



S. Donaldson, Basic Sailing Skills Manual, Canadian Yachting Association (pp. 65–66)

Figure 15-10-7 Gybing

ACTIVITY

Time: 5 min

OBJECTIVE

The objective of this activity is to have the cadets identify how to gybe a sailboat by participating in a simulated activity on shore.

RESOURCES

- A fully rigged sailboat,
- Helmet (one per cadet),
- PFD (one per cadet), and
- A mock-up or dolly.

ACTIVITY LAYOUT

Set up a fully rigged sailboat pointed on a broad reach on a mock-up or dolly.

ACTIVITY INSTRUCTIONS

1. Divide the cadets into pairs.
2. Have each group enter the fully rigged sailboat.
3. Have each group practice the steps for gybing a sailboat.
4. As the skipper pulls the tiller away from the mainsail, move the sailboat's bow so that the stern passes through head to wind. Continue to move the sailboat until the sails switch sides and refill and the skipper straightens the tiller.
5. Have each cadet practice the steps for gybing as skipper and crew at least once or until the cadet feels comfortable with the skill.



If multiple sail coaches and sailboats are available, additional groups can participate in the activity simultaneously.

SAFETY

- This activity must be conducted in a large area that is free of obstructions.
- This activity can only be conducted on a light wind day.

CONFIRMATION OF TEACHING POINT 3

The cadets' participation in the activity will serve as the confirmation of this TP.

Teaching Point 4**Conduct Activities Where the Cadets Will Sail on a Beam Reach, Sail on a Broad Reach and Gybe a Sailboat**

Time: 140 min

Method: Practical Activity

ACTIVITY 1Time: 25 min

OBJECTIVE

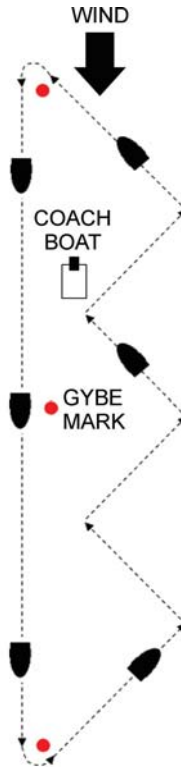
The objective of this activity is to have the cadets practice gybing from a run to a run.

RESOURCES

- Fully equipped sailboat,
- Helmet (one per cadet),
- PFD (one per cadet),
- Coach boat (minimum of one per eight sailboats),
- Two buoys with lines and weights, and
- Whistle.

ACTIVITY LAYOUT

The coach boat operator will set buoys in a windward-leeward formation, large enough to accommodate all the sailboats (as illustrated in Figure 15-10-8).



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Figure 15-10-8 The Quarter Mile



It is important for the coach boat to circulate around the course coaching the cadets on the specific skills being practiced.

ACTIVITY INSTRUCTIONS

1. Conduct the briefing for Drill 5, located at Annex AK, prior to conducting this activity.
2. Have the sailboats sail into a control position and restate the drill, its objectives and key points.
3. Have the sailboats sail around the windward-leeward course rounding the marks to starboard.
4. Have the sailboats gybe when reaching the gybe mark while staying on a run.
5. The coach boat shall focus on the following:
 - a. **Gybing.** Have the sailboats sail on a run between the three marks. The skipper and crew should begin to switch sides of the sailboat as the crew carefully guides the boom across the boat. The skipper should move swiftly from one side to the other by moving the aft foot first, ducking and sitting on the other side of the sailboat.



The tiller extension and mainsheet shall never leave the hands of the skipper.
The skipper shall always face the bow of the sailboat, never the stern.

After sitting on the other side of the sailboat, the skipper shall switch the tiller and mainsheet to the opposite hand. As the skipper is moving from side to side, the crew shall also switch sides, along with switching the jib sheets.

- b. **Course Control.** Have the skipper remain on a run while gybing.
- c. **Sail Trim.** Have the crew hold the jib sheet out around the windward shroud.
- d. **Crew Position.** Have the skipper and crew switch sides so the skipper is on the leeward side and the crew is on the windward side.
- e. **Centreboard/Daggerboard Adjustments.** Have the crew raise the centreboard/daggerboard three-quarters of the way while bearing away to a run.
- f. **Lookout.** Have the crew constantly inform the skipper of sailboats in the immediate area around the sailboat prior to gybing. The crew will also make suggestions for course headings to prevent collisions.



Have the cadets switch positions as skipper and crew midway through the activity.

6. Once the cadets are comfortable rounding the marks to starboard have the sailboats change direction and round the marks to port.
7. When the drill is completed, have the sailboats sail into a control position and quickly debrief the cadets on the drill conducted before beginning the next drill.



COMMON ERRORS

It is common for novice sailors to make the following errors when learning to gybe:

- gybing, to include:
 - looking toward the stern;
 - letting go of the tiller extension and sheets;
 - not ducking; and
 - not guiding the boom;
- course control, to include using the tiller during the gybe resulting in the sailboat heading up after the gybe;
- sail trim, to include not trimming the sails according to the course adjustments; and
- centreboard/daggerboard adjustments, to include:
 - raising the centreboard/daggerboard too far out of the water while on a run, resulting in steering difficulty; and
 - not lowering the centreboard/daggerboard while heading up, resulting in excessive leeway.



If an alternative drill is to be used, focus on the key points outlined in the briefing located at Annex AK.

SAFETY

- Ensure a coach boat is present at all times.
- Ensure the size of the course is large enough to prevent collisions.
- Ensure A-CR-CCP-030/PT-001 is adhered to throughout the activity.

ACTIVITY 2

Time: 20 min

OBJECTIVE

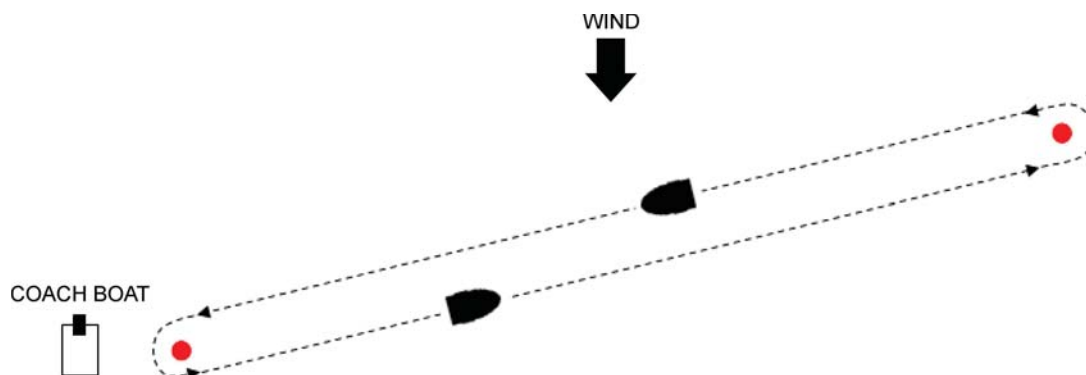
The objective of this activity is to have the cadets practice gybing and sailing on a broad reach.

RESOURCES

- Fully equipped sailboat,
- Helmet (one per cadet),
- PFD (one per cadet),
- Coach boat (minimum of one per eight sailboats),
- Two buoys with lines and weights, and
- Whistle.

ACTIVITY LAYOUT

The coach boat operator will set buoys in a sausage formation, large enough to accommodate all the sailboats (as illustrated in Figure 15-10-9).



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Figure 15-10-9 Sailing Speedway



It is important for the coach boat to circulate around the course coaching the cadets on the specific skills being practiced.

ACTIVITY INSTRUCTIONS

1. Conduct the briefing for Drill 6, located at Annex AL, prior to conducting this activity.
2. Have the sailboats sail into a control position and restate the drill, its objectives and key points.
3. Have the sailboats sail around a sausage course rounding the marks to starboard.
4. The coach boat shall focus on the following:
 - a. **Gybing.** Ensure the skipper does not let go of the tiller extension and the mainsheet while facing the bow of the sailboat. Ensure the crew carefully guides the boom across the sailboat. The sailboat should not sail past a broad reach after completing the gybe.
 - b. **Course Control.** Have the skipper perform small tiller adjustments while sailing a straight course ensuring the sailboat does not bear off past a broad reach.
 - c. **Sail Trim.** Have the skipper and crew sheet out three-quarters of the way while bearing away to a broad reach.
 - d. **Centreboard/Daggerboard Adjustments.** Have the crew raise the centreboard/daggerboard three-quarters of the way while bearing away to a broad reach.
 - e. **Lookout.** Have the crew constantly inform the skipper of sailboats in the immediate area around the sailboat prior to gybing. The crew will also make suggestions for course headings to prevent collisions.



Have the cadets switch positions as skipper and crew midway through the activity.

5. Once the cadets are comfortable rounding the marks to starboard have the sailboats change direction and round the marks to port.
6. When the drill is completed, have the sailboats sail into a control position and quickly debrief the cadets on the drill conducted before beginning the next drill.



COMMON ERRORS

It is common for novice sailors to make the following errors when learning to gybe and sail on a broad reach:

- gybing, to include:
 - pushing the tiller instead of pulling;
 - looking toward the stern;
 - letting go of the tiller extension and sheets;
 - not ducking; and
 - not guiding the boom;
- course control, to include too much tiller movement resulting in an accidental gybe;
- sail trim, to include not trimming the sails according to the course adjustments; and
- centreboard/daggerboard adjustments, to include:
 - raising the centreboard/daggerboard too far out of the water while on a broad reach, resulting in steering difficulty; and
 - not lowering the centreboard/daggerboard while heading up, resulting in excessive leeway.



If an alternative drill is to be used, focus on the key points outlined in the briefing located at Annex AL.

SAFETY

- Ensure a coach boat is present at all times.
- Ensure the size of the course is large enough to prevent collisions.
- Ensure A-CR-CCP-030/PT-001 is adhered to throughout the activity.

ACTIVITY 3

Time: 30 min

OBJECTIVE

The objective of this activity is to have the cadets practice gybing and sailing on a broad reach.

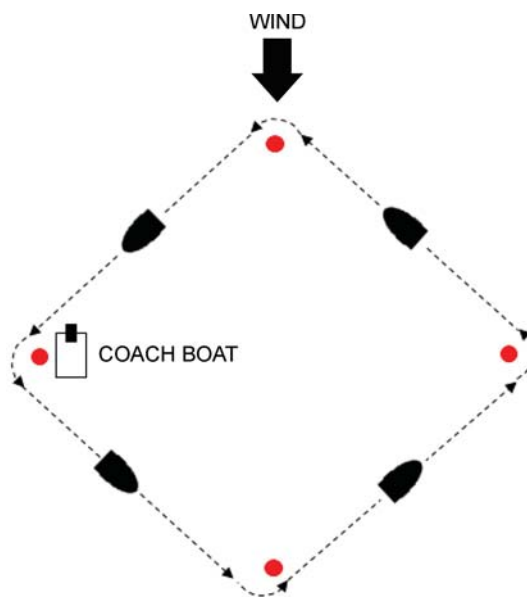
RESOURCES

- Fully equipped sailboat,
- Helmet (one per cadet),

- PFD (one per cadet),
- Coach boat (minimum of one per eight sailboats),
- Four buoys with lines and weights, and
- Whistle.

ACTIVITY LAYOUT

The coach boat operator will set buoys in a diamond formation, large enough to accommodate all the sailboats (as illustrated in Figure 15-10-10).



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Figure 15-10-10 Echo 500



It is important for the coach boat to circulate around the course coaching the cadets on the specific skills being practiced.

ACTIVITY INSTRUCTIONS

1. Conduct the briefing for Drill 7, located at Annex AM, prior to conducting this activity.
2. Have the sailboats sail into a control position and restate the drill, its objectives and key points.
3. Have the sailboats sail around the diamond course rounding the marks to starboard.
4. The coach boat shall focus on the following:
 - a. **Gybing.** Ensure the skipper does not let go of the tiller extension and the mainsheet while facing the bow of the sailboat. Ensure the crew carefully guides the boom across the sailboat. The sailboat should not sail past a broad reach after completing the gybe.

- b. **Course Control.** Have the skipper perform small tiller adjustments in order to maintain a straight course while sailing on a broad reach.
- c. **Sail Trim.** Have the skipper and crew sheet out three-quarters of the way while bearing away to a broad reach.
- d. **Centreboard/Daggerboard Adjustments.** Have the crew raise the centreboard/daggerboard three-quarters of the way while bearing away to a broad reach.
- e. **Lookout.** Have the crew constantly inform the skipper of sailboats in the immediate area around the sailboat prior to gybing. The crew will also make suggestions for course headings to prevent collisions.



Have the cadets switch positions as skipper and crew midway through the activity.

- 5. Once the cadets are comfortable rounding the marks to starboard have the sailboats change direction and round the marks to port.
- 6. When the drill is completed, have the sailboats sail into a control position and quickly debrief the cadets on the drill conducted before beginning the next drill.



COMMON ERRORS

It is common for novice sailors to make the following errors when learning to gybe and sail on a broad reach:

- gybing, to include:
 - pushing the tiller instead of pulling;
 - looking toward the stern;
 - letting go of the tiller extension and sheets;
 - not ducking; and
 - not guiding the boom;
- course control, to include too much tiller movement resulting in an accidental gybe;
- sail trim, to include not trimming the sails according to the course adjustments; and
- centreboard/daggerboard adjustments, to include:
 - raising the centreboard/daggerboard too far out of the water while on a broad reach, resulting in steering difficulty; and
 - not lowering the centreboard/daggerboard while heading up, resulting in excessive leeway.



If an alternative drill is to be used, focus on the key points outlined in the briefing located at Annex AM.

SAFETY

- Ensure a coach boat is present at all times.
- Ensure the size of the course is large enough to prevent collisions.
- Ensure A-CR-CCP-030/PT-001 is adhered to throughout the activity.

ACTIVITY 4

Time: 20 min

OBJECTIVE

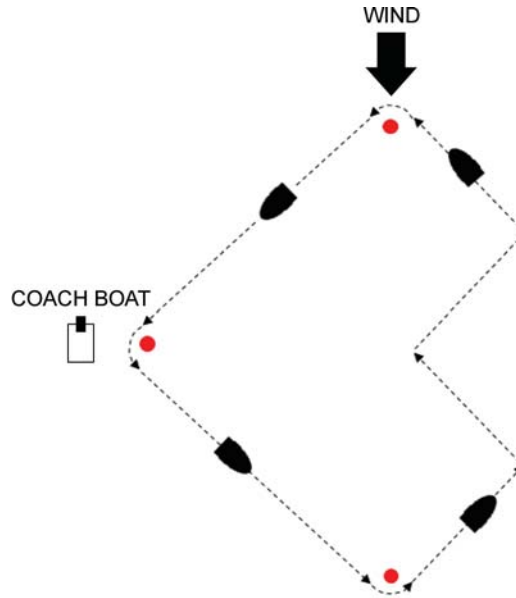
The objective of this activity is to have the cadets practice gybing and sailing on a broad reach.

RESOURCES

- Fully equipped sailboat,
- Helmet (one per cadet),
- PFD (one per cadet),
- Coach boat (minimum of one per eight sailboats),
- Three buoys with lines and weights, and
- Whistle.

ACTIVITY LAYOUT

The coach boat operator will set buoys in a triangle formation, large enough to accommodate all the sailboats (as illustrated in Figure 15-10-11).



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Figure 15-10-11 Gunning Go Carts



It is important for the coach boat to circulate around the course coaching the cadets on the specific skills being practiced.

ACTIVITY INSTRUCTIONS

1. Conduct the briefing for Drill 8, located at Annex AN, prior to conducting this activity.
2. Have the sailboats sail into a control position and restate the drill, its objectives and key points.
3. Have the sailboats sail around the triangle course rounding the marks to starboard.
4. The coach boat shall focus on the following:
 - a. **Gybing.** Ensure the skipper does not let go of the tiller extension and the mainsheet while facing the bow of the sailboat. Ensure the crew carefully guides the boom across the sailboat. The sailboat should not sail past a broad reach after completing the gybe.
 - b. **Course Control.** Have the skipper perform small tiller adjustments in order to maintain a straight course while sailing on a broad reach.
 - c. **Sail Trim.** Have the skipper and crew sheet out three-quarters of the way while bearing away to a broad reach.
 - d. **Centreboard/Daggerboard Adjustments.** Have the crew raise the centreboard/daggerboard three-quarters of the way while bearing away to a broad reach.
 - e. **Lookout.** Have the crew constantly inform the skipper of sailboats in the immediate area around the sailboat prior to gybing. The crew will also make suggestions for course headings to prevent collisions.



Have the cadets switch positions as skipper and crew midway through the activity.

5. When the drill is completed, have the sailboats sail into a control position and quickly debrief the cadets on the drill conducted before beginning the next drill.



COMMON ERRORS

It is common for novice sailors to make the following errors when learning to gybe and sail on a broad reach:

- gybing, to include:
 - pushing the tiller instead of pulling;
 - looking toward the stern;
 - letting go of the tiller extension and sheets;
 - not ducking; and
 - not guiding the boom;
- course control, to include too much tiller movement resulting an accidental gybe;
- sail trim, to include not trimming the sails according to the course adjustments; and
- centreboard/daggerboard adjustments, to include:
 - raising the centreboard/daggerboard too far out of the water while on a broad reach, resulting in steering difficulty; and
 - not lowering the centreboard/daggerboard while heading up, resulting in excessive leeway.



If an alternative drill is to be used, focus on the key points outlined in the briefing located at Annex AN.

SAFETY

- Ensure a coach boat is present at all times.
- Ensure the size of the course is large enough to prevent collisions.
- Ensure A-CR-CCP-030/PT-001 is adhered to throughout the activity.

ACTIVITY 5Time: 25 min

OBJECTIVE

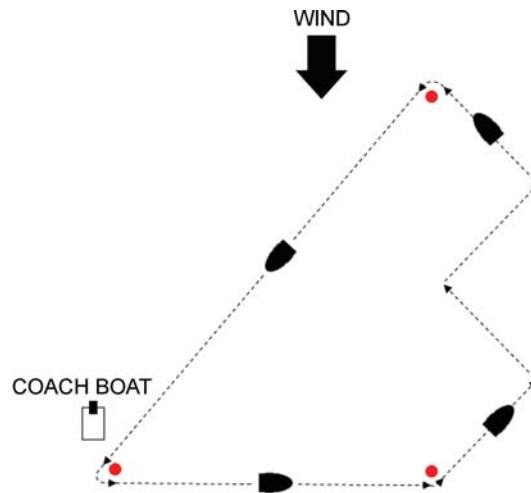
The objective of this activity is to have the cadets practice gybing, sailing on a beam reach and a broad reach.

RESOURCES

- Fully equipped sailboat,
- Helmet (one per cadet),
- PFD (one per cadet),
- Coach boat (minimum of one per eight sailboats),
- Three buoys with lines and weights, and
- Whistle.

ACTIVITY LAYOUT

The coach boat operator will set buoys in a triangle formation, large enough to accommodate all the sailboats (as illustrated in Figure 15-10-12).



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Figure 15-10-12 Up Shifting



It is important for the coach boat to circulate around the course coaching the cadets on the specific skills being practiced.

ACTIVITY INSTRUCTIONS

1. Conduct the briefing for Drill 9, located at Annex AO, prior to conducting this activity.

2. Have the sailboats sail into a control position and restate the drill, its objectives and key points.
3. Have the sailboats sail around the triangle course rounding the marks to starboard.
4. The coach boat shall focus on the following:
 - a. **Gybing.** Ensure the skipper does not let go of the tiller extension and the mainsheet while facing the bow of the sailboat. Ensure the crew carefully guides the boom across the sailboat. The sailboat should not sail past a broad reach after completing the gybe.
 - b. **Course Control.** Have the skipper perform small tiller adjustments in order to maintain a straight course while sailing on a beam reach and a broad reach.
 - c. **Sail Trim.** Have the skipper and crew sheet out three-quarters of the way while bearing away to a broad reach, and sheet in to halfway while heading up to a beam reach.
 - d. **Centreboard/Daggerboard Adjustments.** Have the crew raise the centreboard/daggerboard three-quarters of the way while bearing away to a broad reach and lower the centreboard/daggerboard to halfway while heading up to a beam reach.
 - e. **Lookout.** Have the crew constantly inform the skipper of sailboats in the immediate area around the sailboat prior to gybing. The crew will also make suggestions for course headings to prevent collisions.



Have the cadets switch positions as skipper and crew midway through the activity.

5. When the drill is completed, have the sailboats sail into a control position and quickly debrief the cadets on the drill conducted before beginning the next drill.



COMMON ERRORS

It is common for novice sailors to make the following errors when learning to gybe, sail on a beam reach and sail on a broad reach:

- gybing, to include:
 - pushing the tiller instead of pulling;
 - looking toward the stern;
 - letting go of the tiller extension and sheets;
 - not ducking; and
 - not guiding the boom;
- course control, to include too much tiller movement resulting in an accidental gybe;
- sail trim, to include not trimming the sails according to the course adjustments; and
- centreboard/daggerboard adjustments, to include:
 - raising the centreboard/daggerboard too far out of the water while bearing away to a broad reach, resulting in steering difficulty; and
 - not lowering the centreboard/daggerboard while heading up, resulting in excessive leeway.



If an alternative drill is to be used, focus on the key points outlined in the briefing located at Annex AO.

SAFETY

- Ensure a coach boat is present at all times.
- Ensure the size of the course is large enough to prevent collisions.
- Ensure A-CR-CCP-030/PT-001 is adhered to throughout the activity.

ACTIVITY 6

Time: 20 min

OBJECTIVE

The objective of this activity is to have the cadets practice gybing, sailing on a beam reach and a broad reach.

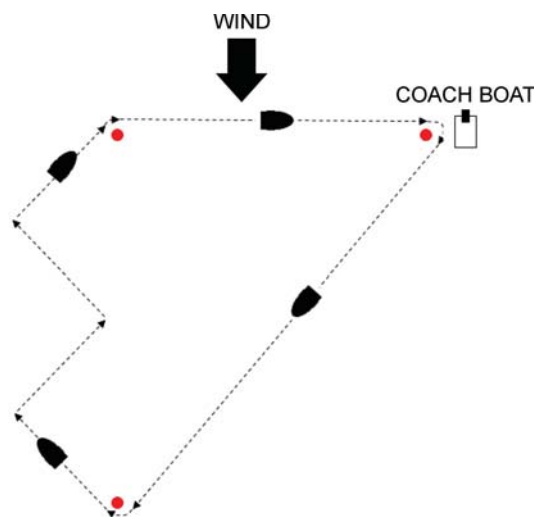
RESOURCES

- Fully equipped sailboat,
- Helmet (one per cadet),

- PFD (one per cadet),
- Coach boat (minimum of one per eight sailboats),
- Three buoys with lines and weights, and
- Whistle.

ACTIVITY LAYOUT

The coach boat operator will set buoys in a triangle formation, large enough to accommodate all the sailboats (as illustrated in Figure 15-10-13).



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Figure 15-10-13 Down Shifting



It is important for the coach boat to circulate around the course coaching the cadets on the specific skills being practiced.

ACTIVITY INSTRUCTIONS

1. Conduct the briefing for Drill 10, located at Annex AP, prior to conducting this activity.
2. Have the sailboats sail into a control position and restate the drill, its objectives and key points.
3. Have the sailboats sail around the triangle course rounding the marks to port.
4. The coach boat shall focus on the following:
 - a. **Gybing.** Ensure the skipper does not let go of the tiller extension and the mainsheet while facing the bow of the sailboat. Ensure the crew carefully guides the boom across the sailboat. The sailboat should not sail past a broad reach after completing the gybe.
 - b. **Course Control.** Have the skipper perform small tiller adjustments in order to maintain a straight course while sailing on a beam reach and a broad reach.

- c. **Sail Trim.** Have the skipper and crew sheet out halfway while bearing away to a beam reach and three-quarters of the way while bearing away to a broad reach.
- d. **Centreboard/Daggerboard Adjustments.** Have the crew raise the centreboard/daggerboard halfway while bearing away to a beam reach and three-quarters of the way while bearing away to a broad reach.
- e. **Lookout.** Have the crew constantly inform the skipper of sailboats in the immediate area around the sailboat prior to gybing. The crew will also make suggestions for course headings to prevent collisions.



Have the cadets switch positions as skipper and crew midway through the activity.

- 5. When the drill is completed, have the sailboats sail into a control position and quickly debrief the cadets on the drill conducted before beginning the next drill.



COMMON ERRORS

It is common for novice sailors to make the following errors when learning to gybe, sail on a beam reach and sail on a broad reach:

- gybing, to include:
 - pushing the tiller instead of pulling;
 - looking toward the stern;
 - letting go of the tiller extension and sheets;
 - not ducking; and
 - not guiding the boom;
- course control, to include too much tiller movement resulting in an accidental gybe;
- sail trim, to include not trimming the sails according to the course adjustments; and
- centreboard/daggerboard adjustments, to include:
 - raising the centreboard/daggerboard too far out of the water while bearing away to a beam reach and broad reach, resulting in steering difficulty; and
 - not lowering the centreboard/daggerboard while heading up, resulting in excessive leeway.



If an alternative drill is to be used, focus on the key points outlined in the briefing located at Annex AP.

SAFETY

- Ensure a coach boat is present at all times.
- Ensure the size of the course is large enough to prevent collisions.
- Ensure A-CR-CCP-030/PT-001 is adhered to throughout the activity.

CONFIRMATION OF TEACHING POINT 4

The cadets' participation in the activities will serve as the confirmation of this TP.

END OF LESSON CONFIRMATION

The cadets' participation in the downwind sailing drills will serve as the confirmation of this lesson.

CONCLUSION

HOMEWORK/READING/PRACTICE

N/A.

METHOD OF EVALUATION

This EO is assessed IAW A-CR-CCP-603/PG-001, Chapter 3, Annex B, Appendix 10 (324 PC).

CLOSING STATEMENT

Downwind sailing involves holding course on the fastest and most exciting points of sail. Practicing downwind sailing will result in greater confidence in arriving at a downwind destination in a safe and timely manner.

INSTRUCTOR NOTES/REMARKS

TPs 1 and 2 should be scheduled as four periods spread throughout the sail weekend(s). The first period of instruction will include TP 1. The remaining three periods will provide training time for TP2.

TPs 3 and 4 should be scheduled as five periods spread throughout the sail weekend(s). The first period of instruction will include TP 3. The remaining four periods will provide training time for TP 4.

If cadets have difficulty attaining a skill, the instructor should focus more time in that area.

REFERENCES

- C1-007 (ISBN 0-920232-17-5/A-CR-CCP-009/PT-001) Donaldson, S. (2001). *Basic Sailing Skills*. Kingston, ON: Canadian Yachting Association.
- C1-008 Canadian Yachting Association. (2006). *Canadian Yachting Association White Sail II Practical Skills Checklist*. Retrieved October 5, 2007, from <http://www.sailing.ca/cbet/content/WIIChecklist.doc>.
- C1-099 (ISBN 0-920232-26-4) Canadian Yachting Association. (2002). *Canadian Yachting Association Sailing Logbook*. Kingston, ON: Canadian Yachting Association.

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ROYAL CANADIAN SEA CADETS

PHASE THREE

INSTRUCTIONAL GUIDE



SECTION 11

EO M324.11 – MOOR A SAILBOAT

Total Time:

90 min

PREPARATION

PRE-LESSON INSTRUCTIONS

Resources needed for the delivery of this lesson are listed in the lesson specification located in A-CR-CCP-603/PG-001, Chapter 4. Specific uses for said resources are identified throughout the instructional guide within the TP for which they are required.

Review the lesson content and become familiar with the material prior to delivering the lesson.

Prepare the briefings located at Annexes AQ and AR.

PRE-LESSON ASSIGNMENT

N/A.

APPROACH

An interactive lecture was chosen for TPs 1 and 2 to introduce the cadets to the method of leaving and returning to a mooring, and to orient the cadets to the duties of the skipper and crew, prior to practical application.

A practical activity was chosen for TP 3 as it is an interactive way to allow the cadets to experience mooring a sailboat in a safe and controlled environment.

INTRODUCTION

REVIEW

N/A.

OBJECTIVES

By the end of this lesson the cadet shall have left and returned to a mooring.

IMPORTANCE

It is important for the cadets to know how to leave and return to a mooring in order to prevent boat damage and to reach courses quickly, increasing time on the water.

Teaching Point 1**Explain the Procedure for Leaving a Mooring**

Time: 5 min

Method: Interactive Lecture

LEAVING A MOORING

When leaving a mooring the skipper must determine a safe path to ensure no damage to the sailboat will occur.

The steps to leaving a mooring include:

1. **Lowering the Centreboard/Daggerboard.** Immediately upon entering the sailboat, lower the centreboard/daggerboard to the down position.
2. **Rigging the Sailboat.** Raise the sails and attach the rudder. Ensure the sails remain loose until ready to leave the mooring.
3. **Untying the Painter From the Mooring.** The crew will untie the painter from the mooring when the skipper is ready.
4. **Backing the Jib Sail.** Move the jib sail opposite the desired direction.
5. **Backing the Mainsail.** Move the boom in the desired direction.
6. **Moving the Tiller.** Move the tiller in the desired direction.
7. **Sheeting In.** When the wind starts blowing over the side of the sailboat, release the jib and sheet in both sails.

CONFIRMATION OF TEACHING POINT 1

QUESTIONS

- Q1. What is the first step when leaving a mooring?
- Q2. Which direction is the tiller moved when leaving a mooring?
- Q3. What is the last step when leaving a mooring?

ANTICIPATED ANSWERS

- A1. Lower the centreboard/daggerboard.
- A2. In the desired direction.
- A3. Sheeting in.

Teaching Point 2**Explain the J-Approach Method to Be Used When Returning to a Mooring**

Time: 10 min

Method: Interactive Lecture



Approaches should be slow enough to ensure the crew will not be injured when grasping the mooring upon arrival.

If the sailboat is sailing too fast, the skipper should turn around and make another approach.

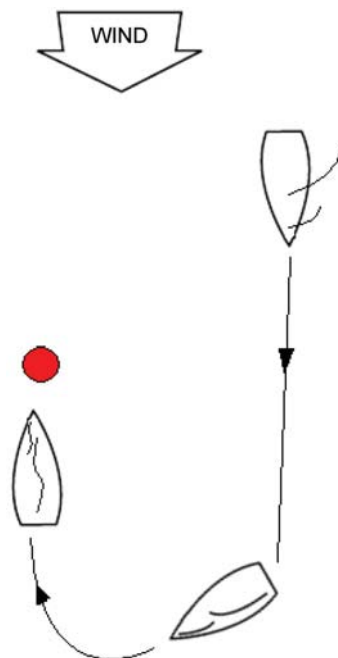
J-APPROACH METHOD

The steps to the J-approach include:

1. **Sailing Downwind.** The skipper will steer a course downwind of the mooring. The skipper will pass the mooring on the windward side of the sailboat with approximately two boat lengths between the mooring and the sailboat.
2. **Heading Up.** Approximately two to four boat lengths past the mooring, the skipper will begin to head up in the direction of the mooring.
3. **Luffing Sails.** The speed of the sailboat should be monitored as it sails toward the mooring. Sails should be eased out in order to spill the air and slow the sailboat. When the sailboat is approximately two boat lengths from the mooring, begin to slowly head into irons.
4. **Grasping the Mooring.** The crew shall grasp the mooring on the windward side of the sailboat.
5. **Tying the Painter to the Mooring.** Once the sailboat has come to a complete stop the crew will tie the painter to the mooring.
6. **De-Rigging.** Once secured to the mooring, lower the sails immediately and detach the rudder.



The centreboard/daggerboard shall remain in the down position until both the skipper and crew are ready to exit the sailboat.



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Figure 15-11-1 J-Approach Method

CONFIRMATION OF TEACHING POINT 2

QUESTIONS

- Q1. What is the method used when returning to a mooring?
- Q2. When does the crew secure the sailboat to the mooring?
- Q3. When is the centreboard/daggerboard raised?

ANTICIPATED ANSWERS

- A1. J-approach.
- A2. When the sailboat has come to a complete stop.
- A3. When the skipper and crew are ready to exit the sailboat.

Teaching Point 3

**Conduct Activities Where the Cadets Will Practice Leaving
and Returning to a Mooring**

Time: 65 min

Method: Practical Activity

ACTIVITY 1

Time: 15 min

OBJECTIVE

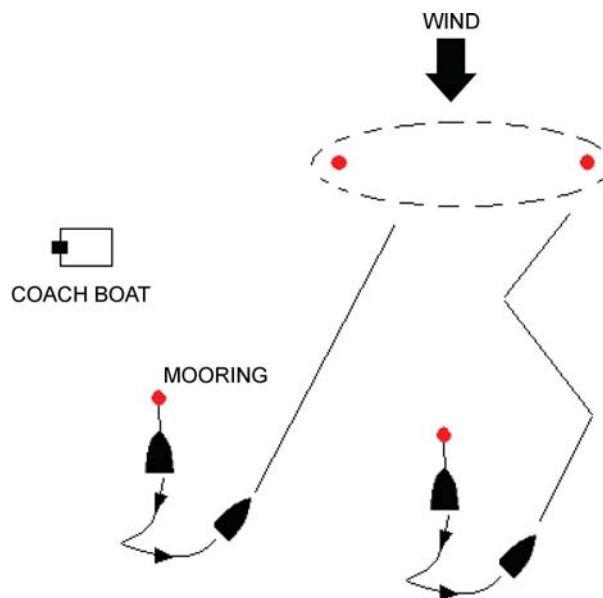
The objective of this activity is to have the cadets practice leaving a mooring.

RESOURCES

- Fully equipped sailboat,
- Helmet (one per cadet),
- Personal floatation device (PFD) (one per cadet),
- Coach boat (minimum of one per eight sailboats),
- Four buoys with lines and weights, and
- Whistle.

ACTIVITY LAYOUT

The coach boat operator will set buoys in a square formation (as illustrated in Figure 15-11-2).



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Figure 15-11-2 Early Mooring



The cadets will have an opportunity to practice this skill in various wind directions and speeds throughout the weekend(s).

ACTIVITY INSTRUCTIONS

1. Conduct the briefing for Drill 1, located at Annex AQ, prior to conducting this activity.
2. Have the sailboats tie to the mooring and quickly restate the drill, its objective and key points.
3. Using a whistle, indicate when the first sailboat is permitted to leave the mooring and sail towards the sausage collector.
4. The coach boat shall focus on the following:
 - a. **Sail Control.** The jib sail is pulled to the side opposite the desired direction and the boom is pushed in the desired direction.
 - b. **Tiller Control.** The tiller is moved in the desired direction.
5. When the sailboat arrives at the sausage collector, return to the mooring area and indicate that the next sailboat can depart from the mooring.
6. Once all the sailboats have left the mooring, have them return to the mooring and switch the skipper and crew.
7. Repeat steps 3. to 6.
8. When the drill is completed, have the sailboats sail into a control position and quickly debrief the cadets on the drill conducted before beginning the next drill.



COMMON ERRORS

It is common for novice sailors to make the following errors when learning to leave a mooring:

- difficulty untying the painter;
- moving the tiller in the wrong direction;
- pushing the boom out too far causing the sailboat to sail backwards; and
- backing the jib sail to the incorrect side.



If an alternative drill is used, focus on the key points outlined in the briefing, located at Annex AQ.

SAFETY

- Ensure a coach boat is present at all times.
- Ensure the size of the course is large enough to prevent collisions.
- Ensure A-CR-CCP-030/PT-001 is adhered to throughout the activity.

ACTIVITY 2

Time: 50 min

OBJECTIVE

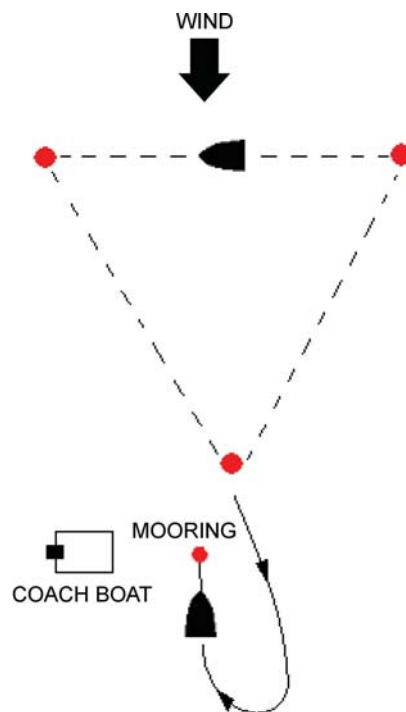
The objective of this activity is to have the cadets practice returning to a mooring.

RESOURCES

- Fully equipped sailboat,
- Helmet (one per cadet),
- PFD (one per cadet),
- Coach boat (minimum of one per eight sailboats),
- Four buoys with lines and weights, and
- Whistle.

ACTIVITY LAYOUT

The coach boat operator will set buoys in a triangle formation (as illustrated in Figure 15-11-3).



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Figure 15-11-3 The Fish Are Biting

ACTIVITY INSTRUCTIONS

1. Conduct the briefing for Drill 2, located at Annex AR, prior to conducting this activity.
2. Have the sailboats sail into a control position and quickly restate the drill, its objective and key points.
3. Using a whistle, indicate when the first sailboat is permitted to leave the triangle.
4. When the sailboat has been identified the cadets must hail “the fish are biting” and head to the mooring mark.
5. While the cadets are practicing the J-approach, the coach boat shall focus on the following:
 - a. **Course Control.** Have the skipper head the sailboat downwind of the mooring. The sailboat should make a “J” as it sails around the mooring.
 - b. **Sail Control.** Have the skipper and crew sheet out as they get closer to the mooring. Boat speed should be slow and steady.
6. When the cadets have successfully sailed to the mooring, have them sail to the triangle, and choose another sailboat. Ensure any sailboat that does not complete the drill correctly is provided another opportunity to complete this drill.
7. Once all the sailboats have completed a mooring, switch the skipper and crew.
8. Repeat steps 3. to 6.
9. When the drill is complete, have the sailboats sail into a control position and quickly debrief the cadets on the drill conducted.



COMMON ERRORS

It is common for novice sailors to make the following errors when learning to return to a mooring:

- course heading, to include passing too far from the mooring; and
- sail control, to include:
 - not sheeting out enough, causing the sailboat to move too fast; and
 - sheeting out too much, causing the sailboat to slow down, not reaching the mooring.



If an alternative drill is used, focus on the key points outlined in the briefing located at Annex AR.

SAFETY

- Ensure a coach boat is present at all times.
- Ensure the size of the course is large enough to prevent collisions.
- Ensure A-CR-CCP-030/PT-001 is adhered to throughout the activity.

CONFIRMATION OF TEACHING POINT 3

The cadets' participation in the activities will serve as the confirmation of this TP.

END OF LESSON CONFIRMATION

The cadets' leaving and returning to a mooring will serve as the confirmation of this lesson.

CONCLUSION

HOMEWORK/READING/PRACTICE

N/A.

METHOD OF EVALUATION

This EO is assessed IAW A-CR-CCP-603/PG-001, Chapter 3, Annex B, Appendix 10 (324 PC).

CLOSING STATEMENT

Leaving and returning to a mooring is a fundamental skill in sailing and is commonly used at many sailing locations. This skill will be practiced on a regular basis and will provide an additional opportunity to practice other skills such as sailing out of irons.

INSTRUCTOR NOTES/REMARKS

The cadets will have several opportunities to practice mooring a sailboat throughout the sail weekend(s).

If the cadets have difficulty performing a skill, the coach should focus more time on that skill.

REFERENCES

- C1-007 (ISBN 0-920232-17-5/A-CR-CCP-009/PT-001) Donaldson, S. (2001). *Basic Sailing Skills*. Kingston, ON: Canadian Yachting Association.
- C1-008 Canadian Yachting Association. (2006). *Canadian Yachting Association White Sail Level II Practical Skills Checklist*. Retrieved April 3, 2006, from <http://www.sailing.ca/cbet/content/WIIChecklist.doc>.
- C1-099 (ISBN 0-920232-26-4) Canadian Yachting Association. (2003). *Canadian Yachting Association Sailing Logbook*. Kingston, ON: Canadian Yachting Association.

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SUGGESTED CLOTHING AND FOOTWEAR FOR A SAIL WEEKEND

The weather forecast and the following clothing guidelines can assist in determining the clothing to be worn/ brought for sail training.

FOOTWEAR

- **On the Water Training.** Soft-soled shoes (sneakers) or sailing boots. No open-toed footwear is permitted. Footwear will get wet. It is recommended that the cadets wear older shoes they do not mind getting wet and possibly salty.
- **Ashore Training.** A separate pair of shoes other than the on the water pair is needed. Cadets are not permitted to wear wet footwear unless they are participating in on the water training. Seasonal outdoor footwear is recommended for ashore activities.

CLOTHING

- **On the Water Training.** All personnel should have at least two sets of the following:
 - shirt,
 - sweater,
 - shorts (if weather permits),
 - bathing suit,
 - pants, such as, sweat pants or lined nylon (NO JEANS PERMITTED as they restrict movement and become heavy when wet),
 - undergarments,
 - hat, and
 - socks.
- **Ashore Training.** All personnel are to bring appropriate seasonal clothing. This clothing should not be the same clothing brought for on the water training.

OUTERWEAR

- Warm hat (if expected temperatures are low),
- Jacket, and
- Gloves/mittens (if expected temperatures are low and cadets wish to wear gloves on the water, they must be suitable for working with small lines and moving parts).

Note: Wet weather gear and wetsuits may be available for loan from the sail centre.

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SAILING TERMINOLOGY

Heading Up. Altering course toward the wind.

Luffing. To steer or trim the sail so it flutters, either near its leading edge or over the whole sail.

Head to Wind. Aiming the bow of the boat directly toward the source of the wind.

Heeling. Sideways leaning or tipping of a boat, usually caused by the force of the wind on the sails.

Hiking. Leaning backwards over the windward gunwale to counteract heel.

Tacking. Act of moving the tiller to leeward to turn the sailboat into the wind until the sails refill on the other side (also known as coming about).

Beating. Sailing to windward using a series of tacks, close hauled first on one tack, and then the other.

Bearing Away. Turning a sailboat away from the source of the wind (also known as heading down).

Gybing. Act of moving the tiller to windward to turn the sailboat away from the wind until the sails swing to the other side.

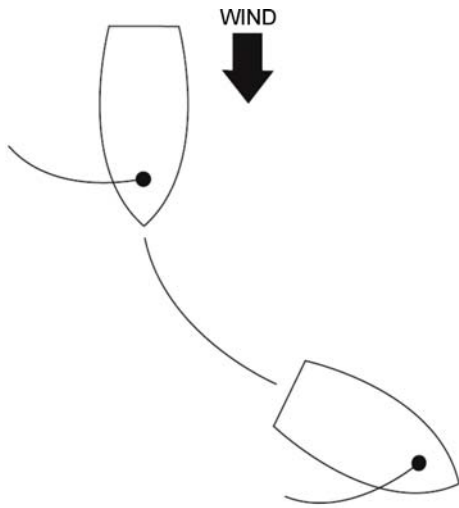
Windward. Toward the source of the wind.

Leeward. Away from the source of the wind.

Skipper. The person who is in charge of the sailboat.

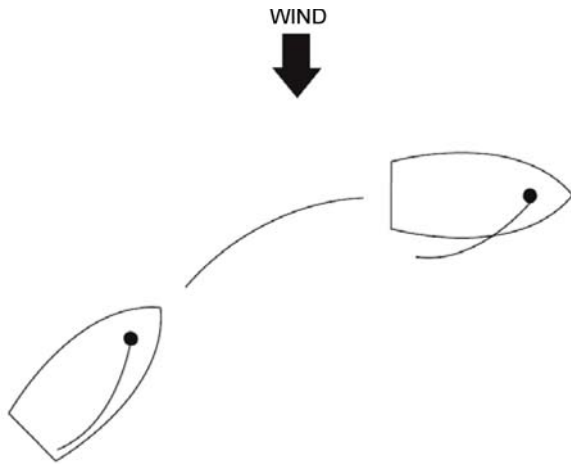
Crew. Person or people who help the skipper sail a sailboat.

Helmsman. The person who steers a boat.



Canadian Yachting Association, White
Sail Workbook (Manuscript in preparation)

Figure 15B-1 Heading Up



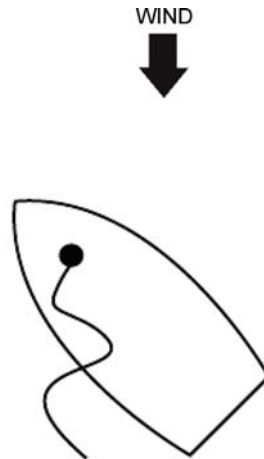
Canadian Yachting Association, White
Sail Workbook (Manuscript in preparation)

Figure 15B-2 Bearing Off



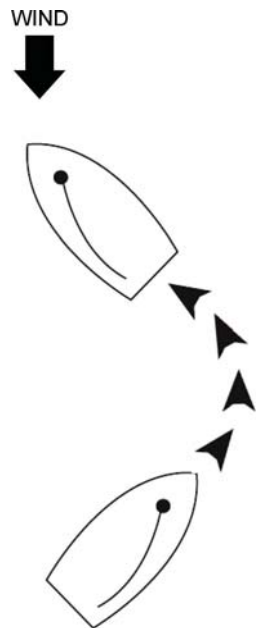
Canadian Yachting Association, White
Sail Workbook (Manuscript in preparation)

Figure 15B-3 Head to Wind



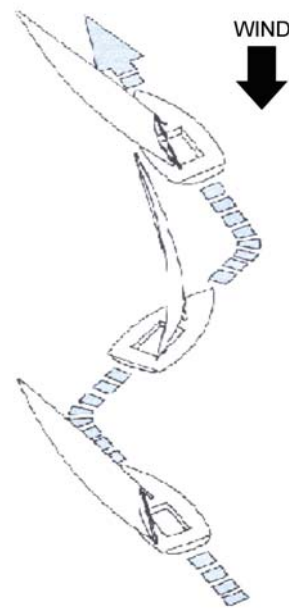
Canadian Yachting Association, White
Sail Workbook (Manuscript in preparation)

Figure 15B-4 Luffing



Canadian Yachting Association, White Sail Workbook (Manuscript in preparation)

Figure 15B-5 Tacking



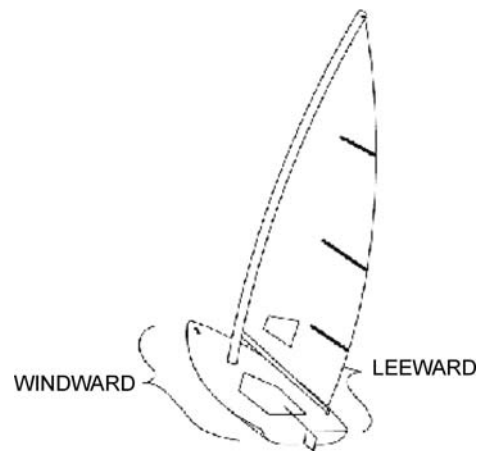
S. Donaldson, Advanced Sailing Skills Manual, Canadian Yachting Association (p. 21)

Figure 15B-6 Beating



Canadian Yachting Association, White Sail Workbook (Manuscript in preparation)

Figure 15B-7 Gybing



Canadian Yachting Association, White Sail Workbook (Manuscript in preparation)

Figure 15B-8 Windward/Leeward

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“SAILOR SAYS” SAILING TERMINOLOGY AND RESPONSES

Terminology	Response
Heading Up. Altering course toward the wind.	Skipper moves tiller to leeward, while skipper and crew pull in on sheets.
Luffing. To steer or trim the sail so it flutters, either near its leading edge or over the whole sail.	Skipper pushes the tiller away and crew flaps arms toward the side of the boat to demonstrate flapping sails.
Head to Wind. Aiming the bow of the boat directly toward the source of the wind.	Skipper pushes the tiller away, then both skipper and crew flap arms toward the rear of the chairs to demonstrate flapping sails.
Heeling. Sideways leaning or tipping of a boat, usually caused by the force of the wind on the sails.	Skipper and crew lean away from the source of the wind, to demonstrate a tipping sailboat.
Hiking. Leaning backwards over the windward gunwale to counteract heel.	Skipper and crew lean toward the wind.
Tacking. Act of moving the tiller to leeward to turn the sailboat into the wind until the sails refill on the other side (also known as coming about).	Skipper moves tiller to leeward, crew flaps arms toward the rear of the chairs while skipper and crew turn around in their chair to face the opposite direction.
Beating. Sailing to windward using a series of tacks, close hauled first on one tack and then the other.	Skipper and crew must demonstrate the action listed in tacking, three times.
Bearing Away. Turning a sailboat away from the source of the wind (also known as heading down).	Skipper moves the tiller to windward, while skipper and crew ease the sheets.
Gybing. Act of moving the tiller to windward to turn the sailboat away from the wind until the sails swing to the other side.	Skipper moves the tiller to windward, crew swings their arm from one side of the chairs to the other while skipper and crew turn around in their chair to face the other direction.
Windward. Toward the source of the wind.	Skipper and crew point toward the windward side of the chairs.
Leeward. Away from the source of the wind.	Skipper and crew point toward the leeward side of the chairs.
Skipper. The person who is in charge of the sailboat.	Both members of the pair point toward the cadet that started the activity as skipper.
Crew. Person or people who help the skipper sail the sailboat.	Skipper points toward the crew.
Helmsman. The person who steers the sailboat.	Crew points to the cadet who is steering.

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ROLLING HITCH

The rolling hitch is tied using the following steps:

1. Wrap a line around the spar, take a second turn around and cross over the standing part to trap it.
2. Take another full turn around the spar, but on the other side of the standing part.
3. Bring the working part up underneath itself to make a half hitch, and pull tight.



B-GN-181-105/FP-E00 (p. 5-31)

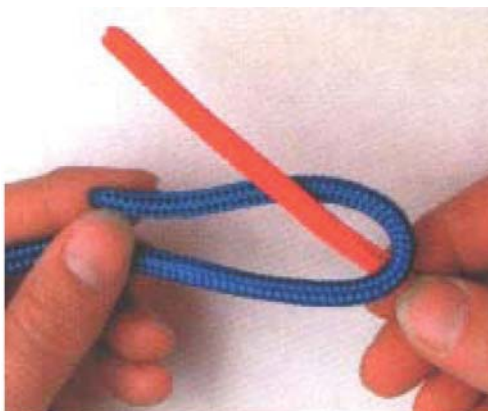
Figure 15D-1 Steps to Tying a Rolling Hitch

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SHEET BEND

The sheet bend is tied using the following steps:

1. Form a bight at the end of a line. If the lines to be joined are of different diameters then the bight should be formed using the larger of the two (as illustrated in Figure 15E-1).
2. Pass the working end of the second line up through the bight, around the shorter end of the first line and behind the standing part (as illustrated in Figures 15E-1 and 15E-2).



D. Pawson, Pocket Guide to Knots and Splices, Chartwell Books, Inc. (p. 112)

Figure 15E-1 Sheet Bend – Steps 1 and 2

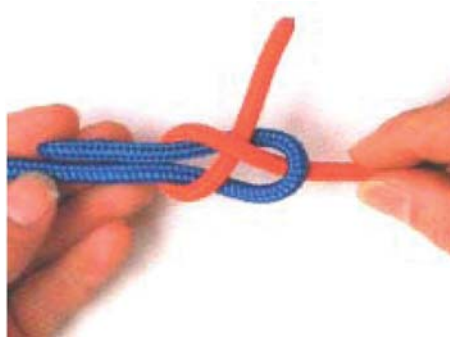
3. Tuck the working end of the second piece of line under itself (as illustrated in Figure 15E-2).



D. Pawson, Pocket Guide to Knots and Splices, Chartwell Books, Inc. (p. 112)

Figure 15E-2 Sheet Bend – Step 3

4. Finish the sheet bend by holding the bight while pulling on the standing part of the tucked line (as illustrated in Figure 15E-3).



D. Pawson, Pocket Guide to Knots and Splices, Chartwell Books, Inc. (p. 112)

Figure 15E-3 Finished Sheet Bend

SAILBOAT CONSTRUCTION SCORESHEET

Team Name	Points	Score
Parts		
Hull	1	
Mast	1	
Boom	1	
Mainsail	1	
Jib sail	1	
Tiller	1	
Rudder	1	
Construction		
Mast stays upright without being held by the cadets.	10	
Sailboat appears to be buoyant.	10	
Construction Creativity	1 • 2 • 3 • 4 • 5 • 6 • 7 • 8 • 9 • 10	
Esprit de Corps	1 • 2 • 3 • 4 • 5 • 6 • 7 • 8 • 9 • 10	
	Subtotal	
	Score multiplied by 1 000 000	
	Total score	

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DRILL 1 BRIEFING (A SAFE DEPARTURE)

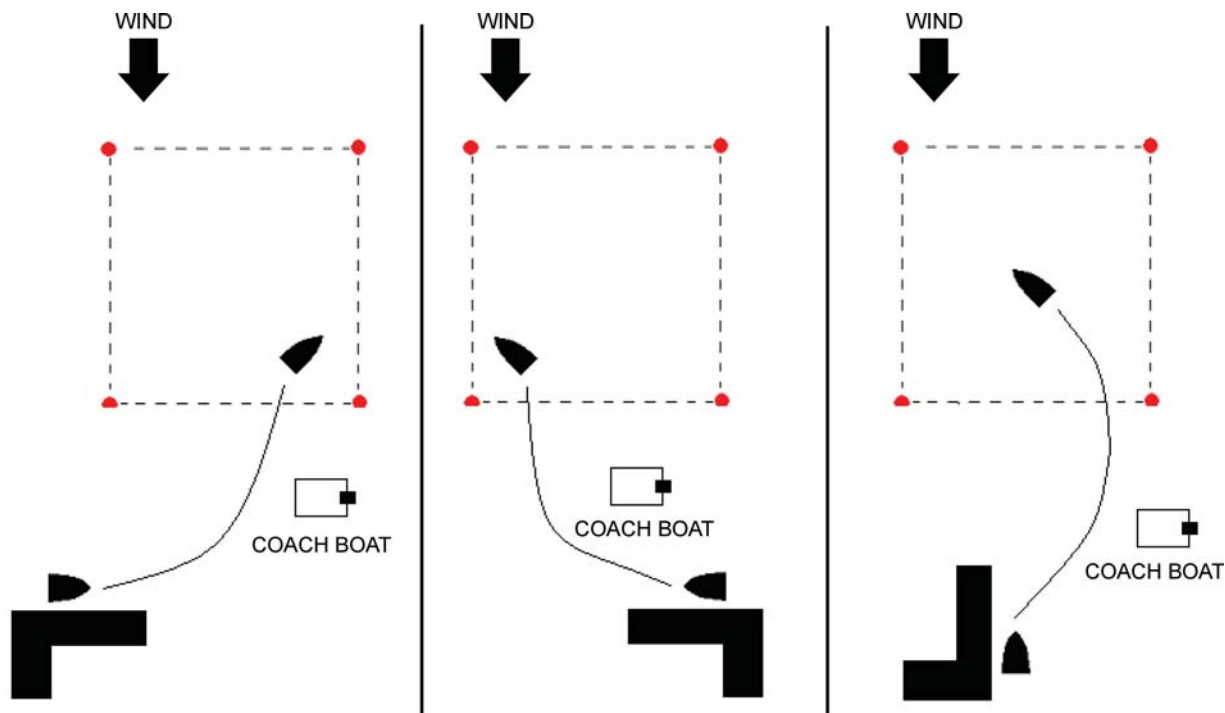
Drill Name: A Safe Departure

Objective: To have the cadets practice leaving a dock.

Key Points

- Course control, to include:
 - maintaining a straight heading; and
 - pushing the sailboat off the dock, preventing it from hitting.
- Sail control, to include:
 - sails remaining loose until ready to untie; and
 - gaining speed gradually.

Drill: Have cadets sail toward the square outlined by the marks.



Director Cadets 3, 2006, Ottawa, ON: Department of National Defence

Figure 15G-1 A Safe Departure

Safety

- Three whistle blasts – sailboats will move into the control position (luffing on a starboard tack downwind of the coach boat).
- Five whistle blasts or more – emergency, all sailboats head directly to shore.

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DRILL 2 BRIEFING (A CAUTIOUS APPROACH)

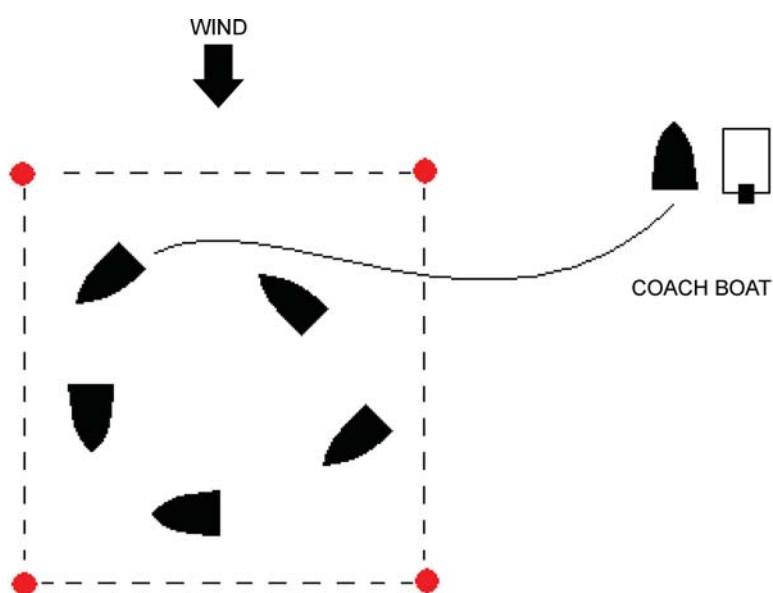
Drill Name: A Cautious Approach

Objective: To have the cadets practice returning to a dock.

Key Points

- Course control, to include:
 - practicing the J-approach; and
 - heading the sailboat into irons.
- Sail control, to include sheeting out the sails.

Drill: Have cadets sail toward the coach boat, practicing returning to a dock.



Director Cadets 3, 2007, Ottawa, ON: Department of National Defence

Figure 15H-1 A Cautious Approach

Safety

- Three whistle blasts – sailboats will move into the control position (luffing on a starboard tack downwind of the coach boat).
- Five whistle blasts or more – emergency, all sailboats head directly to shore.

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DRILL 1 BRIEFING (GET OFF THE BEACH)

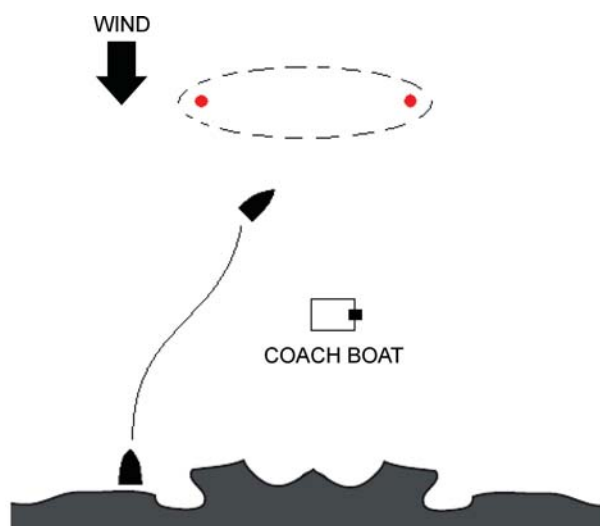
Drill Name: Get Off the Beach

Objective: To have the cadets practice leaving a beach.

Key Points

- Rigging, to include:
 - pointing the bow into irons; and
 - lowering the centreboard/daggerboard and rudder blade.
- Course control, to include sailing towards deep water.

Drill: Have the cadets sail toward the sausage outlined by the marks.



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Figure 15I-1 Get Off the Beach

Safety

- One whistle blast – a sailboat is permitted to leave the beach.
- Three whistle blasts – sailboats will move into the control position (luffing on a starboard tack downwind of the coach boat).
- Five whistle blasts or more – emergency, all sailboats head directly to shore.

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DRILL 2 BRIEFING (EXIT STRATEGY)

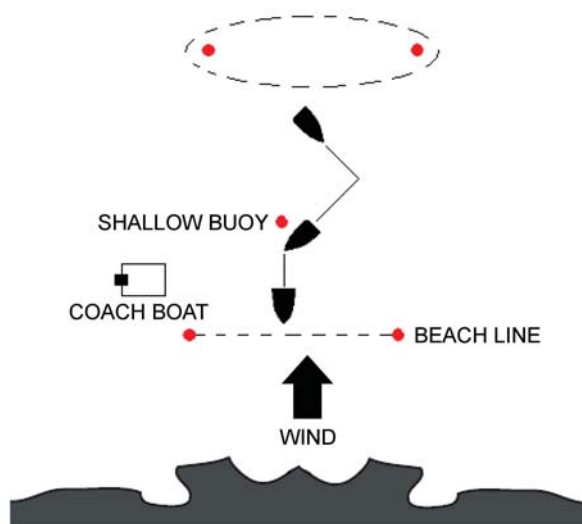
Drill Name: Exit Strategy

Objective: To have the cadets practice returning to the beach with an offshore wind.

Key Points

- Sail control, to include:
 - easing sails; and
 - luffing sails.
- Course control, to include sailing to the desired point on the beach.
- Adjustments, to include raising the centreboard/daggerboard and rudder blade.

Drill: Have the cadets sail toward the sausage outlined by the marks.



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Figure 15J-1 Exit Strategy

Safety

- Three whistle blasts – sailboats will move into the control position (luffing on a starboard tack downwind of the coach boat).
- Five whistle blasts or more – emergency, all sailboats head directly to shore.

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DRILL 3 BRIEFING (BEACH PARTY)

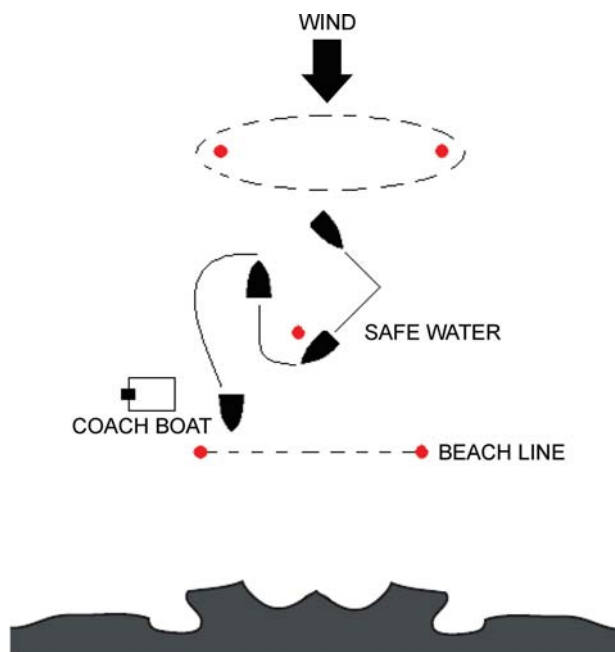
Drill Name: Beach Party

Objective: To have the cadets practice returning to beach with an offshore wind.

Key Points

- Sail control, to include:
 - easing sails; and
 - luffing sails.
- Course control, to include:
 - pointing the bow into irons; and
 - sailing to desired point on the beach using only the jib sail.
- Adjustments, to include:
 - lowering the mainsail; and
 - raising the centreboard/daggerboard and rudder blade.

Drill: Have cadets sail toward the sausage outlined by the marks.



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Figure 15K-1 Beach Party

Safety

- Three whistle blasts – sailboats will move into the control position (luffing on a starboard tack downwind of the coach boat).
- Five whistle blasts or more – emergency, all sailboats head directly to shore.

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DRILL 1 BRIEFING (SLOW AS A TURTLE)

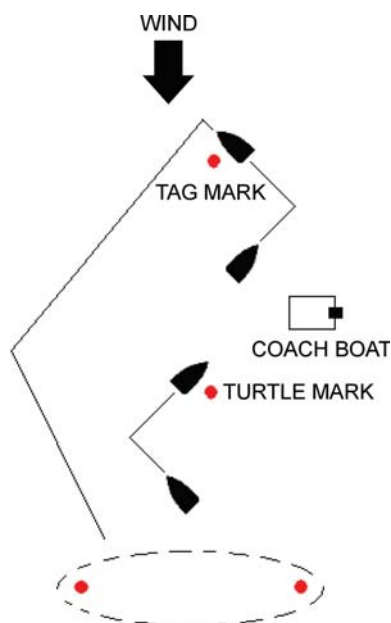
Drill Name: Slow As a Turtle

Objective: To have the cadets practice righting a turtled sailboat.

Key Points

- Ensure constant verbal communication is maintained at all times.
- Self recovery, to include:
 - swimming quickly to the bow and centreboard/daggerboard;
 - pointing the bow into irons; and
 - using the “hand over hand” method.

Drill: When the cadets are signaled to, they are to proceed to the turtle mark, capsize and right a turtled sailboat and proceed to the tag mark and return back to the sausage collector.



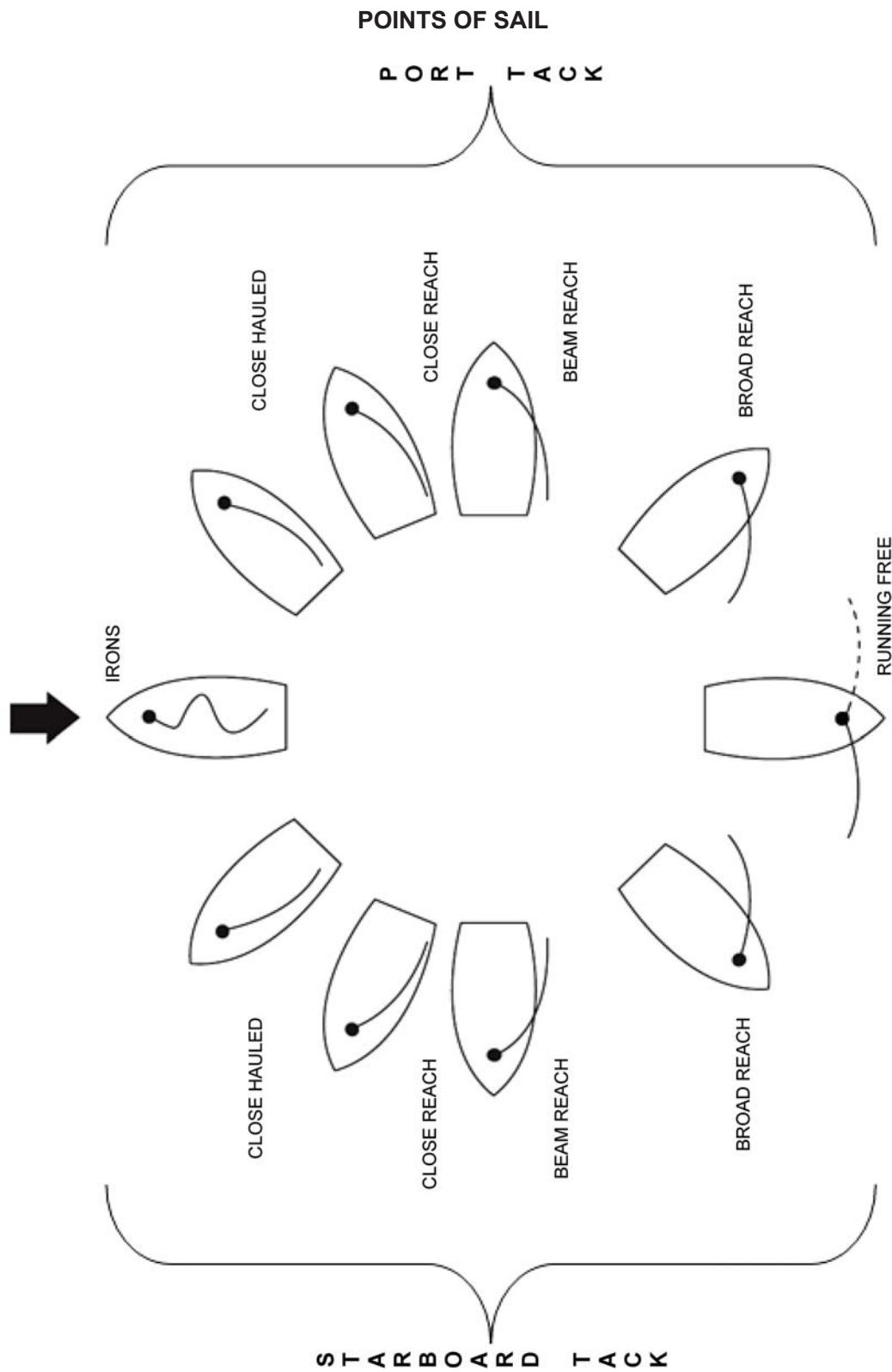
Director Cadets 3, 2007, Ottawa, ON: Department of National Defence

Figure 15L-1 Slow As a Turtle

Safety

- Three whistle blasts – sailboats will move into the control position (luffing on a starboard tack downwind of the coach boat).
- Five whistle blasts or more – emergency, all sailboats head directly to shore.

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Canadian Yachting Association, White Sail Workbook (Manuscript in preparation)

Figure 15M-1 Points of Sail

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POINTS OF SAIL LIST

Irons

Close hauled – port tack.

Close hauled – starboard tack.

Close reach – port tack.

Close reach – starboard tack.

Beam reach – port tack.

Beam reach – starboard tack.

Broad reach – port tack.

Broad reach – starboard tack.

Running free – port tack.

Running free – starboard tack.

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DRILL 1 BRIEFING (THE NILE)

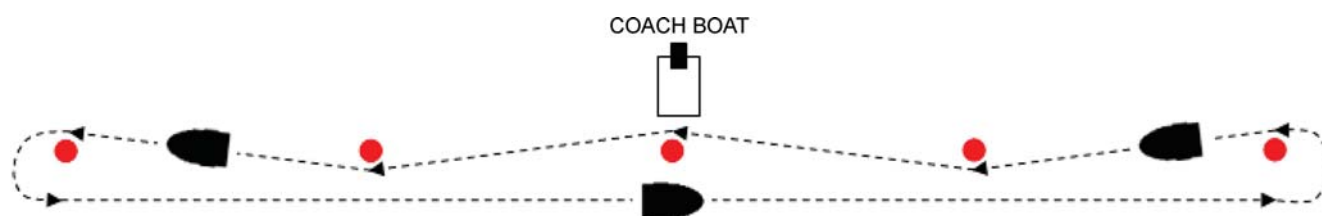
Drill Name: The Nile

Objective: To have the cadets practice heading up and bearing away.

Key Points

- Course control, to include:
 - performing smooth tiller adjustments while heading up and bearing away.
- Sail trim, to include:
 - properly trimming the sails to the point of sail; and
 - making sheet adjustments to maintain sail trim while heading up and bearing away.

Drill: The cadets are to weave through a sausage course rounding the marks to starboard.



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Figure 15O-1 The Nile

Safety

- Three whistle blasts – sailboats will move into the control position (luffing on a starboard tack downwind of the coach boat).
- Five whistle blasts or more – emergency, all sailboats head directly to shore.

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DRILL 2 BRIEFING (UPSIDE DOWN PYRAMID)

Drill Name: Upside Down Pyramid

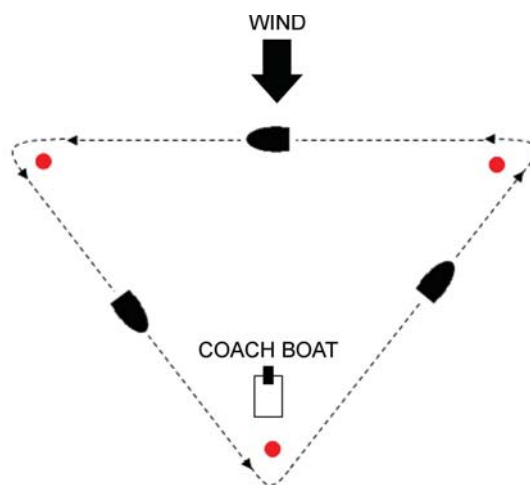
Objective: To have the cadets practice heading up and bearing away, while making adjustments for the following points of sail:

- close hauled,
- beam reach, and
- broad reach.

Key Points

- Course control, to include:
 - performing smooth tiller adjustments while heading up and bearing away.
- Sail trim, to include:
 - properly trimming the sails to the point of sail; and
 - making sheet adjustments to maintain sail trim while heading up and bearing away.
- Centreboard/daggerboard adjustments, to include:
 - raising the centreboard/daggerboard as the sailboat bears away; and
 - lowering the centreboard/daggerboard as the sailboat heads up.

Drill: The cadets are to sail around a triangle course rounding the marks to starboard.



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Figure 15P-1 Upside Down Pyramid

Safety

- Three whistle blasts – sailboats will move into the control position (luffing on a starboard tack downwind of the coach boat).
- Five whistle blasts or more – emergency, all sailboats head directly to shore.

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DRILL 3 BRIEFING (MUMMIES' COFFIN)

Drill Name: Mummies' Coffin

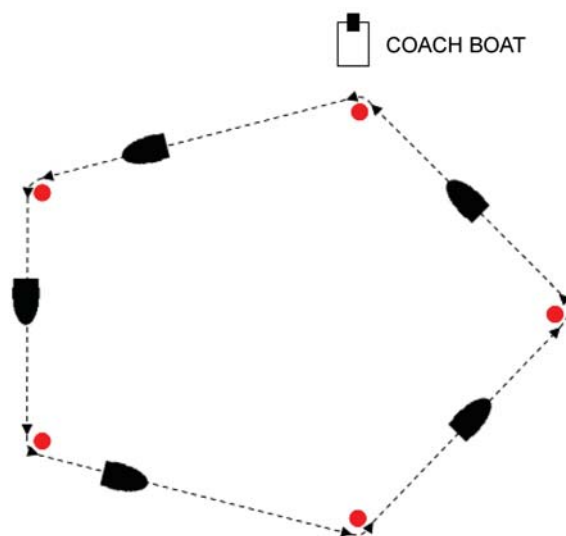
Objective: To have the cadets practice heading up and bearing away, while making adjustments for the following points of sail:

- close hauled,
- broad reach, and
- running free.

Key Points

- Course control, to include:
 - performing smooth tiller adjustments while heading up and bearing away.
- Sail trim, to include:
 - properly trimming the sails to the point of sail; and
 - making sheet adjustments to maintain sail trim while heading up and bearing away.
- Centreboard/daggerboard adjustments, to include:
 - raising the centreboard/daggerboard as the sailboat bears away; and
 - lowering the centreboard/daggerboard as the sailboat heads up.

Drill: The cadets are to sail around a pentagon course rounding the marks to starboard.



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Figure 15Q-1 Mummies' Coffin

Safety

- Three whistle blasts – sailboats will move into the control position (luffing on a starboard tack downwind of the coach boat).
- Five whistle blasts or more – emergency, all sailboats head directly to shore.

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DRILL 4 BRIEFING (HEELING PYRAMID)

Drill Name: Heeling Pyramid

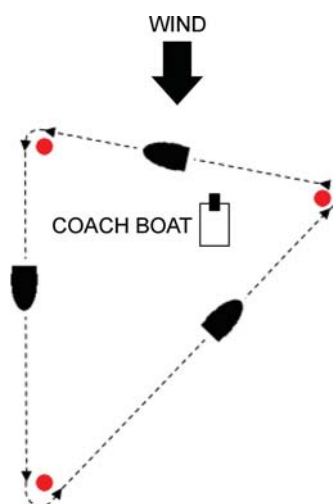
Objective: To have the cadets practice heading up and bearing away, while making adjustments for the following points of sail:

- close hauled,
- close reach, and
- running free.

Key Points

- Course control, to include performing smooth tiller adjustments while heading up and bearing away.
- Sail trim, to include:
 - properly trimming the sails to the point of sail; and
 - making sheet adjustments to maintain sail trim while heading up and bearing away.
- Centreboard/daggerboard adjustments, to include:
 - raising the centreboard/daggerboard as the sailboat bears away; and
 - lowering the centreboard/daggerboard as the sailboat heads up.

Drill: The cadets are to sail around a triangle course rounding the marks to port.



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Figure 15R-1 Heeling Pyramid

Safety

- Three whistle blasts – sailboats will move into the control position (luffing on a starboard tack downwind of the coach boat).
- Five whistle blasts or more – emergency, all sailboats head directly to shore.

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DRILL 5 BRIEFING (SEARCH FOR BUILDING BLOCKS)

Drill Name: Search for Building Blocks

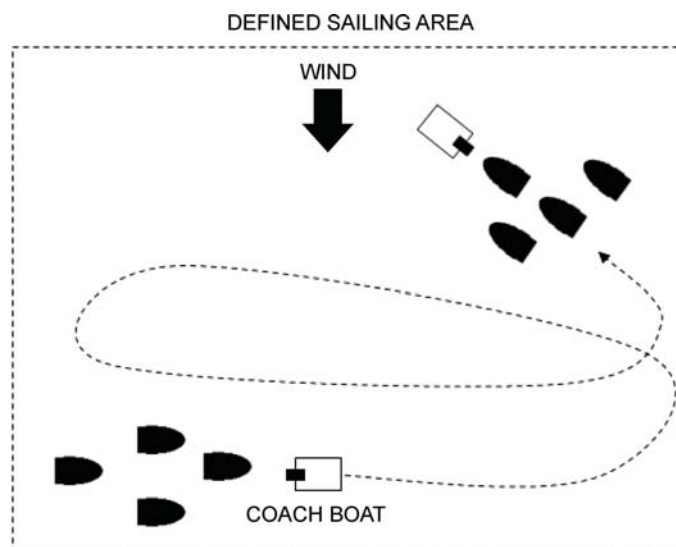
Objective: To have the cadets practice heading up and bearing away, while making adjustments for the following points of sail:

- close hauled,
- close reach,
- beam reach,
- broad reach, and
- running free.

Key Points

- Course control, to include performing smooth tiller adjustments while heading up and bearing away.
- Sail trim, to include:
 - properly trimming the sails to the point of sail; and
 - making sheet adjustments to maintain sail trim while heading up and bearing away.
- Centreboard/daggerboard adjustments, to include:
 - raising the centreboard/daggerboard as the sailboat bears away; and
 - lowering the centreboard/daggerboard as the sailboat heads up.

Drill: The cadets are to play follow-the-leader with the coach boat or assigned leader.



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Figure 15S-1 Search for Building Blocks

Safety

- Three whistle blasts – sailboats will move into the control position (luffing on a starboard tack downwind of the coach boat).
- Five whistle blasts or more – emergency, all sailboats head directly to shore.

DRILL 1 BRIEFING (LUFFING ROUND THE CORNER)

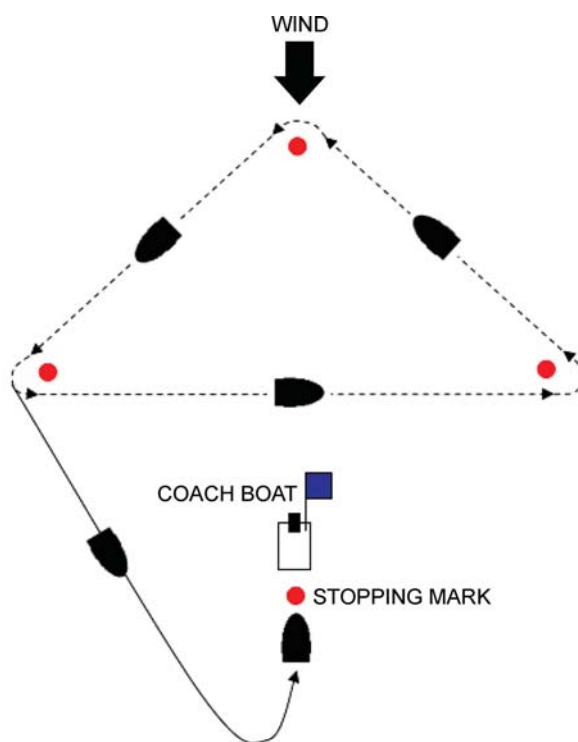
Drill Name: Luffing Round the Corner

Objective: To have the cadets practice stopping a sailboat.

Key Points

- Course control, to include:
 - smoothly luffing up and coming to a stop; and
 - avoiding becoming stuck in irons.
- Sail trim, to include developing an appreciation for the distance a sailboat requires to come to a stop.

Drill: When the cadets see the coach boat with the blue flag raised, as they are passing the gybe mark, they are to proceed to the stopping mark, stop using a J-approach and proceed back to the triangle course.



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Figure 15T-1 Luffing Round the Corner

Safety

- Three whistle blasts – sailboats will move into the control position (luffing on a starboard tack downwind of the coach boat).
- Five whistle blasts or more – emergency, all sailboats head directly to shore.

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DRILL 2 BRIEFING (RED LIGHT GREEN LIGHT)

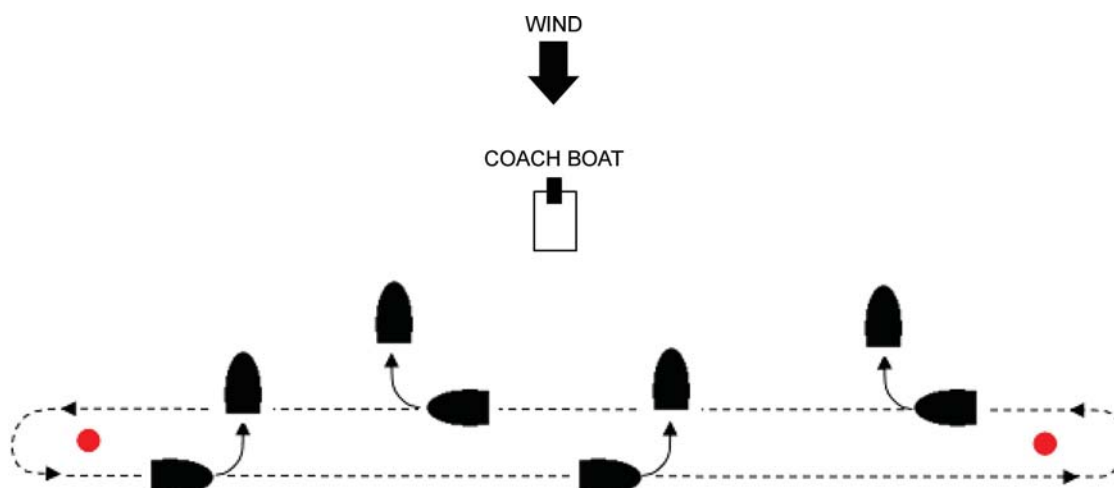
Drill Name: Red Light Green Light

Objective: To have the cadets practice stopping a sailboat.

Key Points

- Course control, to include:
 - smoothly luffing up and coming to a stop; and
 - avoiding becoming stuck in irons.
- Sail trim, to include developing an appreciation for the distance a sailboat requires to come to a stop.

Drill: When the cadets hear the whistle blast they are to head up and come to a stop. When the cadets hear two whistle blasts they are to bear away and continue sailing the sausage course.



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Figure 15U-1 Red Light Green Light

Safety

- Three whistle blasts – sailboats will move into the control position (luffing on a starboard tack downwind of the coach boat).
- Five whistle blasts or more – emergency, all sailboats head directly to shore.

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DRILL 3 BRIEFING (SAUCY SAUSAGE)

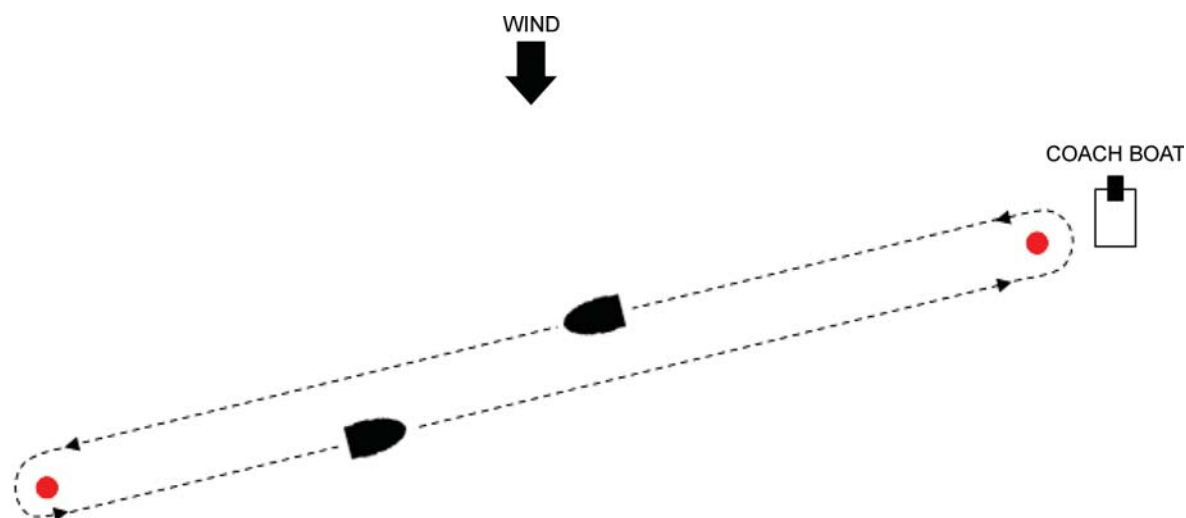
Drill Name: Saucy Sausage

Objective: To have the cadets practice tacking and sailing on a close reach.

Key Points

- Tacking, to include:
 - switching sides of the sailboat;
 - facing forward through the tack;
 - maintaining a grasp of the tiller extension and mainsheet through the tack; and
 - maintaining a course no lower than a close reach after tacking.
- Course control, to include maintaining a straight course when sailing on a close reach.
- Sail trim, to include properly trimming the sails to the point of sail.

Drill: The cadets are to sail around a sausage course rounding the marks to starboard.



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Figure 15V-1 Saucy Sausage

Safety

- Three whistle blasts – sailboats will move into the control position (luffing on a starboard tack downwind of the coach boat).
- Five whistle blasts or more – emergency, all sailboats head directly to shore.

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DRILL 4 BRIEFING (DOUBLE DONUTS)

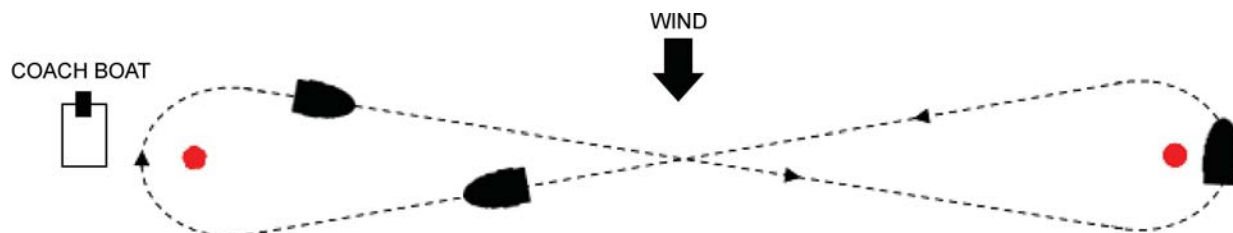
Drill Name: Double Donuts

Objective: To have the cadets practice tacking.

Key Points

- Tacking, to include:
 - switching sides of the sailboat;
 - facing forward through the tack;
 - maintaining a grasp of the tiller extension and mainsheet through the tack.
- Course control, to include performing smooth tiller adjustments while tacking around the marks.
- Sail trim, to include properly trimming the sails to the point of sail.

Drill: The cadets are to sail a figure-of-eight course.



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Figure 15W-1 Double Donuts

Safety

- Three whistle blasts – sailboats will move into the control position (luffing on a starboard tack downwind of the coach boat).
- Five whistle blasts or more – emergency, all sailboats head directly to shore.

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DRILL 5 BRIEFING (CRISPY CRACKER)

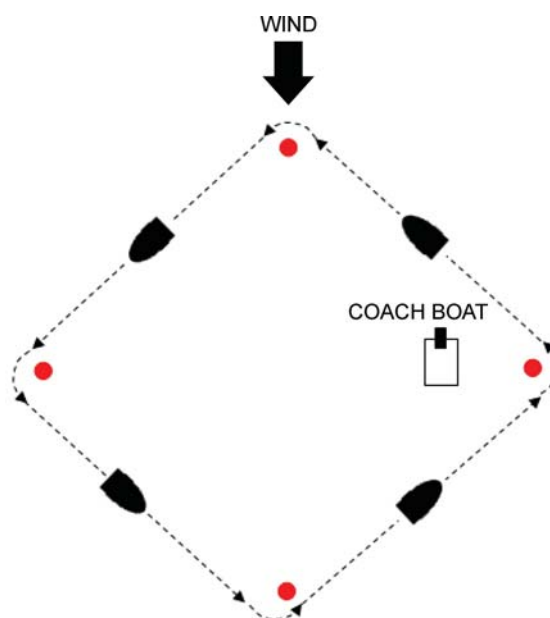
Drill Name: Crispy Cracker

Objective: To have the cadets practice tacking and sailing on a close reach.

Key Points

- Tacking, to include:
 - switching sides of the sailboat;
 - facing forward through the tack;
 - maintaining a grasp of the tiller extension and mainsheet through the tack; and
 - maintaining a course no lower than a close reach after tacking.
- Course control, to include maintaining a straight course when sailing on a close reach.
- Sail trim, to include properly trimming the sails to the point of sail.

Drill: The cadets are to sail around a diamond course rounding the marks to starboard.



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Figure 15X-1 Crispy Cracker

Safety

- Three whistle blasts – sailboats will move into the control position (luffing on a starboard tack downwind of the coach boat).
- Five whistle blasts or more – emergency, all sailboats head directly to shore.

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DRILL 6 BRIEFING (GNARLY NACHO)

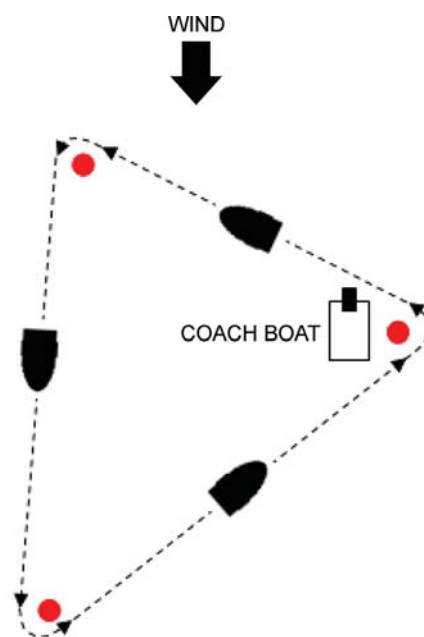
Drill Name: Gnarly Nacho

Objective: To have the cadets practice tacking, sailing close hauled and sailing on a close reach.

Key Points

- Tacking, to include:
 - switching sides of the sailboat;
 - facing forward through the tack;
 - maintaining a grasp of the tiller extension and mainsheet through the tack; and
 - maintaining a course no lower than a close reach after tacking.
- Course control, to include maintaining a straight course when close hauled and on a close reach.
- Sail trim, to include properly trimming the sails to the point of sail.

Drill: The cadets are to sail around a triangle course rounding the marks to starboard.



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Figure 15Y-1 Gnarly Nacho

Safety

- Three whistle blasts – sailboats will move into the control position (luffing on a starboard tack downwind of the coach boat).
- Five whistle blasts or more – emergency, all sailboats head directly to shore.

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DRILL 7 BRIEFING (CORN Y CORN CHIP)

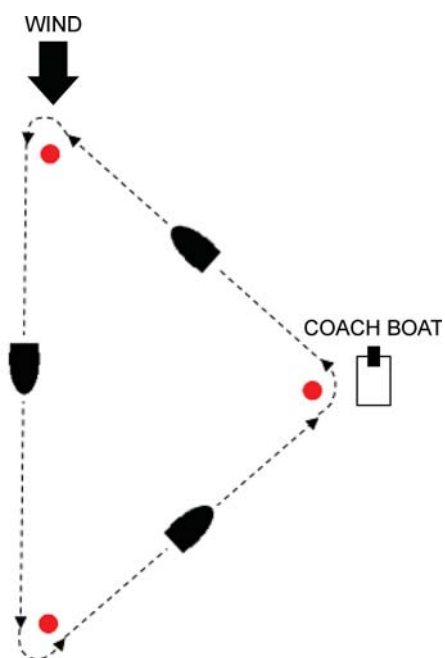
Drill Name: Corny Corn Chip

Objective: To have the cadets practice tacking and sailing close hauled.

Key Points

- Tacking, to include:
 - switching sides of the sailboat;
 - facing forward through the tack;
 - maintaining a grasp of the tiller extension and mainsheet through the tack; and
 - maintaining a course no lower than a beam reach after tacking.
- Course control, to include maintaining a straight course when sailing on close hauled.
- Sail trim, to include properly trimming the sails to the point of sail.

Drill: The cadets are to sail around a triangle course rounding the marks to starboard.



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Figure 15Z-1 Corny Corn Chip

Safety

- Three whistle blasts – sailboats will move into the control position (luffing on a starboard tack downwind of the coach boat).
- Five whistle blasts or more – emergency, all sailboats head directly to shore.

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DRILL 8 BRIEFING (CLIMBING THE MOUNTAIN)

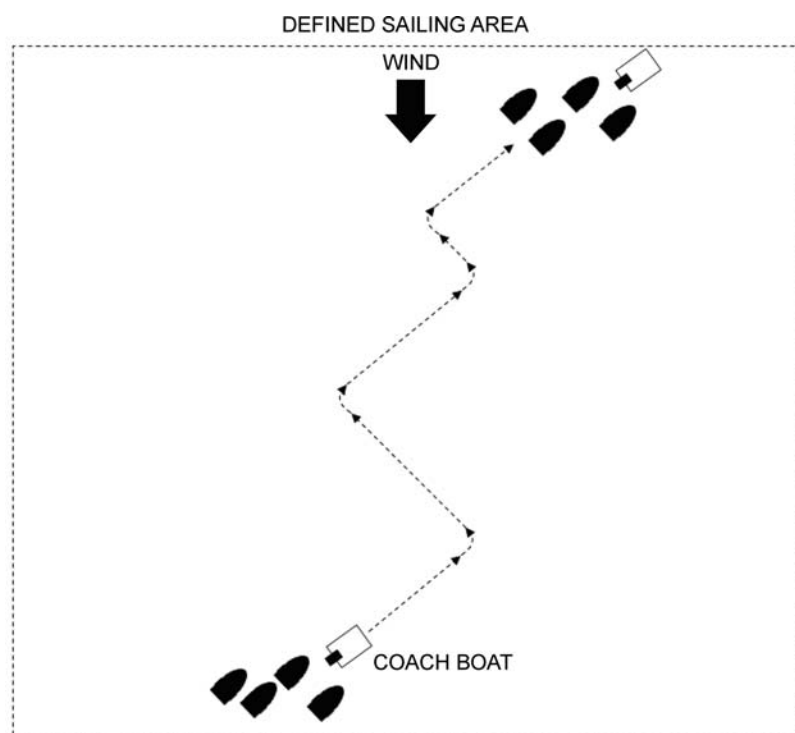
Drill Name: Climbing the Mountain

Objective: To have the cadets practice beating.

Key Points

- Tacking, to include:
 - switching sides of the sailboat;
 - facing forward through the tack;
 - maintaining a grasp of the tiller extension and mainsheet through the tack; and
 - maintaining a close hauled course after tacking.
- Course control, to include maintaining a straight course when sailing close hauled.
- Sail trim, to include cleating the jib sheet when sailing on a close hauled course.

Drill: The cadets are to play follow-the-leader with the coach boat.



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Figure 15AA-1 Climbing the Mountain

Safety

- Three whistle blasts – sailboats will move into the control position (luffing on a starboard tack downwind of the coach boat).
- Five whistle blasts or more – emergency, all sailboats head directly to shore.

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DRILL 9 BRIEFING (SNAKES AND LADDERS)

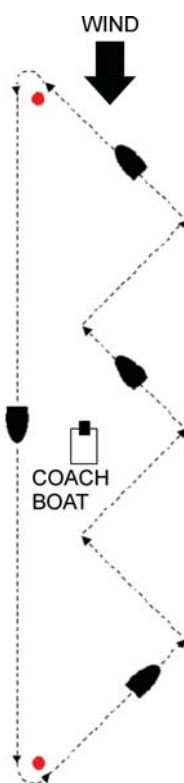
Drill Name: Snakes and Ladders

Objective: To have the cadets practice beating.

Key Points

- Tacking, to include:
 - switching sides of the sailboat;
 - facing forward through the tack;
 - maintaining a grasp of the tiller extension and mainsheet through the tack; and
 - maintaining a close hauled course after tacking.
- Course control, to include maintaining a straight course when sailing close hauled.
- Sail trim, to include cleating the jib sheet when sailing close hauled.

Drill: The cadets are to sail around a windward-leeward course rounding the marks to starboard.



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Figure 15AB-1 Snakes and Ladders

Safety

- Three whistle blasts – sailboats will move into the control position (luffing on a starboard tack downwind of the coach boat).
- Five whistle blasts or more – emergency, all sailboats head directly to shore.

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DRILL 10 BRIEFING (PIT LANE)

Drill Name: Pit Lane

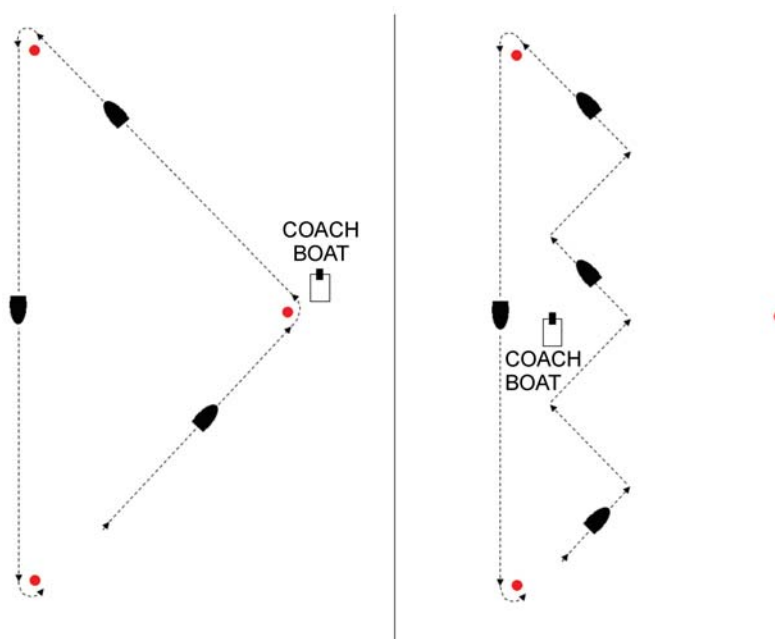
Objective: To have the cadets practice beating.

Key Points

- Tacking, to include:
 - switching sides of the sailboat;
 - facing forward through the tack;
 - maintaining a grasp of the tiller extension and mainsheet through the tack; and
 - maintaining a close hauled course after tacking.
- Course control, to include maintaining a straight course when sailing close hauled.
- Sail trim, to include cleating the jib sheet when sailing close hauled.

Drill

1. The cadets are to sail around the triangle course rounding the marks to starboard.
2. Once around the triangle course the cadets are to sail around the windward-leeward course.
3. The cadets are to repeat steps 1. and 2.



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Figure 15AC-1 Pit Lane

Safety

- Three whistle blasts – sailboats will move into the control position (luffing on a starboard tack downwind of the coach boat).
- Five whistle blasts or more – emergency, all sailboats head directly to shore.

DRILL 11 BRIEFING (AROUND THE TRACK)

Drill Name: Around the Track

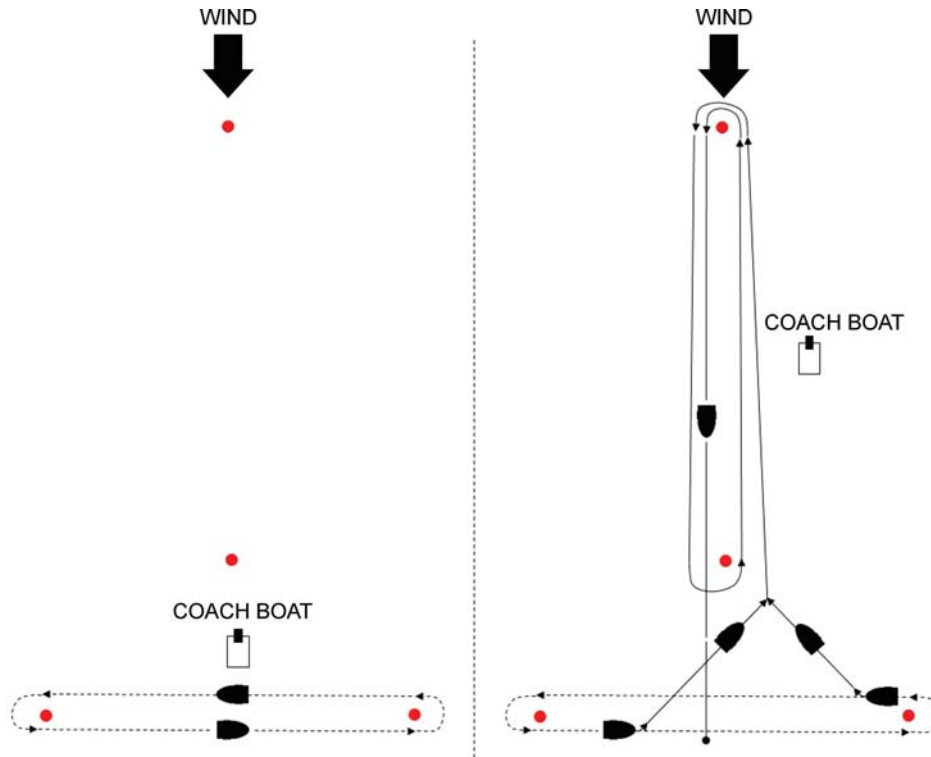
Objective: To have the cadets participate in races while practicing beating in a fun and competitive environment.

Key Points

- Tacking, to include:
 - switching sides of the sailboat;
 - facing forward through the tack;
 - maintaining a grasp of the tiller extension and mainsheet through the tack; and
 - maintaining a close hauled course after tacking.
- Course control, to include maintaining a straight course when sailing close hauled.
- Sail trim, to include cleating the jib sheet when sailing close hauled.

Drill

1. The cadets are to sail around a sausage course rounding the marks to starboard.
2. Use a blue flag and whistle to signal the start of a race.
3. The cadets are to head up and sail around the windward-leeward course one and a half times rounding the marks to starboard.
4. The cadets are to sail through the sausage course to finish the race.



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Figure 15AD-1 Around the Track

Safety

- Three whistle blasts – sailboats will move into the control position (luffing on a starboard tack downwind of the coach boat).
- Five whistle blasts or more – emergency, all sailboats head directly to shore.

RACE FINISH SHEET

RACE #		RACE #	
POSITION	BOAT/SAIL #	POSITION	BOAT/SAIL #
1		1	
2		2	
3		3	
4		4	
5		5	
6		6	
7		7	
8		8	
9		9	
10		10	
11		11	
12		12	
13		13	
14		14	
15		15	
16		16	

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DRILL 1 BRIEFING (TRAINING DAY)

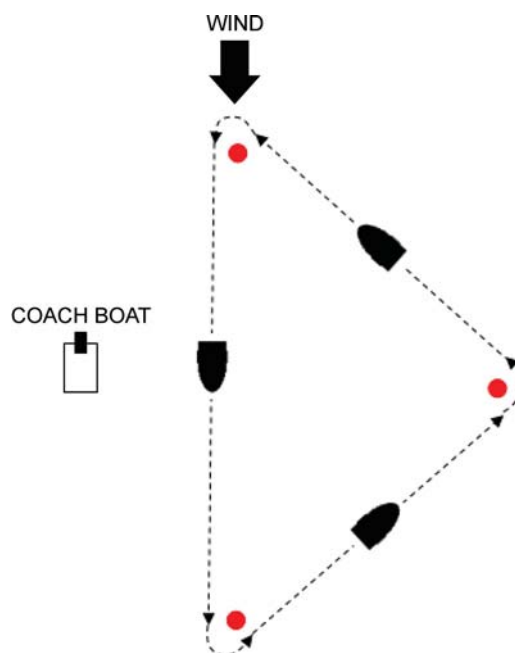
Drill Name: Training Day

Objective: To have the cadets practice sailing on a run.

Key Points

- Course control, to include preventing the boom from swinging by performing small tiller adjustments in order to maintain a straight course while sailing on a run.
- Sail trim, to include the crew holding the jib sheet out around the windward shroud.
- Crew position, to include switching sides so that the skipper is on the leeward side and the crew is on the windward side.
- Centreboard/daggerboard adjustments, to include:
 - raising the centreboard/daggerboard three quarters of the way as the sailboat bears away to a run; and
 - lowering the centreboard/daggerboard as the sailboat heads up.

Drill: The cadets are to sail around the triangle course rounding the marks to starboard.



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Figure 15AG-1 Training Day

Safety

- Three whistle blasts – sailboats will move into the control position (luffing on a starboard tack downwind of the coach boat).
- Five whistle blasts or more – emergency, all sailboats head directly to shore.

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DRILL 2 BRIEFING (ONE HUNDRED METRE DASH)

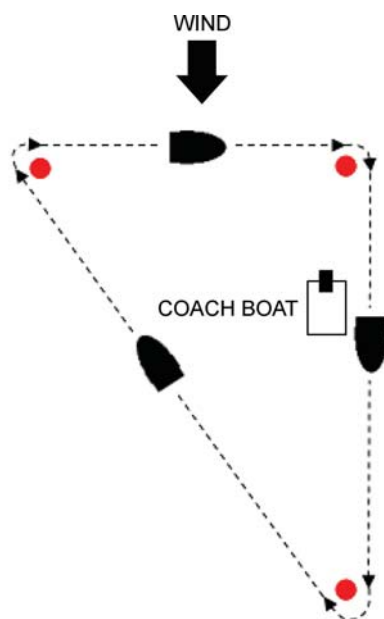
Drill Name: One Hundred Metre Dash

Objective: To have the cadets practice sailing on a run.

Key Points

- Course control, to include preventing the boom from swinging by performing small tiller adjustments in order to maintain a straight course while sailing on a run.
- Sail trim, to include the crew holding the jib sheet out around the windward shroud.
- Crew position, to include switching sides so that the skipper is on the leeward side and the crew is on the windward side.
- Centreboard/daggerboard adjustments, to include:
 - raising the centreboard/daggerboard three quarters of the way as the sailboat bears away to a run; and
 - lowering the centreboard/daggerboard as the sailboat heads up.

Drill: The cadets are to sail around the triangle course rounding the marks to port.



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Figure 15AH-1 One Hundred Metre Dash

Safety

- Three whistle blasts – sailboats will move into the control position (luffing on a starboard tack downwind of the coach boat).
- Five whistle blasts or more – emergency, all sailboats head directly to shore.

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DRILL 3 BRIEFING (RUNNING DOWN THE STREET)

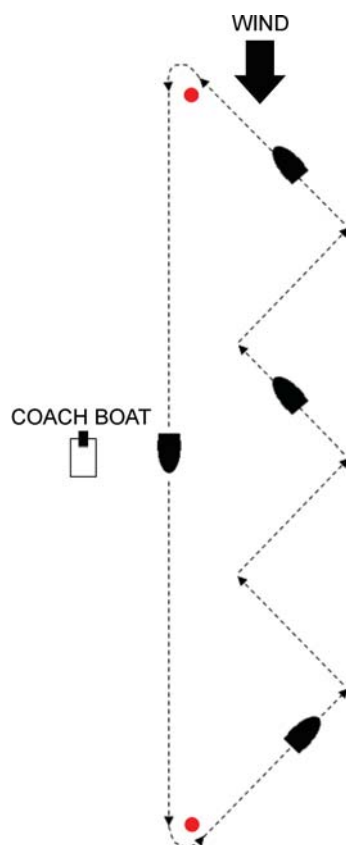
Drill Name: Running Down the Street

Objective: To have the cadets practice sailing on a run.

Key Points

- Course control, to include preventing the boom from swinging by performing small tiller adjustments in order to maintain a straight course while sailing on a run.
- Sail trim, to include the crew holding the jib sheet out around the windward shroud.
- Crew position, to include switching sides so that the skipper is on the leeward side and the crew is on the windward side.
- Centreboard/daggerboard adjustments, to include:
 - raising the centreboard/daggerboard three quarters of the way as the sailboat bears away to a run;
 - and
 - lowering the centreboard/daggerboard as the sailboat heads up.

Drill: The cadets are to sail around the windward-leeward course rounding the marks.



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Figure 15AI-1 Running Down the Street

Safety

- Three whistle blasts – sailboats will move into the control position (luffing on a starboard tack downwind of the coach boat).
- Five whistle blasts or more – emergency, all sailboats head directly to shore.

DRILL 4 BRIEFING (RUNNING A MARATHON)

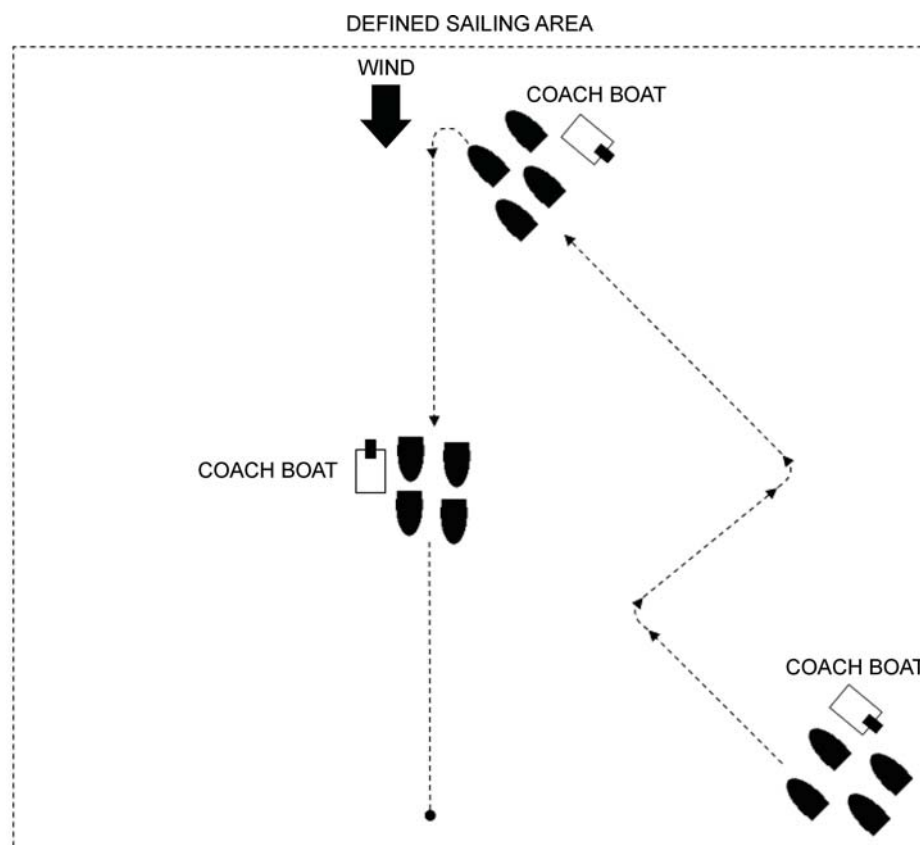
Drill Name: Running a Marathon

Objective: To have the cadets practice sailing on a run.

Key Points

- Course control, to include preventing the boom from swinging by performing small tiller adjustments in order to maintain a straight course while sailing on a run.
- Sail trim, to include the crew holding the jib sheet out around the windward shroud.
- Crew position, to include switching sides so that the skipper is on the leeward side and the crew is on the windward side.
- Centreboard/daggerboard adjustments, to include:
 - raising the centreboard/daggerboard three quarters of the way as the sailboat bears away to a run;
 - and
 - lowering the centreboard/daggerboard as the sailboat heads up.

Drill: The cadets are to tack and run, on the sound of the whistle blasts.



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Figure 15AJ-1 Running a Marathon

Safety

- Three whistle blasts – sailboats will move into the control position (luffing on a starboard tack downwind of the coach boat).
- Five whistle blasts or more – emergency, all sailboats head directly to shore.

DRILL 5 BRIEFING (THE QUARTER MILE)

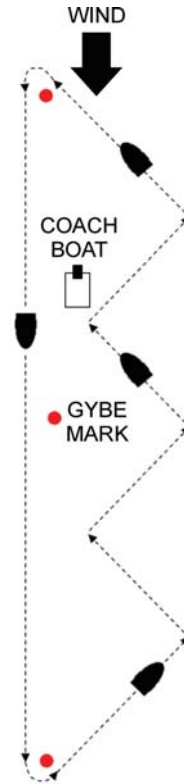
Drill Name: The Quarter Mile

Objective: To have the cadets practice gybing from a run to a run.

Key Points

- Gybing, to include:
 - switching sides of the sailboat;
 - facing forward through the gybe;
 - maintaining a grasp of the tiller extension and mainsheet through the gybe; and
 - guiding the boom across the sailboat.
- Course control, to include preventing the boom from swinging by performing small tiller adjustments in order to maintain a straight course while sailing on a run.
- Sail trim, to include the crew holding the jib sheet out around the windward shroud.
- Crew position, to include switching sides so that the skipper is on the leeward side and the crew is on the windward side.
- Centreboard/daggerboard adjustments, to include:
 - raising the centreboard/daggerboard three quarters of the way as the sailboat bears away to a run; and
 - lowering the centreboard/daggerboard as the sailboat heads up.

Drill: The cadets are to sail around the windward-leeward course rounding the marks, gybing at the gybe mark.



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Figure 15AK-1 The Quarter Mile

Safety

- Three whistle blasts – sailboats will move into the control position (luffing on a starboard tack downwind of the coach boat).
- Five whistle blasts or more – emergency, all sailboats head directly to shore.

DRILL 6 BRIEFING (SAILING SPEEDWAY)

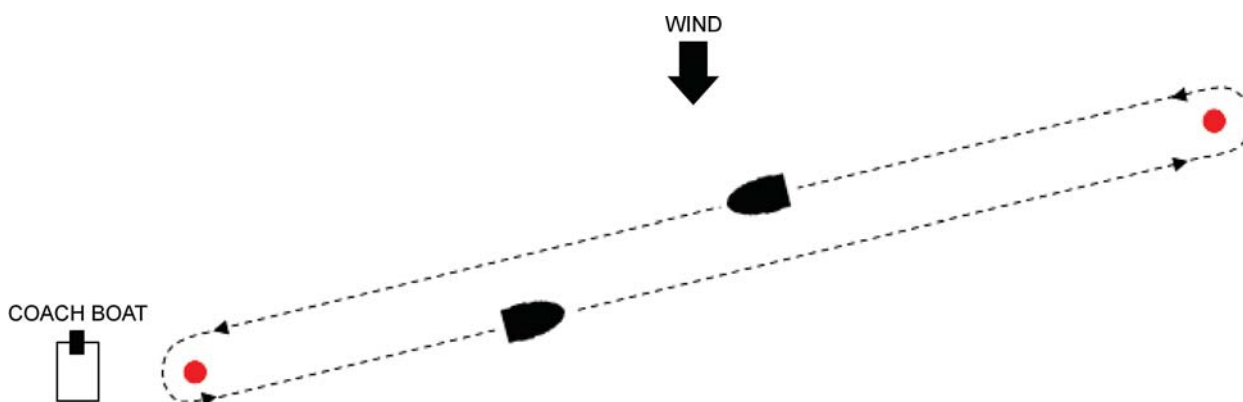
Drill Name: Sailing Speedway

Objective: To have the cadets practice gybing and sailing on a broad reach.

Key Points

- Gybing, to include:
 - switching sides of the sailboat;
 - facing forward through the gybe;
 - maintaining a grasp of the tiller extension and mainsheet through the gybe; and
 - guiding the boom across the sailboat.
- Course control, to include:
 - maintaining a straight course when sailing from one mark to the next; and
 - performing controlled turns when heading up and bearing away.
- Sail trim, to include:
 - sheeting out three-quarters of the way while bearing away to a broad reach; and
 - performing minor sheet adjustments when sailing from one mark to the next.
- Centreboard/daggerboard adjustments, to include:
 - raising the centreboard/daggerboard three quarters of the way as the sailboat bears away to a broad reach; and
 - lowering the centreboard/daggerboard as the sailboat heads up.

Drill: The cadets are to sail around a sausage course rounding the marks.



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Figure 15AL-1 Sailing Speedway

Safety

- Three whistle blasts – sailboats will move into the control position (luffing on a starboard tack downwind of the coach boat).
- Five whistle blasts or more – emergency, all sailboats head directly to shore.

DRILL 7 BRIEFING (ECHO 500)

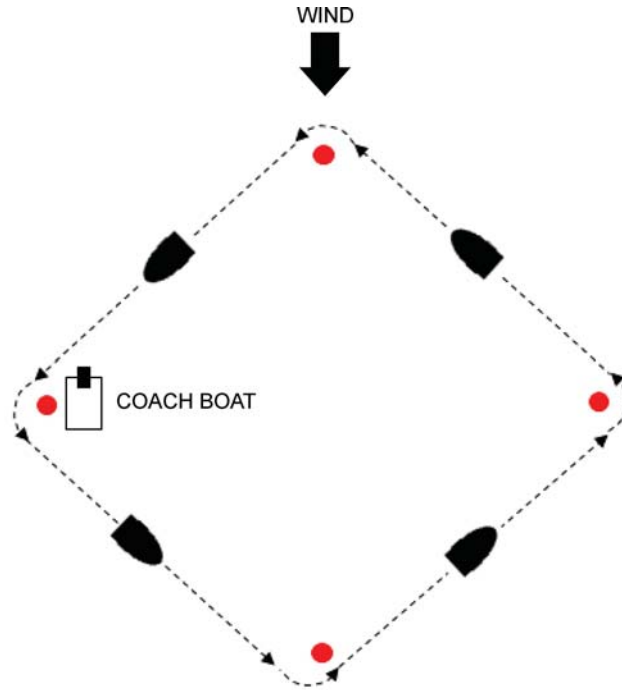
Drill Name: Echo 500

Objective: To have the cadets practice gybing and sailing on a broad reach.

Key Points

- Gybing, to include:
 - switching sides of the sailboat;
 - facing forward through the gybe;
 - maintaining a grasp of the tiller extension and mainsheet through the gybe; and
 - guiding the boom across the sailboat.
- Tiller control, to include performing small tiller adjustments in order to maintain a straight course while sailing on a broad reach.
- Sail trim, to include:
 - sheeting out three-quarters of the way while bearing away to a broad reach; and
 - performing minor sheet adjustments when sailing from one mark to the next.
- Centreboard/daggerboard adjustments, to include:
 - raising the centreboard/daggerboard three quarters of the way as the sailboat bears away to a broad reach; and
 - lowering the centreboard/daggerboard as the sailboat heads up from a broad reach.

Drill: The cadets are to sail around the diamond course rounding the marks.



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Figure 15AM-1 Echo 500

Safety

- Three whistle blasts – sailboats will move into the control position (luffing on a starboard tack downwind of the coach boat).
- Five whistle blasts or more – emergency, all sailboats head directly to shore.

DRILL 8 BRIEFING (GUNNING GO CARTS)

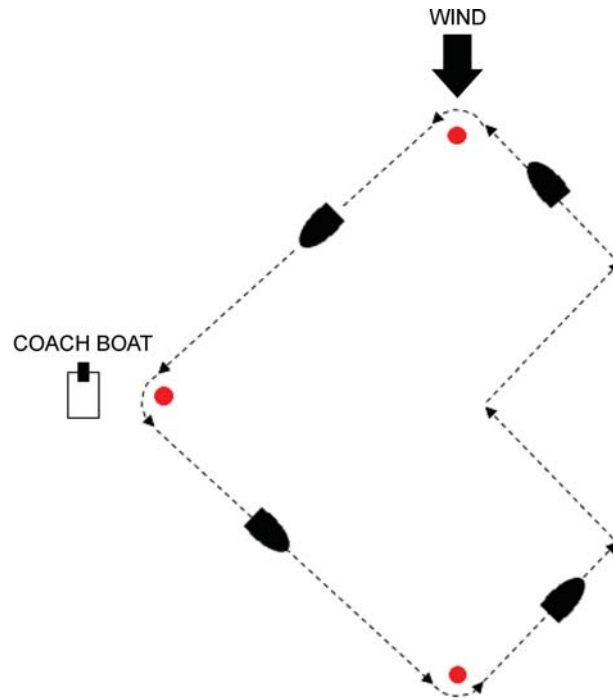
Drill Name: Gunning Go Carts

Objective: To have the cadets practice gybing and sailing on a broad reach.

Key Points

- Gybing, to include:
 - switching sides of the sailboat;
 - facing forward through the gybe;
 - maintaining a grasp of the tiller extension and mainsheet through the gybe; and
 - guiding the boom across the sailboat.
- Course control, to include performing small tiller adjustments in order to maintain a straight course while sailing on a broad reach.
- Sail trim, to include:
 - sheeting out three-quarters of the way while bearing away to a broad reach; and
 - performing minor sheet adjustments when sailing from one mark to the next.
- Centreboard/daggerboard adjustments, to include:
 - raising the centreboard/daggerboard three quarters of the way as the sailboat bears away to a broad reach; and
 - lowering the centreboard/daggerboard as the sailboat heads up.

Drill: The cadets are to sail around the triangle course rounding the marks to starboard.



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Figure 15AN-1 Gunning Go Carts

Safety

- Three whistle blasts – sailboats will move into the control position (luffing on a starboard tack downwind of the coach boat).
- Five whistle blasts or more – emergency, all sailboats head directly to shore.

DRILL 9 BRIEFING (UP SHIFTING)

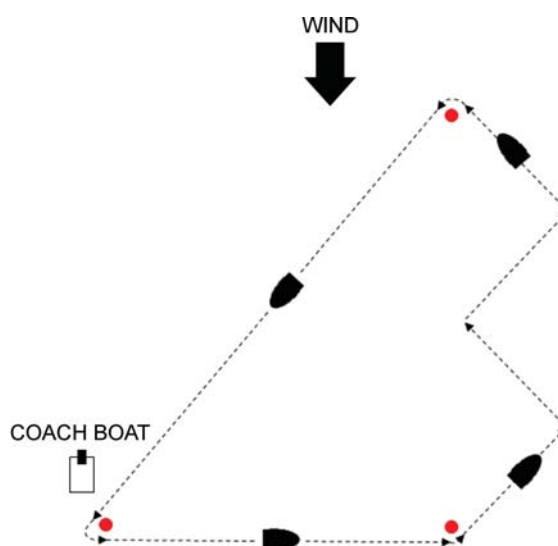
Drill Name: Up Shifting

Objective: To have the cadets practice gybing, sailing on a beam reach and a broad reach.

Key Points

- Gybing, to include:
 - switching sides of the sailboat;
 - facing forward through the gybe;
 - maintaining a grasp of the tiller extension and mainsheet through the gybe; and
 - guiding the boom across the sailboat.
- Course control, to include performing small tiller adjustments in order to maintain a straight course while sailing on a beam reach and on a broad reach.
- Sail trim, to include:
 - sheeting out three-quarters of the way while bearing away to a broad reach;
 - sheeting in to halfway while heading up to a beam reach; and
 - performing minor sheet adjustments when sailing from one mark to the next.
- Centreboard/daggerboard adjustments, to include:
 - raising the centreboard/daggerboard three quarters of the way as the sailboat bears away to a broad reach;
 - lowering the centreboard/daggerboard to halfway as the sailboat heads up to a beam reach; and
 - lowering the centreboard/daggerboard as the sailboat heads up.

Drill: The cadets are to sail around the triangle course rounding the marks to starboard.



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Figure 15AO-1 Up Shifting

Safety

- Three whistle blasts – sailboats will move into the control position (luffing on a starboard tack downwind of the coach boat).
- Five whistle blasts or more – emergency, all sailboats head directly to shore.

DRILL 10 BRIEFING (DOWN SHIFTING)

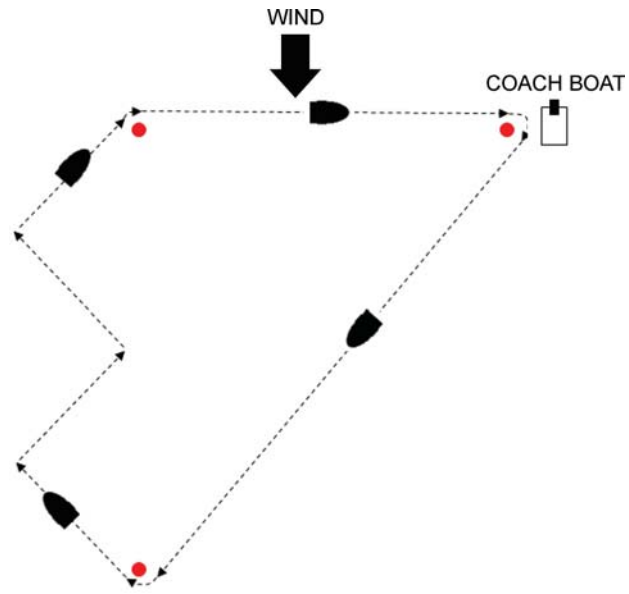
Drill Name: Down Shifting

Objective: To have the cadets practice gybing, sailing on a beam reach and a broad reach.

Key Points

- Gybing, to include:
 - switching sides of the sailboat;
 - facing forward through the gybe;
 - maintaining a grasp of the tiller extension and mainsheet through the gybe; and
 - guiding the boom across the sailboat.
- Course control, to include performing small tiller adjustments in order to maintain a straight course while sailing on a beam reach and on a broad reach.
- Sail trim, to include:
 - sheeting out halfway while bearing away to a beam reach;
 - sheeting out three-quarters of the way while bearing away to a broad reach; and
 - performing minor sheet adjustments when sailing from one mark to the next.
- Centreboard/daggerboard adjustments, to include:
 - raising the centreboard/daggerboard halfway as the sailboat bears away to a beam reach;
 - raising the centreboard/daggerboard three quarters of the way as the sailboat bears away to a broad reach; and
 - lowering the centreboard/daggerboard as the sailboat heads up.

Drill: The cadets are to sail around the triangle course rounding the marks to port.



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Figure 15AP-1 Down Shifting

Safety

- Three whistle blasts – sailboats will move into the control position (luffing on a starboard tack downwind of the coach boat).
- Five whistle blasts or more – emergency, all sailboats head directly to shore.

DRILL 1 BRIEFING (EARLY MOORING)

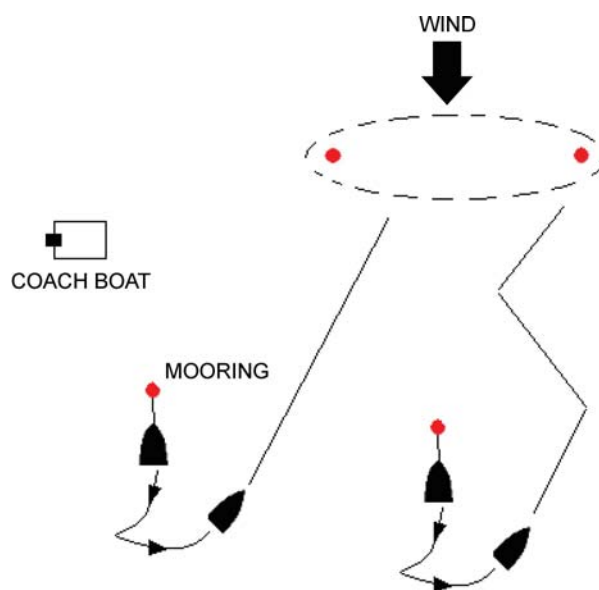
Drill Name: Early Mooring

Objective: To have the cadets practice leaving a mooring.

Key Points

- Sail control, to include:
 - pulling the jib sail opposite the desired direction; and
 - pushing the boom in the desired direction.
- Tiller control, to include moving the tiller in the desired direction.

Drill: Have the cadets leave the mooring and sail to the sausage collector.



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Figure 15AQ-1 Early Mooring

Safety

- Three whistle blasts – sailboats will move into the control position (luffing on a starboard tack downwind of the coach boat).
- Five whistle blasts or more – emergency, all sailboats head directly to shore.

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DRILL 2 BRIEFING (THE FISH ARE BITING)

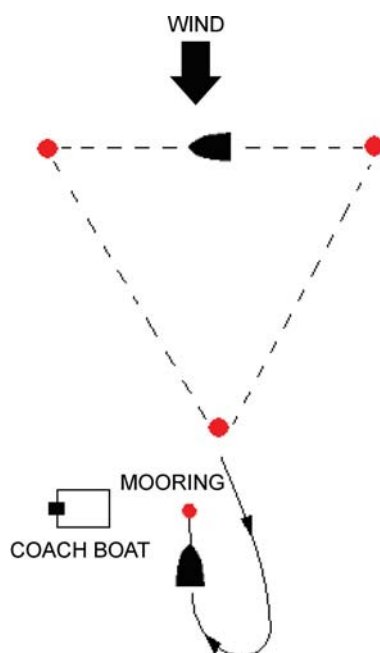
Drill Name: The Fish Are Biting

Objective: To have the cadets practice returning to a mooring.

Key Points

- Course control, to include:
 - practicing the J-approach; and
 - heading the sailboat into irons.
- Sail control, to include sheeting out the sails.

Drill: Have the cadets sail toward the coach boat and practice returning to a mooring.



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Figure 15AR-1 The Fish Are Biting

Safety

- Three whistle blasts – sailboats will move into the control position (luffing on a starboard tack downwind of the coach boat).
- Five whistle blasts or more – emergency, all sailboats head directly to shore.

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CHAPTER 16
SIDC



ROYAL CANADIAN SEA CADETS

INSTRUCTIONAL GUIDE



SEAMANSHIP INTERDIVISIONAL COMPETITION

Total Time:

2 days

PREPARATION

PRE-LESSON INSTRUCTIONS

Resources needed for the delivery of this lesson are listed in the lesson specification located in the applicable Qualification Standard and Plan(s). Specific uses for said resources are identified throughout the instructional guide within the TP for which they are required.

Review the lesson content and become familiar with the material prior to delivering the lesson.

Gather and prepare all resources required for the activities listed in this lesson. Setup stations IAW the activities.

Ensure an assistant instructor is available and prepared for each station to act as the Station OPI.

Photocopy as many copies as there are teams (divisions) of Annex A to distribute to the Station OPI's.

Photocopy one copy of Annex B for the Station OPI.

Photocopy, cut out and laminate one copy of the Boatswain's Call Cards located at Annex C.

Photocopy, cut out and laminate one copy of the Task Cards located at Annex D.

Photocopy one copy of Annex E for each team (division).

Photocopy one copy of Annex F for each cadet.

Photocopy, cut out and laminate one copy of the Secret Code Cards for each team (division).

PRE-LESSON ASSIGNMENT

N/A.

APPROACH

Practical activity was chosen for this lesson as it is an interactive way to allow the cadets to experience seamanship activities in a safe and controlled environment.

INTRODUCTION

REVIEW

N/A.

OBJECTIVES

By the end of this lesson the cadet shall be expected to participate in a seamanship interdivisional competition. The objective of the competition is to reinforce the following:

- seamanship knowledge and skills learned throughout the corps training;
- interest in seamanship;
- team-building skills;
- the divisional system; and
- leadership skills through various opportunities for the Phase Three, Four and Five cadets.

IMPORTANCE

It is important for cadets to participate in this competition as it will reinforce many areas of skills and knowledge learned throughout the corps training. It will allow an opportunity for instructors to evaluate the cadets' knowledge and skills. It will provide a further opportunity for team-building for all members of the corps as it reinforces the divisional system and ensures all divisions and corps members work together and interact to meet a common goal. This competition is a great way to relieve boredom, lift team spirit, increase morale, re-energize the cadets and accomplish goals.

ACTIVITY 1 – COIL AND HEAVE A LINE

Time: 30 min

OBJECTIVE

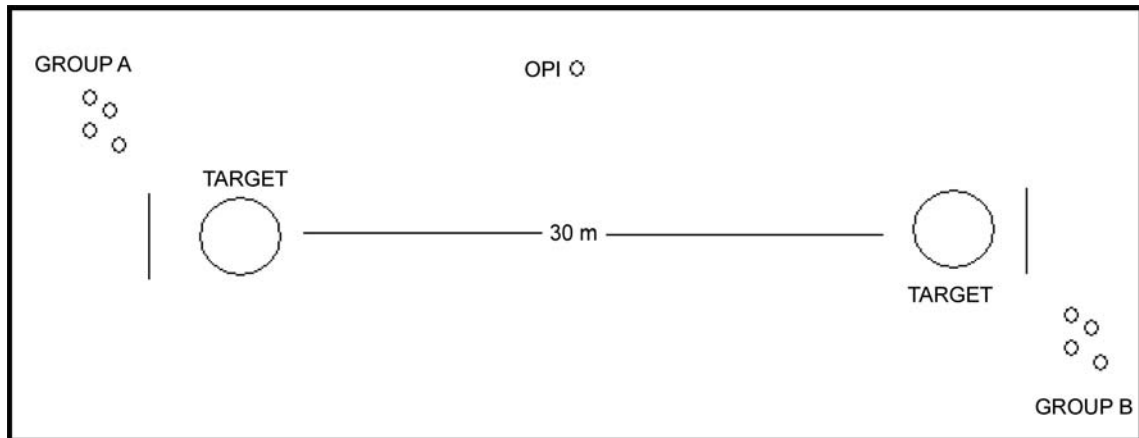
The objective of this activity is to have the cadets coil and throw a weighted heaving line to a target.

RESOURCES

- Heaving line,
- Target (two),
- Whistle,
- Scoring sheet located at Annex A, and
- Pen/pencil.

ACTIVITY LAYOUT

- Place two targets on the ground approximately 30 m (100 feet) apart.
- Mark a line on the ground from which the cadets will heave a line at the opposite target.



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Figure 16-1 Coil and Heave a Line Activity Layout

ACTIVITY INSTRUCTIONS

1. Divide each team (division) into two groups – Group A and Group B.
2. Assign each group a target station and a designated target.
3. Have one cadet from Group A step up to the line and throw a heaving line at the target. If the cadet is unsuccessful, they must retrieve the line and the next cadet from their group will attempt to hit the target.
4. Once Group A has hit the target, Group B must retrieve the line from their side and attempt to throw a heaving line at their assigned target.
5. The team (division) will be awarded one point for every successful target hit. Points will be accumulated until the time has expired or the activity is complete.



A homemade bollard can also be incorporated into this activity. In this situation, once the target has been successfully hit, the cadets would have to clear the heaving line to the bollard before a point is awarded to the group. By doing this the cadets will be experiencing a small component of securing a ship to a dock or jetty.

SAFETY

Ensure that no cadets are near the targets when the heaving line is being tossed.

ACTIVITY 2 – BOATSWAIN'S CALL

Time: 30 min

OBJECTIVE

The objective of this activity is to have the cadets identify and sound different pipes.

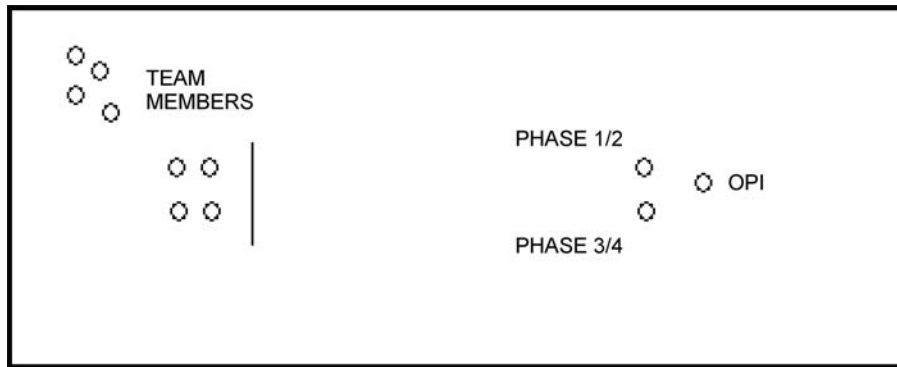
RESOURCES

- Boatswain's Call Cards located at Annex C,
- Container to hold Boatswain's Call Cards,

- Boatswain's call,
- Cleaning supplies,
- Whistle,
- Scoring sheet located at Annex A, and
- Pen/pencil.

ACTIVITY LAYOUT

Place the boatswain's call and the Boatswain's Call Cards in a container and lay them near the OPI (as illustrated in Figure 16-2).



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Figure 16-2 Boatswain's Call Activity Layout

ACTIVITY INSTRUCTIONS

1. Divide the team (division) into two groups by phase. The first group will consist of Phase One and Phase Two cadets and the second group will consist of Phase Three and Phase Four cadets.
2. Have each Phase One cadet partner with a Phase Three cadet and each Phase Two cadet with a Phase Four cadet.
3. Have one set of partners approach the station OPI. Have the Phase Three or Phase Four cadet select a boatswain's call card from the container.
4. Have the remainder of the team members stand a distance away to avoid hearing the answers given (as illustrated in Figure 16-2).
5. Have the Phase Three or Phase Four cadet attempt to sound the pipe. They may be given three attempts to sound the pipe correctly. Once the pipe is sounded correctly, their partner is to attempt to identify the call, its use and where/when it is commonly used at the corps.
6. If the pipe is not sounded correctly after the three attempts, their partner may not identify the pipe and the partners will return to their team. No points will be awarded in this situation.
7. Each set of partners will follow Steps 3. to 5. until the time has lapsed.
8. Points are awarded as follows:
 - a. five points for every pipe sounded correctly;

- b. one point (for a maximum of three) for every cadet who can correctly identify the pipe, explain its purpose and identify where/when used at the corps.

SAFETY

Ensure the boatswain's calls are cleaned between uses.

ACTIVITY 3 – KNOTS, HITCHES AND BENDS

Time: 30 min

OBJECTIVE

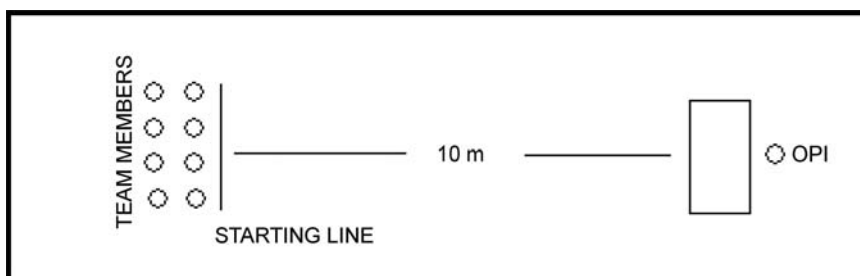
The objective of this activity is to have the cadets practice the knots, hitches and bends learned throughout the corps training.

RESOURCES

- Line (1 m [3.5 feet] long),
- Small spar/dowel,
- Six foot table,
- Container,
- Task cards located at Annex D,
- Whistle,
- Scoring sheet located at Annex A, and
- Pen/pencil.

ACTIVITY LAYOUT

- Place the station OPI's table approximately 10 m (33 feet) from the starting line (as illustrated in Figure 16-3).
- Place the container of task cards and the line on the table.



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Figure 16-3 Knots, Bends and Hitches Activity Layout

ACTIVITY INSTRUCTIONS

1. One at a time, have each team member run to the station OPI's table and select a task card from the container.

2. Upon selecting a task card, have the cadet attempt to tie the selected knot with no assistance.



Complementary knots and hitches may be added to those listed at Annex D.

3. Upon successful completion, have the cadet return to the starting line, tag the next cadet who will run to the station OPI's table and complete Steps 1. to 3. accordingly.
4. Have each cadet complete Steps 1. to 3. until the time has lapsed.
5. Award points as they appear on the task cards for each successful task completed.

SAFETY

Ensure there are no obstacles in the area the cadets will be running.

ACTIVITY 4 – WHIPPING AND SPLICING

Time: 30 min

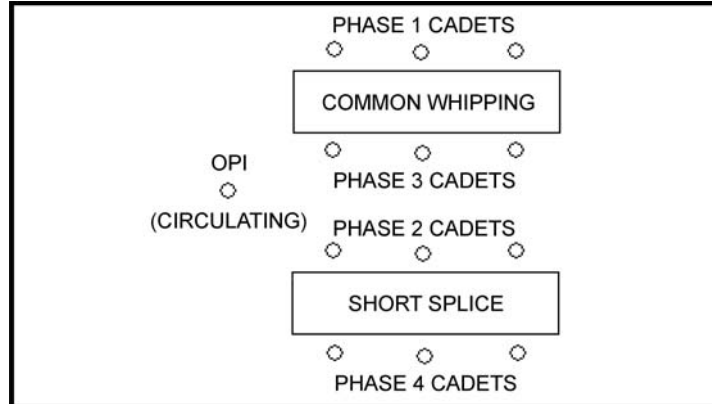
OBJECTIVE

The objective of this activity is to practice whipping and splicing a line.

RESOURCES

- Line (1 m [3.5 feet] per Phase One and Phase Two cadets),
- Three-strand line (1 m [3.5 feet] per Phase Three and Four cadets),
- Whipping twine (one spool),
- Cutting tool,
- Six foot table,
- Whistle,
- Scoring sheet located at Annex A, and
- Pen/pencil.

ACTIVITY LAYOUT




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Figure 16-4 Whipping and Splicing Activity Layout

ACTIVITY INSTRUCTIONS

1. Divide the cadets into groups by phase. The first group will consist of Phase One and Phase Three cadets and the second group will consist of Phase Two and Phase Four cadets.
2. Have each Phase One cadet, with the verbal assistance of a Phase Three cadet, whip the end of a line.



The cadets may use a common whipping for this activity. If the corps choose to instruct C121.01 (Whip the End of a Line Using a West Country Whipping, A-CR-CCP-601/PF-001, Chapter 10, Section 4) or C121.02 (Whip the End of a Line Using a Sailmaker's Whipping, A-CR-CCP-601/PF-001, Chapter 10, Section 5) they may choose to use one of these methods to whip the end of a line for this activity.

3. Have each Phase Two cadet, with the verbal assistance of a Phase Four cadet, complete a short splice.
4. Award points as follows:
 - a. two points for each successful whipping;
 - b. two points for each successful short splice; and
 - c. five points for each Phase Three and Phase Four cadet who displays positive reinforcement, topic knowledge, proper direction and motivation throughout their assistance to the Phase One and Phase Two cadets.

SAFETY

N/A.

ACTIVITY 5 – TRIVIA

Time: 30 min

OBJECTIVE

The objective of this activity is to reinforce theory knowledge and skills from the cadets' respective phase training through questions and tasks.

RESOURCES

Option One

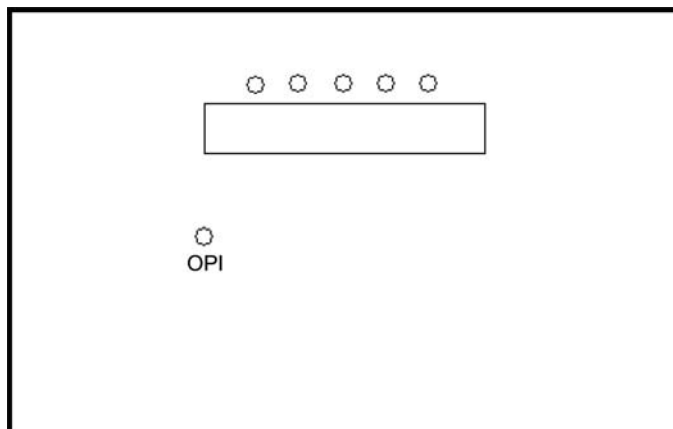
- Six foot table,
- Chairs,
- Whistle,
- List of Suggested Trivia Questions located at Annex B,
- Scoring sheet located at Annex A, and
- Pen/pencil.

Option Two

- Six foot table,
- Chairs,
- Buzzer,
- Question board,
- List of Suggested Trivia Questions located at Annex B,
- Whistle,
- Scoring sheet located at Annex A, and
- Pen/pencil.

ACTIVITY LAYOUT

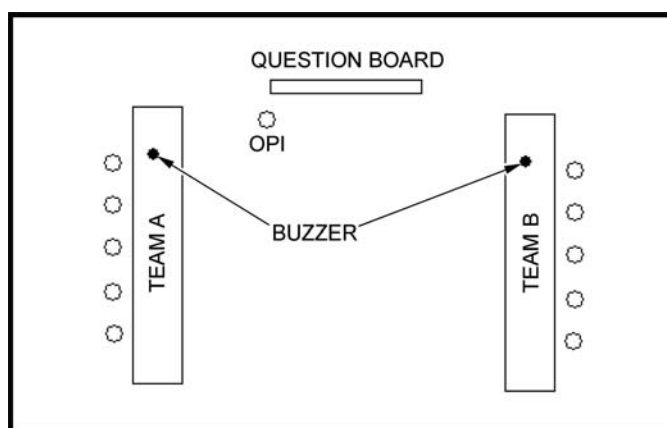
For Option One set up the activity as a stand-alone station that teams will rotate into the same as each other activity. Set up chairs for one team (division), as illustrated in Figure 16-5.



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Figure 16-5 Option One Trivia Activity Layout

For Option Two set up the activity as a head-to-head competition between all of the teams (divisions), as illustrated in Figure 16-6.



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Figure 16-6 Option Two Trivia Activity Layout

ACTIVITY INSTRUCTIONS



Cadets shall not be asked trivia questions from beyond their own year of phase training (eg, Phase One cadets are only asked questions from Phase One but Phase Four cadets can be asked questions from Phase One, Two Three or Four).

Option One

1. Ask each cadet questions from the list on the Suggested Trivia Questions located at Annex B.
2. Ask the questions to each cadet one at a time.
3. Give each team three lifelines to assist them in answering the questions:
 - a. ask an officer;

- b. refer to their training materials; and
 - c. team vote.
4. Award points as follows:
- a. one point will be awarded for every correct response given with the use of a lifeline;
 - b. two points will be awarded for every unassisted correct response; and
 - c. five points will be awarded for every bonus question answered correctly.



Lifelines may not be used for bonus questions.

Option Two

1. Hold a draw to determine where teams (divisions) will be placed in the round robin.
2. Have two teams play against each other to determine a winner.
3. Have the winning teams play off against each other to determine the final winner.
4. Give each team three lifelines to assist them in answering the questions:
 - a. ask an officer;
 - b. refer to their training materials; and
 - c. team vote.
5. Pose a question and have the teams hit their buzzer to determine which team will get the chance to respond to the question.
6. Award points as follows:
 - a. one point will be awarded for every correct response given with the use of a lifeline;
 - b. two points will be awarded for every unassisted correct response; and
 - c. five points will be awarded for every bonus question answered correctly

SAFETY

N/A.

ACTIVITY 6 – SHEER LEGS

Time: 60 min

OBJECTIVE

The objective of this activity is to have the cadets erect a set of sheers.

RESOURCES

General

- Hard hat (one per cadet),
- Two wooden spars each approximately 4.5 m (15 feet) long,
- Manila line 12 mm (0.5 inches) in diameter (9 m [30 feet] long),
- Five steel spikes with eyelets at the top (1 m [3.5 feet] long),
- Roll of whipping twine,
- Load of approximately 18 kg (40 pounds), and
- One steel spike with two eyelets (1 m [3.5 feet] long).

Topping Lift

- Two single blocks,
- Manila line 16 mm (0.6 inches) in diameter (68 m [223 feet] long), and
- Strop.

Splay Tackle

- One double block,
- One single block c/w becket,
- Manila Line 12 mm (0.5 inches) in diameter (17 m [56 feet] long).
- Two strops.

Heel Tackles

- Four double blocks,
- Four single blocks, and
- Four strops.

Load Purchase

- Two double blocks,
- One single block,
- Manila line 12 mm (0.5 inches) in diameter (approximately 30 m [100 feet] long), and
- Strop.

ACTIVITY LAYOUT

N/A.

ACTIVITY INSTRUCTIONS

1. Have each team erect a set of sheers. A set of instructions complete with illustrations may be available for the cadets.

2. Have the cadets complete the tasks associated with their respective phase training (eg, Phase One cadets should complete the strops, Phase Two cadets should mouse the hooks, etc).
3. Points will be awarded IAW the Scoresheet located at Annex A.

SAFETY

- Ensure all cadets wear personal safety equipment at all times throughout this activity.
- Ensure all cadets stay clear of the load as it is raised and lowered.

ACTIVITY 7 – MODEL SHIP

Time: 240 min (completed throughout the two days and judged at the end of day 2)

OBJECTIVE

The objective of this activity is to have the teams (divisions) each complete a model ship highlighting specific ship characteristics.

RESOURCES

- Black bristol board (one sheet per team),
- Grey bristol board (one sheet per team),
- Scissors (one pair per team),
- Tape (one roll per team),
- Paper clips (one small box per team),
- Large tub of water (to test buoyancy),
- Pictures of ships located at Annex E,
- Scoresheet located at Annex A,
- Markers (one package per team), and
- Glue (one per team).



Other resources may be used, if desired, to add creativity to the model ships. Sample resources may include:

- pipe cleaners,
- popsicle sticks, and
- toothpicks, etc.

ACTIVITY LAYOUT

N/A.

ACTIVITY INSTRUCTIONS

- Provide the teams (divisions) with time throughout the two day activity to work on building a model ship.

- Have the teams build a three-dimensional model of a ship, using only the resources provided them.
- The model ship can be any size and type using the given resources.
- Each model ship must contain the following characteristics:
 - bridge,
 - deck,
 - bow,
 - hull,
 - transom,
 - stern,
 - structure,
 - buoyancy, and
 - superstructure.
- Award points IAW the scoresheet located at Annex A, based on the following:
 - ship type accuracy,
 - use of resources,
 - hull structure,
 - hull design,
 - presentation,
 - buoyancy, and
 - overall appearance.



Teams may add other characteristics to their model ship if they wish. Some additional characteristics may include:

- anchor,
- rudder,
- propellers, and
- port holes, etc.

SAFETY

N/A.

ACTIVITY 8 – TEAM-BUILDING – (ONGOING THROUGHOUT THE TWO DAYS)

ACTIVITY 8 (A) – MOST LIKE ME

Time: 10 min

OBJECTIVE

The objective of this activity is to have the cadets participate in an icebreaker team-building activity for team members to get to know each other better.

RESOURCES

- Most Like Me activity sheet (one per cadet) located at Annex F, and
- Pen/pencil (one per cadet).

ACTIVITY LAYOUT

N/A.

ACTIVITY INSTRUCTIONS

1. Distribute the Most Like Me activity sheet to each cadet.
2. Have the cadets look at the pictures on the activity sheet and place an 'X' in the corner of the pictures that are most like them.
3. Allow the cadets approximately five minutes to complete the activity sheet.
4. Have the cadets come together and share which pictures are most like them with the rest of the cadets.

SAFETY

N/A.

ACTIVITY 8 (B) – ACROSS THE RIVER

Time: 30 min

OBJECTIVE

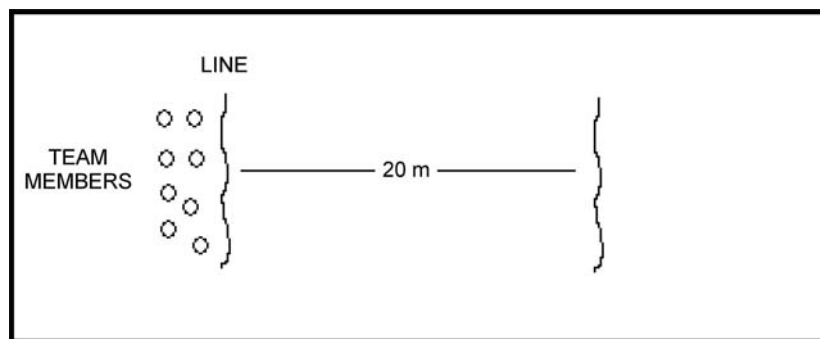
The objective of this activity is to provide the teams the opportunity to solve problems while participating in physical activities.

RESOURCES

Two pieces of line (4 m [14 feet] long).

ACTIVITY LAYOUT

Lay each piece of line across an open space approximately 20 m apart (as illustrated in Figure 16-7).



Director Cadets 3, 2006, Ottawa, ON: Department of National Defence

Figure 16-7 Across the River Activity Layout

ACTIVITY INSTRUCTIONS

1. Have the team (division) stand behind one of the lines. This will become the starting point.
2. Explain that the team is to go from one line to the other by only placing a designated number of feet on the ground at one given time (eg, if there are 10 cadets, perhaps only 14 feet may be on the ground at a given time).
3. Explain that the team is to return by only placing a lesser number of designated feet on the ground at one time (eg, the cadets then have to return by placing only 11 feet on the ground at a given time).

SAFETY

Ensure there are no hazards in the area where the activity will be conducted.

ACTIVITY 8 (C) – SHERPA WALK

Time: 30 min

OBJECTIVE

The objective of this activity is to have the team, while holding hands, walk through a path while blindfolded.

RESOURCES

Blindfold (one per cadet).

ACTIVITY LAYOUT

N/A.

ACTIVITY INSTRUCTIONS

1. Have two cadets volunteer to act as guides.
2. Take the two guides down the path to show them the way. These cadets will become the leaders and guide the remainder of the team through the path.
3. Inform the guides that they will not be permitted to touch or speak to the cadets. The guides are permitted to use sound signals (eg, clap, whistle, snap, etc) as signals to the team.
4. Have the remainder of the cadets arrange themselves in a line and put on their blindfolds.

5. Have one guide at the front of the line and one guide at the rear.
6. Have the guides lead their team through the path using the sound signals.

SAFETY

- Teams must hold hands throughout the activity.
- Ensure the path is free of any major obstacles.

ACTIVITY 9 – FINAL EVENT

Time: 90 min

OBJECTIVE

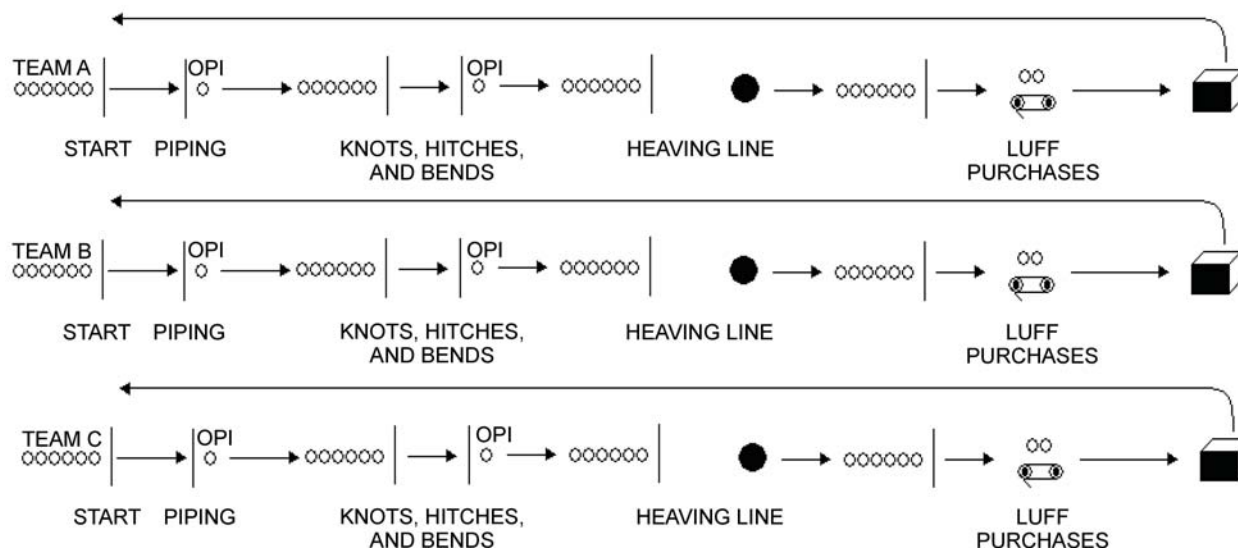
The objective of this activity is to review all aspects of the seamanship competition.

RESOURCES

- Whistle,
- Boatswain's call (one per division),
- Line (1 m [3.5 feet] per division),
- Task cards located at Annex D (one set per division),
- Heaving line (one per division),
- Single blocks (per division),
- Double blocks (per division),
- Manila line 12 mm (0.5 inches) in diameter (one 17 m [56 feet] length per division),
- Small box (one per division),
- Target (one per division), and
- Secret message cards located at Annex G (one set per division).

ACTIVITY LAYOUT

- Set up the activity (as illustrated in Figure 16-8) if enough resources are available for each team (division) to compete at one time against each other.
- If enough resources are not available for each team (division) to compete at one time, one relay should be set up and each team (division) will compete and be timed.
- Set up four stations as follows:
 - Station 1 – Pipes;
 - Station 2 – Knots, Hitches and Bends;
 - Station 3 – Heaving Line; and
 - Station 4 – Luff Purchases.



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Figure 16-8 Final Event Layout

ACTIVITY INSTRUCTIONS

1. Explain the following rules to the cadets:
 - a. each team (division) is to lineup behind the starting point;
 - b. each team is to travel as a group (eg, no member can travel to the next station until the previous one has been completed, then the team shall travel together to the next station);
 - c. on the start signal the teams will travel through each station in sequence (as illustrated in Figure 16-8); and
 - d. upon completion of each station, the team will be given a secret message card which will be used to decipher a secret message upon completion of the activity.
2. Explain Station 1 to the cadets, to include:
 - a. one cadet being given the name of a pipe and having to sound that pipe;
 - b. if the cadet is able to correctly sound the pipe, the team will be given one secret message card and will advance as a team to the next station;
 - c. if the cadet is unable to correctly sound the pipe, the next cadet should attempt to sound the pipe (this should continue through all of the cadets until the pipe is sounded successfully) and the team will advance to the next station; and
 - d. if no cadets on the team are able to successfully sound the pipe, they must wait 15 seconds after the last team has moved to the next station before they may advance to the next station.
3. Explain Station 2 to the cadets, to include:
 - a. one cadet from the team (division) at a time will approach the station OPI and select a task card;
 - b. the cadet must explain the purpose of the knot, hitch or bend and tie the knot for the OPI;
 - c. this process shall continue until three cadets have successfully completed this for the team; and

- d. when the team is successful three times, they will be given a secret message card for each successful attempt (for a maximum of three) and advance as a team to the next station.
4. Explain Station 3 to the cadets, to include:
 - a. one cadet at a time advancing to the starting point, retrieving the heaving line, coiling it and tossing it at the target;
 - b. each successive cadet repeating the process of advancing to the starting point, retrieving the heaving line, coiling it and tossing it at the target until the target has been successfully hit three times; and
 - c. when the team has been successful three times, they will be given a secret message card for each successful attempt (for a maximum of three) and advance as a team to the next station.
 5. Explain Station 4 to the cadets, to include:
 - a. selecting two members of the team (division) to attempt to properly reeve the lines of a luff;
 - b. if the initial members are unsuccessful, they must return and two new members will attempt to properly reeve the purchase;
 - c. this will continue until the team is successful;
 - d. when the team is successful, they will be given two secret message cards and advance as a team to the finishing point;
 - e. upon arriving at the finishing point, the cadets must attempt to decipher the secret message.
 6. Have the cadets participate in the activity.
 7. Points will be awarded IAW the Scoresheet located at Annex A.

SAFETY

Ensure the area is clear from any major obstacles.

END OF LESSON CONFIRMATION

The cadets' participation in the Seamanship Interdivisional Competition will serve as the confirmation of this lesson.

CONCLUSION

HOMEWORK/READING/PRACTICE

N/A.

METHOD OF EVALUATION

N/A.

CLOSING STATEMENT

It is important to participate in this competition as it will reinforce many areas of skills and knowledge learned throughout the corps training. It will allow an opportunity for the instructors to evaluate your knowledge and skills. It will provide a further opportunity for team-building for all members of the corps as it reinforces the divisional system and ensures all divisions and corps members work together and interact to meet a common goal.

INSTRUCTOR NOTES/REMARKS

N/A.

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BOATSWAIN CALL

TEAM NAME:

AWARDING POINTS

Teams will be awarded five points for every correctly sounded pipe. For identifying the pipe, explaining the pipes purpose and identifying common areas the pipe is used at the corps, the team will be awarded one point for each.

Points Awarded		
Pipe Sounded Correctly	Correct - 5 pts	Incorrect - 0 pt
Pipe Identified Correctly	Correct - 1 pt	Incorrect - 0 pt
Purpose Explained	Correct - 1 pt	Incorrect - 0 pt
Common Areas Identified	Correct - 1 pt	Incorrect - 0 pt
		Subtotal:
Pipe Sounded Correctly	Correct - 5 pts	Incorrect - 0 pt
Pipe Identified Correctly	Correct - 1 pt	Incorrect - 0 pt
Purpose Explained	Correct - 1 pt	Incorrect - 0 pt
Common Areas Identified	Correct - 1 pt	Incorrect - 0 pt
		Subtotal:
Pipe Sounded Correctly	Correct - 5 pts	Incorrect - 0 pt
Pipe Identified Correctly	Correct - 1 pt	Incorrect - 0 pt
Purpose Explained	Correct - 1 pt	Incorrect - 0 pt
Common Areas Identified	Correct - 1 pt	Incorrect - 0 pt
		Subtotal:
Pipe Sounded Correctly	Correct - 5 pts	Incorrect - 0 pt
Pipe Identified Correctly	Correct - 1 pt	Incorrect - 0 pt
Purpose Explained	Correct - 1 pt	Incorrect - 0 pt
Common Areas Identified	Correct - 1 pt	Incorrect - 0 pt
		Subtotal:
Pipe Sounded Correctly	Correct - 5 pts	Incorrect - 0 pt
Pipe Identified Correctly	Correct - 1 pt	Incorrect - 0 pt
Purpose Explained	Correct - 1 pt	Incorrect - 0 pt
Common Areas Identified	Correct - 1 pt	Incorrect - 0 pt
		Subtotal:
		Overall Total:

OPI Name:

Date:

KNOTS, HITCHES AND BENDS

TEAM NAME:

AWARDING POINTS

Teams will be awarded points for every task completed correctly. Point value will be IAW the points indicated on the task cards.

Points Awarded					
Tie Knots					
5 pts	5 pts	5 pts	5 pts	5 pts	5 pts
5 pts	5 pts	5 pts	5 pts	5 pts	5 pts
					Subtotal:
Who Am I?					
3 pts	3 pts	3 pts	3 pts	3 pts	3 pts
3 pts	3 pts	3 pts	3 pts	3 pts	3 pts
					Subtotal:
Definition					
2 pts	2 pts	2 pts	2 pts	2 pts	2 pts
2 pts	2 pts	2 pts	2 pts	2 pts	2 pts
					Subtotal:
Visual Identification					
1 pt	1 pt	1 pt	1 pt	1 pt	1 pt
1 pt	1 pt	1 pt	1 pt	1 pt	1 pt
					Subtotal:
					Overall Total:

OPI Name:

Date:

WHIPPING AND SPLICING

TEAM NAME:

AWARDING POINTS

Teams will be awarded two points for every correct short splice and whipping. The OPI will also assess the phase three and four cadets' ability to provide guidance and assistance. The OPI will look for things such as positive reinforcement, topic knowledge, proper direction and motivation.

Points Awarded					
Whippings Completed					
2 pts	2 pts	2 pts	2 pts	2 pts	2 pts
2 pts	2 pts	2 pts	2 pts	2 pts	2 pts
					Subtotal:
Splices Completed					
2 pts	2 pts	2 pts	2 pts	2 pts	2 pts
2 pts	2 pts	2 pts	2 pts	2 pts	2 pts
					Subtotal:
Leadership					
	1 pt	2 pts	3 pts	4 pts	5 pts
	6 pts	7 pts	8 pts	9 pts	10 pts
					Subtotal:
					Overall Total:

OPI Name:

Date:

TRIVIA (OPTION ONE)

TEAM NAME:

AWARDING POINTS

Teams will be awarded two points for every correct short splice and whipping. The OPI will also assess the phase three and four cadets' ability to provide guidance and assistance. The OPI will look for things such as positive reinforcement, topic knowledge, proper direction and motivation.

Points Awarded		
Question # 1	Correct 2 pts	Incorrect 0
Question # 2	Correct 2 pts	Incorrect 0
Question # 3	Correct 2 pts	Incorrect 0
Question # 4	Correct 2 pts	Incorrect 0
Question # 5	Correct 2 pts	Incorrect 0
Question # 6	Correct 2 pts	Incorrect 0
Question # 7	Correct 2 pts	Incorrect 0
Question # 8	Correct 2 pts	Incorrect 0
Question # 9	Correct 2 pts	Incorrect 0
Question # 10	Correct 2 pts	Incorrect 0
Question # 11	Correct 2 pts	Incorrect 0
Question # 12	Correct 2 pts	Incorrect 0
Question # 13	Correct 2 pts	Incorrect 0
Question # 14	Correct 2 pts	Incorrect 0
Question # 15	Correct 2 pts	Incorrect 0
Bonus Question:	Correct 5 pts	Incorrect 0
LIFELINES:		
Ask an officer:	- 1 pt	
Reference manuals:	- 1 pt	
Team vote:	- 1 pt	
Overall Total:		

OPI Name:

Date:

TRIVIA (OPTION TWO)

TEAM NAME:

AWARDING POINTS

Teams will be awarded one point for every correct response given with the use of a lifeline, two points for every unassisted correct response and five points for every bonus question answered correctly.

Points Awarded		
Question # 1	Point Value Awarded:	_____
Question # 2	Point Value Awarded:	_____
Question # 3	Point Value Awarded:	_____
Question # 4	Point Value Awarded:	_____
Question # 5	Point Value Awarded:	_____
Question # 6	Point Value Awarded:	_____
Question # 7	Point Value Awarded:	_____
Question # 8	Point Value Awarded:	_____
Question # 9	Point Value Awarded:	_____
Question # 10	Point Value Awarded:	_____
Question # 11	Point Value Awarded:	_____
Question # 12	Point Value Awarded:	_____
Question # 13	Point Value Awarded:	_____
Question # 14	Point Value Awarded:	_____
Question # 15	Point Value Awarded:	_____
		Overall Total:

OPI Name:

Date:

SHEERS

TEAM NAME:

AWARDING POINTS

Teams will be awarded points IAW the scoring guide.

Points Awarded					
HEAD LASHING—proper, tight, neat and secure.					
Clove Hitch	3 pts	2 pts	1 pt		
Correct Number of Turns	1 pt				
Tight and Secure	2 pts	1 pt			
					Subtotal:
TOPPING LIFT—Double Whip					
Lines Rove	3 pts	2 pts	1 pt		
Hooks Moused	3 pts	2 pts	1 pt		
Strops	1 pt				
					Subtotal:
SPLAY TACKLE—Luff					
Lines Rove	3 pts	2 pts	1 pt		
Hooks Moused	3 pts	2 pts	1 pt		
Strops	1 pt				
					Subtotal:
HEEL TACKLES—Luff (four)					
Lines Rove	5 pts	4 pts	3 pts	2 pts	1 pt
Hooks Moused	5 pts	4 pts	3 pts	2 pts	1 pt
Strops	3 pts	2 pts	1 pt		
					Subtotal:
LOAD PURCHASE—Double Block					
Lines Rove	5 pts	4 pts	3 pts	2 pts	1 pt
Hooks Moused	5 pts	4 pts	3 pts	2 pts	1 pt
Strops	3 pts	2 pts	1 pt		
					Subtotal:
OVERALL APPEARANCE					
	5 pts	4 pts	3 pts	2 pts	1 pt
					Subtotal:
					Overall Total:

OPI Name:

Date:

MODEL SHIP

TEAM NAME:

AWARDING POINTS

Teams will be awarded points IAW the scoring guide.

Points Awarded				
SHIP TYPE ACCURACY – the ship’s model is similar to that of the type chosen by the team.				
1 pt	2 pts	3 pts	4 pts	5 pts
USE OF RESOURCES – the team maximized the use of resources provided.				
1 pt	2 pts	3 pts	4 pts	5 pts
HULL STRUCTURE – the hull structure highlights the areas of the hull, bow, stern and transom.				
1 pt	2 pts	3 pts	4 pts	5 pts
HULL DESIGN – the hull design highlights the areas of the bridge, deck and superstructure.				
1 pt	2 pts	3 pts	4 pts	5 pts
PRESENTATION – the team presentation was clear, confident and involved maximum group participation.				
1 pt	2 pts	3 pts	4 pts	5 pts
BUOYANCY – the model floats even and steady.				
1 pt	2 pts	3 pts	4 pts	5 pts
OVERALL APPEARANCE – the model has many details.				
1 pt	2 pts	3 pts	4 pts	5 pts
				Overall Total:

OPI Name:

Date:

FINAL EVENT

AWARDING POINTS

Teams will be awarded points IAW their finishing position.

Points Awarded	
FIRST PLACE TEAM NAME:	Points 50
SECOND PLACE TEAM NAME:	Points 40
THIRD PLACE TEAM NAME:	Points 30
FOURTH PLACE TEAM NAME:	Points 20
FIFTH PLACE TEAM NAME:	Points 10
Overall Total:	

OPI Name:

Date:

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SUGGESTED TRIVIA QUESTIONS

PHASE ONE

Q1. What is the purpose of one of the following knots hitches or bends:

- Reef Knot,
- Figure Eight Knot,
- Sheet Bend,
- Bowline,
- Clove Hitch, or
- Round Turn Two Half Hitches.

A1. The following answers apply:

- Reef Knot: to tie together two ropes of equal diameter.
- Figure Eight Knot: stopper knot.
- Sheet Bend: to tie together two ropes of unequal diameter.
- Bowline: to create a temporary eye in the end of a line.
- Clove Hitch: to secure a line to a spar.
- Round Turn Two Half Hitches: to secure a line to a ring or eye.
- Common Whipping: to finish the end of a line to prevent it from fraying or unravelling.

Q2. Define one of the following naval terms:

- Gash can,
- Stand easy,
- Secure,
- Heads,
- Duty watch,
- Out pipes,
- Scran locker,
- Pipe,
- Colours,
- Liberty boat,
- Bulkhead,
- Deck,
- Ship's company,
- Sunset,
- Gangway,
- Galley,
- Boatswain's stores,
- Pipe down,
- Kye,

- Aye Aye, Sir/Ma'am,
- Port,
- Starboard,
- Ship's Office,
- Gangway, and
- Brow.

A2. Answers:

- Gash can: garbage can.
- Stand easy: a break.
- Secure: to close up and put away gear.
- Heads: toilet(s).
- Duty watch: a division that is selected on a rotational basis that is responsible for corps preparation and cleanup.
- Out pipes: a pipe indicating the commencement of classes or the end of stand easy.
- Scran locker: lost and found.
- Pipe: sound produced from a boatswain's call. The notes played have a specific meaning/ message.
- Colours: the ceremony of hoisting the national flag, usually in the morning or at the beginning of the training day.
- Liberty boat: when all personnel are dismissed for the day and may go ashore;
- Bulkhead: a wall.
- Deck: a floor.
- Ship's company: the complement of a ship (this would include a sea cadet corps).
- Sunset: the ceremony of lowering the national flag at the end of a training day.
- Gangway: any recognized entrance to, passageway or traffic route within a ship.
- Galley: the ship's kitchen.
- Boatswain's stores: a storeroom for cleaning gear.
- Pipe down: an order meaning to keep quiet.
- Kye: a hot chocolate drink.
- Aye Aye, Sir/Ma'am: order understood that will be obeyed, an appropriate response to an order from an officer.
- Port: left side of a ship.
- Starboard: right side of a ship.
- Ship's Office: administration office.
- Brow: entrance/exit of a ship where personnel must salute when coming aboard or going ashore.

Q3. What pipe is used to gain the attention of a ship's company before passing an order?

A3. General Call.

Q4. What pipe is used to bring the ship's company to attention?

A4. The Still.

Q5. What pipe is sounded after the reason for the still is complete?

A5. Carry On.

Q6. How many times do you ring a ship's bell for Colours/Sunset?

A6. The bell is rung as follows:

- Colours: eight times, and
- Sunset: four times.

PHASE TWO

Q1. What are the three steps involved in bringing a naval vessel into service?

A1. The three steps involved in bringing a naval vessel into service are:

- keel laying;
- naming and launching; and
- commissioning.

Q2. What is the draught of a ship?

A2. The depth of the keel below the waterline at any point along the hull.

Q3. Identify the following splice (present the cadets with a pre-tied short splice).

A3. Short Splice.

Q4. What type of blocks does a luff consist of?

A4. One double block and one single block.

Q5. What tackle consists of two double blocks?

A5. Two-fold purchase.

Q6. What should you do to prevent a load from falling off a hook?

A6. Mouse the hook.

Q7. What part of the sailboat is used to hoist the sails?

A7. Halyards.

Q8. What helps prevent a sailboat from capsizing?

A8. Centreboard/Daggerboard.

Q9. What are sheets used for?

A9. To control the mainsail and jib sail.

Q10. What are some ways to determine wind direction?

A10. Flags, tall grass, smoke, small waves, wind sock, moored boats and low altitude clouds.

Q11. What times are associated with the first dog watch?

A11. 1600–1800 hours.

Q12. What times are associated with the forenoon watch?

A12. 0800-1200 hours.

Q13. What is the purpose of the dog watches?

A13. The dog watches are only half the time of the others to create a seventh watch, ensuring that personnel do not stand the same watch every day.

PHASE THREE

Q1. What ship is currently operating in _____ (the OPI should select a current deployment)?

A1. Depends on current deployments.

Q2. What are three safety precautions to consider when using lifting devices?

A2. Wear a helmet, do not enter the safety zone and do not walk under the load.

Q3. What is the purpose of a splay tackle?

A3. To prevent the legs of a sheer from separating.

Q4. How many turns should a head lashing consist of?

A4. Eleven to fifteen.

Q5. What part attaches to the load on sheers?

A5. Main purchases.

Q6. The bottom of a sail is known as what?

A6. Foot.

Q7. What part of the sailboat houses the centreboard?

A7. Centreboard trunk.

Q8. What should the crew of a sailboat do to help prevent heeling?

A8. Hike.

Q9. What does PFD stand for?

A9. Personal floatation device.

PHASE FOUR, FIVE AND SIX

Q1. Name one civilian maritime organization.

A1. Department of Fisheries and Oceans, Canadian Coast Guard, etc.

Q2. What is turning a sailboat so its bow passes through head to wind known as?

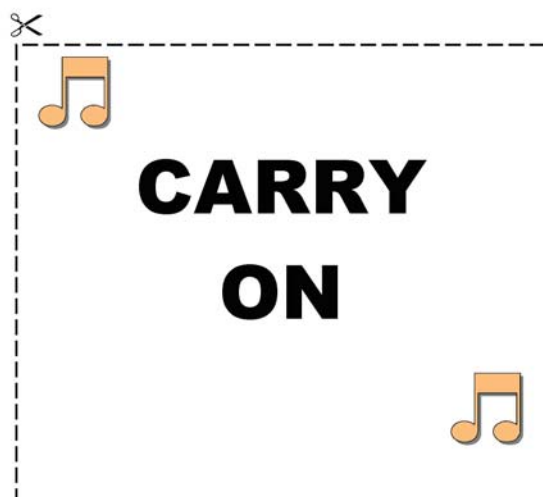
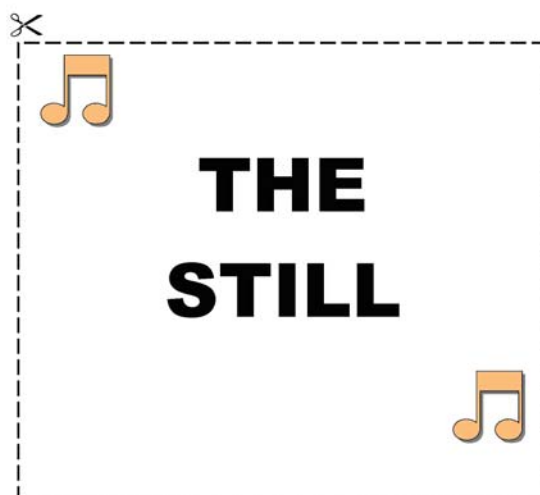
A2. Tacking.

Q3. The side the boat that the wind passes over first is known as what?

A3. Windward side.

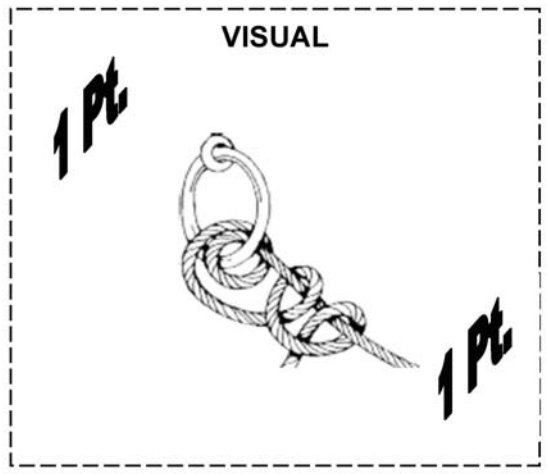
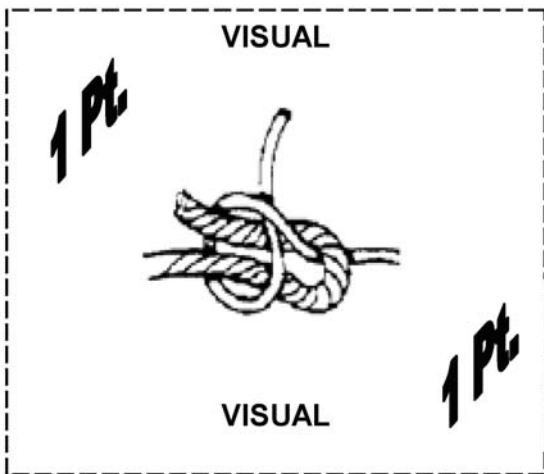
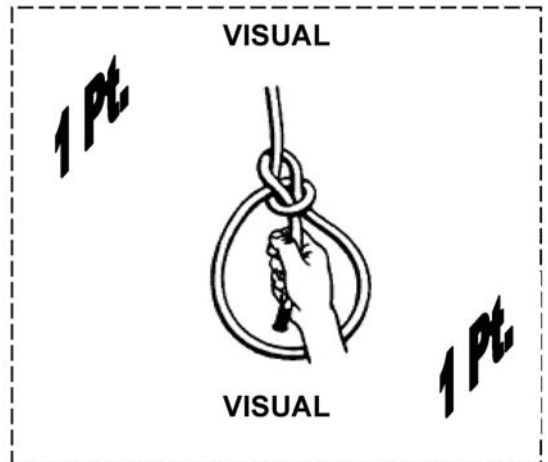
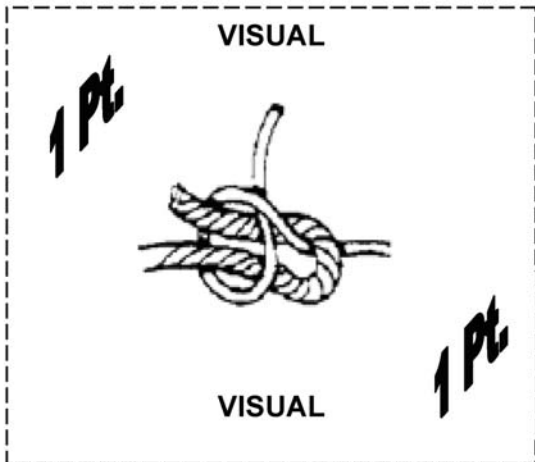
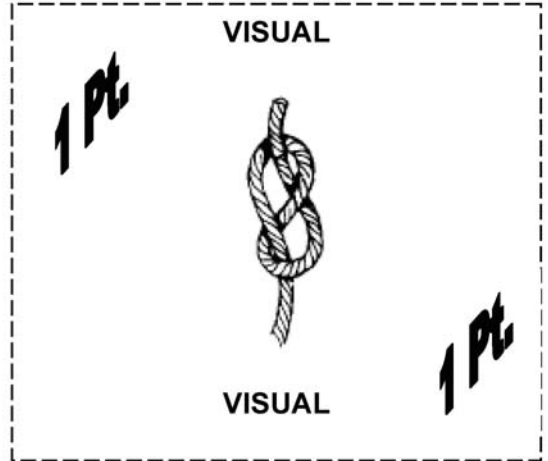
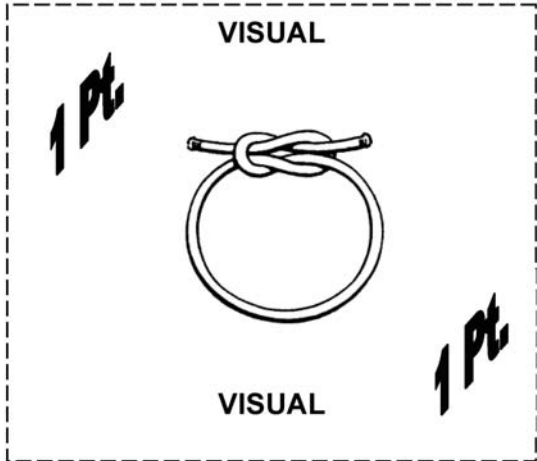
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BOATSWAIN'S CALL CARDS



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TASK CARDS





TIE KNOTS

BOWLINE

TIE KNOTS

5 PTS. 5 PTS.

TIE KNOTS

FIGURE 8

TIE KNOTS

5 PTS. 5 PTS.

TIE KNOTS

SHEET BEND

TIE KNOTS

5 PTS. 5 PTS.

TIE KNOTS

REEF KNOT

TIE KNOTS

5 PTS. 5 PTS.

TIE KNOTS

CLOVE HITCH

TIE KNOTS

5 PTS. 5 PTS.

TIE KNOTS

**ROUND TURN
2 HALF HITCHES**

TIE KNOTS

5 PTS. 5 PTS.



WHO AM I?
3 PTS.
Stop the line from
running all the
way out the
fairleads
WHO AM I? **3 PTS.**

WHO AM I?
3 PTS.
Start tying me by
making a six
somewhere in
the line
WHO AM I? **3 PTS.**

WHO AM I?
3 PTS.
You can use me to
temporarily tie
up a small boat
WHO AM I? **3 PTS.**

WHO AM I?
3 PTS.
Lines different
diameters?
I think I can
help.
WHO AM I? **3 PTS.**

WHO AM I?
3 PTS.
I am often used as
the start when
tying your
shoes
WHO AM I? **3 PTS.**

WHO AM I?
3 PTS.
My hitches should
always be made with
the running end going
in the same direction.
WHO AM I? **3 PTS.**



DEFINITION

2 PTS.

REEF KNOT

DEFINITION *2 PTS.*

DEFINITION

2 PTS.

SHEET BEND

DEFINITION *2 PTS.*

DEFINITION

2 PTS.

BOWLINE

DEFINITION *2 PTS.*

DEFINITION

2 PTS.

FIGURE 8

DEFINITION *2 PTS.*

DEFINITION

2 PTS.

CLOVE HITCH

DEFINITION *2 PTS.*

DEFINITION

2 PTS.

**ROUND TURN
2 HALF HITCHES**

DEFINITION *2 PTS.*

TYPES OF SHIPS



Department of National Defence. Retrieved March 11, 2006, from http://www.navy.forces.gc.ca/cms_images/ship_site_images/ship_gallery/283/ETD02-0081-30_l.jpg

Figure 16E-1 HMCS Algonquin



Department of National Defence. Retrieved on March 11, 2006, from http://www.navy.forces.gc.ca/cms_images/ship_site_images/ship_gallery/710/cx2003-0152-22c.jpg

Figure 16E-2 HMCS Brandon



Department of National Defence. Retrieved on March 11, 2006, from http://www.navy.forces.gc.ca/cms_images/ship_site_images/ship_gallery/334/Sailpast.jpg

Figure 16E-3 HMCS Regina



Department of National Defence. Retrieved on March 11, 2006, from http://www.navy.forces.gc.ca/cms_images/ship_site_images/ship_gallery/509/prot11.jpg

Figure 16E-4 HMCS Protecteur



JCOMMOPS, 2001-2008. Retrieved on March 11, 2006, from http://www.jcommops.org/graph_ref/cargo_ship-3.jpg

Figure 16E-5 Cargo Vessel



CBS News. Retrieved on March 11, 2006, from <http://www.cbsnews.com/images/2006/03/24/imageSJU10103232114.jpg>

Figure 16E-6 Cruise Ship



Newfoundland Photo Gallery. Retrieved on March 11, 2006, from <http://www.geocities.com/Heartland/Pointe/5181/nfld/smallwood.jpg>

Figure 16E-7 Car Ferry



CMT Consulting Management Technology. Retrieved on March 11, 2006, from <http://www.cmt-gmbh.de/tanker%20ship.jpg>

Figure 16E-8 Tanker

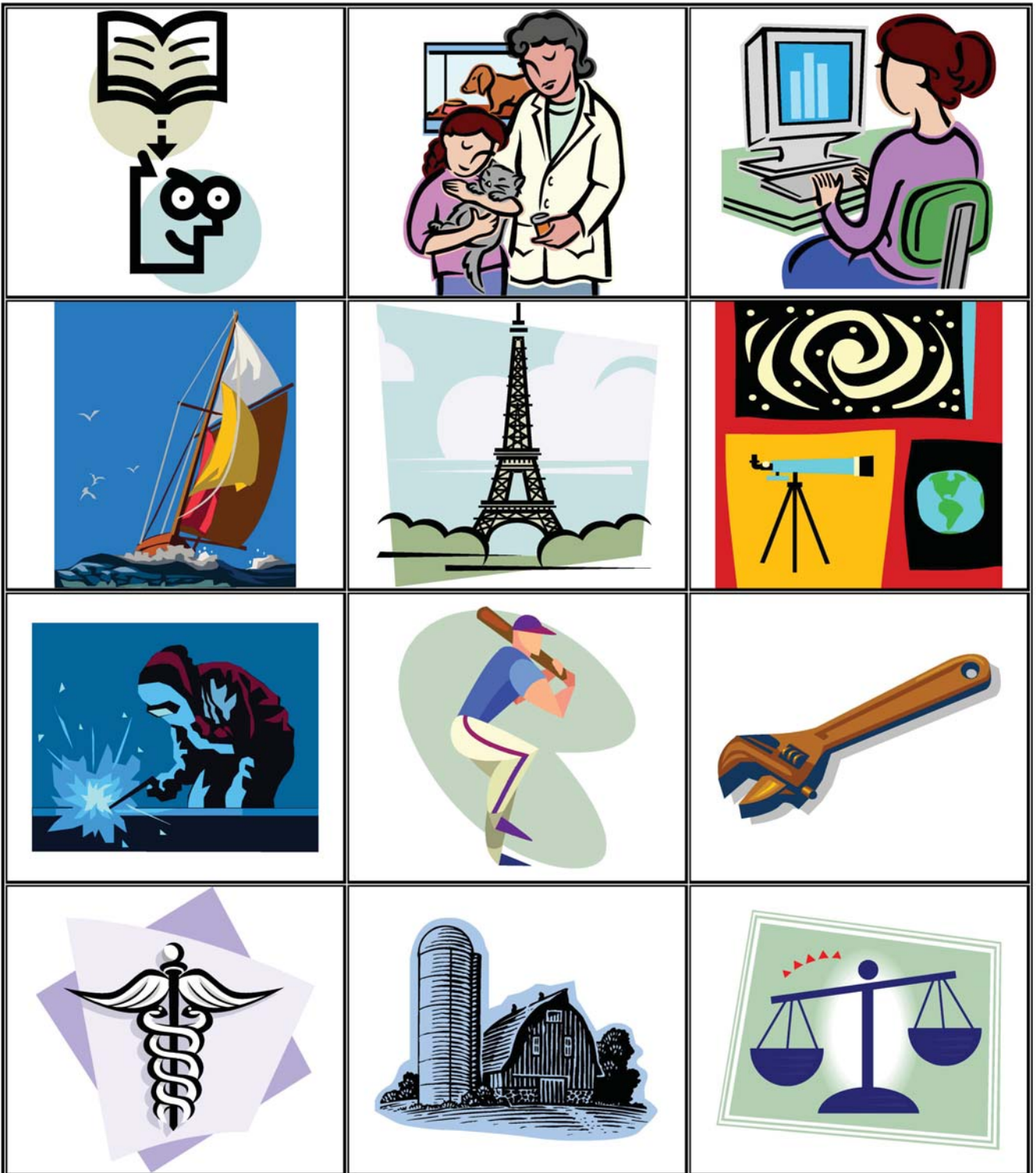


Retrieved on March 11, 2006, from <http://ei4hq.shacknet.nu/corkHarbour/tugs/original/Gerry%20O'Sullivan%201.jpg>

Figure 16E-9 Tug Handling Supply Vessel

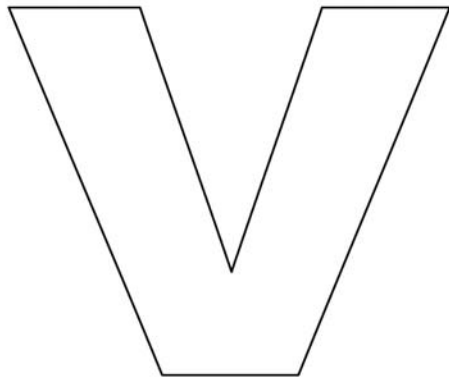
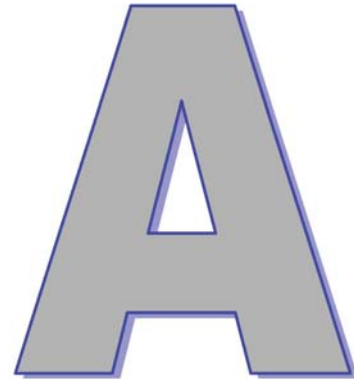
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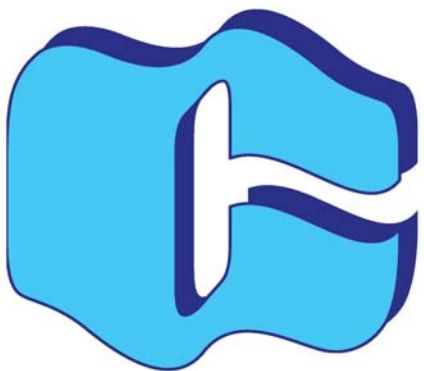
MOST LIKE ME ACTIVITY SHEET



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SECRET MESSAGE CARDS





Secret Message—"NAVY ROCKS"