



# UNIVERSITY OF NEW BRUNSWICK BOATING SAFETY MANUAL

1<sup>st</sup> Edition  
July 01, 2012

## CONTENTS

Scope and Application.....	5
Introduction .....	5
1 Scope.....	6
1.1 Definition .....	6
2 UNBSJ Boat Safety Committee .....	6
2.1 Membership.....	6
2.2 Responsibility .....	6
2.3 Terms of Reference.....	6
3 Boat Safety Officer .....	7
3.1 Responsibility .....	7
3.2 Responsibilities and Duties .....	7
3.3 Authority.....	7
4 Boating Course Instructors.....	8
4.1 Responsibility .....	8
4.2 Responsibilities and Duties .....	8
5 Organization and Responsibilities of Personnel .....	8
5.1 Project Level: Boating Project Directors.....	8
5.2 Operations Level: Boat Operator-in-Charge.....	8
6 Boat Crew .....	9
6.3 Emergency Deviation from the Standard.....	9
7 Authorization for Boat Operators.....	10
7.1 Entry into the Program.....	10
7.2 Registration and Certification .....	10
7.3 Age .....	10
7.4 Policy .....	10
7.5 Purpose .....	11
8 Required Safety Equipment .....	11
8.1 Canoes, Kayaks, and Row Boats .....	11
8.2 Sail and Powered Boats up to Six Metres in Length.....	12
8.3 Powered Boats over Six Metres and up to Nine Metres in Length .....	14

8.4	Powered Boats over Nine Metres and up to Twelve Metres .....	16
8.5	Powered Boats over Twelve Metres and up to Twenty Four Metres.....	17
8.6	Radar Reflector .....	19
8.7	Sound-Signalling Appliances.....	19
8.8	Sound-Signalling Device .....	19
8.9	Navigation Lights .....	19
8.10	Manual propelling devices .....	19
8.11	Bailers and manual water pumps.....	20
8.12	First Aid Kit .....	20
8.13	Road Transport and Launching .....	21
9	Special Communications Training.....	21
9.1	Special Equipment Requirements and Training .....	21
9.2	Marine radio communications.....	22
9.3	Marine VHF radio and GPS .....	22
9.4	Global Positioning System (GPS) .....	23
9.5	Emergency Position Indicating Radio Beacon (EPIRB).....	23
9.6	Cellphones and *16 .....	23
10	Diving and Boating Operations.....	24
10.1	Classifications.....	24
10.2	Boat Operator's Responsibility .....	24
10.3	Visual Indicators.....	25
10.4	Boating Operations .....	25
10.5	Diver Recall .....	26
11	Outboard Motors .....	27
12	Portable Fuel Tanks .....	27
13	Boat Mooring.....	28
13.1	Wharves .....	28
13.2	Beaches.....	28
13.3	Outcropping .....	28
13.4	Free Anchorage .....	28
14	Accident Reporting .....	29

14.1	Regulation Enforcement.....	29
14.1.1	An enforcement officer .....	30
14.2	Collision Regulations.....	30
14.3	The Criminal Code, Canada Shipping Act, and Contraventions Act ..	30
Appendix A – Terms of Reference .....		31
Appendix B – University of New Brunswick, SJ, Boating Safety Administration .....		32
Appendix C – University of New Brunswick Boating Information Form .....		33
Appendix D – Boating Safety Acknowledgment Form .....		34
References.....		35

## **SCOPE AND APPLICATION**

This Boating Safety Manual is designed to provide University of New Brunswick, Saint John (UNBSJ) boat operators with standards and procedures for safe boating operations. This manual is a minimum standard. In the case of any omissions or conflict with Canadian Coast Guard and Transport Canada, the latter must prevail.

This Boating Safety Manual only applies to UNBSJ's scientific operations, which includes diving and boating related training by University employees and students as part of their research, occupation or instruction. This Manual does not cover students or staff engaged in boating activities for non-university purposes.

This boating Safety Manual also does not apply to any boating operations performed as part of a commercial boating contract with UNBSJ. Such contracts shall provide for the requirements of the Canadian Coast Guard Regulations and Transport Canada guidelines.

## **INTRODUCTION**

The purpose of this Boating Safety Manual is to set forth policy and standards for the organization and conduct of UNBSJ's Boating Safety Program and to establish safety procedures in the University's boating operations.

The objectives of UNBSJ's Boating Safety Program are:

- a. To enhance health and safety in university boating operations by ensuring all boat operators comply with all applicable regulations, standards and procedures;
- b. To facilitate use of boating in scientific study and research;
- c. To encourage and promote reciprocity nationally and internationally in boating safety programs; and
- d. To provide training to those wanting to operate boats under university auspices.

# 1 SCOPE

## 1.1 DEFINITION

This manual applies to boat operators for UNBSJ falling under the following definition:

- Boat Operator means any; person, student, staff, faculty who have completed and received a certificate, Pleasure Craft Operator's license as a minimum, from a nationally recognized training agency allowing them to operate boats under university auspices. Any boating privileges sanctioned by UNBSJ must first meet the requirements of Recreational Boating.
- This manual does not apply to students or staff engaged in operations for non-university purposes nor to any boating operations performed as part of a commercial boating contract with UNB.

Contract - meaning, rental of a commercial or private boat with an operator/owner.

# 2 UNBSJ BOAT SAFETY COMMITTEE

## 2.1 MEMBERSHIP

The membership of the Boat Safety Committee should consist of a small group knowledgeable about boating, boating safety and scientific research. The membership shall include the Boat Safety Officer, as appointed by the Environmental Health and Safety Manager, and a reasonable number of representatives from university stakeholders.

## 2.2 RESPONSIBILITY

The Boat Safety Committee shall act as an advisory committee in matters pertaining to scientific boating operations and boating safety. The committee shall meet at least annually and more often as required.

## 2.3 Terms of Reference

As outlined in the terms of reference in Appendix A attached, the Boat Safety Committee is responsible to do the following:

- a. Issue, reissue or revoke boating privileges;
- b. Review and approve boating projects annually and periodically as changes are made; and

- c. Review boating practices and to exercise authority to restrict, prohibit, or suspend any boating operations or programs it considers unsafe.

### **3 BOAT SAFETY OFFICER**

UNBSJ, Environmental Health and Safety Manager shall appoint a Boat Safety Officer to supervise and administer the University Boating Safety program.

#### **3.1 RESPONSIBILITY**

The Boat Safety Officer shall report to the Boat Safety Committee.

#### **3.2 RESPONSIBILITIES AND DUTIES**

The Boat Safety Officer shall have experience in and be responsible for:

- a. The safety of all boating operations;
- b. The establishment and/or approval of boat operator training programs;
- c. Providing advise on the suitability of new equipment to be used on university boats;
- d. Knowledge of boating equipment, safety supplies prior to issuance of purchase orders;
- e. The general surveillance of all boating projects and the recommendations to the Boat Safety Committee for changes in, and/or additions to policy to promote boating safety;
- f. The custody and audit of all boating project records including boating inventory;
- g. Serving as a member of the Boat Safety Committee;
- h. Providing representation on boating to different government agencies and other institutions.

#### **3.3 AUTHORITY**

The Boat Safety Officer shall have authority to restrict, prohibit or suspend any unsafe boating operations, programs, projects or practices.

## **4 BOATING COURSE INSTRUCTORS**

Instructors of canoe, kayak, or motorized boats for research purposes under the University auspices are to register with the Environmental Health and Safety office before instructional classes begin.

### **4.1 RESPONSIBILITY**

It is the responsibility of each instructor to provide adequate protection and training to the students in their charge while teaching in accordance with the minimum standards laid down by their certifying agencies.

### **4.2 RESPONSIBILITIES AND DUTIES**

The boating instructor shall have experience in and be responsible for:

- a. The safety of all students in their charge;
- b. Equipment, boats, personal flotation devices and motors are in good working condition prior to course commencement;
- c. Notifying the Environmental Health and Safety office as to the location of the courses, the number of students enrolled and the names and qualifications of any assistant instructors; and
- d. Emergency response procedures in the event of an injury or accident.

## **5 ORGANIZATION AND RESPONSIBILITIES OF PERSONNEL**

### **5.1 PROJECT LEVEL: BOATING PROJECT DIRECTORS**

Directors of research or study projects or programs, including instructors of courses, field trips or like instructional components; department heads; and persons in charge of any scientific research or educational undertaking any of which utilize or involve boating; shall be responsible for ensuring all individuals engaging in boating operations and projects are aware of and comply with this manual.

### **5.2 OPERATIONS LEVEL: BOAT OPERATOR-IN-CHARGE**

5.2.1 Personnel in charge at this level shall be designated as Boating Project Director and shall have authority to restrict, prohibit or suspend boating operations under their charge. When such persons do not have the required boating knowledge and experience to



perform the duties of Director, the qualified boat operator designated to be in charge shall be the Boating Project Director.

5.2.2 The Boating Project Director or a person appointed by the Boating Project Director shall be designated as the Boat Operator. The Boat Operator must ensure an operational plan is constructed and has the responsibility for briefing the crew with respect to his/her intentions.

5.2.3 The Boat Operator must also ensure all necessary equipment is on board and in good working order, and must be familiar with the standards, procedures, regulations that pertain to small boat operations.

5.2.4 The Boat Operator shall have the authority to restrict, prohibit or suspend any unsafe boating procedures, programs, projects or practices under his/her charge.

5.2.5 The Boat Operator must, before every boating operation, ensure a Remote Location Form has been filed with Security indicating their location, emergency contact number and expected time of return.

## **6 BOAT CREW**

6.1 Members of the crew and support personnel selected or approved by the Boating Project Director or designate to be involved in a boating operation shall be considered members of the crew.

6.2 It shall be each crew member's right, responsibility, and duty to refuse to engage in boating support activities if he/she:

- a. Feels unfit or inadequately trained or unprepared for the activity;
- b. Judges conditions to be unsafe; and/or
- c. Feels that engaging in the activity would violate the precepts of his/her training or the requirements set forth in this manual.

### **6.3 Emergency Deviation from the Standard**

The Boat Operator may deviate from the requirements of this manual to the extent necessary to prevent or minimize a situation which is likely to cause death, injury, or environmental damage. In such cases the boat operator must:

- a. Notify the Boating Project Director and Boat Safety Officer as soon as possible after the onset of the emergency situation indicating the nature of the emergency and the extent of the deviation from the prescribed standards; and
- b. Submit such information in writing as soon as possible thereafter.

## **7 Authorization for Boat Operators**

No person shall operate a boat on any project or operation unless he/she holds a valid certificate to operate the boat pursuant to the provisions of this manual or is authorized to engage in training prescribed herein.

### **7.1 Entry into the Program**

The basic requirements necessary for all students and staff of UNB to operate boats under university auspices are:

- a. To attain Pleasure Craft Operator Card; and
- b. To attend university training on equipment as required by the Boat Safety Committee.

### **7.2 Registration and Certification**

Prior to acceptance into the University Boating Safety Program and participating in any boating operation, all operators must register with the Boat Safety Officer by completing the boat operator's information form in Appendix C.

### **7.3 Age**

The applicant for training and certification shall normally be at least eighteen (18) years of age.

### **7.4 Policy**

It is the policy of the Boating Safety Program to teach the fundamentals of boat operations to university students, faculty and staff in the safe and prudent manner in accordance with this manual.

## 7.5 Purpose

It is the purpose of the boating safety program to provide students, faculty, and staff of UNB with the means of learning boating safety practices.

## 8 REQUIRED SAFETY EQUIPMENT

### 8.1 Canoes, Kayaks, and Row Boats

#### Personal Lifesaving Appliances

1. One (1) Canadian-approved personal flotation device or lifejacket of appropriate size for each person on board

**Note:** A personal flotation device or lifejacket carried on board a human-powered pleasure craft operated in whitewater must be inherently buoyant.

2. One (1) buoyant heaving line at least 15 m (49'3") long
3. One (1) reboarding device

**Note:** A reboarding device is only required if the vertical height that must be climbed to reboard the pleasure craft from the water is over 0.5 m (1'8").

#### Visual Signals

**Only required if the pleasure craft is over 6 m**

4. One (1) watertight flashlight
5. Six (6) Canadian-approved flares of Type A (Rocket Parachute), B (Multi-Star) or C (Hand)

**Note:** Flares are not required for a pleasure craft that:

- is operating on a river, canal or lake in which it can never be more than one (1) nautical mile (1.852 km) from shore; **or**
- has no sleeping quarters and is engaged in an official competition or in final preparation for an official competition.

#### Vessel Safety Equipment

6. One (1) bailer **or** manual bilge pump

**OR**

Bilge-pumping arrangements

**Note:** A bailer or manual bilge pump is not required for a pleasure craft that cannot hold enough water to make it capsize or a pleasure craft that has watertight compartments that are sealed and not readily accessible.

### Navigation equipment

7. One (1) [sound-signalling appliance](#) that meets the applicable standards set out in the [Collision Regulations](#)

**OR**

A [sound-signalling device](#)

8. Navigation lights that meet the requirements set out in the [Collision Regulations](#)

**Note:**

- Navigation lights are only required if the pleasure craft is operated after sunset, before sunrise, or in periods of restricted visibility (fog, falling snow, etc.).
- For a human-powered vessel, this requirement can be met with a watertight flashlight

You can learn more about the requirements for your pleasure craft by consulting the [navigation lights](#) section of the [Safe Boating Guide](#)

9. One (1) magnetic compass

**Note:** A magnetic compass is not required if the pleasure craft is 8 m (26'3") or less **and** is operated within sight of seamarks (navigation marks).

10. One (1) [radar reflector](#) is required under certain conditions

11. Communications Equipment - A cellular phone

## 8.2 Sail and Powered Boats up to Six Metres in Length

### Personal Lifesaving Appliances

1. One (1) Canadian-approved personal flotation device or lifejacket of appropriate size for each person on board
2. One (1) buoyant heaving line at least than 15 m (49'3") long
3. One (1) reboarding device

**Note:** A reboarding device is only required if the vertical height that must be climbed to reboard the pleasure craft from the water is over 0.5 m (1'8").

## Visual Signals

**Only required if boat is equipped with a motor**

4. One (1) watertight flashlight

**OR**

Three (3) Canadian-approved flares of Type A (Rocket Parachute), B (Multi-Star) or C (Hand)

**Note:** Flares are not required for a pleasure craft that:

- Is operating on a river, canal or lake in which it can never be more than one (1) nautical mile (1.852 km) from shore; **or**
- Has no sleeping quarters and is engaged in an official competition or in final preparation for an official competition.

## Vessel Safety Equipment

5. One (1) [manual propelling device](#)

**OR**

One (1) anchor and at least 15 m (49'3") of cable, rope or chain in any combination

6. One (1) bailer

**OR**

One (1) manual bilge pump

**Note:** A bailer or manual bilge pump is not required for a pleasure craft that cannot hold enough water to make it capsize or a pleasure craft that has watertight compartments that are sealed and not readily accessible.

## Navigation equipment

7. One (1) [sound-signalling appliance](#) that meets the requirements set out in the [Collision Regulations](#)

**OR**

A [sound-signalling device](#)

8. Navigation lights meet the requirements set out in the [Collision Regulations](#)

**Note:** Sailing vessels less than 7 m in length can meet this requirement with a watertight flashlight

**Note:** Navigation lights are only required if the pleasure craft is operated after sunset, before sunrise, or in periods of restricted visibility (fog, falling snow, etc.).

9. One (1) magnetic compass

**Note:** A magnetic compass is not required if the pleasure craft is 8 m (26'3") or less **and** is operated within sight of sea marks (navigation marks).

### **Firefighting Equipment**

10. One (1) 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 refrigeration appliance

11. One (1) radar reflector is required under certain conditions

12. Communications Equipment - A VHF radio and/or a cellular phone

## **8.3 Powered Boats over Six Metres and up to Nine Metres in Length**

### **Personal Lifesaving Appliances**

1. One (1) Canadian-approved personal flotation device or lifejacket of appropriate size for each person on board

2. One (1) buoyant heaving line at least 15 m (49'3") long

**OR**

One (1) lifebuoy attached to a buoyant line at least 15 m (49'3") long

3. One (1) reboarding device

**Note:** A reboarding device is only required if the vertical height that must be climbed to reboard the pleasure craft from the water is over 0.5 m (1'8").

### **Visual Signals**

4. One (1) watertight flashlight

5. Six (6) Canadian-approved flares of Type A (Rocket Parachute), B (Multi-Star) or C (Hand)

**Note:** Flares are not required for a pleasure craft that:

- Is operating on a river, canal or lake in which it can never be more than one (1) nautical mile (1.852 km) from shore; **or**
- Has no sleeping quarters and is engaged in an official competition or in final preparation for an official competition.

### **Vessel Safety Equipment**

6. One (1) [manual propelling device](#)

**OR**

One (1) anchor and at least 15 m (49'3") of cable, rope or chain in any combination

7. One (1) bailer **or** manual bilge pump

**Note:** A bailer or manual bilge pump is not required for a pleasure craft that cannot hold enough water to make it capsize or a pleasure craft that has watertight compartments that are sealed and not readily accessible.

### **Navigation equipment**

8. One (1) [sound-signalling appliance](#) that meets the requirements set out in the [Collision Regulations](#)

**OR**

A [sound-signalling device](#)

9. Navigation lights that meet the requirements set out in the [Collision Regulations](#)

**Note:**

- Sailing vessels less than 7 m in length can meet this requirement with a watertight flashlight
- Navigation lights are only required if the pleasure craft is operated after sunset, before sunrise, or in periods of restricted visibility (fog, falling snow, etc.).

10. One (1) magnetic compass

**Note:** A magnetic compass is not required if the pleasure craft is 8 m (26'3") or less **and** is operated within sight of sea marks (navigation marks).

### **Firefighting Equipment**

11. One (1) 5BC fire extinguisher if the pleasure craft is equipped with a motor

**AND**

12. One (1) 5BC fire extinguisher if the pleasure craft is equipped with a fuel-burning cooking, heating or refrigeration appliance

13. One (1) [radar reflector](#) is required under certain conditions

14. Communications Equipment - A VHF radio and/or a cellular phone

## **8.4 Powered Boats over Nine Metres and up to Twelve Metres**

### Personal Lifesaving Appliances

1. One (1) Canadian-approved personal flotation device or lifejacket of appropriate size for each person on board

2. One (1) buoyant heaving line at least than 15 m (49'3") long

3. One (1) lifebuoy attached to a buoyant line at least 15 m (49'3") long

4. One (1) reboarding device

**Note:** A reboarding device is only required if the vertical height that must be climbed to reboard the pleasure craft from the water is over 0.5 m (1'8").

### Visual Signals

5. One (1) watertight flashlight

6. Twelve (12) Canadian-approved flares of Type A (Rocket Parachute), B (Multi-Star), C (Hand), or D (smoke signals)

#### **Note:**

- Not more than six (6) of which are of Type D (smoke signals).
- Flares are not required for a pleasure craft that:
- Is operating on a river, canal or lake in which it can never be more than one (1) nautical mile (1.852 km) from shore; **or**
- Has no sleeping quarters and is engaged in an official competition or in final preparation for an official competition.

### Vessel Safety Equipment

7. One (1) anchor and at least 30 m (98'5") of cable, rope or chain in any combination

8. One (1) manual bilge pump

**OR**



Bilge-pumping arrangements

**Note:** A bailer or manual bilge pump is not required for a pleasure craft that cannot hold enough water to make it capsize or a pleasure craft that has watertight compartments that are sealed and not readily accessible.

### **Navigation equipment**

9. One (1) sound-signalling appliance that meets the requirements set out in the Collision Regulations

OR

A sound-signalling device

10. Navigation lights that meet the requirements set out in the Collision Regulations

11. One (1) magnetic compass

### **Firefighting Equipment**

12. One (1) 10BC fire extinguisher if the pleasure craft is equipped with motor

**AND**

13. One (1) 10BC fire extinguisher if the pleasure craft is equipped with a fuel-burning cooking, heating or refrigeration appliance

14. One (1) radar reflector is required under certain conditions

15. Communication Equipment – A VHF radio and/or a cellular phone

## **8.5 Powered Boats over Twelve Metres and up to Twenty Four Metres**

### **Personal Lifesaving Appliances**

1. One (1) Canadian-approved personal flotation device or lifejacket of appropriate size for each person on board

2. One (1) buoyant heaving line at least than 15 m (49'3") long

3. One (1) lifebuoy equipped with a self-igniting light or attached to a buoyant line at least 15 m (49'3") long

4. One (1) reboarding device

**Note:** A reboarding device is only required if the vertical height that must be climbed to reboard the pleasure craft from the water is over 0.5 m (1'8").

## Visual Signals

5. One (1) watertight flashlight

6. Twelve (12) Canadian-approved flares of Type A (Rocket Parachute), B (Multi-Star), C (Hand), or D (smoke signals)

### Note:

- Not more than six (6) of which are of Type D (smoke signals).
- Flares are not required for a pleasure craft that:
- Is operating on a river, canal or lake in which it can never be more than one (1) nautical mile (1.852 km) from shore; **or**
- Has no sleeping quarters and is engaged in an official competition or in final preparation for an official competition.

## Vessel Safety Equipment

7. One (1) anchor and at least 50 m (164'1") of cable, rope or chain in any combination

8. Bilge-pumping arrangements

## Navigation equipment

9. [Sound-signalling appliances](#) that meets the requirements set out in the [Collision Regulations](#)

**Note:** pleasure craft over 20 m (65'7") in length require a whistle (horn), and a fitted bell.

10. Navigation lights that meet the requirements set out in the [Collision Regulations](#)

11. One (1) magnetic compass that meets the requirements of the *Navigation Safety Regulations*

- See Part 2 of the Regulations if your pleasure craft was built [before July 1, 2002](#)

### OR

- See Part 3 of the Regulations if your pleasure craft was built [on or after July 1, 2002](#)

## Firefighting Equipment

12. One (1) 10BC fire extinguisher at all of the following locations:

- 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 machinery space.

13. One (1) axe

14. Two (2) buckets

**Note:** Transport Canada recommends that each bucket have a capacity of at least 10 litres.

15. One (1) radar reflector is required under certain conditions

### 8.6 Radar Reflector

Vessels less than 20 m (65'7") in length or that are constructed primarily of non-metallic materials must have radar reflectors, unless they are not essential to the safety of the vessel, or the small size of the vessel or its operation away from radar navigation makes compliance impractical. If properly positioned, they help larger, less manoeuvrable vessels detect your presence on their radar screens. They should be located above all superstructures and at least 4 m (13'1') above the water (if possible).

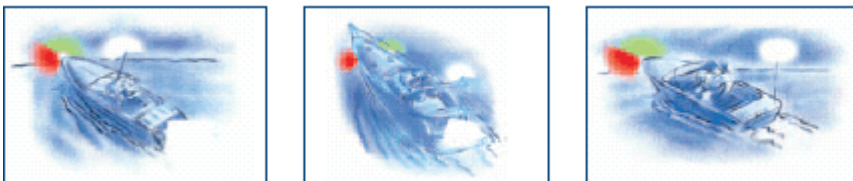
### 8.7 Sound-Signalling Appliances

Pleasure craft 12 m (39'4") or greater in length must have a fitted whistle. Check the Collision Regulations for the technical criteria the whistle must meet.

### 8.8 Sound-Signalling Device

Pleasure craft less than 12 m (39'4") in length need a sound-signalling device if they are not fitted with a sound-signalling appliance. The sound-signalling device can be a peaseless whistle, compressed gas horn or an electric horn.

### 8.9 Navigation Lights



### 8.10 Manual propelling devices

A manual propelling device *can mean:*

- a set of oars;
- a paddle; or,
- any other apparatus that can be used manually (by hand or foot) by a person to propel a vessel, including pumping the rudder on small open sailboats or a paddle wheel on a paddle boat.

A spare paddle or other propelling device is a good idea, but only one is necessary to meet the requirement.

### **8.11 Bailers and manual water pumps**

Bailers must be at least 750 ml with the opening a minimum of 65 cm<sup>2</sup> (10 in<sup>2</sup>), and made of plastic or metal. If you have a manual pump, the pump and hose must be able to reach the bilge and discharge over the side of the boat.

A bailer or manual water pump is not required for multi-hull vessels that have subdivided multiple-sealed hull construction (common example: pontoon boat) or sailboats fitted with a recess-type cockpit that cannot contain a sufficient quantity of water to capsize the boat.

**Make a bailer out of a four-litre rigid plastic bottle (useful for small open boats) Rinse thoroughly and then:**

1. Secure lid
2. Cut off bottom
3. Cut along side with handle

### **8.12 First Aid Kit**

Powered crafts operating under University auspices shall carry a marine emergency first aid kit and have at least one qualified and current First Aid Provider on board. Contents of the first aid kit are as described in Small Vessel Regulations.

A first aid kit required by these Regulations shall be packed in a waterproof case capable of being tightly closed after use and shall be a marine emergency first aid kit that contains the following:

- an up-to-date first aid manual or up-to-date first aid instructions, in English and French,
- 48 doses of analgesic medication of a non-narcotic type,
- six safety pins or one roll of adhesive first aid tape,
- one pair of bandage scissors or safety scissors,
- one resuscitation face shield,
- two pairs of examination gloves,
- 10 applications of antiseptic preparations,

- 12 applications of burn preparations,
- 20 adhesive plasters in assorted sizes,
- 10 sterile compression bandages in assorted sizes,
- 4 m of elastic bandage,
- two sterile gauze compresses,
- two triangular bandages, and
- a waterproof list of the contents, in English and French; or
- a first aid kit that meets the requirements of the [Marine Occupational Safety and Health Regulations](#) or of provincial regulations governing workers' compensation, with the addition of a resuscitation face shield and two pairs of examination gloves if the kit is not required to contain them.

### **8.13 Road Transport and Launching**

Only University owned vehicles which have been properly fitted for towing, have the approved class of hitch for trailer being towed & correct lighting harness, shall be used. Vehicle Provincial Safety Inspection shall be valid. Tire "chaulks" shall be used and emergency brake engaged when launching or retrieving a vessel onto or from a trailer to help ensure a vehicle is not accidentally "swamped".

## **9 SPECIAL COMMUNICATIONS TRAINING**

All University personnel or students operating a university boat of any size in open-ocean or coastal waters, and having a VHF radio as the only communications equipment, must be knowledgeable and possess a certificate as a VHF Restricted Radio Operator.

### **9.1 Special Equipment Requirements and Training**

All university boats without exception, operating in open ocean conditions must comply with the Canadian Coast Guard regulations. Boats must carry communications for the area; such as VHF radios, cellular phone, and a GPS if the destination is of a considerable distance, to be able to give a location in the event of a breakdown.

The operators of equipment that may pose a hazard to health and safety must have training in the operation of that equipment before they are allowed to conduct operations unsupervised. Special equipment will include but not be limited to; compressors, generators, blocks, pulleys, cables and winches.

## 9.2 Marine radio communications

Regulated marine distress and safety communication equipment such as:

- marine VHF radios (with the new digital selective calling (DSC) option, channel 70)
- marine MF/HF – DSC radios
- Emergency Position Indicating Radio Beacons (EPIRBs)
- NAVTEX
- Inmarsat

work together to form the new international system known as the Global Maritime Distress and Safety System (GMDSS). This combination of equipment quickly relays distress alerts to the Coast Guard and other vessels in the immediate vicinity.

Pleasure craft do not have to carry GMDSS-compatible equipment, but it is recommended. If your pleasure craft has this equipment, connect it to a Global Positioning System (GPS) receiver to ensure your exact location is automatically transmitted in a digital distress alert in an emergency.

## 9.3 Marine VHF radio and GPS

Marine VHF radio is generally the most effective and reliable means of issuing a distress alert. If you have a VHF radio keep it tuned to channel 16. Know where you are at all times and be prepared to describe your specific location.

If you are buying a new VHF radio, make sure it has the new digital selective calling (DSC) feature on channel 70. This feature provides automatic digital distress alerts. The Canadian Coast Guard has upgraded its facilities to provide DSC channel 70 service in many areas.

Remember, VHF radio channel 16 is used for emergency and calling purposes only. Once you call another vessel on channel 16, take your conversation to a working frequency to continue. VHF channel 70 should be used only for DSC (digital) communication and not for voice communications. Anyone who uses a VHF radio must follow the procedures described in the VHF Radiotelephone Practices and Procedures Regulations.

Obtain a nine-digit Maritime Mobile Service Identity (MMSI) number for your radio to get maximum benefits from this automated system. Your owner's manual will explain this feature and how to make a DSC call to another vessel or to a shore station that has DSC capability. These numbers are assigned, free-of-charge, by Industry Canada. Call 1-800-667-3780 or visit [Industry Canada](#) for more information.

On a VHF radiotelephone, in case of grave and imminent danger (for example, your boat is taking on water and you are in danger of sinking or capsizing), use channel 16 and say "Mayday" three times. Then give the name of your boat, its position, the nature of your problem and the type of assistance needed.

If you need assistance but are not in immediate danger (for example, your boat's motor has quit and you are unable to reach shore) use channel 16 and say "Pan-Pan" three times. Then give the name of your boat, its position, the nature of your problem and the type of assistance needed.

An important feature of a VHF/DSC radio is its ability to send a distress alert that tells the Coast Guard and nearby vessels you require immediate assistance. To find out where VHF/DSC services are available visit the [Canadian Coast Guard](#) or contact a Canadian Coast Guard Marine Communications and Traffic Services centre.

Currently, all VHF marine radio operators are required to have a restricted operator's certificate (ROC) with maritime qualifications. Contact your local Industry Canada office or the Canadian Power and Sail Squadrons at 1-888-CPS-BOAT for more information on procedures and radiotelephone license requirements.

#### **9.4 Global Positioning System (GPS)**

More and more pleasure craft operators rely on the GPS to tell them where they are on the water. The GPS is a worldwide radio-navigation system consisting of a network of satellites and monitoring stations.

Its receivers can calculate where you are, anywhere on the planet, to within 30 metres. The Coast Guard supplies a Differential GPS that has an integrity monitoring feature and provides an accuracy of within 10 metres.

If your boat is equipped with a GPS receiver, connecting it to your DSC radio may be a good idea. This ensures that when a distress alert is transmitted rescuers will immediately know your precise location and will arrive sooner.

#### **9.5 Emergency Position Indicating Radio Beacon (EPIRB)**

These buoyant radio distress beacons can be manually activated or float free of a sinking or overturned vessel and transmit for hours. Their signals communicate your position to a network of satellites for transmission to Joint Search and Rescue Coordination Centres. In an emergency, their function is invaluable.

Although pleasure craft are not required to carry them, an EPIRB is highly recommended.

**EPIRBs must be registered with the Canadian Beacon Registry at 1-877-406-7671 or at [www.Canadianbeaconregistry.forces.gc.ca](http://www.Canadianbeaconregistry.forces.gc.ca).**

#### **9.6 Cellular Phones and \*16**

With a cellular phone, you can contact Rescue Coordination Centres directly by dialling \*16 for the Canadian Coast Guard Marine Communications and Traffic Services centres.

However, a cellphone is not a reliable substitute for a marine radio and not the best means of issuing a distress call. Cellphones can lose reception or get wet and damaged. Calling from your cell does not alert other vessels close to you that you are in distress — the occupants of those other vessels could be the ones to help you if they could hear you. Unlike VHF transmissions, some wireless phone signals cannot be followed back to your location by rescuers.

**Not all cellular providers offer the \*16 service. Contact your wireless provider to find out if the \*16 service is available from your phone.**

## 10 DIVING AND BOATING OPERATIONS

Understanding the role as a boat operator during scientific diving operations.

### 10.1 Classifications

When operating boats the operator must come under one of two classifications:

- a. Surface safety attendant as specified by the Canadian Standards Association Competency Standard for Diving Operations Z275.4-97 and possess a recognized boat operator's proficiency certificate; or
- b. Must be a Scientific Diver with boating experience and training in accordance with this manual.

All operators must be experienced and knowledgeable in recognizing operational deficiencies and indicators associated with the regular routine of handling divers. Under 6.6.3 Performance Standard for Diving Operations, CSA Z275.4-02, the operator is required to know boating operations. Diving operations for the boat operator require an acute sense for recognizing problems with the environment, the dive plan, and the way the operation is unfolding.

### 10.2 Boat Operator's Responsibility

- a. The operator must at all times devote his/her undivided attention to operating the boat.
- b. It is the responsibility of the operator to terminate diving operations if environmental conditions turn unfavourable or the dive plan in progress has changed.
- c. It is the responsibility of the operator to put in place contingency plans in the event of an emergency.
- d. The operator must have up-to-date certification in First Aid, CPR, and DAN O2 provider.



- e. The operator does not necessarily have to be the dive supervisor.
- f. The operator must display a dive flag when diving operations are being conducted.
- g. The operator must suspend all diving operations if and when any mechanical problems or deficiencies exist with the running of the boat.
- h. When diving in inlets, canals, or harbours, the boat operator must inform and be in continuous contact with harbour authorities (traffic) or Coast Guard.

### **10.3 Visual Indicators**

- a. By keeping in visual contact with the diver's bubbles or identification markers, the operator can determine a safe and reasonable distance to monitor their activities.
- b. The distance of the bubbles from two divers can indicate whether they have become separated and a recall notification should be given.
- c. An excess of bubble formation in one location or separate locations can indicate regulator malfunctions due to freezing conditions or the return of the divers to the surface. The operator must stand off from the site but be able to render assistance at a moment's notice.
- d. Wind and sea conditions can change on short notice. Winds can change direction and speed, creating conditions unfavourable for the operator with a risk also to the divers upon reaching the surface and trying to reboard the boat. Such conditions require an immediate response from the operator to retrieve the divers and seek immediate shelter.
- e. Operators must take precautions when shore line surf poses a threat to the boat. The operator must stand off and avoid contact with the shoreline or being caught in surf or tide. The operator does not venture to the shoreline to collect divers except in an emergency. The divers instead swim out to the boat operator.

### **10.4 Boating Operations**

- a. When approaching divers in the water, the operator should approach up wind when possible. If there is a tide, the approach should be into the tide at a slow speed and disengage the motor when contact is made with the divers. At no time does the operator reverse engines when overshooting, but continues on and circles for another try.
- b. When at anchor, the operator should have a standby floating line attached to the stern of the boat of not less than 15 metres in length or trailing behind the boat when surface tides or moderate winds exist. This will ensure that if the divers are swept beyond the boat, they can use the line to secure their return.

- c. Dive flags are not an insurance that other boats will stay clear during diving operations. If the boat operator suspects that another boat is encroaching on the dive location, the operator should proceed as closely as possible to the divers and indicate using hand signals to approaching boats to stay clear.
- d. When operating boats such as a 12' Zodiac, it is important that weight is distributed evenly along its length and that the operator creates a low center of gravity. This situation exists when there is only one person on board. There should always be weight situated forward whether it is an anchor or fuel tank to counteract the effects of strong wind and wave action. Even though Zodiacs are very stable, they have been known to capsize.
- e. Outboard motors should not be idling for long periods of time; possible fouling of spark plugs could occur.
- f. When in the vicinity of ice cover, ice flows and icebergs, the boat operator should proceed with extreme caution, especially if the boat is constructed of anything but steel.

## 10.5 Diver Recall

There will be times when the boat operator is required to recall the divers. It could be because of changing weather and sea conditions to a change in the dive plan, or the divers obviously moving in a direction that the dive plan did not allow for (going in the wrong direction). Recall procedures may be in many forms especially when sound travels through water four times faster than in air.

Outboard motors transmit sound through water very well, thereby allowing communications to the diver. Outboard motors usually transmit a steady rhythm when operated normally, but when the operator increases and decreases the rhythm of the engine continuously, it is not a normal sound to the divers, and usually indicates a problem on the surface. The divers are to surface immediately. Other sounds can be transmitted to the divers; tapping on the hull, inside or out, and the bottom of the outboard motor gear case.

- a. It is recommended that dive teams carry with them a line that has a float to the surface, that is usually attached to a small buoy or dive flag, for easy location of the divers and allowing for an easy recall. It is understandable that such a device cannot be used in areas where there is a chance of entanglement, around wharves and boat basins;
- b. Explosive devices such as waterproof firecrackers are also known to be used. The military and the fishing industry also use them extensively. These small sticks do not

create concussion waves but only loud noises that can carry for miles. These sticks can be dangerous and must be treated with respect; and

- c. Underwater voice communication systems either between divers and the boat operator are the best way to keep in touch. Vocal sounds from the divers can be picked up using transducers hung over the side of the boat. These systems provide continuous communications between operator and diver.

## **11 OUTBOARD MOTORS**

All boat operators of UNB must be familiar with the operations of all outboard motors under their charge. Before any boat is used on a University project, the operator must be familiar with that particular motor, its unique characteristics, history, power and weaknesses. Outboard motors are not all designed the same. Each manufacturer has a specific design, with different controls, weight, starting instructions and performance;

- a. At the beginning of every working season, every outboard motor is to be tested before any functional operation begins;
- b. At the end of every season, motors are to be winterized and stored in accordance with the manufacturer's instructions. Documentation of winterization is to be forwarded to the Boat Safety Officer on receipt;
- c. Operators or assistants handling motors must be very careful when picking up and installing motors on boats. Care and caution must be displayed in lifting and carrying of motors because of the heavy weight factor. When lifting heavy objects, that person should bend at the knees with back straight before picking up an outboard motor;
- d. When motors are lowered over wharves to a boat, a line has to be secured to that motor to help create a safer deployment. The same applies to retrieving the motor;
- e. When outboard motors are transported to work sites, care and caution must be taken to ensure that the motors are secure to prevent movement and possible damage to transport and passengers; and
- f. When outboard motors cannot operate at full capacity and are showing deficiencies, projects are to be terminated immediately until those deficiencies are rectified.

## **12 Portable Fuel Tanks**

- a. Fuel tanks must contain enough fuel to complete a project with at least one third contents remaining upon completion of the project
- b. All connections must be inspected before departure to ensure that there are no fuel leaks and the lines maintain a positive pressure and connection to the motor

- c. The fuel tank and fuel lines must be secured in such a position so as to prevent entanglement, obstruction, and free of contamination to equipment and clothing
- d. All fuel tanks are to be filled with the appropriate ratio of fuel/oil if required.
- e. Depending on the size of the boat, the fuel tank should be positioned in accordance with the boats highest level of stability and performance.
- f. The storage of all fuel containers for outboard motors must be in storage containers that are outside university buildings and are designed to contain any contamination and injury due to fire or explosion.

## **13 Boat Mooring**

### **13.1 Wharves**

When boats are secured to wharves and left unattended for long periods of time, four-point mooring is required, bow, stern and spring lines. Attention must be paid to rising and falling tides so as not to flounder or suspend the boat.

### **13.2 Beaches**

Boats that are beached must be secured by line or anchor to prevent the boat from slipping back into the surf. These boats must not be left unattended due to rising and falling tides that could strand or take the boat out to sea and leave its crew stranded or could cause damage to the boat.

### **13.3 Outcropping**

When boats are moored to outcropping with a stern anchor and bowline, the boat should not be left unattended due to fluctuations in tide levels. As tide falls, the boat can run ashore causing damage. Conversely, as the tide rises, the boat will distance itself from the shoreline leaving its occupants stranded.

### **13.4 Free Anchorage**

When a boat is anchored free from land, continual monitoring is required to ensure that the boat does not slip its anchorage.

## 14 ACCIDENT REPORTING

This section applies in a province where the government of the province has reached an agreement with the minister of Fisheries and Oceans in respect of a craft accident reporting procedures and where a notice confirming that agreement has been published in the Canada Gazette.

If a craft is involved in an accident that results in injury to a person who requires medical treatment beyond first aid but not admittance to a hospital, or that causes property damage estimated at more than \$2,500, the person responsible for the care and control of the craft shall complete an Accident Report Form and forward it to the office of Boating Safety of the Canadian Coast Guard not later than 14 days after the accident. This type of accident and all other boating accidents and injuries must be reported to the respective Security office of the parent UNB campus.

If a craft is involved in an accident that results in a fatality, injury to a person that requires admittance to a hospital, or property damage greater than \$5,000 resulting from fire, explosion or collision with another vessel or floating or fixed structure, the person responsible for the care and control of that craft shall report the accident to the local police authority as soon as possible, as well as the respective Security office of the parent UNB campus.

### Search and Rescue Contact

JRCC Halifax

Emergency Numbers (24 hour)

Toll free (within region) 1-800-565-1582

Phone +1-902-427-8200

### 14.1 Regulation Enforcement

The following persons are designated as enforcement officers in respect of craft for the purpose of the Coast Guard Regulations:

- a. A member of the Royal Canadian Mounted Police;
- b. A member of any harbour or river police force;
- c. A member of any provincial, county or municipal police force; and
- d. Any person designated as an enforcement officer for the purposes of these regulations by the Minister of Fisheries and Oceans.

**14.1.1** An enforcement officer may, in order to verify and ensure compliance with Coast Guard Regulations:

- a. Examine a craft and its equipment, ask any pertinent questions of, and demand all reasonable assistance from, the owner or operator or any person who is in charge or appears to be in charge of the pleasure craft; and
- b. Require that the owner or operator or other person who is in charge or appears to be in charge of the craft produce personal identification, any licence, document or plate required by Coast Guard Regulations.
- c. Subject to subsection d) of the Boating Safety Manual, an enforcement officer may, in order to ensure compliance with the Regulations and in the interests of public safety, direct the movement of a craft or direct the operator of a craft to stop it.
- d. Except in an emergency, an enforcement officer shall not give a direction under subsection c) of the Boating Safety manual in respect of any craft in a public harbour for which a harbour master is appointed without the prior consent of the harbour master.
- e. Every person shall comply with the requirements of an enforcement officer in the course of carrying out duties and functions under these Regulations.

## **14.2 Collision Regulations**

Boat operators must understand and be able to apply basic understanding of the [Collision Regulations](#) which outline the “rules of the road” to prevent collision on the water. Among other things, the Collision regulations outlines which vessel has the right-of-way over another, safety procedures in day, night or restricted visibility, and use of both sound and light signals. Collision Regulations Rules are clear, specific and apply to operators of any canoe to an ocean liner.

## **14.3 The Criminal Code, Canada Shipping Act, and Contraventions Act**

Small boat operators can be charged with the following criminal offenses:

- a. Operating a craft in a manner dangerous to the public;
- b. Operating a vessel while impaired by alcohol or drugs;
- c. Failing to keep an eye on people aboard the boat;
- d. Failing to stop and offer assistance at the scene of an accident;
- e. Sending false distress signals;
- f. Interfering with navigational aids by concealing, altering, removing or tying up to;  
and
- g. Operating a craft known to be unseaworthy.

## APPENDIX A – TERMS OF REFERENCE

The purpose of the University Boating Safety Committee is to:

- a. Promote safe boating practices with the University;
- b. Write and periodically update University Boating Regulations. Such regulations should be written in a manner compatible with the standards and regulations of the Canadian Standards Association, the Canadian Association for Underwater Science, and standards legislated federally and provincially. Submit regulations for approval to the Senior Executive Committee;
- c. Keep current on legislation and standards related to safe boating and diving as they pertain to boat operations; and advise accordingly the University and its employees, faculty and students involved with boat operations;
- d. Advise the President through his/her delegate, on matters related to boating;
- e. Upon request, serve as University representation to government and other agencies involved in formulating regulations or standards as they relate to University boating operations;
- f. Investigate alleged violations of University Boating Regulations;
- g. Participate in the investigation of any accidents, near accidents, alleged unsafe practices, employee or student concerns and any other incidents related to boating under the auspices of the University which may have implications for safety;
- h. Review periodic reports and recommendations from the University Boat Safety Officer concerning boating operations and practice;
- i. Promote safe boating practice within the University;
- j. The committee will have full authority to suspend any boating operations under University auspices which it believes to be unsafe or in violation of University Boating Regulations;
- k. The committee will have authority to call for any documents or reports necessary to fulfill its purpose and to summon witnesses if required;
- l. The University Dive Safety Officer will be delegated by the committee to review, assess, prohibit or approve any proposals involving boat safety which may have a direct or indirect bearing on diving operations to ensure compliance with University Diving regulations; and
- m. The Committee will submit an annual report to the President, through his/her delegate, on its activities.

## **APPENDIX B – UNIVERSITY OF NEW BRUNSWICK, SAINT JOHN, BOATING SAFETY ADMINISTRATION**

Vice – President of UNBSJ

Assistant Vice President of UNBSJ

Dean of Science, Applied Science and Engineering

Manager of Environmental Health, Safety & Security

Boat Safety Committee

Boat Safety Officer

Boating Project Director

Boat Operator

Boat Crew



## Appendix C – University of New Brunswick Boating Information Form

Name: \_\_\_\_\_

Address: \_\_\_\_\_

(Office): \_\_\_\_\_

(Home): \_\_\_\_\_

Tel.No.

(Office): \_\_\_\_\_ Home: \_\_\_\_\_

Fax No: \_\_\_\_\_ Email: \_\_\_\_\_

Faculty      Staff      Student

Year of Pleasure Craft Operator Course: \_\_\_\_\_

PCOC # \_\_\_\_\_

Boating Experience:

Vessel Type:

Canoe      Sea Kayak      Open <6m      Open 6-8m      >12m

Operational Years:

1 \_\_\_ 2 \_\_\_ 3 \_\_\_ 4 \_\_\_ 5 \_\_\_ 6 \_\_\_ 7 \_\_\_ 8 \_\_\_ 9 \_\_\_ 10 \_\_\_ 11+ \_\_\_

Safety Courses (Date of completion): CPR \_\_\_\_\_ Provider \_\_\_\_\_

Other Boating courses or skills:

---

---

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

Boat Safety Officer \_\_\_\_\_

**APPENDIX D – BOATING SAFETY ACKNOWLEDGMENT FORM**

I, \_\_\_\_\_, have fully reviewed University of New Brunswick's Boating Safety Manual and do acknowledge and understand its contents and having full awareness of the hazardous risks of boating operations, will abide by the policies laid down in this document.

Dated this \_\_\_\_\_ day of \_\_\_\_\_ 20\_\_

Witness \_\_\_\_\_

Signature \_\_\_\_\_

## References

Transport Canada

Canada Shipping Act

Small Vessel Regulations

“On Board” with the Canadian Red Cross  
A Complete Study Guide and Boating Safety Resource

Canadian Coast Guard

Canadian Standards Association, Z275.4-02, Competency Standard for Diving Operations