TP 13206E

SAFETY EQUIPMENT ACCESSIBILITY ON SMALL COMMERCIAL PASSENGER VESSELS

March 1998

Prepared for

Transportation Development Centre
Safety and Security
Transport Canada

by

MIL Systems

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The views expressed in this report are those of the authors and not necessarily the opinions or views of the Transportation Development Centre.

Un sommaire français se trouve avant la table des matières.

Transport Canada / Transports Canada

PUBLICATION DATA FORM

1. Transport Canada Publication No.	2. Project No.	3. Recipient's Catalogue No.
TP 13206E	9295	

4. Title and Subtitle	5. Publication Date
Safety Equipment Accessibility on Small Commercial Passenger Vessels	March 1998
	6. Performing Organization Document No.

7. Author(s)	8. Transport Canada File No.
Andrew Prior	ZCD1460-379

9. Performing Organization Name and Address	10. PWGSC File No.
MIL Systems 200-1150 Morrison Drive Ottawa, Ontario K2H 8S9	XSD92-00242-(651)
	11. PWGSC or Transport Canada Contract No. T8200-2-2557/02-XSD

12. Sponsoring Agency Name and Address	13. Type of Publication and Period Covered
Transportation Development Centre (TDC) 800 René Lévesque Blvd. West 6th Floor Montreal, Quebec H3B 1X9	Final
	14. Project Officer A. Taschereau

15. Supplementary Notes (Funding programs, titles of related publications, etc.)

Funded by Transport Canada Marine Safety Directorate

16. Abstract

This report documents investigations made into the safety equipment carried on board small commercial passenger vessels (GRT < 5 t, < 12 passengers), the accessibility of that equipment and general operational safety. Of specific concern are vessels operating as nature tour/sightseeing boats (i.e. whale watching), charter fishing boats and charter diving boats. Investigations included a review of relevant Transportation Safety Board (TSB) reports, a review of applicable Canadian regulations and surveys of 20 vessels.

Based on the investigations made, general conclusions are drawn regarding small commercial passenger vessels operating in Canada. Based on these conclusions, a number of recommendations were made including identification of the need for action concerning:

- pre-departure briefings
- operator training and certification
- sail plans
- equipment requirement notices
- markings and placards
- inspections
- regulatory reform
- detaining orders and
- development of a centralized information resource (Internet) for owners/operators

17. Key Words	18. Distribution Statement
Safety, accessibility, small passenger vessel, tour boat, charter fishing boat, dive boat	Limited number of copies available from the Transportation Development Centre

19. Security Classification (of this publication)	20. Security Classification (of this page)	21. Declassification (date)	22. No. of Pages	23. Price
Unclassified	Unclassified	—	xii, 44, apps	—

Transports Canada Transport Canada

FORMULE DE DONNÉES POUR PUBLICATION

1. N° de la publication de Transports Canada	2. N° de l'étude	3. N° de catalogue du destinataire
TP 13206E	9295	

4. Titre et sous-titre	5. Date de la publication
Safety Equipment Accessibility on Small Commercial Passenger Vessels	Mars 1998
	6. N° de document de l'organisme exécutant

7. Auteur(s)	8. N° de dossier - Transports Canada
Andrew Prior	ZCD1460-379

9. Nom et adresse de l'organisme exécutant	10. N° de dossier - TPSGC
MIL Systems 200-1150 Morrison Drive Ottawa, Ontario K2H 8S9	XSD92-00242-(651)
	11. N° de contrat - TPSGC ou Transports Canada T8200-2-2557/02-XSD

12. Nom et adresse de l'organisme parrain	13. Genre de publication et période visée
Centre de développement des transports (CDT) 800, boul. René-Lévesque Ouest 6e étage Montréal (Québec) H3B 1X9	Final
	14. Agent de projet A. Taschereau

15. Remarques additionnelles (programmes de financement, titres de publications connexes, etc.)

Recherche financée par la Direction générale de la sécurité maritime, Transports Canada

16. Résumé

Ce rapport rend compte d'une recherche portant sur l'équipement de secours à bord des petites embarcations commerciales destinées au transport des passagers (moins de cinq tonnes de jauge brute, moins de 12 passagers), sur l'accessibilité de cet équipement et sur la sécurité générale associée à l'exploitation de ces embarcations. Les chercheurs se sont particulièrement intéressés aux embarcations utilisées pour des excursions (d'observation des baleines) et aux embarcations affrétées pour la pêche sportive et la plongée. L'étude comportait l'analyse de rapports d'accidents du Bureau de la sécurité des transports du Canada (BSTC) mettant en cause ce genre d'embarcations, une revue de la réglementation canadienne pertinente et l'inspection de 20 embarcations.

L'étude a mené à de grandes conclusions concernant les petits bateaux à passagers commerciaux exploités au Canada, lesquelles ont débouché sur un certain nombre de recommandations. Celles-ci touchent les exposés sur :

- les mesures de sécurité faits avant le départ
- la formation et la certification des exploitants
- les plans de navigation
- les avis sur les exigences relatives à l'équipement de secours
- les marquages/écriteaux
- les inspections
- la réforme réglementaire
- les ordres de détention
- la mise en place d'une banque de données centralisée (sur Internet) à l'intention des propriétaires/exploitants

17. Mots clés	18. Diffusion
Sécurité, accessibilité, petit bateau à passagers, bateau d'excursion, bateau de pêche affrété, bateau de plongée	Le Centre de développement des transports dispose d'un nombre limité d'exemplaires.

19. Classification de sécurité (de cette publication)	20. Classification de sécurité (de cette page)	21. Déclassification (date)	22. Nombre de pages	23. Prix
Non classifiée	Non classifiée	—	xii, 44, ann.	—

ACKNOWLEDGEMENTS

The authors would like to thank the following for their guidance and assistance during this project:

André Taschereau - Transportation Development Centre
John Grinstead - Transport Canada, Ottawa

Thanks are also extended to the following for their support in providing information:

Robert Bradbury - Transport Canada, Kingston
Ed Lavender - Transport Canada, Sarnia

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SUMMARY

This study was commissioned in 1997 by the Transportation Development Centre (TDC). The subject of the report is small commercial passenger vessels of less than 5 GRT carrying not more than 12 passengers on limited voyages. The emphasis is on tour boats (i.e., whale-watching tours) and boats engaged in charter sport fishing.

The objective of this study was to provide an assessment of the safety equipment carried aboard these vessels, the accessibility of that equipment and the general operational safety of the vessels. Investigations made to achieve this objective included:

- a review of Transportation Safety Board (TSB) reports dealing with small commercial passenger vessels;
- a review of current Canadian regulations applicable to these vessels; and
- completion of 20 vessel surveys and candid discussions with owners/operators.

Based on the investigations noted above, the following recommendations were made.

- Pre-departure Briefings: Transport Canada should develop and publish guidelines to aid operators in preparing pre-departure briefings to be given to passengers.
- Operator Training and Certification: Transport Canada should develop syllabi pertaining to training courses for operators of tour boats and charter fishing vessels. These courses would be given by a marine training institute or boating organization like CPS, in order to ensure a base level of competency among operators.
- Sail Plans: Transport Canada should promote the logging of basic sail plans with an operator's appointed shore-based emergency contact.
- Equipment Requirements Notifications: To promote regulatory compliance, Transport Canada should periodically publish notifications reminding operators of basic regulatory requirements regarding safety equipment and procedures.
- Marking/Placards: Transport Canada should issue standards governing the marking of stowage lockers containing safety equipment. Stowage compartments containing essential safety equipment should be clearly marked.
- Inspections: Transport Canada should ensure that periodic inspections for small passenger vessels are carried out by qualified marine surveyors.
- Regulatory Modifications: Transport Canada's modification of regulations pertaining to small passenger operators should continue to be done in close consultation with related industry groups and associations.

- Notice to Comply/Detaining Order: Notice to comply should be issued for non-safety critical elements only. Vessels that are inspected and found to be non-compliant with safety critical equipment should be issued with detaining orders immediately.

- Use of Internet Resources: Transport Canada should create an information resource centre for small passenger vessel operators as part of their Internet Web site. This site would collate and present safety information to operators.

Note that the order in which the recommendations appear does not represent any perceived order of importance and/or cost.

SOMMAIRE

Ce rapport rend compte d'une étude commandée en 1997 par le Centre de développement des transports (CDT) portant sur les petits bateaux à passagers commerciaux de moins de 5 GRT, pouvant accueillir un maximum de 12 passagers pour de courts voyages. L'attention a surtout porté sur les embarcations utilisées pour des excursions d'observation des baleines et sur les bateaux affrétés pour la pêche sportive.

L'objectif de l'étude consistait à évaluer l'équipement de secours transporté à bord de ces embarcations, l'accessibilité de cet équipement et la sécurité générale associée à l'exploitation de ces bateaux. Les moyens pris pour atteindre cet objectif comprenaient :

- une analyse de rapports d'accidents du Bureau de la sécurité des transports du Canada (BSTC) mettant en cause des petits bateaux à passagers commerciaux;
- une revue de la réglementation canadienne en vigueur visant ces bateaux;
- l'inspection de 20 bateaux et des discussions libres avec les propriétaires/ exploitants.

Les activités susmentionnées ont débouché sur les recommandations suivantes :

- Exposé sur les mesures de sécurité faits avant le départ - Que Transports Canada élabore et publie des lignes directrices pour guider les exploitants dans la mise au point des consignes de sécurité à communiquer aux passagers avant le départ.
- Formation et certification des exploitants - Que Transports Canada mette au point des syllabus touchant les cours de formation pour les exploitants de bateaux d'excursion et de bateaux de pêche sportive. Ces cours seraient offerts par un institut en formation maritime ou un organisme de navigation de plaisance comme l'ECP, afin de garantir un niveau minimal de compétence dans la conduite de ces embarcations.
- Plans de navigation - Que Transports Canada fasse de la promotion afin d'inciter les exploitants à déposer leurs plans de navigation auprès d'un contact à terre désigné pouvant être joint en cas d'urgence.
- Avis sur les exigences relatives à l'équipement de secours - Que Transports Canada publie des avis périodiques rappelant aux exploitants les exigences réglementaires de base concernant l'équipement de secours et les procédures en cas d'urgence, de façon à favoriser la conformité à ces règlements.
- Marquages/Écriteaux - Que Transports Canada établisse des normes sur le marquage des compartiments servant au rangement de l'équipement de secours. Que les casiers contenant l'équipement de secours essentiel soient clairement identifiés.
- Inspections - Que Transports Canada s'assure qu'un programme d'inspection périodique des petits bateaux à passagers soit mené par des inspecteurs maritimes qualifiés.

- Modifications des règlements - Que la modification, par Transports Canada, des règlements touchant les exploitants de petits bateaux à passagers, continue de se faire en étroite collaboration avec les divers groupes et associations de l'industrie.

- Avis d'infraction/Ordres de détention - Que les avis d'infraction ne soient envoyés que lorsqu'il y a un manque d'équipement non critique pour la sécurité. Qu'on procède immédiatement à l'émission d'un ordre de détention lorsqu'un bateau, après inspection, est jugé non conforme aux règles touchant l'équipement de première nécessité.

- Utilisation des ressources Internet - Que Transports Canada crée un site Internet à l'intention des exploitants de petits bateaux à passagers commerciaux, dans lequel seraient regroupées et présentées des données utiles touchant la sécurité.

À noter que les recommandations ci-dessus sont présentées dans un ordre aléatoire, qui ne tient pas compte de leur importance ni de leur coût respectifs relatifs.

TABLE OF CONTENTS

1. INTRODUCTION

In 1997, the Transportation Development Centre (TDC) commissioned MIL Systems to conduct investigations and report on the accessibility of safety equipment aboard small passenger and charter vessels. The "vessels of interest" were characterized as follows:

- commercial passenger vessels carrying not more than 12 passengers, not pleasure craft or commercial fishing vessels;
- 8.0 m or less in length;
- GRT < 5 t ;
- voyage class:
  - home trade voyage Class III,
  - home trade voyage Class IV,
  - inland voyage Class II,
  - minor waters voyage Class I, or
  - minor waters Class II.

The equipment items considered as "safety equipment" for the purposes of this investigation included:

- Personal Floatation Devices (PFDs)/Life Jackets;
- Life Buoys;
- Bailers and Pumps;
- Boat Hooks;
- Oars, Paddles and Anchors;
- Portable Fire Extinguishers;
- Fire Buckets;
- Distress Flares;
- Communications Equipment;
- Navigation Equipment; and
- Emergency Radio Position Indicating Radio-Beacon (EPIRB).

MIL Systems' investigations into the accessibility of "safety equipment" aboard the "vessels of interest" included the following steps:

- The review of recommendations and background reports issued by the Transportation Development Board (TSB) concerning safety equipment aboard small passenger vessels.

- The review of the relevant Canadian regulatory regime (regulations, standards/ guidelines) governing safety equipment aboard small passenger vessels.

- Performing a statistically significant number of surveys (~20) on small passenger vessels in Canada to obtain an understanding of what safety equipment is commonly carried aboard these vessels and the accessibility of this equipment.

- Commenting on the results of the surveys with respect to the adherence of these vessels to current regulations and providing discussion on any remedial action that should be taken regarding equipment carried aboard these vessels.

- Commenting on the regulations that apply to the vessels of interest and providing discussion on remedial action that should be taken regarding the regulations themselves.

- Providing general conclusions and recommendations based on the work completed during the project.

The following sections of this report (Sections 2 through 8) document MIL Systems' completion of the project "steps" as noted above.

2. TSB REPORTS

One of the primary driving forces behind the commissioning of this report was recommendations made by the Transportation Safety Board (TSB) regarding the vessels of interest. These recommendations and the background TSB reports are discussed below.

On April 25th, 1996, TSB released "Five Marine Safety Recommendations Concerning the Safety of Small Sight-Seeing Vessels as a Result of Two Separate Investigations into the Grounding, 11-09-93, and the Sinking, 12-09-93, of the 'TAN 1' in the St. Lawrence River off Les Escoumins, Quebec". In this release the TSB recommended that the Department of Transport:

[1] develop training standards and certification requirements for the operators of small sightseeing boats that carry fare-paying passengers.

[2] amend the regulations to require sightseeing boats that carry fare-paying passengers to be fitted with adequate radio equipment and to report to the VTC, before departure, the number of persons aboard.

[3] and the Department of Fisheries and Oceans, in cooperation with police forces and SAR personnel, explore means of improving the monitoring and inspection of small passenger-carrying commercial vessels.

[4] require all small boats that carry fare-paying passengers to undergo safety inspections to ensure their seaworthiness and operational safety.

[5] require the operators of small sightseeing boats to provide pre-departure safety instructions to the passengers for normal operating conditions and for emergency situations.

The full text of this TSB release is presented in Appendix A. The TSB release and the background reports cited below may be found at the TSB web site; http://bst-tsb.gc.ca.

Recommendations [1], [2] and [3] above were made in the TSB marine occurrence Report #93L0003. This report documents a voyage of the "TAN 1" and "TAN 2"; two zodiac-type open boats of 7.62 m length and less then 5 GRT.

On August 11th, 1993 while on a marine mammal-watching tour, TAN 1 and TAN 2 found themselves operating in extremely poor visibility conditions due to thick fog. TAN 2 was not equipped with radar and the operator lost his bearings. A local ferry picked up the TAN 2 on her radar and was able to guide TAN 2 safely to shore. TAN 1, contacted the Vessel Traffic Centre (VTC) to advise that she was grounded with 12 passengers (plus one operator) aboard and required assistance. Communications between TAN 1 and the VTC was cutoff due to failure of the radio set aboard TAN 1. TAN 1 managed to free herself on the rising tide and lay at anchor awaiting assistance. With some difficulty, the pilot boat Abraham Martin, was able to pick up TAN 1 on

radar and escort her back to shore. One of the propeller blades of the Abraham Martin was damaged during rescue operations.

Careful review of this report identifies a number of important facts:

- TSB analysis suggests that weather conditions prevailing in the area throughout the day of the occurrence warranted postponing of the cruise. Foggy periods occur frequently along the coast during summer and vessels must therefore be equipped with accurate navigational instruments to avoid disorientation.

- Canadian Coast Guard (CCG) marine surveyors inspected TAN 1 on July 23rd, 1993 and issued a list of certificates and equipment that did not comply with regulations or was missing altogether, including:

  - radio station license;
  - radio-telephone operator's certificate;
  - radio inspection certificate;
  - standard life jackets;
  - radar reflector; and
  - an extinguisher of adequate capacity.

  Both TAN 1 and TAN 2 were issued notices to comply with the requirements of the Small Vessel Regulations within three weeks. At the time of this occurrence (August 11th, 1993), these vessels still did not comply. On August 13th, CCG issued a detaining order against both vessels until they complied.

- Neither TAN 1 or TAN 2 contacted VTC to advise of their voyage plan. As these vessels are less than 20 m in length, this is not a regulatory requirement. Subsequent to this incident the Canadian Coast Guard, CCG, published Ship Safety Bulletin No. 4/95, entitled "Recommended Safety Communications Measures for Small Craft". This bulletin directed to operators of all small craft explains the benefits of sail plans and procedures to file a sail plan with CCG. It also encourages boat operators to give safety briefings and demonstrate what measures to take in an emergency.

- Failure of the single radio aboard TAN 1 was attributed to depleted batteries. VHF radios were fitted to both TAN 1 and TAN 2; however, the radios and installation did not comply with the Ship Station Radio Regulations. The Radio Operator's Certificate Regulations require that VHF radio-telephone operators hold a certificate, neither of the operators (TAN 1 or TAN 2) held such a certificate at the time of occurrence.

- During this incident rescue efforts were delayed because of confusion over the geographic location concerned and the number of passengers aboard TAN 1.

- Rescue efforts were hampered by the absence of a radar reflector aboard TAN 1.

There is strong reason to attribute a lack of training as a significant cause for this incident. The tours were undertaken even though weather conditions were known to be difficult (fog), the vessels were not equipped for instrument navigation, safety equipment was known to be inadequate (CCG notice had been issued) and safety equipment was not well maintained (depleted batteries). The operator was disorientated by fog and unable to navigate by compass because it was out of adjustment or the operator did not know how to use it.

The absence of regulations for vessels such as TAN 1 and TAN 2 must also be considered a significant factor in this occurrence as noted below.

- Vessels not over 5 GRT and carrying not more than 12 passenger are not required to undergo regulatory inspections by CCG. However, these vessels must comply with the Small Vessel Regulations (CSA-76).

- Regulations pertaining to Vessel Traffic Services Zones apply only to vessels of 20 m length or more. There is no regulatory requirement for vessels such as TAN 1 and TAN 2 to report to VTC. As noted above CCG Ship Safety has subsequently published recommendations for small craft operators to file sail plans but this is not a regulatory requirement.

- The Canada Shipping Act (CSA) exempts vessels under 5 GRT that carry fewer than 12 passengers from the requirement to have a certified officer. No training or certification is required to operate small passenger carrying vessels of this type; there is not even a requirement for the operator to attend a basic navigation course.

Recommendations [4] and [5] above were made in the TSB marine occurrence Report #93l0004. This report documents another voyage of the TAN 1; same vessel that was subject to TSB Report #93l0003.

On September 12, 1993, the TAN 1 was engaged in a whale watching tour with 12 passengers and an operator aboard. TAN 1 was traveling at high speed in heavy seas and was being tossed quite violently from wave crest to wave crest. One of the passengers sustained an injury and the operator put the motors in neutral and helped this passenger. The starboard motor stalled; however, the operator was able to restart it and the tour continued at reduced speed. Waves began breaking over the stern and began to flood the transom. When the starboard motor stalled again and the vessel turned sideways to the waves, the operator used the port motor to put the vessel head-on to the sea. While trying to restart the starboard motor, the port motor stalled. While the operator was trying to re-start the motors, the boat began taking on water. There were no bailers aboard and flooding continued. Water accumulated in the vessel bottom and lifted the under-deck locker; the passengers found life-jackets. The operator used VHF to contact the pilot boat Abraham Martin to request assistance. In the meantime the TAN 3, another vessel owned by the same tour company as TAN 1, headed towards her to lend assistance. Before the TAN 3 could reach her, TAN 1 capsized and sank by the stern throwing all occupants into the water; some life jackets unfastened, while other occupants had no life jackets at all. Three passengers managed to cling to the bow of

TAN 1 while others were sent adrift. The Vessel Traffic Centre (VTC) was alerted and in turn advised other tour boats in the area. The 13 occupants of TAN 1 were all quickly rescued from the water. All were safe and sound; however, some were hospitalized to receive treatment for hypothermia due to cold water immersion.

Careful review of this report identifies a number of important facts:

- Departure and number of passengers aboard were reported to the VTC before the tour began.

- Before the voyage passengers were told to distribute themselves evenly in the boat and remain seated throughout the tour except when the boat was stationary. Passengers were not briefed on the location or use of life jackets carried aboard.

- Life jackets were stowed aboard in an under-deck locker; there was no sign, placard or indication of where they were stowed.

- The operator wore a Mustang vest and all the passengers were wearing wetsuits; although it is noted in the report that some of the wet suits were in ill repair (holes).

- There were no bailers aboard TAN 1 at the time of the incident.

- At the time of the incident CCG had lifted the detaining order previously placed on this vessel (as noted in Report #93l0003 discussed above) because the owner had obtained his radio license and the equipment was in compliance with the requirements of the Small Vessel Regulations (CSA-76). It should be noted here that CSA-76 requires either a bailer or manual pump to be aboard. TAN 1 was fitted with both a manual and electric bilge pump but neither was operational.

- On the day of the occurrence, 45 minutes after departure, Environment Canada issued a small vessel warning because of strong winds. The operator of TAN 1 heard this warning on VHF radio but continued the tour as he felt he was sheltered from the wind. Wave height was estimated at one or two metres.

- The operator of TAN 1 did not issue a distress call on channel 16 of the VHF radio. Instead, he used channel 9 to call the Abraham Martin and channel 10 to inform them that vessel that the TAN 1 had a large ingress of water. This message was picked up by VTC.

- Witnesses noted greyish smoke from the exhaust pipes of the motors on TAN 1, an indication of the presence of water in the fuel. TSB Engineering Laboratory examined the motors and noted traces of prolonged contamination and deposits of salt water and other substances in the fuel supply system and carburetors; these had to come from the fuel tank. Several deficiencies were noted in the design of the tank that did not meet the Construction Standards for Small Vessels, Part IV.

- The TSB Engineering Laboratory informed CCG of deficiencies that jeopardized the seaworthiness of TAN 1, in particular, problems associated with water contamination of the fuel due to problems with the vent pipe, filters to retain water and fuel tank.

- The TAN 1 design was such that while still or at reduced speed water could ingress through an opening in the transom; at speed, water flows outward (Venturi effect).

This TSB report, as well as the one discussed above, identifies a number of regulatory issues from which small tour boats such as TAN 1 are exempt by virtue of being less than 5 GRT and carrying no more than 12 passengers.

In addition to the two TSB reports described above, other reports have dealt with small passenger vessels and boats available for charter. Of particular interest are TSB Report #M92W1031 “Overturning of a Small Open Charter Boat off Mara Rock, Entrance to Barkley Sound, British Columbia, 02 April 1992" and TSB Report #M92C2007 "Capsizing of the ‘Co-Hoe Charters’ off Manitoulin Island, Lake Huron, 05 July 1992". Both of these reports deal with occurrences involving the loss of life.

We do not provide a detailed synopsis of these two TSB reports here. However, some of the findings from these reports are of particular note.

[M92W1031]
- The rental company’s instructions to the renters did not contain information on weather or warning about the possibility of encountering higher-than-normal waves in the area.
- There was no means of communication between the boat and the rental company, nor was there a means of alerting the authorities in case of an emergency.
- There was little means of attracting attention to the rescuers. The boat’s pyrotechnics, which were not secured, were not available after the boat capsized.

[M92C2007]
- No instruction was given to the group in the use or location of the safety equipment aboard.
- A sailing plan was not filed with a responsible person ashore.

As part of the "Action Taken" sections, both of the reports noted immediately above cite recommendations made by the TSB to Transport Canada issued February 1994. The TSB recommended that the Department of Transport:

- conduct a formal safety evaluation of the Canadian charter boat industry to include the adequacy of vessel inspection and crew certification requirements as well as current operational practices; and

- expedite its currently proposed amendment to the Canada Shipping Act with respect to the carriage of fare paying public as passengers on charter vessels.

As an interim measure, with respect to life-saving equipment for passengers, the TSB further recommended that the Department of Transport:

- encourage all charter vessel operators to equip their vessels with life-saving and emergency communication and/or signaling equipment suitable for the type of operation;

- encourage charter boat operators to establish sailing plans and to conduct passenger safety briefings before getting underway; and

- initiate research and development into ways of ensuring the accessibility of all emergency equipment, including in a capsizing situation.

The discussion of TSB reports presented here is provided as background information to the reader. The authors whole-heartedly agree with all recommendation made by TSB. As noted in the following sections (Sections 3 and 4), many of the problems that have been addressed by the TSB still exist. Of particular concern is the lack or regulations pertaining to vessels of not more than 5 GRT and carrying no more than 12 passenger (see Section 3). Although there is a general awareness of problems and risks, there is still great variance in the operational practices of operators of these vessels (see Section 4).

3. CANADIAN REGULATIONS

The Canadian Shipping Act (CSA), its regulations and the associated Canadian Coast Guard (CCG) Ship Safety Publications (Standards and Guidelines) form the basis of Canada's marine regulatory regime. Appendix B contains tables listing all CSA Regulations and Ship Safety Publications. The following list identifies those of particular relevance regarding safety and navigation equipment requirements for small vessels:

- CSA: The Canada Shipping Act
- CSA-27: Home Trade, Inland and Minor Waters Voyages Regulations
- CSA-20: Fire Detection and Extinguishing Equipment Regulations
- CSA-32: Life Saving Equipment Regulations
- CSA-76: Small Vessel Regulations
- CSA-45: Navigating Appliances and Equipment Regulations
- CSA-14: Collision Regulations
- CSA-63: Ship Station Radio Regulations
- TP-11717: Standards for the Construction and Inspection of Small Passenger Vessels
- TP-1332: Construction Standards for Small Vessels

The following subsections discuss the impact of these regulations and standards on the vessels of interest to this study.

3.1 Canada Shipping Act (CSA)

The requirements of many regulations and standards are dependant on the type of voyage for which a vessel is intended. The *Canada Shipping Act* (CSA), Section 2 "Definitions" defines the following types of voyages:

> **home-trade voyage** means a voyage, not being an inland or minor waters voyage, between places within the area following, namely, Canada, the United States other than Hawaii, St. Pierre and Miquelon, the West Indies, Mexico, Central America and the northeast coast of South America, in the course of which a ship does not go south of the sixth parallel of north latitude;
>
> **inland voyage** means a voyage, not being a minor waters voyage, on the inland waters of Canada together with such part of any lake or river forming part of the inland waters of Canada as lies within the United States or on Lake Michigan;
>
> **minor waters voyage** means a voyage within the following limits, namely, the minor waters of Canada together with such part of any lake or river forming part of the minor waters of Canada as lies within the United States;
>
> **inland waters of Canada** means all the rivers, lakes and other navigable fresh waters within Canada, and includes the St. Lawrence River as far seaward as a straight line drawn (a) from Cap des Rosiers to West Point Anticosti Island, and (b) from Anticosti Island to the north shore of the St. Lawrence River along the meridian of longitude sixty-three degrees west;

minor waters of Canada means all inland waters of Canada other than Lakes Ontario, Erie, Huron, including Georgian Bay, and Superior and the St. Lawrence River east of a line drawn from Father Point to Point Orient, and includes all bays, inlets and harbours of or on those lakes and Georgian Bay and such sheltered waters on the sea-coasts of Canada as the Minister may specify;

3.2 CSA-27: Home Trade, Inland and Minor Waters Voyages Regulations

Depending on the type of voyage for which a vessel is intended, the vessel is assigned a classification. The *Regulations Respecting the Classification of Home-Trade, Inland and Minor Waters Voyages* (CSA-27) classifies vessels as follows:

4. (1) A home-trade voyage, Class I, means a home-trade voyage in the course of which a steamship goes anywhere within the limits of a home-trade voyage as defined in the Canada Shipping Act.

4. (2) A home-trade voyage, Class II, means a home-trade voyage in the course of which, (a) on the Atlantic coast, a steamship does not go south of the port of New York; (b) on the Pacific coast, a steamship does not go south of Portland, Oregon; (c) the steamship is at no time more than 120 miles off shore; and (d) the distance between suitable ports of refuge on the voyage does not exceed 200 miles.

4. (3) Subject to section 7, a home-trade voyage, Class III, means a home-trade voyage made within the limits specified in the inspection certificate of the steamship making the voyage, in the course of which,
(a) on the Atlantic coast, the steamship does not go south of the port of New York;
(b) on the Pacific coast, the steamship does not go south of Portland, Oregon;
(c) the steamship is at no time more than 20 miles off shore; and
(d) the maximum distance between suitable ports of refuge on the route does not at any time exceed 100 miles.

4. (4) Subject to section 7, a home-trade voyage, Class IV, means a home-trade voyage in the course of which a steamship does not go beyond certain sheltered waters specified in the inspection certificate, or, in fine weather, on short voyages so specified, beyond the limits of those sheltered waters, between May 1st and September 30th in any year.

5. (1) An inland voyage, Class I, means an inland voyage in the course of which a steamship goes anywhere within the limits of an inland voyage as defined in the Canada Shipping Act.

5. (2) Subject to section 7, an inland voyage, Class II, means an inland voyage made within the limits specified in the inspection certificate of the steamship making the voyage in the course of which,
(a) the steamship is at no time more than 20 miles off shore; and
(b) the maximum distance between suitable ports of refuge on the route does not exceed 100 miles.

6. (1) A minor waters voyage, Class I, means a minor waters voyage in the course of which a steamship goes anywhere within the limits of a minor waters voyage as defined in the Canada Shipping Act.

6. (2) Subject to section 7, a minor waters voyage, Class II, means a minor waters voyage made in certain lakes or rivers that are specified in the inspection certificate, and the greatest width of which does not exceed 2 miles, or a voyage in the course of which a steamship does not go beyond the limits of certain sheltered waters specified in the inspection certificate, or on short voyages so specified, beyond the limits of such lakes, rivers or waters, in fine weather, between May 1st and September 30th in any year, provided that, where a voyage is made in any lake or river that has a width in excess of 2 miles for a short distance only and it appears to the Board to be unreasonable to have such a voyage classed as a minor waters voyage, Class I, the Board may, in its discretion, class that voyage as a minor waters voyage, Class II.

7. The Board shall decide, from time to time, having regard to the degree of risk that may be encountered, whether any voyage herein defined as a home-trade voyage, Class III, home-trade voyage, Class IV, inland voyage, Class II, or minor waters voyage, Class II, is a voyage of the next higher class, as herein defined.

3.3 CSA-20: Fire Detection and Extinguishing Equipment Regulations

The *Fire Detection and Extinguishing Equipment Regulations* (CSA-20) are the primary regulatory instrument defining shipboard fire detection and protection system requirements. The vessels of interest to this study are limited to carrying 12 passengers or fewer. These vessels <u>are exempt</u> from the *Fire Detection and Extinguishing Equipment Regulations* as noted in Section 3 below:

Application

3. (1) Subject to subsections (2) and (3), these Regulations apply to
(a) ships not over 5 tons, gross tonnage, that carry more than 12 passengers;
(b) passenger ships over 5 tons, gross tonnage;
(c) non-passenger ships over 15 tons, gross tonnage, including lighters, dredges, barges, hoppers and like vessels that are self-propelled; and
(d) non-self-propelled dredges, rock drills, floating elevators, floating pile drivers and like vessels that are subject to inspection.
(2) These Regulations apply to new ships and in so far as is reasonable and practicable to existing ships.
(3) These Regulations do not apply to fishing vessels.
(4) Sections 31, 46, 51, 68, 82 and 94 do not apply to ships registered or licensed in Canada after June 1, 1978.
(5) Sections 31.1, 46.1, 50.1, 51.1, 68.1, 82.1 and 94.1 apply only to ships registered or licensed in Canada after June 1, 1978

3.4 CSA-32: Life Saving Equipment Regulations

The *Life Saving Equipment Regulations* (CSA-32) are the primary regulatory instrument defining shipboard lifesaving equipment requirements. The vessels of interest to this study are less than 5 GRT and limited to carrying 12 passengers or fewer. These vessels <u>are exempt</u> from the *Life Saving Equipment Regulations* as noted in Section 3 below:

3. These Regulations do not apply in respect of
(a) fishing vessels;
(b) pleasure yachts;
(c) ships that are five tons gross tonnage or under and are certified to carry 12 passengers or fewer;
(d) cargo ships that are 15 tons gross tonnage or under; or
(e) ships capable of engaging in the drilling for, or the production, conservation or processing of, oil or gas.

3.5 CSA-76: Small Vessel Regulations

The *Small Vessel Regulations* (CSA-76) cover vessel licensing, engine power and load capacity plate, precautions against fire and basic lifesaving equipment requirements. Of particular note is the definition of pleasure craft contained within the regulations:

> pleasure craft means a boat, vessel or any other description of water craft that is used exclusively for pleasure and does not carry passengers or goods for hire, reward, remuneration or any object of profit;

The vessels of interest to this study are small tour/sightseeing boats and charter boats used for recreational fishing, these are not considered pleasure craft. The vessels of interest are passenger carrying vessels not over five tons. Consequently they must comply with the Small Vessel Regulations as noted below:

> PART IV - REQUIREMENTS FOR PASSENGER CARRYING VESSELS NOT OVER FIVE TONS
>
> Application
>
> 26. This Part applies to vessels other than pleasure craft, if such vessels are not over 5 tons gross tonnage and carry not more than 12 passengers.
>
> Not over 5.5 m in Length
>
> 27. (1) Every vessel not over 5.5 m in length shall carry
> (a) one approved standard lifejacket or approved small vessel lifejacket for each person on board;
> (b) two oars and rowlocks or two paddles;
> (c) one bailer or one manual pump; and
> (d) one Class B I fire extinguisher.
> (2) The permanently fitted navigation lights on every vessel not over 5.5 m in length shall meet the requirements of the Collision Regulations for those lights.
>
> Over 5.5 m and not over 8 m in Length
>
> 28. (1) Every vessel over 5.5 m and not over 8 m in length shall carry
> (a) one approved standard lifejacket for each person on board;
> (b) two oars and rowlocks, two paddles, or one anchor with not less than 15 m of cable, rope or chain;
> (c) one bailer or one manual pump;
> (d) one Class B I fire extinguisher; and

(e) six approved pyrotechnic distress signals of which at least three shall be of Type A, B or C; and
(f) one of the following throwable devices, namely:
(i) an approved life saving cushion,
(ii) a buoyant heaving line of not less than 15 m in length, or
(iii) an approved 508 mm, 610 mm or 762 mm lifebuoy.
(2) The permanently fitted navigation lights on every vessel over 5.5 m and not over 8 m in length shall meet the requirements of the Collision Regulations for those lights.

Over 8 m in Length

29. (1) Every vessel over 8 m in length shall carry
(a) one approved standard lifejacket for each person on board;
(b) one approved 762 mm diameter lifebuoy with not less than 9 m of rope attached;
(c) one bailer and one manual pump;
(d) six approved pyrotechnic distress signals of any type and six approved pyrotechnic distress signals of Type A, B or C;
(e) one anchor with not less than 15 m of cable, rope or chain;
(f) one Class B II fire extinguisher
(2) Every vessel over 8 m in length shall be fitted with navigation lights and sound signaling apparatus that permit the vessel to comply with the Collision Regulations.

SCHEDULE III - EQUIPMENT STANDARDS

Life Saving Equipment

1. Every lifejacket, personal flotation device (P.F.D.), life saving cushion, lifebuoy and buoyant apparatus required by these Regulations to be carried on a vessel shall be of an approved type and shall bear a stamp or a label indicating it has been so approved.

Lifejackets

2. A lifejacket that complies with the requirements of Schedule XII of the Life Saving Equipment Regulations for approved keyhole type standard lifejackets may be substituted for a small vessel lifejacket or personal flotation device (P.F.D.) required by these Regulations.

Lifebuoy Cores

3. (1) Lifebuoy cores shall be constructed of efficient buoyant material.
(2) Lifebuoys, the cores of which are constructed of a material other than cork, are hereinafter referred to as "synthetic lifebuoys".
(3) Sections 9, 10 and 11 of this Schedule do not apply to a lifebuoy that is, to the satisfaction of the Board, efficient, durable and buoyant and the core of which is constructed of cork.

Lifebuoy Material

4. A synthetic lifebuoy shall be made of material of uniform consistency, free from cracks and perforations and shall not be affected adversely by temperatures ranging from -30°C to 65.6°C.

Lifebuoy Covering

5. (1) If a covering is fitted on a lifebuoy, it shall be made from grey duck conforming to the following specifications:
(a) the weight shall be not less than 360 g/m2;
(b) the threads per 25 mm shall be warp 45, weft 33, 2-ply thread in both warp and weft;
(c) the breaking strength of the duck shall be not less than warp 690 N weft 534 N; and
(d) the sewing shall be carried out with
(i) double linen thread having a breaking strength of not less than 76 N and weighing 1511.9 m/0.5 kg, or
(ii) nylon thread of strength comparable to the linen thread described in sub-paragraph (i).
(2) A lifebuoy that is not covered shall have a hard smooth surface that is resistant to usage.
(3) The cover on a covered lifebuoy and the surface of an uncovered lifebuoy shall be coloured
(a) a highly visible shade of
(i) yellow,
(ii) orange, or
(iii) red quartered with white; or
(b) in the case of a 610 mm or 508 mm lifebuoy, white.

Retro-reflective tape

5.1 Every 762 mm lifebuoy shall have affixed to it retro-reflective tape in accordance with the provisions of Schedule IV to the Life Saving Equipment Regulations.

Lifebuoy Dimensions

6. (1) A 762 mm lifebuoy shall have an inside diameter of 458 mm, an outside diameter of 762 mm, a major axis of 152 mm, and a minor axis of 102 mm.
(2) A 610 mm lifebuoy shall have an inside diameter of 356 mm, an outside diameter of 610 mm, a major axis of 127 mm and a minor axis of 95 mm.
(3) A 508 mm lifebuoy shall have an inside diameter of 280 mm, an outside diameter of 508 mm, a major axis of 114 mm and a minor axis of 89 mm.

Lifebuoy Weight

7. (1) A 762 mm lifebuoy shall not weigh more than 6.124 kg or less than 2.949 kg.
(2) A 610 mm or 508 mm lifebuoy shall not weigh more than 6.124 kg or less than 1.134 kg.

Lifebuoy Grab Lines

8. (1) Each synthetic lifebuoy that is covered shall have grab lines of good quality unsinkable line, well-secured to the cover by sewing or seizing and, in addition, by bands of double thickness of the covering material 75 mm wide around the section of the lifebuoy at four equidistant points, providing four loops of line each not less than
(a) in the case of a 762 mm lifebuoy, 710 mm long;
(b) in the case of a 610 mm lifebuoy, 610 mm long; and
(c) in the case of a 508 mm lifebuoy, 460 mm long.

(2) Each uncovered synthetic lifebuoy shall have grab lines of good quality unkinkable line well-secured to the lifebuoy in a manner equivalent to the manner specified in respect of covered lifebuoys in order to provide four loops of line of the same lengths as those referred to in subsection (1).

Lifebuoy Strength Test

9. (1) The strength test of a 762 mm lifebuoy shall be made by
(a) suspending the lifebuoy core without covering in a vertical position by a strap approximately 50 mm in width passed through the buoy;
(b) suspending a weight of 90 kg from the buoy by means of a similar strap; and
(c) leaving the lifebuoy so suspended for 30 minutes.
(2) The lifebuoy does not pass the strength test if after the test it shows signs of damage or permanent deformation.

Lifebuoy Buoyancy

10. (1) The buoyancy test of a lifebuoy shall be made by floating it for at least 24 hours in fresh water that has 6 mm of gasoline on its surface.
(2) During the buoyancy test the seams of any material covering the lifebuoy shall be open for 150 mm at four equidistant points around the circumference of the lifebuoy and there shall be suspended from it,
(a) in the case of a 762 mm lifebuoy, 14.5 kg of iron; and
(b) in the case of a 610 mm or 508 mm lifebuoy, 7.5 kg of iron.
(3) The lifebuoy does not pass the buoyancy test if at the end of the test the gasoline has affected its buoyancy or chemical structure.

Lifebuoy Inspection

11. (1) Before a batch of lifebuoys is shipped from a factory, the manufacturer shall arrange to have them inspected and tested by a steamship inspector who shall take one lifebuoy from each batch of 250 lifebuoys or less and
(a) test that lifebuoy to ascertain whether it passes
(i) in the case of a 762 mm lifebuoy, the strength and buoyancy test prescribed in sections 9 and 10 of this Schedule, and
(ii) in the case of a 610 mm or 508 mm lifebuoy, the buoyancy test prescribed in section 10 of this Schedule; and (b) inspect and test that lifebuoy to ascertain whether it meets the other requirements of this Schedule respecting lifebuoys.
(2) Where a lifebuoy is inspected and tested pursuant to subsection (1) and passes the tests and meets the other requirements of this Schedule respecting lifebuoys, the inspector shall
(a) inspect the other lifebuoys in the batch to ascertain whether they appear to be similar to the tested lifebuoy; and
(b) on behalf of the Department, approve each lifebuoy in the batch that appears to be similar to the tested lifebuoy by stamping it to indicate that it has been approved and by initialing and dating the approval in indelible ink.
(3) Where a lifebuoy is inspected and tested pursuant to subsection (1) and does not pass the tests or meet the other requirements of this Schedule respecting lifebuoys, the inspector shall select 10 more lifebuoys from the batch and test and inspect them and where
(a) all 10 lifebuoys pass the tests and meet the other requirements of this Schedule respecting lifebuoys, he shall inspect the other lifebuoys in the batch and approve, in accordance with paragraph (2)(b), each of those other lifebuoys that appears to be similar to the 10 tested lifebuoys; or

(b) one of the 10 lifebuoys does not pass the tests or meet the other requirements of this Schedule respecting lifebuoys, he shall reject the whole batch.
(4) When an inspector rejects a batch of lifebuoys, the manufacturer may test the rejected batch and, after eliminating the lifebuoys that do not pass the tests and meet the other requirements of this Schedule respecting lifebuoys, may require an inspector to test the remainder of the batch as if it were a new batch submitted for inspection and testing under subsection (1).

Lifebuoy Approval and Importation

12. (1) Before any lifebuoys are manufactured by any person in Canada, or are imported into Canada, 3 sample lifebuoys shall be submitted to the Board for testing and approval.
(2) After the Board has tested the sample lifebuoys submitted pursuant to subsection (1), one of those lifebuoys shall be returned to the manufacturer or importer via the Steamship Inspection Office in the district from which they were submitted and, in the case of imported lifebuoys, the importer shall retain that sample to be produced to an inspector on request.
(3) An importer of lifebuoys or lifebuoy cores shall obtain a certificate from a government authority of the country of origin stating that the lifebuoys or lifebuoy cores have been inspected during production and that they conform to the sample approved under subsection (2).
(4) Every imported lifebuoy or lifebuoy core shall, before being covered, have stamped on it in indelible ink the approval of the government inspection authority of the country of origin, the stamp to appear on each face at four evenly spaced locations around the circumference.

Lifebuoy Lights

13. (1) Every lifebuoy light shall be of an electric light type.
(2) No lifebuoy lights shall use flame as illumination.
(3) Every lifebuoy light shall be self-igniting and shall be capable of burning for 45 minutes at a luminosity of not less luminosity of not less than 2 cd after exposure to a temperature of -17.8°C for 48 hours.

Lifebuoy Markings

14. (1) Every 610 mm and 508 mm lifebuoy shall be clearly marked to show the name of its manufacturer and the approval number of the Department for that lifebuoy.
(2) Every 610 mm lifebuoy shall be clearly marked with words and numbers to indicate that it is only for use in pleasure craft up to 20 m in length.
(3) Every 508 mm lifebuoy shall be clearly marked with words and numbers to indicate that it is only for use in pleasure craft up to 8 m in length.

Fire Extinguishers

15. Every fire extinguisher required by these Regulations shall
(a) be of a type approved by the Board;
(b) in the case of fire extinguishers manufactured in Canada, bear the approval label of the Underwriters Laboratories of Canada;
(c) in the case of fire extinguishers manufactured in the United Kingdom, have been approved for marine use by the British Department of Trade and Industry; or

(d) in the case of fire extinguishers manufactured in the United States, have been approved for marine use by the United States Coast Guard.

16. Where the total capacity of two or more fire extinguishers carried on a vessel equals at least the capacity of the class of fire extinguisher required by these Regulations, the requirements of these Regulations respecting the carriage of that class of fire extinguisher shall be deemed to have been met.

17. The classes of fire extinguishers set out in the table to this section are hereby prescribed as the classes of fire extinguishers referred to in Parts II, IV and V of these Regulations and a fire extinguisher having a capacity set out in any column of an item of that table is equivalent in capacity to, and is in the same class as, a fire extinguisher having a capacity set out in any other column of that item:

Item	Class	Column I Foam L	Column II Carbon Dioxide kg	Column III Dry Chemical kg	Column IV Soda Acid Water and Load Stream L	Column V Dry Chemical Multi-purposes kg	Column VI Halon 1211 Portable kg
1	A I	4.5	-	-	4.5	0.9	-
2	A II	9.0	-	-	9.0	2.25	-
3	B I	4.5	2.25	0.9	-	0.9	1.36 or 3.175
4	B II	9.0	4.5	2.25	-	2.25	-
5	C I	-	2.25	0.9	-	0.9	1.36 or 3.175
6	C II	-	4.5	2.25	-	2.25	-

Pyrotechnic Distress Signals

18. Every pyrotechnic distress signal described in this schedule shall be of an approved type.

19. (1) A Type A distress signal shall be capable of producing a single bright red star that is projected to the height required by subsection (3) by a rocket and that burns while falling, its rate of fall being controlled by a parachute to 4.57 m/s.

(2) The star referred to in subsection (1) shall burn with a luminosity of not less than 25 000 cd for a period of not less than forty seconds.

(3) Where a Type A distress signal is fired approximately vertically, the star and the parachute shall be ejected at or before the top of the trajectory at a height of not less than 228.6 m and the star shall burn out at a height of not less than 45.7 m from sea level.

(4) A Type A distress signal shall be capable of functioning in accordance with subsections (1) and (2) when fired at an angle of 45□ to the horizontal.

(5) The parachute referred to in subsection (1) shall be attached to the star by a flexible fireproof harness.

(6) The rocket referred to in subsection (1) shall be ignited by a suitable external ignition method.

(7) The ignition device and external surface of the rocket referred to in subsection (1) shall be suitably waterproofed and the entire Type A distress signal, including the ignition and the rocket, shall be packed in a waterproof container.

20. (1) A Type B distress signal shall be capable of producing, in rapid succession and at intervals of not more than 15 seconds, two or more red stars.

(2) Each red star referred to in section (1) shall

(a) be capable of being projected to a height of not less than 91.4 m, burn with a luminosity of not less than 5 000 cd for a period of not less than four seconds, and burn out before touching the sea; or
(b) be capable of being projected to a height of not less than 61 m, burn with a luminosity of not less than 10 000 cd for a period of not less than 5.5 seconds, and burn out before touching the sea.
(3) Where a distress signal produces only a single red star within the 15 second interval required by subsection (1) but meets the requirements of subsection (2) in all other respects, the distress signal or its package shall be clearly marked to indicate that two devices are required to be projected within 15 seconds in order to meet the requirements for one Type B distress signal.
(4) A Type B distress signal shall
(a) contain a firing device capable of throwing the stars automatically; or
(b) be provided with a cartridge-firing device that requires loading for each star.
(5) Where a Type B distress signal contains a cartridge-firing device, the vessel shall carry a sufficient number of cartridges to produce the number of stars required by subsection (1).
(6) A Type B distress signal, including the firing device and the cartridges, if any, shall be suitably waterproofed and packed in a waterproof container.
21. (1) A Type C distress signal shall consist of a flare that is
(a) capable of producing
(i) a bright red light having a luminosity of not less than 15 000 cd for a period of at least one minute,
(ii) a bright red light having a luminosity of not less than 500 cd for a period of at least two minutes, or
(iii) a bright red light having such luminosity less than 5 000 cd but not less than 500 cd for such period greater than one minute as is satisfactory to the Board; and
(b) sheathed to prevent any dripping of burning material.
(2) The external surface of each Type C distress signal shall be suitably waterproofed and each signal shall be packed in a waterproof container.
22. (1) A Type D distress signal shall be a mechanically ignited device capable of producing a dense volume of orange coloured smoke for not less than three minutes.
(2) The device referred to in subsection (1) shall be of such design as to be either hand-held or buoyant.
(3) Where the device referred to in subsection (1) is buoyant, it shall be capable of functioning effectively when afloat in moderate seas.
23. A distress signal and its appliances shall be considered as suitably waterproofed if they are capable of functioning properly after immersion in water for one minute.
24. The date on which a distress signal is manufactured and the lot number of the signal shall be permanently marked thereon.
25. The instructions for operating a distress signal shall be permanently marked thereon in both official languages or the signal shall carry a diagram clearly showing the manner of operation of the signal.
26. No distress signal shall be regarded as meeting the requirements of this schedule if four years or more have elapsed since the date of manufacture.

3.6 CSA-45: Navigating Appliances and Equipment Regulations

The *Navigating Appliances and Equipment Regulations* (CSA-45) cover various items of navigation equipment including magnetic compasses, gyro compasses, navigational radar, radio direction equipment, electronic position fixing equipment, sounding apparatus, speed and distance indicators, rate of turn indicators, maneuvering system indicators, signaling lamps internal communications systems and searchlights.

The vessels of interest to this study are 5 GRT and below and thus are exempt from most of these regulations. However, for the vessels of interest that operate out of sight of navigation marks, an efficient steering compass must be fitted as noted below:

> Magnetic Compasses
>
> 12. (1) Subject to subsections (2) and (3), every ship
> (a) making a voyage other than a voyage described in section 6, or
> (b) that is a pleasure yacht of 20 m or more in length shall be fitted with an efficient steering compass.
> (2) Subsection (1) does not apply to a ship referred to in paragraph (1)
> (a) that is less than 5 tons; and
> (b) navigated within sight of navigation marks.
> (3) Subsection (1) does not apply to a pleasure yacht that is navigated within sight of navigation marks.
> 13. Every magnetic compass required to be fitted on a ship by these Regulations shall be properly adjusted and its table or curve of residual deviations shall be available for inspection on the ship at all times.
> 14. (1) When the compasses on a ship are being inspected by an inspector, the master shall
> (a) show the inspector a certificate of adjustment substantially in the form set out in Schedule I signed by a compass adjuster, or a deviation card signed and dated by a compass adjuster; or
> (b) where the compasses have been found satisfactory to provide heading direction by the master, give the inspector a statement signed by the master and first mate to that effect.
> (2) If the inspector referred to in subsection (1) has reasonable grounds for suspecting that the compasses are not satisfactory, the master of a ship shall show the inspector any relevant documents requested by the inspector for the purpose of determining the condition of the compasses.
> (3) The master of a ship shall take any corrective measures specified by the inspector referred to in subsection (1) if the inspector determines that the compasses are not satisfactory to provide heading direction.

3.7 CSA-14: Collision Regulations

The *Collision Regulations* (CSA-14) deal with various equipment items and operational procedures pertaining to the prevention of collision at sea. Collision at sea is not the focus of this study, however, parts of these regulations do relate to what has been defined as emergency equipment, these parts are noted below:

> Rule 37 Distress Signals
> When a vessel is in distress and requires assistance she shall use of exhibit the signals described in annex IV.
>
> Rule 40 Radar Reflectors
> (a) Subject to paragraph (b), a vessel that is less than 20 metres in length or is constructed primarily of non-metallic materials shall be equipped with a passive radar reflector.
> (b) Paragraph (a) does not apply where

(i) a vessel operates in limited traffic conditions, daylight, and favourable environmental conditions and where compliance is not essential for the safety of the vessel, or
(ii) the small size of the vessel or its operation away from radar navigation makes compliance impracticable.
(c) The radar reflector prescribed in paragraph (a) shall,
(i) be capable of performance through 360 degrees of azimuth and responsive to a radar frequency of 9.3 GHz (corresponding wave length 3.2 centimetres),
(ii) have an equivalent echoing area of 10 square metres measured perpendicularly to the main radar lobes,
(iii) be mounted or suspended higher than the superstructures and, if practicable, at a height of not less than 4 metres above the water,
(iv) be positioned and painted so as not to be visually prominent,
(v) be capable of maintaining its performance under the conditions of sea states, vibration, humidity and change of temperature likely to be experienced in the marine environment, and
(vi) be clearly marked so as to indicate any preferred orientation of mounting.
(d) The azimuthal polar diagram of the radar reflector prescribed in paragraph (a) shall have a response not less than minus 6 dB with reference to the maxima of the main radar lobes
(i) over a total angle of 240 degrees, and
(ii) within any arc of more than 10 degrees.

ANNEX IV

DISTRESS SIGNALS--INTERNATIONAL

1. The following signals, used or exhibited either together or separately, indicate distress and need of assistance:
(a) a gun or other explosive signal fired at intervals of about a minute;
(b) a continuous sounding with any fog-signaling apparatus;
(c) rockets or shells, throwing red stars fired one at a time at short intervals;
(d) a signal made by radiotelegraphy or by any other signaling method consisting of the group ...---... (SOS) in the Morse Code;
(e) a signal sent by radiotelephony consisting of the spoken word "Mayday";
(f) the International Code Signal of distress indicated by N.C.;
(g) a signal consisting of a square flag having above or below it a ball or anything resembling a ball;
(h) flames on the vessel (as from a burning tar barrel, oil barrel, etc.);
(i) a rocket parachute flare or a hand flare showing a red light;
(j) a smoke signal giving off orange-coloured smoke;
(k) slowly and repeatedly raising and lowering arms outstretched to each side;
(l) the radiotelegraph alarm signal;
(m) the radiotelephone alarm signal;
(n) signals transmitted by emergency position-indicating radio beacons;
(o) approved signals transmitted by radiocommunication systems including survival craft transponders.
2. The use or exhibition of any of the foregoing signals except for the purpose of indicating distress and need of assistance and the use of other signals which may be confused with any of the above signals is prohibited.
3. Attention is drawn to the relevant sections of Transport Canada International Code of Signals, 1987, TP 2323, as amended from time to time, and Transport Canada Merchant Ship Search and Rescue Manual (CANMERSAR), 1986, TP 7085, as amended from time to time, and the following signals:

(a) a piece of orange canvas with either a black square and circle or other symbol appropriate for identification from the air; and
(b) a dye marker.

Distress signals--Canadian Modifications

4. In Canadian waters or fishing zones, in addition to the signals described in section 1, the following signals may be used or exhibited either together or separately to indicate distress and need of assistance:
(a) a square shape or anything resembling a square shape; and
(b) a high intensity white light flashing at regular intervals of 50 to 70 times per minute.
5. Notwithstanding section 2 and paragraph 4(b), a North Cardinal Buoy may use a quick flashing white light flashing at regular intervals of 60 times per minute.

3.8 CSA-63: Ship Station Radio Regulations

The *Ship Station Radio Regulations* (CSA-63) define radio equipment requirements for all Canadian ships operating in Canadian waters. The *Ship Station Technical Regulations* (CSA-64) are companion regulations that cover technical details for the equipment noted in CSA-63. Radio equipment requirements covered by CSA-63 include radiotelephone installations, search and rescue VHF radio direction-finding equipment, NAVTEX and EPIRBs. The ships of interest to this study are mostly exempt from these regulations except as noted below.

3. (3) Section 4 does not apply to
(a) a ship other than a tow-boat that is under 300 tons, unless it is 20 metres or more in length, certified to carry more than 12 passengers for hire and engaged on a voyage other than a home trade voyage, Class IV or a minor waters voyage, class II;

3. (4) Sections 4 and 5 do not apply to a ship that is
(a) making a minor waters voyage in waters other than those listed in the schedule;
(b) a non-self-propelled dredge or similar floating plant that is not located in or near a channel or fairway or in any other place where it constitutes a hazard to passing ships;
(c) a tow-boat where the tow-boat and its tow are located within a booming ground; or
(d) a pleasure yacht other than a pleasure yacht that carries a master or crew that is hired or rewarded.

SCHEDULE
MINOR WATERS

Newfoundland
1. Humber Arm
Prince Edward Island
2. Charlottetown Harbour
3. Summerside Harbour
Nova Scotia
4. The Bras d'Or Lake
5. Halifax Harbour and the waters inside a line joining the triangulation stations on Osborne Head to the eastern extremity of Chebucto Head

New Brunswick
6. Saint John Harbour
7. Miramichi Bay
8. Nepisiquit Bay
9. Dalhousie Harbour
10. Shippegan Sound
Quebec
11. St. Lawrence River
Ontario
12. St. Lawrence River
13. Detroit River
14. St. Clair River
15. St. Marys River
British Columbia
16. Alberni Inlet
17. Quatsino Sound
18. Jervis Inlet
19. Prince Rupert Harbour
20. Fraser River downstream from Pitt River
21. Skeena River downstream from Port Essington

Interpretation of the Sections noted above implies that Section 4 does not apply (vessels of interest carry 12 passengers or less). However, the vessels of interest may include operation in those areas identified in the schedule, in this case Section 5 will be applicable. Outside these areas, sight-seeing and recreational charter fishing vessels that are designated as pleasure yachts which carry a master or crew that is "hired" are also subject to Section 5.

5. (1) Subject to subsection (2), a ship referred to in subsection 3(3) as a ship to which section 4 does not apply shall be fitted with at least one bridge-to-bridge VHF radiotelephone installation where the ship
(a) is more than 8 metres in length and is a closed construction ship;
(b) is carrying more than 6 passengers for hire and engaged on a voyage, any part of which is
(i) within VHF coverage area, or
(ii) more than 5 miles from the shore;
(c) is a tow boat.
(1.1) Where a VHF radiotelephone installation referred to in subsection (1) is fitted on a ship after April 28, 1996, the installation shall have dual watch capability.
(2) A ship referred to in paragraph (1)(b) or (c) shall, where it is within the VHF coverage area of the Great Lakes or the St. Lawrence River above the St. Lambert Lock, be fitted with at least two bridge-to-bridge VHF radiotelephone installations, one of which may be portable.

3.9 TP-11717: Standards for the Construction and Inspection of Small Passenger Vessels

The *Standards for the Construction and Inspection of Small Passenger Vessels* (TP-11717), as the name implies, cover all aspects of construction of small passenger vessels including lifesaving equipment. However, the vessels of interest to this study carry 12 or fewer passengers. Consequently, they are exempt from the “Standards for the Construction and Inspection of Small Passenger Vessels” as indicated below.

2. APPLICATION

2.1 These Standards do not apply to ferry vessels or dynamically supported craft.
2.2 These Standards apply to new small passenger vessels that are used in the transport of one or more passengers, are restricted to voyages not more exposed than home-trade Class III or inland waters Class II, and are not more than 24.0 m in length that:

(a) exceed 15 tons gross tonnage but are not more than 150 tons gross tonnage, and carry not more than 100 unberthed passengers or 25 berthed passengers, or

(b) do not exceed 15 tons gross tonnage, and carry more than 12 passengers but not more than 100 unberthed passengers or 25 berthed passengers.

3.10 TP-1332: Construction Standards for Small Vessels

The *Construction Standards for Small Vessels* (TP-1332) cover hull construction and equipment, engine and fuel tank compartment ventilation, fuel systems, AC and DC electrical systems, LPG and CNG systems and lightning protection for small pleasure vessels. These standards define "small vessels" as follows:

PART I
Definitions and Interpretation

1. In these Standards
a) "power driven vessel" means any vessel propelled by machinery, or designed to be powered by machinery, including such design features of the hull as transom cutouts, “V sterns”, or motor wells so that the vessels could be propelled by machinery;
b) "small vessel" means
1) Pleasure craft, regardless of length or accommodation;
2) Power driven vessels not over 15 tons that
i) do not carry passengers,
ii) are not fishing vessels, and
iii) are not tugs; and,
3) Power driven vessels not over 5 tons gross tonnage and carrying not more than 12 passengers.

The vessels of interest to this study are small tour/sightseeing boats and charter boats (available for hire) used for recreational fishing. As such, as noted in Section 2.5, these are not considered pleasure craft and thus the *Construction Standards for Small Vessels* are not applicable.

3.11 Regulatory Summary

This study is concerned with small vessels available for charter for recreational fishing and small vessels used as tour boats (i.e., whale watching). Considering only vessels less than 8 m in length, less than 5 GRT tonnage and noted as commercial passenger vessels, review of the Canadian Regulations and Ship Safety Publications relating to Safety Equipment indicates that there are very few regulatory requirements applicable

to these vessels. Table 3.1 identifies the regulatory instruments reviewed, equipment covered by each and a summary note regarding applicability. Table 3.2 identifies various items of safety equipment and presents the regulatory requirement.

With respect to regulations pertaining to safety equipment aboard the vessels of interest to this study, the following notes are made.

- Readers should be aware that the regulations and discussions presented in this study are current at the time of writing. It should be noted that Bill C-15, “An Act to amend the Canadian Shipping Act and to make consequential amendments to other Acts”, is currently in parliament. Included in Bill C-15 are changes to the CSA definition of passenger and pleasure craft.

- Discussions with Transport Canada and Coast Guard personnel indicate that vessels of interest to this study, particularly vessels available for charter for recreational fishing, may be classed as pleasure craft. This is presumed to be the result of subjective interpretation of various definitions within the Canada Shipping Act (CSA) and its Regulations. Section 2 or the CSA makes the following definitions:

  "passenger" means any person carried on a ship, but does not include
  (b) a person carried on a ship that is not a Safety Convention ship who is
  (i) the master, a member of the crew or a person employed or engaged in any capacity on board the ship on the business of that ship,
  (ii) the owner or charterer of the ship, a member of his family or a servant connected with his household,
  (iii) a guest of the owner or charterer of the ship if it is used exclusively for pleasure and the guest is carried on the ship without remuneration or any object of profit, or
  (iv) under one year of age
  "passenger ship" means a ship carrying passengers;
  "pleasure yacht" means a ship however propelled that is used exclusively for pleasure and does not carry passengers;

  The Small Vessel Regulations (CSA-76) makes the following definition.

  "pleasure craft" means a boat, vessel or any other description of water craft that is used exclusively for pleasure and does not carry passengers or goods for hire, reward, remuneration or any object of profit;

  The absence of a definition of "charterer" in the CSA results in an interpretation problem. As an example, consider a person "chartering" a small vessel and master to take his family on a salmon-fishing trip on the Great Lakes. Is this person considered the "charterer" and therefore not a passenger or is this person and his family considered "passengers"? There is simply no straightforward answer to this question.

  However, CCG indicates that the following criteria must be met for a vessel to qualify as a charter vessel:
  [a] there exists for the vessel a bon fide properly executed charter, and
  [b] persons carried are excluded from the definition of “passenger”.

Table 3.1
Regulations/Ship Safety Publications Matrix

Ref. #	Instrument	Applicability	Notes
CSA	Canada Shipping Act	Definitions	Legal vehicle enabling regulations.
CSA-27	Home Trade, Inland and Minor Waters Voyages Regulations	Defines voyage classes	Many regulatory requirements are dependent on the voyage classes in which a vessel will be engaged. However, for the small vessels of interest to this study, this is a moot point.
CSA-20	Fire Detection and Extinguishing Equipment Regulations	EXEMP	For ships under 5 GRT, these regulations are applicable only when carrying more than 12 passengers.
CSA-32	Life Saving Equipment Regulations	EXEMP	For ships under 5 GRT, these regulations are applicable only when carrying more than 12 passengers.
CSA-76	Small Vessel Regulations	Requirements for lifejackets, oar/, paddles, bailer/pump, fire extinguisher, distress signals and lifebuoys	Requirements dependent on vessel length: - not over 5.5 m in length - over 5.5 m and not over 8 m in length - over 8 m in length Schedule III - Equipment Standards
CSA-45	Navigating Appliances and Equipment Regulations	Requirement for an efficient steering compass	Magnetic compass not required for a vessel that is less than 5 GRT which is navigated within sight of navigation marks.
CSA-14	Collision Regulations	Requirements for signals and radar reflectors	Rule 37 - Distress Signals Rule 40 - Radar Reflectors Annex IV - Distress Signals - Internationals
CSA-63	Ship Station Radio Regulations	Bridge-to-bridge VHF radiotelephone	Requirements for ship carrying more than 6 passengers and operating within VHF coverage area or more than 5 mi from shore.
TP-11717	Standards for the Construction and Inspection of Small Passenger Vessels	EXEMPT	For ships less than 15 t gross tonnage, these Standards only apply if carrying more than 12 passengers.
TP-1332	Construction Standards for Small Vessels	EXEMP	These Standards apply only to pleasure craft.
Note: CSA Regulations and Ship Safety Publications relevant to safety equipment carried aboard vessels of interest to this study; less than 8 m in length, less than 5 GRT, passenger ships carrying not more than 12 passengers.			

Table 3.2
Safety Equipment Matrix

Equipment Item	Applicable Regulations	Requirements for Vessels not over 5.5 m in Length	Requirements for Vessels over 5.5 m and not over 8 m	Requirements for Vessels over 8 m in Length
PFDs/ Life Jackets	CSA-76	One approved standard life jacket or small vessel life jacket for each person aboard	One approved standard life jacket for each person aboard	One approved standard life jacket for each person aboard
Life Buoys	CSA-76	None	An approved lifesaving cushion or a buoyant heaving line of not less than 15 m in length or an approved 508 mm, 610 mm or 762 mm lifebuoy	One approved 762 mm diameter lifebuoy with not less than 9 m of rope attached
Bailers/ Pumps	CSA-76	One bailer or one manual pump	One bailer or one manual pump	One bailer and one manual pump
Pumps	CSA-76	See above	See above	See above
Boat Hooks	CSA-76	None	None	None
Paddles/ Oars/ Anchors	CSA-76	Two oars and rowlocks or two paddles	Two oars and rowlocks, two paddles, or one anchor with not less than 15 m of cable, rope or chain	One anchor with not less than 15 m of cable, rope or chain
Portable Fire Extinguishers	CSA-76	One Class B I fire extinguisher	One Class B I fire extinguisher	One Class B II fire extinguisher
Fire Buckets	CSA-76	None	None	None
Distress Flares	CSA-76 CSA-14	None	Six approved pyrotechnic distress signals of which at least three shall be of Type A, B or C	Six approved pyrotechnic distress signals of which at least three shall be of Type A, B or C
Communi-cations Equipment	CSA-63	Bridge to bridge VHF radiotelephone if carrying more than 6 passengers and operating within VHF coverage area or more than 5 mi from shore.		
Navigation Equipment	CSA-45	Efficient steering compass if NOT operating within sight of navigation marks		
EPIRBs	CSA-63	None		
Radar Reflector	CSA-14	Passive radar reflector required where (i) vessel operates in limited traffic conditions, daylight, and favourable environmental conditions and where not deemed essential for the safety of the vessel, or (ii) the small size of the vessel or its operation away from radar navigation makes it impracticable.		

Note: (1) CSA Regulations and Ship Safety Publications relevant to safety equipment carried aboard vessels of interest to this study; less than 8 m in length, less than 5 GRT, passenger ships carrying not more than 12 passengers.

(2) CSA-76 = Small Vessel Regulations, CSA-14 = Collision Regulations, CSA-63 = Ship Station Radio Regulations, CSA-45 = Navigating Appliances and Equipment Regulations.

- Operational guidelines for the vessels of interest appear nowhere in current Canadian regulations. There are no formal requirements regarding things such as logging of voyage plans or training/instruction of passengers with regard to safety equipment aboard the vessels. CCG does publish recommendations from time to time such as Ship Safety Bulletin No. 4/95 "Recommended Safety Communications Measures for Small Craft". However, these are recommendations (voluntary) and not regulations (requirements).

- There exists no specific "Construction Standards" for the vessels of interest. TP-11717 provides Standards for small passenger vessels less than 24.0 m in length. However, the vessels of interest to this study are exempt from these standards as they are less than 15 GRT and do not carry more than 12 passengers.

4. VESSEL SURVEYS

As part of this project, 20 vessel surveys were completed to obtain an understanding of the safety equipment commonly carried aboard the vessels of interest and the accessibility of that equipment. The following subsections detail the surveying conducted and results obtained.

4.1 Surveys Completed

In an effort to promote completeness and consistency in the vessel surveys performed MIL Systems prepared a "Survey Form" to be used by surveyors. Appendix C presents a blank copy of the Survey Form used for all surveys completed for this project.

The majority of surveys completed involved MIL Systems surveyors visiting the vessels and talking with the owners/operators. However, it is noted that a few of the surveys were completed by the owners/operators themselves and returned by mail to MIL Systems. Surveys were conducted across Canada as noted below:

- West Coast - 9 surveys in the Victoria area;
- Central Canada - 10 surveys in the Ottawa/Kingston area; and
- East Coast - 1 survey in Newfoundland.

All vessels surveyed were either fishing charters, dive boats and/or wildlife/nature tour boats (i.e., whale-watching). It would have been preferable to conduct surveys during the normal operating season for these vessels (summer months), unfortunately, project constraints would not allow this. Consequently, all surveys were completed during February and March 1998. This was not the ideal time for surveying as many of the vessels were “laid up” for the winter season with most of the safety equipment removed. However, conversations with the vessel owners/operators resulted in obtaining the desired information.

As a condition of survey, many owners/operators requested that the surveys completed be kept confidential. MIL has respected these requests. Survey details presented in Table 4.1 and in Appendix D have been stripped of all identifying notes (i.e., owner/ operator name and address, vessel license numbers, radio certificate numbers, etc.); vessels are simply noted as A, B, C, etc. Notes regarding equipment aboard and accessibility from each survey are presented in full. It was deemed important to present this information to allow the reader access to the source information from which conclusions have been drawn.

Most of the companies approached for surveying were very co-operative (in fact, several welcomed the survey); however, there were a few who were elusive and did not have time to co-operate. This was particularly true in the Kingston area where many owners/operators felt they had been "surveyed to death" and were quite opposed to another "government" survey. Nevertheless, MIL Systems did manage to find a number of owners/operators in the Kingston area who agreed to co-operate.

Table 4.1
Summary of Vessels Surveyed

Vessel	Length [feet]	GRT [tons]	Area	Type	Max. # Passenger
1	22.0	2.8	B.C.	Tour	12
2	22.0	3.0	B.C.	Tour	12
3	28.0	3.6	B.C.	Tour	12
4	29.0	4.0	B.C.	Tour	12
5	24.0	1.6	B.C.	Tour/Dive	7
6	29.0	2.1	B.C.	Tour	12
7	24.0	4.5	B.C.	Tour	12
8	20.0	1.8	B.C.	Tour	11
9	27.0	3.5	B.C.	Tour	12
10	25.5	4.9	Nfld.	Tour/Fish	8
11	18.8	< 1.0	Ont.	Fish	1
12	24.0	1.5	Ont.	Fish	6
13	28.0	< 5.0	Ont.	Tour/Fish	10
14	28.5	< 5.0	Ont.	Tour/Fish	12
15	24.0	1.6	Ont.	Fish	10
16	24.7	< 5.0	Ont.	Fish	4
17	22.0	< 5.0	Ont.	Dive	8
18	22.0	< 5.0	Ont.	Dive	6
19	23.6	~ 2.0	Ont.	Fish	6
20	25.0	?	Ont.	Fish	5

4.2 Survey Findings

Table 4.2 presents a matrix showing equipment normally carried aboard the vessels surveyed. As can be seen, most of the vessels surveyed carried a complete set of safety and navigation equipment. In fact, the complement of equipment carried generally exceeded the minimum suggested by applicable regulations. The following notes highlight pertinent details regarding equipment carried aboard.

- All vessels surveyed had sufficient life jackets or flotation suits (i.e., "cruiser suits") for each passenger aboard. In many instances cruiser suits were present in lieu of life jackets. It should be noted that there is a fundamental difference between life jackets and other floatation devices. Life jackets are designed to keep a weak and/or unconscious person in a face-up position in the water; this is usually not the case for PFDs. However, PFDs are the floatation device of preference due to better comfort. A point of concern with PFDs, especially those used by numerous passengers during the season, is the degree of wear. Flotation suits deteriorate with time due to fair wear and tear, and there is no regulatory requirement to replace these suits at designated intervals.

- All but one of the vessels surveyed carried one or more life buoys equipped with a heaving line. However, in many instances the smaller 508 mm life buoy was carried. This is fine for vessel under 8 m (26'3"), but for vessels over this length the 762 mm life buoy is required.

- All vessels surveyed were equipped with anchors. However, in some cases the size of the anchor was small, the line/chain was small and the bitter end was not secured.

- All vessels owners/operators interviewed said that they performed a safety briefing for passengers before departure. The problem in assessing these briefings is that

Table 4.2
Equipment Matrix

VESSEL	Sail Plan	Briefing	PFD/Lifejacket	Life Buoy/Cushion	Heaving Line	Bailers	Pumps	Boat Hooks	Paddles/Oars	Oar Locks	Anchor	Anchor Line	Portable Extinguisher	Fire Bucket	Pyrotechnics	First Aid Kit	VHF	Radar	Radar Reflector	Compass	EPIRB	GPS/Loran C
A	x	x	x	x	x	x	x		x		x	x	x		x	x	x	x	x	x		x
B	?	x	x	x	x	x	x		x		x	x	x		x	x	x	x	x	x		x
C	?	x	x	x	x	x	x		x		x	x	x		x	x	x	x	x	x		x
D	?	x	x	x	x	x	x		x		x	x	x		x	x	x	x	x	x		x
E	?	x	x	x	x	x	x	x	x		x	x	x		x	x	x		x	x		x
F	?	x	x	x	x	x	x	x	x		x	x	x		x	x	x			x		x
G	x	x	x	x	x	?	x	x	x		x	x	x		x	x	x	x	x	x		x
H	?	x	x	x	x	x	x	x	x		x	x	x		x	x	x	x	x	x		x
I	?	x	x	x	x		x		x		x	x	x		x	x	x	x	x	x		x
J	x	x	x	x	x	x	x	x	x		x	x	x		x	x	x			x		x
K	x	x	x	x		x	x		x		x	x	x		x	x				x		
L	?	x	x		x	x	x	x	x		x	x	x		x	x	x			x		
M	x	x	x	x	x	x	x	x			x	x	x		x	x	x			x		x
N	x	x	x	x	x	x	x	x			x	x	x		x	x	x	x		x		x
O	x	x	x	x	x	x	x	x	x		x	x	x		x	x		x		x		x
P	?	x	x	x	x	x	x	x	x		x	x	x		x	x	x			x		x
Q	?	x	x	x	x	x	x	x	x		x	x	x		x	x	x			x		x
R	?	x	x	x	x	x	x	x	x		x	x	x		x	x	x		x	x		x
S	?	x	x	x	x	x	x	x	x		x	x	x	x	x	x	x			x		x
T	?	?	x	x	x	x	x	x	x		x	x	x		x	x	x			x		

they are not documented. Discussions directly operators reveal at one end of the scale, pre-departure briefings simply entail issuing life jacket and assigning seating. At the other end of the scale, pre-departure briefings include pre-medical screening, detailed description of the course to be taken and instruction on use of various emergency equipment and emergency radio procedures.

- All but one of the vessels surveyed was employed in operations where a "skipper" operated the vessel; that is, not a bare boat charter where the passengers themselves operate the vessel. In several cases, the vessel crew consisted of two personnel, an operator and a naturalist.

- Commentary that can be made about stowage is limited. The vessels of interest to this study are small; many of the vessels surveyed were open skiffs or zodiacs. Consequently, the number of places equipment can be stowed is limited:

  - fore peak compartment or bow locker;
  - transom lockers;
  - side lockers;
  - floor lockers;
  - under seats;
  - in brackets at vessel sides;
  - in brackets on deck; and
  - in portable storage compartments/boxes (i.e., coolers).

  Almost without exception operators reported that all safety equipment was secured (stowed) either in a compartment or bracket. More than anything else, this is a practical necessity on a small boat simply to provide clear deck space for passengers.

- Because of the small size of the boats surveyed and the limited number of stowage spaces, accessibility is generally considered good. In the case of sinking or capsizing, safety equipment remains accessible as long as the stowage spaces remain accessible. In some instances accessibility was considered hampered by benches or equipment that would have to be moved in order to reach the stowage space.

- Instances were operators stated that items of safety equipment were “placed on deck where convenient” were scarce. Obviously in these cases, this equipment would be lost overboard in the case of sinking or capsizing.

- Perhaps the single most important comment to be made with respect to accessibility is that passengers must be aware of the location of stowage spaces; location may be obvious to seasoned mariners but may not be obvious to those unfamiliar with small vessels. Furthermore, passengers must be aware of what safety equipment is located in the each of the stowage spaces. Aboard the vessels surveyed, there was very little observed in the way of signs or placards indicating the location of safety equipment.

- Generally, communications between vessels and their home base was exceptionally good. Almost all vessels surveyed were equipped with one or more VHF radio sets.

In addition, many operators reported carrying cellular phones for emergency purposes.

- Navigation and communications equipment was generally all console mounted and easily observed and accessible. The primary exception to this was portable GPS receivers and cellular phones. These equipment items were typically carried on the person of the operator.

- In addition to the safety equipment specifically identified in the Survey Form, many operators carried additional equipment including items such as:

  - air horns;
  - spot lights;
  - navigation charts;
  - binoculars; and
  - depth sounders.

- There is a wide variance in the experience and training of the operators of the vessels surveyed. Some of the operators themselves identified this as a point of concern. They suggested that it is only a matter of time before an incident occurs that may result in the loss of life, particularly with vessels capable of speeds in excess of 30 kn.

- In general, the surveyors found the operators/owners interviewed to be very competent, responsible and concerned over the safety of their passengers. Two of the reasons for this are good business practices and concern over insurance and liability in the event of an incident involving the loss of life.

- Some operators said they would welcome some regulatory changes, particularly those that would inhibit "fly-by-night" operators from competing in the industry with sub-standard vessels and equipment. It was suggested by some operators that about 90% of the operators were in the business for the long run and were very concerned about their boats, equipment and passengers, however, about 10% were not.

- It should be noted that the surveys completed may be somewhat biased in that it is responsible operators that are more likely to show an interest in and spend time completing the Survey From presented. It is perhaps true that the less responsible owners are more likely to shy away from and avoid such surveys. This is a catch-22 situation because it is the less responsible operators that are of the most concern.

- Some of the smaller operators, particularly in Ontario (i.e., small fishing charter boats carrying less than a half dozen persons including the operator) expressed concern about regulatory change. The issue of concern was any requirement for additional expensive equipment (i.e., liferafts, EPIRBs). Many of these operators work part time on a short season of about 14 weeks at best. They feel that the expense of complying with such additional regulatory requirements could put them out of business.

- Another point of concern over regulatory change is fear that some vessels would be broad brushed into a regulatory category that does not reflect the practicality of a given vessel's geographic location or type of operation. For example, while it might make sense for tour boats operating on the western coastline to be equipped with radar, radar reflectors and long lengths of anchor chain, this does not make much sense for small "bass" boats operating in shallow, low-traffic inland waters in Ontario.

- This concern is well understood; however, the small passenger vessels of interest to this study may be generally categorized as on of the following types:

  - tour boats;
  - dive boats; or
  - fishing charter boats.

  Operating areas may be generally categorized as either:

  - great lakes or coastal waters; or
  - inland waters and lakes.

  As long as regulations identify and reflect these differing types and operating areas, any concern over broad brushing should be minimized.

- A final note to be made here relates to proposed regulations. A number of operators commented that they were frustrated with hearing about (i.e., from flyers distributed at boat shows) the government's intent to introduce "new" and/or "modified" regulations and then seeing nothing transpire.

The above notes conclude the general findings from the surveys completed by MIL Systems during the course of this project. However, it would not be prudent to end this section without mentioning that there are a number of industry organizations and associations that have a vested interest in safe boating. Various tour boat, diving and fishing associations actively promote safe boating practices among their members. Of particular note are the Ontario Sportfishing Guide's Association and the West Coast Tour Boat Operators Association, both these groups have written operating policies and requirements for their members.

In some areas (i.e., Ontario), affordable insurance is difficult to find unless the operator is a member of such an industry association. Consequently, there is a danger that sideline operators will dispense with insurance. Consideration may be given to making it a legal requirement to carry liability insurance for all commercial operators; however, discussion should first be held with the insurance industry to ensure that affordable insurance policies will be available.

5. REMEDIAL ACTIONS

In this section, commentary is made on remedial actions that should be considered regarding safety equipment and its accessibility as well as regulations. This commentary, based on the review of TSB reports, applicable regulations and the survey findings, is presented below.

[1] Pre-Departure Briefings

One of the TSB recommendations was that small sightseeing boats provide pre-departure safety briefings. There is currently no regulatory requirement for this. All of the operators surveyed indicated that some sort of pre-departure briefing was given to passengers. However, there is great variance in the completeness of the briefings given. A remedial action that should be considered is Transport Canada's formulation of a syllabus for pre-departure safety briefings. The bare essential topics of such a syllabus would include topics such as:

- location of all emergency equipment aboard;
- instructions on proper fitting of lifejackets;
- instruction on the operation of pyrotechnics; and
- basic survival notes (i.e., stay with the boat).

A more advanced syllabus may include topics such as:

- VHF radio operation and emergency radio procedures;
- engine starting procedures;
- basic navigation (i.e., reading charts, using a compass, using GPS); and
- basic marine firefighting.

Delivery of this information could be made either by publication of a Ship Safety Bulletin, or publication of a Ship Safety Handbook in a similar format to either TP-5021: "Personal Safety on Ships", TP-10038: "Small Fishing Vessel Safety Manual" or TP-11969: "Marine Survival Handbook for Cold Regions". Handbooks could be delivered to tour boat and fishing charter companies at a nominal cost. Essential safety information from the handbook could be condensed into the form of a laminated (waterproof) safety card similar to that used by the airline industry. These safety cards would become part of a vessels safety equipment inventory.

[2] Operator Training and Certification

Wide differences exist in the training and experience of operators. There is no regulatory requirement for operators to be certified navigation officers or even to attend a navigation course. There is also no requirement for operators to have basic medical training such as standard first aid and CPR courses. The only applicable regulatory requirement is that of the Radio Operators' Certificate Regulations that require that VHF radiotelephone operators hold a certificate.

The majority of those surveyed during the course of this study seemed to be competent, experienced and possessing excellent local marine navigation knowledge. However, this is not always the case, as demonstrated by the incidents reported by TSB involving the TAN 1. In this case, the operator was aware that his vessel did not meet regulatory requirements regarding safety equipment, knew there was a problem with water in his engine's fuel supply, was aware that bad weather conditions were forecast, knew his vessel was not equipped for instrument navigation and yet still decided to embark on the voyage later documented by the TSB.

The operator mentioned above could be considered as having either a blatant disregard for safety or simply a lack of common sense. Nonetheless, the end result was that this operator was exposing passengers to an unnecessarily high safety risk. It is, of course, impossible to regulate common sense, however, various regulatory actions may be taken to ensure some basic level of operator competency. The remedial action that is suggested is that basic training courses be a requirement of operators of small passenger craft. Transport Canada should identify syllabi for such courses, topics to be covered may include:

- basic seamanship;
- basic navigation;
- operators responsibility to passengers and liabilities;
- marine safety and fire-fighting; and
- basic first aid and CPR.

It is not suggested that operators be required to become certified navigation officers; it is simply suggested that basic training courses become a requirement for small passenger vessel operators. Suitable course are offered by various marine training institutes and boating organizations. Experienced operators should have no problem with course material. Inexperienced operators will be presented with information that can only help them in operating more safely; this knowledge may guard them against making decisions such as those made by the operator of TAN 1.

[3] Sail Plans

Search and rescue efforts are most efficient when the geographic area in which a "target" should be located is known. There is no regulatory requirement for vessels of 5 GRT and less carrying not more than 12 passengers to log sail plans. However, this is a low-cost procedure which, in the event of an emergency, can facilitate fast rescue and possibly save lives.

The remedial action that is suggested is that it be a requirement that small passenger vessels make a sail plan for each voyage. This sail plan need not be onerous and need not be reported to regulatory authorities. It is suggested that each operator assign a responsible person ashore as his/her emergency contact. The name of this emergency contact person would be made known to the regulatory authorities. Before each voyage, the operator would briefly discuss the voyage with the emergency contact person and identify the planned route and the number of passengers aboard. Such a

system should not meet with much opposition from operators as many of them already voluntarily follow such a procedure.

[4] Equipment Requirements Notification

Most vessels surveyed during this study carried a full set of safety equipment as required by the Small Vessel Regulations. However, as noted in various TSB reports, this is not always the case. Furthermore, in some instances an operator has in good faith equipped his/her vessel with a specific piece of safety equipment but this item does not meet regulatory requirements. For example, the owner of a vessel over 8 m in length who has a 508 mm life buoy onboard; the requirement this length of vessel is a 762 mm life buoy.

The remedial action suggested is that Transport Canada periodically (at the beginning of each season and/or during various boat shows) distribute flyers summarizing safety equipment requirements. This flyer could be simply a covering letter accompanied by a copy of the table presented as Table 3.2 of this report. Distribution of such information increases operator awareness of regulatory requirements and promotes communication between operators and the regulatory authorities.

[5] Markings/Placards

There were very few vessels surveyed during this project which were equipped with signs or placards identifying where safety equipment was located. Surveyors noted that equipment was generally readily accessible from stowage lockers. However, in an emergency situation, where time may be critical, passengers should be aware of which locker/compartment specific safety equipment is stowed. Although this information may be relayed to passengers during a pre-departure briefing, it is quite possible that this information is soon forgotten.

The remedial action suggested is that Transport Canada publish a Ship Safety Bulletin recommending that the lockers in which safety equipment is stowed be clearly marked indicating the equipment within. As a minimum, it is suggested that the location of lifejackets/PFDs, distress pyrotechnics, first aid kits and anchors be clearly marked.

[6] Inspections

Transport Canada should promote some form of periodic inspection for small passenger vessels to ensure regulatory compliance. Such inspections need not necessarily conducted by Transport Canada personnel. Qualified marine surveyors and possibly various industry organizations could perform such inspections. This requirement may be more acceptable to operators if actions as suggested in [3] above are implemented. It is also suggested that Transport Canada consider promulgation of a "surveyor's guide" for small passenger vessels. This document would clearly identify to surveyors what to look for and how to assess regulatory compliance. Such a document would ensure a level of consistency of surveys.

[7] Regulatory Modifications

The review and possible modifications of various regulations pertaining to lifesaving equipment should give due consideration to practicable operations. The following list comments on items that have been previously considered and highlights some concerns:

- Lifejackets/PFDs - the regulations stipulate the number of these that must be carried onboard. Consideration has been given to modifying the regulations to stipulate that not only must these be carried but that they must also be worn. Although this concept has merit, it is not practical in certain conditions. Charter fishermen fishing at anchor on a windless, hot day in the middle of summer are simply not going to wear lifejackets. A regulation that stipulates they should is impractical and unenforceable.

- EPIRBs - for vessels under 5 GRT carrying not more than 12 passengers this equipment item is not currently a requirement. The requirement for Class 1 EPIRBS would likely be hard to "sell" to operators due to the relatively high cost of these devices. A requirement for Class B EPIRBs would be better as these are relatively inexpensive. However, there is some concern over accidental activation of these devices and possible fines associated with accidental activation.

- Liferafts - some consideration has been given to a requirement for small passenger vessels to carry liferafts. Again there is concern over the practicality of this for many operators. These safety appliances require considerable space to mount, are expensive and in many areas (i.e., shallow inland rivers) of operation are simply overkill.

It is noted here that various associations exist (i.e., Ontario Sport Fishing Guides Association, Ontario Underwater Council, etc.) that actively promote safe boating amongst their members. It is understood that Transport Canada does consult these groups with regard to regulatory development. This consultation process should continue to ensure any regulatory changes reflect real life practical operations.

[8] Notice To Comply/Detaining Order

The fact that cannot be over-stressed is that there are inherent risks in the operation of a small passenger vessel. Operators are taking the lives of passengers into their hands while providing service. It is the responsibility of the operator to minimize the risk of the loss of life to the greatest extent practicable by ensuring his/her vessel is seaworthy and equipped with the appropriate lifesaving equipment. It is the responsibility of the regulatory agency to promulgate and enforce regulations that promote safe vessels and operation of those vessels.

The TSB report documenting the grounding of the TAN 1 (93L0003) highlights the concern with the policy regarding notices of non-compliance and detaining orders. On July 23rd, 1993 the operator was issued a list of equipment that did not comply with the Small Vessel Regulations and was issued a notice to comply within three weeks. At the

time of the occurrence, August 11th, the vessel still did not comply and on August 13th a detaining order was issued.

A crude interpretation of these events would be that by issuing a notice to comply within three weeks, the regulatory agency is in essence saying "we deem your vessel unsafe as it does not meet regulatory requirements; however, we are allowing you to continue putting lives at risk by allowing you to continue operating for three weeks". Fortunately, in this case there was no loss of life; however, things may well have been different.

The remedial action that should be considered here is that detaining orders be issued immediately if a vessel is inspected and found to be non-compliant with regulations concerning safety-critical equipment. This action would place the onus on operators to ensure that their vessels were regulatory compliant and would possibly deter operators who are uncertain about regulatory requirements from operating without discussion with regulatory representatives.

[9] Exploitation of Internet Resources

Many of the actions noted above involve communications and information transfer. The final remedial action that is suggested is that Transport Canada create an information centre for small passenger vessel operators on their Internet Web site. This site would collate information of interest to operators and would include:

- review and summary of applicable regulations;
- online standards and guidelines of relevance;
- TSB reports of relevance;
- archive of all pertinent Ship Safety Bulletins;
- Transport Canada newsletter advising of activities;
- a Frequently Asked Questions (FAQ) response list; and
- direct e-mail access to regulatory contacts.

6. CONCLUSIONS

Based on the work completed during this project involving a review of TSB reports, a review of regulations and the completion of 20 small passenger vessel surveys as well as assimilation of information relayed by the owners/operators of the vessels surveyed, a number of conclusions can be drawn. Detailed conclusions are presented in Sections 2, 3.11 and 4.2 of this report. Key points highlighted in these sections are summarized below.

- For at least six years, the Transportation Safety Board has identified problems in the current regulatory regime with respect to the vessels of interest to this study.

- There are very few regulations in the Canada Shipping Act (CSA) that are applicable to small passenger vessels less that 5 GRT and carrying not more than 12 passengers.

- Minimum safety equipment requirements are stated by the Small Vessel Regulations (CSA-76). There are no operator certification requirements, no requirements to log vessel movements (sail plans), little in the way of firefighting requirements and no requirement for inspections.

- The absence of a definition of "charter" in the CSA provides a loophole by which certain charter fishing boats and rental boats may be exempt from being considered as small passenger vessels.

- The small passenger vessels surveyed generally met the regulatory requirements for carriage of safety equipment. However, a few minor problems such as undersized life buoys and anchors were noted.

- In many cases the vessels surveyed carried additional safety equipment (beyond regulatory requirements) such as: extra lifejackets, backup VHF radios sets, cellular phones, depth-sounders, charts, etc.

- In general, accessibility to the safety equipment aboard the vessels surveyed was good. This is in part simply a result of the small size of the vessels. Safety equipment must be stowed in available stowage lockers to leave the deck areas free for passenger seating.

- In general, accessibility to communications and navigation equipment onboard the vessels surveyed was excellent. This equipment is typically console-mounted and readily observed by passengers (whether passengers would know how to operate this equipment is a separate issue).

- Very few examples of signs or placards indicating the location of safety equipment were observed on the vessels surveyed.

- Many of the operators interviewed stated that they conducted some sort of pre-departure briefing for their passengers. However, there was great variance in the content of these briefings. Some simply advised of lifejacket location and seating arrangements while others were quite comprehensive involving advanced topics such as emergency radio procedures.

- Few of the operators produced formal sail plans for their voyages. However, almost all indicated that someone ashore was aware of the vessel's planned route.

- For the vessels surveyed, communications between the vessel and its shore base were generally excellent. Many operators carried spare VHF radios and cellular phones.

- Levels of experience and training varied greatly among the operators interviewed.

- Operators are concerned about any regulatory change. In particular, they are concerned about having their vessels being broad brushed into some regulatory category that does not reflect their operations or geographic location. There is also concern about being obligated to purchase additional expensive safety equipment (i.e., liferafts and EPIRBs).

A final conclusion is that, in general, the vessel operators surveyed were found to be competent and responsible individuals who had a genuine interest in the survey and the safety of their passengers. It must be noted that there may be an inherent bias in the survey results. Responsible operators are more likely to volunteer for surveys such as those conducted during this study. Non-responsible operators who are aware that their vessels are poorly equipped are more likely to avoid such surveys. This is a catch-22 situation because it is preferable to obtain survey results from both types of operators.

7. RECOMMENDATIONS

Based on the conclusions outlined in Section 6 and the remedial action discussion presented in Section 5, a number of recommendations may be made as noted below.

[1] Pre-departure Briefings - Transport Canada should develop and publish guidelines. These guidelines should identify essential briefing topics and provide generic text that can be incorporated by operators into their briefings.

[2] Operator Training and Certification - Transport Canada should develop syllabi pertaining to training courses for operators of tour boats and charter fishing vessels. The aim is simply to ensure some minimum level of competency among operators.

[3] Sail Plans - Transport Canada should promote the logging of sail plans for operators of tour boats and charter fishing vessels. This should include the identification of a shore-based emergency contact person for each operator and instructions that this contact be made aware of the number of passengers and basic route of each voyage.

[4] Equipment Requirements Notifications - Transport Canada should periodically issue notifications to operators reminding them of safety equipment requirements under the current regulatory regime.

[5] Marking/Placards - Transport Canada should issue standards governing the marking of stowage lockers containing safety equipment. As a minimum, stowage compartments containing lifejackets, distress pyrotechnics, first aid kits and anchors should be clearly marked and visible to passengers.

[6] Inspections - Transport Canada should promote periodic inspection of small passenger vessels of less than 5 GRT carrying no more than 12 passengers.

[7] Regulatory Modifications - Transport Canada's modification of regulations pertaining to small passenger operators should continue to be done in close consultation with related industry groups and associations. This will ensure that changes reflect practical operating requirements and conditions.

[8] Notice to Comply/Detaining Order - Transport Canada should eliminate issuance of Notice to Comply letters for safety-critical equipment. When a small passenger vessel is inspected and found to be non-compliant with safety-critical equipment regulations, that vessel should be immediately detained.

[9] Exploitation of Internet Resources - Transport Canada should create an information resource centre for small passenger vessel operators as part of their Internet Web site. This site would collate and present safety information to operators.

APPENDIX A
TSB RECOMMENDATIONS

TSB # M 06/96

FIVE MARINE SAFETY RECOMMENDATIONS CONCERNING THE SAFETY OF SMALL SIGHT-SEEING VESSELS AS A RESULT OF TWO SEPARATE INVESTIGATIONS INTO THE GROUNDING, 11-08-93, AND THE SINKING, 12-09-93, OF THE "TAN 1" IN THE ST. LAWRENCE RIVER OFF LES ESCOUMINS, QUEBEC

REPORTS No. M93L0003 & M93L0004

(For release 25 April 1996)

(Hull, Quebec) - The Transportation Safety Board of Canada (TSB) has released five marine safety recommendations concerning the safety of small sight-seeing vessels. These recommendations have come about as a result of investigations into two accidents in 1993 involving the 7.6-metre "TAN 1" on whale-watching cruises in the St. Lawrence River, near Les Escoumins, Quebec. The accidents, a grounding on 11 August and a capsizing and sinking on 12 September, fortunately did not result in any fatalities or serious injuries.

In the first occurrence, the "TAN 1" departed Les Escoumins at approximately 1715 EDT, in fog and restricted visibility. There were 12 passengers and one operator on board. As the cruise progressed, the operator became disoriented, and the boat ran aground on a large rock. The pilot boat "ABRAHAM MARTIN", as part of a search and rescue (SAR) effort, found the vessel and escorted her back to port. None of the occupants sustained injuries.

The Board determined that the "TAN 1" departed on the cruise in restricted visibility with inadequate safety equipment and without having on board the navigational instruments necessary for a safe cruise. The SAR operations were hampered by the failure of the radio and the absence of a radar reflector on board the "TAN 1". The boat operator had not been trained for instrument navigation nor did he hold a radio operator's certificate.

In the second occurrence, the "TAN 1" departed Anse aux Basques at approximately 1515 EDT. As the cruise progressed, the winds from the south-west picked up and the sea became increasingly choppy. About two hours later, the engines failed and water began to flood the boat, waves broke over the stern, and the vessel capsized. The 13 persons on board were dumped into the water, but were quickly rescued by other sight-seeing vessels in the area.

The Board determined that the outboard motors of the "TAN 1" stalled and could not be restarted because the fuel was contaminated with water. Shortly thereafter, the drifting boat was flooded by the stern and eventually capsized. The bilge pumps were inoperable and the passengers had received no safety instructions regarding the lifejackets before departure.

Following the first occurrence, the Canadian Coast Guard (CCG) issued a detaining order requiring the owner to improve the navigation equipment of his vessels to comply with the regulations. This included the fitting of a commercial radar reflector and the installation of a watertight VHF receiver with a battery charger connected to the motor. The company also began to file sail plans with Vessel Traffic Centre (VTC) at Les Escoumins to advise authorities of when and where they were taking their cruises, in case of emergency.

After the capsizing and sinking of the "TAN 1", the TSB examined the salvaged vessel and noted a number of deficiencies that jeopardized her seaworthiness; e.g. fuel contamination and design / construction standards. The CCG subsequently provided technical advice to the owner to render the vessel seaworthy.

The Canada Shipping Act (CSA) does not require operators of vessels five tons or under that carry not more than 12 passengers to hold a certificate of competency, nor do they need to have their vessels inspected or to demonstrate their navigational skills.

There is an increasing number of these small boat sight-seeing operations carrying fare-paying passengers, and the TSB believes that it is important for the safety of those fare-paying passengers that operators of those boats have formal marine training. Some owners' associations are aware of the shortcomings in the training and have asked that training courses be developed to meet their specific needs. The Board welcomes this initiative, but is concerned that there is currently no training required to operate these vessels and has therefore recommended that:

The Department of Transport develop training standards and certification requirements for the operators of small sight-seeing boats that carry fare-paying passengers. [M96-01]

The TSB is concerned that, since these boats are not "inspected" vessels, they are not required to be fitted with radio equipment necessary for effective communication in distress or emergency situations. Therefore, the Board has recommended that:

The Department of Transport amend the regulations to require sight-seeing boats that carry fare-paying passengers to be fitted with adequate radio equipment and to report to the VTC, before departure, the number of persons on board. [M96-02]

Furthermore, the Board is concerned about the adequacy of the safety equipment carried on board these sight-seeing vessels and its possible effect on the safety of fare-paying passengers. The TSB notes that the CCG does not have an inspection and prevention program for these vessels, but that SAR personnel carry out courtesy inspections of pleasure craft. Other agencies, who, under the mandate of the Small Vessel Regulations, can carry out inspections of sight-seeing vessels, do not have the resources to adequately monitor these boats. Therefore, the Board has recommended that:

The Department of Transport and the Department of Fisheries and Oceans, in cooperation with police forces and SAR personnel, explore means of improving the monitoring and inspection of small passenger-carrying commercial vessels. [M96-03]

Five-gross-ton vessels like the "TAN 1" are not required to undergo CCG safety inspections nor are they required to meet mandatory design requirements. Every year in Canada, a large number of sight-seeing boats, more than 40 in the Tadoussac area alone, operate without having been inspected by the CCG.

However, the passengers who board these boats assume that they are seaworthy and safe. In the absence of mandatory requirements, CCG surveyors do not have the necessary regulatory instruments to improve the safety of these boats. The public has to rely on the operators to maintain these vessels in a seaworthy condition. In some cases, as shown by these two occurrences, the public can be unwittingly exposed to inherently unsafe operations. The Board therefore has recommended that:

The Department of Transport require all small boats that carry fare-paying passengers to undergo safety inspections to ensure their seaworthiness and operational safety. [M96-04]

In a number of these sight-seeing operations, the passengers do not receive any type of safety briefing, nor are they informed of how to use or where to find the safety equipment on board the boat. In these two occurrences, the passengers had no knowledge of the location or the use of the lifejackets carried on board. They also had received no pre-departure instructions regarding the life-saving equipment. The TSB believes that, in order to reduce the severity of accidents and to better prepare for emergency situations, passengers must be well informed of any safety precautions and measures that apply to them. The Board therefore has recommended that:

The Department of Transport require the operators of small sight-seeing boats to provide pre-departure safety instructions to the passengers for normal operating conditions and for emergency situations. [M96-05]

The Transportation Safety Board of Canada is an independent agency operating under its own Act of Parliament. Its sole aim is the advancement of transportation safety. It is not the function of the Board to assign fault or determine civil or criminal liability.

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For further information:

Jim Harris - Public Affairs Officer

(819) 994-8053

Ghyslain Charron - Public Affairs Officer

(819) 953-7812

Read Reports M93L0003 or M93l0004 / Back to the Main Communiqués Page

APPENDIX B
LISTING OF CSA REGULATIONS AND SHIP SAFETY PUBLICATIONS

Table B-1
Canada Shipping Act Regulations

CSA #	
1	Aids to Navigation Protection Regulations
2	Air Pollution Regulations
3	Board of Steamship Inspection Scale of Fees
4	Boat and Fire Drill Regulations
5	Boating Restriction Regulations
6	Canadian Ship's Flag Regulations
7	Coasting Trade Exemption Regulations
8	Certification of Able Seamen Regulations
9	Certification of Lifeboat Men Regulations
10	Certification of Ships' Cooks Regulations Part I and Part II
11	Charts and Publications Regulations
12	Dangerous Chemicals and Noxious Liquid Substances Regulations
13	Classed Ships Inspection Regulations
14	Collision Regulations
15	Crew Accommodation Regulations
16	Dangerous Goods Shipping Regulations
17	Distressed Seamen Regulations
18	Eastern Canada Vessel Traffic Services Zone Regulations
19	Emergency Position Indicating Buoy Regulations
20	Fire Detection and Extinguishing Equipment Regulations
21	Fisherman's Notice of Claim for Loss of Income Regulations
22	Garbage Pollution Prevention Regulations
23	General Load Line Rules
24	Grain Cargo Regulations
25	Great Lakes Navigation Safety Regulations
26	Great Lakes Sewage Pollution Prevention Regulations
27	Home-Trade, Inland and Minor Waters Voyages Regulations
28	Hull Construction Regulations
29	Hull Inspection Regulations
30	Non-Safety Convention Ship Inspection Certificate Regulations
31	Large Fishing Vessel Inspection Regulations
32	Life Saving Equipment Regulations
33	Marine Machinery Regulations
34	Load Line Assignment Authorization Order
35	Load Line Exemption Order
36	Load Line Regulations (Inland)
37	Load Line Regulations (Sea)
38	Load Line Rules for Lakes and Rivers
39	Marine Engineer Examination Regulations
40	Ship-source Oil Pollution Fund Regulations
41	Master and Engineer Dual Capacity Regulations
42	Masters and Mates Examination Regulations
43	Medical Examination of Seafarers Regulations
44	Minor Waters Order
45	Navigating Appliances and Equipment Regulations
46	Nominal Horsepower Computing Method Regulations
47	Non-Canadian Ships Compliance Certificate Regulations
48	Non-Canadian Ships Safety Order
49	Oil Pollution Prevention Regulations
50	Pilot Ladder Regulations
51	Pleasure Yachts Marking Order
52	Pollutant Substances Regulations
53	Private Buoy Regulations
54	Registration of Government Ships Regulations
55	Anchorage Regulations
56	Safe Manning Regulations
57	Safe Working Practices Regulations
58	Safety Convention Certificate Regulations
59	St. Clair and Detroit Navigation Safety Regulations
60	St. Lawrence Waterway Marine Traffic Regulations
61	Sealing Ships Construction Regulations
62	Ship Radio Inspection Fees Regulations
63	Ship Station Radio Regulations
64	Ship Station Technical Regulations
65	Ship's Draught Marks Exemption Order
66	Shipping Casualties Appeal Rules
67	Shipping Casualties Reporting Regulations

Table B-1
Canada Shipping Act Regulations
(Cont'd)

CSA #	
68	Shipping Inquiries and Investigations Rules
69	Ships' Crew Food and Catering Regulations
70	Ships' Deck Watch Regulations
71	Ships' Elevator Regulations
72	Ships' Names Registration Regulations
73	Ships Registry Fees Tariff
74	Ship's Tonnage Survey and Measurement Fees Regulations
75	Small Fishing Vessel Inspection Regulations
76	Small Vessel Regulations
77	Steamship Machinery Construction
78	Pollutant Discharge Reporting Regulations
79	Steamship Machinery Inspection Regulations
80	Steamships Carrying Cargo Containers Order
81	Steering Appliances and Equipment Regulations
82	Tackle Regulations
83	Tariff of Fees of Shipping Masters
84	Timber Cargo Regulations
85	Tonnage of Ships Order
86	Towboat Crew Accommodation Regulations
87	Dangerous Bulk Materials Regulations
88	Vessel Traffic Services Zones Regulations
89	EPIRB Regulations
90	Small Fishing Vessels Draught Marks Exemption Order
91	Pleasure Craft Sewage Pollution Prevention Regulations
92	Non-Pleasure Craft Sewage Pollution Prevention Regulations
93	Burlington Canal Regulations
94	Port Wardens Tariff
95	Ships Registration Forms Regulations
96	VHF Radiotelephone Practices and Procedures Regulations
97	Ship Fumigation Regulations
99	Tonnage Regulations
101	Response Organizations and Oil Handling Facilities Regulations
102	Publications of Standards of Regulations

Table B-2
Ship Safety Publications

TP #	
127	SHIP SAFETY ELECTRICAL STANDARDS
438	STRUCTURAL FIRE PROTECTION STANDARDS: LIST OF APPROVED PRODUCTS
439	STRUCTURAL FIRE PROTECTION STANDARDS: TESTING AND APPROVAL PROCEDURES
782	INSPECTION REGULATIONS FOR SMALL FISHING VESSELS
1018	CODE OF NAUTICAL PROCEDURES AND PRACTICES 1985 - 3RD EDITION
1269	CODE OF SAFE WORKING PRACTICES FOR SELF-UNLOADING VESSELS
1324	MATERIAL SPECIFICATION FOR COATED FABRICS USED IN THE MANUFACTURE OF INFLATABLE LIFERAFTS
1332	CONSTRUCTION STANDARDS FOR SMALL VESSELS
1802	ROUTING STANDARDS - 1986, 4TH EDITION
1861	COLLISION REGULATIONS STANDARDS FOR LIGHTS, SHAPES, SOUND SIGNAL APPLIANCES AND RADAR REFLECTORS
2072	DECK CARGO SAFETY CODE
2237	EQUIVALENT STANDARDS FOR FIRE PROTECTION OF PASSENGER SHIPS
2534	CANADIAN CODE OF SAFE PRACTICE FOR SHIPS CARRYING TIMBER DECK CARGOES
2872	STANDARDS FOR RADIO INSTALLATIONS AND RELATED EQUIPMENT
3177	STANDARD FOR THE CONTROL OF GAS HAZARDS IN VESSELS TO BE REPAIRED OR ALTERED
3685	STANDARDS RESPECTING NOISE CONTROL AND HEARING PROTECTION IN CANADIAN TOWBOATS OVER 15 TONS, GROSS TONNAGE
3668	STANDARDS FOR NAVIGATING APPLIANCES AND EQUIPMENT
4071	STANDARD FOR ENGINEERING WATCHKEEPING ON SHIPS
4295	STANDARD FOR INERT GAS SYSTEMS
4330	STANDARD MARINE NAVIGATIONAL VOCABULARY
4414	GUIDELINES RESPECTING HELICOPTER FACILITIES ON SHIPS
4479	APPROVAL BOOK
5579	STANDARDS RELATING TO DESIGN, CONSTRUCTION AND OPERATIONAL SAFETY OF DYNAMICALLY SUPPORTED CRAFT IN CANADA
5021	PERSONAL SAFETY ON SHIPS
5761	CANADIAN CODE OF SAFE PRACTICE FOR SOLID BULK CARGOES
6472	STANDARDS RESPECTING MOBILE OFFSHORE DRILLING UNITS
7301	STABILITY, SUBDIVISION, AND LOAD LINE STANDARD
7319	STANDARD FOR PYROTECHNIC DISTRESS SIGNALS AND SIMILAR DEVICES
7320	STANDARDS FOR LIFEBOATS
7321	STANDARDS FOR LIFERAFTS AND INFLATABLE RESCUE PLATFORMS
7322	STANDARDS FOR RESCUE BOATS
7323	LAUNCHING AND EMBARKATION APPLIANCES - January 1992
7325	STANDARDS FOR LIFEBUOYS AND INTEGRAL EQUIPMENT
7326	STANDARD FOR THERMAL PROTECTIVE AIDS
7920	STANDARDS RESPECTING STANDBY VESSELS
8643	RIVER RAFTING STANDARDS

Table B-2
Ship Safety Publications
(Cont'd)

TP #	
8941	INTERIM STANDARDS FOR THE CONSTRUCTION, EQUIPMENT AND OPERATION OF PASSENGER SHIPS IN THE SEA ICE AREAS OF EASTERN CANADA
9247	STANDARDS FOR THE CONSTRUCTION AND TESTING OF EMERGENCY BOATS
9248	STANDARD FOR PERSONAL LOCATOR LIGHTS (P.L.L)
9396	WEAR STANDARDS FOR CARGO GEAR
9834	GUIDELINES FOR REPORTING INCIDENTS INVOLVING DANGEROUS GOODS, HARMFUL SUBSTANCES AND/OR MARINE POLLUTANTS
9878	SAFETY AND DISTRESS RADIOTELEPHONE PROCEDURES
9912	STANDARD FOR INSPECTION OF TACKLE ON LARGE FISHING VESSELS
10038	SMALL FISHING VESSEL SAFETY MANUAL
10405	SHIP SAFETY PASSENGER SHIP OPERATIONS AND DAMAGED STABILITY STANDARDS (CONVENTION SHIPS)
10531	STANDARDS FOR PILOT VESSELS
10655	CANADIAN COAST GUARD APPRO
10783	ARCTIC WATER OIL TRANSFER GUIDELINES
10943	SHIP SAFETY PASSENGER SHIP OPERATIONS AND DAMAGED STABILITY STANDARDS (NON-CONVENTION SHIPS)
10944	NOTICE TO SHIPMASTERS LOADING COAL
11127	A TRAINING PROGRAMME IN MARINE COOKING
11232	UNITIZED CARGO STANDARD
11249	SHIP SAFETY STANDARD FOR IN-WATER SURVEYS
11342	COASTAL INFLATABLE LIFERAFT
11469	GUIDE TO STRUCTURAL FIRE PROTECTION
11641	APPROVAL AND INSPECTION OF PERSONAL BUOYANT WATER SAFETY DEVICES
11663	GUIDELINES FOR THE OPERATION OF TANKERS AND BARGES IN CANADIAN ARCTIC WATERS
11690	COLD WEATHER MARINE SURVIVAL GUIDE
11710	STANDARDS FOR THE DOUBLE HULL CONSTRUCTION OF OIL TANKERS
11717	STANDARD FOR THE CONSTRUCTION INSPECTION OF SMALL PASSENGER VESSELS
11960	SHIP SAFETY STANDARDS AND GUIDELINES FOR THE CONSTRUCTION, INSPECTION AND OPERATION OF BARGES THAT CARRY OIL IN BULK
11969	MARINE SURVIVAL HANDBOOK FOR COLD REGIONS
12234	TONNAGE MEASUREMENT OF SHIPS
12245	WEB SLING STANDARD
12260	EQUIVALENT STANDARDS FOR THE CONSTRUCTION OF ARCTIC CLASS SHIPS
12301	STANDARD FOR 5 PPM BILGE ALARMS (FOR CANADIAN INLAND WATERS)
12401	RESPONSE ORGANIZATIONS STANDARDS
12402	OIL HANDLING FACILITIES STANDARDS

APPENDIX C
BLANK SURVEY FORM

SURVEY FORM
Safety Equipment Accessibility

INSTRUCTIONS FOR SURVEYORS

[1] The primary purpose of this survey is to obtain information regarding the accessibility of safety equipment carried aboard the vessels of interest. Under the "accessibility notes" columns (Sections 6 and 7) of the Survey Form, please comment on how equipment is stowed and any problems you perceive regarding accessibility of this equipment, particularly in the event of capsizing or floundering.

[2] The vessels of interest to this study are small passenger carrying vessels; tour boats such as "whale watchers", "sight seeing tours" and vessels used for charter fishing trips. In particular, we are interested in vessels that are 8.0 metres or less in length and less than 5 tons GRT.

[3] Before conducting surveys, please familiarize yourself with the various regulations within the Canada Shipping Act that are relevant to safety equipment aboard the vessels of interest. "Progress Report #1" by MIL Systems provides a brief review of the relevant regulations.

[4] Surveys are being conducted simply for the purpose of "fact finding". At the owner's request, a survey report will be marked confidential.

Confidential survey reports will be used only by MIL Systems and will not be distributed to Transport Canada or the Canadian Coast Guard. However, MIL Systems may use the information within the survey report to draw general conclusion regarding the accessibility of safety equipment on small vessels; specific vessels will not be identified.

[5] Please make every effort to complete ALL sections of the supplied survey form.

[6] Any questions, comments or concerns regarding the Survey Form should be made to:

Andrew Prior
Senior Naval Architect
MIL Systems
Suite 200, 1150 Morrison Drive
Ottawa, Ontario, K2H 8S9
Tel: 613-726-0500 extension 204
Fax: 613-726-0252
E-mail: aprior@milsystems.com

1. SURVEY DATA	
Surveyor Name	
Date	
Location	
2. CONFIDENTIALITY	
Confidential Survey (yes/no)	
3. VESSEL OWNER	
Owner Name	
Telephone	
Address	
4. VESSEL PARTICULARS	
General Description (rigid inflatable, open skiff, etc./manufacturer)	
Length	
Breadth	
Depth	
Draft	
Tonnage (GRT)	
Power (engine type/power)	
Enclosed Superstructure (length, breadth, height)	
Other Comments (i.e., any other relevant comments; placement or seating for passengers, etc.)	

MIL Systems, 200-1150 Morrison Drive, Ottawa, Ontario, K2H 8S9
Tel: 613-726-0500 ext. 204, Fax: 613-726-0252, E-mail: aprior@milsystems.com

5. VESSEL OPERATIONS	
# of Crew (does crew voyage with fare paying passengers ?)	
Crew Qualifications (i.e., masters ticket, radio operators license)	
# of Passengers (indicate max. carried)	
Type of Operation (Tour Boat/Fishing Charter)	
Area of Operation	
Season of Operation	

6. NAVIGATION AND COMMUNICATIONS EQUIPMENT	Equipment Onboard (# of, type & manufacturer)	Accessibility Notes
Radio Equipment		
Radar		
Radar Reflector		
Compass		
EPIRB		
GPS		

MIL Systems, 200-1150 Morrison Drive, Ottawa, Ontario, K2H 8S9
Tel: 613-726-0500 ext. 204, Fax: 613-726-0252, E-mail: aprior@milsystems.com

7. SAFETY EQUIPMENT	Equipment Onboard (# of, type & manufacturer)	Accessibility Notes
PFD=s/Lifejackets (indicate type)		
Life Buoys/Cushion (indicate type)		
Heaving Line for Life Buoy (indicate length and size)		
Bailers (indicate capacity)		
Pumps (indicate type and capacity)		
Boat Hooks		
Paddles/Oars		
Oar Locks Fitted (yes/no)		
Anchors (indicate type/weight)		
Anchor Line (rope/wire, length and size)		
Portable Fire Extinguisher (type and size)		
Fire Buckets (indicate size)		
Distress Flares (indicate type)		
First Aid Kit		

MIL Systems, 200-1150 Morrison Drive, Ottawa, Ontario, K2H 8S9
Tel: 613-726-0500 ext. 204, Fax: 613-726-0252, E-mail: aprior@milsystems.com

8. MISCELLANEOUS	
Please provide details of any signs of placards noted on the vessel regarding emergency equipment operation and/or procedures.	
Please provide your overall opinions on the accessibility of emergency equipment in the event of floundering or capsize.	
After discussion with owner/operator, please provide brief notes regarding any safety procedures, if any, employed onboard the vessel (i.e., logging of voyage plan with home base, instruction given to passengers etc.).	
9. PHOTOGRAPHS	
Please list, number and provide a brief description of any photographs taken.	
10. NOTES	
THANK YOU FOR COMPLETING THIS SURVEY	

MIL Systems, 200-1150 Morrison Drive, Ottawa, Ontario, K2H 8S9
Tel: 613-726-0500 ext. 204, Fax: 613-726-0252, E-mail: aprior@milsystems.com

APPENDIX D
SURVEY RESULTS

VESSEL NO. 1		
1. VESSEL PARTICULARS		
General Description (rigid inflatable, open skiff, etc./manufacturer)	Rigid Inflatable Zodiac "Hurricane" model	
Length	22 feet	
Breadth	10 feet 4 inches (outside), 8 feet (inside)	
Depth	20 inches	
Draft	20 inches	
Tonnage (GRT)	2.8T	
Power (engine type/power)	Single 175 OMC outboard	
Enclosed Superstructure (length, breadth, height)	No	
Other Comments (i.e., any other relevant comments; placement or seating for passengers, etc.)	Four bench seats (3 passengers per bench) facing forward	
2. VESSEL OPERATIONS		
# of Crew (does crew voyage with fare paying passengers ?)	Single operator. Yes, voyages with passengers.	
Crew Qualifications (i.e., masters ticket, radio operators license)	Senior Captain (Master Limited) / VHF ROC B yes Standard First Aid / Crew certified by Senior Captain	
# of Passengers (indicate max. carried)	12	
Type of Operation (Tour Boat/Fishing Charter)	Nature Tours/Whale Watching	
Area of Operation	East Point, Southern Gulf of Georgia to Sombrio Point B Eastern Juan De Fuca Strait	
Season of Operation	April through October	
3. NAVIGATION AND COMMUNICATIONS EQUIPMENT	**Equipment Onboard (# of, type & manufacturer)**	**Accessibility Notes**
Radio Equipment	VHF ICOM M585 Trunk Radios	Fitted Console Fitted Console
Radar	Furano 1621	Antenna fitted on Arch / Receiver mounted on Operator's Console dash
Radar Reflector	Yes	Side flaps B fitted on Radar Arch
Compass	Magnetic B Ritchie	Operator's Dash
EPIRB	No	-
GPS	Logitech Hand Held plus bracket (Internal antenna)	Operator's Dash

4. SAFETY EQUIPMENT	Equipment Onboard (# of, type & manufacturer)	Accessibility Notes
PFDs/Lifejackets (indicate type)	All passengers are required to wear flotation suits (Mustang/Buoy O Buoy)	Good.
Life Buoys/Cushion (indicate type)	Yes, Ring type	Bow Locker – good.
Heaving Line for Life Buoy (indicate length and size)	50 feet of polypropylene	Bow Locker – good.
Bailers (indicate capacity)	Yes (1 gallon)	Bilge Compt aft of Operator – good.
Pumps (indicate type and capacity)	Hand Operated Whale Gusher 500 gph Electric Bilge Pump	Bilge Compt aft of Operator – good.
Boat Hooks	No	-
Paddles/Oars	1 paddle	Bilge Compt aft of Operator – good.
Oar Locks Fitted (yes/no)	No	-
Anchors (indicate type/weight)	Yes – 20 lb Danforth	Forepeak Compartment – good.
Anchor Line (rope/wire, length and size)	30 feet of 5/16 inch chain 100 feet of ½ inch Samson braid	Forepeak Compartment – good.
Portable Fire Extinguisher (type and size)	Yes – 1 - 5 lb	Operator's Console
Fire Buckets (indicate size)	No	-
Distress Flares (indicate type)	Yes – Orion Pistol; 6A and 6B	Compartment aft of Console – good.
First Aid Kit	Yes	Compartment aft of Console – good.

5. MISCELLANEOUS	
Please provide details of any signs of placards noted on the vessel regarding emergency equipment operation and/or procedures.	– Passengers pre-screened for any medical problems – Safety briefing on departure emphasizing ride on boat – Safety considerations
Please provide your overall opinions on the accessibility of emergency equipment in the event of floundering or capsize.	Vessel was surveyed ashore and undergoing an overhaul. Much of the equipment/safety gear was in storage. However, the accessibility of same is assessed as "good".
After discussion with owner/operator, please provide brief notes regarding any safety procedures, if any, employed onboard the vessel (i.e., logging of voyage plan with home base, instruction given to passengers etc.).	Vessel fitted with trunk radio and in constant communication with home base.

6. PHOTOGRAPHS	
Please list, number and provide a brief description of any photographs taken.	

7. NOTES

VESSEL NO. 2		
1. VESSEL PARTICULARS		
General Description (rigid inflatable, open skiff, etc./manufacturer)	1985 Zodiac MK VII (Large Diameter tubes) Rigid Inflatable	
Length	22 feet	
Breadth	10 feet 8 inches (outside), 8 feet (inside)	
Depth	22 inches	
Draft	22 inches	
Tonnage (GRT)	3T	
Power (engine type/power)	Twin 175 OMC outboards (140 gallons)	
Enclosed Superstructure (length, breadth, height)	No	
Other Comments (i.e., any other relevant comments; placement or seating for passengers etc.)	Fore and aft seating for passengers: 8 passengers forward of console - facing outboard 4 passengers aft of console - facing forward	
2. VESSEL OPERATIONS		
# of Crew (does crew voyage with fare paying passengers ?)	Single operator. Yes, voyages with passengers.	
Crew Qualifications (i.e., masters ticket, radio operators license)	Senior Captain (Master Limited) / VHF ROC – yes Standard First Aid / Crew certified by Senior Captain	
# of Passengers (indicate maximum carried)	12	
Type of Operation (Tour Boat/Fishing Charter)	Nature Tours/Whale Watching	
Area of Operation	East Point, Southern Gulf of Georgia to Sombrio Point – Eastern Juan De Fuca Strait	
Season of Operation	April through October	
3. NAVIGATION AND COMMUNICATIONS EQUIPMENT	**Equipment Onboard (# of, type & manufacturer)**	**Accessibility Notes**
Radio Equipment	VHF ICOM M585 Trunk Radios	Fitted Console Fitted Console
Radar	Furano 1621	Antenna fitted on Arch / Receiver mounted on Operator's Console dash
Radar Reflector	Yes	Side flaps – fitted on Radar Arch
Compass	Magnetic – Ritchie	Operator's Dash
EPIRB	No.	-
GPS	Logitech Hand Held plus bracket (Internal antenna)	Operator's Dash

4. SAFETY EQUIPMENT	Equipment Onboard (# of, type & manufacturer)	Accessibility Notes
PFDs/Lifejackets (indicate type)	All passengers are required to wear flotation suits (Mustang/Buoy O Buoy)	Good.
Life Buoys/Cushion (indicate type)	Yes, Ring type	Bow Locker – good.
Heaving Line for Life Buoy (indicate length and size)	50 feet of polypropylene	Bow Locker – good.
Bailers (indicate capacity)	Yes (1 gallon)	Bilge Compt aft of Operator – good.
Pumps (indicate type and capacity)	Hand Operated Whale Gusher 500 gph Electric Bilge Pump	Bilge Compt aft of Operator – good.
Boat Hooks	No	-
Paddles/Oars	1 paddle	Bilge Compt aft of Operator – good.
Oar Locks Fitted (yes/no)	No	-
Anchors (indicate type/weight)	Yes – 20 lb Danforth	Forepeak Compartment – good.
Anchor Line (rope/wire, length and size)	30 feet of 5/16 inch chain 100 feet of ½ inch Samson braid	Forepeak Compartment – good.
Portable Fire Extinguisher (type and size)	Yes – 1 - 5 lb	Operator's Console
Fire Buckets (indicate size)	No	-
Distress Flares (indicate type)	Yes – Orion Pistol; 6A and 6B	Compartment aft of Console – good.
First Aid Kit	Yes	Compartment aft of Console – good.

5. MISCELLANEOUS	
Please provide details of any signs of placards noted on the vessel regarding emergency equipment operation and/or procedures.	Passengers receive a safety briefing on departure. * Passengers also screened for any medical problems that may prevent them from making the trip.
Please provide your overall opinions on the accessibility of emergency equipment in the event of floundering or capsize.	Vessel was surveyed ashore and undergoing an overhaul. Much of the equipment/safety gear was in storage. However, the accessibility of same is assessed as "good".
After discussion with owner/operator, please provide brief notes regarding any safety procedures, if any, employed onboard the vessel (i.e., logging of voyage plan with home base, instruction given to passengers etc.).	Vessel fitted with trunk radio and in constant communication with home base.

6. PHOTOGRAPHS	
Please list, number and provide a brief description of any photographs taken.	

7. NOTES

1. Vessel was surveyed out of the water.
2. As a Zodiac MK VII this vessel is very rigidly built, capable of operating safely in higher sea states.

VESSEL NO. 3		
1. VESSEL PARTICULARS		
General Description (rigid inflatable, open skiff, etc./manufacturer)	28 feet: Fibreglass Construction Goldstream Boat House, Victoria	
Length	28 feet	
Breadth	10 feet 6 inch (outside), 9 feet (inside)	
Depth		
Draft	22 inches	
Tonnage (GRT)	3.6T	
Power (engine type/power)	Twin 175 OMC outboards	
Enclosed Superstructure (length, breadth, height)	Small enclosed Head under Operator Console	
Other Comments (i.e., any other relevant comments; placement or seating for passengers etc.)	4 bench seats facing forward (3 passengers per bench) * Also room for 6 passengers on benches aft of Operator's Console	
2. VESSEL OPERATIONS		
# of Crew (does crew voyage with fare paying passengers ?)	Single operator. Yes, voyages with passengers.	
Crew Qualifications (i.e., masters ticket, radio operators license)	Senior Captain (Master Limited) / VHF ROC – yes Standard First Aid / Crew certified by Senior Captain	
# of Passengers (indicate maximum carried)	12	
Type of Operation (Tour Boat/Fishing Charter)	Nature Tours/Whale Watching	
Area of Operation	East Point, Southern Gulf of Georgia to Sombrio Point – Eastern Juan De Fuca Strait	
Season of Operation	April through October	
3. NAVIGATION AND COMMUNICATIONS EQUIPMENT	**Equipment Onboard (# of, type & manufacturer)**	**Accessibility Notes**
Radio Equipment	VHF ICOM M585 Trunk Radios	Fitted Console Fitted Console
Radar	Furano 1621	Antenna fitted on Arch / Receiver mounted on Operator's Console dash
Radar Reflector	Yes	Side flaps – fitted on Radar Arch
Compass	Magnetic – Ritchie	Operator's Dash
EPIRB	No	-
GPS	Logitech Hand Held plus bracket (Internal antenna)	Operator's Dash
Other Equipment	Depth Sounder,Charts,Binoculars	

4. SAFETY EQUIPMENT	Equipment Onboard (# of, type & manufacturer)	Accessibility Notes
PFDs/Lifejackets (indicate type)	All passengers are required to wear flotation suits (Mustang/Buoy O Buoy)	Good.
Life Buoys/Cushion (indicate type)	Yes – Ring (760 mm)	Side of Operator's Console – good.
Heaving Line for Life Buoy (indicate length and size)	Yes – 75 feet	Side of Operator's Console – good.
Bailers (indicate capacity)	Yes (1 gallon)	Bilge Compartment aft of Operator's Console – good.
Pumps (indicate type and capacity)	Whale Gusher (Hand-operated) Electric bilge pumps (500 gph)	Under Operator's Console Bilge
Boat Hooks	No	-
Paddles/Oars	1 paddle	Strapped on inside by Operator's Console
Oar Locks Fitted (yes/no)	No	-
Anchors (indicate type/weight)	Yes – 22 lb Danforth	Anchor Locker in Forepeak – good.
Anchor Line (rope/wire, length and size)	150 feet of ½ inch Samson 40 feet of 5/16 inch chain	Anchor Locker in Forepeak – good.
Portable Fire Extinguisher (type and size)	1 – 5 lb and 1 – 10 lb	Inside Operator's Console – good.
Fire Buckets (indicate size)	No	-
Distress Flares (indicate type)	Pistol (Orion) smoke	In Head Compartment Operator's Console – good.
First Aid Kit	Yes – Standard	In Head Compartment Operator's Console – good.

5. MISCELLANEOUS	
Please provide details of any signs of placards noted on the vessel regarding emergency equipment operation and/or procedures.	– Passengers pre-screened for any medical problems – Safety briefing on departure emphasizing ride on boat – Safety considerations
Please provide your overall opinions on the accessability of emergency equipment in the event of floundering or capsize.	As the vessel was ashore and under cover much of the equipment was removed and in storage. However, from viewing where the equipment would be fitted/stowed; the overall accessibility is assessed as "good".
After discussion with owner/operator, please provide brief notes regarding any safety procedures, if any, employed onboard the vessel (i.e., logging of voyage plan with home base, instruction given to passengers etc.).	The vessel is equipped with a trunk radio and is in constant contact with home base.

6. PHOTOGRAPHS	
Please list, number and provide a brief description of any photographs taken.	

7. NOTES
This operator has two of these 28 foot fibreglass constructed vessels in operation. They appear to be strongly built with sufficient room for the passengers to move around or to have alternative seating arrangements.

VESSEL NO. 4		
1. VESSEL PARTICULARS		
General Description (rigid inflatable, open skiff, etc./manufacturer)	3 Armstrong 29 foot Rigid Inflatable (aluminum) Polaris tubes	
Length	29 feet	
Breadth	8 feet	
Depth		
Draft	2 feet	
Tonnage (GRT)	4000	
Power (engine type/power)	2 boats - Twin 115 hp Evenride / 1 boat - Twin 150 hp Evenride	
Enclosed Superstructure (length, breadth, height)	N/A	
Other Comments (i.e., any other relevant comments; placement or seating for passengers etc.)	4 H 3 passenger benches approximately 2 feet apart facing forward (cushioned). Grab bars in seat in front of benches – arm rests on side of bench.	
2. VESSEL OPERATIONS		
# of Crew (does crew voyage with fare paying passengers ?)	Skipper	
Crew Qualifications (i.e., masters ticket, radio operators license)	Strong local knowledge. Senior Skipper - checks out candidates (series of accompanied trips). VHF license not required	
# of Passengers (indicate maximum carried)	12 paying passengers	
Type of Operation (Tour Boat/Fishing Charter)	Marine company – whale & wildlife tours (sightseeing)	
Area of Operation	Eastrn Juan De Fuca – Haro Strait, San Juan Islands, Southrn Gulf Islands	
Season of Operation	April through October (annually)	
3. NAVIGATION AND COMMUNICATIONS EQUIPMENT	**Equipment Onboard (# of, type & manufacturer)**	**Accessibility Notes**
Radio Equipment	Triton VHF (fixed) plus cell phone to HQs.	
Radar	Yes, 12' range, 6" screen (Sitex)	
Radar Reflector	Mobri (cylindrical)	
Compass	Magnetic (fixed)	
EPIRB	No	
GPS	Yes (hand held) Garmin	
Optional Equipment	Navigation Charts – yes Depth Sounder – yes Horn – compressed air	

4. SAFETY EQUIPMENT	Equipment Onboard (# of, type & manufacturer)	Accessibility Notes
PFDs/Lifejackets (indicate type)	All crew/passengers wear cruise suits (Buoy O Buoy)	
Life Buoys/Cushion (indicate type)	Life ring	Fitted on side of Operator's Console
Heaving Line for Life Buoy (indicate length and size)	Toss Bag – 70 feet of line	Fitted on side of Operator's Console
Bailers (indicate capacity)	Bucket	In compartment under Operator's Console
Pumps (indicate type and capacity)	Bile Pp – electric 250 gpm - Rule	Bilge
Boat Hooks	No	-
Paddles/Oars	1 paddle	-
Oar Locks Fitted (yes/no)	No	-
Anchors (indicate type/weight)	Yes, Darforth – 10 lb	Compartment in bow of vessel by towing bollard
Anchor Line (rope/wire, length and size)	100 feet	Compartment in bow of vessel by towing bollard
Portable Fire Extinguisher (type and size)	1 – 5 lb portable No fixed	Inside of Operator's Console
Fire Buckets (indicate size)	No	-
Distress Flares (indicate type)	6 pistol "A" flares plus 6 hand held	Waterproof bag – stowed in compartment by Operator's Console
First Aid Kit	Yes	Waterproof bag – stowed in compartment by Operator's Console

5. MISCELLANEOUS	
Please provide details of any signs of placards noted on the vessel regarding emergency equipment operation and/or procedures.	Pre-departure briefing – outlining the vessel and basic safety precautions.
Please provide your overall opinions on the accessibility of emergency equipment in the event of floundering or capsize.	The overall accessibility of safety equipment is assessed as good.
After discussion with owner/operator, please provide brief notes regarding any safety procedures, if any, employed onboard the vessel (i.e., logging of voyage plan with home base, instruction given to passengers etc.).	– Head Office manned continuously when any company boats out on the water. – Operators have access to cellular phones if any problems arise or they wish to apprise the office of any events.

6. PHOTOGRAPHS	
Please list, number and provide a brief description of any photographs taken.	

7. NOTES

This operator is a responsible owner/operator, who oversees his operation with close scrutiny. He possesses a very business like approach, well aware of his overheads, but not hesitant in providing his staff with top line equipment.
He is currently having three more vessels being built, which will bring his fleet up to six vessels.

VESSEL NO. 5		
1. VESSEL PARTICULARS		
General Description (rigid inflatable, open skiff, etc./manufacturer)	1989 24 foot Bayliner Cabin Cruiser	
Length	24 feet	
Breadth	10 feet	
Depth		
Draft	2½ feet	
Tonnage (GRT)	3600 lbs	
Power (engine type/power)	Inboard 305 hp gasoline engine with outboard leg.	
Enclosed Superstructure (length, breadth, height)	Yes, small cabin with protection/windshield and roof over operator.	
Other Comments (i.e., any other relevant comments; placement or seating for passengers etc.)	– Seating for four passengers in small enclosed cabin. – Bench seat for three passengers fitted athwartships aft of the operator.	
2. VESSEL OPERATIONS		
# of Crew (does crew voyage with fare paying passengers ?)	1 operator Yes, voyages with passengers.	
Crew Qualifications (i.e., masters ticket, radio operators license)	Experienced in local waters and high speed craft. Good leadership skills. VHF ROC	
# of Passengers (indicate maximum carried)	7	
Type of Operation (Tour Boat/Fishing Charter)	Whale watching, wildlife tours, scuba diving.	
Area of Operation	Boundary Pass, San Juan Islands, Gulf Islands, Haro Strait – Eastern Juan De Fuca Strait.	
Season of Operation	March through October.	
3. NAVIGATION AND COMMUNICATIONS EQUIPMENT	**Equipment Onboard (# of, type & manufacturer)**	**Accessibility Notes**
Radio Equipment	VHF (Horizon)	Fitted in bracket in front of Operator – good.
Radar	No	-
Radar Reflector	Yes – Mobri (cylindrical)	Fitted top of cabin
Compass	Yes – Ritchie	Fitted in front of Operator – good.
EPIRB	No	-
GPS	Yes – hand held Magellan	By operator – good.

4. SAFETY EQUIPMENT	Equipment Onboard (# of, type & manufacturer)	Accessibility Notes
PFDs/Lifejackets (indicate type)	Yes, one per passenger.	
Life Buoys/Cushion (indicate type)	Yes, 1 710 mm Ring type.	
Heaving Line for Life Buoy (indicate length and size)	Yes, 70 feet	
Bailers (indicate capacity)	Yes, cut out 1 gal bleach bottle.	
Pumps (indicate type and capacity)	Electric 250 gpm Rule	
Boat Hooks	Yes	
Paddles/Oars	1 paddle	
Oar Locks Fitted (yes/no)	No	
Anchors (indicate type/weight)	Bow mounted 10 lb Danforth	
Anchor Line (rope/wire, length and size)	3/16 inch chain, 25 feet 150 feet of 5/16 inch line.	
Portable Fire Extinguisher (type and size)	Yes, 1 10 lb.	
Fire Buckets (indicate size)	No.	
Distress Flares (indicate type)	Yes – 6 A and 6 B.	
First Aid Kit	Yes	

5. MISCELLANEOUS	
Please provide details of any signs of placards noted on the vessel regarding emergency equipment operation and/or procedures.	– Pre-departure verbal safety briefing is provided by operator. – Will not proceed if heavy weather or restricted visibility.
Please provide your overall opinions on the accessibility of emergency equipment in the event of floundering or capsize.	– As this vessel was surveyed on land much of the safety equipment was removed for storage. – The accessibility of safety equipment in this particular vessel is assessed as fair.
After discussion with owner/operator, please provide brief notes regarding any safety procedures, if any, employed onboard the vessel (i.e., logging of voyage plan with home base, instruction given to passengers etc.).	Cellular phones carried for communication with home base.

6. PHOTOGRAPHS	
Please list, number and provide a brief description of any photographs taken.	

7. NOTES

Not assessed as a particularly sea worthy vessel in sea states above Sea State 3. One operator plus seven passengers is the load carrying capacity of the vessel in fair weather conditions.

VESSEL NO. 6		
1. VESSEL PARTICULARS		
General Description (rigid inflatable, open skiff, etc./manufacturer)	29 foot custom built aluminum 1996 (Armstrong)	
Length	29 feet	
Breadth	10½ feet	
Depth	-	
Draft	2 feet	
Tonnage (GRT)	4800 lbs	
Power (engine type/power)	Twin 225 hp Mercury O/Bs	
Enclosed Superstructure (length, breadth, height)	Small enclosed Head aft of the Operator's Console	
Other Comments (i.e., any other relevant comments; placement or seating for passengers etc.)	– 4 Bench seats facing forward for up to 3 passengers each. – Operator's Console – seating for 2. * Sufficient room to walk around seats.	
2. VESSEL OPERATIONS		
# of Crew (does crew voyage with fare paying passengers ?)	– 1 crew with Naturalist (on occasion) – Yes, crew voyages with passengers.	
Crew Qualifications (i.e., masters ticket, radio operators license)	Experienced in local waters and high speed craft. Good leadership skills. VHF ROC	
# of Passengers (indicate maximum carried)	Maximum 12	
Type of Operation (Tour Boat/Fishing Charter)	Whale watching/wildlife tours	
Area of Operation	Georgia Strait; San Juan Islands/Boundary Pass/Haro Strait; Eastern part of Juan De Fuca Strait.	
Season of Operation	March through October.	
3. NAVIGATION AND COMMUNICATIONS EQUIPMENT	**Equipment Onboard (# of, type & manufacturer)**	**Accessibility Notes**
Radio Equipment	VHF (Horizon)	Mounted on Operator's Console – good.
Radar	No	-
Radar Reflector	No	-
Compass	Yes (Ritchie)	Mounted on Operator's Console – good.
EPIRB	No	-
GPS	Yes – hand held Garmin	Operator's Console – good.
Other Equipment	* Also carries Hummingbird Fishfinder (Operator's Console) and a hand held cellular phone.	

4. SAFETY EQUIPMENT	Equipment Onboard (# of, type & manufacturer)	Accessibility Notes
PFDs/Lifejackets (indicate type)	No. PFDs B passengers required to wear Buoy O Buoy cruiser suits.	Good.
Life Buoys/Cushion (indicate type)	Yes	Side of Operator's Console – good.
Heaving Line for Life Buoy (indicate length and size)	Yes – 75 foot polypropylene	Good.
Bailers (indicate capacity)	Plastic 1 gallon bleach bottle (opening cut out)	Compartment in front of Operator's Console – good.
Pumps (indicate type and capacity)	Hand bilge pump (as deck is sealed)	Operator's Console Compt – good.
Boat Hooks	Yes	Aft by Operator's Console – good.
Paddles/Oars	2 paddles	Secured aft by Operator's Console – good.
Oar Locks Fitted (yes/no)	No	-
Anchors (indicate type/weight)	12 lb Danforth	Good.
Anchor Line (rope/wire, length and size)	20 feet of 3/16 inch chain 150 feet of 7/16 inch line	Good.
Portable Fire Extinguisher (type and size)	1 10 lb	Operator's Console – good.
Fire Buckets (indicate size)	No	-
Distress Flares (indicate type)	Yes – 6 A plus 6 B.	Operator's Console – good.
First Aid Kit	Yes	Operator's Console – good.

5. MISCELLANEOUS	
Please provide details of any signs of placards noted on the vessel regarding emergency equipment operation and/or procedures.	Pre-departure briefing for passengers describing route, and basic safety precautions.
Please provide your overall opinions on the accessibility of emergency equipment in the event of floundering or capsize.	Although majority of equipment removed for winter storage B the accessibility of safety equipment is considered good.
After discussion with owner/operator, please provide brief notes regarding any safety procedures, if any, employed onboard the vessel (i.e., logging of voyage plan with home base, instruction given to passengers etc.).	Apart from pre-departure briefing, appears to be no other safety notes/procedures.

6. PHOTOGRAPHS	
Please list, number and provide a brief description of any photographs taken.	

7. NOTES

- This vessel appears to be very strongly built and adequately powered for its size.
- There are stanchions with hand rails along gunwales – passengers may move about in relative safety.
- Aluminum arch over after section to support antennas.
- All electronic equipment, compasses removed for storage.

VESSEL NO. 7		
1. VESSEL PARTICULARS		
General Description (rigid inflatable, open skiff, etc./manufacturer)	3 Rigid hull Inflatable: 2 - Zodiac 1 - Silverstreak	
Length	24 feet	
Breadth	9 feet 6 inches	
Depth	Hull - 2 feet Skeg - 3 feet	
Draft	-	
Tonnage (GRT)	4.5 T	
Power (engine type/power)	KAD 42 Turbo Diesel Volvo (230 HP)	
Enclosed Superstructure (length, breadth, height)	N/A	
Other Comments (i.e., any other relevant comments; placement or seating for passengers etc.)	Operator Console in Aft section with sit down bench seating for maximum of 12 passengers. * One boat seats passengers fore and aft while the other 2 vessels seat the passengers sideways, facing outboard. * Operator has good view of passengers. * In addition to operator – also a naturalist.	
2. VESSEL OPERATIONS		
# of Crew (does crew voyage with fare paying passengers ?)	1 Driver/Operator and 1 Naturalist Both voyage with passengers.	
Crew Qualifications (i.e., masters ticket, radio operators license)	Master Small Craft certified - R.O.C. * Also in house training program (sound boat knowledge).	
# of Passengers (indicate maximum carried)	12	
Type of Operation (Tour Boat/Fishing Charter)	Whale watching/wildlife sightseeing	
Area of Operation	S. Georgia Strait – into eastern part of Juan De Fuca Strait	
Season of Operation	April through October	
3. NAVIGATION AND COMMUNICATIONS EQUIPMENT	**Equipment Onboard (# of, type & manufacturer)**	**Accessibility Notes**
Radio Equipment	VHF – 1 per boat/Horizon TRUNK radio – business (GE) 800 mHz (also carry portables)	* All equipment fitted at Operator Console or on radar arch on stern section.
Radar	Radar Furuno 8 foot range 1621	
Radar Reflector	Yes – Mobri - 1 per boat	
Compass	Yes – 1 per boat - mounted	
EPIRB	No	
GPS	Yes – 1 per boat Fixed - Micrologic Marine	

4. SAFETY EQUIPMENT	Equipment Onboard (# of, type & manufacturer)	Accessibility Notes
PFDs/Lifejackets (indicate type)	* Mustang Cruiser Suits Replaced every 3 years	* Mandatory wear by each passenger.
Life Buoys/Cushion (indicate type)	Yes - 610 mm	Good – by Operator's Console
Heaving Line for Life Buoy (indicate length and size)	Yes 40 feet	
Bailers (indicate capacity)	* Bailers not required as trunk bailer tubes equipped	
Pumps (indicate type and capacity)	2 bilge pumps and 1 manual (Whale Gusher) per boat	2 bilge pumps (Rule 590 gph) fitted in bilge. Manual pump – Operator's Console
Boat Hooks	1 per boat	
Paddles/Oars	1 set/boat	Good – under bench by Operator's Console
Oar Locks Fitted (yes/no)	No	-
Anchors (indicate type/weight)	Yes / Bruce (5 kg)	
Anchor Line (rope/wire, length and size)	Rope – ½ inch Samson 300 feet	Good – forward around towing bollard
Portable Fire Extinguisher (type and size)	1 per boat 5BC (Console)	Good – Operator's Console
Fire Buckets (indicate size)	No	-
Distress Flares (indicate type)	Yes – gun type	Good – Operator's Console
First Aid Kit	Yes	Good – under bench in front of Console

5. MISCELLANEOUS	
Please provide details of any signs of placards noted on the vessel regarding emergency equipment operation and/or procedures.	No signs/placards on actual vessels; the passengers are provided with a pre-departure brief on the basic safety aspects of the vessel.
Please provide your overall opinions on the accessibility of emergency equipment in the event of floundering or capsize.	Apart from the anchor and line stowed forward on the towing bollard, all other safety equipment is stowed in compartments within the Operator's Console or in close proximity to the Console. Appears to be accessible providing nothing happens to the operator, in which case, items would be difficult to locate.
After discussion with owner/operator, please provide brief notes regarding any safety procedures, if any, employed onboard the vessel (i.e., logging of voyage plan with home base, instruction given to passengers etc.).	Every trip: – Log sheet per trip (route, engine hours, crew, unusual occurrences). – Constant communications with home base. – Pre-departure (on dock) for passengers - getting in, seated, basic safety procedures. * Clear safety record.

6. PHOTOGRAPHS	
Please list, number and provide a brief description of any photographs taken.	N/A

7. NOTES

This operator operates high speed rigid inflatable craft with the proportionate higher probability for grounding/collision due to operator error. However, via its in house training program for its operators and the emphasis on passenger safety the operation has maintained a clear safety record. Regardless in any grounding or collision should the operator get thrown and/or injured the passengers would be left to their own devices. These vessels are subject to tremendous forces due to their speed in moderate to rough seas.

VESSEL NO. 8		
1. VESSEL PARTICULARS		
General Description (rigid inflatable, open skiff, tc./manufacturer)	Rigid hull inflatable (3 vessels in fleet) (Rendova Boats)	
Length	20 feet	
Breadth	Beam (inside) 6 feet	
Depth	1½ feet	
Draft	1½ feet	
Tonnage (GRT)	1.8T	
Power (engine type/power)	Twin Yamaha 90 hp	
Enclosed Superstructure (length, breadth, height)	No	
Other Comments (i.e., any other relevant comments; placement or seating for passengers etc.)	4 bench seats padded facing forward (3 bench seats seat 3 passengers each with the smaller forward bench seat capable of seating 2 passengers)	
2. VESSEL OPERATIONS		
# of Crew (does crew voyage with fare paying passengers ?)	1 Driver/operator Yes, voyages with passengers	
Crew Qualifications (i.e., masters ticket, radio operators license)	VHF (ROC) Local experience/boat experience	
# of Passengers (indicate maximum carried)	11	
Type of Operation (Tour Boat/Fishing Charter)	Marine Wildlife Tours/adventures	
Area of Operation	Port San Juan to Point Roberts	
Season of Operation	Year Round	
3. NAVIGATION AND COMMUNICATIONS EQUIPMENT	**Equipment Onboard (# of, type & manufacturer)**	**Accessibility Notes**
Radio Equipment	VHF (Standard Horizon)	Operator's Console
Radar	Yes – Furano 12 feet	Dome fitted Arch Display – Console
Radar Reflector	Yes (Mobri)	Radar Arch
Compass	Yes – magnetic	Operator's Console
EPIRB	No	
GPS	Yes – Garmin	Fitted, capable of hand held
Other Equipment	Depth Sounder – Hummingbird Cellular Phone	

4. SAFETY EQUIPMENT	Equipment Onboard (# of, type & manufacturer)	Accessibility Notes
PFDs/Lifejackets (indicate type)	Passengers required to wear cruiser suit (Mustang/Buoy O Buoy)	
Life Buoys/Cushion (indicate type)	Ring type	Front of Operator's Console
Heaving Line for Life Buoy (indicate length and size)	Yes – 50 feet polypropylene	Front of Operator's Console
Bailers (indicate capacity)	Hand pump and bucket	Under console anchor locker
Pumps (indicate type and capacity)	Bilge – 500 gph (Rule)	Bilge
Boat Hooks		
Paddles/Oars	1 paddle fitted with boat hook	Front of Console
Oar Locks Fitted (yes/no)	No	
Anchors (indicate type/weight)	Danforth (8 lb)	
Anchor Line (rope/wire, length and size)	100 feet of line	Locker in forward section of vessel
Portable Fire Extinguisher (type and size)	Yes – 5 lb	Front of Console
Fire Buckets (indicate size)	No	
Distress Flares (indicate type)	Yes – pistol: 6 A and 6 B	Waterproof Box under Console
First Aid Kit	Yes	Waterproof Box under Console

5. MISCELLANEOUS	
Please provide details of any signs of placards noted on the vessel regarding emergency equipment operation and/or procedures.	As they depart Harbour, passengers are given a "Safety Briefing" • Seating procedure in rougher conditions • Essential safety gear
Please provide your overall opinions on the accessibility of emergency equipment in the event of floundering or capsize.	The size of these vessels limit the movement of passengers and permit only limited movement by the operator. Although the essential safety gear is onboard and appears accessible in an extreme situation, the operator would be restricted, i.e., when required to anchor.
After discussion with owner/operator, please provide brief notes regarding any safety procedures, if any, employed onboard the vessel (i.e., logging of voyage plan with home base, instruction given to passengers, etc.).	Base radio – cellular phones manned at all times boat is away – boats travel in pairs.

6. PHOTOGRAPHS	
Please list, number and provide a brief description of any photographs taken.	

7. NOTES

These particular rigid hull inflatables have a low freeboard and in sea states above 3 would probably be restricted in their capability to make way at a reasonable speed with 11 passengers and 1 operator. They do not appear to be particularly strong, sea worthy vessels.

VESSEL NO. 9		
1. VESSEL PARTICULARS		
General Description (rigid inflatable, open skiff, etc./manufacturer)	2 vessels, Rigid Inflatable – Lifetimer Boats	
Length	27 LOA	
Breadth	10 feet (outside tubes)	
Depth		
Draft	1½ feet	
Tonnage (GRT)	4T (7860 lbs)	
Power (engine type/power)	O/B 250 HP Yamahas (single engine)	
Enclosed Superstructure (length, breadth, height)	No. Operator's Console fitted in after section of vessel.	
Other Comments (i.e., any other relevant comments; placement or seating for passengers, etc.)	Up to 12 passengers. Bench seats facing forward (3/bench) – 5 benches. Handrails/backrails/cushions. * Stability assessment by Nav Arch. '96.	
2. VESSEL OPERATIONS		
# of Crew (does crew voyage with fare paying passengers ?)	1 operator plus separate naturalist (crew).	
Crew Qualifications (i.e., masters ticket, radio operators license)	Experienced in local waters, CPS course, Survival first aid, VHF ROC. Several accompanied trips.	
# of Passengers (indicate maximum carried)	12	
Type of Operation (Tour Boat/Fishing Charter)	Whale watching and marine wildlife tours	
Area of Operation	South end Juan De Fuca – Haro Straits/Boundary Pass/San Juan Islands	
Season of Operation	Year round, but main season March to September.	
3. NAVIGATION AND COMMUNICATIONS EQUIPMENT	**Equipment Onboard (# of, type & manufacturer)**	**Accessibility Notes**
Radio Equipment	VHF – 1 fixed (Furuno) Trunk radios 1 fixed/boat Portable VHF (Emergency)	Operator's Console and A Frame
Radar	Raytheon 16 nm radars Antenna – A frame overhead	
Radar Reflector	Cylindrical (Mobri) 24 inches	
Compass	Ritchie 4" dash mounted magnetic compass	
EPIRB	No	
GPS	Handheld/Fixed / Magellan 3000	
Other Equipment	Depth Sounder also fitted. Charts – yes/Horn (compressed air)	

4. SAFETY EQUIPMENT	Equipment Onboard (# of, type & manufacturer)	Accessibility Notes
PFDs/Lifejackets (indicate type)	All passengers & crew wear cruiser suits (Buoy O Buoy)	
Life Buoys/Cushion (indicate type)	1 Lifebuoy (762 mm)	Side of Operator's Console
Heaving Line for Life Buoy (indicate length and size)	Attached (50 feet)	Stowage compartment in bow of vessel
Bailers (indicate capacity)	No	
Pumps (indicate type and capacity)	Hand bilge pump 250 gpm electric pump (Rule)	Hand pump stowed in compt in front of Console. Electric pump fitted in bilge.
Boat Hooks	No	-
Paddles/Oars	1 paddle	-
Oar Locks Fitted (yes/no)	No	-
Anchors (indicate type/weight)	Danforth – 8 lbs	Stowed in compartment in forward section of vessel. * No towing bollard.
Anchor Line (rope/wire, length and size)	27 foot chain, 100 feet 5/8 inch Samson braid	
Portable Fire Extinguisher (type and size)	1 10 lb ABC	Side of Console
Fire Buckets (indicate size)	No	
Distress Flares (indicate type)	Yes – hand held (12)	Waterproof bag in compartment under Operator's Console/
First Aid Kit	Yes	In portable gear box under Operator seats.

5. MISCELLANEOUS	
Please provide details of any signs of placards noted on the vessel regarding emergency equipment operation and/or procedures.	Pre-trip briefing – emphasizing vessel construction, safety, navigation route, etc., procedures in marginal conditions.
Please provide your overall opinions on the accessibility of emergency equipment in the event of floundering or capsize.	Although much of the equipment was taken off the boat, the placement of safety equipment is assessed as good. The size of this particular rigid inflatable boat provides ready access to any part of the vessel.
After discussion with owner/operator, please provide brief notes regarding any safety procedures, if any, employed onboard the vessel (i.e., logging of voyage plan with home base, instruction given to passengers etc.).	The operators are in constant communication with home base via trunk radios. The progress and whereabouts of either company vessel is closely monitored.

6. PHOTOGRAPHS	
Please list, number and provide a brief description of any photographs taken.	

7. NOTES

A responsible owner/operator, concerned with the upkeep of his 2 boats and for the safety of his crew and passengers. Has several concerns regarding operations that he considers are marginal at best; foresees need for regulations to ensure that all involved fulfill the standards. Recommends that all vessels carrying passengers be subject to an annual inspection to ensure vessel integrity.

VESSEL NO. 10		
1. VESSEL PARTICULARS		
General Description (rigid inflatable, open skiff, etc./manufacturer)	Home Built Fiberglass U-Hull, with walkaround cabin	
Length	25 feet 6 inches	
Breadth	8 feet	
Depth	54 inches	
Draft		
Tonnage (GRT)	4.89	
Power (engine type/power)	225 HI Mariner Outboard	
Enclosed Superstructure (length, breadth, height)	L = 7 fft, B = 5 feet, H = 2 feet / Deck dropped 12 inches below sheer line	
Other Comments (i.e., any other relevant comments; placement or seating for passengers etc.)	Seating: Outside – 2 sets back to back chairs – Bench across stern Inside – 2 - v-berths (5 feet and 7 feet) – Enclosed Head	
2. VESSEL OPERATIONS		
# of Crew (does crew voyage with fare paying passengers ?)	2 including skipper Yes	
Crew Qualifications (i.e., masters ticket, radio operators license)	Radio Operators License Local Experience	
# of Passengers (indicate maximum carried)	Licensed for 12. Operator carries 10 at most, includng crew	
Type of Operation (Tour Boat/Fishing Charter)		
Area of Operation	Tour Boat and Fishing Charter	
Season of Operation	Year-round, weather and ice conditions dependent	
3. NAVIGATION AND COMMUNICATIONS EQUIPMENT	**Equipment Onboard (# of, type & manufacturer)**	**Accessibility Notes**
Radio Equipment	2 VHF / Handheld/ Base	Left of cockpit / easily accessible by operator
Radar	No	
Radar Reflector	No	Intending to install in spring
Compass	Yes	At centre of boat, adjacent to operator
EPIRB	No	
GPS	Yes	Handheld / dashmounted
Other Equipment		

4. SAFETY EQUIPMENT	Equipment Onboard (# of, type & manufacturer)	Accessibility Notes
PFDs/Lifejackets (indicate type)	8 Standard Lifejackets / Adjust Size / 2 Floater Suits / 6 PFDs	Fwd part of Cabin
Life Buoys/Cushion (indicate type)	20 inch Life Ring	Rear Storage Compt between Aft Seats
Heaving Line for Life Buoy (indicate length and size)	150 feet x 3/16 inch	Rear Storage Compt between Aft Seats
Bailers (indicate capacity)	2 1-gallon Bulkers	Rear Storage Compt between Aft Seats
Pumps (indicate type and capacity)	Automatic Bilge Pump. 1,000 gph	Rear Storage Compt between Aft Seats
Boat Hooks	12 feet gaff / 3 feet boat hook	Side Decks
Paddles/Oars	2 home-made / 11 feet	Side Decks on Brackets
Oar Locks Fitted (yes/no)	No but holes provided for tying	
Anchors (indicate type/weight)	Stainless 26 feet Danforth	
Anchor Line (rope/wire, length and size)	300 feet x ½" nylon rope	Aft Deck Locker
Portable Fire Extinguisher (type and size)	5A2BC	Under dash
Fire Buckets (indicate size)		
Distress Flares (indicate type)	As per Coast Guard Rep. Exp. Date: 2001	In Head, Fwd of Cockpit
First Aid Kit	Yes	In Head, Fwd of Cockpit

5. MISCELLANEOUS	
Please provide details of any signs of placards noted on the vessel regarding emergency equipment operation and/or procedures.	– Engine starting procedures – Coast Guard Approval decal – Intention to install signs indicating location of lifejackets and ring buoys
Please provide your overall opinions on the accessibility of emergency equipment in the event of floundering or capsize.	– Lifejackets and life ring are not easily accessible, but navigation, communication and fire sighting equipment are easily accessible
After discussion with owner/operator, please provide brief notes regarding any safety procedures, if any, employed onboard the vessel (i.e., logging of voyage plan with home base, instruction given to passengers etc.).	– No voyage plan logged for normal route of operation. Plan logged for out-of-bay trips. Recent upgrading of marine radio services makes daily logging of voyages inconvenient. Radio operators based at St. Anthony Stn. lack local knowledge of Notre Dame Bay. – Regular contact with Home Base by all phone (in service area) – Upon boarding, passengers informed of Life Jacket and Seating location. Seating locations are weather dependent

6. PHOTOGRAPHS	
Please list, number and provide a brief description of any photographs taken.	

7. NOTES

Operator impressed with survey. Vessel proven in extreme weather and sea conditions. Has operated completely satisfactorily in gales of 50 mph with 60 mph gusts, in head on and following seas.

VESSEL NO. 11		
1. VESSEL PARTICULARS		
General Description (rigid inflatable, open skiff, etc./manufacturer)	Aluminum Tournament Bass Boat Fischer	
Length	18 feet 10 inches	
Breadth	89 inches	
Depth	Gumel to floor approx. 12 inches, gum to keel 22 inches	
Draft	7 - 8 inches	
Tonnage (GRT)	Hull 1100 lbs motor approx. 375 lbs	
Power (engine type/power)	Bow – Minukota 3 hp electric motor 24 / Stern – Mercury - 100 hp 2 + 2 2 cyl. below 1800 rpm/ 4 cyl. above 1800 rpm	
Enclosed Superstructure (length, breadth, height)	None, single rightside console	
Other Comments (i.e., any other relevant comments; placement or seating for passengers, etc.)	3 RV batteries, booster cables 1000 CCA 225 min reserved tim each Air horn Emergency blankets 1 million candle power beam	
2. VESSEL OPERATIONS		
# of Crew (does crew voyage with fare paying passengers ?)	1 Yes	
Crew Qualifications (i.e., masters ticket, radio operators license)	Nothing	
# of Passengers (indicate maximum carried)	4	
Type of Operation (Tour Boat/Fishing Charter)	Fishing Charter	
Area of Operation	Ontario	
Season of Operation	Ice-out to Ice-in	
3. NAVIGATION AND COMMUNICATIONS EQUIPMENT	**Equipment Onboard (# of, type & manufacturer)**	**Accessibility Notes**
Radio Equipment	None	
Radar	None	
Radar Reflector	None	
Compass	Yes	Tackle box / not an emergency item
EPIRB	Flares ? Yes	
GPS	None	
Other Equipment		

4. SAFETY EQUIPMENT	Equipment Onboard (# of, type & manufacturer)	Accessibility Notes
PFDs/Lifejackets (indicate type)	5 Buoy-o-Buoy PFDs	All customers are offered PFDs at dock, two flotation cushions are always above deck, the rest are stored below
Life Buoys/Cushion (indicate type)	2 Seat Cushions BB	Always above deck
Heaving Line for Life Buoy (indicate length and size)		
Bailers (indicate capacity)	1 manual 2 litres	Below deck (stern)
Pumps (indicate type and capacity)	1 Electric Attwood 500 gph	Built-in
Boat Hooks	None	
Paddles/Oars	2 Paddles	Above deck behind seats
Oar Locks Fitted (yes/no)		
Anchors (indicate type/weight)	1 20-lbs. (naval)	
Anchor Line (rope/wire, length and size)	Rope 100 feet	Below deck (stern hatch)
Portable Fire Extinguisher (type and size)	Yes, very small	Under console
Fire Buckets (indicate size)		
Distress Flares (indicate type)	Hand-held	Side rod locker
First Aid Kit	Yes	Bow hatch

5. MISCELLANEOUS	
Please provide details of any signs of placards noted on the vessel regarding emergency equipment operation and/or procedures.	Everyone is told, on the dock, where the PFDs, flares, and med kit are stored.
Please provide your overall opinions on the accessibility of emergency equipment in the event of floundering or capsize.	Very little, to nothing would be accessible in the event of capsize, like most boats. Given boat's dimensions, it is almost impossible to flip; 2 PFD cushions always above deck.
After discussion with owner/operator, please provide brief notes regarding any safety procedures, if any, employed onboard the vessel (i.e., logging of voyage plan with home base, instruction given to passengers, etc.).	If weather is rough, verbal notification is made as to where vessel is headed and for how long.

6. PHOTOGRAPHS	
Please list, number and provide a brief description of any photographs taken.	

7. NOTES

VESSEL NO. 12		
1. VESSEL PARTICULARS		
General Description (rigid inflatable, open skiff, etc./manufacturer)	Ullrichson Capstrake Runabout open vessel	
Length	24 feet	
Breadth	8 feet	
Depth	2 feet	
Draft	2.5 feet	
Tonnage (GRT)	1.5	
Power (engine type/power)	Chrysler Marine 318 250 HP inboard	
Enclosed Superstructure (length, breadth, height)	Forward cabin, head only	
Other Comments (i.e., any other relevant comments; placement or seating for passengers, etc.)		
2. VESSEL OPERATIONS		
# of Crew (does crew voyage with fare paying passengers ?)	Owner operator – 4 people to 6 people aboard, usually 4	
Crew Qualifications (i.e., masters ticket, radio operators license)	CYA Race Management Level I Radio operator's license	
# of Passengers (indicate maximum carried)	Usually 4	
Type of Operation (Tour Boat/Fishing Charter)	Fishing Charter	
Area of Operation	Kingston Harbour – St. lawrence River, Wolfe Island	
Season of Operation	June - October	
3. NAVIGATION AND COMMUNICATIONS EQUIPMENT	**Equipment Onboard (# of, type & manufacturer)**	**Accessibility Notes**
Radio Equipment	VHF-FM Marine Radio telephone SP 7600	Accessible
Radar		
Radar Reflector		
Compass	Air guide	
EPIRB		
GPS		
Other Equipment		

4. SAFETY EQUIPMENT	Equipment Onboard (# of, type & manufacturer)	Accessibility Notes
PFDs/Lifejackets (indicate type)	5 PFDs vest type / 2 horse collars	
Life Buoys/Cushion (indicate type)		
Heaving Line for Life Buoy (indicate length and size)	5/8 inch 150 feet	
Bailers (indicate capacity)	3500 - 4000 L/hr / 10 L sail	
Pumps (indicate type and capacity)	Electric Bilge 1 1/4 inch 4500 L/hr Automatic	
Boat Hooks	1	Topside rack
Paddles/Oars	2	
Oar Locks Fitted (yes/no)		
Anchors (indicate type/weight)	12 feet chain Danforth 18 inches	
Anchor Line (rope/wire, length and size)	5/8 Dacron 150 feet	Under seat or in stern
Portable Fire Extinguisher (type and size)	CO_2	On bulkhead
Fire Buckets (indicate size)		
Distress Flares (indicate type)	3	On shelf in bow
First Aid Kit	1	On dash

5. MISCELLANEOUS	
Please provide details of any signs of placards noted on the vessel regarding emergency equipment operation and/or procedures.	Radio distress – MOT card
Please provide your overall opinions on the accessibility of emergency equipment in the event of floundering or capsize.	Easily accessed
After discussion with owner/operator, please provide brief notes regarding any safety procedures, if any, employed onboard the vessel (i.e., logging of voyage plan with home base, instruction given to passengers, etc.).	

6. PHOTOGRAPHS	
Please list, number and provide a brief description of any photographs taken.	

7. NOTES

VESSEL NO. 13		
1. VESSEL PARTICULARS		
General Description (rigid inflatable, open skiff, etc./manufacturer)	Sea Sport Pro 8000 V hull, cuddy cabin, alum.	
Length	28 feet	
Breadth	9 feet 6 inches	
Depth	54 inches	
Draft	12 inches	
Tonnage (GRT)	(L5) 4,300 lbs dry weight	
Power (engine type/power)	350 ci/gas chevy	
Enclosed Superstructure (length, breadth, height)		
Other Comments (i.e., any other relevant comments; placement or seating for passengers, etc.)	Seating for 6 Cuddy Cabin Seating bench style Cockpit for 6 persons sitting back to back 4 persons engine cover rear deck Seating for 2 persons bow area	
2. VESSEL OPERATIONS		
# of Crew (does crew voyage with fare paying passengers ?)	Captain of vessel only No regular crew	
Crew Qualifications (i.e., masters ticket, radio operators license)	8 years experience as Captain of own vessel Radio license	
# of Passengers (indicate maximum carried)	6 - 8 (insured for 10)	
Type of Operation (Tour Boat/Fishing Charter)	Fishing Charter / Sightseeing	
Area of Operation	Eastern Lake Ontario	
Season of Operation	May 1st to Sept 30th	
3. NAVIGATION AND COMMUNICATIONS EQUIPMENT	**Equipment Onboard (# of, type & manufacturer)**	**Accessibility Notes**
Radio Equipment	1 VHF Radio RayJeff 5000	By vessel's helm (right side)
Radar	N/A	
Radar Reflector	None	
Compass	1 compass	Dash in front of helm (left)
EPIRB	None	
GPS	Loran C Sitex	By helm
Other Equipment		

4. SAFETY EQUIPMENT	Equipment Onboard (# of, type & manufacturer)	Accessibility Notes
PFDs/Lifejackets (indicate type)	9 adult vests / 3 child vests	Kept under seats in cockpit
Life Buoys/Cushion (indicate type)	Dolphin 610 mm	
Heaving Line for Life Buoy (indicate length and size)	Dolphin 15 m polypropylene	
Bailers (indicate capacity)	Manual diaphragm & fishing buckets	
Pumps (indicate type and capacity)	20 1750 gph	
Boat Hooks	One al.	
Paddles/Oars	No	
Oar Locks Fitted (yes/no)	No	
Anchors (indicate type/weight)	20 lb Danforth type	
Anchor Line (rope/wire, length and size)	150 feet 3/4 braided nylon w 5 feet chain lead	
Portable Fire Extinguisher (type and size)	2 #10 BC Kidde + 20 lb BC	
Fire Buckets (indicate size)	No except for plastic fishing buckets	
Distress Flares (indicate type)	Olin Pistol – 12 shells (double req't) 3 Hand-held flares	
First Aid Kit	Yes	

5. MISCELLANEOUS	
Please provide details of any signs of placards noted on the vessel regarding emergency equipment operation and/or procedures.	Signs posted: – Remain seated while boat is moving. – Do not grab dock while departing or arriving. – Do not sit on Gunnel or front deck. – No drunkeness - No horseplay.
Please provide your overall opinions on the accessibility of emergency equipment in the event of floundering or capsize.	Access to PFDs and ring good. If boat were to be flipped (unlikely), jackets would not likely float free.
After discussion with owner/operator, please provide brief notes regarding any safety procedures, if any, employed onboard the vessel (i.e., logging of voyage plan with home base, instruction given to passengers etc.).	Boat kept at Colling Bay Legion. Guests shown where safety eqt located. No alcohol or drugs allowed aboard. (Part of charter agreement.) (Difficulty arises with some groups who are accustomed to wine with a meal.) Voyage plan w office, radio contact w office and between boats. Boats often go together. Soft soled shoes and appropriate clothing and personal F.D. responsibility of each person. No standing on board while in motion. No sitting on rail while in motion.

6. PHOTOGRAPHS		
Please list, number and provide a brief description of any photographs taken.	1. Bow shot. 2. Stern 1/4 3. Beam View 4. Note full walkaround	5. Helm and seating arrangement 6. Posted sign re behaviour 7. Aft cock pit and engine cover

7. NOTES
Could not inspect engine and bilge spaces due to ice cover.

VESSEL NO. 14		
1. VESSEL PARTICULARS		
General Description (rigid inflatable, open skiff, etc./manufacturer)	Baha Sport Fisherman V hull, cuddy cabin, fibreglass	
Length	28 feet 6 inches	
Breadth	10 feet	
Depth	5 feet	
Draft	18 inches	
Tonnage (GRT)	(L5) 9,500 lbs dry weight	
Power (engine type/power)	Twin 350 ci Inboards	
Enclosed Superstructure (length, breadth, height)		
Other Comments (i.e., any other relevant comments; placement or seating for passengers, etc.)	Seating for 6 Cuddy Cabin Seating for 6 Cockpit area Seating for 2 persons bow area	
2. VESSEL OPERATIONS		
# of Crew (does crew voyage with fare paying passengers ?)	Captain of vessel only No regular crew	
Crew Qualifications (ie. masters ticket, radio operators license)	18 years experience as Captain of own vessel Radio license	
# of Passengers (indicate maximum carried)	6 - 8 (insured for 12)	
Type of Operation (Tour Boat/Fishing Charter)	Fishing Charter / Sightseeing	
Area of Operation	Eastern Lake Ontario	
Season of Operation	May 1st to Sept 30th	
3. NAVIGATION AND COMMUNICATIONS EQUIPMENT	**Equipment Onboard (# of, type & manufacturer)**	**Accessibility Notes**
Radio Equipment	1 VHF Radio RayJeff 5000	By vessel's helm (right side)
Radar	Radar Seaport 12 mil.	Far left dash
Radar Reflector	None	
Compass	1 compass	Dash in front of helm (left)
EPIRB	None	
GPS	Loran C Sitex	By helm
Other Equipment		

4. SAFETY EQUIPMENT	Equipment Onboard (# of, type & manufacturer)	Accessibility Notes
PFDs/Lifejackets (indicate type)	9 adult vests / 3 child vests	Kept under seats in cockpit
Life Buoys/Cushion (indicate type)	Dolphin 610 mm	
Heaving Line for Life Buoy (indicate length & size)	Dolphin 15 m Polypropylene	
Bailers (indicate capacity)	Fishing buckets 3 5-gal; manual diaphragm in lazarette intake at bilge low point; perm. fix	
Pumps (indicate type and capacity)	2 x 1750 gph	
Boat Hooks	One al.	
Paddles/Oars	No	
Oar Locks Fitted (yes/no)	No	
Anchors (indicate type/weight)	20 lb Danforth type / Slotted shank	
Anchor Line (rope/wire, length and size)	150 feet 3/4 braided nylon w 5 feet chain lead	
Portable Fire Extinguisher (type and size)	2 #10 BC Kidde + Class 2A Water 2 Gal	
Fire Buckets (indicate size)	No except for plastic fishing buckets	
Distress Flares (indicate type)	Olin Pistol + shells (double) 3 Hand-held flares	
First Aid Kit	Yes	

5. MISCELLANEOUS	
Please provide details of any signs of placards noted on the vessel regarding emergency equipment operation and/or procedures.	Signs posted: – Remain seated while boat is moving. – Do not grab dock while departing or arriving. – Do not sit on Gunnel or front deck. – No drunkeness - No horseplay.
Please provide your overall opinions on the accessibility of emergency equipment in the event of floundering or capsize.	Access to PFDs and ring good. If boat were to be flipped (unlikely), jackets would not likely float free.
After discussion with owner/operator, please provide brief notes regarding any safety procedures, if any, employed onboard the vessel (ie. logging of voyage plan with home base, instruction given to passengers etc.).	Boat kept at Colling Bay Legion. Guests shown where safety eqt located. No alcohol or drugs allowed aboard. (Part of charter agreement.) (Difficulty arises with some groups who are accustomed to wine with a meal.) Voyage plan w office, radio contact w office and between boats. Boats often go together. Soft soled shoes and appropriate clothing and personal F.D. responsibility of each person. No standing on board while in motion. No sitting on rail while in motion.

6. PHOTOGRAPHS		
Please list, number and provide a brief description of any photographs taken.	8. Seating and Helm Arrgt. 9. Helm Pre-departure check list signals 10. Charter Party Agreement re behaviour aboard	11. View fr. helm 12. Cockpit aft engine under

7. NOTES
Could not inspect engine and bilge spaces due to ice cover.

VESSEL NO. 15		
1. VESSEL PARTICULARS		
General Description (rigid inflatable, open skiff, etc./manufacturer)	Fiberglass Center Console	
Length	24 feet	
Breadth	8 feet 6 inches	
Depth		
Draft	Approx. 2 feet	
Tonnage (GRT)	Approx. 3500 lb	
Power (engine type/power)	200 Hp Johnson 1996 Outboard	
Enclosed Superstructure (length, breadth, height)	T - Top	
Other Comments (i.e., any other relevant comments; placement or seating for passengers etc.)	Small berth inside center console	
2. VESSEL OPERATIONS		
# of Crew (does crew voyage with fare paying passengers ?)	1 Skipper	
Crew Qualifications (i.e., masters ticket, radio operators license)	Skipper – Canadian Power Squadron Basic Boating Course VHF License / 30 Yrs boating experience	
# of Passengers (indicate maximum carried)	6 (boat certified for 10)	
Type of Operation (Tour Boat/Fishing Charter)	Charter Fishing	
Area of Operation	Lake Ontario / Bay of Quinte	
Season of Operation	April 1 - Nov 30	
3. NAVIGATION AND COMMUNICATIONS EQUIPMENT	**Equipment Onboard (# of, type & manufacturer)**	**Accessibility Notes**
Radio Equipment	2 VHF – Sitex; Apelco Cellular phone	Radio box in T-Top overhead Phone on person
Radar	Furuno	Screen in overhead radio box
Radar Reflector	No – T-Top acts as reflector	
Compass	Yes – mounted on dash	
EPIRB	No	
GPS	Yes – low range LMS 350	On dash

4. SAFETY EQUIPMENT	Equipment Onboard (# of, type & manufacturer)	Accessibility Notes
PFDs/Lifejackets (indicate type)	– 8 basic keyhole – Floatation suit - Mustang – Vests - Berkely – Childrens Vests	– Stowed in Cooler in deck – Usually worn by Skipper – Inside Console – Stored in Cooler on Deck
Life Buoys/Cushion (indicate type)	1 Full size orange life range and 50 ft rope	On deck
Heaving Line for Life Buoy (indicate length and size)	3/8" Poly Propylene/Nylon 50 ft	On deck
Bailers (indicate capacity)	Manual Pump	
Pumps (indicate type and capacity)	3 Electric Bilge Pumps approx. 1200 GPH x 2 and 600 GPH x 1	
Boat Hooks	1 8-ft Telescopic Aluminum	On deck
Paddles/Oars	2 Oars	Inside console
Oar Locks Fitted (yes/no)	No	
Anchors (indicate type/weight)	Danforth 20 lb / Mushroom 15 lb	
Anchor Line (rope/wire, length and size)	200 ft Braided Dacron 1/2 inch	
Portable Fire Extinguisher (type and size)	5 lb ABC	
Fire Buckets (indicate size)	5 Gal plastic buckets avail. on dk	
Distress Flares (indicate type)	– Flare Gun + 12 flares – 6 Double Flaire Sky Rockets	– In console – In console
First Aid Kit	Yes	In console

5. MISCELLANEOUS	
Please provide details of any signs of placards noted on the vessel regarding emergency equipment operation and/or procedures.	VHF operating instructions – Coast Guard.
Please provide your overall opinions on the accessibility of emergency equipment in the event of floundering or capsize.	All equipment very accessible – very open fishing boat.
After discussion with owner/operator, please provide brief notes regarding any safety procedures, if any, employed onboard the vessel (i.e., logging of voyage plan with home base, instruction given to passengers etc.).	Someone is always notified of approximate fishing location and intended time of return daily.

6. PHOTOGRAPHS	
Please list, number and provide a brief description of any photographs taken.	

7. NOTES

VESSEL NO. 16		
1. VESSEL PARTICULARS		
General Description (rigid inflatable, open skiff, etc./manufacturer)	Crestliner Sabre GL (Gt Lakes) All welded al.	
Length	24 feet - 8 inches	
Breadth	8 feet - 10 inches	
Depth		
Draft	~ 14 inches to USK	
Tonnage (GRT)	< 5	
Power (engine type/power)	Mercruiser 5 l LX gas 1/0	
Enclosed Superstructure (length, breadth, height)	L ~ 6 ft 5 in; L ~5 ft; W ~to sides of boat bow cuddy w 2 bunks and porta botti	
Other Comments (i.e., any other relevant comments; placement or seating for passengers etc.)	4 Captains Chairs in Cockpit 2 Jump Sects aft 1 P 1 S each side of engine box	
2. VESSEL OPERATIONS		
# of Crew (does crew voyage with fare paying passengers ?)	One Owner/Operator	
Crew Qualifications (i.e., masters ticket, radio operators license)	Radio Ops. License – Lectures from CCG thru OFCA Military Navigatiors Course and Boat Operators Course	
# of Passengers (indicate maximum carried)	4	
Type of Operation (Tour Boat/Fishing Charter)	Fish Charter	
Area of Operation	East Lake Ontario	
Season of Operation	June - August	
3. NAVIGATION AND COMMUNICATIONS EQUIPMENT	**Equipment Onboard (# of, type & manufacturer)**	**Accessibility Notes**
Radio Equipment	VHF Realistic MT-400	Console MTD
Radar	No	
Radar Reflector	Metal Boat	
Compass	Yes	
EPIRB	No	
GPS	Lowrange 350A Loran C Lowrange	Console
Other Equipment		

4. SAFETY EQUIPMENT	Equipment Onboard (# of, type & manufacturer)	Accessibility Notes
PFDs/Lifejackets (indicate type)	8 Vests CCG Approved 1 Floater Jacket	Side Shelves in Cockpit
Life Buoys/Cushion (indicate type)	610 mm Ring and 50 lb Line 2 Float Cushions	Side Shelves in Cockpit
Heaving Line for Life Buoy (indicate length and size)	Connected to Ring	
Bailers (indicate capacity)	2 Buckets 8 l + 4 l	Cockpit
Pumps (indicate type and capacity)	Automatic 12 V Rule 1200 12 V Manual Rule 1200	
Boat Hooks	One	P side coaming in clips
Paddles/Oars	2 Paddles	Behind life jackets
Oar Locks Fitted (yes/no)	No	
Anchors (indicate type/weight)	Danforth Type 20 lb	
Anchor Line (rope/wire, length and size)	150 ft x 5/8 inch No chain	In centre of Cockpit under role in a storage bin
Portable Fire Extinguisher (type and size)	1 @ 10 lb and 1 @ 5 lb	In open W/h
Fire Buckets (indicate size)	No	
Distress Flares (indicate type)	Pistols and 12 shells 1 Smoke cannister 1 Rocket shell hend-held	In open W/h under helm seat
First Aid Kit	One from Medical Centre	In open W/h

5. MISCELLANEOUS	
Please provide details of any signs of placards noted on the vessel regarding emergency equipment operation and/or procedures.	Radio channels, etc. Instruction to passengers on how to use radio charts marked with position and compass brgs to get home (in event Captain incapacitated). Also instructions on how to use GPS.
Please provide your overall opinions on the accessibility of emergency equipment in the event of floundering or capsize.	Probably would have to dive under to get at flares.
After discussion with owner/operator, please provide brief notes regarding any safety procedures, if any, employed onboard the vessel (i.e., logging of voyage plan with home base, instruction given to passengers etc.).	Passengers told about magnetic direction effect on compass (local variation by 10 degrees or more). Emergency radio procedures.

6. PHOTOGRAPHS	
Please list, number and provide a brief description of any photographs taken.	

7. NOTES

VESSEL NO. 17		
1. VESSEL PARTICULARS		
General Description (rigid inflatable, open skiff, etc./manufacturer)	Open Skiff 'UMIAK 22' Metalcraft 'ROW E BOAT'	
Length	22 feet	
Breadth	8 feet	
Depth		
Draft	~ 1 foot	
Tonnage (GRT)	< 5	
Power (engine type/power)	2 Johnson 60 hp outboards; gas	
Enclosed Superstructure (length, breadth, height)	No	
Other Comments (i.e., any other relevant comments; placement or seating for passengers etc.)	Passengers remain fwd underway. Seating on bench lockers fore and aft P & S and athwartships fwd of console.	
2. VESSEL OPERATIONS		
# of Crew (does crew voyage with fare paying passengers ?)	One (Skipper/Dive Master)	
Crew Qualifications (i.e., masters ticket, radio operators license)	Divemaster (minimum standard) Instructor Regulated thru Ont. Underwater Council (1 Master's Ticket) Radio Ops ticket and Power Squadron	
# of Passengers (indicate maximum carried)	8	
Type of Operation (Tour Boat/Fishing Charter)	Dive Charters	
Area of Operation	East Lake Ontario / Upper St. Lawrence	
Season of Operation	Mid April to Mid November (depending on ice)	
3. NAVIGATION AND COMMUNICATIONS EQUIPMENT	**Equipment Onboard (# of, type & manufacturer)**	**Accessibility Notes**
Radio Equipment	– VHF Apelco Waterproof – Cell phone Motorolla 2 way VHF	Hard mtd on console. Carried on Dive Master in waterproof bag
Radar	No	
Radar Reflector	No but all al. constr. with a frame at rear	
Compass	Offshore 105	Console
EPIRB	No	
GPS	Yes Magellan 5000	Detachable bkt on console
Other Equipment	Fish Finder/Depth Sounder	On console

4. SAFETY EQUIPMENT	Equipment Onboard (# of, type & manufacturer)	Accessibility Notes
PFDs/Lifejackets (indicate type)	– Buoy-o-Buoy 712 waistcoat w back flap (8) – Keyhole (6)	– Under console seat lkr – Behind seat lkrs
Life Buoys/Cushion (indicate type)	1 Ring 50 feet 1 Float 100 feet w reel	On a frame in mtr well
Heaving Line for Life Buoy (indicate length and size)	1 Throw Bag and Line 100 feet	Adjacent lifering
Bailers (indicate capacity)	1 2-l can	
Pumps (indicate type and capacity)	1 Stirrup Pump hand 1 12 V Rule 1200	
Boat Hooks	1 Telescopic Al.	Laid where convenient
Paddles/Oars	2 Paddles (Al.)	Fwd outboard of side lkrs
Oar Locks Fitted (yes/no)	No	
Anchors (indicate type/weight)	1 Danforth Type 1 Grapple 150 ft 3/4 inch	
Anchor Line (rope/wire, length and size)	150 feet x 3/4 rope w 5 feet chain	
Portable Fire Extinguisher (type and size)	- 20 lb ABC (1) - 2 lb BC (1)	– Under Ctr Console – Under Engine well
Fire Buckets (indicate size)	No	
Distress Flares (indicate type)	Orlon Pistol and shells 2 Skyblazers	In cnr of engine well on velco retainers
First Aid Kit	Yes, assembled by nurse. Includes O_2.	2 Packs 2 feet x 2 feet x 8 inch cases in water/air tight cases

5. MISCELLANEOUS	
Please provide details of any signs of placards noted on the vessel regarding emergency equipment operation and/or procedures.	Radio call sign on console.
Please provide your overall opinions on the accessibility of emergency equipment in the event of floundering or capsize.	As good as one can expect given the type of boat (open).
After discussion with owner/operator, please provide brief notes regarding any safety procedures, if any, employed onboard the vessel (i.e., logging of voyage plan with home base, instruction given to passengers etc.).	Standard diving waivers. Dive plan left at office. Radio communication to office. Pre-moored dive sites. Orientation instr to passengers re safety equipment, etc.

6. PHOTOGRAPHS	
Please list, number and provide a brief description of any photographs taken.	

7. NOTES
Boat is a ‘stock’ commercial design by Metalcraft Marine Kingston. All aluminum and rugged construction with ample grab handles.

VESSEL NO. 18		
1. VESSEL PARTICULARS		
General Description (rigid inflatable, open skiff, etc./manufacturer)	Open skiff by T. Wroe (pre Metalcraft)	
Length	22 feet	
Breadth	7 feet - 10 inches	
Depth	39 inches	
Draft	20 inches USK 30 inches Drive	
Tonnage (GRT)	< 5	
Power (engine type/power)	4.3 GL Volvo Prenta 1/0 130 hp gasoline	
Enclosed Superstructure (length, breadth, height)	No	
Other Comments (i.e., any other relevant comments; placement or seating for passengers etc.)	CL Fore and Aft seating (sturdy)	
2. VESSEL OPERATIONS		
# of Crew (does crew voyage with fare paying passengers ?)	One	
Crew Qualifications (i.e., masters ticket, radio operators license)	Divemaster (minimum standard) Instructor Regulated thru Ont. Underwater Council (1 Master's Ticket) Radio Ops ticket and Power Squadron	
# of Passengers (indicate maximum carried)	8	
Type of Operation (Tour Boat/Fishing Charter)	Dive Charters	
Area of Operation	East Lake Ontario / Upper St. Lawrence	
Season of Operation	Mid April - Mid November (depending on ice)	
3. NAVIGATION AND COMMUNICATIONS EQUIPMENT	**Equipment Onboard (# of, type & manufacturer)**	**Accessibility Notes**
Radio Equipment	– VHF Apelco Waterproof – Cell phone Motorolla 2 Way VHF	– Hard mtd on console – Carried on Dive Master in waterproof bag
Radar	No	
Radar Reflector	No but all al. constr. with a frame at rear	
Compass	Offshore 105	Console
EPIRB	No	
GPS	Yes Magellan 5000	Detachable bkt on console
Other Equipment	Fish Finder/Depth Sounder	On console

4. SAFETY EQUIPMENT	Equipment Onboard (# of, type & manufacturer)	Accessibility Notes
PFDs/Lifejackets (indicate type)	– Buoy-o-Buoy 712 Waistcoat w back flap (8) – Keyhole (6)	– Under console seat lkr – Behind seat lkrs.
Life Buoys/Cushion (indicate type)	– 1 Ring 50 feet – 1 float 100 feet with reel	– On a frame – In Mtr well
Heaving Line for Life Buoy (indicate length and size)	1 Throw bag and line 100 feet	Adjacent life ring
Bailers (indicate capacity)	1 2-litre can	
Pumps (indicate type and capacity)	1 Stirrup pump ahnd 1 12-V Rule 1200	
Boat Hooks	One Telescopic Al.	Laid where convenient
Paddles/Oars	2 Paddles (Al.)	Fwd outboard of side lkrs.
Oar Locks Fitted (yes/no)	No	
Anchors (indicate type/weight)	1 Danforth Type 1 Grapple 150 feet 3/4 inch	
Anchor Line (rope/wire, length and size)	150 feet x 3/4 rope w 5 feet chain	
Portable Fire Extinguisher (type and size)	– 20 lb ABC (1) and 2 lb BC (1)	– Under ctr console – Under engine well
Fire Buckets (indicate size)	No	
Distress Flares (indicate type)	Orlon Pistol and shells 2 Skyblazers	In ctr of engine well on velco retainers
First Aid Kit	Yes, assembled by a nurse. Includes 0_2.	2 Packs 2 feet x 2 feet x 8 inches cases in water/air tight cases

5. MISCELLANEOUS	
Please provide details of any signs of placards noted on the vessel regarding emergency equipment operation and/or procedures.	Radio call sign on console.
Please provide your overall opinions on the accessibility of emergency equipment in the event of floundering or capsize.	As good as one can expect given the type of boat (open).
After discussion with owner/operator, please provide brief notes regarding any safety procedures, if any, employed onboard the vessel (i.e., logging of voyage plan with home base, instruction given to passengers etc.).	Standard diving waivers. Dive plan left at office. Radio communication to office. Pre-moored dive sites. Orientation instr. to passengers re safety equipment, etc.

6. PHOTOGRAPHS	
Please list, number and provide a brief description of any photographs taken.	

7. NOTES
Boat is a ‘stock’ commercial design by Metalcraft Marine Kingston. All aluminum and rugged construction with ample grab handles.

VESSEL NO. 19		
1. VESSEL PARTICULARS		
General Description (rigid inflatable, open skiff, etc./manufacturer)	Fiberglass ThunderCraft	
Length	23 feet 7 inches	
Breadth	8 feet	
Depth		
Draft	27 inches	
Tonnage (GRT)	Approx. 5000 lbs.	
Power (engine type/power)	Mercruiser 35.0 cu.in. 260 hp	
Enclosed Superstructure (length, breadth, height)		
Other Comments (i.e., any other relevant comments; placement or seating for passengers etc.)	Very deep boat	
2. VESSEL OPERATIONS		
# of Crew (does crew voyage with fare paying passengers ?)	N/A	
Crew Qualifications (i.e., masters ticket, radio operators license)	N/A	
# of Passengers (indicate maximum carried)	6	
Type of Operation (Tour Boat/Fishing Charter)	Fishing Charters / Recreational	
Area of Operation	Eastern lake Ontario and St. Lawrence River	
Season of Operation	May - October	
3. NAVIGATION AND COMMUNICATIONS EQUIPMENT	**Equipment Onboard (# of, type & manufacturer)**	**Accessibility Notes**
Radio Equipment	1 VHF (Ray Jefferson) 1- Cell phone (Motorola)	Excellent
Radar	No	
Radar Reflector	No	
Compass	Yes	Excellent
EPIRB		
GPS	Loran Nav Guide Yes – New 98	Eagle Portable
Other Equipment		

4. SAFETY EQUIPMENT	Equipment Onboard (# of, type & manufacturer)	Accessibility Notes
PFDs/Lifejackets (indicate type)	8 - 10 mostly vest type	
Life Buoys/Cushion (indicate type)	1	
Heaving Line for Life Buoy (indicate length & size)	1 - 100 ft	
Bailers (indicate capacity)	– Hand pump – 1 pail	
Pumps (indicate type and capacity)	Automatic/manual bilge pump (electric) 500 ga/lhr	
Boat Hooks	1 extendable	
Paddles/Oars	2 paddles	
Oar Locks Fitted (yes/no)	N/A	
Anchors (indicate type/weight)	2 – 1 - 15 lb 1 - 20 lb	
Anchor Line (rope/wire, length and size)	100 foot rope and chain 50 foot rope (15 lb)	
Portable Fire Extinguisher (type and size)	2 – dry powder 1 – 5 BC to be purchaced in 98	
Fire Buckets (indicate size)	1 – 1-gal	
Distress Flares (indicate type)	6 – 1996 and 6 – older handheld - normal marine application	
First Aid Kit	Yes – 2	

5. MISCELLANEOUS	
Please provide details of any signs of placards noted on the vessel regarding emergency equipment operation and/or procedures.	Distress marker VHF Cell Phone
Please provide your overall opinions on the accessibility of emergency equipment in the event of floundering or capsize.	Fair – not a perfect situation. Boat was not designed for easy access to emergency equipment.
After discussion with owner/operator, please provide brief notes regarding any safety procedures, if any, employed onboard the vessel (i.e., logging of voyage plan with home base, instruction given to passengers etc.).	Everyone always told what to do in emergencies and where emergency equipment is located.

6. PHOTOGRAPHS	
Please list, number and provide a brief description of any photographs taken.	

7. NOTES

VESSEL NO. 20		
1. VESSEL PARTICULARS		
General Description (rigid inflatable, open skiff, etc./manufacturer)		
Length	25 feet	
Breadth	8 feet	
Depth		
Draft		
Tonnage (GRT)		
Power (engine type/power)	5.7 litre - 350 hp	
Enclosed Superstructure (length, breadth, height)		
Other Comments (i.e., any other relevant comments; placement or seating for passengers etc.)		
2. VESSEL OPERATIONS		
# of Crew (does crew voyage with fare paying passengers ?)		
Crew Qualifications (i.e., masters ticket, radio operators license)	Radio License	
# of Passengers (indicate maximum carried)	5	
Type of Operation (Tour Boat/Fishing Charter)		
Area of Operation	Lake Ontario	
Season of Operation	May - October	
3. NAVIGATION AND COMMUNICATIONS EQUIPMENT	**Equipment Onboard (# of, type & manufacturer)**	**Accessibility Notes**
Radio Equipment	Yes	
Radar		
Radar Reflector		
Compass	Yes	
EPIRB		
GPS		
Other Equipment		

4. SAFETY EQUIPMENT	Equipment Onboard (# of, type & manufacturer)	Accessibility Notes
PFDs/Lifejackets (indicate type)	8	
Life Buoys/Cushion (indicate type)	2	
Heaving Line for Life Buoy (indicate length and size)	1	
Bailers (indicate capacity)	Yes	
Pumps (indicate type and capacity)	Yes	
Boat Hooks	Yes	
Paddles/Oars	Yes	
Oar Locks Fitted (yes/no)	No	
Anchors (indicate type/weight)	Yes	
Anchor Line (rope/wire, length and size)	Yes	
Portable Fire Extinguisher (type and size)	3	
Fire Buckets (indicate size)		
Distress Flares (indicate type)	Yes	
First Aid Kit	Yes	

5. MISCELLANEOUS	
Please provide details of any signs of placards noted on the vessel regarding emergency equipment operation and/or procedures.	
Please provide your overall opinions on the accessibility of emergency equipment in the event of floundering or capsize.	
After discussion with owner/operator, please provide brief notes regarding any safety procedures, if any, employed onboard the vessel (i.e., logging of voyage plan with home base, instruction given to passengers etc.).	

6. PHOTOGRAPHS	
Please list, number and provide a brief description of any photographs taken.	

7. NOTES