IAATO Vessel Emergency Contingency Plan
An Update

IAATO Vessel Emergency Contingency Plan
2006-2007 IAATO Operational Document

Information Paper submitted by

The International Association of Antarctica Tour Operators

Introduction

The following IAATO Vessel Emergency Contingency Plan was agreed to originally at IAATO's 14th Annual General Meeting, May 2003. It was tabled as ATCM XXVI IP069 and has been in place for all subsequent seasons. At IAATO's 17th Annual General Meeting, April 2006, the plan was reviewed first by IAATO's Marine Committee and then presented to all ship operators for discussion and adoption. It was agreed by the membership that the plan was effective and only required additional supplemental text. The plan retains the flexibility to be amended should international shipping regulations be changed or operators find more efficient and practical ways to work. The plan is outlined below, and an IAATO Emergency Contingency Plan Flow Chart, is shown in Appendix A. This paper was originally prepared by Captain Leif Skog and reviewed and or updated each year since 2003. Captain Skog has been working in Antarctica for 27 years and is the Vice President of Marine Operations for IAATO member, Lindblad Expeditions.

Background

All IAATO vessels operating in Antarctica are required to operate under the ISM Code and consequently they must have a well-established Safety Management System (SMS) in place in addition to the IAATO emergency contingency plans and recommendations.

Since it entered into force on 1 July 1998, the ISM Code for Safe Operation of Ships and for Pollution Prevention, which is adopted today by all Flag States, has had a huge impact to drastically improve the safe operation of ships and pollution prevention. The ISM Code describes in broad terms what a ship operating company's safety management system needs to include. A summary of the points describing the ISM code framework are listed in Appendix B.

In 2004 COMNAP published a paper on Emergency Guidelines (see ATCM XXVII, IP012). The COMNAP Guidelines, similar to the ISM code and IAATO Emergency Contingency Plan, only give a description of how to produce an Emergency Contingency Plan which can be used for operations in Antarctica: in effect all are a framework, on which to hang a specifically tailored emergency contingency plan peculiar to each vessel/operation.

In addition to these plans, IAATO has launched an IAATO vessel database in March 2006 which provides a single database of critical information for every IAATO member and vessel. The specific information which was gathered for this database is provided in Appendix C.

The IAATO Emergency Contingency Plan

1. The cornerstones for an IAATO Emergency Contingency and Search and Rescue Plans for Antarctic cruise vessels are:

- Assurance that there is adequate emergency equipment available onboard all IAATO ships
- Assurance that the ships' schedules and positions are frequently updated
- Effective communication between vessels including reporting schema for a possible event
- Medical evacuation support

2. Emergency situations to consider are:

- Ice damage to the hull, propeller and rudder
- Heavy weather damage
- Medical emergencies
- Man overboard from the ship, Zodiacs, kayaks, etc.
- Grounding and stranding
- General oil spill from deck equipment, Zodiacs, boats, helicopters, etc.
- Waste oil spill
- Mechanical and/or steering failure
- Power outage/blackout
- Fire
- Collision
- Security threat
- Explosion

3. Some of the plans to deal with the above emergencies are as follows:

- Damage control plan
- Medical contingency plan
- Search and Rescue plan
- Fire plan
- Oil spill and pollution plan (SOPEP)
- Propulsion and steering failure plan
- Security and threat plan
- Evacuation and abandon ship plan
- Plan for evacuation of passengers and crew from large cruise vessels

4. Currently in place are the following:

- A well-established spreadsheet of vessel itineraries in the Antarctic and Sub-Antarctic
- Proven and effective communication between vessels
- An established medical evacuation plan
- A database detailing emergency equipment available on board all IAATO ships
- All ships are in compliance with ISM, MARPOL, SOLAS, etc.
- Agreement to assist each vessel in any emergency
- Adequate insurance coverage
- Engagement of only experienced and properly trained officers and crew, Ice Masters in compliance with Standards for Training, Certification and Watchkeeping (STCW)

5. Recommended Preventive Measures:

- Encourage the use of very light Marine Gas Oil (MGO) fuel during the Antarctic season. Light MGO is a non-persistent fuel oil that will evaporate more quickly in the event of a spill.
- Lubricating oil is persistent. In such case lubricating oil should be kept in low quantities, which will minimize the environmental impact from an accident.
- Use of appropriate ships based on ice conditions
- Naval Structure as referenced in the Arctic Shipping Guidelines
- Oil spill contingency training
- All collected Hydrographical data to be deposited with appropriate governmental offices
- Participation in the Automated Mutual-Assistance Vessel Rescue (AMVER) system

6. Future Work

- Regular updates of the IAATO emergency equipment database
- Compliance with the International Ship and Port Security Code, Voyage Data Recording systems, and Advanced Information Systems.
- Enhancing training and certification requirements for Zodiac drivers.
- Increased medical emergency response capabilities in remote areas.

Appendices

A. IAATO Emergency Contingency Plan --Flow Chart

B. Bullet points describing the framework which all Companies are required to use under ISM Code for Safe Operation of Ships and for Pollution Prevention when developing plans and procedures and in assigning responsibilities

C. IAATO Vessel Questionnaire used in new Vessel Database

Appendix A

IAATO Emergency Contingency Plan Flow Chart

Vessels are required to operate under the ISM Code and consequently they must have a well-established Safety Management System (SMS) in place. The command centre for any emergencies in Antarctica will always be the ship that is experiencing the emergency. The Master of the distressed ship will be the commander for all emergency response activities. The Master of the ship experiencing the emergency can appoint a Master of another ship as the incident commander and the command centre. However, the incident commander can only act on behalf of the distressed ship and will not have any legal obligations other than what is accepted under normal international shipping practice.

The Master/Ship Operator shall have the authority to contract with emergency providers for all assistance required in compliance with their Safety Management System (SMS).

NO	RESPONSIBILITY	TASK	TIME	INITIAL
1	Master	Activate appropriate IMO and SAR plans with regard to communication and checklists from the individual company Safety Management System including SOPEP if an oil spill is expected.		
2	Master	Contact all the other IAATO ships in the area as appropriate via the GMDSS. Use the established radio log for proper contacts and documentation.		
3	Master/Ship Operator	Contact IAATO		
4	Master/Ship Operator	Contact the nearest Antarctic stations		
5	Master/Ship Operator	Contact national government The governments to whom the tour operator has given the advanced notification and/or environmental impact assessment regarding Antarctic visit.		
6	Master/Ship Operator	Contact COMNAP		
7	Master	Establish a list of ships that have arrived on site to assist in compliance with Safety Management System (SMS).		
8	Master	Keep notes about when the contacts are established with specific parties involved in the emergency procedures.		

Appendix B

Overall Framework

The following summary outlines the requirements that IAATO Members would be obligated for under "The ISM Code For Safe Operation Of Ships And For Pollution Prevention When Developing Plans and Procedures and in Assigning Responsibilities." For purposes of this contingency plan, IAATO has followed the outline already in existence by the International Safety Management (ISM) system.

- **Safety and Environmental Protection Policy** – The ISM Code requires each Company to have a written policy or in effect a "mission statement" of their objectives for safe management of their vessels. **At a minimum, the objectives should include: provision for safe practices and safe working conditions, identification of all risks, conducting *risk assessments*, establishing safeguards to protect against them, procedures for continuously improving the skills of both ship and shore personnel in safety management and environmental protection.** This section has been put in bold text because of the important role it plays within the ISM system of requirements.

- **Company Responsibility and Authority** – Companies are required to identify individuals with safety management and environmental protection responsibilities and to describe their authority to make decisions and manage resources.

- **Designated Person(s)** – There must be a person or persons designated to be a direct link between the ship and upper level management. The role of this person is to monitor all safety and pollution aspects of the operation and to report directly to upper management any concerns. Generally they are responsible for following up on any identified non-conformities and participating in investigations of any incidents.

- **Master's Responsibility and Authorities** – The Company is required to describe the Master's responsibility for implementation and overseeing the Safety Management System on board. There should also be a statement which describes the overriding authority of the Master to make decisions that are in the best interest of safety and environmental protection.

- **Resources and Personnel** – The ISM Code requires that the Company establish procedures which ensure that properly qualified and trained personnel are manning the ship. This includes defining training requirements, making personnel aware of relevant rules and regulations, familiarizing new crew to their responsibilities, and ensuring that all ship's personnel receive information from the Safety Management System that is relevant to their duties.

- **Development of Plans for Shipboard Operations** – The Company must identify key operations and then to develop standard operating procedures for these key operations. Examples of some key operations which might require the development of some standard instructions would be Bridge management during various conditions, pre-departure preparation, Zodiac operations, fuelling procedures, etc.

- **Emergency Preparedness** – There are two parts to this, one is establishing responsibilities and procedures for the ship, and the second is establishing responsibilities for Company personnel who will be providing support during an emergency. Emergencies are best prepared for by providing relevant training and then performing drills on a routine schedule so that all personnel are familiar with their duties. International regulation (SOLAS) requires certain types of drills and training be done at specific intervals. For example, fire drills and abandon ship drills are required to be done weekly by passenger ships. In addition, the ISM Code requires Companies to identify potential emergency situations and to establish procedures to prepare for them. For example, if a Company has identified a kayaking operation as a potential emergency situation, then they would establish a routine for responding to an emergency and then conduct drills and exercises to ensure familiarity with emergency duties and to develop best practices.

    Shore-side preparedness would include establishing responsibilities such as is found in Incident Command Structure. An established emergency response team would participate in drills and exercises on a routine basis in order to improve response skills and create lessons learned.

- **Reports and Analysis of Non-Conformities, Accident and Hazardous Occurrences** – The ISM Code requires that Companies establish how they will report, analyze and investigate non-conformances with the Safety Management System and various types of hazardous occurrences. These types of incidents are required to be reported by the vessel to the Company. Once the incidents have been analyzed there should be procedures for implementing appropriate corrective action in order to prevent future occurrences. For example a Company should have a written procedure for reporting and responding to a pollution incident such as an oil spill. This written procedure is typically documented in the ship's SOPEP, an approved plan that details response, taking into account each particular ship's general layout, manning, fuel capacity, etc.

- **Maintenance of the Ship and Equipment** –Each company is required to identify critical equipment and to establish routines for inspecting, maintaining, and testing this equipment. SOLAS regulations require certain equipment to be inspected and tested at specific intervals. Other identified equipment is maintained according to manufacturer recommendations and common best practices. The ships are required to keep records of these activities. Generally this is documented systematically in form of a preventive Maintenance Program where equipment and systems are inspected and maintained according to a calendar or running hour schedule.

- **Documentation** – Often referred to as Document Control, the ISM Code requires Companies to establish a procedure for ensuring that all documents related to the Safety Management System are identified as being relevant and that obsolete documents are removed from circulation. It is a means to ensure that those referring to the document can be certain they are using the most recent revision to prevent action using outdated policies or procedures. This is typically done through the use of special formatting which creates a certain "look" to the documents as well as the inclusion of an issue number or revision date. An example of this type of Document Control is the US Code of Federal Regulations. Titles are identified by a unique number and colour scheme and are noted with the date of revision on the cover and the pages of text.

- **Company Versification, Review and Evaluation** The Company is required to establish procedures for conducting internal audits of their Safety Management System and to conduct periodic reviews to evaluate the efficiency of the system. We have established a schedule for auditing our vessels annually. In addition our Masters and Designated Person conduct an annual review of the SMS. The results of the audits and reviews are brought to the attention of key members of management. Any non-conformities or deficiencies identified are documented and corrected.

- **Certification and Periodical Verifications** – The ISM Code requires that an external organization conduct verification audits of both the Company and all its vessels on a periodic basis. Company verification is done annually and ships are audited approximately every 2 ½ years. The Company is then issued with a Document of Compliance and each ship with a Safety Management Certificate. These certificates can be withdrawn by the flag state if major non-conformities to the ISM Code are identified or if the required verification audit is not completed.

Appendix C
IAATO Vessel Questionnaire used in new Vessel Database

General Information	Vessel - General Information
Vessel Name	Port/Country of Registry
Vessel Operator	IMO Number
Vessel Operator Contact Person	Call Sign
Vessel Operator Address	Year Built
Vessel Operator Telephone	Year(s) Rebuilt
Vessel Operator Mobile Telephone	Class Notation
Vessel Operator Fax Number	Ice Class
Vessel Operator Email Address	Telephone Number
Vessel Operator Web Address	Fax Number
Tour Operator	Email Address
Tour Operator Contact Person	GMDSS Area
Tour Operator Address	AIS
Tour Operator Telephone	VDR
Tour Operator Mobile Telephone	Length Overall (m)
Tour Operator Fax Number	Length pp (m)
Tour Operator Email Address	Draft Max (m)
Tour Operator Web Address	Passenger Capacity
	Crew Capacity
	PSSC Total # of Persons
	Gross Tonnage
	Net Tonnage
	Deadweight, Normal Operation (m. ton)
	Speed - Max
	Speed - Normal Cruising
	Helicopter Deck
	Lifeboats (Type, Open/Covered/Capacity)

Engine/Fuel Information	Oily Water Discharge/Waste Oil
Main Engine	Certified Oily Water Separator (OWS)
	Certified OWS with 15ppm Alarm & Automatic Shut-Off.
Auxiliary Engine	
Boiler	Sludge Oil Holding Capacity (cbm)
Gas Oil (GO) Capacity - Normal Cruising (m. ton)	Sludge Oil Holding Capacity (days)
Marine Diesel Oil (MDO) Capacity - Normal Cruising (m. ton)	
Heavy Fuel Oil (HFO) capacity - Normal Cruising (m. ton)	Bilge Water Holding Capacity (cbm)
HFO Specification, Grade (IFO 380, IFO 180, >IFO 180 etc.)	Bilge Water Holding Capacity (days)
HFO Storage Tanks (Type & Location)	IOPP Certificate
Lubricating Oil (LO) Capacity - Normal Cruising (m. ton)	Approved SOPEP
LO Storage Tanks (Type & Location)	Oil Record Book
Fuel Consumption per 24 hours - Normal Cruising (m. ton)	
Fuel Consumption per 24 hours - Max (m. ton)	
Fuel Consumption per 24 hours - Penetrating Ice (m. ton)	

Garbage/Incineration	Fresh Water (FW)
Waste Management Plan *[Footnote #1]*	FW Capacity (cbm)
Incinerator Capacity	FW Production (cbm/24 hours)

Incinerator Frequency of Use
Incinerator Burning Temperatures
Incinerator Used in Antarctica

FW Consumption (cbm/24 hours)

Grey Water	**Blackwater (Sewage)**
Grey Water Capacity (cbm)	Black Water Management Plan *(Footnote #2)*
Grey Water Capacity (days)	Certified Blackwater Treatment Plant
Untreated GW Discharged Directly Overboard (cbm/hours)	
	Blackwater Capacity (cbm)
	Black Water Capacity (hours)

Ballast	**Echo Sounder and Sonar**
Ballast Water Management Plan *(Footnote #3)*	Echo Sounder 1, 2, 3, etc.
Ballast Capacity (m. ton)	Echo Sounder Type
Ballast Amount - Normal Operation (m. ton)	Echo Sounder Transmission Power and Frequency
Ballast Exchange Frequency - Normal Operation (days)	Sonar
Ballast Exchange Frequency - Antarctica (days)	Sonar Type
	Sonar transmission power and frequency
	Hydrographic Work

Anti-Fouling System	**Air Pollution**
Anti-fouling Certificate *(Footnote #4)*	IAPP Certificate *(Footnote #5)*

Miscellaneous	**Remarks**
	Additional information necessary for an adequate assessment of IAATO ships.
Damage Control Equipment	
Oil Spill Containment Equipment	
Oil Spill Response Company	
Under Water Welding Facilities	
Divers & Equipment for Polar Waters	
Number of Zodiacs/Landing Craft	
Emergency Medical Evacuation Response	
P&I Insurance (Amount in USD)	
Pollution Liability Insurance (Amount in USD)	
Search & Rescue (SAR) Insurance (Amount in USD)	
Operate in the Arctic	
Member of IAATO	
Member of AECO	

Footnotes:

#1 - Water Management Plan in compliance with MARPOL 73/78, annex V.
#2 - Black Water Management Plan in compliance with MARPOL 73/78. annex IV and the 2004 (April) amendments entered in force 1 August 2005.
#3 - Ballast Water Management plan in compliance with International Convention for the Control and Management of Ships Ballast Water and Sediments, adopted 2004

#4 - Anti-fouling certificate in compliance with International Convention on the Control of Harmful Anti-fouling System, TBT, on Ships
#5 - International Air Pollution Prevention Certified in compliance with MARPOL, annex VI, entered into force 19 May 2005

IMO Regulations, Conventions, Circulars and Guidelines: http://www.imo.org/home.asp