The Bigger The Ship
The Bigger The Mess

LARGE SHIP TOURISM IN THE ANTARCTIC:
A RECOMMENDATION

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1. RECOMMENDATION

Recalling Recommendation VIII-9 that tourism is a natural development in the Antarctic and requires regulation.

Reaffirming The Protocol on Environmental Protection to the Antarctic Treaty 1991 seeks to enhance the protection of the Antarctic environment and dependent and associated ecosystems.

Recalling the Committee on Environmental Protection (CEP) set up under Article 11 of The Protocol on Environmental Protection to the Antarctic Treaty provides advice on the means of minimising or mitigating environmental activities in the Antarctic Treaty area.

Recalling Working Group Two, set up by the Antarctic Treaty Consultative Parties to meet at Antarctic Treaty Consultative Meetings, provides advice on scientific research and operations in the Antarctic Treaty area.

Acknowledging the need to prevent adverse environmental impacts by timely regulation, particularly as the grounding or sinking of a tourist ship could result in long-term environmental damage.

Noting that ship borne tourism takes place in areas with high densities of wildlife, often during the breeding season.

Noting that the nature of the Antarctic climate means that tourist ships can be exposed to extreme weather conditions.

Recalling that the Antarctic Treaty System does not restrict the maximum passenger capacity of tourist ships.

Noting the recent increase in the number of large tourist ships (800-1600 maximum passenger capacity) operating in Antarctic waters which are not members of the International Association of Antarctic Tour Operators (IAATO).

Considering that an accident involving a large tourist ship would require a magnitude of emergency response for the search and rescue and marine pollution that exceeds the current capabilities of bases operating in the Antarctic.

Recommend to their governments that:

The Committee on Environmental Protection (CEP) and Working Group Two of the Antarctic Treaty Consultative Meeting (ATCM) investigate a viable maximum passenger capacity for tourist ships operating in the Antarctic Treaty area.

1. CEP will recommend a maximum passenger capacity for tourist ships based on mitigating and minimising environmental impacts in the Antarctic Treaty area.
2. Working Group Two will recommend a maximum passenger capacity for tourist ships based on the operational and human safety issues, and search and rescue logistics involved in a large tourist ship grounding or sinking.

Both groups will report back to ATCM XXVI in South Africa with their recommendations. The recommendations will be discussed at this meeting with the view that a decision in relation to maximum passenger capacity will be adopted by the ATS.
2. BACKGROUND

2.1 Introduction

The Antarctic is a growing international tourist destination and marketed as a unique wilderness and nature-based experience. The tourist industry consists of three types of activity: ship borne; land borne; and airborne. (Hall and Johnston, 1995) Although many issues have surfaced in relation to land based and airborne tourism, the focus of this document is on ship borne tourism, as ninety percent of tourism in the Antarctic is ship borne. During the past twenty years, ship borne passenger numbers in the Antarctic have increased by over 50 percent (IAATO). In particular, there are increasing numbers of large tourist vessels being operated in the Antarctic. Tourist ships travelling close to the coast, pose a serious threat to the environment and a challenge to search and rescue teams. Furthermore, the operation of large tourist ships poses an increased risk of a large-scale marine disaster in the Antarctic. As there are currently no Antarctic Treaty System (ATS) regulations preventing large ships from operating in the Antarctic, the purpose of this paper is to examine whether the operation of large tourist ships in the Antarctic should be regulated.

2.2 History of Antarctic tourism

Commercial Antarctic tourism began in 1956 when the Chilean national airline took 66 passengers on an over flight of the Shetland Islands and the Trinity Peninsula. Two years later ship borne tourism began with two Argentinean cruises to the west coast of the Antarctic Peninsula. The era of modern ship-based expedition tourism began in 1986 with a voyage organised by Linblad Travel. (Bauer 2000) Since this date, ships have provided the main form of transport for tourists visiting the Antarctic. Antarctic Treaty Consultative Parties (ATCPs) acknowledged in 1957 that tourism is a natural development in the Antarctic and that it requires regulation. (Recommendation VIII-9).

In response to the increase in tourism in the Antarctic The International Association of Antarctic tour Operators (IAATO) was established as a non-governmental organisation in 1991 by seven existing tour operators in the Antarctic to "advocate, promote and practise environmentally responsible private sector travel to Antarctica" (Splettstoesser, 1994). IAATO has had an important influence on the practice of tourism in the Antarctic, and has produced a number of guidelines for tour operators. (Vidas 2000).

2.3 Benefits of tourism

Tourists who visit the Antarctic are usually well educated, wealthy and motivated by a passionate interest in the area. (Bauer 2000) Because of the pristine environment in the Antarctic and the waste minimisation practices of tour companies, tourists gain an increased awareness of the importance of the Antarctic environment and behave as "ambassadors for Antarctica" on their return. Tourists usually tell others, for
example, children, friends, workmates, service groups and politicians about the
continent and the wildlife. They may donate money to Antarctic organisations and
become advocates for Antarctic issues. Tourists also put pressure on national
scientific programmes to improve their environmental standards. For the positive
benefits from tourism to continue, ship borne tourism needs to be considered a safe
activity that protects the environment.

2.4 Dimensions of tourism

The environment ultimately controls Antarctic tourism. The relatively short tourism
season lasts between November and March when the Antarctic has warm
temperatures and long daylight hours. The tourism season also coincides with
breeding seasons for wildlife.

Because of the Antarctic’s remoteness, and the surrounding turbulent Southern
Ocean, access to the Antarctic coastline is difficult. Even though tourist ships
operate during the summer months, weather, sea and ice conditions are
unpredictable and can change rapidly. Depending on sea and ice conditions, the
voyage from Australia to Antarctica can take seven to nine days, and five to seven
days from New Zealand. Easiest access to the continent is from South American
ports where the voyage to the Antarctic Peninsula only takes two to three days.
Consequently, the Antarctic Peninsula region is the most visited part of the continent
and ninety percent of ship tourists visit 35 sites on the Antarctic Peninsula. The
second most visited area is the Ross Sea region (Waterhouse 2001).

2.5 Typical tourist ship operation

A typical expedition itinerary involves: flying from the eastern USA to South America;
sailing 2-3 days across the Drake Passage; and 6 days shore cruising including 3-5
landings per day. Landing passengers ashore requires shuttle by zodiac while the
ship anchors or drifts close to shore (each zodiac carries 10-15 passengers).
Landing sites include science bases, historic sites and wildlife areas. At the moment
large ships do not generally land passengers because of logistics in relation to time
and numbers.

2.6 Types of tourist ships operating

There are generally three types of vessels operating in the Antarctic region. First,
small expedition vessels, which carry between up to one hundred passengers and
are usually former Russian marine science vessels. Second, medium sized cruise
ships which are more luxurious than small expedition vessels and carry one hundred
to four hundred passengers. Third, large cruise ships, of over four hundred
passengers, including Marco Polo, (regular visitor), which has a capacity of 1600
passengers but usually only carries 850 passengers, Eugenio Costa, which carried
918 passengers in 1995, MS Rotterdam, which carried 936 passengers in 2000,
Aegean with a capacity of 912 passengers and the Ocean Explorer with a capacity of 889 passengers.

The table below sets out the number of tourist ships operating in Antarctic waters during the 1999-2000 and 2000-2001 seasons. Ship size is defined as passenger capacity. None of the large tourist ships had an ice class rating or were International Association of Antarctic Tour Operators (IAATO) members. This data is important for two reasons. First, the lack of an ice class rating of large ships increases the risk of these large tourist ships having an accident, especially when the weather and ice conditions in the Antarctic are often unpredictable. Second, if large ships are not IAATO members they do not have direct communication with or support from other IAATO members in an emergency.

(See Appendix 1: Ship Survey)

<table>
<thead>
<tr>
<th>Ship size/Passenger Capacity</th>
<th>No of ships</th>
<th>Ice Class Rating</th>
<th>IAATO member</th>
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<tr>
<td>Small (up to 100)</td>
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<td>9</td>
<td>10</td>
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<tr>
<td>Medium (100-400)</td>
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<tr>
<td>Large (400+)</td>
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<td>0</td>
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</tbody>
</table>

Table: Ships operating during 1999-2001 seasons.

2.7 Trends in ship borne visitor numbers

In 1985/86 seasons 544 passengers visited the Antarctic. By the 1991/92 season, this figure had increased to 6317 passengers resulting in an increase of ship borne visitor numbers of an average 48.3% per year. (Bauer 2000;90-91) In the 2000/2001, season passenger numbers were 12,248. Passenger numbers are expected to be 16,500 in the 2001/2002 season and IAATO projects that passenger numbers will increase to 29,000 in the 2005/2006 season. The 2005/2006 figure includes large ship/non-landing passenger numbers of 7000.

(See Appendix 2: Antarctic ship tourist trends 1992-2001 graph plus Antarctic tourist 5 year projection)

2.8 Future changes in large ship borne tourism

Even though large ship borne tourism is in its infancy, it is projected to increase in the future. (See Appendix 2) Air supported ship based tourism is also becoming possible. This involves tourists being flown to ships in Antarctic waters from a main land port. Flight time across the Drake Passage is 3-4 hours compared to 2-3 days by ship depending on sea conditions. Therefore, air supported tourism may result in tourist ships spending more time in Antarctic waters. There may also be a general increase in the number of large cruise ships in the Antarctic. Due to economies of
scale, large ships can offer a cheaper Antarctic experience than small ships, creating a new market based on price and convenience.

2.9 Potential impacts of large ship borne tourism

Currently there appear to be no documented impacts specifically from large ship borne tourism. Although all ship tourism has the potential to have adverse impacts in the Antarctic, the operation of large vessels amplifies the scale of any maritime disaster because of the increase in passenger numbers and ship size. A number of large ships manoeuvring around the Antarctic Peninsula will increase the likelihood of mishap. The adverse effects on the terrestrial environment from tourists visiting an area are not dependent on ship size and are not included here.

The potential adverse impacts from a maritime disaster include:

(a) Ship wreck: There will be visual pollution and physical disturbance of the environment resulting from shipwreck.

(b) Pollution from oil spills: Oil spills in the Antarctic are particularly serious because of the dense sea bird and mammal populations near the coast, and the cold temperatures which impede the breakdown and volatilisation of oil (Parker 1971). Spilt fuel oil is a potentially toxic substance for a number of marine organisms. It is lethal to animals that get too much coating their gills, skin or feathers. Birds also die if they groom their oil-covered feathers and ingest the oil. Often the mode of death is through cold or drowning due to lack of water proofing from oiled feathers. The behaviour of most birds (including penguins) is not conducive to human intervention to deoil them. Thus, oil floating on the Antarctic coastal sea where birds or mammals live is as much a problem as oil coating the coastline where birds or mammals come onto land.

As the waves act on the original oil slick it goes into a sticky “mousse”, and later these thicker lumps are broken up to finally disperse as non-toxic smaller globules. This occurs more quickly in warmer waters. In temperate regions, the fuel oil will volatilise from the sea surface, depending on the oils density and composition. Diesel and other light fuels volatilise quickly, with the heavier crude or lubricating oils being very persistent.

There are two different methods of response to a maritime oil spill. In relatively calm weather and slow current conditions, a series of large booms can be placed to contain the oil and prevent it from reaching the coast; or spray detergents can disperse the oil through the water column (Benyon 1971). These two methods are mutually incompatible and the best response to an oil spill requires decisions from experts, good weather, the right gear, good coordination, fast response, previous practice and a recognised
command structure. Usually neither method is very successful and oil will adversely affect the marine environment and more noticeably, the wildlife.

(c) Human safety: The larger the ship the increased number of people at risk if a ship runs into difficulties. If a disaster occurs there is more potential for loss of human life of both passengers and crew on large ships as search and rescue operations will take longer. Lifeboats built to withstand the extremities of the Southern Ocean are not standard to large cruise ships. Also, having more people onboard a ship increases the chances of the ship having to divert to medivac a passenger, resulting in riskier inshore manoeuvres. For example, there have been a number of occasions on which a ship has had to turn back (towards Argentina or New Zealand) in order to meet a helicopter/motor boat to evacuate an injured person to the nearest hospital (1994 and 2001 Kapitan Khlebnikov – Levinson and Ger 2001). Larger vessels will increase the number of these emergencies.

(d) Demand on scientific programmes, resources and other tourist vessels - hazards for rescuers: Evacuation of people from ships in Antarctic waters is a hazardous operation due to the Antarctic’s extreme weather and remote location. The cold water (1-2°C) and the wind-chill factor from a storm will limit the time a person can survive in the sea to a few minutes.

Most tour operators are aware of the serious life-threatening nature of search and rescue in the Antarctic and will have the correct warm clothing and lifejackets, undertake lifeboat drill etc. Tour operators belonging to IAATO are obligated to keep in regular contact with other operators in the region and assist each other if they get into difficulty. Some of the ships have helicopters on board which would aid rescue operations.

If a ship foundered during good weather passengers would stand a better chance of getting ashore or to a safe location until rescued. Under stormy conditions, the chances would be severely reduced. Ship accidents often occur in bad weather when visibility is minimal, the wind overrides the preferred steering direction and technical or structural damage is sustained (For example, Bremen Levinson and Ger 2001). Large numbers of passengers complicate the logistics of the rescue and increases confusion. More “safe havens” are also required for passengers and crew to shelter in.

There may often be other tourist operators in the area that will be requested to assist with search and rescue. However, a large ship could not be expected to adequately help any smaller ships in the area; it would be logistically impossible for smaller ships to handle the numbers involved in any extreme emergency. Maritime search and rescue is a specialised and hazardous
undertaking and without correct gear, training, available personnel and resources this should not be undertaken (at the risk of losing more lives).

During summer, the Antarctic Peninsula has a number of staffed scientific bases and these and other ships could assist with information and communications even if they did not attempt to actually rescue passengers. This assistance will disrupt the bases own schedules and activities, and some scientific bases are not resourced to cater for such an emergency.

2.10 Potential for a disaster

So far, there have been no tourist ship disasters in the Antarctic. However, it is possible that a serious tourist ship accident will happen in the future.

An example of the potential for a tourism ship accident in the Antarctic is illustrated by the 1989 sinking of the Argentinean resupply ship Bahia Paraiso on the Antarctic Peninsula, 3km from Palmer station. The ship was also carrying tourists and was travelling closer to the coast than normal. The Bahia Paraiso sustained a 30 foot gash in its side which led to the loss of 170 000 litres of diesel fuel (from its total load of 250 000 litres) into the ocean. Within a few days of the accident which happened in fine weather, a 15-mile long slick had reached the beaches and rookeries surrounding Palmer Station Research Centre (US) covering an area of about 10 square miles. Krill, seals, penguins, cormorants, skuas and giant petrels were all significantly affected. For example, the entire brood of skua chicks in the Palmer area was lost. In addition, scientific research at Palmer station was severely damaged. Cleaning equipment along with 15-oil spill experts (from the US, Argentina and Chile) were sent to the area within 36 hours. The Bahia Paraiso grounded in fine weather, and spilt only 2/3 of the fuel she was carrying. If this disaster had occurred in a storm with gale force, winds the outcome could have been very different.

Although there was no loss of life from the Bahia Paraiso accident, when an Air New Zealand tourist flight crashed into Mount Erebus, Ross Island in 1979 on a sightseeing tour, 257 passengers and crew were killed. The scale of the disaster and the loss of life put immense strain on search and rescue teams on Ross Island which did not have the resources to cope with such a disaster. This accident occurred in the same year as the ATCPs put out Recommendation X-8 about commercial overflights in the Antarctic.

(See Appendix 3)

These examples highlight the potential for environmental impacts, loss of life and the difficulties search and rescue may face if a large tourist ship were to ground or sink in the Antarctic.
3. CURRENT REGULATIONS OF SHIP BORNE TOURISM IN THE ANTARCTIC

3.1 Antarctic Treaty System (ATS)

The Antarctic Treaty governs Antarctic tourism, including ship borne tourism, 1959 (AT) and the AT’s associated agreements, measures and recommendations that are collectively referred to as the Antarctic Treaty System (ATS). The Protocol on Environmental Protection to the Antarctic Treaty (EP) 1991, which came into force in 1998, is the most important instrument for regulating ship borne tourism activities in the Antarctic.

(See Appendix 4)

3.2 Environmental Protocol

The EP establishes environmental principles for the conduct of all activities in the Antarctic, including tourism, by codifying and making legally binding a number of environmental protection measures (Kruijken and Rootes, June 2000). The most significant requirements of the EP in relation to ship borne tourism in the Antarctic are set out in Article 8. Article 8 of the EP requires all Antarctic ship borne tourist operators registered in AT states to conduct an Environmental Impact Assessment (EIA) (as outlined in Annex 1 of the EP) to assess and mitigate the impacts of their operations. Although EIAs focus on environmental impacts, rather than human safety and search and rescue.

If the relevant government department determines that a tourist operation will have more than a “minor or transitory impact” on the environment the operator will be required to complete a more stringent Initial Environmental Evaluation (IEE) and where appropriate, a Comprehensive Environmental Evaluation (CEE) (Articles 2 and 3, Annex 1 of the Protocol). Tourist operators, who are not registered in Antarctic Treaty states, are not required to complete EIAs.

Annex IV of the EP on the Prevention of Marine Pollution is also relevant to tourist ships in the Antarctic. This Annex includes regulations in relation to the discharge of oil, discharge of noxious substances, disposal of garbage, discharge of sewage, preventive measures and emergency preparedness and response for marine pollution whilst operating in the Antarctic.

The Committee for Environmental Protection (CEP) provides advice and formulates recommendations to the ATCPs in connection with the implementation of the EP. The CEP was established on 14 January 1998 in accordance with the EP. The advice CEP provides includes means of minimising or mitigating environmental impacts of activities in the AT area; the application and implementation of the EIAs procedures set out in Article 8 and Annex I; and procedures for situations requiring urgent action, including response action in environmental emergencies.
3.2 Antarctic Treaty Consultative Meeting Recommendations

Discussions at ATCMs have resulted in a number of Recommendations on Antarctic tourism. Recommendations that apply to ship borne tourism include:

(a) Recommendations 1972 VII-4 and 1975 VIII-9, both on how environmental effects of tourism can be monitored;

(b) Recommendation 1979 X-8 Part III encouraging tour operators to carry experienced guides;

(c) Recommendation 1994 XVIII recommending that information is provided to participants on environmental protection, respect for scientific research and safety;

(d) Recommendations 1972 VII-4(2), 1975 VIII-9 and 1979 X-8 Part I stating that operators and visitors should be aware of the relevant provisions of the Treaty, Recommendations, and accepted practices;

(e) Recommendation 1979 X-8 Part II encouraging expeditions to be self-sufficient and carry adequate insurance;

(f) Recommendation 1995 XIX-3, XVIII-1, 1997 XXI-3 in relation to post-visit reporting of tourist activities;

(g) Recommendation 1966 IV-27, 1970 VI-7 that scientific activities should not be prejudiced.

In addition, the ATCPs adopted Decision 2 (1999) "Guidelines for Antarctic Shipping and Related Activities" at ATCM XXIII 1999— a proposal to draft guidelines for shipping and related activities in the Antarctic. ACTPs proposed that these guidelines be adopted by the International Maritime Organisation (IMO) as a means of extending their applicability to members of the IMO that are not ATCPs. However, the proposed draft relates more to the design, construction, manning and equipment of ships rather than the logistics and operations of tourist ships.

3.3 National laws and regulations

Tourism operators must also comply with their national laws and regulations that implement the ATS, as well as other national laws and regulations implementing international agreements on environmental protection, pollution and safety that relate to the Antarctic. Some ATCPs exercise control over their nationals onboard tourist ships through domestic legislation; the USA is an example (Vidas 2000). Other ATCPs in the Antarctic endeavour to exercise control over third-party vessels. For example, the UK refuses non-IAATO vessels access to their bases. Argentina, Poland and the US also have well defined tourism management policies and strictly regulate tourism near their stations (Vidas 2000). In addition, the US has required Canadian firms to undertake EIAs under US law, whilst the UK has granted permits
to Canadian registered companies on the grounds that the company is based in the UK (Vidas 2000).

3.4 International law

International instruments regulating shipping activities in the Antarctic include the 1973/78 International Convention for the Prevention of Pollution from Ships (MARPOL), 1974 International Convention for the Safety of Life at Sea (SOLAS) and 1982 United Nations Convention on the Law of the Sea (UNCLOS). Some nations, which are not signatories to the AT, are signatories to these Conventions. MARPOL, which regulates pollution from ships, is particularly important as it refers directly to the Antarctic. In 1990, Annex I (Regulation for the prevention of pollution by oil) and optional Annex V (Regulations for the prevention of pollution by garbage from ships) were amended in order to designate the "Antarctic area" as a special area. The same was done in 1992 with respect to Annex II of MARPOL 73/78 (Regulations for the control of pollution by noxious liquid substances in bulk). Annex IV of the EP provides that 'with respect to those Parties which are also Parties to MARPOL 73/78, nothing in this Annex shall derogate from the specific rights and obligations thereunder' (Article 14). Therefore, EP signatories who are also signatories of MARPOL must comply with both MARPOL and the EP. Further, MARPOL is a means of controlling tourist operators registered in non-ATCP states who are not signatories to EP, but are signatories to MARPOL.

3.3 Liability for disaster

At the moment, there are no regulations in relation to the liability of tourist operators in the event of a ship grounding or sinking. However, Article 160 of the EP provides for an Annex relating to liability to be adopted by the ATCPs. Although this Annex has not yet been finalised, it is likely that in the future tourist operators may be responsible for environmental damage to the Antarctic as a result of a ship sinking or grounding. Environmental damage may include response action, remedial measures and compensation for response action and remedial measures taken by third parties.

3.4 Non-governmental regulations

IAATO have observer status at Antarctic Treaty Consultative Meetings (ATCM) and have tabled numerous papers at ATCMs including annual reports on activities, safety and contingency plans, and environmental evaluations. In particular, IAATO's original visitor and tour operator guidelines served as the basis for Recommendation 1994 XVIII-1 of the ATS on guidance for Antarctic visitors and for non-governmental tour organisers.

Membership to IAATO is voluntary and the organisation currently has 44 members. (See Appendix 5). Enforcement for non-compliance with IAATO's by laws is informal, and relies on adverse publicity for the offending member (Stonehouse 1992). Twenty-two out of the twenty-seven tourist vessels operating in the 2000-2001
season were IAATO members. Benefits of IAATO membership include educational material, guides, requirements for experienced master and crew, communication between vessels and the co-ordination of and search and rescue resources.

IAATO's bylaws were changed in 2001 to include a new category of membership for vessels with a capacity over 500 passengers providing the operators do not land their passengers. In 2001 none of these large cruise ships were members of IAATO. (See Table at page 7).

During ATCM XXIII (agenda item 4) IAATO reiterated their precautionary approach to allowing larger ships in the Antarctic, and their concern "that the potential cumulative environmental impacts and emergency response requirements of very large vessels could adversely impact on the principles of safe and environmentally-responsible travel to Antarctica."

3.5 Weaknesses of the current regulations

As outlined above, there are no regulations within the ATS that limit the passenger capacity of tourist ships operating in ATS waters. Although it is difficult for the ATS to control non-treaty or non-consultative parties, further regulation in relation to ship borne tourism is required to minimise the risk of a large-scale disaster involving loss of life and environmental damage.

In addition, IAATO membership is determined by numbers of passengers, rather than the maximum capacity. However, this does not have a direct relationship to actual ship size and for the purposes of this report passenger capacity has been used as the unit of measurement.

3.5 Summary

A shipping grounding or sinking could also arise from factors other than size such as lack of:

- suitable ice strengthening for the conditions ships encounters, which vary with the seasons.
- An experienced shipmaster and/or chief officer for the ice and storm conditions in Antarctic waters.
- experienced crew to respond to an emergency.
- accurate charts for the area.
- suitable contingency plan and resources for human or environmental emergency.

These issues were considered as options to base a recommendation on, but it is believed that the particular problems associated with large tourists ships in the
Antarctic as this is seen as an issue that needs to be addressed urgently. (ASOC, IAATO) The continuation of large tourist ships operating in Antarctic waters poses increased risk of a disaster of substantial proportions, involving:

- Injury or death to passengers, crew and rescuers
- Damage to the environment and associated ecosystems from marine pollution, particularly oil spills
- Disruptions to science, national bases and other ships
- Costs to everyone involved in search and rescue
- Arguments over liability for environmental damage
4. RECOMMENDATION DESCRIPTION

The recommendation proposed is that the Committee on Environmental Protection (CEP) and Working Group Two investigate a viable maximum passenger capacity for ships operating in ATS waters. CEP should consider a maximum capacity in terms of environmental issues. Working Group Two should consider a maximum capacity in terms of operational issues, human safety and search and rescue logistics. Both groups will report to ATCM XXVI 2003 South Africa with their recommendations. The recommendations will be discussed at this meeting with a view to a decision in relation to maximum passenger capacity being adopted by the ATS.

This recommendation is based on maximum passenger capacity of ships. The size of a ship can also be described in terms of the ship’s physical dimensions - for example tonnage, length, and draft. Passenger capacity was considered the most appropriate because the number of passengers and crew is relevant to all disaster outcomes: human safety; search and rescue operations; environmental damage and liability; and marine pollution.

CEP provides advice and formulates recommendations to the Antarctic Treaty Parties in connection with the implementation of the EP. The advice CEP provides includes means of minimising or mitigating environmental impacts of activities in the AT area. Consequently, CEPs should detail the environmental impacts of large ship borne tourism, including impacts resulting from sinking or grounding, and establish a maximum passenger capacity relating to these impacts.

In addition, Working Group Two of the ATCM should also prepare a report on maximum passenger capacity of large tourist ships. Working Group Two deals with operational and scientific issues. Working Group Two’s report should consider the operational issues of large tourist ships operating in the Antarctic as well as human safety and search and rescue issues in order to establish a maximum passenger capacity.

The reports should also address the following matters:

(a) **Enforcement:** The outcome should include details of a feasible compliance regime, with inspection and penalties for non-compliance. This may include: countries refusing to issue permits under Article 8 of the EP to tourist operators who propose to operate over the maximum capacity; non-ATCP members being encouraged to enforce the maximum capacity on tourist operators operating under their flag state; and inspections by observers in accordance with Article VII of the AT.

(b) **Monitoring and review:** The suitability of the size chosen should be monitored through a reporting system of incidents and accidents, and reviewed at regular intervals.
(c) **Financial implications:** The cost of enforcement and monitoring to ATCPs, and how this cost should be funded and administered.

(d) **Affected parties:** CEP and Working Group 2 should consult with the affected parties to obtain stakeholder commitment to a maximum passenger capacity. Affected parties include current tourist operators and those proposing to operate large ships in the Antarctic, ATCPs issuing permits to tourist operators; IAATO, MARPOL and SOLAS. The involvement of IAATO is particularly important, as they should be encouraged to adopt the same maximum capacity under their bylaws.

(e) **Time frame:** The due date for the report is XXVI 2003, as this issue needs to be addressed urgently. It is expected that CEP and Working Group 2 will take a year to research all issues and obtain the opinions of relevant experts. ATCPs will consider the maximum passenger capacity recommended in both reports for adoption as a decision at ATCM XXVI 2003.
5. RECOMMENDATION JUSTIFICATION

Establishing a maximum passenger capacity for large ship borne tourism in the Antarctic would reduce the risk of a large-scale tourist ship disaster. The following benefits arise because of this recommendation:

(a) **Environmental:** Prevents damage to the Antarctic environment and its dependent and associated ecosystems from a large ship grounding or sinking. These include marine pollution from an oil spill and other ship debris and disturbance, destruction of wildlife and loss of biodiversity.

(b) **Human safety:** Diminishes the risk to passengers, crew and rescuers of loss of life and injury.

(c) **National bases:** Reduces the possibility of science bases having to cope with a large-scale ship accident and the time and cost required to perform search and rescue operations.

(d) **Science programme:** Decreases the potential for substantial disruption to science programmes and research because of environmental impacts.

(e) **Tourism:** Allows tourism to retain a safe and environmentally friendly image in the Antarctic.

(f) **Financial:** Minimises the possibility of nations, responsible parties and tourist operators having to pay for the cost of responding to such a disaster and repairing any damage.

Conversely, if the recommendation is not adopted this could result in the following consequences (in addition to the converse of those mentioned above):

(a) **Tourism:** Damage to the environment and wildlife would discourage future tourists and the Antarctic tourism industry as a whole would suffer. In addition, a ship grounding or sinking would change the perception of the Antarctic tourism industry and political pressure would be put on ATCPs to severely restrict tourism.

(b) **Inadequate regulation:** Inadequate regulation of large tourist ships as self-regulation of the tourist industry principally by IAATO, is failing to reduce the risks associated with large tourist ships in the Antarctic.
6. CONCLUSION

If potential environmental impacts in the Antarctic are going to be minimised and tourists are going to be able to visit the Antarctic safely, action has to be taken to avoid a large-scale ship sinking or grounding. Although a large tourist ship sinking or grounding has not yet happened, a proactive approach needs to be taken by the ATCPs to prevent such a situation arising. Therefore, the operation of large tourist ships in Antarctic waters needs to be regulated and monitored. The most efficient way to achieve this regulation is for limitations to be established in relation to the maximum passenger capacity of tourist ships.
7. REFERENCES


Antarctic Southern Ocean Coalition web site [www.asoc.org](http://www.asoc.org)


Benyon L.R. "Dealing with major oil spills at sea.", *Water Pollution by Oil* Hepple (ed) Institute of Petroleum, 1971


International Association of Antarctic Tour Operators web site [www.IAATO.org](http://www.IAATO.org)

International Maritime Organisation web site [www.imo.org](http://www.imo.org)


8. BIBLIOGRAPHY


Appendix 1

Ship Specification Survey IAATO 1999-2001

<table>
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<tr>
<th>Vessel</th>
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<td>Australia</td>
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Forecast of Antarctic Tourism-Next 5 Years-2001-2006

**Note, this is a GUESTIMATE only based on limited communication from new small companies and large ship operators. As the industry changes, so will the estimates. It is difficult to predict the number of large ships or aircrafts entering the Antarctic Market at this stage and therefore the 2002-2006 increases are only a guess. It is important to recognize that these numbers would more likely decrease than increase.

<table>
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<tr>
<th>Year</th>
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<td>2001-02</td>
<td>13,174</td>
<td>2400</td>
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<td>2005-06</td>
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Source, IAATO web site
Appendix 3

Antarctic Treaty Consultative Meeting X

RECOMMENDATION X-8

Effects of tourists and non-government expeditions in the Antarctic Treaty Area

The Representatives,

Recalling that Annex A to Recommendation VIII-9 was to be discussed at the Ninth Consultative Meeting and that a draft text of a Statement of Accepted Practices and the Relevant Provision of the Antarctic Treaty was referred from the Ninth to the Tenth Consultative Meeting;

Recognizing that, in addition to the statement referred to in the previous paragraph which is primarily intended for the organizers of tourist expeditions, it would be helpful to the organizers of such expeditions to be able to provide to individual visitors a brief guide to good conduct in the Antarctic;

Noting that adventurous individuals organizing non-governmental expeditions to Antarctica may seek help or advice from offices administering Antarctic programs;

Recognizing, also, that in considering responses to requests for help from such expedition, an important concern is the possibility that such expeditions may, in cases of emergency, involve the offices administering Antarctic programs in financial or material loss;

Recognizing that suitably qualified guides accompanying commercially organized Antarctic tours would both benefit the tourists and help to ensure that the conservation and environmental measures adopted by the Consultative Parties were observed;

Reaffirming the traditional principle in the Antarctic of rendering all assistance feasible in the event
of an emergency request for help, but noting that commercial overflights of Antarctica are operating in a particularly hazardous environment, where aircraft operation systems normally available elsewhere in the world are at a minimum, and where emergencies could arise which are beyond the capacity of permanent Antarctic expeditions to respond adequately;

Recommend to their Governments that:


They insert the attached statement of Accepted Practices and the Relevant Provisions of the Antarctic Treaty into Annex A to Recommendation VIII-9 for the purposes set out in operative paragraph 1 of that Recommendation.

II. Non-Governmental Expeditions

If a non-governmental expedition approaches a Consultative Party for help or advice, that Consultative Party should inform the Contracting Party where the expedition to Antarctica is being organized and may request all relevant information about the expedition. They urge non-governmental expeditions to carry adequate insurance cover against the risk of their incurring financial charges or material losses in the Antarctic Treaty Area.

III. Tour Guides

To the extent practicable, they encourage commercial tour operators to carry tour guides with experience of Antarctic conditions, who are aware of the considerations which underlie the Agreed Measures for the Conservation of Antarctic Fauna and Flora and for the protection of the Antarctic environment.

IV. Commercial Overflights in Antarctica

They notify commercial aircraft operators that the present level of tourist overflight activity:

i. exceeds existing capabilities for air traffic control, communications and search and rescue in the Antarctic;
ii. may interfere with normal operational flights in support of expeditions engaged in ongoing scientific programs in the Antarctic;
iii. exceeds the capacity of their Antarctic operations to respond adequately to an unplanned emergency landing.
AREA PROTECTION AND MANAGEMENT
- Area description and management plans
  - Antarctic Specially Protected Areas
    - 1985 XIII-13 Specially Protected Areas Cape Hallett Victoria Land extension of boundaries

EXCHANGES OF INFORMATION
- Annual exchanges of information
  - 1985 Extract from Report of XIIIth ATCM Exchange of information under the Antarctic Treaty
  - 1985 XIII-3 Exchange of information in accordance with the Antarctic Treaty annual exchanges

TOURISM AND NON-GOVERNMENTAL ACTIVITIES
- 1985 Extract from Report of XIIIth ATCM Tourism

- 1987
- TOURISM AND NON-GOVERNMENTAL ACTIVITIES
  - 1987 Extract from Report of XIVth ATCM Tourism and non-governmental expeditions

- 1989
- AREA PROTECTION AND MANAGEMENT
  - Antarctic Treaty Recommendations
    - 1989 XV-11 Antarctic Protected Area System establishment of Multiple-use Planning Areas MPAs

ENVIRONMENTAL IMPACT ASSESSMENT
- Antarctic Treaty Recommendations
  - 1989 Extract from report of XVth ATCM Implementation of environmental impact assessment procedures

ENVIRONMENTAL MONITORING
- PROTECTION OF THE ANTARCTIC ENVIRONMENT

TOURISM AND NON-GOVERNMENTAL ACTIVITIES

- 1991
- AREA PROTECTION AND MANAGEMENT
- COUNCIL OF MANAGERS OF NATIONAL ANTARCTIC PROGRAMS
- ENVIRONMENTAL MONITORING
- OPERATION OF THE ANTARCTIC TREATY SYSTEM
- PROTECTION OF THE ANTARCTIC ENVIRONMENT
- TOURISM AND NON-GOVERNMENTAL ACTIVITIES
  - 1991 Extract from report of XVth ATCM Tourism and non-governmental expeditions in the Antarctic Treaty Area
- 1991 XVI-13 Tourism and non-governmental Activities in the Antarctic Treaty Area

Documents thru 44 of 44 available.
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A member organization founded in 1991
to advocate, promote and practice safe
and environmentally responsible private-sector travel to the Antarctic.

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