

IAATO here presents its report to the Meeting on member company programs for training and education as offered at ATCCM XXI (Final report, Item 13, para.133).

The report consists of two parts: an excerpt on the subject from a 1997 environmental assessment; and the results of a survey developed by COMNAP and distributed by IAATO.

The training and education of staff by current members of IAATO is remarkably similar, depending heavily on written materials, lectures and tutoring by experienced staff. IAATO has developed a standard table of contents for expedition leader handbooks and manuals as well as an educational slide show on Recommendation XVIII-I that is used by all member companies. Regular exchange of information on programs takes place at the annual meeting and informally throughout the season.

This information on education and training is excerpted and adapted from:

INITIAL ENVIRONMENTAL EVALUATION, Ship Based Tourism by Five U.S. Organizers to the Antarctic Peninsula, South Shetland Islands and South Orkney Islands, November 1997- March 1998. Submitted to the U. S. Environmental Protection Agency, October 14, 1997

5.1.4 Education, training and experience of staff

While each individual tour operator conducts its own training programs and hires according to its own standards, IAATO collects systematic information on the qualifications and experience of the field staff employed by its members. IAATO standards require that its members hire staff that, as a whole, has at least 75% previous Antarctic experience. The 175 staff members employed during the 1996-97 Antarctic season by IAATO members had, on average, seven years of Antarctic experience (ranging from 1-35). Field staff are hired according to a number of criteria, including their Antarctic field experience with Treaty Party research programs.

Each Expedition Leader is supplied with a handbook/manual, which includes details of safe and efficient standard procedures for an environmentally sound cruise program. Experience and training of small-boat (e.g. Zodiac) operators is a primary concern of all tour operators, with many employing formal training courses for their drivers that are certified by U.S. Coast Guard or equivalent in non-U.S. countries. The ship safety officer and Expedition Leader are ultimately responsible for screening and approving Zodiac drivers.

Officers, staff, crew and passengers on a tour vessel in Antarctica are given specific, formal information on the obligations of the Antarctic Treaty System. Periodic mandatory conservation briefings are held for crew members in their own languages. All staff and crew receive a copy of Recommendation XVIII-1, Guidance For Antarctic Visitors, and Guidance For Those Organising and Conducting Tourism and Non-Governmental Activities in the Antarctic in one of six languages.

In addition, many IAATO members conduct workshops, training courses or other company-specific training for Antarctic staff and company representatives attend an annual meeting of IAATO.

5.1.5 Education of Passengers

Although not a requirement of the Antarctic Treaty System, tour operators assume an obligation to educate passengers with regard to the uniqueness of Antarctica, the sensitivity of wildlife in the ecosystem, and the need for conducting an environmentally sound visit to the continent. This not only is a sensible and standard business practice because it often results in repeat clientele, but it also creates passengers who have a meaningful concern for the Antarctic environment, thus becoming 'Ambassadors' who transfer those impressions to others. This is not only an important component of the purpose and value of Antarctic tourism, this emphasis on education also helps to minimize any potential environmental impact.

Providing a first-hand Antarctic experience to tourists educates them to the ecological sensitivity of

the Antarctic environment and promotes a greater understanding of the earth's resources and the important role of Antarctica in the global environment. It can also build substantial political support for continued scientific research in the Antarctic. Controlled visitation by well informed, well prepared travelers in small groups, led by experts in the field, helps ensure ecologically sustainable activities and the continued protection of Antarctica.

Prior to embarking on a voyage, passengers receive a package of predeparture materials, including information on safety and conservation, an extensive Antarctica Primer, and a copy of Recommendation XVIII-1, "Guidance for Visitors to the Antarctic." Passengers also receive a copy of the National Science Foundation pamphlet, "Conservation of Antarctic Seabirds," that educates, in user friendly language and format, the reader on the Antarctic Conservation Act by describing the area's birds and their habitat, conservation tips and other related information. Passengers also receive an extensive reading list, which includes the "Oceanites Site Guide to the Antarctic Peninsula." Copies of predeparture materials are available from individual tour operators.

Once on board, briefings and education continue. "Behold Antarctica," a video produced by the U.S. NSF Office of Polar Programs that highlights obligations of the U.S. Antarctic Conservation Act, is shown onboard voyages with U.S. citizens. All passengers receive a copy of Recommendation XVIII-1, in one of six languages, as an integral part of conservation briefings aboard ship. An initial hour-long mandatory briefing on Antarctic conservation and etiquette ashore is held before the first landing. This briefing features an IAATO-produced slide presentation reinforcing Recommendation XVIII-1.

Emphasis is placed on significant sensitive features of shore visits, particularly any Antarctic protected areas that may be within the vicinity of the area visited. Protected areas receive special attention in briefings of passengers, staff, bridge officers and pilots for purposes of shore stops, zodiac cruises and helicopter activities.

Regular briefings are held onboard regarding planned activities by the expedition leader, supplemented by a printed daily events sheet and announcements over the public address system. Onboard lecturers provide regular slide-illustrated presentations on topics of interest, including lectures with an emphasis on sound environmental practices around wildlife in the Antarctic. In addition to the lecture program, documentary videos are shown as part of the onboard lecture program. These are often supplemented by the very useful presentations given by station personnel who board tour vessels when scheduled visits are made to the U.S. stations Palmer and McMurdo, for example. Each vessel also carries a small polar library, including documents of the Antarctic Treaty System.

Lecturers and other staff supervise, monitor and guide walks ashore or during small boat excursions. According to IAATO standards, the ratio of staff to passengers ashore will be a minimum of 1:15-20. This number is often exceeded in practice.

COMNAP Education and Training Questionnaire

2. WHO IN YOUR ORGANISATION IS RESPONSIBLE FOR ANTARCTIC EDUCATION AND TRAINING?

- Personnel Officer
- Education and Training Officer
- Other (please specify)

IAATO Summary: *The environmental officer, director of operations, company president or other responsible individual is the IAATO representative for each company. This same person is responsible for Antarctic education and training of staff. The expedition leader has this responsibility in the field.*

Abercrombie & Kent	Antarctic Environmental Officer. On board the responsibility extends to the Captain (overall responsibility) and Expedition Leader for staff, passenger and crew education and compliance.
Adventure Network	Education and Training Officer
Aurora Expeditions	Managing Director, expedition leaders and naturalists on individual voyages
Clipper Cruise Line	Director Passenger Operations
Hapag-Lloyd	Environmental Officer
Marine Expeditions	Manager, Expedition Operations
Quark Expeditions	Field Operations and Environmental Affairs Officer, Expedition Leaders
Society Expeditions	Director of Operations, Ship's Safety Officer, Expedition Leader
Special Expeditions	Director of Field Staff, Director of Field Operations
Zegrahm Expeditions	President, and co-founders/Expedition Leaders

3. WHO DO YOU PROVIDE EDUCATION AND TRAINING FOR?

- Staff
- Contractors
- Visiting Scientists and Technicians
- Research Students
- Staff from other national Antarctic programs
- Private Expeditioners
- Tourists
- Other (please specify)

IAATO Summary: *All members not only train officers, staff and crew but also provide education for Antarctic visitors.*

Abercrombie & Kent	Everyone on board including passengers, crew, staff , visiting scientists, technicians
Adventure Network	Staff, Contractors, Private expeditioners, Tourists
Aurora Expeditions	Staff, private expeditioners, tourists, ship crew
Clipper Cruise Line	On board staff, passengers, officers, crew
Hapag-Lloyd	Expedition Staff, Lecturers, Contractors, Tourists, Ships crew
Marine Expeditions	Staff, contractors, private expeditioners, tourists
Quark Expeditions	On board staff, passengers, officers, crew
Society Expeditions	Ship's Expedition Staff, Lecturers, Passengers and Crew
Special Expeditions	Staff, Tourists
Zegrahm Expeditions	On board staff, passengers, officers, crew

4. HOW DO YOU PROVIDE EDUCATION AND TRAINING?

- Prior to Departing for Antarctica (e.g. introductory conference or training course)
 - En-route to Antarctica (e.g. ship safety briefings)
- While in Antarctica (e.g. arrival briefings, field training, job specific training)

IAATO Summary:

All members provide written handbooks and other printed materials to staff before the season following a standard table of contents. In addition, some companies offer training sessions and require training in first-aid and related safety topics. All members conduct regular briefings, lectures and discussions while en route to Antarctica and during time in the Antarctic Treaty Area, most significantly pre-landing briefings and post-landing review sessions.

Abercrombie & Kent	Brochures, extensive pre-tour documentation (destination-related travel information, reading list, destination notebook, briefings on board, education lecture series by experts with Antarctic experience (ie ornithology, history, geology, glaciology, oceanography and marine mammalogy, comprehensive reference materials and resource notebooks in the ships library, pre-arrival briefings by the Expedition Leader, daily briefings and recap sessions, and supervision in the field by the Expedition Leader and expedition staff (whose combined Antarctic experience averages over 9 years per person.)
Adventure Network	Training 10 days before departure, 5 days while in Antarctica
Aurora Expeditions	<p><u>Prior to departing for Antarctica:</u> Ongoing training to office staff. Introduction to our environmental principles to tourists in a two hour session, approximately 6 weeks before departure to Antarctica. All zodiac drivers must complete a first aid course (1 week) and Surf Life Saving Association Zodiac Driving Course before employment (2 day course) unless they have significant prior experience in polar conditions.</p> <p><u>En-route to Antarctica:</u> Ship safety briefing within 24 hours of leaving port for all staff and tourists. Video, and slide briefing to all passengers about Madrid Protocol environmental standards, before arriving in Antarctica. Zodiac and helicopter safety briefing to all passengers before arriving in Antarctica.</p> <p><u>While in Antarctica</u> Pre landing briefings specific to each site</p>
Clipper Cruise Line	Prior to departing for Antarctica: Documents which include brochures, predeparture information, information notebooks are sent in advance from 120

	<p>days or less for passengers and staff.</p> <p>Enroute to Antarctica and while in Antarctica: Briefings and lectures are presented as often as possible and when appropriate. Briefings include: Safety at sea, zodiac, clothing suggestions, Recommendation XV111-1, IAATO slide show, protected areas, lectures on wildlife biology, history, geology, Antarctic Treaty, political affairs, oceanography, Environmental Protocol.</p>
Hapag-Lloyd	<p>Prior to Departing for Antarctica: mailing information and regulations</p> <p>En route and while in Antarctica: ongoing briefings and lectures.</p>
Marine Expeditions	<p>2-day course for staff and contractors, briefings en route to Antarctica for staff, crew and tourists, daily briefings while in Antarctic Treaty Area.</p>
Quark Expeditions	<p>Prior to departing for Antarctica: Documents which include brochures, predeparture information, maps, Recommendation XV111-1, Antarctic Primer are sent in advance from 120 days or less for tourists and staff.</p> <p>Enroute to Antarctica and while in Antarctica: Briefings and lectures are presented as often as possible and when appropriate. Briefings include: Safety at sea, zodiac, helicopter, clothing suggestions, Recommendation XV111-1, IAATO slide show, protected areas, lectures on ornithology, marine biology, oceanography, history, geology, Antarctic Treaty and associated topics, political affairs, Environmental Protocol, etc.</p>
Society Expeditions	<p><u>Prior to departure:</u> Hire experienced Expedition Leader (2 seasons minimum in an assistant capacity), Expedition Notebook, Guidelines, IAATO slides, Review IEE, Ron Naveen Site Guide.</p> <p><u>En-route to Antarctica:</u> Safety Briefing, Zodiac Procedures, guidelines for visitors to Antarctica, Slides and Brochure.</p> <p><u>While in Antarctica-</u> Site arrival briefings, on site monitors, post visit reviews.</p>
Special Expeditions	<p>One day training before season for staff, briefings aboard ship en route to Antarctica and during time in Antarctic Treaty Area</p>
Zegrahm Expeditions	<p>Prior to departing for Antarctica: Documents which include brochures, predeparture information, maps, information notebooks are sent in advance from 120 days or less for tourists and staff.</p> <p>Enroute to Antarctica and while in Antarctica: Briefings and lectures are presented as often as possible and when appropriate. Briefings include: Safety at sea, zodiac, clothing suggestions, Recommendation XV111-1, IAATO slide show, protected areas, lectures on ornithology, marine mammals, history, geology, Antarctic Treaty, Environmental Protocol .</p>

5. WHAT TOPICS DOES YOUR TRAINING COVER?	
<ul style="list-style-type: none"> • Antarctic legislation • Antarctic science • Environmental issues • Fire training • First aid • Field training – marine • Field training - deep field • Health and Safety 	<ul style="list-style-type: none"> • “Lifestyles” • Logistics • Communication systems • Base description and emergency plan • Accident scenarios including videos • Diving and diver assistance • Use of helicopters • Other (please specify)

IAATO Summary: Topics covered in training for staff and crew varies but all include basic emergency contingency, communications, and standard operating procedures for safe and environmentally responsible programs. Education of passengers focuses on the Antarctic environment, conservation and wildlife.

Abercrombie & Kent	For passengers and staff: Antarctic legislation, Antarctic science, environmental issues and other topics pertinent to the destination.
Adventure Network	Antarctic legislation, environmental issues, fire training, first aid, field training – deep field, health and safety, logistics, base description and emergency plan, accident scenarios without videos, use of fixed wing aircraft, air safety.
Aurora Expeditions	Antarctic legislation, Antarctic science, Environmental issues, first aid for field briefings on Health and Safety
Clipper Cruise Line	Antarctic legislation, Antarctic science, Environmental issues, Health and Safety, Lifestyles, Logistics, Communication systems, Base description and Emergency plans, Accident Scenarios including videos, Zodiacs, ship board logistics and operational procedures, educational programs, content of educational programs.
Hapag-Lloyd	Antarctic legislation, Antarctic Science, Environmental Issues, Fire Training, First Aid, Health and Safety, communication systems for crew and staff, Accident scenarios including videos for crew, zodiac training.
Marine Expeditions	Ship-based operator with lectures for passengers on Antarctic legislation, science and environmental issues and training for field staff in first-aid, health and safety, communications and accident scenarios.
Quark Expeditions	Antarctic legislation, access to Antarctic science, Environmental issues, Health and Safety, Lifestyles, Logistics, Communication systems, Base description and Emergency plans, Accident Scenarios including videos, Helicopters, Zodiacs, ship board logistics and operational procedures, educational programs, content of educational programs.
Society Expeditions	Antarctic legislation, Antarctic Science, Environmental issues, responsible travel in remote regions, Antarctic Treaty System guidelines.
Special Expeditions	Educational lectures aboard ship on Antarctic science, environment and conservation and staff training in emergency contingency, safety, communications and logistics.
Zegrahm Expeditions	Antarctic legislation, access to Antarctic science, Environmental issues, Health and Safety, Lifestyles, Logistics, Communication systems, Base description and Emergency plans, Accident Scenarios including videos, Helicopters, Zodiacs, ship board logistics and operational procedures, educational programs, content of educational programs.

6. HOW DO YOU DELIVER EDUCATION AND TRAINING MATERIALS?

- Lectures
- Written Materials (.e.g. handbooks)
- Video
- Scenarios, role play
- Other (please specify)

IAATO summary: The primary means of staff and crew training is through handbooks and written instructions and tourists are educated through written materials, videos, lectures, briefings, on-site supervision, and discussions. The video training tapes developed by the U.S. National Science Foundation are used by some operators.

Abercrombie & Kent	<p>Pre-tour documents include a set of travel information which includes extensive information on the destination, reading list, regulations, Recommendation XV111-1, Guidance for Visitors, among others. A comprehensive expedition notebooks is also sent with pre-tour documents.</p> <p>On board education and training is imparted through handouts (ie Rec XV111-1, Guidance for Visitors, lectures, videos, scenarios and role playing (ie EL briefings), handouts, reference materials on the bulletin board, extensive reference library, recaps, briefings, announcements and briefings over the public address system.</p>
Adventure Network	Lectures, written materials, scenarios and drills
Aurora Expeditions	Written materials, lectures before and during expeditions, videos and slide show before departure.
Clipper Cruise Line	<p>Prior to departure: extensive pre-tour documents are sent which includes a detailed notebook which includes a general overview of most all aspects of Antarctic legislation, natural history, science, etc.</p> <p>On board: Lectures, Written Materials, Hand-outs, Educational Videos, Briefings, on Shore Lectures.</p>
Hapag-Lloyd	Lectures, Written Materials/Handbooks, Video, practical training for crew i.e. zodiac training.
Marine Expeditions	Handbooks and printed materials, lectures, and videos, group discussion of issues
Quark Expeditions	<p>Prior to departure: extensive pre-tour documents are sent which includes a detailed notebook which includes a general overview of most all aspects of Antarctic legislation, natural history, science, etc.</p> <p>On board Lectures: Written Materials, hand-outs, Educational Videos, Briefings, on Shore Lectures</p>
Society Expeditions	Lectures, pamphlet, Naveen site guide available, IAATO guidelines and slide presentation
Special Expeditions	Lectures, written materials, videos
Zegrahm Expeditions	<p>Prior to departure, extensive pre-tour documents are sent which includes a detailed notebook which includes a general overview of most all aspects of Antarctic legislation, natural history, science, etc.</p> <p>On board Lectures, Written Materials, Hand-outs, Educational Videos, Briefings, on Shore Lectures</p>

7. WHAT RESOURCES ARE ALLOCATED TO EDUCATION AND TRAINING?

- Staff numbers
- Training budget (US \$)
- How many persons undergo training per year?

IAATO Summary: Varies by member company

Abercrombie & Kent	There is not a specific budget for this. Approximately 33 staff, 61 crew are briefed each season. Staff average over 9 years of Antarctic experience per person. The majority of our crew have worked for many seasons.
Adventure Network	5 staff train 27 persons with no specific budget
Aurora Expeditions	Staff numbers: 3 to 8 staff members on each voyage. Training budget (US \$) no specific training budget because it is inherent in ship operating procedures and pre-departure information for passengers. First aid and zodiac course costs are borne by each staff member. How many persons undergo training per year? all passengers and ship staff = approximately 500 per year
Clipper Cruise Line	There is no specific budget for staff training. In general, most staff have previous Antarctic experience. There are approximately 30 staff who work throughout the season.
Hapag-Lloyd	Staff numbers: 10-12 per voyage Training budget: no set amount
Marine Expeditions	3 staff train about 40 persons with a budget of \$4,000 (exclusive of staff cost)
Quark Expeditions	There is no specific budget for staff training. Approximately 80 staff are employed throughout the season and 99% of the staff have Antarctic experience from 1-35 years. Most of the staff work in both the Arctic and Antarctic. Quark Expeditions specializes in travel to remote destinations in polar regions.
Society Expeditions	4 staff train 56 persons with a budget of 12,000 (worldwide operations)
Special Expeditions	28 persons are trained each season with a budget of \$100 per staff person including collateral materials.
Zegrahm Expeditions	There is no specific budget for staff training. Approximately 20 staff are employed and in total have over 300 years of Antarctic experience. Many of the staff have worked from 50 up to 100 trips on tourist ships to Antarctic. In addition, many of the staff work in the Arctic, S. Pacific, Indian Ocean and other remote destinations involving zodiac operations and expeditionary style cruising.

8. HOW IS EDUCATION AND TRAINING IN YOUR ORGANISATION EVALUATED?

- Internal review by training department
- Feedback from participants
- External review (e.g. consultants)
- Other (please specify)

IAATO Summary:

In addition to internal review by each member company, a post-season review, including education and training, is part of the annual IAATO meeting held each July. Members also complete annual IAATO registration information. Tour operators distribute questionnaires to tourists.

Abercrombie & Kent	By internal review by training department and senior staff (expedition leaders and cruise directors) and ship's command, along with feedback from participants and from observers (if aboard.)
Adventure Network	Feedback from participants, reporting and questionnaire by all staff members
Aurora Expeditions	Feedback from Passengers in voyage evaluation sheets. 2 day long, end of season review by ship and office staff each year.
Clipper Cruise Line	Internal Review by those in charge of hiring and supervising the individuals. Expedition Leaders and Cruise Directors on board the vessels evaluate and pass on the information either directly to the individuals involved or the office administrative staff. Questionnaires evaluating the overall voyage.
Hapag-Lloyd	Internal review by training department, Feedback from participants, External Review
Marine Expeditions	Internal review, feedback, expedition leader reports, external audit by Poles Apart (consultants), annual review of operations by IAATO
Quark Expeditions	Internal Review by those in charge of hiring and supervising the individuals. Expedition Leaders and Cruise Directors on board the vessels evaluate and pass on the information either directly to the individuals involved or the office administrative staff. Tourists also fill out questionnaires evaluating the overall voyage.
Society Expeditions	Internal review, feedback from participants, external review and Expedition Leader's report on a cruise by cruise basis.
Special Expeditions	Internal review, feedback from participants
Zegrahm Expeditions	Internal Review by those in charge of hiring and supervising the individuals. Expedition Leaders and Cruise Directors on board the vessels evaluate and pass on the information either directly to the individuals involved or the office administrative staff.

<p>9. DO YOU SHARE INFORMATION ON EDUCATION AND TRAINING WITH OTHER ANTARCTIC OPERATORS?</p> <ul style="list-style-type: none"> • National Antarctic operators • Tour companies • Private Expeditioners • Other (please specify)

IAATO summary: Exchange of information among members is a primary objective of IAATO. In addition, members have benefited from increasing exchange of operational information with environmental officers of national programs and COMNAP.

Abercrombie & Kent	Information on education and training is shared with the National Antarctic operators through our end of season reporting to NSF to IAATO members through IAATO distribution and meetings, and others as required (ie if the end of season report is required by an Antarctic Treaty Party who has national legislation in place that requires our follow-up) or requested i.e. out of courtesy to In.Fue.Tur.
Adventure Network	Exchange with IAATO Members informally and at annual meeting
Aurora Expeditions	Receive printed information from Australian Antarctic Division Informal exchange of information with other tour companies via IAATO Receive printed environmental guidelines from IAATO
Clipper Cruise Line	NA, will operate in Antarctica for the first season in 1998-99.
Hapag-Lloyd	With National Antarctic operators, tour companies and other National and International Institutions and Governments
Marine Expeditions	With tour operators on an ongoing basis and with national operators on request
Quark Expeditions	We send upon request our Expedition Leaders Handbook and Table of Contents of the Resource Notebooks to National Antarctic Operators. Tour Companies: Tour Companies share the Table of Contents for their Expedition Leaders Handbooks and Resource Notebooks upon request.
Society Expeditions	National Antarctic operators and tour companies
Special Expeditions	NA, will operate in Antarctica for the first season in 1998-99
Zegrahm Expeditions	We send upon request pre-departure materials to National Programs which includes comprehensive educational information to passengers and staff.

10. HOW DO YOU THINK EDUCATION AND TRAINING FOR PEOPLE WORKING IN, OR VISITING ANTARCTICA, COULD BE IMPROVED?

Abercrombie & Kent	We believe the education and training for people visiting Antarctica, (ie tourists) is already quite comprehensive and handled appropriately. I would however like to see some standardization between the operators conducting ship-bourne tourism. Common standards could be determined within IAATO to create standardized operating manuals, i.e. zodiac drivers manual, expedition leader's handbook, visitor briefings, etc. and staff could participate in training programs. All of this is of course, contingent upon additional funds being allocated to this issue.
Adventure Network	Continue exchange of information
Aurora Expeditions	Continuing interchange between government programs and IAATO – particularly COMNAP and IAATO
Clipper Cruise Line	No comment
Hapag-Lloyd	No comment
Marine Expeditions	No comment
Quark Expeditions	Promote exchange of information between IAATO and COMNAP relative to how we can all better train and educate our staff and personal on Antarctic policy, science legislation and working/living in Antarctic conditions.
Society Expeditions	Encourage a regular exchange of useful information (possibly via internet)
Special Expeditions	No comment
Zegrahm Expeditions	Encourage the exchange of information with regard to staff training and education.

11. FURTHER COMMENTS

Abercrombie & Kent	None
Adventure Network	Previous operational and extensive experience in the Arctic or in other remote regions is strongly considered and appreciated when employing staff.
Aurora Expeditions	Environmental education is a necessity for running a viable tour business. It is expected by our clients or potential clients.
Clipper Cruise Line	None
Marine Expeditions	Various IEE's by IAATO and tour operators as well as handbooks and manuals contain detailed information on education and training.
Quark Expeditions	The USA, Australia, as well as the United Kingdom and New Zealand have provided excellent educational tools for educating and training staff. Exchange of information similar to what has taken place over the last few years will hopefully continue.
Society Expeditions	Keep IAATO slide presentation and booklets up to date.
Special Expeditions	None
Zegrahm Expeditions	The USA, Australia, as well as the United Kingdom and New Zealand have provided excellent educational tools for educating and training staff. Exchange of information similar to what has taken place over the last few years will hopefully continue.