LOGISTICAL AND OPERATIONAL ISSUES

Introductory note

The arrival during the International Geophysical Year (1957- 58) of eight national expeditions (in addition to the four which had been there for some time) meant that there was much mutual advantage to be gained from exchanging technical logistical information. Proven techniques could be adopted more widely; dead ends could be avoided. Thus were stimulated the two logistics symposia to which these Recommendations refer. The reports of these symposia have been published by SCAR. A Council of Managers of National Antarctic Programs (COMNAP) was established to review operational matters and to exchange information in cooperation with SCAR. Under COMNAP the Standing Committee on Antarctic Logistics and Operations (SCALOP) was established. Terms of reference for COMNAP and SCALOP are reproduced below.

Council of Managers of National Antarctic Programs (MNAP): Terms of reference

[The term 'Manager of National Antarctic Program' means the national official responsible for planning and conducting that nation's presence in the Antarctic. This person normally represents the organization funded by the government to implement that nation's program and presence. More than one MNAP from a country can be accepted if the internal national structure so demands]

Terms of reference

1. To establish a Council of MNAPs, federated to SCAR.
2. To review, on a regular basis, operational matters and to exchange information.
3. To examine, discuss and seek possible solutions to common operational problems.
4. To provide a forum for discussion in order to frame better, and in a timely, efficient and harmonious manner:
   - i) national responses to common issues directed to National Antarctic Operators,
   - ii) appropriate input to SCAR responses to questions involving science and operations/logistics.
5. To review, with appropriate SCAR WGs and Groups of Specialists, projected programs requiring major international collaboration on operations/logistics and to provide appropriate advice to the SCAR Executive.
6. To respond to requests by SCAR for information, advice and comment.
7. To create sub-groups as necessary, of which one will be a Standing Committee on

Antarctic Logistics and Operations (SCALOP) and which will replace the SCAR Logistics Working Group upon its termination.

8. Copies of all written outputs of the Council of MNAPs, and its sub-groups, to be passed to the SCAR Secretariat.

Membership and meeting arrangements

1. Two members representing each country
   - National Antarctic Program Manager or his/her designated alternate
   - Logistics and Operations Co-ordinator or equivalent as nominated by MNAP.
2. Meetings to take place each year, and in SCAR years at the time and place of the SCAR Delegates' Meeting. MNAPs should take opportunities to maintain regular contact.
3. The chairman may either be the member from the host country, chosen by consensus or he/she may be chosen, by consensus, for a term to be decided by the members for each case.

Standing Committee on Antarctic Logistics and Operations (SCALOP)

Terms of reference

1. To serve SCAR by providing advice on Antarctic operations and logistics.
2. To investigate and, if necessary, arrange for research on operational problems identified by the Council of MNAPs or by SCAR and its Working Groups.
3. To establish ad hoc groups of experts to discuss and to foster advances in technology.
4. To hold symposia and expositions to inform of and review technological advances.
5. To exchange timely information on Antarctic logistics and operations.

Membership and meeting arrangements

1. One member to be nominated by the MNAP of each country, the logistics and operations coordinator or equivalent.
2. Meetings to take place in conjunction with the SCAR Delegates' meetings. Meetings should take place at least annually. Members should take the opportunity to maintain regular contact.
3. A chairman shall be elected on a consensus basis.

Antarctic Treaty Recommendations

IV-25: Meeting on logistics

The Representatives recommend to their Governments that they accept the offer made by the Government of Japan to hold a meeting on logistics in Japan in June 1968.

1. The meeting will be held in furtherance of principles and objectives of the Antarctic

Treaty.

2. The meeting will be for a period of about one week and will be attended by experts in selected fields. The meeting will have the following terms of reference:
   i) to discuss problems in the fields of Antarctic logistics specified in paragraph 3 below;
   ii) to exchange views on possible solutions which have been tried recently;
   iii) to examine critically new solutions which may be proposed in papers submitted at the meeting.
3. The fields for discussion will include aspects of:
   i) design of buildings and building services, including waste disposal and water supply
   ii) oversnow transport
   iii) air transport, including airfields
   iv) sea transport
   v) safety measures
   vi) new and urgent problems which Governments agree require discussion.

III-III: Logistics

In view of the Recommendations by the First and Second Consultative Meetings (I-VII and II-V) concerning logistics;

Taking into consideration the Logistics Symposium which took place at Boulder, Colorado, USA, in August 1962, under the auspices of the Scientific Committee on Antarctic Research (SCAR), and the Report on this Symposium published in 1963;

The Representatives recommend to their Governments that the organization, agenda, date and place for the inter-governmental meeting of experts, on the present state of knowledge about useful aspects of logistic activities in the Antarctic to which the above recommendations refer, be considered during the preparatory meetings for the Fourth Consultative meeting.

II-V: Symposium on logistic problems

The Representatives recommend to their Governments that in view of Recommendation I-VII of the First Consultative Meeting designed to achieve one of the objectives of the Antarctic Treaty, namely the creation of conditions necessary for carrying out scientific investigation, and in view of the logistic symposium organized by SCAR which is soon to take place:

a) a meeting or symposium of experts should be held, to review the present state of knowledge acquired on the organization of expeditions, logistic support and transport, in order to evaluate such knowledge;
b) consultations be held during the preparations for the next Consultative Meeting to fix a suitable date, place, organization and agenda for such meeting or symposium.

I-XII: Postal services

The Representatives recommend to their Governments that they should:

1) promote cooperation among expeditions in the Treaty Area in the collection and distribution of mail for expedition members;

2) advise each other of opportunities for forwarding mail to and from stations in the Treaty Area;

3) consult together with a view to reaching agreement on further practical measures for improving postal communications in the Treaty Area.

Air Transport

Introductory note

The cost and safety of getting to Antarctica and of moving around once there has always been a major component of the costs of scientific research in Antarctica. For this reason, Parties have given consideration to ways to cooperate and to improve safety of transport to and within Antarctica. At the XIVth ATCM attention turned to the question of providing for air safety in Antarctica. The Consultative Parties adopted Recommendation XIV-9 looking forward to a meeting of experts to look into the issues in the light of the particular circumstances of the Antarctic. The meeting of experts was held in Paris from 2–5 May 1989. Its report was considered at the XVth ATCM and Recommendation XV-20 gives effect to its ten proposals. In accordance with this Recommendation, COMNAP/SCALOP have published, and regularly update, an 'Antarctic Flight Information Manual' (AFIM).

Antarctic Treaty Recommendations

Extract from Report of the XVIth ATCM

Air safety in Antarctica

(129) The question of improving air safety in Antarctica was discussed in detail by the Meeting.

(130) One delegation recalled that, upon invitation of the Contracting Parties a meeting of experts had been convened in May 1989 in Paris to develop measures relating to air safety in Antarctica. It pointed out that this expert meeting had submitted 10 proposals on air safety for consideration to the XVth ATCM, and that the XVth ATCM, in taking up the said proposals, had adopted Recommendation XV-20.

(131) The said delegation further recalled that the task of implementing Recommendation XV-20 had been taken up by COMNAP/SCALOP through the SCALOP subgroup on Antarctic Air Safety. It drew the Meeting's attention to the results which were summarised as follows:

Pursuant to Recommendation XV-20:

- library of ICAO publication has been acquired by the SCALOP subgroup to ensure that all measures are implemented on the basis of ICAO criteria;
- a standardised format for advance notices on air operations has been developed and introduced for use;
- Primary and Secondary Air Information Stations in Antarctica have been designated, through which air operations are being coordinated;
- the TIBA frequency of 129.7 MHz has been adopted and confirmed by national operators; the procedures are in accord with ICAO Annex 11;
- national points of contact have been designated to be used as addresses for distress messages through the COSPAS/SARSAT system;
- a handbook entitled 'Antarctic Flight Information Manual (AFIM)' has been developed to Recommendation XV-20 and ICAO Annex 15. The first edition has been assembled and was introduced to the XVIth ATCM. Copies will be sent through the diplomatic channels to the Treaty Parties. The manual comprises information on aircraft, airfields, equipment, operational procedures, areas of national operations, etc and
- a flight planning format is being developed for pre-flight transmission.

(132) The aforementioned delegation informed the Meeting that the full wording of the proposals of the SCALOP subgroup is set forth in the first Report of COMNAP to the XVIth ATCM. He added that the work of the SCALOP subgroup will be continued taking into account the remaining recommendations by giving due regard to the increasing importance of Antarctic air safety.

(133) The Soviet delegation underlined the importance of air safety in Antarctic with regard to transport and scientific research, especially considering the increase of activities in the future. The delegation submitted an information paper on this matter (XVI ATCM/INFO 45). It was proposed that adequate measures should be taken to set up regulations with a view to the use of air space, to traffic control and a system of air safety based on ICAO principles and the special conditions of the Antarctic. It was further noted that COMNAP and SCAR should continue their work in this field.

XV-20: Air safety in Antarctica

The Representatives,

Recalling Recommendations I-X and XIV-9;

Recognizing the importance of ensuring safe air operations in the Antarctic, and:

a) that there is a wide range of problems in air operations which are becoming more urgent with increasing activity;
b) that the principal body of knowledge and experience of Antarctic air operations, and its current problems, lies with the operators of national Antarctic programmes;

Noting, with appreciation, the Report of the Meeting of Experts on Air Safety in

Antarctica, held in Paris from 2 to 5 May 1989;

Recommend to their Governments that:

1. For the purpose of ensuring that measures for improved air safety apply to all flights in Antarctica, measures to improve air safety set out in paragraphs 2–10 below should be elaborated on the basis of ICAO criteria, taking due account of the specific features of Antarctica as well as of existing practices and services.

2. For the purpose of ensuring the safety of air operations in the Antarctic Treaty area, they exchange, preferably by 1 September and no later than 1 November each year, information about their planned air operations in accordance with the standardized format at Annex 1 to this Recommendation.

3. For the purpose of improving air safety in Antarctica, national Antarctic programmes operating aircraft in Antarctica and their aircrews should be provided with a continuously updated compendium ('Handbook') describing ground facilities, aircraft and aircraft operating procedures (including helicopters) and associated communications facilities operated by each national Antarctic programme (out of the use of which questions of liability will not arise) and, therefore, they should:

a) prepare such a Handbook as a matter of urgency;
b) facilitate the preparation of such a Handbook by their national Antarctic programme operators by collective action through the medium of the Council of Managers of National Antarctic Programmes (COMNAP) federated to SCAR;
c) adopt a loose-leaf format in which information provided by each national operator is kept separate (unless facilities are jointly operated) so as to facilitate updating of information;
d) request their national Antarctic operators to provide information for the purpose of compiling the Handbook in accordance with Annex 2 to this Recommendation.

4. For the purpose of ensuring mutual awareness of current air operations and exchanging information about them, they should designate:

a) *Primary Air Information Stations* (PAIS) which coordinate their own air information and information from their Secondary Air Information Stations (if any) for the purpose of notifying current air operations to other PAIS. These PAIS should have adequate communication facilities able to transmit 'hard copy' information by means of an agreed HF data mode and/or INMARSAT; and
b) *Secondary Air Information Stations* (SAIS) which comprise stations/bases (including field bases and ships) which provide air information to their parent coordinating PAIS.

5. For the purpose of avoiding air incidents in areas beyond the range of VHF radio coverage of primary and secondary stations, aircraft outside the areas covered by primary and secondary stations should use a specific radio frequency to apply the 'TIBA' procedure laid down in Annex 11 to the Convention on International Civil Aviation.

6. So as to ensure compliance with Article VII, paragraph 5 of the Antarctic Treaty and also Recommendation X-8, Part IV, they should keep one another informed about non-

governmental flights and a reminder of the above provisions should be given to all pilots filing a flight plan for flights to Antarctica.

7. So as to provide for the improved collection from, and exchange within Antarctica of meteorological data and information of significance to the safety of Antarctic air operations, they should:

a) encourage the World Meteorological Organization in their work towards this end; and
b) take steps to improve meteorological services available in Antarctica, specifically to meet aviation requirements.

8. For the purpose of ensuring effective communications between Primary Air Information Stations (PAIS), they ensure that their PAIS have adequate facilities for communicating with other PAIS, and that, in this connection, they bear in mind the INMARSAT system.

9. For the purpose of locating aircraft in distress in Antarctica, and noting the possibilities offered by the COSPAS-SARSAT system for the location of Emergency-Locator-Beacons-Aircraft transmitting on 406 Mhz, they designate points of contact which are to be the addressees of emergency location messages relating to air operations in Antarctica generated by the COSPAS-SARSAT system.

10. For the purpose of enhancing the safety of operation of aircraft in the longer term, studies should be undertaken, at a suitable time, aimed at making use of a satellite communication and navigation system being developed within the framework of ICAO.

Annex to Recommendation XV-20

[Note: Six specimen forms for the Exchange of Information on Planned Air Operations in Antarctica, comprising the first part of this annex, are not reproduced here.]

Explanatory notes on the Procedure for the Exchange of Information on Planned Air Operations in Antarctica

In accordance with discussions at the 1988 Hobart Meeting of MNAP's and the SCAR Working Group on Logistics, and Proposal 2 of the 1989 Paris Meeting of Experts on Air Safety, it was agreed that Antarctic Operators would exchange information on their planned air operations in a standardized format by 1 September each year.

The format for presenting the information is given in the attachments to this document.

Please note:

1. All Operators are to complete the 'Advance Notice' cover sheet whether or not they plan to undertake air operations in the forthcoming summer season.

2. Operators who do plan to conduct air operations during the forthcoming summer season are to complete the 'Advance Notice' cover sheet and the applicable information sheets as follows:

- Intercontinental Operations (Sheet 1).

- Continental Operations (Sheet 2).
- Ship Based Operations (Sheet 3).
- Other Airborne Operations (Sheet 4), and
- Aircraft Description (Sheet 5).

3. Flight Level or Altitude information is to be provided as follows:

For inter or intracontinental flights, and flights remote from stations, specify the normal operating Flight Level for the aircraft (which would be based on the Standard Pressure altimeter setting of 1013.2 hPa).

For flights operating within the vicinity of stations (up to ?30 nm radius), specify normal operating Altitude or altitude range for the aircraft (which would be based on the local QNH altimeter setting).

Note:

a) A transition altitude and level for Antarctic flights has not yet been agreed.
b) A table of standard en route cruising levels for vertical separation based on direction of track (true or grid) has not yet been agreed.
c) The ICAO standard altitude in both metres and feet for each flight level will apply.

4. All flight times (for example, for balloon launches) are to be given in Coordinated Universal Time (UTC).

5. The 'Exchange of Information Sheets' should preferably be completed in the English language.

Antarctic Aeronautical Information Handbook: Contents

1. GENERAL (arranged by the name of countries in their internationally accepted order in the language of the document).

1.1 The postal address of the National Antarctic Operator including telephone, telex and telefax numbers;

1.2 An indicative description of the parts of the Antarctic Treaty Area in which the operators' aircraft operate;

1.2.1 frequently

1.2.2 infrequently (Maps may be used where this would facilitate understanding of the description).

1.3 The primary station (PAIS) or stations from which the national operator coordinates his aircraft operations;

1.3.1 the role played by the operators' secondary stations (PAIS).

1.4 Ships carrying helicopters or which have designated on board facilities for operating helicopters.

2. GROUND FACILITIES (arranged by the alphabetical order of the name of each

station. All stations and field camps are to be included which operate for more than one Antarctic summer season).

2.1 Runways, skiways and helipads (Information to be provided using paragraphs 2-43 of section 2.2 of Appendix I to Annex 15 to the Convention on International Civil Aviation as a guideline).

2.2 Communications(Information to be provided using paragraphs 2-14 of section 3.2 and paragraphs 2-10 of section 3.3 of Appendix I to Annex 15 as a guideline).

2.3 Meteorology (Information to be provided using paragraphs 2-11 of section 4.2 of the Appendix I to Annex 15 as a guideline).

2.4 Aircraft operating procedures.

2.5 Alerting and search and rescue procedures.

Extract from Report of XVth ATCM

168. The Meeting noted that the Meeting of Experts on Air Safety in Antarctica had taken place in Paris from 2–5 May 1989. The Final Report of that Meeting was circulated. It contained ten specific proposals relating to air safety. A draft recommendation was submitted by the United Kingdom based on those proposals.

169. The draft, with minor amendments, was adopted as Recommendation XV-20.

XIV-9: Air safety in Antarctica

The Representatives,

Recalling Recommendation 1-X;

Recognizing the importance of safe air operations in the Antarctic and:

i) that there is a wide range of problems in air operations which are becoming more important and urgent with increasing activity;

ii) that the principal body of knowledge and experience of Antarctic air operations, and its current problems, lies with the operators of national Antarctic programmes;

Recommend to their Governments that:

1. Arrangements be made for a meeting of experts in accordance with Recommendation IV-24, to be held well in advance of the Fifteenth Consultative Meeting, at a time and place to be decided through diplomatic channels, and that the host Government for the XVth Consultative Meeting should initiate the necessary consultations. Delegations from Consultative Parties to the meeting should include experts with direct experience in Antarctic operations. In the course of preparing for the meeting, consideration shall be given to the invitation of ICAO and other experts to attend the meeting in accordance with paragraph 1 of Recommendation IV-24 (e.g. WMO, ITU);

2. The terms of reference for the meeting shall be to provide for:

i) avoidance of inter-operator air-incidents;
ii) mutual assistance in the course of Antarctic operations, including medical evacuations;
iii) coordinated measures to improve search and rescue procedures;

3. In the fulfillment of these terms of reference, the meeting shall have regard to:

i) existing systems for safe air operations;
ii) means of mutually coordinating air traffic movements in Antarctica;
iii) means of ensuring adequate communications between operators originating air traffic movements, between aircraft and stations in the vicinity of their operations and between aircraft, including consideration of the possible advantages of satellite communications and adoption of predetermined radio frequencies;
iv) means of rapidly initiating search and rescue operations, including the advantages of using common dedicated calling frequencies and of coordinating subsequent operations;
v) how best to ensure that all operators in the Antarctic are aware of air-operational safety requirements and search and rescue procedures;
vi) air operations from ships.

4. In order to facilitate the work of the Meeting they provide relevant information to the host government, preferably 3 months in advance of the meeting, for circulation to other Consultative Parties. An indicative list of such information is set out in the Annex to this recommendation.

5. The report of the meeting be circulated to all Consultative Parties and be referred for consideration at the XVth Consultative Meeting in accordance with Paragraphs 3 and 4 of Recommendation IV-24.

Annex

The following information is an indicative list of the relevant information to be circulated to all Consultative Parties prior to the Meeting of Experts in Air Safety in Antarctica as recommended at the XIVth Consultative Meeting:

i) current areas of air operation;
ii) period and frequency of operation;
iii) types of aircraft used and their navigation and communication equipment;
iv) operating altitudes and ranges;
v) other airborne devices (e.g. balloons, rockets) or other uses of air space in Antarctica
vi) runway length, width, slope, orientation, surface type and condition, load capacity and markings;
vii) Radio Direction Finding and Distance Measuring equipment;
viii) navigation aids, including beacon power and frequencies and communications equipment;
ix) features in the vicinity of landing facilities which could be hazardous to aircraft;

x) prevailing weather conditions of significance to air operations in the vicinity of landing facilities;
xi) service facilities;
xii) type and specification of fuel used;
xiii) operating times of landing and communication facilities;
xiv) available air navigation charts and published visual and instrument approach procedures;
xv) medical facilities available, including medical personnel, and whether stations have trained search and rescue personnel.

IX-4: Cooperation in transport

The Representatives,

Recalling the appropriate provisions of the Treaty as well as Recommendation VIII-7;

Acknowledging the comprehensive report on transport resources and potential requirements delivered to the Fourteenth Meeting of the Scientific Committee on Antarctic Research (SCAR);

Concurring that the most effective use of aviation assets will be in coordinated air support projects (as circumstances permit) without major additional construction or investment;

Noting that new types of aircraft, equipment, and facilities are either being developed or likely to be introduced, and the continuing need for standardization of facilities and procedures to ensure effective coordination;

Recommend to their Governments that:

1. They request SCAR, through their National Antarctic Committees, to continue the work of the Sub-committee on Cooperative Air Transport System for Antarctica (CATSA) of the Working Group on Logistics;

2. They request their offices responsible for the administration of Antarctic expeditions to adopt, to the extent practicable, such measures for improved compatibility of facilities and procedures as SCAR might be able to suggest.

VIII-7: Cooperation in transport

The Representatives,

Recalling Recommendation VII-8;

Recognizing that access to Antarctica by long-range aircraft combined with intra-continental feeder routes by smaller aircraft would facilitate new levels of cooperation and flexibility in research;

Noting the interest taken by the Scientific Committee on Antarctic Research (SCAR) in the potential benefits to be derived from a cooperative air transport system;

Recommend to their Governments that:

1. They request their offices responsible for the administration of Antarctic expeditions to review their scientific programmes in order to identify the ways in which a cooperative air transport system might benefit them and to inform SCAR through their representatives on the SCAR Working Group on Logistics;

2. They request SCAR, through their National Antarctic Committees, to review the available transport resources and the potential requirements with respect to a cooperative air transport system and to bring their conclusions to the attention of the Consultative Parties.

VII-8: Cooperation in transport

The Representatives,

Recognizing that the relative inaccessibility of many regions of the Antarctic Treaty Area creates special transport problems;

Acknowledging the benefits to be derived from international cooperation in scientific investigations in that Area;

Recommend to their Governments that:

1. They accept the principle of using, where appropriate, common transport facilities by sea and by air for scientific and other personnel proceeding with their equipment to and from Antarctic stations;

2. They encourage bilateral or multilateral consultations between Contracting Parties in order to establish when arrangements for such common use of transport facilities would be mutually convenient and practicable;

3. The cost of the use of any common transport facilities should be arranged by agreement between the Contracting Parties concerned, either by direct payment, by reciprocation in kind, or by other mutually agreed means.

Meteorology and telecommunications

Introductory note

There were not enough stations in the Antarctic to make forecasts of weather conditions based on observations from a number of different points in Antarctica a practical possibility until the International Geophysical Year (1957–58). The IGY also showed the importance of Antarctic meteorological observations for forecasting purposes in the rest of the world. Thus, there was a close link between meteorology and telecommunications

and between the needs of the world in general for meteorological information from Antarctica and practical needs for it in Antarctica.

Because of the difficulties imposed by the physical nature of the telecommunications environment that faced national Antarctic programmes in earlier years, the question of telecommunications was an important concern for Consultative Parties. They dealt with this concern in two separate fora: the first, the World Meteorological Organisation (WMO) Working Group (later: Commission) on Antarctic Meteorology has dealt with the requirements for meteorological observations in Antarctica and for requirements for transmission of such observations between Antarctic stations and from Antarctica to the north. The second forum has been Antarctic Treaty Meetings of Experts on Antarctic Telecommunications of which there have been three: in 1963, 1969, and 1978. The terms of reference for the first of these meetings of experts, in Washington in 1963, are set out in Recommendation I-XI; a précis of its proceedings found above and the follow-up action is at Recommendation III-V, IV-26 and V-2. Recommendation V-2 sets out the terms of reference for the second meeting, in Buenos Aires in 1969; the follow-up action is at Recommendations VI-1 and VI-3. Recommendation VII-7 refers to a SCAR meeting held in Norway in 1972. The terms of reference for the last of these meetings of experts, in Washington in 1978, are at Recommendation IX-3; its report is found above and follow-up action is at Recommendation X-3.

Antarctic Treaty Recommendations

XV-18: Cooperation in meteorological and sea ice information services for maritime and air navigation in Antarctica

The Representatives,

Recalling Article II of the Antarctic Treaty and the Recommendations relating to cooperation in Antarctic logistics (II-V, III-III, IV-25) as well as Recommendation XIV-10 on the marine meteorological and sea ice information service;

Having regard to the continuing occurrence of hazardous situations leading to loss of or damage to ships in the Treaty Area,

Noting the report of a SCAR/WMO/IOC group of experts meeting;

Taking into account the results of discussion on Recommendation XIV-9 concerning air safety in Antarctica, revealing the urgent necessity to improve meteorological information for flights in the area of the Antarctic;

Wishing to act to increase the efficiency and safety of maritime and air navigation in the Treaty area on the basis of international cooperation;

Recommend to their Governments that:

1. They continue to consider ways of developing and improving meteorological and sea ice information services for maritime and air navigation in the Antarctic Treaty area;

2. The report of the Leningrad group of experts meeting be referred to the WMO Working Group on Antarctic Meteorology for formal consideration and comment at its next meeting.

3. Upon completion of the review by the WMO Working Group on Antarctic Meteorology the matter be considered by COMNAP, in association with SCAR, for the purpose of recommending any appropriate further joint, or individual action to the next Consultative Meeting.

4. In order to assist in improving meteorological services to maritime and air navigation, they take prompt measures to participate in the IGOSS, drifting-buoy and automatic weather station programmes to provide maximum data for international exchange and operational use.

XIV-7: Antarctic meteorology and telecommunications

The Representatives,

Recalling Article IV of the Antarctic Treaty and Recommendations V1-3, X- 3 and XII-1;

Noting the Final Report of the World Meteorological Organization (WMO) Executive Council Working Group on Antarctic Meteorology, Fourth Session (EC/WGAM-IV), (September 1986) and subsequent action taken by the WMO Tenth Congress (May 1987), relating to Antarctic meteorology.

Recommend to their Governments that:

1. Having regard to Recommendations 6 and 8 of EC/WGAM-IV (reproduced as Annex I to the Final Report of the XIVth Consultative Meeting [not reproduced here]), they accept Annex I to this Recommendation as a current statement of the Basic Synoptic Network and the Network of Climat and Climat Temp Reporting Stations in the Antarctic and that, as a consequence, Annex I to Recommendation XII-1 be withdrawn

2. Annexes 1, 2 and 3 to Recommendation X-3 and Annexes 2 and 3 to Recommendation XII-1 be withdrawn and replaced by Annexes 2 and 3 [not reproduced] to this Recommendation as a current statement of the 'Existing links for the daily international exchange of meteorological data within the Antarctic' and the 'Principal routes by which the Antarctic Meteorological data enter the GTS' (Global Telecommunications System of the WMO World Weather Watch);

3. Annexes I and II to Recommendation VI-3 be withdrawn and replaced by Annexes 4 and 5 [not reproduced] to this Recommendation as current statements of Requirements for Observational Data and Requirements for Processed Information;

4. Having regard to paragraph 4.1 and Annex I to the Final Report of EC/WGAM-IV (reproduced at Annex H to the Final Report of ATCM XIV), they:

a) respond expeditiously in respect of paragraph 288, sub-paragraphs (a) and (e);
b) invite WMO to identify such areas of difficulty as there may be in respect of the transmission of meteorological data inside Antarctica, between the Antarctic and the outside world (in both directions) and in the operation of the GTS and to use all feasible means, through the exercise of their good offices, to see if such difficulties can be resolved;
c) also be ready to consider a joint meeting of WMO and SCAR telecommunication experts, convened in accordance with Recommendation IV- 24, in the light of any report which may be prepared reflecting action taken in accordance with sub-paragraph (b) above;
d) respond positively to requests received in accordance with sub-paragraph (b) and (c) of paragraph 289, subject to overriding scientific, administrative or budgetary considerations;
e) request WMO, when passing Antarctic Treaty Consultative Parties their recommendations arrived at in accordance with sub-paragraph (d) of paragraph 289, to set out in specific terms the technical functions, capacities and services of proposed 'Antarctic Meteorological Centres' and WMO's views on the justification for the designation of each proposed Centre;
f) be prepared to respond to any request for designation received from WMO, in accordance with sub-paragraph (e) of paragraph 289, on the understanding that any such designations and activities carried out accordingly, will be subject to Article IV of the Antarctic Treaty.

XII-1: The collection and distribution of Antarctic meteorological data

The Representatives,

Recalling Recommendation VI-3 and X-3;

Noting Resolutions 4, 5, 6, 7 and 8 of the WMO Executive Committee, Thirty Fourth Session June 1982 concerning meteorological observing networks, collection and transmission of meteorological data and meteorological data processing in Antarctica;

Recognizing

1. the continuing importance of Antarctic meteorological data for support of operations within Antarctic and for weather forecasting and research, especially climate research in the rest of the world;

2. the need to maintain a basic network of meteorological stations providing surface and upper-air synoptic data to meet in so far as possible the requirements of Consultative Parties and of the WMO World Weather Watch;

3. the diminishing value of meteorological data if it is not available to users within and outside the Antarctic in accordance with the WMO schedules for the receipt of raw and processed data;

4. the paucity of Antarctic meteorological surface and upper air data and the consequent importance of maintaining regularity of meteorological observations; and

5. that the increasing shipping and aircraft activities in Antarctica will give rise to increasing demands for meteorological support;

Reaffirming the importance of the WMO Global Telecommunications System (GTS) for purposes of transmitting Antarctic meteorological data between Antarctic stations in cases where direct transmission within Antarctica is inhibited by ionospheric conditions, and noting that the adoption by some Consultative Parties of satellite communications may facilitate the reception within Antarctica of meteorological data from the GTS;

Noting:

1. that monitoring carried out by WMO in 1982 and 1983 on the flow of Antarctic meteorological data into the GTS indicates that significant deficiencies remain;
2. the reactivation of the WMO Executive Committee Working Group on Antarctic Meteorology and the outcome of its Third Session in April 1982, including preliminary work on a review of the requirements for raw and processed data set out in Annexes 1 and 2 of Recommendation VI-3;
3. the efforts of the WMO Meeting of Experts on Antarctic Data Telecommunication Arrangements in June 1983, in reviewing and updating the meteorological telecommunications routing diagrams set forth in Annexes 1, 2 and 3 of Recommendation X-3; and
4. that the aforesaid WMO Meeting of Experts arrived at a number of conclusions and recommendations aimed at improving Antarctic telecommunications for meteorological purposes, and at improving the manner in which Antarctic meteorological data is transmitted within the GTS of the WMO World Weather Watch;

Recognising the need to keep under review:

1. the requirements for raw and processed Antarctic meteorological data; and
2. the arrangements for transmission of meteorological data within Antarctica and between Antarctica and the WMO World Weather Watch system;

Recommend to their Governments that they:

1. Use their best endeavours, subject to any overriding scientific, administrative or budgetary considerations, to secure full implementation of the network of stations and observational programs set forth in Annex 1 [not reproduced] of this Recommendation;

2. Maintain and improve, subject to any overriding scientific, administrative or budgetary considerations, the system for collection and distribution of meteorological data to, from and within Antarctica having regard to the routing arrangements shown in Annexes 2 and 3 [not reproduced], which are based on the conclusions of the WMO Meeting of Experts on Antarctic Data Telecommunication Arrangements in June 1983;

3. Seek, through their Permanent Representatives with WMO, the completion of Annex IV to the Final Report of the aforesaid WMO Meeting of Experts, as a helpful contribution to planning the exchange of available meteorological data;

4. Seek, through their Permanent Representatives with WMO, to ensure that consideration is given, as appropriate, to other conclusions and recommendations made by the aforesaid WMO Meeting of Experts;

5. Invite WMO, through their Permanent Representatives with that Organization, to keep under review the arrangements for routing of meteorological data within Antarctica and between Antarctica and the GTS of the World Weather Watch, and to suggest actions which might be taken to improve the timely receipt of data at stations in Antarctica and at World Meteorological Centres Melbourne, Moscow and Washington and other centres in the World Weather Watch System, having particular regard to changing requirements for meteorological information and to opportunities offered by new technology; and

6. Note that the statements of requirements for raw and processed Antarctic meteorological data provided by the WMO pursuant to Recommendation X-3 paragraph 9 require refinement, and invite WMO, through their Permanent Representatives with that Organization, to undertake such refinement.

XII-2: Antarctic telecommunications

The Representatives,

Recalling Recommendations VI-1, VII-7 and X-3;

Recognising that Antarctic telecommunications are designed to carry operational, scientific and meteorological traffic and that improvement of the telecommunications system would serve to ensure timely and full exchange of information;

Recognizing that recent developments in the use of satellites, of which some Consultative Parties have made use, have improved the reliability of communication links between Antarctic stations and the outside world, but that consequent diminished reliance on conventional telecommunication methods may have affected the capability of stations to communicate with each other;

Noting with appreciation the response of the SCAR Working Group on Logistics to the request in Recommendation X-3, paragraph 6, to prepare an Antarctic Telecommunications Guidance Manual (SCARCOM);

Noting that the increasing shipping and aircraft activity in Antarctica will require improved telecommunications and meteorological support by Consultative Parties undertaking such increased activity;

Recommend to their Governments that:

1. They strive to ensure effective use of the Antarctic telecommunication systems already in existence, and to utilize as appropriate the developing satellite communication systems with a view to achieving improved communications between the Antarctic stations, as well as between those stations and points outside Antarctica;

2. They invite SCAR, through their National Antarctic Committees, to:

i) consider, in consultation with agencies responsible for national Antarctic programs (hereinafter referred to as 'national Antarctic programs'), how best SCARCOM can be periodically updated so that it may provide adequate guidance to telecommunications operators on telecommunication practices of national Antarctic programs and relevant internationally agreed procedures;

ii) examine issues relating to increased use of satellite communications including:
   a) an exchange of information and experience arising out of the adoption of satellite communications for the benefit of those national Antarctic programs which have not adopted this means of telecommunication,
   b) the cost-effectiveness of satellite communications and the benefits to operational efficiency and scientific research that may be derived therefrom,
   c) identification of any problems which may be encountered in communication between the stations of different national Antarctic programs in the event of more widespread adoption of satellite communications, and
   d) exploration of means by which any such problems might be overcome while maintaining the cost-effectiveness and other benefits of satellite communications;

iii) examine the adequacy of the Antarctic telecommunications system to meet demands arising from the expansion of shipping and aircraft activity in Antarctica, and to suggest improvements where these might be desirable. In this examination particular attention should be given to:
   a) communications between Antarctic stations;
   b) use of the existing facilities for communications between Antarctica and the outside world, and
   c) communications between stations, ships and aircraft for the purpose of coordinating emergency and search and rescue operations.

X-3: Improvement of telecommunications in Antarctica and the collection and distribution of Antarctic meteorological data

The Representatives,

Recalling Recommendations VI-1, VI-3, and VII-7;

Noting that the Third Antarctic Treaty Meeting on Telecommunications held in Washington in September 1978 had described the telecommunications network for the exchange of meteorological data both within the Antarctic and between the Antarctic and Global Telecommunications System (GTS) of the World Weather Watch (WWW) as it existed on September 1978 (see Annexes 1, 2 and 3 [not reproduced]).

Taking account of the importance of Antarctic meteorological data to the WWW and the diminished value of such data if it is not available to users within and outside the Antarctic in accordance with the World Meteorological Organization (WMO) schedules for the receipt of raw and processed data;

Reaffirming the importance of the GTS for purposes of transmitting Antarctic meteorological data between Antarctic stations in cases where direct transmission within Antarctica is inhibited by ionospheric conditions;

Noting, with appreciation, the response of the Scientific Committee on Antarctic Research (SCAR) to Recommendation IX-3 and the improvement in Antarctic telecommunications that would follow if operators and offices administering Antarctic programs had available to them statements of the current telecommunications practices within and between national networks;

Recognizing that changing national requirements for Antarctic telecommunications, changing technology or budgetary constraints may lead to significant incompatibilities arising between national networks;

Recognizing that possible future trans-polar commercial air traffic and the steadily increasing amount of shipping in the Antarctic region may give rise to a changing pattern of needs for raw and processed meteorological data;

Affirming that developments in the collection and distribution of meteorological data should be reviewed from time to time;

Recommend to their Governments that:

1. Taking account of the final report of the Third Antarctic Treaty Meeting on Telecommunications, they should strive to improve the system for the collection and distribution of Antarctic meteorological data having regard particularly to increasing efficiency, reliability and economy of effort; taking into account opportunities offered by new technology;

2. Each station undertaking meteorological observations should ensure that data are transmitted as soon as practicable after the observation;

3. Stations receiving these data for onward transmission to other Antarctic stations or to the GTS should forward such data with minimum delay;

4. In cooperation with other Antarctic stations and World Meteorological Centers, they continue regularly to monitor receipt of Antarctic data by, and its transmission within, the GTS;

5. In cooperation with the WWW, they seek to ensure that the transmission of these data from the GTS to Antarctic stations is facilitated in cases where this method is likely to be more reliable or cost-effective than trans-Antarctic transmissions;

6. Through their National Antarctic Committees, they invite SCAR to prepare a brief handbook of the telecommunications practices within and between national networks in a format which allows it to be amended periodically in the light of changes in national practices;

7. For the purposes of the previous paragraph, they ensure that their offices administering Antarctic programs inform SCAR in June and December each year of changes in their

telecommunications practices;

8. Subject to overriding scientific, administrative or budgetary reasons, they seek to ensure, by means of appropriate contacts with the offices administering Antarctic programs, that transmission of meteorological data between Antarctic stations is not prejudiced by changes in their telecommunications practices;

9. They invite WMO, through their Permanent Representatives to that Organization, to review Annexes 1 and 2 of Recommendation VI-3 with a view to advising Consultative Parties about current, and probable future, requirements for both raw and processed data in the Antarctic region;

10. Not later than at the Twelfth Antarctic Treaty Consultative Meeting they review developments in Antarctic telecommunications for meteorological purposes, having sought in the interim period to resolve any international difficulties that may arise with regard to the system by appropriate discussion.

Extract from Report of Xth ATCM

Telecommunications

The Working Group on Telecommunications convened on 18 September and completed its work on 21 September. It had before it the Final Report of the Third Antarctic

Treaty Meeting on Telecommunications held in Washington, DC, September 11-15, 1978 (Annex 7). The Group identified 'areas of concern' which included:

a) the need for increasing the rate of flow of meteorological data to data centers;
b) making available weather information for use as a basis for operational needs, including the likely increasing requirements of commercial ship and aircraft operations;
c) improving the means for exchanging data between West and East Antarctica;
d) compatibility of equipment;
e) the desirability of continuing the updating and exchange of information regarding telecommunication practices.

The Chairman of the Working Group presented a summary of its activities in Plenary on 26 September. The draft recommendation developed by the Working Group was presented in Plenary on 1 October.

Final report of the Treaty Meeting on Telecommunications, Washington DC, September 11 to 15 1978

1. In accordance with Recommendation IX-3 adopted at the Ninth Antarctic Treaty Consultative Meeting, experts from Argentina, Australia, Belgium, Chile, France, Japan, New Zealand, Poland, the Republic of South Africa, the Union of Soviet Socialist Republics, the United Kingdom of Great Britain and Northern Ireland, and the United States of America met in Washington on 11 September 1978 for the purpose of

discussing the matters included in the Agenda transcribed below. The Meeting was attended by an observer of the World Meteorological Organization (WMO).

2. The Meeting was opened by Dr Edward P. Todd, Director of the Division of Polar Programs (and of the U.S. Antarctic Program) of the National Science Foundation, as the temporary Chairman. Mr Alfred N. Fowler, Deputy Director of the Division of Polar Programs was unanimously elected to Chair the Meeting. Mr Fowler announced that Miss Nadene Kennedy and Mrs Helen Gerasimou would provide administrative support for the Chairman and were available to assist representatives.

3. Following discussion of a provisional draft the Meeting adopted the following Agenda:

A. Opening of the meeting
B. Election of Chairman
C. Adoption of agenda
D. Description of telecommunication operations and analysis of information exchanged pursuant to Recommendation IX-3 of the Ninth Consultative Meeting
E. Identification of problems
F. Discussion of possible solutions
G. Proposals for improvements
H. Findings and conclusions
I. Adoption of final report
J. Closing of the meeting

4. The Meeting considered in Plenary Session all the items on the agenda. A Working Group chaired by Mr I. H. Lloyd was appointed to study the transmission of Antarctic meteorological data to the Global Telecommunication System (GTS) of the World Weather Watch (WWW).

5. The proceedings and conclusions of the Meeting were as set out below.

Agenda Item D

6. While it was recognized that Antarctic telecommunications are required for operational, administrative and scientific purposes, in addition to the transmission of meteorological data, the analysis of information provided by governments was carried out on the understanding that its objective was primarily to describe telecommunication operations as they were used for the international transmission of meteorological data.

7. It was considered desirable to set out such a description in diagrammatic form and Annexes 1, 2 and 3 to this report were prepared by the Working Group. These Annexes set out:

- ANNEX 1: the existing links for the daily international exchange of meteorological data within the Antarctic;
- ANNEX 2: the principal intra-Antarctic international routes by which Antarctic meteorological data leaves the Antarctic;
- ANNEX 3: the principal routes by which Antarctic data enters the Global Telecommunication System.

These diagrams represent the links and routes existing in September 1978.

8. Since the Second Antarctic Treaty Meeting on Telecommunications held in Buenos Aires in 1969, all nations have undertaken extensive programs of equipment replacement and organization with a view to improving the circuit efficiencies of the telecommunication systems.

Agenda Item E

9. Informal discussion of various aspects of Antarctic telecommunications identified problems and difficulties in a number of areas. In recent years changes in meteorological observation, data collection, processing and dissemination techniques had given rise to special problems for Antarctic stations which depended on the timely receipt of all available relevant data for the preparation of forecasts. Some of these problems were of a temporary nature but others were more persistent. It was recognized that some of these difficulties arose from differing national perceptions of their requirements and scientific priorities, and these were best addressed in bilateral discussions, and useful progress was made in this respect.

10. The Meeting also identified other allied difficulties of more general significance. These were:

i) Difficulties of radio wave propagation across the auroral belt
ii) Difficulties of circulating Antarctic meteorological data to, and possibly within, the GTS;
iii) Difficulties of assuring compatibility of systems for intra-Antarctic communications while taking advantage of new technological developments;
iv) Difficulties in providing radio links between stations having different capabilities at different times of the year.

11. With respect to radio wave propagation problems, a useful exchange of information on ways and means of predicting propagation path disturbance was held, with South Africa, Chile and the United States describing systems presently in use or planned. It was agreed that these problems would benefit from the exchange of research results and the operational use of frequency prediction techniques.

12. With respect to difficulties of circulating Antarctic meteorological data to, and possibly within the GTS, the Working Group noted that some deficiencies exist in injection and switching of Antarctic data in some GTS centers as a result of the duplication of allocation of the CLLLL group. The report of the Working Group is at Annex 4. The Meeting recognized that resolution of these difficulties within the GTS will ultimately require some action by the WMO in consultation with the affected Member countries.

Agenda Item F

13. With respect to the potential problems associated with the adoption of new technology, the representatives outlined their future plans for improvement. It appears that a number of advances in HF equipment and error-correction devices operating on a standard receiving signal, planned for installation by various nations, will be totally

compatible with existing systems and will serve to improve intra-Antarctic communications.

Agenda Item G

14. It appears that possibilities associated with use of geostationary and polar-orbiting communication satellites offer a real potential for communication improvements without detriment to the intra-Antarctic network. Other alternative means of communications within Antarctica, such as the meteor-burst system, appeared to be very promising for use during periods of HF blackouts resulting from increased solar flare activity. Such alternative systems would depend upon the acquisition of the necessary equipment.

Agenda Item H

15. The Meeting recognized that technological developments in telecommunications are likely to lead in the future to greater diversity in the methods adopted by national Antarctic activities for their telecommunications purposes. These developments will be stimulated by differing requirements but may offer possibilities of improved cost-effectiveness in international Antarctic communications. There is no reason to discourage such developments away from conventional HF systems. It should be borne in mind, however, that there will remain a need for a common system for operational scientific, administrative and emergency purposes.

Agenda Item I

16. The Meeting reviewed items 1 through 15 of this text together with Annexes 1 through 4 hereto and unanimously adopted these as the Meetings Final Report.

17. Participants in the Meeting expressed their appreciation to the Chairman, to Mrs Gerasimou and to Miss Kennedy, and their thanks to Dr Todd, to the United States National Science Foundation and to the United States Government for the facilities and support made available for the Meeting. The Chairman and Dr Todd reciprocated for the United States and presented to each delegation a copy of the film *Antarctic Sea Ice Growth and Decay 1973–1974*.

18. The Meeting unanimously supported a proposal, and the Chairman agreed to transmit a suitable message to all Antarctic stations. A copy of that message is shown at Annex 6 [not reproduced].

19. There being no further business on the Agenda, the Chairman closed the Meeting at 1700 on September 15, 1978.

20. A list of participants is shown at Annex 5. A list of documents submitted is shown at Annex 7 [not reproduced].

[The Annexes are not reproduced]

IX-3: Improvement of telecommunications in the Antarctic

The Representatives,

Considering that requirements in the field of telecommunications as regards collection and dissemination of meteorological data, and the need for scientific, administrative and operational traffic have developed substantially since the second telecommunications meeting of experts of the Consultative Parties held in Buenos Aires in 1969;

Considering that the implementation of Recommendation VI-1 and VII-7, and participation in the programmes of the World Meteorological Organisation, particularly the World Weather Watch, require a thorough review and improvement of the network operating in the Antarctic;

Recommend to their Governments that they:

1. Compile comprehensive data, each for its own part, on the types of traffic, modes of transmission, timing, frequencies of their telecommunications schedules and current equipment of their telecommunications programmes in the Antarctic, as well as on projects in the process of implementation and proposed improvements, in particular by designating, where appropriate, stations capable of replacing others in the event of breakdown;

2. Forward all such data to each of the other Consultative parties via diplomatic channels on the one hand and on the other by direct despatch to the departments concerned;

3. Arrange for a meeting of telecommunications experts to be held, on the initiative of the Government of the host country, before the Tenth Consultative Meeting, to analyze the data thus compiled, suggest desirable measures of harmonization and put forward recommendations on improvements to be made in the operation of the telecommunications network in the Antarctic;

4. Request SCAR through their National Antarctic Committees to undertake, at the earliest opportunity, a study of the most recent applications of science and technology to the specific problems of the Antarctic in the field of propagation of radio waves, and to pass on its conclusions to the Consultative Parties prior to their Tenth Meeting or if necessary to the next Consultative Meetings.

VII-7: Antarctic telecommunications

The Representatives,

Considering the contribution to the study of Antarctic radio propagation and the ionosphere made at the SCAR Symposium on 'Scientific and Technical Problems Affecting Antarctic Telecommunications' held in Sandefjord, Norway, in May 1972 and the Interim Report of the SCAR Group of Specialists (Revised 25 August 1972);

Recognizing the need for improving, as far as practicable, the transmission of information between stations within the Antarctic Treaty Area and between those stations and the rest

of the world;

Bearing in mind that difficulties may arise in Antarctic communications if new methods of transmission are accepted by Consultative Parties without due regard to the principle of compatibility both between new systems and between new and existing systems;

Recommend to their Governments that:

1. Their offices administering Antarctic programmes take into account the information presented at the SCAR Symposium when considering new means of improving Antarctic communications; techniques discussed at the Symposium and brought to the attention of Representatives by SCAR and others including communications satellites, VHF low power scatter systems, oblique ionospheric sounding, coding and error correcting devices and the wider use of ionospheric prediction services, especially with regard to short-term advice on impending disturbances;

2. Their offices administering Antarctic programmes be encouraged to exchange information about changes contemplated in types of equipment or methods in order to improve, where practicable, compatibility between Antarctic networks.

Extract from Report of VIIth ATCM

Telecommunications

The Meeting noted with appreciation the contribution to the study of Antarctic radio propagation and the ionosphere made at the SCAR Symposium on 'Scientific and Technical Problems Affecting Antarctic Telecommunications' held in Sandefjord, Norway, in May 1972, and welcomed the Interim Report of the SCAR Group of Specialists (Revised 25 August 1972). In taking note of SCAR's opinion that advantages would accrue from the preparation of an operator's handbook, the Meeting suggested that Governments draw this suggestion to the attention of offices administering Antarctic programmes. If these offices considered that such a handbook would be helpful they should be urged to cooperate to reach agreement on those parts of the text which would benefit from drawing together national experience in this field. For the guidance of these offices, Representatives considered that the handbook might adopt a standardized loose-leaf format in order to facilitate the incorporation of amendments and might contain, inter alia:

1. texts on the factors affecting radio propagation in the Antarctic, and on the general operating procedures which experience has shown to be useful in adverse conditions;
2. a brief statement about the Antarctic telecommunications system of each Consultative Party and its normal operating procedures;
3. information on telecommunications equipment and schedules based on that exchanged in accordance with Recommendation VI-2.

In connection with the exchange of information on telecommunications in accordance with Recommendation VI-2, it was noted that the present timing of the exchange, which

was governed by Recommendation IV-2 (Date of Exchange of Information), made it difficult to ensure that information reached Antarctic radio operators in time to be of use. The Meeting expressed the view that it should prove operationally beneficial if this information were to be exchanged by 30 June, at the same time as the reporting of modifications of planned activities under Recommendation II-VI. Because of the proposal to review all exchanges of information under the Antarctic Treaty it was felt to be inappropriate to make a Recommendation to Governments at this time. It was agreed instead that, until such time as the overall review had been completed, Governments should be urged to exchange notifications of planned alterations to their telecommunications equipment and procedures at the same time as they exchange information under Recommendation II-VI.

VI-1: Antarctic telecommunications

The Representatives,

Considering that:

1. an Antarctic telecommunications system serves the administrative, operational, meteorological and other scientific needs of stations in the Antarctic;
2. there is a need to exchange meteorological information as soon as possible within the Antarctic Treaty Area and to transmit that information with minimum delay to the Global Telecommunications System;
3. there is a need to organize technically compatible routes for telecommunications both within, and out of the Antarctic Treaty Area;
4. an Antarctic telecommunications system needs to respond, as may be appropriate, to future changes in requirements for transmission of meteorological information and advances in telecommunications technology;

Recommend to their Governments that:

1. They adopt as guidelines the Proposals contained in the Final Report of the Second Antarctic Treaty Meeting on Telecommunications held in Buenos Aires in 1969.

2. In the plans for their expeditions they provide the organizational and technical arrangements necessary to implement these Proposals as soon as, and as far as, practicable.

VI-3: Antarctic meteorology

The Representatives,
Considering that:

1. exchange of scientific observations is provided by paragraph 1(c) of Article III of the Antarctic Treaty;
2. meteorological information for flight, marine and field operational forecasts is an important requirement at some stations in the Antarctic;

3. Antarctic meteorological information is required by adjacent continents for the preparation of weather analyses and prognoses;
4. meteorological activities in the Antarctic should be supported, to the greatest extent feasible, by transmissions of processed data to the Antarctic from the World Weather Watch;
5. the requirements of the Consultative Parties for meteorological information will change as the operational activities and the scientific programmes of their Antarctic stations evolve;
6. the requirements of the Consultative Parties for meteorological information will change as knowledge and understanding of the meteorology of the Antarctic Treaty Area grow and with developments in meteorological technology;

Recommend to their Governments that:

1. They adopt Annex 1 [not reproduced] to this Recommendation as a current basis for planning the exchange of available raw meteorological data;

2. They adopt Annex 2 [not reproduced] to this Recommendation as a current basis for planning the exchange of available processed meteorological data;

3. They support, as far as practicable, such measures as will facilitate the speedy and effective implementation of Annexes 1 and 2 as a basis for planning;

4. They invite the World Meteorological Organization to review Annexes 1 and 2 from time to time and advise them of the results of such reviews.

V-2: Measures for improving Antarctic telecommunications

Recognizing the need for improving the collection and distribution of meteorological data and other scientific information and for further improving Antarctic telecommunications:

Considering the views of the World Meteorological Organisation, as expressed at the 18th and 20th Sessions of the WMO Executive Committee, on the desirability of setting up Antarctic Meteorological Centres and of determining provisionally their functions;

Supporting the principle of the World Weather Watch;

Considering the intention of some governments voluntarily to create, within a few years, such Antarctic Meteorological Centres at their stations;

The Representatives *recommend* to their Governments that:

1. In view of the valuable information provided by WMO and SCAR to Consultative Parties, they continue to cooperate with the WMO through their Representatives thereto and with SCAR through their National Committees in defining future scientific requirements.

2. They consider the usefulness of creating Antarctic Meteorological Centres in the

Antarctic.

3. They hold a meeting of telecommunications experts at Buenos Aires, Argentina, between 15 August and 15 September 1969, in accordance with Recommendation IV-24. The date of this meeting should be arranged through diplomatic channels, taking into account relevant meetings of other international organizations which will be held in 1969 and the time required to translate and distribute the documents from such meetings.

4. Although it is expected that all Consultative Parties will participate, the meeting in Buenos Aires may proceed without the participation of them all provided all the Consultative Parties agree to that procedure and to the provisional agenda. All Consultative Parties will communicate before 1 June 1969 to the host government their intentions as to sending experts. Proposals emanating from the meeting will be sent to all Consultative Parties for their consideration.

5. One expert each from WMO, ITU, IOC and SCAR should be invited to attend as observers. Invited observers may submit documents and make statements with the permission of the Chairman but they may not vote. All experts from Consultative Parties attending will be members of their delegations.

6. The agenda for the meeting should be determined by the Consultative Parties through diplomatic channels and the agreed provisional agenda will be circulated by the host government through diplomatic channels one month prior to the opening of the meeting.

7. The results of the meeting should take the form of proposals on telecommunications unanimously agreed by the delegations of the Consultative Parties participating in the meeting. These will be circulated by the host government to all Consultative Parties for consideration. These proposals will constitute the report of the meeting. Other conference documents may be appended for information as annexes to the report with the consent of all delegations present. The proposals will not become measures under Article IX of the Antarctic Treaty but any Consultative Parties may submit any matter arising from this meeting to a subsequent Consultative Meeting.

8. Information should be exchanged through diplomatic channels on the following aspects of telecommunications procedures at least one month prior to the opening of the Meeting:

- i) existing networks, traffic loads and channel capacity on each route;
- ii) shortcomings in existing networks and channels;
- iii) present traffic carried on each route
  - d) Administrative and operational traffic
  - a) Meteorological traffic
  - b) Other scientific traffic;
- iv) iv. existing time schedules for meteorological transmission
  - a) a. Broadcast
  - b) b. Point to point traffic.

9. The fields of discussion at the meeting should include, *inter alia*:

- i) New telecommunications traffic requirements submitted by Consultative

Parties, WMO, IOC and SCAR, the capacity of the existing facilities and the effect of these new requirements on the existing facilities, taking into account the report of the Antarctic Treaty Meeting on Telecommunications held in Washington in 1963 and present prevailing conditions;

ii) Estimates of requirements for the near future and further projections if possible;

iii) Procedure for amending telecommunications arrangements from time to time to meet changing conditions;

iv) New telecommunications techniques which might be introduced into the Antarctic to meet future requirements;

v) Preparation of a standard format for the exchange of information on telecommunications facilities under Article VII of the Antarctic Treaty.

IV-26: Telecommunications

Considering the need to keep up to date the traffic system of Antarctic radio communications and to transmit observational data from the Treaty Area to the world system for the collection and transmission of meteorological information:

The Representatives recommend to their Governments that, before the Consultative Meeting scheduled to take place in Paris in 1968, they consider including in the Agenda an examination of the Recommendations made by the Washington Meeting on Telecommunications in 1963, in the light of conditions prevailing in 1968.

III-V: Telecommunications

The Representatives, noting that experts met in an Antarctic Treaty Meeting on Telecommunications in Washington from 24th to 28th June 1963, follow upon Recommendations I-XI and II-III of the First and Second Consultative Meetings, and in accordance with Recommendation II-IX, recommend to their Governments that they take the necessary steps to approve and implement as soon as practicable those recommendations of the Telecommunications Meeting which they find themselves able to approve, taking into consideration (a) and (b) below.

The Representatives, pointing out the useful and important work effected by the Telecommunications Meeting at Washington, recommend to their Governments that they:

a) Continue their consultations with a view to effecting further improvement in coordinating telecommunications activities.

b) During the Preparatory Meetings for the next Consultative Meeting, examine the results of the Recommendations made by the Washington Telecommunications Meeting, and consider measures to improve Antarctic radio communications in the future.

Antarctic Treaty Meeting on Telecommunications: Washington 24–28 June 1963

Note

In accordance with Recommendations I-XI and II-III, Representatives from the twelve Governments which signed the Antarctic Treaty, together with observers from the World Meteorological Organisation (WMO), the International Telecommunications Union (ITU), and the Scientific Committee on Antarctic Research (SCAR) of the International Council of Scientific Unions (ICSU), met in Washington, DC, to discuss questions of Antarctic telecommunications.

The final report of the Meeting appeared in the form of eleven technical recommendations for the consideration of Governments. In normal circumstances the transmission of meteorological data provides much the most frequent international radio traffic in the Antarctic. Some of the international links cross zones of maximum ionospheric disturbance with consequent loss of circuit reliability. The primary intent of the recommendations is to provide guidelines for increased efficiency in Antarctic international communication, and to encourage Governments to find solutions for the major technical difficulties. The recommendations may be grouped as follows: routing of telecommunications traffic, timing of traffic, transmission techniques, search and rescue procedures, radio aids to air navigation, and continuing liaison.

i. Routing of telecommunications traffic:

Recommendation III sets out a system for the transmission of meteorological data from all Antarctic stations through seven collecting stations which will relay the data to its final destination or destinations. Recommendations IV and V set out a system of normal and emergency radio links within the Treaty Area, and to points outside the Treaty Area. It is recommended that international links should be limited as far as possible to those proposed. Recommendation II concerns the particular problems of the transmission of meteorological data from stations in the Antarctic Peninsula area across the auroral zone of ionospheric disturbance to McMurdo Sound, Mirny and the International Antarctic Weather Analysis Centre (IAAC) in Melbourne; and calls for investigation of methods to increase the reliability of these links.

ii. Timing of traffic:

Recommendation I gives a provisional timetable for the transmission of meteorological data from Antarctic stations to 'McMurdo' and thence to the IAAC in Melbourne. Recommendation X proposes that Antarctic radio transmissions should be timed to begin so that there is a minimum of interference with the international ionospheric sounding programme.

iii. Transmission techniques:

Recommendation VI provides for the co- ordination of aerial systems design at both ends of each international radio link to produce efficient circuit conditions. Recommendation VII considers the need for the co-ordination of transmission modes at each end of the

international radio links to produce effective communications.

iv. Search and rescue procedures:

Recommendation VIII covers the radio procedures to be used, following regulations of the International Telecommunications Union, in the event of an emergency. The priority of such traffic is established and it is recommended that continuous communication between the stations involved should be maintained until the emergency is over.

v. Radio aids to navigation:

Recommendation IX notes that international flights in the Antarctic are becoming more frequent and considers that it is desirable that Governments should follow an agreed plan covering the installation or modification of ground-based radio aids to air navigation. The meeting recommended that all stations offering aircraft landing facilities should provide non-directional air navigational beacons and that details of type, power and frequency of such beacons should be exchanged under Recommendation I-6, paragraph 8, of the First Antarctic Treaty Consultative Meeting.

vi. Continuing liaison:

Recommendation XI notes that since the beginning of the International Geophysical Year the co-ordination of Antarctic telecommunications has been handled by working groups under the auspices first of the Special Committee for the IGY, and subsequently of SCAR, and that this has been adequate for the urgent resolution of day to day problems. It is also noted that the SCAR working group might wish to limit their responsibilities to the scientific requirements for telecommunications. The problems of day to day liaison therefore remain unsolved. The meeting recommended that continued co-ordination of Antarctic telecommunications should be considered at the next Consultative Meeting under the Antarctic Treaty (see now Recommendation III-V).]

II-III: Telecommunications

The Representatives, taking into consideration Recommendation I-XI of the First Consultative Meeting concerning Antarctic radio communications, recommend to their Governments that the proposed meeting of specialists in Antarctic radio communications would take place between 1st May and 31st August 1963, on a date and at a place to be fixed.

I-XI: Telecommunications

The Representatives recommend to their Governments:

1. that they convene as soon as practicable a meeting of specialists in Antarctic radio communications;

2. that this meeting of specialists should discuss the telecommunications facilities needed for scientific, technical and other purposes in the Treaty Area, and their use;

3. that the meeting should take into consideration:
   a) the requirements of governments;
   b) the viewpoint of the United Nations Specialized Agencies and other international organizations having a scientific or technical interest in Antarctic communications;
   c) the relevant recommendations of the Communications Working Group of SCAR;
   d) the experience of the various Antarctic expeditions;
4. that the meeting should examine and make recommendations regarding such matters as:
   i) the routing required to meet demands of users most effectively;
   ii) the modes of transmission;
   iii) the power requirements for effective reception;
   iv) the rationalization of schedules and the evaluation of priorities for traffic in normal and post blackout conditions;
   v) new developments in the field of communications relevant to Antarctic requirements;
   vi) emergency radio procedures;
   vii) such other matters of an engineering or traffic nature as may be appropriate;

5. that the governments should consult regarding the date, place and definitive agenda of the meeting, and as to which Specialized Agencies and other internal organizations referred to in paragraph 3(b) should be informed of the meeting and be invited to send observers.

Emergency Response and Contingency Planning

XXIII: Resolution 5(1999)

Advice from COMNAP and SCAR

The Representatives,

Recalling Resolution 6 (1998) regarding Emergency Response Action and Contingency Planning;

Considering that further work on preventative measures and on response action would promote progress on the issue of addressing liability for damage to the Antarctic environment;

Recording the appreciation of the Meeting for the valuable information regarding Antarctic environmental risks contained in XXIII ATCM / WP 16 presented by COMNAP, and for the participation of COMNAP and SCAR at the present Meeting during discussion of the question of liability for environmental harm;

Request that COMNAP and SCAR:

1. Continue to provide representatives throughout all meetings of the Consultative Parties at which the question of liability is discussed.

2. Drawing on their respective areas of expertise, and in consultation with other appropriate bodies, provide advice in a joint Working Paper to the XXIV ATCM. The Working Paper should discuss the operational and scientific aspects of preventative measures and response action, with a view to aiding the ATCM in its understanding of these practical aspects in order to facilitate work on liability issues. In addition to possible examples of preventative measures and response actions, the Working Paper could address, *inter alia*:
   a) What criteria could be used to determine whether an impact causes harm to the environment;
   b) What is the scientific meaning of "dependent and associated ecosystems";
   c) What, in the circumstances of Antarctica, are incidents that could cause environmental harm, distinguishing immediate harm from gradual or cumulative harm;
   d) Whether, and under what circumstances, would it be possible and/or practicable to take containment, mitigation or clean-up action, and whether, and under what circumstances, would it be possible to restore the environment; and
   e) Is there an operational or scientific definition of the term "irreparable" and, if so, what criteria could be used to determine if harm is "irreparable".

Note the desirability of receiving comments from the CEP on the joint COMNAP/SCAR Working Paper.

Further request that the advice, referred to in paragraph 2, as well as reports of COMNAP on emergency risk assessment, be conveyed by the chairman of the Meeting to representatives of the insurance industry, including the International Association of P&I Clubs, in order to seek their views regarding the insurability of operators and vessels for harm to the Antarctic environment, and what further scientific or practical information would be necessary for assessing the risks associated with operations in the Antarctic.

XXII: Resolution 6 (1998)

Emergency Response Action and Contingency Planning

The Representatives,

Welcoming the entry into force of the Protocol on Environmental Protection to the Antarctic Treaty (Environmental Protocol);

Noting the provisions of Article 15 of the Environmental Protocol on emergency response action and contingency planning;

Aware that the reduction of risk of emergencies or accidents is best achieved through effective measures on preparedness, emergency response action and contingency planning;

Desiring to ensure that a comprehensive framework for such measures is in place;

Welcoming the continuing work that has been undertaken by COMNAP and IAATO;

Recalling Resolution 1(1997)

Recommend that:

1. The Consultative Parties adopt the COMNAP/SCALOP Guidelines, annexed to this Resolution, specifically:

- Recommended Procedures for Fuel Oil Handling at Stations and Bases;
- Recommendations for Spill Prevention and Containment of Fuel Oil at Stations and Bases;
- Guidelines for Oil Spill Contingency Planning;
- Guidelines for the Reporting of Oil Spill Incidents Which Occur in Antarctica.

2. COMNAP/SCALOP be requested to review, and if necessary revise, as appropriate, these recommendations and guidelines and keep them under periodic review.

3. The Consultative Parties take steps to ensure full application of the provisions of paragraphs 1 and 2 of Resolution 1(1997).

4. COMNAP/SCALOP be requested to undertake an assessment of the risks of environmental emergencies arising from activities in Antarctica, including but not limited to an analysis of incidents which have occurred over the past ten years within the Antarctic Treaty area, and the types of future incidents that could occur in connection with operations at stations and bases.

5. COMNAP/SCALOP also be requested to identify and formulate additional steps in relation to emergency response action and contingency planning for incidents other than oil spills (including guidelines on co-ordination, communication and equipment requirements).

6. COMNAP/SCALOP be further requested to report on the above work to ATCM XXIII, with the report to be provided to the Committee for Environmental Protection so that the Committee can provide advice to ATCM XXIII.

NOTE: Paragraph 3 of this Resolution refers to paragraphs 1 and 2 of Resolution 1(1997) which state:

1. That those Consultative Parties whose research stations and vessels operating in Antarctica are not covered by contingency plans should take the necessary steps to ensure that the operators of the stations and vessels introduce plans based on the 1992 Guidelines prepared by COMNAP.

2. That the Consultative Parties, individually or collectively, should to the extent possible carry out regular contingency exercises, both theoretical and practical on land and at sea, to test and thereby refine their contingency plans, and report on the results of the exercises to the ATCM. Exercises at sea should be carried out in accordance with the relevant maritime conventions.

(Annex 3)

Annex to Resolution 6 (1998)

(Originally annexed the COMNAP Report to XVII ATCM)

Recommended Procedures for Fuel Oil Transfer at Stations and Bases

Preface

This document outlines the procedures to be followed, within the competence of individual national operators, when transferring fuel oils between ships and shore facilities, or between individual storages at stations or bases in Antarctica.

The document was prepared under the direction of the Standing Committee on Antarctic Logistics and Operations (SCALOP) by the SCALOP Subgroup on Oil Spill Prevention and Response. The Subgroup was established by SCALOP in June 1990 with Representatives from Australia, Canada, Germany, Norway, South Africa, United Kingdom and United States of America.

This document was approved by the Council of Managers of National Antarctic Programmes (COMNAP) at its meeting in June 1992.

Dr. Mario Zucchelli

Chairman COMNAP

Recommended Procedures for Fuel Oil Transfer at Stations and Bases

1. Introduction

1.1 The transfer of fuel oils from resupply vessels to shore based storage facilities. and between individual storage facilities on stations or bases, are potentially hazardous operations. It is incumbent on national Antarctic operators to ensure that procedures are in place, and are implemented. to minimise the risk of oil spillage and environmental pollution during such fuel transfer operations.

1.2 The procedures outlined in this document cover the documentation, operation, inspection and maintenance of fuel transfer facilities and the training requirements for operational staff, Individual national Antarctic operators may deem it necessary to supplement these minimum requirements to satisfy national standards, or to meet specific operational needs.

2. Procedures

Documentation

2.1 Personnel who are responsible for, or are required to undertake, fuel oil transfer operations are to be provided with clear and comprehensive documentation prescribing the procedures to be followed, and precautions to be observed, in conducting fuel transfer operations.

2.2 The documentation is to include up-to-date layout drawings or diagrams indicating

storage tanks, reticulation systems, pumps, valves and safety devices.

2.3 All tanks, valves and pumps are to be allocated unique identity numbers which are to appear on the layout drawings and in a prominent place on installed equipment. The written procedures are to make reference to the identity numbers.

Training

2.4 All personnel who are responsible for, or required to undertake, fuel oil transfer operations are to receive instruction or training in the operation of the equipment, spillage prevention and other measures.

2.5 The above personnel will also receive training on oil spill contingency planning procedures and duties.

Operations

2.6 Fuel transfer equipment must be inspected for serviceability prior to the commencement of pumping operations.

2.7 Except during fuel transfer operations, all isolation valves on storage tanks are to be closed.

2.8 When transferring fuel oil between ships and shore facilities or fuel farms and remote holding tanks (e.g., at power houses), personnel must be stationed at both locations to monitor the transfer operation and must also maintain regular contact via VHF radio or similar. The fuel transfer pipes must be monitored for leaks during transfer operations.

2.9 During fuel transfer operations only one tank shall be active (i.e., valve open) except at the overlap period when switching from the access tank, to the next tank. Such operations must be continuously monitored.

2.10 All staff responsible for, and associated with, fuel transfer operations are to take whatever action is deemed appropriate to minimise and avoid the risk of fuel spills.

2.11 If personnel have any doubts about the adequacy of existing procedures and systems, these must be brought to the immediate attention of the responsible authority.

2.12 Records of all fuel transfers and spillages shall be maintained by personnel on site and the national operating authority.

Inspection

2.13 All fuel storage tanks are to be visibly inspected on a weekly basis, and as soon as possible following adverse weather, to check the integrity of the storage systems and associated plumbing. In addition, all storage tanks are to be checked monthly to verify contents.

2.14 Bulk storage tanks shall be thoroughly inspected on an annual basis. A record of these inspections including the internal cleaning of tanks shall be maintained at the station.

Maintenance

2.15 All pumps, valves and associated equipment are to be maintained in good working order.

2.16 Any defective fixtures or fittings shall be replaced or repaired as soon as is practicable.

(Annex 4)

Recommendations for Spill Prevention and

Containment of Fuel Oil at Stations and Bases

Preface

This document outlines recommendations to be followed, within the competence of individual national operators, for the design of fuel storage facilities at Antarctic stations and bases with particular reference to measures for spillage prevention, containment, detection and recovery.

The document was prepared under the direction of the Standing Committee on Antarctic Logistics and Operations (SCALOP) by the SCALOP Subgroup on Oil Spill Prevention and Response. The Subgroup was established by SCALOP in June 1990 with Representatives from Australia, Canada, Germany, Norway, South Africa, United Kingdom and United States of America.

This document was approved by the Council of Managers of National Antarctic Programmes (COMNAP) at its meeting in June 1992.

Dr. Mario Zucchelli

Chairman COMNAP

Recommendation for Spill Prevention and Containment

of Fuel Oil at Stations and Bases

1. Introduction

1.1. Fuel oils are used at Antarctic stations and bases for a variety of operational needs including power generation and the fuelling of vehicles and aircraft. The spillage of fuel oils as a result of equipment failure, accidental damage or human error poses a potential environmental threat. It is therefore incumbent on national Antarctic operators to design, install and operate fuel oil storage facilities to minimise such risks.

1.2 The design recommendations outlined in this document are intended to minimise the possibilities of fuel spillage to the environments. The recorturiendations apply to new and, where practicable, existing installations. The design philosophy incorporates:

- spillage prevention;

- spillage containment;
- spillage detection;
- spillage alert and
- spillage recovery.

2. Design Recommendations

Spillage Prevention

2.1 Installation shall be sited and designed to minimise the deleterious effects of the environment, such as from ice build-up on valves and fittings.

2.2 Installations shall be sited to minimise damage from operational activities such as heavy vehicular traffic and where this is not practicable the installation shall be protected by means such as bollards, guards and signs.

2.3 Tanks, valves and fittings shall be of first grade materials suitable for petroleum products and site specific climatic conditions.

2.4 Lever operated ball valves shall preferably be used which give clear visual indication of the "open" and "shut" positions.

2.5 Manufacture, fabrication and site construction of facilities shall be inspected, tested beyond application conditions if possible, and approved for use by a competent authority.

2.6 The installation shall avoid undue complexity so as to reduce the risk of human error through confusion or misunderstanding.

2.7 Tanks shall be piped for top fill and top draw off.

2.8 All tanks shall be numbered and have the maximum capacity clearly marked. All valves shall be tagged or numbered to facilitate clear and unambiguous description in operating procedures.

2.9 Adjacent tanks shall be fitted with overflow equalising connections between them, where practicable.

2.10 Tanks shall have calibrated dip-sticks, continuous level monitoring gauges, or other means of assessing the quantity of fuel stored.

2.11 Fuel pumps for bulk handling shall have a lockable switch or other appropriate mechanism to prevent accidental pumping.

2.12 The delivery pump shall have an emergency stop switch or other appropriate mechanism located in a prominent, accessible position. Alternatively, a master valve shall be fitted immediately downstream of the pump to facilitate emergency.

Spillage Containment

2.13 The containment facility shall have the capacity to contain the contents of at least the largest tank should a spill occur plus an allowance for snow, ice or water accumulation.

2.14 Containment may take various forms including, for example: (i) bounding around the installation or around individual tanks; (ii) remote bounding with interconnection drainage from the tank installation; (iii)double skin tanks, horizontal or vertical, with the outer skin being the containment; or (iv) flexible bladders within a containment structure.

Spillage Detection

2.15 Installations shall have, where practicable, sensors to detect fuel spillage. This may be in the form of electronic fuel sensors fitted in appropriate locations for example between the walls of double skin tanks or in the sump of the containment structure. Low level sensors in tanks may serve to indicate loss from a tank.

Spillage Alert

2.16 Audible and/or visual alarms shall be installed in locations which are frequented regularly, or are obvious during fuel transfer operations.

2.17 All bulk storages shall, where practicable, have a high level alarm which is audible and/or visible to an operator. Such alarms shall signify a potential overflow before the tank reaches capacity.

Spillage Recovery

2.18 Installations shall have the capacity to store any recovered fuel up to quantities at least matching the capacity of the largest tank. This provision may be met by additional storage capacity such as a spare tank, or by underfilling tanks to provide the reserve storage by transfer pumping.

(Annex 5)

Guidelines for Oil Spill Contingency Planning

Preface

This document provides guidance to national Antarctic operators on the recommended format for, and the information to be included in, oil spill contingency plans for facilities and geographic areas of Antarctica.

The document was prepared under the direction of the Standing Committee on Antarctic Logistics and Operations (SCALOP) by the SCALOP Subgroup on Oil Spill Prevention and Response. The Subgroup was established by SCALOP in June 1990 with Representatives from Australia, Canada, Germany, Norway, South Africa, United Kingdom and United States of America.

This document was approved by the Council of Managers of National Antarctic Programmes (COMNAP) at its meeting in June 1992.

Dr. Mario Zucchelli

Chairman, COMNAP

CONTENTS

1. Introduction
2. Tiered Approach to Contingency Planning
3. Format of Plans
4. Plan Effectiveness

APPENDIX Format for Contingency Plans

Guidelines for Oil Spill Contingency Planning

1. Introduction

1.1 The need to develop and implement measures to alleviate and combat the pollution of Antarctic waters has been the subject of several Recommendations adopted at Antarctic Treaty Consultative Meetings (ATCMs) in recent years. At the 1989 ATCM, Recommendation XV-4 specifically called on the Governments of Treaty Parties to establish contingency plans for marine pollution response in Antarctica, including plans for vessels carrying oil.

1.2 The need to develop contingency plans for response to marine pollution incidents is also requirement of Annex IV of the "Protocol to the Antarctic Treaty on Environmental Protection".

1.3 This COMNAP document defines a recommended format and specifies the information to be included in oil spill plans which are to be prepared by national antarctic operators for facilities or larger geographic areas in Antarctica.

2. Tiered Approach To Contingency Planning

2.1 Most oil spills in Antarctica are likely to be small and confined to a station or base and the adjoining waters. In the event that the spill is beyond the station or base capability, or is likely to affect a larger area, an enhanced response may be necessary involving support from other national operators.

2.2 This tiered response to oil spill incidents requires the development of compatible contingency plans for individual facilities and, where appropriate, contingency plans for larger geographic areas encompassing a number of operators, as defined below:

Facility Plans

These are to be developed for individual stations or bases and their local environs, where appropriate. The plans will be prepared by individual national operators responsible for the management of a specific facility.

Multi-Operator Plans

These are to be developed to encompass a geographic area where a coordinated and compatible response by two or more national operators is feasible. This will apply where it is effective and feasible to pool and deploy response equipment and supplies.

3. Format of Plans

3.1 The recommended format for Facility and Multi-operator contingency plans are given in the Appendix. The plans are to be divided in two parts plus annexes as follows:

Part 1: Strategic Information

This is a descriptive policy document providing background information including a description of the facility and an evaluation of oil spill scenarios.

Part II: Operational Response

This describes the recommended procedures for the development of an operational response to oil spills. The format of the Operational Plan corresponds to the expected chronological order of events. The text of this document should be supplemented, to the maximum extent, with decision tree diagrams or checklists to simplify and speed interpretation. In particular the Operational Plan, Chapter 6, shall be in the form of tree diagrams or checklists.

Annexes

These include detailed reference information relating to specific aspects of the contingency plans, e.g. Communications, Health and Safety, Training, etc.

3.2 It is recommended that all national operators adopt the formats specified in this document. This will enable the plans to be easily understood and assist with the integration and compatibility of the facility plans with multi-operator plans, where applicable. Plans should be complete in themselves and not involve reference to other supporting documents which may cause delays. Plans should preferably be produced in loose leaf form to facilitate regular update.

4. Plan Effectiveness

4.1 The International Tanker Owners Pollution Federation consider that the adequacy of contingency plans may be assessed against the following ten questions:

1. Has there been a realistic assessment of the nature and size of the possible threat, and of the resources most at risk, bearing in mind the probable movement of any oil spilled?
2. Have priorities for protection been agreed, taking into account the viability of the various protection and clean-up options?
3. Has a strategy for protecting and cleaning the various areas been agreed and clearly explained?
4. Has the necessary organisation been outlined and the responsibilities of all those involved been clearly stated with no "grey areas" - will all who have a task to perform be aware of what is expected of them?
5. Are the levels of equipment, materials and manpower sufficient to deal with the anticipated size of spill? If not, have back-up resources been identified and, where necessary, have mechanisms for obtaining their release and entry to the country been established?
6. Have temporary storage sites and final disposal routes for collected oil and debris been identified?
7. Are the alerting and initial evaluation procedures fully explained as well as arrangements for continual review of the progress and effectiveness of the clean-up operation?
8. Have the arrangements for ensuring effective communication between shore, sea and air been described?
9. Have all aspects of the plan been tested and nothing significant found lacking?
10. Is the plan compatible with plans for adjacent areas and other activities?

Format of Title Page

* FORMAT CONTINGENCY PLAN OR *MULTI-OPERATOR CONTINGENCY PLAN OR § NAME OF FACILITY OF MULTI-OPERATOR AREA Council of Managers of National Antarctic Programmes ° Date

*	Chose titles according to plan type
§	State name of facility or multi-operator
°	Date of plan

Facility Plan

PART 1: STRATEGIC INFORMATION

I INTRODUCTION
1.1 Background
1.2 Purpose
1.3 Scope of Plan
1.4 How to Use the Plan

2 SPILL RISK ENVIRONMENT
2.1 Facility Description
2.2 Oil Stored at Facility
2.3 Oil Transfer Operations

3 SPILL RISK ASSESSMENT
3.1 Migration Pattern of Spills
3.2 Sensitive Locations
3.3 Spill Scenarios

PART II: OPERATIONAL RESPONSE

4 FACILITY ORGANIZATION
4.1 Response Organization Structure
4.2 Facility Organization

5 RESPONSE NOTIFICATION
5.1 Initial Assessment
5.2 Initial Notification

6 OPERATIONAL PLAN
6.1 Response Team Deployment
6.2 Personnel Safety
6.3 Response Strategies
6.4 Communications
6.5 Spill Surveillance
6.6 Environmental Assessment
6.7 Clean-up Methods
6.8 Restoration

7 WASTE DISPOSAL
7.1 Storage of Waste
7.2 Disposal of Waste

8 DEMOBILIZATION
8.1 Personnel Decontamination
8.2 Equipment Decontamination/Maintenance

9 POST SPILL MONITORING

10 REPORTING

Multi-Operator Plan

PART 1: STRATEGIC INFORMATION

I INTRODUCTION
1.1 Background
1.2 Purpose
1.3 Scope of Plan
1.4 How to Use the Plan

2 SPILL RISK ENVIRONMENT
2.1 Geographic Description of Area
2.2 Oil Transported in Area

3 SPILL RISK ASSESSMENT
3.1 Migration Pattern of Spills
3.2 Sensitive Locations
3.3 Spill Scenarios

PART II: OPERATIONAL RESPONSE

4 MULTI-OPERATOR ORGANIZATION
4.1 Response Organization Structure
4.2 Area Response Infrastructure

5 RESPONSE NOTIFICATION
5.1 Initial Assessment
5.2 Initial Notification

6 OPERATIONAL PLAN
6.1 Request for Assistance
6.2 Joint Response Operations
6.3 Personnel Safety
6.4 Response Strategies
6.5 Communications
6.6 Spill Surveillance
6.7 Environmental Assessment
6.8 Clean-up Methods

7 WASTE DISPOSAL
7.1 Storage of Waste
7.2 Disposal of Waste

8 DEMOBILIZATION
8.1 Personnel Decontamination
8.2 Equipment Decontamination/Maintenance

9 POST SPILL MONITORING

10 REPORTING

FORMAT OF CONTINGENCY PLANS

PART I: STRATEGIC INFORMATION

Facility Plan

1. INTRODUCTION

1.1 Background

- Define the requirement, authority and applicability of plan in relation to the national program, relevant national agencies and other countries.
- Describe relevant Antarctic Treaty obligations and related national legislation or requirements.

1.2 Purpose

- Describe the objectives of the plan which are to reduce loss and damage resulting from oil spills by:
  - identifying the potential risks,
  - describing response actions,
  - outlining available resources, and
  - defining functions and responsibilities, etc.

1.3 Scope of Plan

- Define facility/area covered by the plan and the boundaries.
- Describe involvement of other countries participating in the plan where applicable.

1.4 How to Use the Plan

- Explain how the plan is structured and how it is designed to be used.

2. SPILL RISK ENVIRONMENT

2.1 Facility Description

- Describe in detail the physical layout of facility including buildings, access ways, storage facilities, reticulation systems, etc.
- Describe oil storage facilities and capacities including piping/pumping systems, mobile oil

Multi-Operator Plan

1. INTRODUCTION

1.1 Background

- Define the requirement, authority and applicability of plan in relation to the national program, relevant national agencies and other countries.
- Describe relevant Antarctic Treaty obligations and related national legislation or requirements.

1.2 Purpose

- Describe the objectives of the plan which are to reduce loss and damage resulting from oil spills by:
  - identifying the potential risks,
  - describing response actions,
  - outlining available resources, and
  - defining functions and responsibilities, etc.

1.3 Scope of Plan

- Define geographic area covered by the plan.
- Nominate the operators participating in the plan.

1.4 How to Use the Plan

- Explain how the plan is structured and how it is designed to be used.

2. SPILL RISK ENVIRONMENT

2.1 Geographic Description of Area

- Describe main geographic features of the area including the location of stations.
- Describe natural hazards in area based on hydrographic, sea ice and weather data.

transfer equipment and safety control devices eg relief valves, emergency shutdown systems, alarms, etc

- Describe existing containment measures and firefighting systems, site electric supplies, mobile/portable generator capacity and waste disposal systems.

2.2 Oil Stored at Facility

- Describe typical quantities and location of oil stored on site giving seasonal variations.
- Provide specifications of products and define characteristics, eg toxicity, persistence, flammability.

2.3 Oil Transfer Operations

- Describe the normal methods and frequency of receiving and transferring oil on site.
- Describe how oil products are used.

2.2 Oil Transported in Region

- Identify vessels transiting, or visiting, the area and quantity of oils carried onboard.
- Determine and plot shipping routes and transit frequency.
- Define specifications of oil products carried on vessels and define characteristics, eg toxicity, persistence, flammability.

3. SPILL RISK ASSESSMENT

3.1 Migration Patterns of Spills

- Describe potential migration paths of spilled oil during transfer operations or from storage facilities.

3.2 Sensitive Locations

- Identify environmentally sensitive locations within the geographic boundaries of the plan with reference to seasonal variations.
- Define priorities for protection.

3.3 Spill Scenarios

- Describe the most probable and worst case spill scenarios taking into account oil storages, transfer operations, refuelling points, vehicle suitability, etc.
- Describe possible seasonal and local climatic impacts.
- Describe terrain and accessibility to potentially threatened areas.

3. SPILL RISK ASSESSMENT

3.1 Migration Patterns of Spills

- Describe potential migration paths of oil spills as a result of marine accidents at high risk locations.

3.2 Sensitive Locations

- Identify environmentally sensitive locations within the geographic boundaries of the plan with reference to seasonal variations.
- Define priorities for protection.

3.3 Spill Scenarios

- Describe the most probable and worst case spill scenarios.
- Describe possible seasonal and local climatic impacts.
- Describe terrain and accessibility to potentially threatened areas.

PART II: OPERATIONAL PLAN

Facility Plan

Multi-Operator Plan

4. FACILITY ORGANIZATION

4.1 Response Organization Structure

- Describe the management structure of the facility and the report/authority hierarchy for spill response.
- Describe the roles and responsibilities of response team members.
- Describe the management linkages and command structure between the facility and the responsible national authority for spill response.
- Describe linkages with other countries participating in the plan, where applicable.
- Make reference to Annex S as source of relevant telephone numbers.

4.2 Facility Organization

- Describe typical seasonal staffing levels of facility including scientific, trades, administrative, etc.
- Describe the availability of specialist support personnel including medical, firefighting, SAR.
- Identify specialist scientific expertise at facility or in the national agency in such fields as marine biology, chemistry, environmental monitoring.

5. RESPONSE NOTIFICATION

5.1 Initial Assessment

- Facility manager, or responsible officer, to assess initial report of spill and take action to protect safety of life and property, and halt or minimize further spill where possible.
-

5.2 Initial Notification

- As soon as practicable, and not necessarily before mobilizing response team, advise national authority of incident, stating:
  - Time of spill
  - Source of spill
  - Identity of material spilled
  - Cause of spill, if known
  - Estimate of amount spilled and likelihood of further spillage and amount
  - Resources under threat, if any.
- Advise details of spill to other operators, where applicable and necessary.

6. OPERATIONAL PLAN

6.1 Response Team Deployment

- Subject to weather and safety considerations.

4. MULTI-OPERATOR ORGANIZATION

4.1 Response Organization Structure

- Describe arrangements for the assumption of the lead role by one of the participating operators in the event of a spill.
- Describe the command structure and liaison arrangements for joint response.
- Make reference to Annex S as source of relevant telephone numbers.

4.2 Area Response Infrastructure

Describe the availability of specialist support personnel in the area including medical, SAR, aircraft, shipping and specialist scientific expertise in such fields as marine biology, chemistry, environmental monitoring.

5. RESPONSE NOTIFICATION

5.1 Initial Assessment

- On receipt of spill information, the responsible officer or authority is to assess the initial report and determine whether response action is necessary or possible.
-

5.2 Initial Notification

- As soon as practicable, and not necessarily before mobilizing response team, advise appropriate authority of incident, stating:
  - Time of spill
  - Source of spill
  - Identity of material spilled
  - Cause of spill, if known
  - Estimate of amount spilled and likelihood of further spillage and amount
  - Resources under threat, if any.
- Advise details of spill to other operators participating in the plan.

6. OPERATIONAL PLAN

6.1 Request for Assistance

- Define the procedures to be followed to activate

mobilize response team and appropriate equipment.

- Adopt appropriate response strategy to halt or minimize further spill. contain existing spill and protect threatened resources to the extent possible.

6.2 Personnel Safety

- Ensure that safety equipment is issued and used in accordance with H&S Plan.
- Alert medical personnel of operations so that appropriate preparations can be made.

6.3 Response Strategies

- Outline response action for the most probable and worst case spill scenarios.
- Describe seasonal effects on oil spill response actions.
- Identify the available equipment options, eg booms, skimmers, absorbents etc, to contain spill and/or protect resources.

6.4 Communications

- Establish a communications/command post to ensure that contact can be maintained with response team and other support personnel.
- Provide regular update on spill response progress to national authority.

6.5 Spill Surveillance

- Use aircraft, where available, or other safe means to determine extent of offshore spills and the trajectory.
- Estimate track of spill and identify threatened resources.
- Advise national authority and other countries, where appropriate, of spill trajectory.

6.6 Environmental Assessment

- Undertake ongoing assessment of environmental impacts.

6.7 Clean-up Methods

- Liaise with national authority and on-site experts, if available, to determine appropriate restoration

response assistance from other operators participating in the plan.

- Identify national and commercial resources that may be available to supplement available area resources and possible logistics support

6.2 Joint Response Operations

- Describe command structure and liaison/coordination arrangements for joint response operations.

6.3 Joint Response Operations

- Ensure that safety equipment is issued and used in accordance with H&S Plan.
- Alert medical personnel of operation so that appropriate preparations can be made.

6.4 Response Strategies

- Outline response action for the most probable and worst case spill scenarios.
- Describe seasonal effects on oil spill response actions.
- Identify the available equipment options eg booms, skimmers, absorbents etc, to contain spill and/or protect resources.

6.5 Communications

- Describe procedure for setting up a central communications/command post to facilitate coordination with response team and the operators participating in the response action.
- Define the frequency and content of reports between command post and participating operators and national authorities.

6.6 Spill Surveillance

- Use aircraft, where available, or other safe means to determine extent of offshore spills and the trajectory.
- Estimate track of spill and identify threatened resources.
- Advise operators participation in the plan, and other countries where their operations may be affected, of spill trajectory.

6.7 Environmental Assessment

- Undertake ongoing assessment of environmental

measures.

7 WASTE DISPOSAL

7.1 Storage of Waste
- Identify storage facilities or temporary arrangements suitable for storing recovered oil and oily wastes.

7.2 Disposal of Waste
- Outline potential arrangements for disposal or transport of oil or oily wastes.
- Ensure that transport arrangements comply with relevant national and international regulations.

Facility Plan

8. DEMOBILIZATION

8.1 Personnel Decontamination
- Provide facilities and materials for personnel decontamination.
- Arrange for screening of personnel by facility medical staff.

8.2 Equipment Decontamination/Maintenance
- Arrange cleaning of equipment and identify maintenance needs.

9. POST SPILL MONITORING

- Liaise with national authority to determine need for post-spill monitoring program.
- Arrange for comprehensive post-spill photographic record of affected area.

10. REPORTING

- Prepare report on oil spill incident outlining the cause, extent of spill, response action,

impacts.

6.8 Clean-Up Methods
- Liaise with relevant national authorities and on-site experts, if available, to determine appropriate clean-up techniques for contaminated shorelines, snow, ice, etc.

6.9 Restoration
- Liaise with relevant national authorities and on-site experts, if available, to determine appropriate restoration measures.

7 WASTE DISPOSAL

7.1 Storage of Waste
- Identify storage facilities or temporary arrangements suitable for storing recovered oil and oily wastes.

7.2 Disposal of Waste
- Outline potential arrangements for disposal or transport of oil or oily wastes.
- Ensure that transport arrangements comply with relevant national and international regulations.

Multi-Operator Plan

8. DEMOBILIZATION

8.1 Personnel Decontamination
- Provide facilities and materials for personnel decontamination.
- Arrange for screening of personnel by facility medical staff.

8.2 Equipment Decontamination/Maintenance
- Arrange cleaning of equipment and identify maintenance needs.

9. POST SPILL MONITORING

- Liaise with other participating operators to determine need for, and implementation of post-spill monitoring program.

10. REPORTING

- Prepare report on oil spill incidents in

effectiveness of action, known environmental impact, damage or loss of assets or resources, debrief outcome, costs, further action.

conjunction with national participants outlining the cause, extent of spill, response action, effectiveness of action, known environmental impact, damage or loss of assets or resources, debrief outcome, costs, further action.

ANNEXES

ANNEX A: FACILITY AREA MAP (OR AREA MAP)

ANNEX B: SPILL RISK ASSESSMENT MAP

ANNEX C: COMMUNICATION PLAN

ANNEX D: RESPONSE TEAM ORGANIZATION

ANNEX E: RESPONSE EQUIPMENT AND MATERIALS

ANNEX F: HEALTH AND SAFETY PLAN

ANNEX G: TRAINING PLAN

ANNEX H: PUBLIC RELATIONS/MEDIA PLAN

ANNEX J: COST ACCOUNTING PLAN

ANNEX K: DOCUMENTATION PLAN

ANNEX L: DISPERSANT USE

ANNEX M: IN-SITU BURNING

ANNEX N: BIOREMEDIATION USE

ANNEX P: BIRD AND MAMMAL CLEANING

ANNEX Q: EQUIPMENT AND PERSONNEL CLEANING

ANNEX R: DEFINITIONS AND ABBREVIATIONS

ANNEX S: COMMUNICATIONS CONTACT NUMBERS

Facility Plan

A. FACILITY AREA MAP
- Map illustrating the extent of facility covered by contingency plan.

B. SPILL RISK ASSESSMENT MAP
- Map identifying potential spill risk sources, spill migration paths and sensitive locations.

C. COMMUNICATION PLAN
- Identify staff positions responsible for

Multi-Operator Plan

A. AREA MAP
- Map illustrating area covered by contingency plan.

B. SPILL RISK ASSESSMENT MAP
- Map identifying potential spill risk sources, spill migration paths and sensitive locations.

C. COMMUNICATION PLAN
- Identify communication systems and

execution of the Communication Plan.

- Identify communication systems and frequencies available for local communication with response teams in remote locations and with reconnaissance aircraft/helicopters and surface units.
- Describe external communication assets, including telefax, computer modem and other satellite and relay station telephone capabilities.

D. RESPONSE TEAM ORGANIZATION

- Identify members of the response team by position description.
- Define each member's role and responsibilities.

E. RESPONSE EQUIPMENT AND MATERALS

- Identify staff positions responsible for equipment storage and readiness.
- Identify all local assets of containment, cleanup, waste storage and disposal equipment and their location on site.
- Describe when and how to use the various types of equipment and materials.
- Describe how to clean and maintain the equipment.
- Identify other response resources/capabilities available from other sources, national Government agencies, contractors, other countries.
- Describe how to request additional equipment and predicted time to receive.

F. HEALTH AND SAFETY PLAN

- Identify local medical support resources.
- Describe how to request additional medical assistance.
- Identify potential personnel hazards relating to materials which could be spilled in the area, operating the response equipment and weather/elements exposure.
- Describe Health and Safety training

frequencies available for communication with each of the stations participating in the plan and the respective national authorities.

- Describe external communication assets, including telefax, computer modem and other satellite and relay station telephone capabilities.
- Describe reporting requirements and procedures, including sample message formats.

D. RESPONSE TEAM ORGANIZATION

- Identify the position and responsibilities of the response coordinator for each of the stations participating in the plan.
- Describe the response team organization and command structure for each of the stations participating in the plan.

E. RESPONSE EQUIPMENT AND MATERIALS

- Identify regional assets for containment, cleanup, waste storage and disposal and their location.

F. HEALTH AND SAFTY PIAN

- Identify medical and evacuation support assets in the area.
- Describe how to request additional medical assistance.
- Identify potential personnel hazards relating to materials which could be spilled in the region.

requirements for personnel handling oil products.

- Describe use of the Material Safety Data Sheet (MSDA) by response team personnel.
- Identify local assets of protective clothing and equipment and describe when and how to use.
- Describe medical evacuation procedures.

G. TRAINING PLAN

- Define training requirements for all members of response team.
- Define training requirements for response administrators and advisors at national organization headquarters.
- Describe plan for field messing.
- Describe plan for response team personnel rotation.

G. TRAINING PLAN

- Define training requirements for response coordinators with regard to area response activities.

H. PUBLIC RELATIONS/MEDIA PLAN

- Identify staff positions responsible for executing the Public Relations/Media Plan.
- Provide format for initial and follow-on written press releases.
- Identify all media personnel who may be in the local area and their location.

H. PUBLIC RELATIONS/MEDIA. PLAN

- Identify methods by which media advice will be coordinated between countries participating in response action.

J. COST ACCOUNTING PLAN

- Identify staff positions responsible for execution of the Cost Accounting and Documentation Plan.
- Identify costs which should be tracked and how they should be recorded.
- Identify sources of funding and how to request.

J. COST ACCOUNTING PLAN

- Provide format for recording actions taken during spill incident and cleanup.
- Identify costs which should be traced and how they should be recorded.

K. DOCUMENTATION PLAN

- Provide format for recording actions taken during spill incident and cleanup to facilitate after action reporting requirements and the consideration of lessons learned.

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- Provide format for recording actions taken during spill incident and cleanup to facilitate after action reporting requirements and the consideration of lessons learned.

L. DISPERSANT USE

- Describe policy on use of dispersants and

L. DISPERSANT USE

- Describe policy on use of dispersants and

decision making process, if applicable.

M. IN-SITU BURNING

- Describe policy on in-situ burning and decision making process, if applicable.

N. BIOREMEDIATION USE

- Describe policy on bioremediation use and decision making process, if applicable.

P. BIRD AND MAMMAL CLEANING

- Describe the effects of oil on birds and mammals.
- Define methods of cleaning, including cleaning materials and equipment.

Q. EQUIPMENT AND PERSONNEL CLEANING

- Describe materials available and procedures for cleaning personnel of oil contamination.
- Describe procedures for cleaning and checking serviceability of response equipment.

R. DEFINITION AND ABBREVIATIONS

- Define acronyms, technical terms and abbreviations which are used in the plan.

S. COMMUNICATIONS CONTACT NUMBERS

- List telephone/fax/telex numbers and names of personnel involved in response action within the facility and the national authority headquarters, including national agencies which can provide assistance.
- List contact numbers, where applicable, of other national operators participating in plan or which may be able to provide assistance.

decision making process, if applicable.

M. IN-SITU BURNING

- Describe policy on in-situ burning and decision making process, if applicable.

N. BIOREMEDIATION USE

- Describe policy on bioremediation use and decision making process, if applicable.

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R. DEFINITION AND ABBREVIATIONS

- Define acronyms, technical terms and abbreviations which are used in the plan.

S. COMMUNICATIONS CONTACT NUMBERS

- List telephone/fax/telex numbers and names of personnel involved in response action at each station and in the respective national authorities of countries participating in the plan.

Guidelines For The Reporting Of Oil Spill Incidents Which Occur In Antarctica

PREFACE

This document outlines the procedure to be used by national Antarctic operators for reporting to the COMNAP Secretariat oil spill incidents which occur in Antarctica.

The document was prepared under the direction of the Standing Committee on Antarctic Logistics and Operations (SCALOP) by the SCALOP Sub-group on Oil Spill Prevention and Response. The Sub-group was established by SCALOP in June 1990 with representatives from Australia, Canada, Germany, Norway, South Africa, United Kingdom and United States of America.

The Council of Managers of National Antarctic Programs (COMNAP) approved the reporting procedure at its meeting in Christchurch, New Zealand during June 1993.

Dr Mario Zucchelli

Chairman COMNAP

Guidelines For The Reporting Of Oil Spill Incidents Which Occur In Antarctica

1. INTRODUCTION

1.1 The intention of this procedure is to provide an archival record of oil spill incidents which occur in the Antarctic Treaty area in order to assist national operators to determine whether there is a need to modify or improve oil handling practices.

2 OIL SPILL REPORTING PROCEDURE

2.1 In the event of an oil spill incident in excess of 200 litres (and for oil spills less than 200 litres, if considered significant) national Antarctic operators are to lodge a COMNAP Oil Spill Report with the COMNAP Secretariat.

2.2 The report is to be provided in English and lodged with the COMNAP Secretariat within 30 days of the incident occurring.

2.3 In the event of a major spill, a copy of the press release or publicly released statement on the incident should be provided to COMNAP members through the COMNAP Secretariat.

3. REPORTING FORMAT

3.1 The format and content of the COMNAP Oil Spill Report, which is to be lodged with the COMNAP Secretariat, is given in Annex A. A description of the information to

be provided in the report is described against each heading.

4. OIL SPILL SITREP

4.1 To facilitate the collection of information in a format which will assist in the compilation of the COMNAP Oil Spill Report, a suggested Situation Report (SITREP) format is given in Annex B. It should be noted that the SITREP is intended for the internal use of national operators only, and is not to be lodged with the COMNAP Secretariat.

COMNAP OIL SPILL REPORT

TO: COMNAP Secretariat
FM: (Name, address, fax or E-mail of contact person)
COUNTRY: (Country of national operator lodging the report)

1. STATION/VESSEL:
(General location of spill)
2. TIME AND DATE SPILL OCCURRED:
3. SPILL LOCATION:
(Specific location of spill, eg name of building and/or area, latitude/longitude of vessel)
4. WEATHER CONDITIONS:
(Weather conditions at time of spill and impact of weather conditions on subsequent response action)
5. OPERATION UNDERWAY WHEN SPILL OCCURRED:
(Fuelling, defuelling, transfer, transport, other)
6. TYPE OF FUEL SPILLED:
(Diesel, lubricating oil, hydraulic oil, etc)
7. AMOUNT SPILLED IN LITRES:
(Best estimate of spill in litres)
8. AMOUNT RECOVERED:
(State in litres the estimated amount recovered and per cent recovered of total litres spilled)
9. SPILL CAUSE:
(Describe cause of incident, if known, eg structural failure, hose failure or leak tank rupture, operator error, etc)
10. SLICK DESCRIPTION AND MOVEMENT:
(Describe extent of slick if spill occurred or reached open water and the extent of movement)
11. AREAS DAMAGED:
(Describe or name areas damaged, eg nature and extent of land damage, bodies of water affected, damage to wildlife or other natural resources, any threats still existing)
12. FUEL/WATER SAMPLES WERE/WERE NOT TAKEN:
(State number of samples taken, if any, and what is being done with them)
13. CONTAINMENT METHOD USED:
(Describe containment action taken, eg repaired damaged container, using another container, dyking, damming, diverting, boom deployment, other)
14. SPILL REMOVAL METHOD USED:
(Describe clean-up measures taken - ie absorbent, skimming, pumping, excavating, type of container used, etc. Also describe: disposal or retrograde plans)
15. PERSONNEL INVOLVED IN SPILL REMOVAL:
(Describe typical number of personnel involved at each stage of the response activity)
16. ADDITIONAL COMMENTS:
(Use this space to report what measures have been taken to prevent recurrence of a spill, ie repairs made, removal of faulty equipment, changes in procedure, etc)

SUGGESTED FORMAT OF COMNAP OIL SPILL SITREP ANNEX B

(For internal use only. Not to be sent to the COMNAP Secretariat)

OIL SPILL SITREP

TO: *(Name of responsible person in national operator organisation)*
FM: (*Originator of report and name of station/base/vessel*)
TIME/DATE: (*Time and date of initial and subsequent SITREPS*)

1. STATION/VESSEL:
   (General location of spill)
2. TIME AND DATE SPILL OCCURRED:
3. SPILL LOCATION:
   (Specific location of spill, eg name of building and/or area, latitude/longitude of vessel, etc)
4. WEATHER CONDITIONS:
   (Weather conditions at time of spill and impact of weather conditions on subsequent SITREPS)
5. OPERATION UNDERWAY WHEN SPILL OCCURRED:
   (Fuelling, defuelling, transfer, transport, other)
6. TYPE OF FUEL SPILLED:
   (Diesel, lubricating oil, hydraulic oil, etc)
7. AMOUNT SPILLED IN LITRES:
   (Best estimate of spill in initial SITREP and revised estimate in subsequent SITREPS in litres)
8. AMOUNT RECOVERED TO DATE:
   (State in litres the estimated amount recovered and per cent recovered of total litres spilled)
9. SLICK DESCRIPTION AND MOVEMENT:
   (If spill occurred or reached open water describe: size: - length and width; colour: - barley, visible, silvery, faint colour or sheen ,bright colour, dull brown, etc; wind conditions: - direction, speed, sea state, slick: movement: - direction, speed)

10.: AREAS DAMAGED OR THREATENED
   (Describe or name areas damaged or threatened in initial SITREP and indicate any changes in subsequent SITPEPS, eg if slick is approaching any SPAs or SSSIs, indicate distance from and best estimate of arrival. If birds or mammals affected, indicate numbers, mortality count and cleaning treatment status)

11. CONTAINMENT METHOD:
   (Describe equipment or techniques being used)
12. SPILL REMOVAL AND EFFECTIVENESS:
   (Provide assessment of spill response effectiveness)
13. ADDITIONAL COMMENTS:
   (Include any additional comments such as preventative measures, repairs, request for any outside area assistance, etc)

XXI: Resolution 1 (1997)

Emergency Response Action and Contingency Planning

The Representatives,

Noting the provisions of Article 15 of the Environmental Protocol and related provisions of Annex IV on emergency response action and contingency planning.

Conscious that implementation of the provisions requires actions by the Parties;

Recognising that initiatives bearing on the provisions have been taken by COMNAP and IAATO;

Convinced that additional work on the subject needs to be done by the ATCM;

Recommend that:

1. That those Consultative Parties whose research stations and vessels operating in Antarctica are not covered by contingency plans should take the necessary steps to ensure that the operators of the stations and vessels introduce plans based on the 1992 Guidelines prepared by COMNAP.

2. That the Consultative Parties, individually or collectively, should to the extent possible carry out regular contingency exercises, both theoretical and practical on land and at sea, to test and thereby refine their contingency plans, and report on the results of the exercises to the ATCM. Exercises at sea should be carried out in accordance with the relevant maritime conventions.

3. In view of the relevance of work being done by IMO, that the IMO expert invited to attend ATCM XXII be requested to take part also in the discussion on this subject.

4. That COMNAP and IAATO submit Information Papers to ATCM XXII describing their respective Guidelines for contingency plans, the extent to which the plans have been put in place, and plans for future work.

5. That in the light of the above reports, discussions, papers and other available information, ATCM XXII should review the issue of emergency response action and contingency planning with a view to implementing further the provisions of Article 15, and the related provisions of Annex IV to the Protocol, on cooperative response action, and decide on further action.

I-X: Assistance in emergency

The Representatives reaffirm the traditional Antarctic principle, that expeditions render all assistance feasible in the event of an emergency request for help and recommend to their Governments that consideration should be given to arranging consultations among them, and to the matter being discussed at the appropriate time at any meeting of experts qualified to discuss it.