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COMMISSION FOR BASIC SYSTEMS

EMERGENCY RESPONSE ACTIVITIES
CO-ORDINATION GROUP

ITEM: 10

WASHINGTON, D.C, USA, 10 -14 SEPTEMBER 2001

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**CLARIFICATION OF IMPLEMENTATION OF AMENDMENT 72 TO ICAO ANNEX 3,
SPECIFICALLY ON "AIRBORNE RADIOACTIVITY"**

(Submitted by the Secretariat)

Summary and purpose of document

This document contains a summary of the International Civil Aviation Organization (ICAO) *Amendment 72* to Annex 3 and action taken by the WMO Secretariat, as a follow up on its implementation, by Regional Specialized Meteorological Centres (RSMC) and National Meteorological Services (NMS), specifically on those aspects related to "airborne radioactivity".

Action proposed

The meeting is invited to address all formal and outstanding issues required to facilitate successful operational implementation of *Amendment 72*.

Annex (1): Sections of Amendment 72 to Annex 3, which are relevant to RSMC activities.

1. DISCUSSION

The last amendment to Annex 3, number 71, was implemented in November 1998. *Amendment 72* will be implemented in November 2001 and *Amendment 73* in November 2004.

a) *Amendment 72* consists of two parts:

- Part 1 was sent by ICAO to the member States as "State letter" - reference: AN 10/1-99/69, dated 9 July 1999. The key element is the proposal for Regional Specialized Meteorological Centres (RSMC), to provide to the aviation community, trajectory and dispersion information, related to nuclear emergencies (the specific details are given in section 7 and Annex 2 of this document);
- Part 2 was sent by ICAO to the member States, as "State letter" AN 10/1-00/57 dated 23 June 2000. This part is not relevant to RSMC (nuclear) activities.

b) The key dates for *Amendment 72* are as follows:

- Both parts have been approved by the International Civil Aviation Organization (ICAO) - Air Navigation Commission and have been combined for submission to the Council for adoption of the complete *Amendment 72* to Annex 3 in March 2001;
- The official ICAO State letter will be sent to the member States in April 2001;
- The amendment will become official in July 2001 unless rejected by 50% or more of the States - this has never happened in the past;
- It will then be applicable starting in November 2001.

c) If after reviewing the proposed amendment it is felt that that a member State is not able or does not want to implement some of these proposed changes, then the Meteorological Authority of that State has to file an official "difference" with ICAO.

- *Amendment 72* also produces consequential amendments to other ICAO annexes and documents.

d) The detailed sections of *Amendment 72* with respect to RSMC activities are found in the Annex of this document. In summary, they are as follows:

- World Area Forecast Centres (WAFC), (Washington, D.C, USA and Bracknell, UK) and Regional Area Forecast Centres (RAFC), (Buenos Aires, Brasilia, Cairo, Melbourne, New Delhi, Tokyo and Wellington, although there may be others) will receive information concerning the accidental release of radioactive materials in the atmosphere from its associated WMO Regional Specialized Meteorological Centres, for the provision of transport model products for radiological environmental emergency response, in order to include the information in significant weather charts.

- Meteorological Watch Offices (MWO) shall supply information received concerning the accidental release of radioactive materials into the atmosphere, in the area for which it maintains watch or adjacent areas, to its associated ACC/FIC, as agreed between the meteorological and ATS (Air Traffic Services) authorities concerned, and to aeronautical information service units, as agreed between the meteorological and appropriate civil aviation authorities concerned. The information shall comprise location, date and time of the accident, and forecast trajectories of the radioactive materials. This information is provided at the request of the Delegated Authority in a State, by WMO RSMCs, for the provision of transport model products for radiological environmental emergency response.
- Significant Weather Charts will show information on the location of an accidental release of radioactive materials into the atmosphere of significance to aircraft operations, comprising: the radioactivity symbol at the site of the accident and, at the side of the chart, the radioactivity symbol, latitude/longitude of the site of the accident, date and time of the accident and a reminder to users to check NOTAM (Notice to airman) for the area concerned. Something similar applies to volcanic eruptions. These symbols are to be included on all charts (low, medium and high) irrespective of the height to which the volcanic ash or radioactive material is reported, or expected to reach. Significant Weather Charts will be amended if any new information concerning (volcanic eruptions) or the accidental release of radioactive materials into the atmosphere is of significance to aircraft operations.
- Area forecasts for all levels (below FL-100, FL100-FL250 and above FL-250) will include information on the location of an accidental release of radioactive materials in the atmosphere of significance to aircraft operations, comprising latitude/longitude of the site of the accident, date and time of accident and a reminder to users to check NOTAM for the area concerned.

2. ACTIONS TAKEN BY THE WMO SECRETARIAT

WMO letters No. 17.207/WB/SY/DP of 7 February 2001 and 17.208/WB/SY/DP of 22 February 2001, brought to the attention of WMO Members states, the implications to services provided by RSMCs, as a result of the adoption of *Amendment 72* to ICAO Annex 3/WMO Technical Regulation [C.3.1]. These were in response to new operational requirements for the provision of Meteorological Service to International Air Navigation.

It was noted in the letter, that the current procedures for dissemination of products to NMSs by RSMCs as given in Appendices I.3 and II.7, to the Manual on the Global Data Processing System (WMO No. 485), effectively addresses the requirements of Regional Area Forecast Centres, operated by the NMSs. Likewise, product and related information requirements of Meteorological Watch Offices shall be made available by the NMS to its Watch Offices, who normally would supply relevant information to its associated ACC/FIC as agreed between the Meteorological and Air Traffic Services (ATS) authorities concerned.

To meet the requirements of *Amendment 72*, the current procedures need to be augmented and adjusted such that, during radiological incident, relevant RSMCs provide or make available products to the London and Washington, World Area Forecast Centres (WAFC). To facilitate urgent update of product dissemination procedures, the WAFCs were invited to inform the WMO Secretariat of details of their business contact and 24-hour operational contact (i.e. address of the centre, contact person's name, telephone, fax and e-mail for both contact points respectively).

Those National Meteorological Services, which have not yet participated in the World Meteorological Organization's Environmental Emergency Response Activities (ERA) programme, were informed that it was necessary for them to do so, in order to meet the requirements of *Amendment 72*.

It was noted that for the efficient provision of transport model products to NMSs, up-to-date contact lists are essential to ensure reliable, timely and secure communications of critical information (notification, transport model products updates). As an established procedure, the Secretariat maintains and publishes the official lists of Delegated Authorities and Operational Contacts for NMSs and makes them available to Members and the International Atomic Energy Agency (IAEA). To this end, the Secretariat has set up a Website at:

- http://www.wmo.ch/web/www/DPS/delegated_tbl.html
- http://www.wmo.ch/web/www/DPS/nmsoperat_tbl.html

All Members currently not participating in the ERA programme were invited to make designations, as soon as possible but preferably not later than **30 March 2001**. Members with Internet access are encouraged to provide their updates as indicated in the above Web pages.

ANNEX 1

(Sections of Amendment 72 to ANNEX 3 that are relevant to RSMC activities)

CHAPTER 3. WORLD AREA FORECAST SYSTEM AND METEOROLOGICAL OFFICES

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3.2 World area forecast centres

3.2.1 A Contracting State, having accepted the responsibility for providing a WAFC within the framework of the world area forecast system, shall arrange for that centre:

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- d) to prepare and issue amendments to the forecasts;
- e) to receive information concerning the accidental release of radioactive materials into the atmosphere from its associated WMO regional specialized meteorological centre for the provision of transport model products for radiological environmental emergency response, in order to include the information in significant weather forecasts; and
- f) to establish and maintain contact with VAACs for the exchange of information on volcanic activity in order to co-ordinate the inclusion of information on volcanic eruptions in significant weather forecasts.

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3.2.4 Recommendation.— *Forecasts of significant weather phenomena prepared by WAFCs should be issued four times a day for fixed valid times of 0000, 0600, 1200 and 1800 UTC. The transmission of each forecast should be completed as soon as technically feasible but at least nine hours before its validity time when issued in chart form and at least twelve hours before its validity time when issued in the BUFR code form.*

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3.2.4~~2~~13 Recommendation.— *WAFCs should apply the following criteria for the amendment of significant en-route weather forecasts:*

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Other significant en-route weather phenomena, and any new information concerning volcanic eruptions or the accidental release of radioactive materials into the atmosphere of significance to aircraft operations. Newly expected occurrence; no longer expected.

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3.2.44¹⁵ **Recommendation.**— *Amendments to forecasts of significant weather phenomena should be issued with the minimum possible delay in accordance with the criteria in 3.2.42¹³ and supplied in the form of abbreviated plain-language messages.*

Note.— *Guidance on the preparation of abbreviated plain- language significant weather forecast messages is given in Attachment A.*

3.3 Regional area forecast centres

3.3.1 A Contracting State, having accepted, by regional air navigation agreement, the responsibility for providing an RAFC within the framework of the area forecast system, shall arrange for that centre:

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d) to receive information concerning the accidental release of radioactive materials into the atmosphere from its associated WMO regional specialized meteorological centre for the provision of transport model products for radiological environmental emergency response, in order to include the information in significant weather forecasts; and

Editorial Note: — *Renumber items d) to h) to read f) to j)*

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3.3.10 **Recommendation.**— *RAFCs should apply the following criteria for the amendment of significant en-route weather forecasts:*

.....
Other significant en-route weather phenomena, and any new information concerning volcanic eruptions or the accidental release of radioactive materials into the atmosphere of significance to aircraft operations *Newly expected occurrence; no longer expected.*

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Editorial Note: — *Renumber paragraphs 3.4.6 and 3.4.7 to read 3.4.7 and 3.4.8*

3.5 Meteorological watch offices

3.5.1 A Contracting State, having accepted the responsibility for providing air traffic services within a flight information region or a control area, shall establish one or more meteorological watch offices, or arrange for another Contracting State to do so..

3.5.2 A meteorological watch office shall:

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f) supply information received on pre-eruption volcanic activity, a volcanic eruption and volcanic ash cloud for which a SIGMET has not already been issued to its associated flight information centre or area control centre ACC/FIC as agreed between the meteorological and ATS authorities concerned, and to its associated VAAC as determined by regional air navigation agreement; and

G) supply information received concerning the accidental release of radioactive materials into the atmosphere, in the area for which it maintains watch or adjacent areas, to its associated ACC/FIC, as agreed between the meteorological and ATS authorities concerned, and to aeronautical information service units, as agreed between the meteorological and appropriate civil aviation authorities concerned. The information shall comprise location, date and time of the accident, and forecast trajectories of the radioactive materials.

Note. — The information is provided, at the request of the delegated authority in a State, by WMO regional specialized meteorological centres for the provision of transport model products for radiological environmental emergency response.

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6.6 Area forecasts for low-level flights

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6.6.3 Area forecasts for low-level flights exchanged between meteorological offices in support of the issuance of AIRMET information shall be prepared in a format agreed upon between the meteorological authorities concerned. When abbreviated plain language is used, the forecast shall be prepared as a GAMET area forecast, employing approved ICAO abbreviations and numerical values. The area forecasts shall be issued to cover the layer between the ground and flight level 100 (or up to flight level 150 in mountainous areas, or higher, where necessary) and shall contain information on en-route weather phenomena hazardous to low-level flights, in support of the issuance of AIRMET information, and additional information required by low-level flights. When prepared in GAMET format, they shall contain two sections: Section I related to information on en-route weather phenomena hazardous to low-level flights, prepared in support of the issuance of AIRMET information and Section II related to additional information required by low-level flights. The area forecasts shall contain the following information as necessary and, when prepared in GAMET format, in the order indicated. Additional elements in Section II shall be included in accordance with regional air navigation agreement:

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CHAPTER 9. SERVICE FOR OPERATORS AND FLIGHT CREW MEMBERS

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9.6 Flight documentation — significant weather charts

9.6.1 Where information on significant en-route weather phenomena is supplied in chart form to flight crew members before departure, the charts shall be significant weather charts valid for a specified fixed time. Such charts shall show, as appropriate to the flight:

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n) information on the location of an accidental release of radioactive materials into the atmosphere of significance to aircraft operations, comprising: the radioactivity symbol at the site of the accident and, at the side of the chart, the radioactivity symbol, latitude/longitude of the site of the accident, date and time of the accident and a reminder to users to check NOTAM for the area concerned.

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**CHAPTER 10. INFORMATION FOR AIR TRAFFIC SERVICES,
SEARCH AND RESCUE SERVICES AND
AERONAUTICAL INFORMATION SERVICES**

**10.1 Information for
air traffic services units**

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10.1.7 The following meteorological information shall be supplied, as necessary, to a flight information centre or an area control centre by its associated meteorological watch office:

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e) information received concerning the accidental release of radioactive materials into the atmosphere, as agreed between the meteorological and ATS authorities concerned.

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**10.3 Information for
aeronautical information services units**

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10.3.2 The following information shall be supplied, as necessary, to an aeronautical information services unit:

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b) information necessary for the preparation of NOTAM or ASHTAM including, in particular, information on:

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2) the occurrence of volcanic activity.

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3) accidental release of radioactive materials into the atmosphere, as agreed between the meteorological and appropriate civil aviation authorities concerned.

Note.— The specific information required is provided in 3.5.2 g).

ATTACHMENT A. GUIDANCE ON AREA FORECASTS IN ABBREVIATED PLAIN LANGUAGE

(See 3.2.13, 3.2.14, 3.3.1 and 3.3.9 of this Annex)

PART 1 — FORMAT FOR ABBREVIATED PLAIN-LANGUAGE SIGNIFICANT WEATHER FORECAST MESSAGES AND AMENDMENTS THERETO TO SERVE INTERNATIONAL CIVIL AVIATION IN OPERATIONS ABOVE FLIGHT LEVEL 250

1. Specifications

1.1 For the purpose of these instructions, «abbreviated plain language» refers to a language conveying to aeronautical personnel a directly intelligible meaning through the use of abbreviations (except signals of the Q code) approved by ICAO and numerical values of self-explanatory nature supplemented, if suitable ICAO-approved abbreviations are not available, by other words taken with their usual meaning in aviation.

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g) Radioactive materials in the atmosphere. Information on the location of an accidental release of radioactive materials into the atmosphere of significance to aircraft operations, comprising: latitude/longitude of the site of the accident, date and time of accident and a reminder to users to check NOTAM for the area concerned.

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PART 2 — FORMAT FOR ABBREVIATED PLAIN-LANGUAGE SIGNIFICANT WEATHER FORECAST MESSAGES AND AMENDMENTS THERETO TO SERVE INTERNATIONAL CIVIL AVIATION IN OPERATIONS BETWEEN FLIGHT LEVELS 100 AND 250

1. Specifications

1.1 For the purpose of these instructions, «abbreviated plain language» refers to a language conveying to aeronautical personnel a directly intelligible meaning through the use of abbreviations (except signals of the Q code) approved by ICAO and numerical values of self-explanatory nature supplemented, if suitable ICAO-approved abbreviations are not available, by other words taken with their usual meaning in aviation.

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1.4 The format should be as follows:

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h) Radioactive materials in the atmosphere. Information on the location of an accidental release of radioactive materials into the atmosphere of significance to aircraft operations, comprising: latitude/longitude of the site of the accident, date and time of accident and a reminder to users to check NOTAM for the area concerned.

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