



STUDY NOTE

**MEETING OF THE METEOROLOGY PANEL (METP)
METEOROLOGICAL INFORMATION AND SERVICE
DEVELOPMENT WORKING GROUP (WG-MISD)**

SECOND MEETING

Montreal, Canada, 11 to 13 July 2016

Agenda Item 4: Matters Relating to WG-MISD RHWAC Work Stream

**4.2: Review and Revise Job Card MEPT.007.01 Implementation of a Regional
Advisory System for Select En-Route Hazardous Meteorological Conditions**

**Review and Revise Work Plan and
Job Card METP.007.01**

(Presented by Sharon Lau)

SUMMARY

This study note review the work plan of the RHWAC work stream.

Action by the METP-WG/MISD RHWAC work stream is in paragraph 3.

1. INTRODUCTION

1.1 Long-standing deficiencies in the reporting and forecasting of en-route hazardous meteorological conditions have persisted for many years in some Regions. In addition to this the aviation industry has identified a need for a phenomenon-based system to provide advice on hazardous weather.

1.2 To address these issues the Meteorology Divisional Meeting in 2014 (MET14) formulated Recommendation 2/9 (see Appendix A). It called for a phenomenon-based regional advisory system for select en-route hazardous meteorological conditions consistent with the Global Air Navigation Plan (Doc. 9750) to be developed expeditiously.

1.3 In response the MET14 Recommendation 2/9, the Meteorology Panel (METP) developed a Job Card for “Implementation of a regional advisory system for select en-route hazardous meteorological conditions” (Job Card METP.007.01 – see Appendix B) to increase safety and efficiency by keeping aircraft operations out of areas of hazardous meteorological conditions.

1.4 The METP WG-MISD has established a RHWAC workstream to take forward the Job Card METP.007.01 and MET14 Recommendation 2/9 and the original work plan is given in Appendix C.

1.5 This study note reviews the progress of the RHWAC work stream and proposes changes to the work plan.

2. DISCUSSION

2.1 Since the last WG-MISD meeting, the RHWAC work stream has conducted two webex meetings. Minutes of meeting are made available at the METP secured website.

2.2 As discussed in SN14, the RHWAC work stream has developed an initial draft of the Concept of Operations (ConOps) for Advisory Service for Hazardous Meteorological Information in support of International Air Navigation, an initial draft of the guidance for selection of advisory centres and proposed changes to Annex 3, Part I, Core SARPs.

2.3 During the development of the Concept of Operations (ConOps) for Advisory Service for Hazardous Meteorological Information in support of International Air Navigation and on reviewing the comments, it was revealed that to future-proof the advisory system and ensure that it would meet users' expectation, it is important to obtain a better understanding of users' needs for weather information for operational decision making in the tactical, pre-tactical and strategic flight planning timeframe. To accommodate a more thorough understanding of users' needs, a Service Definition Team – MET Information was formed with IATA, IFALPA, IFATCA, CANSO, WMO, MISD rapporteur and RHWAC work stream coordinator as members.

2.4 As a more in-depth analysis based on the evolving science and technology and the users' requirements have to be conducted before finalizing the three deliverables, further revision of the draft deliverables have been put on hold pending further analysis. Moreover, to allow time for States to comment on the draft revisions to ICAO Annex 3, the original target dates were too late. Thus it is necessary to revise the target dates in the work plan.

2.5 In addition, while it is the task of the work stream to develop guidance for selection of advisory centres, the task of actual implementation the advisory centres should be that of ICAO. It was thus agreed at the second webex that the milestone "Implementation of RHWAC" be removed from the work plan and replaced with "Proposed amendment to ICAO Annex 3 becomes effective".

2.6 In the light of these development, the work plan for the RHWAC work stream has been revised and is given in the Appendix D to this paper. Major changes are highlighted in red. Subject to the deliberation of the meeting, the effective and applicability dates of the Job Card METP.007.01 would be revised accordingly.

3. ACTION BY THE METP-WG/MISD RHWAC WORK STREAM

3.1 The METP-WG/MISD RHWAC work stream is invited to:

a) note the information contained in this paper; and

b) provide any feedback on the work plan, in particular the activities and milestones of the work stream over the next months in preparation of the MET Panel meeting in October 2016.

APPENDIX A – MET14 RECOMMENDATION 2/9

Recommendation 2/9 - Implementation of a regional advisory system for select en-route hazardous meteorological conditions

That an appropriate ICAO expert group, in close coordination with WMO, be tasked to:

- a) expeditiously develop provisions supporting the implementation of a phenomenon-based regional advisory system for select en-route hazardous meteorological conditions consistent with the *Global Air Navigation Plan* (Doc 9750), in considering users' long-standing requirements, especially in those States where notable SIGMET-related deficiencies persist using, as appropriate, the strategic, governance and cost recovery assessments provided in Appendices D and E;
- b) integrate the information produced by the referred system into the future system-wide information management environment underpinning the future globally interoperable air traffic management system; and
- c) develop appropriate guidance material to support the selection criteria of regional hazardous weather advisory centres taking account of cost-effectiveness, the processes for the preparation and dissemination of the advisory information, mutual cooperation, sustainability of the existing meteorological infrastructure and use of local expertise.

Note:- Select hazardous meteorological conditions in this context included: as a minimum, thunderstorms, icing, turbulence and mountain waves, but excludes volcanic ash and tropical cyclones.

APPENDIX B - JOB CARD METP.007.01 REGARDING RHWAC

Title		Implementation of a regional advisory system for select en-route hazardous meteorological conditions	Reference:	MEPT.007.01		
Source		MET Divisional Meeting 2014 (Recommendation 2/9)				
Problem Statement		Long-standing deficiencies in the reporting and forecasting of en-route hazardous meteorological conditions have persisted for many years in some regions with an identified need for a phenomenon-based system.				
Specific Details (including impact statements)		It was recommended by the MET Divisional Meeting (Recommendation 2/9) that an appropriate ICAO expert group, in close coordination with WMO, expeditiously develop provisions supporting the implementation of a phenomenon-based regional advisory system for select en-route hazardous meteorological conditions considering users' long-standing requirements for those States where notable SIGMET-related deficiencies persist. Such requirements should be integrated into the SWIM environment with appropriate guidance to support the selection criteria of centres. Further development should take into consideration the main legacy tasks from the Meteorological Warnings Study Group (METWSG) that relate to en-route hazardous meteorological conditions.				
Expected Benefit		Increase safety and efficiency by keeping aircraft operations out of areas of hazardous meteorological conditions.				
Reference Documents		Annex 3 — <i>Meteorological Service for International Air Navigation, Global Air Navigation Plan (Doc 9750), Manual of Aeronautical Meteorological Practice (Doc 8896).</i>			Attachments	
Primary Expert Group:		METP				
WPE No.	Document affected	Description of Amendment proposal or Action	Supporting Expert Group	Expected dates:		
				Expert Group	Effective	Applicability
	Annex 3	Proposals for inclusion in Amendment 78 to Annex 3 to establish a regional advisory system to meet operational requirements in line with the GANP and to integrate the information on the provision of hazardous weather into the SWIM environment.		Sep 2016	Jul 2018	Nov 18
	Docs 8896	Update related guidance material to support the implementation of Annex 3 Amendment.		Sep 2016	Jul 2018	
	N/A	Develop criteria necessary for ICAO Regions to select advisory centres		Sep 2016		
	Regional Air Navigation Plans	Based on Annex 3 provisions, update of the plans as necessary.				
Initial Issue Date: 17 June 2015		Date approved by ANC: 17 June 2015	Session/Meeting: 199-9			

APPENDIX C – Original Work Plan of RHWAC

Activity / Milestone	Accountability	Predecessors	Target Date
Activity 2.1: Gathering of existing deficiencies through ICAO and to prepare gap analysis	RHWAC WS		Oct 2015
Activity 2.2: Make proposal on possible ways of governance of regional services taking into consideration existing practices	RHWAC WS	Interdependent on 3.3	End Jan 2016
Activity 2.3: Revise ConOps taking into account of existing draft ConOps	RHWAC WS	Interdependent on 2.2	End Jan 2016
Activity 2.4: Submission of a revised ConOps to MISD	RHWAC WS, WG-MISD	2.2, 2.3	July 2016
Milestone 2.1: Endorsement of ConOps by MET Panel	MET Panel	2.4	Sep 2016
Activity 2.5: Review existing regional guidance materials, previous proposals	RHWAC WS		May 2016
Activity 2.6: Definition of the areas of responsibilities and requirements for the centres	RHWAC WS	2.1	May 2016
Activity 2.7: Draft guidance based on the review, areas of responsibilities and requirements	RHWAC WS	2.6	May 2017
Activity 2.8: Submission of guidance to MET Panel through WG-MISD	RHWAC WS, WG-MISD	2.7	May 2017
Milestone 2.2: Guidance adopted by MET Panel	MET Panel	2.8	Sep 2017
Activity 2.9: Develop Annex 3 provisions on RHWAC	RHWAC WS	All of the above activities	End Jan 2018
Activity 2.10: Develop guidance material on RHWAC	RHWAC WS	2.9	End Jan 2018

Activity 2.11: Submit draft Annex 3 provisions and guidance material to MET Panel through WG-MISD, in coordination with WG-MRI	RHWAC WS, WG-MISD	2.10	May 2018
Milestone 2.3: Annex 3 provisions and guidance material adopted	MET Panel	2.11	Sep 2018
Activity 2.12: Develop implementation plan for establishment of RHWACs based on guidance provided by MET Panel	PIRGs	All of the above activities	TBD
Milestone 2.4: RHWACs implemented	PIRGs	2.12	TBD
Activity 2.13: Study of technical feasibility of regional/global provision of SIGMETs	RHWAC WS		Oct 2019
Activity 2.14: Study of legal and other institutional issues of centralization of SIGMET provision by regional/global centres	RHWAC WS		Oct 2019
Activity 2.15: Prepare review report based on the above studies	RHWAC WS	2.13, 2.14	End Jan 2020
Activity 2.16: Submit review report through WG-MISD to MET Panel	RHWAC WS, WG-MISD	2.15	May 2020
Milestone 2.5: Review report adopted by MET Panel	MET Panel	2.16	Sep 2020
Activity 2.17: Review options of cost recovery models based on existing practices and previous proposals	RHWAC WS		End Jan 2016
Activity 2.18: Recommend regional cost recovery mechanisms through WG-MISD to MET Panel	RHWAC WS, WG-MISD	2.17	May 2016
Activity 2.19: Chair of MET Panel to consult ICAO bodies concerned	MET Panel Chair	2.18	Sep 2016
Milestone 2.6: Regional cost recovery mechanisms adopted	ICAO, WMO	2.19	Sep 2018

Activity 2.20: Stock taking of progress of RHWAC tasks in regional provision of service	RHWAC WS	All of the above activities	
Activity 2.21: Prepare inputs through WG-MISD to MET Panel (assuming that it will be an annual review process by the MET Panel)	RHWAC WS	2.20	
Milestone 2.7: Annual inputs to MET Panel provided	RHWAC WS, WG-MISD	2.21	Annually starting in May 2016

APPENDIX D – Draft Revised Work Plan of RHWAC

Activity / Milestone	Accountability	Predecessors	Target Date	End
Activity 2.1: Gathering of existing deficiencies through ICAO to prepare gap analysis	RHWAC WS		Sep 2016	
Activity 2.2: Make proposal on possible ways of governance of regional services taking into consideration existing practices	RHWAC WS	Interdependent on 3.3	End Jan 2017	
Activity 2.2a: Alternative analysis, taking into consideration the development of science and technology	RHWAC WS	Interdependent on 2.1	Oct 2017	
Activity 2.3: Revise ConOps taking into account of existing draft ConOps	RHWAC WS	Interdependent on 2.2a	End Jan 2018	
Activity 2.4: Submission of a revised ConOps to MISD	RHWAC WS, WG-MISD	2.2, 2.3	July 2018	
Milestone 2.1: Endorsement of ConOps by MET Panel	MET Panel	2.4	Sep 2018	
Activity 2.5: Review existing regional guidance materials, previous proposals	RHWAC WS		End Jan 2018	
Activity 2.6: Definition of the areas of responsibilities and performance and functional requirements for the centres	RHWAC WS	2.1	Oct 2017	
Activity 2.7: Draft guidance based on the review, areas of responsibilities and requirements Revise guidance for selection based on the review, performance and functional requirements for the centres	RHWAC WS	2.6	End Jan 2018	
Activity 2.8: Submission of guidance to WG-MISD	RHWAC WS, WG-MISD	2.7	July 2018	
Milestone 2.2: Guidance adopted by MET Panel	MET Panel	2.8	Sep 2018	
Activity 2.9: Develop Annex 3 provisions on RHWAC	RHWAC WS	All of the above activities	End Jan 2018	

Activity 2.10: Develop guidance material on RHWAC	RHWAC WS	2.9	End Jan 2018
Activity 2.11: Submit draft Annex 3 provisions and guidance material to WG-MISD, in coordination with WG-MRI	RHWAC WS, WG-MISD	2.10	Jul 2018
Milestone 2.3: Annex 3 provisions and guidance material adopted	MET Panel	2.11	Sep 2018
Activity 2.12: Develop implementation plan for establishment of RHWACs based on guidance provided by MET Panel	PIRGs	All of the above activities	TBD
Milestone 2.4: RHWACs implemented Proposed amendment to ICAO Annex 3 becomes effective	PIRGs/ICAO	2.12	TBD
Activity 2.13: Study of technical feasibility of regional/global provision of SIGMETs	RHWAC WS	-	Oct 2019
Activity 2.14: Study of legal and other institutional issues of centralization of SIGMET provision by regional/global centres	RHWAC WS		End Jan 2017
Activity 2.15: Prepare review report based on the above studies	RHWAC WS	2.13, 2.14	End Jan 2017
Activity 2.16: Submit review report to WG-MISD to MET Panel	RHWAC WS, WG-MISD	2.15	Jul 2017
Milestone 2.5: Review report adopted by MET Panel	MET Panel	2.16	Sep 2017
Activity 2.17: Review options of cost recovery models based on existing practices and previous proposals	RHWAC WS		End Jan 2017
Activity 2.18: Recommend regional cost recovery mechanisms through WG-MISD to MET Panel	RHWAC WS, WG-MISD	2.17	Jul 2017
Activity 2.19: Chair of MET Panel to consult ICAO bodies concerned	MET Panel Chair	2.18	Sep 2017

Milestone 2.6: Regional eCost recovery mechanisms adopted by ICAO, WMO		2.19	TBD
Activity 2.20: Stock taking of progress of RHWAC tasks in regional provision of service	RHWAC WS	All of the above activities	
Activity 2.21: Prepare inputs through WG-MISD to MET Panel (assuming that it will be an annual review process by the MET Panel)	RHWAC WS	2.20	
Milestone 2.7: Annual inputs to MET Panel provided	RHWAC WS, WG-MISD	2.21	Annually starting in May 2020