



PACIFIC
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SPREP
Secretariat of the Pacific Regional
Environment Programme

“Sustainable Weather, Climate, Oceans and Water Services for a Resilient Pacific”

Fourth Meeting of the Pacific Meteorological Council

14-18 August 2017

Honiara

Solomon Islands

Agenda Item No. 12.2: Aviation Weather Service: Compliance with International Civil Aviation Organization (ICAO) requirements including Annex 3, Quality Management System (QMS): International Organization for Standardization (ISO) 9001-2015, Civil Aviation Rule (CAR) Document / Part 174), competency assessment and capacity development of Aeronautical Meteorological Observers (AMOs) and Aeronautical Meteorological Forecasters (AMFs).

Sub-Item No. 12.2.3: Compliance with the CAR Part 174

Purpose:

This discussion paper provides information on Aviation Meteorological Services (AMSs) certification under the Civil Aviation Rule (CAR) Part 174 in compliance to the national Civil Aviation Authority (CAA) regulations and in reference to CAA Advisory Circulars AC 00-3 and AC 174-1 for Aviation Meteorological Service Organizations.

Background:

According to the International Civil Aviation Organization (ICAO) quality management requirements stated in the ICAO Annex 3 to the Convention on International Civil Aviation, Meteorological Service for International Air Navigation, all National Meteorological and Hydrological Services (NMHSs) are required to implement Quality Management System (QMS) based on the International Organization for Standardization (ISO) 9001 series.

The following is an extract from the ICAO Annex 3 (effective from 10 November 2016), pertaining to quality management states the following under 2.2 - *Supply, use and quality management of meteorological information*:

2.2.2 Each Contracting State **shall** ensure that the designated meteorological authority... **establishes and implements a properly organized quality system** comprising procedures, processes and resources necessary to provide for the quality management of the meteorological information to be supplied to the users

2.2.3 **Recommendation** — The quality system established in accordance with 2.2.2 **should be in conformity with the International Organization for Standardization (ISO) 9000 series of quality assurance standards** and should be certified by an approved organization.

Note.— The International Organization for Standardization (ISO) 9000 series of quality assurance standards provide a basic framework for the development of a quality assurance programme. The details of a successful programme are to be formulated by each State and in most cases are unique to the State organization.

2.2.6 — **Demonstration of compliance of the quality system applied shall be by audit.** If nonconformity of the system is identified, action should be initiated to determine and correct the cause. All audit observations shall be evidenced-based and properly documented.

(Annex, 3 Chapter, 2 10 November 2016)

Solomon Islands and other Pacific Island Countries and Territories have adopted the New Zealand Civil Aviation Standards (NZCAAS), therefore, they are required to comply with the Civil Aviation Rule (CAR) Part 174. The national CAA also requires the NMHSs providing Meteorological Services for Aviation to comply with the CAR Part 174. The CAA Advisory Circular AC 174-1 provides information specifically to the CAR Part 174.

Certification – Aviation Meteorological Service Organisations and the CAA Advisory Circular AC 00-3 provides guidance to internal quality assurance. The CAR Part 174 clause 77 requires Quality (safety) Management based on the ISO 9000 series. As for this purpose, the NMHSs shall document on their exposition under the CAR Part 174 clause 77 the QMS based on the ISO 9001 series.

AC-174-1 Subpart B — Certification Requirements, 174.51(a) (1) Personnel Requirements — Chief Executive. The applicant is required to nominate a person to be identified as the Chief Executive or Director in the NMHS. This is the person whom the authority of the meteorological service certificate is vested. NMHSs who wish to have their organisations to be certified under the ISO 9001 series and CAR Part 174 to ensure that they appoint Quality Manager (QM) or Quality Assurance Manager (QAM), reference WMO_1100 clause 5.3, 174.51(a) (2) paragraph 5.

Annex 1 illustrates sample guidelines on the process for the CAR Part 174 Certification.

Update:

NMHSs status on CAR Part 174 certifications – Aviation Meteorological Service. Refer to Annex 2 - result of survey conducted by the Pacific Island Aviation Weather Services (PIAWS) Panel on status of implementation of QMS including arrangement for, and certification under the CAR Part 174 in Pacific Island Countries and Territories' NMHSs.

Recommendations:

The Meeting is invited to:

➤ **Note:**

1. (a) NMHSs to liaise with their national CAA counterparts as part of process to allow for compliance and recognise the QMS of NMHSs under the CAR Part 174.
 - (b) NMHSs to take note of the CAA Matrix on 174.77 in reference to QMS and safety Management CAR 100.3, this to be clarified on the documentation and explained to CAA.
2. Director of NMHSs also to have a title Chief Executive Officer (CEO) or be designated under the CAR Part 174.
3. Director of NMHSs to appoint a Quality Manager or Quality Assurance Manager who will have responsibility and report on matters related to QMS including the CAR Part 174 and Aviation Meteorological Services.

- **Request:**
4. SPREP to organize for technical experts to work with other Pacific Island Countries and Territories' NMHSs and helping them on the CAR Part 174 certification;
 5. National CAA to recruit inspector/auditor to audit NMHSs on the CAR Part 174.

Attachments:

Annex 1: Sample guidelines on the process for the CAR Part 174 Certification.

Annex 2: Status of implementation of QMS including arrangement for, and certification under the CAR Part 174.

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ANNEX 1

SAMPLE GUIDELINES ON CIVIL AVIATION RULE (CAR) PART 174 CERTIFICATION.

Role	Name	Signature (upon agreement)	Date
PIAWS Chairman	Mr 'Ofa Fa'anunu		02 Jul 2017
PIAWS Secretariat	Mr. Henry Taiki		02 Jul 2017
PIAWS Member (SIMS)	Mr. Solomon Sammy		02 Jul 2017

Document Information

	Information
QMS Doc file Name:	Annex 01: Sample guidelines on CAR Part 174 Certification for AMS.
Document Reference ID:	Annex 01.
Document Owner:	QMS Manager (SIMS).
Document Status:	ACTIVE
Version:	01.
Effective date of version:	02 nd Jul 2017 Last saved date: 03 rd July, 2017.
No. of pages:	05

Document History

Version	Issue Date	Changes
1.0	13 th June, 2017	Drafted created by QMS (SIMS).
2.0	02 nd July, 2017	Approved version effective.

Responsible (Document control) : *Live document control by the document owner, amendment and revision can only be made by the document owner.*

Objective : *This sample guideline focuses mainly on the CAR Part 174 certification.*

Scope : *This sample guideline applies to the CAR Part 174 for Aviation Meteorological Services.*

Document Reference : *ICAO Annex 3 – Meteorological Service for International Air Navigation, Met Act 1985, Civil Aviation Act 2008, CAR Part 174 consolidations, AC 174-1, AC 00-3, CAR Part 100 consolidation and AC 100-1.*

EXECUTIVE SUMMARY:

Each State/Pacific Island Countries has its own Meteorology Act and Civil Aviation Act. For example the Solomon Islands Meteorology Act 1985 and the Civil Aviation Act 2008. Solomon Islands Civil Aviation Act PART IV states the RULES, the Honorable Minister of the Crown in the Government may make rules (in the Act called “ordinary rules”) for all or any of the following purpose: (a) the implementation of the obligation of Solomon Islands under the Chicago Convention – Annex 3 applies to Meteorology (b) the provision of Aviation Meteorological Services, Search and Rescue Services, and Civil Aviation Security Programs and Services:

- The Civil Aviation Authority in Solomon Islands (CAASI) adopted the New Zealand Civil Aviation Standard (NZCAS).
- The NZCAS requires Aviation Services provider to meet the Civil Aviation Rules part which is applicable for their services, for instance, Meteorology Services to meet the requirements under the Civil Aviation Rules (CAR) Part 174; and CAR Part 174.5 and 174.9 states the Meteorology Service Certification requirements.
- Other States/Pacific Island countries who adopted the NZCAS are also required to be certified under CAR Part 174.

The Solomon Islands Meteorological Service (SIMS) as a service provider for Aviation Meteorological Services has been granted certification under the CAR Part 174 for Solomon Islands (Honiara) Flight Information Region (FIR) after the followings documents has been submitted and assessed by the CAASI: (a) Exposition Manual for Aviation Meteorological Services (AMS); (b) certification application letter – Form CAASI 2417/01; and (c) exposition matrix – form CAA 2417/02. CAASI assigned an external (third party) auditor who audited our exposition manual based on the CAR Part 174.

SIMS also signed on the 12th August, 2016, the Memorandum of Understanding (MoU) between the Ministry of Communication and Aviation and the Ministry of Environment, Climate Change, Disaster Management and Meteorology. SIMS and the Civil Aviation Air Traffic Service (CAATS) signed the a Letter of Agreement (LoA).

AC-174-1 Subpart B — Certification Requirements, 174.51(a)(1) Personnel Requirements — Chief Executive. The applicant is required to nominate a person to be identified as the Chief Executive or a Director in the NMS. This is the person in whom the authority of the meteorological service certificate is vested. NMSs who wish to have their organisation to be certified under the International Standards Organisations (ISO) 9001 and CAR Part 174 to ensure that they appoint Quality Manager or Quality Assurance Manager (QAM), reference WMO_1100 clause 5.3, 174.51(a)(2) par-5.

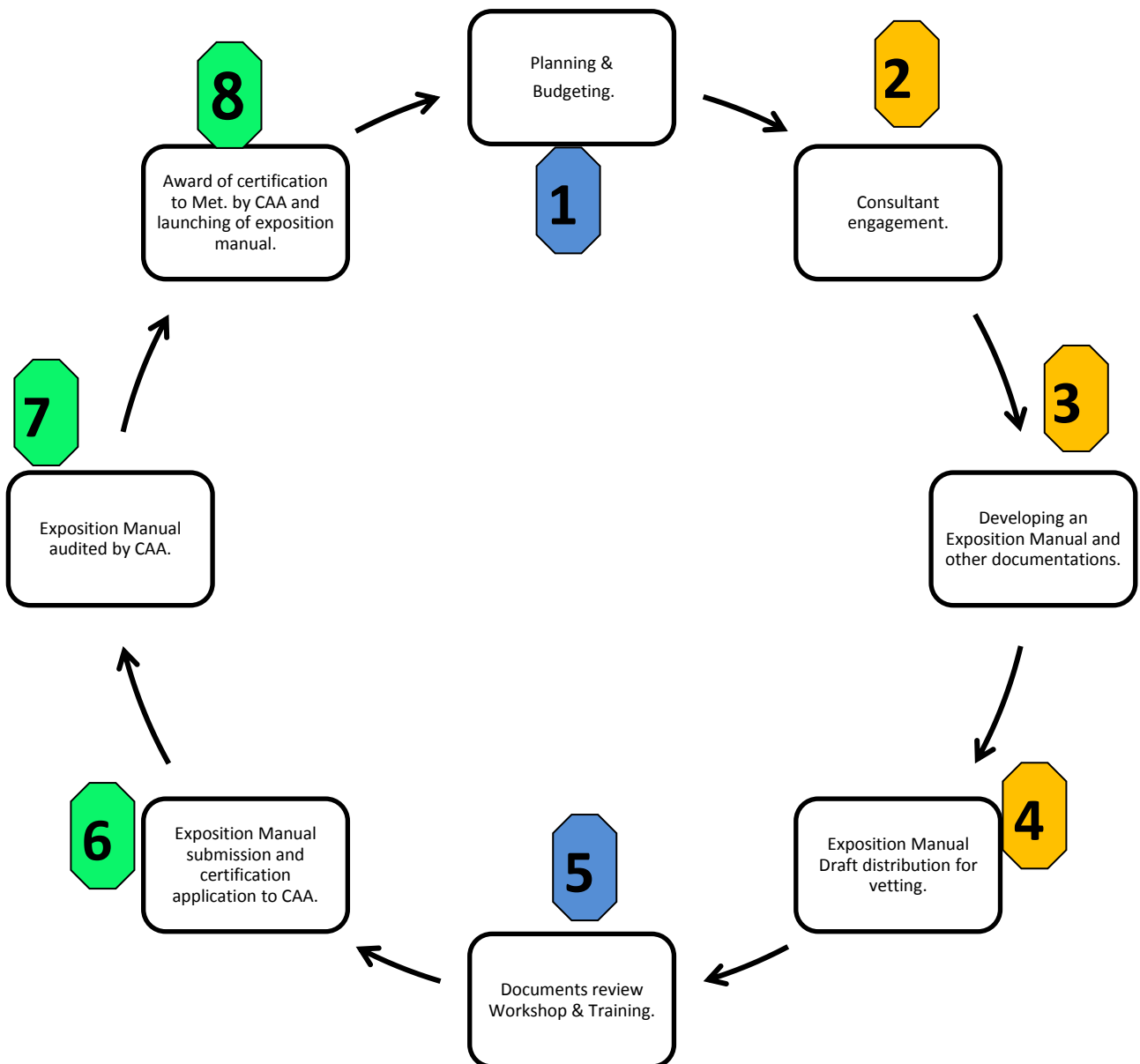
ABBREVIATIONS:

AC	- Advisory Circular.
AMS	- Aviation Meteorology Services
ATS	- Air Traffic Service
CAA	- Civil Aviation Authority.
CAASI	- Civil Aviation Authority of Solomon Islands
CAR	- Civil Aviation Rule
FIR	- Flight information Region
ICAO	- International Civil Aviation Organisation
ISO	- International Standardisation Organisation
LOA	- Letter of Agreement

ABBREVIATIONS:

- MCA** - Ministry of Communication and Aviation
- MECDM** - Ministry of Environment, Climate Change, Disaster Management and Meteorology
- MET** - Meteorology
- MOU** - Memorandum of Understanding
- NMHS** - National Meteorology and Hydrology Services
- PIAWS** - Pacific Islands Aviation Weather Services.
- PS** - Permanent Secretary
- QAM** - Quality Assurance Manager (also refers to Quality Assurance Management).
- QMS** - Quality Management System
- SIMS** - Solomon Islands Meteorological services
- WMO** - World Meteorology Organisation

SAMPLE CAR PART 174 CERTIFICATION PROCESS.



Solomon Sammy
QAM/QMS (SIMS)

SIMS QMS Process Map dated: 08/08/2016.

DEVELOPMENT STAGES OF CAR PART 174 CERTIFICATION FOR AMS.

This is the brief outline for stages on Aviation Meteorology Services certification under CAR 174:

1. Stage 1: Planning and Budgeting:

The first stage is the planning and budgeting; the Met. Management to put into the annual work plan and allocate a budget for the 174 certification task which will cover the costs for a consultant, documentations, workshop/training, launching of the exposition manual and the certificate handover ceremony.

2. Stage 2: Consultant engagement:

Since a QMS Manager got very tied work schedules, therefore, to engage a consultant is the best option. Met. Management to identify, appoint, engage and sign an agreement with the consultant. The consultant to work with the QMS Manager and the Senior officers to develop the exposition manual for Aviation Meteorology Service.

3. Stage 3: Developing an Exposition Manual:

The third stage is to develop the exposition manual. All Senior Officers to contribute and work closely with the consultant so that the exposition manual development to be completed in time.

4. Stage 4: Exposition Manual draft distribution for vetting:

At this stage the first draft of the exposition manual is available and to be distributed to legal expert and Senior Met. Officers for review and vetting of the document.

5. Stage 5: Document review Workshop & Training:

The 5th stage is the final review for the final draft of the document, the consultant will present the exposition document to the Senior Met. Officers as part of the training. Inputs from the review workshop will be taken into account as the edits for the exposition document.

6. Stage 6: Exposition Manual submission and certification application to CAA.

The 6th stage is whereby the certification application is submitted to the CAA plus the exposition manual, the nominated Senior Persons names (Form CAA 24175/01) and the Exposition Matrix (Form CAA 24174/02).

7. Stage 7: Exposition Manual audited by CAA.

At this stage the CAA will engage an external (third party) Auditor to audit the exposition manual based on Rule 174 and its compliance.

8. Stage 8: Award of certification to Met. by CAA and launching of exposition manual.

This is the final stage whereby the CAA will issue the certification to Meteorology Service for the province of Meteorology Services for aviation according to CAR Part 174.5. The Meteorology Service may arrange an official ceremony for this certification handover and at the same time to launch the new exposition manual for Aviation Meteorology Service.

CERTIFICATION REQUIREMENTS UNDER RULE 174 BY CAA.

The Civil Aviation Rule clause and Advisory Circulars that required Meteorology Services to be certified as a service provider for Aviation Meteorology Services.

1. Pacific Island countries who adopted the New Zealand Civil Aviation Standard are required as a service provider to meet the Civil aviation Rule parts which is applicable to their service, for instance Meteorology Service to meet the requirements under Rule Part 174.
2. Civil Aviation Rule Part 174.5 & 174.9 stated the Meteorology Service certification requirements.
3. Advisory Circular AC 174-1 Aviation Meteorology Service organisations.
4. Advisory Circular AC 00-3 Internal Quality Assurance.
5. CAR Part 174.77, CAR Part 100.3 & AC 100-1 requires the implementation Of Safety Management. NMHSs' QMS must also be integrated with the Safety Management System (SMS).

DURATION OF CERTIFICATION CAR 174.13.

A Meteorology Service certificate may be granted or renewed for a period of up to 5 years (it depends on the National CAA).

RENEWAL OF CERTIFICATE CAR 174.15.

1. An application for the renewal of a Meteorology Service certificate shall be made on form CAA 24174/01.
2. The application shall be submitted to the Director before the application renewal date specified on the certificate or, if no such date is specified, not less than 30 days before the certificate expires.

ACTION TAKEN TO MAINTAIN THE CERTIFICATION.

The action to main the certification lies in the hands of the Top Management, the Section Managers and the Staff, a continually improvements, measuring and monitoring the service provisions and the operations is vitally importance. I wish to state the following important areas:

1. External & internal Audits; action taken to close items raised from the audits.
2. Staff competency assessments and trainings.
3. Calibration and comparison checks on all instruments and equipments.
4. Incidence investigating, faults reporting system and corrective action.
5. Management review meetings.
6. Provision of resources to support the service (Man power, logistics, tools, equipment etc.).
7. Maintain the communication and observation networks to the required QMS targets.

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ANNEX 2

Status on implementing QMS including arrangement for, and certification under the CAR Part 174 in the Pacific Island Countries and Territories' NMHSs

Pacific Countries and Territories	Islands and	Status of implementing QMS
Australia		Certification to ISO 9001:2015 achieved.
Cook Islands		QMS documentation 50% completed. Regular internal audits not yet established. Regular external audits not yet established
FSM		QMS documentation 30% completed. Regular internal audits not yet established.
Fiji		Certified in ISO 9001:2008 standard.
Kiribati		QMS documentation is 90% completed. Part 174 documentation is 100% completed but await CAA review on the expositions. Regular internal audit not yet established. No external audit established yet.
Niue		QMS documentation 80% completed. Regular internal audit not yet established. No external audit establishes.
PNG		QMS documentation has been completed. SMS documentation not complete. Regular internal audit established but not effective.
Samoa		QMS documentation 80% completed. Regular internal audits not yet established. Regular external Audits not yet established.
Solomon islands		QMS documentation 100% completed and compliance to ISO 9001:2008. Work on documentation and transition to ISO 9001:2015 30% completed. QMS internal audits according to schedules. No regular third party external Audit established.
Tonga		QMS documentation 80% completed. Regular internal audits not yet established. Regular external audits not yet established.

Tuvalu	<p>Internal or external audits not yet established.</p> <p>QMS documentation not yet established.</p>
Vanuatu	<p>QMS documentation 98% completed.</p> <p>Regular internal audits established.</p> <p>Regular external audits not yet established.</p>

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