CIVIL AVIATION PUBLICATION

CAP 02

AIRWORTHINESS AND MAINTENANCE

CONTENTS

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LIST OF ABBREVIATIONS

The following abbreviations are used in this CAP:

AD	Airworthiness Directive
ADRS	Aircraft Data Recording System
AIR	Airborne Image Recorder
AIRS	Airborne Image Recording System
AMOC	Alternative Means of Compliance
AMO	Approved Maintenance Organisation
ANAC	Agência Nacional de Aviação Civil of Brazil
ARC	Airworthiness Review Certificate
ARD	Airworthiness Review Declaration
AWOPS	All Weather Operations
CAMO	Continued Airworthiness Management Organisation
CAP	Civil Aviation Publication
C of A	Certificate of Airworthiness
CARS	Cockpit Audio Recording System
CMR	Certification Maintenance Requirement
CRS	Certificate of Release to Service
CVR	Cockpit Voice Recorder
DFL	Data Frame Layout
DLR	Data Link Recorder
DLRS	Data Link Recording System
EASA	European Aviation Safety Agency
EFB	Electronic Flight Bag
ELT	Emergency Locator Transmitter
EVS	Enhanced Vision Systems
EWIS	Electrical Wiring Interconnect System
FAA	Federal Aviation Administration
FAR	Federal Aviation Regulation
FDR	Flight Data Recorder
GCAA	General Civil Aviation Authority (UAE)
HUD	Head-up Display
LOV	Limit of Validity
MEL	Minimum Equipment List
MMEL	Master Minimum Equipment List
MPD	Maintenance Planning Document
NAA	National Aviation Authority
OEM	Original Equipment Manufacturer
PMA	Parts Manufacturing Approval
RCC	Rescue Coordination Centre
RNP	Required Navigation Performance
RPAS	Remotely Piloted Aircraft System
RVSM	Reduced Vertical Separation Minima
the CAA	San Marino Civil Aviation Authority
SB	Service Bulletin
STC	Supplemental Type Certificate
TAC	Type Acceptance Certificate

TCDS	Type Certificate Data Sheet
TC	Type Certificate
UAE	United Arab Emirates

1. INTRODUCTION

This Civil Aviation Publication (CAP) provides information and the CAA policies regarding the airworthiness and maintenance of aircraft operated under CAR OPS 2A/H – General Aviation Operations, CAR OPS 4 for Remotely Piloted Aircraft Systems (RPAS) and commercially operated aircraft under CAR OPS 1/3 on the Republic of San Marino aircraft register.

2. TYPE CERTIFICATES AND TYPE ACCEPTANCE CERTIFICATE (TAC)

2.1 General

Before an aircraft can be issued with a certificate of airworthiness in San Marino, the CAA must have previously accepted the Type Certificate (TC) and the specific Type Certificate Data Sheet (TCDS) for the aircraft type and model. In order to be able to accept the TC the CAA must have contact with the TC holder, have reviewed the TC and the relevant TCDS and be included in the TC holder's distribution list for receipt of all future airworthiness data published by the TC holder.

Before a prospective owner selects an aircraft for presentation to the CAA for the initial issue of a certificate of airworthiness it is strongly recommended that the owner contacts the CAA with details of the proposed aircraft. The CAA will then advise the owner whether or not the aircraft type has previously been accepted for certification in San Marino. If the aircraft type has previously been certificated in San Marino, the process of application for the initial C of A may proceed. However, if the aircraft type has not previously been certificated in San Marino, the owner must contact the TC holder and ask him to make application, usually by letter, to the CAA requesting recognition and acceptance of the TC and the relevant TCDS.

The CAA will accept, provided the appropriate criteria is met, Type Certificates and associated Type TCDS for aircraft certificated by the FAA of the USA, EASA, UK CAA, Transport Canada and ANAC. In practice this means that the CAA will accept any aircraft from any of the above NAAs without the aircraft having to undergo any modifications to revert it to the certification standard of the State of Design. So if an aircraft such as a Falcon 900 has been operating in the USA and is certificated to the FAA TCDS, it may be placed on the San Marino register and be issued with a certificate of airworthiness without having to be modified to meet the EASA certification standards and meet the EASA TCDS although it is designed and manufactured in an EASA State.

Similarly, if a Gulfstream GV has been registered and certificated in an EASA State and meets all the EASA certification requirements, it may be certificated in San Marino without having any modifications embodied which could have been required if it was to be registered and certificated by the FAA.

The EASA/FAA/TCCA/ANAC/UK CAA Bilateral Agreements can be accessed via the weblinks provided on the SMAR Website page - Type Certificate. It is incumbent on the applicant to demonstrate how a design change has been accepted via one of the above referenced bilateral agreements. It is not the responsibility of the CAA to do this.

The CAA will issue a Type Acceptance Certificate (TAC) for every aircraft type on the San Marino register to enable the associated certificates of airworthiness to be issued in a particular aircraft's case.

The foregoing acceptance of various TCDS and the issue of the related TACs for the same aircraft type will mean that in some exceptional cases there may be up to four TACs associated with the same aircraft type. In practice there will only be two or possibly three TACs for the most common aircraft type, i.e. those manufactured in Europe and those manufactured in North America.

One of the many advantages of this acceptance by the CAA of differing TCDS for the same aircraft types is the applicability of Airworthiness Directives (AD).

There will be no need to apply any additional ADs to an aircraft coming from the FAA register for instance; it will simply be a case of continuing to apply FAA ADs relevant to that aircraft type for the whole time the aircraft is registered in SM. Similarly, it will not be necessary to have any Supplemental Type Certificates (STC) reassessed for compliance with a different design standard, as the CAA will accept all STCs already embodied on the aircraft at initial certification. However it does mean that any STCs embodied after the aircraft is certificated in SM must conform to the certification standard of the aircraft at initial issue of the certificate of airworthiness by the CAA.

2.2 Acceptance of ANAC TC

The CAA will also accept an aircraft that has been Type Certificated by Agência Nacional de Aviação Civil (ANAC) of Brazil provided the aircraft type has previously had a Type Certificate issued by EASA, FAA or Transport Canada (TCCA).

Some aircraft Type Certificated by ANAC, as opposed to EASA, FAA or TCCA will have been registered in parts of the world where the continuing airworthiness regulatory requirements may not be internationally recognised.

This situation could lead to an aircraft having continuing airworthiness records that are therefore not traceable to a standard such as EASA, FAA or TCCA would require.

This situation would not be acceptable to CAA.

It is likely that some of these aircraft will enter the second hand market. For one of these aircraft to be accepted by CAA on to the San Marino Register, and subsequently issued with a Certificate of Airworthiness the Aircraft Maintenance History, including the Modification and Repair Certification Standard, will need to be properly investigated, and the certification basis for each design change established to meet CAR 21 Subpart C by the prospective applicant prior to any application being made to CAA.

This will mean that prior to the CAA being in a position to issue a Certificate of Airworthiness all Design Changes (Modifications and Repairs), that have been incorporated on to one of these specific ANAC Type Certificated aircraft, the applicant will need to demonstrate to the satisfaction of the CAA compliance with CAR 21.73 or 21.75 as appropriate.

For example an ANAC Type Certificated aircraft that was registered in China and had a major modification or repair embodied during that time, it would have to be proven that this design change was ultimately certified, approved, validated or accepted by either EASA, FAA or Transport Canada through an internationally recognised bilateral agreement (and associated TIP) between that state and Brazil.

2.3 Acceptance of a UK TC

With effect from 1st January 2021 the United Kingdom is no longer part of the European Union (EU) and therefore do not comply with EU Regulations. The UK have published legislation that subsumes the applicable EU regulations (that were current as of 1st January 2021) into UK Law. The overarching UK Legislation is: UK (EU retained) law pursuant to the European Union (Withdrawal) Act 2018.

Aircraft that have been Type Certificated in accordance with this UK legislation are acceptable to San Marino CAA.

3. ISSUANCE OF THE CERTIFICATE OF AIRWORTHINESS

3.1 Application

Application for the initial issue of a certificate of airworthiness for an aircraft registered in San Marino shall be made using Form SM 02 "Application for the Issue of a Certificate of Airworthiness" and shall include the appropriate fee and be accompanied by supporting documentation relating to the aircraft and its records as may be required to enable the CAA to determine whether the aircraft may qualify for the issue of a certificate of airworthiness.

Note: The acceptance by the CAA of the application form for the issue of a certificate of airworthiness does not guarantee that the aircraft will be issued with such a certificate of airworthiness and should an application fail for any reason the appropriate fee for the investigation will be retained by the CAA.

The application must be signed by the owner, the owner's representative of the aircraft or the operator's representative.

The C of A will normally be valid for a period of 12 months from the date of issue unless satisfactory continuing airworthiness arrangements are made by a fixed, long term contract with an appropriate organisation acceptable to the CAA. In such cases the C of A may be valid for a period of 24 months, respectively 36 months if the contract is with a CAMO organisation approved by the CAA according CAR CAMO.

Reference should be made to CAR AIR.57, CAR CAMO and paragraph 20 of this CAP 02 for the acceptance of satisfactory maintenance arrangements.

Note: For aircraft operated in accordance with CAR OPS 1/3, Operators may apply for an approval to perform Airworthiness Reviews to extend the validity of Certificates of Airworthiness from 12 months to 24 months. Refer to CAR OPS 1.890 and Appendix 1 to OPS 1.890 or CAR OPS 3.890 and Appendix 1 to OPS 3.890 (as applicable).

3.2 Supporting Documentation

Reference must be made to CAP 08, Appendix 1, to identify what supporting documents are required for the application.

3.2.1 New Aircraft Type on the SM Register

If the aircraft is a new aircraft type to the San Marino register of aircraft, the applicant should contact the Airworthiness Office of the Type Certificate holder (e.g. Dassault, Bombardier, Cessna, Boeing etc.) and request that he submit an application to the CAA requesting their acceptance of the aircraft type (Refer to Section 2). Once this has been obtained and a Type Acceptance Certificate issued by the CAA, the process to issue a certificate of airworthiness may proceed.

3.2.2 New Aircraft

If the aircraft is new from the manufacturer and has not been registered, a statement from the manufacturer will be required, confirming that the aircraft has never been registered and confirming the design standard of the aircraft and its compliance with the Type Certificate and the appropriate Type Certificate Data Sheet. For new aircraft coming from a manufacturer in the EASA region, EASA Form 52 will be acceptable.

The manufacturer will usually supply all the supporting data required for the certification of the aircraft, this data package will also include all the relevant aircraft manuals, equipment lists, Flight Data Recorder readouts, results of acceptance flight tests, an electrical load analysis and weight and balance data etc. Reference must be made to CAP 08, Appendix 1, to identify what supporting documents are required for the application.

3.2.3 Used Aircraft

If the aircraft is not new but registered elsewhere than in San Marino, a Certificate of Airworthiness for Export issued by the last State of Registry will normally be required. Any exceptions to this are individually agreed on a case by case basis, Refer to CAR 21.175 (6).

For aircraft imported from an EASA Member State or United Kingdom, a Certificate of Airworthiness (C of A) along with a current Airworthiness Review Certificate (ARC) is normally acceptable in lieu of an Export C of A from the last State of Registry.

Note: Some National Aviation Authorities do not issue certificates of airworthiness for export. In these cases a letter from the Regulatory Authority stating that had this aircraft been presented for the renewal of its certificate of airworthiness, the certificate would have been renewed may be acceptable.

For aircraft coming from an EASA Member State and which do not comply with the EASA TCDS as the aircraft was grandfathered under Commission Regulation (EC) No. 1702/2003. These aircraft will have to demonstrate that the aircraft meets either the FAA or Transport Canada TCDS.

The application for the initial issue of a certificate of airworthiness should be accompanied by applications for, Navigation Approvals for operations in Designated Airspace, the Maintenance Control Manual and the Maintenance Programme.

A Permission to use the Master Minimum Equipment List will be valid for a maximum of 30 days to allow time for the owner/operator to develop and have approved the MEL. The remaining certificates except the C of A, associated with the applications above will normally remain valid for the length of time the aircraft remains on the San Marino register.

When the application for the certificate of airworthiness has been reviewed and accepted by the CAA, an inspection of the aircraft and its records by a representative of the CAA will be scheduled. The inspector will review all the aircraft records, the Maintenance Programme, the Aircraft Flight Manual, the Technical Log and any other supporting documentation such as the export certificate from the last state of registry as described in CAP 08. If all is in order and the physical inspection of the aircraft is satisfactory, the inspector will make a recommendation to the CAA that the certificate of airworthiness may be issued.

With regard to aircraft that have been Type Accepted via the ANAC TC all existing modifications and repairs will need to be investigated and their Type Certification basis established to demonstrate compliance with CAR 21 Subpart C standards. This could mean that an appropriately approved Design Organisation (EASA/FAA/TCCA) might need to be engaged to provide a Data Package establishing that each modification and/or repair meets the ANAC TC applicable certification standards.

It would not be necessary for this Data Package to be specifically approved as this will be approved in accordance with CAR 21.79 at C of A issue and the Data Package will form part of the Aircraft Continuing Airworthiness Records.

If deficiencies are found during the inspection, the inspector will raise Findings for the Airworthiness Coordinator or Postholder for Continuing Airworthiness to correct. When Findings have been corrected evidence of the corrective actions must be supplied to the Inspector (e.g. copies of log book entries, copies of documents, photographs etc.) for his review and agreement that the Finding can be closed. The review is done as quickly as possible but the applicant should carefully co-ordinate their intended date and time of the first flight to allow sufficient time for the review and closure by the CAA. When the Inspector is satisfied that all the Findings have been corrected he makes a recommendation to the CAA that the C of A be issued.

The certificates will then be prepared and sent to the owner/operator's Airworthiness Coordinator or Postholder for Continuing Airworthiness together with any other certificates or approvals. In the first instance, scanned copies of all the documents will be sent electronically to the applicant together with a covering letter advising that these scanned copies are only a temporary measure and have limited validity. The originals must be placed on board the aircraft as soon as they are received by the owner/operator.

4. ACCEPTANCE OF A CERTIFICATE OF AIRWORTHINESS FOR EXPORT

A certificate of airworthiness for export is required by CAR 21.175 as part of the application for a San Marino certificate of airworthiness.

In order for an aircraft to receive a certificate of airworthiness the aircraft has to meet either the FAA, Transport Canada, EASA, UK CAA or ANAC Type Certificate as defined on the applicable Type Certificate Data Sheet together with any conditions that apply to the applicable Type Acceptance basis. If the certificate of airworthiness for export from the exporting country does not clearly state that the aircraft meets one of the foregoing the certificate cannot automatically be accepted by the CAA. The applicant for the certificate of airworthiness should therefore, at an early stage in applying for a San Marino certificate of airworthiness, obtain confirmation that the certificate of airworthiness for export will clearly state that the aircraft meets either the FAA, Transport Canada, EASA, UK CAA or ANAC Type Certificate.

If the exporting State does not, or will not, make this statement on their certificate, the applicant should contact the CAA to determine if an alternative method of establishing what Type Certification standards the aircraft meets can be found.

The following may be considered acceptable in lieu of an Export C of A;

(a) A valid C of A and current Airworthiness Review Certificate from an EASA Member State or United Kingdom;

(b) A current domestic C of A issued by the existing Regulator (except EASA and UK) which is stating the TCDS;

(c) A current domestic C of A issued by the existing Regulator (except EASA, FAA, TCCA and UK) which is either stating the TCDS or accompanied by a letter of the Regulator confirming the TC; or

(d) A current domestic C of A issued by FAA or TCCA.

A certificate of airworthiness for export is considered valid by the CAA if it is no more than 12 months preceding receipt of the C of A application by the CAA.

5. RENEWAL OF THE CERTIFICATE OF AIRWORTHINESS

[The application for renewal of the Certificate of Airworthiness may be submitted at the applicant's convenience. If the C of A inspection is conducted no more than 60 days before the current certificate expires, its existing validity or periodicity will remain unchanged.

The application is made using Form SM 28 for the renewal of a C of A for 12 or 24 months or Form SM 28A for the renewal of a C of A for 36 months.] Application for the Renewal of a Certificate of Airworthiness, and shall include the appropriate fee.

The CAA will review the form and any supporting documentation and if it is acceptable will arrange for the aircraft and its records to be inspected by a representative of the CAA. If this inspection is satisfactory a recommendation will be made to the CAA to renew the certificate. If deficiencies are found during the inspection, the inspector will raise Findings for the Airworthiness Coordinator or Postholder for Continuing Airworthiness to correct before a recommendation can be made.

6. AIRWORTHINESS REVIEW DECLARATION

An Airworthiness Review Declaration (ARD) is required to be issued for aircraft operated under CAR OPS 2A/H and has a C of A valid for 24 months or 36 months.

The ARD shall be issued twelve months after the initial issue of the C of A and renewed at twelve-monthly intervals until the next renewal of the C of A. It is not required at the time the certificate of airworthiness is either issued or renewed by the CAA. An ARD shall be issued by the appointed owner/operator's Airworthiness Coordinator or Postholder for Continuing Airworthiness who is responsible for the continued airworthiness management of the aircraft. The owner/operator of the aircraft must make available to the person making the declaration all the required information to raise an ARD.

The ARD must be raised in triplicate, one copy to be placed on board the aircraft stating when the last ARD was issued and when the next ARD is due, one copy in the aircraft records and one copy sent to the CAA within 48 hours of it being issued. An ARD is due twelve months after the issue or renewal of the C of A.

The regulations pertaining to an Airworthiness Review Declaration are contained in CAR GEN Subpart E.

7. AIRWORTHINESS REVIEW FOR AIRCRAFT OPERATED IN ACCORDANCE WITH CAR OPS 1/3

For aircraft normally operating in accordance with CAR OPS 1 or 3 commercial air transport, the certificate of airworthiness will have a 12-month period of validity. This can be extended to a 24-month period of validity when the operator gains an additional approval to their "Operators Maintenance System Approval" for Airworthiness Reviews. Refer to CAR OPS 1.890 and Appendix 1 to OPS 1.890 or CAR OPS 3.890 and Appendix 1 to OPS 3.890 (as applicable).

The Operator will detail procedures acceptable to the Authority for the performance of Airworthiness Reviews in the approved MME.

8. AIRCRAFT LEAVING THE SAN MARINO REGISTER

When an aircraft is leaving the San Marino register it is necessary to compete a Form SM 11 to apply for de-registration. It is likely that the new State of Registry will require a certificate of airworthiness for export from the CAA. If this is the case then the applicant should complete a Form SM 10 and send it together with the appropriate fee to the CAA.

The process for the issue of a C of A for Export is basically the same as that for the issue of a C of A. Reference should be made to CAP 08, Appendix 4, for the applicable Checklist.

Should an application for the issue of a certificate of airworthiness for export be made within two months of the initial issue or renewal of a certificate of airworthiness, the CAA may dispense with the associated records and physical inspection of the aircraft and issue the export certificate without inspection.

The export certificate of airworthiness would be dated as of the date of the issue or renewal of the certificate of airworthiness. As this date could be up to 60 days old, the applicant should check with the importing country that they will accept this.

As the C of A for Export is simply a statement of the airworthiness condition of the aircraft and confirmation of its certification standard at that time, the issue of a C of A for Export confers no privileges of flight on the aircraft. However the issue of a C of A for Export does not cancel the current C of A and the aircraft may continue to fly on its existing C of A provided all other airworthiness matters associated with the aircraft are satisfactorily addressed such as its airworthiness, serviceability and compliance with the relevant mandatory requirements, and it remains on the San Marino register.

CAR 21 Subpart L contains the regulations pertaining to the issuing of export certificates of airworthiness.

9. CERTIFICATE OF AIRWORTHINESS CEASING TO BE IN FORCE

If a certificate of airworthiness has ceased to be in force for any of the reasons quoted in CAR 21.185 and CAR 21.187, the aircraft must not fly (other than in accordance with a Permit to Fly) until the condition that caused the certificate to be invalid has been addressed, repairs, replacements, modifications or inspections have been carried out and a certificate of release to service (CRS) has been issued. The issue of the CRS will restore the validity of the certificate of airworthiness and it will be in force once again.

10. PERMITS TO FLY

The regulation for Permits to Fly is found in CAR GEN Subpart D and CAR 21 Subpart P. The CAA may issue a Permit to Fly in the following circumstances:

(a) The aircraft does not qualify for a certificate of airworthiness. These are aircraft such as homebuilt, micro-lights, ex-military aircraft and RPAS in special cases. No commercial air transport or Public Transport may be undertaken.

(b) The aircraft qualifies for a certificate of airworthiness but for some reason the certificate has ceased to be in force or cannot be issued. The CAA will issue a Permit to Fly when it is satisfied that the aircraft is fit for the intended flight having regard to the airworthiness of the aircraft and the conditions attached to the Permit to Fly. In cases where the certificates of airworthiness are not in force on account of damage or other circumstances such as outstanding maintenance or mandatory modifications or inspections, the support of the aircraft manufacturer will normally be required to determine the conditions or limitations under which the aircraft may make the intended flight and these conditions and limitations will be added to the Permit to Fly.

(c) The aircraft is a temporary registered aircraft. A temporary registered aircraft is an aircraft registered for the purpose of storage, performance of maintenance including modifications, parking, between leases or in transition to another register. In these cases, a San Marino certificate of airworthiness is not applied for or issued by the CAA.

Note: The CAA will not issue a Permit to Fly to an aircraft which in their opinion qualifies for the issue of a certificate of airworthiness.

Where a Permit to Fly stipulates as a condition that a Permit Flight Release is required, the CAA will normally authorise a Postholder for Continuing Airworthiness, licenced aircraft engineer, whose licence has been validated by the CAA, or an authorised person from a SM CAR 145 or an Aircraft Maintenance Organisation, approved by a NAA of an equivalent standard listed in CAR 145.5(a), who will sign a statement which will certify that the aircraft is considered fit for the intended flight.

If due to the remote location of the aircraft the CAA may consider an alternative qualified person to certify the Permit Flight Release. In such cases the person must be demonstrably competent and knowledgeable to make such a certification.

On rare occasions, when there are no maintenance or airworthiness considerations the CAA may authorise the aircraft Captain to certify the Permit Flight Release.

The person authorised by the CAA to certify the Permit Flight Release will be included in the conditions and limitations contained on the Permit to Fly.

Reference must be made to CAR GEN.155 for the things the certifying person must satisfy themselves regarding before certifying the Permit Flight Release. The Permit Flight Release statement will be:

> "This aircraft, registration (complete the aircraft registration), Serial Number (complete the aircraft Serial Number) is considered in a fit condition for the intended flight(s) under the conditions and restrictions as stated on the Permit to Fly".
>
> The following must be entered beside the statement of fitness for flight:
>
> Name of the Certifying person:
>
> Signature
>
> Date:

Note: The name on the Permit Flight Release must be the same as that nominated on the application FORM SM 12.

11. MAINTENANCE PROGRAMMES FOR AIRCRAFT OPERATED UNDER CAR OPS 2A/H OR CAR OPS 4

11.1 Introduction

The Maintenance Programme for a privately operated aircraft under CAR OPS 2A/H, or for a RPAS operated under CAR OPS 4, is required to be accepted by the CAA. As such, it is therefore required that the maintenance programme includes all the maintenance that will ensure the continuing airworthiness of the aircraft.

The owner/operator's Airworthiness Coordinator or Postholder for Continuing Airworthiness is required to submit a Maintenance Programme Declaration on Form SM 13. The information required to be annotated on the form is based on the policies and guidance contained in this section of CAP 02 and in CAP 12.

The Airworthiness Coordinator or CAA approved CAR CAMO organisation as applicable, should review the contents at least annually and keep this up to date.

11.2 Annual Utilisation

The owner/operator is responsible for ensuring that the Maintenance Programme is appropriate for its age, utilisation, operating environment and configuration.

The recommended maintenance by the Type Certificate Holder is normally based on an assumed utilisation and operating environment. Should the anticipated, or actual utilisation of the aircraft, vary by more than 25% from these assumptions then the Maintenance Programme should be reviewed and the tasks and frequencies adjusted as necessary.

In some cases the Type Certificate Holder has produced specific low utilisation recommendations for the adoption of owners/operators which should be used when applicable.

11.3 Maintenance Source Documents

The maintenance of the aircraft, engines, propellers and equipment are normally in accordance with the Type Certificate Holders' and the applicable Supplemental Type Certificate Holder's instructions for continuing airworthiness, their inspection standards and any additional requirements of the CAA.

The Maintenance Programme Declaration Form SM 13, requires these source documents to be declared. The revision status of the documents is not required to be recorded as it is expected that only the latest revisions will be applicable and used.

11.4 Additional Maintenance Tasks

The source documents used as the basis for the Maintenance Programme do not normally include the required maintenance for such things as seats, safety equipment, galley equipment etc. as these can be specified and sourced from different equipment manufacturers. The aircraft manufacturers recommended maintenance document (e.g. MPD) will frequently say "in accordance with the manufacturer's requirements" for these items. The information for continuing airworthiness for these items is found in the documents supplied from the Original Equipment Manufacturer (OEM). These must be reviewed and the necessary maintenance tasks extracted and recorded on Part 3 of the Maintenance Programme Declaration Form SM 13.

Modifications to the aircraft, engines, propellers and equipment performed after manufacture of the aircraft are not normally included in the source documents used as the basis for the Maintenance Programme and recorded in Part 2 of the Maintenance Programme Declaration Form SM 13.

The information for continuing airworthiness supplied with these modifications should be reviewed and their details recorded in Part 3 of the Maintenance Programme Declaration Form SM 13.

Special operating approvals such as RVSM, All Weather Operations (AWOPS), EVS/HUD, EFB etc. frequently require further maintenance and are not normally included in the source documents used as the basis for the Maintenance Programme and recorded in Part 2 of the Maintenance Programme Declaration Form SM 13. The additional maintenance tasks associated with maintaining these approvals should be reviewed and their details recorded in Part 3 of the Maintenance Programme Declaration Form SM 13.

The owner/operator may elect to perform non-mandatory maintenance tasks normally derived from Service Bulletins, Service Letters etc. These should be recorded in Part 4 of the Maintenance Programme Declaration Form SM 13.

Parts 3 and 4 of the Maintenance Declaration Form must be kept up to date by the Airworthiness Coordinator or Postholder for Continuing Airworthiness but changes to these sections do not require to be submitted to the CAA after the initial assessment and acceptance by them.

11.5 Maintenance Programme Variations

The periods prescribed by the accepted Maintenance Programme may be varied by the operator provided that such variations are within the limits specified below. Variations shall be permitted only when the periods prescribed by this Programme (or documents in support of this Programme) cannot be complied with due to circumstances which could not reasonably have been foreseen by the operator. The decision to vary any of the prescribed periods shall be made only by the operator after consultation with, and the agreement of, the Airworthiness Coordinator or Postholder for Continuing Airworthiness as applicable. Particulars of every variation so made shall be entered in the appropriate Log Book(s).

(a) Items Controlled by Flying Hours

(1) 5000 flying hours or less 10%;

(2) More than 5000 flying hours; 500 flying hours.

(b) Items Controlled by Calendar Time

(1) 1 year or less 10% or 1 month, whichever is the lesser;

(2) More than 1 year but not exceeding 3 years; 2 months;

(3) More than 3 years; 3 months.

(c) Items Controlled by Landing/Cycles

(1) 500 landings/cycles or less 10% or 25 landings/cycles, whichever is the lesser;

(2) More than 500 landings/cycles 10% or 500 landings/cycles, whichever is the lesser.

(d) Items Controlled by More Than One Limit For items controlled by more than one limit, e.g. items controlled by flying hours and calendar time or flying hours and landings/cycles, the more restrictive limit shall be applied.

Notes:

The variations permitted above do not apply to:

1. *Those components for which an ultimate (scrap) or retirement life has been prescribed (e.g. primary structure, components with limited fatigue lives, and high energy rotating parts for which containment is not provided). Details concerning all items of this nature are included in the Type Certificate holder's documents or manuals.*

2. *Those tasks included in the Maintenance Programme that have been classified as mandatory by the Type Certificate holder or the CAA.*

3. *Certification Maintenance Requirements (CMR) unless specifically approved by the manufacturer and agreed by the CAA.*

Any variations to the Maintenance Programme beyond that described above must have the approval of the CAA.

11.6 Inspection Standards

The maintenance and inspection standards applicable to the maintenance tasks must meet the requirements of the Type Certificate Holders recommended standards and practices.

11.7 Systems and Structural Integrity Programmes

Any systems or structural integrity programmes, such as Supplemental Structural Programmes Ageing Structures and Systems, Corrosion Prevention and Control, Fuel Tank Safety, Electrical Wiring Interconnection System (EWIS) published by the Type Certificate Holder must be implemented into the Maintenance Programme.

Where the Type Certificate Holder has defined a Limit of Validity (LOV) for a programme the aircraft may not continue to be operated beyond these limits.

11.8 Pre – Flight Inspections

Pre-flight Inspections are to be performed in accordance with the Type Certificate Holders instructions and do not require a maintenance release to service (Certificate of Release to Service).

12. INSPECTIONS OF FLIGHT RECORDING SYSTEMS

(Reference should be made to the CAR OPS regulation as applicable for the requirement)

This section is applicable to all aircraft that have any type of flight recording system installed

A Flight Recorder is any type of recorder installed in the aircraft for the purpose of complementing accident/incident investigation. The aircraft manufacturer often does not include the inspections of flight recorder systems or calibration of the FDR system in their recommendations for maintenance (e.g. Maintenance Planning Document) as it is not necessary for the continuing airworthiness of a particular aircraft, but for future airworthiness considerations as result of an accident investigation.

For aircraft equipped with any type of recorder:

(a) Prior to the first flight of the day, the built-in test features for the flight recorders and flight data acquisition unit (FDAU), when installed, shall be monitored by manual and/or automatic checks.

(b) FDR systems or ADRS, CVR systems or CARS, and AIR systems, shall have recording inspection intervals of 12 months. This may be extended by the CAA for a maximum of 24 months provided these systems have demonstrated a high integrity of serviceability and self-monitoring.

(c) Data link recorder (DLR) systems or data link recording system (DLRS) shall have recording inspection intervals of two years. This may be extended by the CAA to 48 months provided these systems have demonstrated high integrity of serviceability and self-monitoring.

With respect to aircraft coming onto the San Marino register.

(a) If the Flight Recorder System Inspections have not been accomplished previously within the last 12 months or 24 months, as applicable in the previous paragraph, from the date of the CAA Inspection, the owner/operator must have the inspections performed and any defects rectified within 3 months from the date of the issue of the certificate of airworthiness.

(b) Upon completion of the Flight Recorder inspections, a copy of the reports, analysis and confirmation of any defect rectification must be sent to be CAA.

Recording system inspections shall be carried out as follows:

(a) an analysis of the recorded data from the flight recorders shall ensure that the recorder operates correctly for the nominal duration of the recording;

(b) the analysis of the FDR or ADRS recording shall evaluate the quality of the recorded data to determine if the bit error rate (including those errors introduced by recorder, the acquisition unit, the source of the data on the aeroplane and by the tools used to extract the data from the recorder) is within acceptable limits and to determine the nature and distribution of the errors;

(c) a complete flight recording from the FDR or ADRS recording from a complete flight shall be examined in engineering units to evaluate the validity of all recorded parameters. Particular attention shall be given to parameters from sensors dedicated to the FDR or ADRS. Parameters taken from the aircraft's electrical bus system need not be checked if their serviceability can be detected by other aircraft systems;

(d) the readout facility shall have the necessary software to accurately convert the recorded values to engineering units and to determine the status of discrete signals;

(e) an annual examination of the recorded signal on the CVR or CARS shall be carried out by replay of the CVR or CARS recording. While installed in the aircraft, the CVR or CARS shall record test signals from each aircraft source and from relevant external sources to ensure that all required signals meet intelligibility standards;

(f) where practicable, during the examination, a sample of in-flight recordings of the CVR or CARS shall be examined for evidence that the intelligibility of the signal is acceptable; and

(g) an examination of the recorded images on the AIR or AIRS shall be carried out by replay of the AIR or AIRS recording. While installed in the aircraft, the AIR or AIRS shall record test images from each aircraft source and from relevant external sources to ensure that all required images meet recording quality standards, and

(h) CAR OPS 1.720 and CAR OPS 2A.430 both require that when an aircraft uses data link communications (CPDLC) and are required to carry a CVR, all data link communications messages shall be recorded on a crash-protected recorder capable of recording data link communications. Confirmation is to be obtained that these data link messages are being recorded satisfactorily.

Note: Refer to Appendix 2 to OPS 1.710/OPS 1.715 and Appendix 1 to OPS 2A.430 as applicable.

A flight recorder system is considered unserviceable if there is a significant period of poor quality data, unintelligible signals, or if one or more of the mandatory parameters is not recorded correctly.

A report of the recording system inspections shall be kept in the aircraft records and made available on request to the CAA for monitoring purposes.

These records shall also be made available to an authorised accident investigation officer upon request.

12.1 Calibration of the FDR system

The FDR system should be calibrated as follows:

(a) for those parameters which have sensors dedicated only to the FDR and are not checked by other means, recalibration shall be carried out at least every five years or in accordance with the recommendations of the sensor manufacturer to determine any discrepancies in the engineering conversion routines for the mandatory parameters and to ensure that parameters are being recorded within the calibration tolerances; and

(b) when the parameters of altitude and airspeed are provided by sensors that are dedicated to the FDR system, there shall be a recalibration performed as recommended by the sensor manufacturer, or at least every 24 months.

13. LOGBOOKS AND RECORDS

13.1 General

It is the responsibility of every owner/operator of an aircraft registered in San Marino that full sets of records pertaining to the airframe, engines and variable pitch propellers installed on the aircraft are maintained. An electronic recording system as alternative to hard copy Log Books and records may be acceptable to the CAA if it can be shown to be able to record the required information and has adequate protection systems to prevent unauthorised entries and alterations, and such electronic records are capable of being retrieved in a readable format.

Aircraft coming onto the San Marino Register should have all the records in the English language. Operators, whose aircraft do not have those records translated in the English language, must ensure that the records provide all the necessary information to allow the operator, contracted maintenance facilities and the CAA to clearly establish the airworthy condition of the aircraft during the time the aircraft is San Marino registered.

13.2 Airframe, engine and Variable Pitch propeller Log Books

Log Books should contain records of all scheduled and un-scheduled maintenance and inspections carried out. In addition any Airworthiness Directives embodied should also be recorded.
Of particular importance is the recording of the airframe total hours flown, the flight cycles completed and landings performed. All of these records have an important impact on the correct and timely performance of scheduled maintenance.

When an aircraft has a major maintenance activity performed it is usual for the maintenance organisation to raise a Work Pack detailing and recording all the work carried out.

This Work Pack and any other record of any activity performed on the aircraft, its engines or components must be recorded by reference in the respective log books and shall be considered to form part of the records of the aircraft.

Whenever requested to do so, the Airworthiness Coordinator or Postholder for Continuing Airworthiness must make all document and records pertaining to the aircraft available to a representative of the CAA when acting in his or her official capacity.

Reasonable notice will be given to the Airworthiness Coordinator or Postholder for Continuing Airworthiness to enable the requested records to be retrieved.

13.3 Technical Logs

For the day to day flying activities of the aircraft a Technical Log sometimes called a Daily Record or a Trip Log must be kept for most aircraft registered in San Marino.

The requirements for a Technical Log are contained in CAR AIR.79, CAR GEN.117 and CAR OPS 1 and CAR OPS 3 as applicable.

The format of the Technical Log, as prescribed in EASA Part M.306 with the CRS amended to reflect the CRS wording as defined in paragraph 13.1 below and CAR GEN is acceptable and is reviewed by the CAA inspector at the inspection for the initial issue of the C of A.

13.4 Preservation of Records

All records pertaining to the airframe, engines and variable pitch propellers of an aircraft must be retained and preserved by the owner of the aircraft for the life of the aircraft and for a period of two years after the aircraft is permanently removed from service, destroyed or scrapped. If the aircraft owner or operator changes it is the responsibility of the former owner or operator of the aircraft to ensure that all the above records are handed to the new owner/operator.

14. MAINTENANCE CERTIFICATION

14.1 Certificate of Release to Service

Before an aircraft with a certificate of airworthiness registered in San Marino may fly it must be issued with a certificate certifying that all required maintenance has been completed in accordance with the requirements of the manufacturer and the CAA.

This certification is known as a Certificate of Release to Service (CRS) and it can only be issued by persons approved directly or indirectly by the CAA.

The CAA will accept the Release to Service certification of an accepted San Marino CAR 145, EASA Part 145, Singapore SAR Part 145, UAE GCAA CAR 145, HKAR 145, TCCA CAR Part V subpart 73, UK CAA Part 145, EASA Part CAO, UK CAA Part CAO and FAA FAR Part 145 approved organisation. In such cases the maintenance organisation will quote their NAA maintenance approval reference but the certificate of release to service will be as required by CAR GEN Subpart C and entered in the Log Book or other record accepted by the CAA, such as the Technical Log Book.

14.2 Who may issue a CRS

The following persons may issue a CRS for an aircraft registered in San Marino:

(a) The holder of a maintenance engineer's licence or certificate issued by an ICAO Contracting State and rendered valid by the CAA; or

(b) A person approved by the CAA as being competent to issue such certification; or

(c) A person authorised in accordance with;

(1) EASA Part 145;

(2) UAE GCAA CAR 145;

(3) Singapore CAAS SAR Part 145;

(4) EASA Part CAO;

(5) UK CAA Part CAO;

(6) SM CAR 145;

(7) FAA FAR Part 145;

(8) Hong Kong CAD HKAR-145;

(9) Transport Canada Civil Aviation CAR Part V, Subpart 73; or

(10) UK CAA Part-145.

(d) A person authorised by the CAA in a particular case.

14.3 CRS not required

A certificate of release to service is not required in the following circumstances:

(a) A CRS is not required to be issued for the Pre-Flight Inspection as it is not considered a maintenance task.

(b) A CRS is not required if the only maintenance carried out is in accordance with the list published in CAR GEN Appendix A and is performed by a person holding a pilot's licence validated by the CAA and who is also the owner of the aircraft.

(c) [A CRS is not required where the procedures for installing and removing dual pilot controls in a helicopter are published in the Flight Manual or POH. The pilot performing the task must place in the aircraft logbook or aircraft Technical Log a record of the installation or removal, quoting the Flight Manual or POH reference, as applicable, and must sign, quote their San Marino CAA pilot licence validation number and date the entries. If the procedures are not in the Flight Manual or Pilot's Operating Handbook the task is a maintenance task and must be performed and certified in accordance with CAR GEN.101 and CAR GEN.103.]

14.4 Certifying requirements

No person shall certify an aircraft for release to service after maintenance unless that maintenance has been performed in accordance with approved maintenance data and the requirements of the CAA and, in respect of that maintenance, the aircraft is fit for release to service. The prerequisites for issuing a certificate of release to service are contained in CAR GEN.103.

15. AIRCRAFT WEIGHT SCHEDULE

[Every aircraft registered in San Marino and holding a current certificate of airworthiness must be weighed and the position of its centre of gravity determined at five year intervals, or when there is a change in the aircraft empty weight, and at such other times as the CAA may require. The requirements for mass and balance are contained in CAR GEN Subpart B.

When the aircraft is weighed its operator must prepare a weight schedule. The weight schedule consists of:

- The latest weighing report
- The latest equipment list
- The weight change record
- The basic empty weight and empty Centre of Gravity

Note: A change in operator requires a new Weight Schedule unless accepted by the CAA.

The above information must be made available to the pilot in command

The weight schedule must account for and properly document the accumulated effects of modifications and repairs on the mass and balance of the aircraft. The aircraft must be reweighed if the effect of modifications and repairs on the mass and balance is not accurately known.

These weight schedules must be preserved by the operator for at least six months after the next occasion when the aircraft is weighed.]

16. ACCESS FOR INSPECTION AND AIRWORTHINESS PURPOSES

Any person authorised by the CAA to inspect any aircraft, any part of, or material intended to be incorporated in any part of, an aircraft or its equipment or any documents relating to that aircraft, shall, for the purposes of that inspection, have access to any aerodrome or aircraft factory or approved organisation where that aircraft, part, material or document is located.

For the purpose of issuing and renewing a certificate of airworthiness, the aircraft and their associated records must be presented by the owner/operator's Airworthiness Coordinator or Postholder for Continuing Airworthiness in a condition and location where the CAA or their Designated Airworthiness Inspector can effectively conduct his/her inspection for the issue or renewal of its certificate of airworthiness.

17. EQUIPMENT TO BE INSTALLED

The equipment to be installed in an aircraft registered in San Marino will depend on the operational use of the aircraft and the required equipment for each mode of operation, Private/ Corporate, Aerial Work or Commercial Air Transport can be found in the applicable CAR OPS. Any equipment fitted to an aircraft that is essential for the airworthiness of the aircraft must be of a type approved by either, the FAA, EASA, Transport Canada, UK CAA or ANAC, depending on the basis of Type Acceptance.

In certain circumstances the CAA may require additional equipment to be carried in a particular aircraft for certain specific roles such as Search and Rescue operations or Off-Shore operations. The CAA will publish these requirements in the relevant CAR OPS.

18. INSTALLATION AND OPERATION OF RADIO AND NAVIGATION EQUIPMENT

An aircraft must be equipped with radio and navigation equipment to enable it to comply with the law of the country where it is registered and with the requirements of any country over or to which it is to operate.

In certain circumstances, and in certain designated air spaces, additional radio and navigation equipment is required to be installed. Such areas include the North Atlantic, Eurocontrol and any other areas designated as areas where higher specific levels of navigation accuracy are required. The operator is responsible for ensuring the aircraft is appropriately equipped and has any applicable operational approvals to operate in these airspaces.

19. REPAIRS AND MODIFICATIONS (DESIGN CHANGES)

19.1 Introduction

The type certification standard of any aircraft to be registered in San Marino must be stated and demonstrated at the time of initial application and agreed by the CAA. This may be EASA, FAA, TCCA, UK CAA or ANAC as described in CAR 21. Once the C of A has been granted then that specific certification standard must be maintained, throughout the life of the aircraft, whilst on the San Marino register, when considering matters such as Design changes, mandatory airworthiness instructions and the Aircraft Flight Manual.

The CAA will only validate the approval of the technical aspects of a design change which has been approved by the Certification Authority relevant to the declared TC Standard of the aircraft and as defined in CAR 21 Subpart C. This validation is demonstrated by the issuance of a CAA Approval Certificate.

The approval/validation process is specific to a T7 registration and is not a series approval, it also ensures that the following has been presented in order to form part of the approval/validation:

- The applicable certification basis for the design change is demonstrated, i.e. the certification basis of Type Acceptance for the aircraft in question (FAA, EASA, TCCA, UK CAA, ANAC as applicable)

- The uniquely referenced modification document package (for minor design changes) and STC or equivalent, e.g. FAA 8110-3 (for major design changes) is applicable and effective for the particular aircraft by T7 registration and/or MSN

- The modification data package includes any documents referenced on the applicable NAA approval documentation, for example:

  - ICA's
    - AMM supplements
    - WDM supplements
    - IPC supplements
    - etc.
  - Installation and fabrication Instructions and drawings
  - FM Supplements
  - Configuration options
  - etc.

It is strongly recommended that applicants liaise with the CAA before considering the embodiment of a design change so that it is clearly understood by both parties what is involved in terms of the certification basis, evidential documentation required and what must be accomplished to successfully gain CAA approval.

With regard to aircraft that have been "Type Accepted" via the ANAC Type Certificate particular attention is required as to the acceptable approval basis for any Design Change. For example a Major design change that has been approved by ANAC must meet CAR 21 Subpart C and at the very least CAR 21.73(b)(3). This means that the Design Change besides being ANAC approved must also have been certified, approved, validated or accepted by either EASA, FAA or Transport Canada through an internationally recognised bilateral agreement (and associated TIP) between that State and Brazil.

The certification standard of an aircraft is not an easy matter to change and the assistance of the manufacturer must be sought to assist in this exercise.

Not only must all modifications and repairs be re-evaluated by an approved design organisation to ensure they comply with the desired airworthiness code, but in some cases the manufacturer may be having to supply a Flight Manual compatible to the revised certification standard at some considerable cost to the applicant.

Bilateral Agreements can be accessed via the weblinks provided on the SMAR Website page: Type Certificate. It is incumbent on the applicant to demonstrate how a design change (including a Service Bulletin if applicable) has been accepted via an internationally recognised bilateral agreement. It is not the responsibility of the CAA to do this. It is an obligation for applicants to demonstrate that any intended design change has been approved by the Certification Authority relevant to the applicable Type Certification standard of the recipient aircraft.

CAR 21 Subpart C describes how a Design Change should be classified (i.e. as either Major or Minor), who can develop such design changes and how they should be approved. In all cases, the CAA must validate the approval of the design change prior to its' embodiment Ref: CAR 21.73(g) and CAR 21.75(e).

For design changes that have been classified as "Major" the process is relatively straightforward and generally will result in a Supplemental Type Certificate being issued by an organisation identified in CAR 21.73(b). There are however circumstances where the TC Holder has classified the design change as major and indicated approval of this major design change via a process and documentation approved by their (state of design) approving NAA. This is also acceptable to CAA but the applicant is responsible for providing the documented substantiation this is the case.

For design changes that have been classified as "Minor" the approval circumstances and processes can be a little more varied and therefore complex to understand and establish. If the design change has been developed by an appropriately approved Design Organisation (for example an EASA Part 21 Subpart J DOA) then they will produce a Minor Modification that has been approved, via their EASA approved design procedures.

19.2 Service Bulletins

With regard to Service Bulletins, CAR 21.81 generally allows for these to be embodied without the need for formal CAA Approval. This would depend on the Service Bulletin being published by an organisation having the appropriate authority to do so. In most cases this is quite straight forward, but there are some examples where the authority lies within a bilateral agreement.

For example the Gulfstream 150, 200 or 280 type where it is manufactured in Israel under the Gulfstream FAA Production Certificate.

A Service Bulletin, for this aircraft type, approved by CAA Israel (CAAI) has been accepted as approved data via the bilateral agreement between the USA and Israel.

There is a possibility, however, that both a STC and SB have been issued for the same Major Design Change on some aircraft types. (e.g. Bombardier and Gulfstream).

This has caused some confusion for Operators and their Maintenance Providers as to what document should be referenced within the aircraft's Continuing Airworthiness Records and what document (i.e. STC or SB) should take precedence in terms of the approval basis for the Design Change.

For aircraft that are already on the San Marino T7 Register, CAR 21.73(g) requires the approval of a major design change, covered by an STC, to be signified by the issue of an approval document by the Authority. Whereas CAR 21.81 states that a design change covered by the issue of a SB is deemed to be approved by the Authority without the need for a formal approval document to be issued.

In the examples that have come to light so far, there is a statement in each SB that the "Approval Basis" for the SB is that of the applicable STC or that the SB has been raised to provide the embodiment instructions for the STC , or similar wording. It therefore follows in these cases that the SB is a subordinate document to the STC and the STC must be approved in accordance with CAR 21.73 and a Form SM 45 – Application for Modification Approval – be submitted to facilitate this to occur.

Gulfstream have different terminology for the document they use as an equivalent to a Service Bulletin, they use the term "Aircraft Service Change" (ASC). In some cases it is a combination of two documents, an ASC and a Customer Bulletin (CB). This is usually when an inspection, or some other similar maintenance action, is required.

This in itself is not a problem once known. What does need to be understood however is that historically the wording within the design change regulatory statement, at the beginning of every ASC, has changed over time. Some of the older ASC's contain a sentence: ***"Individual approval should be obtained from the appropriate airworthiness agency prior to installation on aircraft registered outside of the United States"***.

This of course means that when an ASC (containing this sentence) is to be embodied on to a San Marino T7 registered aircraft prior specific approval must be obtained from the CAA and a Form SM 45 – Application for Modification Approval – be submitted to facilitate this to occur.

Current regulatory statement wording within an ASC now appears to include wording such as: "***The design of this ASC is approved by aircraft type design data for installation on aircraft registered for operation in accordance with applicable regulations of the FAA and the EASA".***

Whilst this wording appears to imply it is only applicable to aircraft "operated" in accordance FAA or EASA regulations, it has been agreed with Gulfstream that SM CAA will accept ASC's with this wording included without further approval being required.

It is also important, when considering the embodiment of an ASC, to establish within the ASC regulatory statement that it is applicable to the aircraft certification standard declared at Type Acceptance, when the aircraft first came on to the San Marino register and whether the regulatory statement says it is only applicable to US registered aircraft.

This research is the responsibility of the operator and not for the CAA to establish.

19.3 Design Change Development Based on the FAA System

For minor modifications that have been developed under the FAA Regulatory system and by a FAR 145 approved Repair Station it can be a little more complex to provide the required design change substantiation that satisfies CAR 21.75 requirements.

Terminology is also a consideration in the process as within FAA vocabulary a modification is termed as an "Alteration" and when an Alteration has been classified as "Minor" it can be deemed to be approved quite legitimately within the FAA regulations by a FAR 145 Repair Station (Ref FAR 43).

The FAA have also defined two sources of data for design changes:

(a) Approved Data, which by its very name indicates this data has been approved by the FAA. All major design changes must use approved data as their source of development, and

(b) Acceptable Data, this data is a little more problematic to establish and source. For example if an FAA AC does not specifically state that it can be used as approved data it can only be used as acceptable data. FAA minor alterations can use acceptable data but must make clear reference to it and how it has been used.

In order to provide some assistance as to what the basis acceptable for CAA acceptance of Design Changes developed within the FAA Regulatory System please refer to Table 1 below:

TABLE 1

Mod Type	Requirements	Notes
A minor modification or repair to a T7 registered aircraft where the US is <u>not</u> the State of Design for the aircraft type E.g. Airbus, Dassault, Bombardier, Embraer etc.	1. This is a Minor Alteration or Repair using FAA accepted data or elementary processes. 2. An 8110-3 declaration of conformity cannot be issued by the FAA if accepted data or elementary processes are used. 3. If the data to be used is neither FAA accepted data nor done by elementary processes then the modification cannot be processed by the CAA under CAR 21.75(2) because the FAA will not approve the data for aircraft types that the US is not the State of Design. 4. In the case of FAA acceptable data, AC43.13-1B and AC.43.13-2B are only acceptable to the CAA for T7 registered aeroplanes of 5700 kg Maximum Take-Off Mass (MTOM) or less and rotorcraft of 3175 kg MTOM or less.	Reference should be made to: FAA AC 43-18 Fabrication of Aircraft Parts by Maintenance Personnel FAA AC 43-210a Standardized Procedures for Obtaining Approval of Data Used in the Performance Major Repairs and Major Alterations (Section 1.5 Repair and Alteration Classification) FAA AC 120-77 Maintenance and Alteration Data

A major modification or repair to a T7 registered aircraft where the US is <u>not</u> the State of Design for the aircraft type E.g. Airbus, Dassault, Bombardier, Embraer etc.	The FAA have two methods for approving Major Alterations. A Field Approval that would only be applicable to one aircraft and indicated by the issuance of a FAA Form 8110-3 or an STC that could be applied to many aircraft. If the US is not the State of Design for the aircraft then a Form 8110-3 will not be available from the FAA to support an FAA Field Approval Therefore an STC will be required.	Reference should be made to: FAA AC 43-18 Fabrication of Aircraft Parts by Maintenance Personnel FAA AC 43-210a Standardized Procedures for Obtaining Approval of Data Used in the Performance Major Repairs and Major Alterations FAA AC 120-77 Maintenance and Alteration Data
A minor modification or repair to a T7 registered aircraft where the US is the State of Design. e.g. Boeing, Gulfstream, Cessna etc.	1. This is a Minor Alteration or Repair using FAA accepted data or elementary processes. 2. In the case of FAA acceptable data, AC43.13-1B and AC.43.13-2B are only acceptable to the CAA for T7 registered aeroplanes of 5700 kg Maximum Take-Off Mass (MTOM) or less and rotorcraft of 3175 kg MTOM or less.	Reference should be made to: FAA AC 43-18 Fabrication of Aircraft Parts by Maintenance Personnel FAA AC 43-210a Standardized Procedures for Obtaining Approval of Data Used in the Performance Major Repairs and Major Alterations (Section 1.5 Repair and Alteration Classification) FAA AC 120-77 Maintenance and Alteration Data
A major modification or repair to a T7 registered aircraft where the US is the State of Design. E.g. Boeing, Gulfstream, Cessna etc.	A Major repair must be supported by an appropriate FAA Form 8110-3 or an Approved Repair Scheme produced by the TC Holder in accordance with their FAA approved procedures. A Major modification should be supported by an STC to satisfy CAR 21.73(b)(1) for T7 registered aircraft that have been accepted as meeting the FAA Type Certificate.	

FAA FAR 145 Repair Stations commonly make reference to AC 43.13-1B as a source of acceptable data for Minor Alterations (modifications), quite often it seems in error as the AC "Purpose" states it should only be used for "repairs of non-pressurised areas of civil aircraft". It is only acceptable for minor modifications/repairs intended for embodiment to a T7 registered aeroplanes of 5700 kg Maximum Take-Off Mass (MTOM) or less and rotorcraft of 3175 kg MTOM or less to use or make reference to AC 43.13-1B or AC 43.13-2B as source data.

The circumstances of how an acceptable FAA FAR 43 minor alteration (minor modification) should be developed and documented is not so clearly defined and there are several FAA AC's that address what should occur as part of different aspects to the design change. For example "parts fabrication" required for the installation of a modification: the FAA have published AC 43.18 which describes how parts should be categorised, how they should be fabricated, how they should be marked, the fabrication process being controlled via a Fabrication Quality Control System (FQCS) etc.

Confirmation of compliance with this would need to be confirmed within the modification documentation and certifications at installation.

The demonstration of compliance with these AC's can be quite variable. So in order to provide guidance as to what the CAA would expect and to be able to approve as a minor design change/modification (alteration) developed by a FAR 145 AMO (and in accordance with FAR 43) for embodiment on to a San Marino T7 registered aircraft the following should occur:

The applicant must ensure that the design change substantiation documentation produced by the FAR 145 Repair Station should be in a consolidated "Report" format.

The Report should contain (at least) the following:

- A unique report reference number;
- Name of the FAR 145 Organisation and FAR 145 Repair Station Authorisation Number;
- Full description of the Alteration (Modification);
- The applicable Type Certification basis of the T7 registered aircraft in question;
- Classification of the alteration(s) referencing the methodology used to classify, e.g. FAA AC.43-210A (Figure 3 – 2);
- Full description of any Fabrication of parts involved in the Alteration(s) and references to the fabrication methodology , e.g. in accordance with FAA AC.43-18, reference to a FQCS, fabrication drawings etc.;
- Precise references to identified FAA Approved and/or Acceptable Data used to develop, fabricate and embody the Alteration;
- A statement, signed by an appropriately authorised person within the Repair Station, that the Alteration was accomplished pursuant to the applicable FAA Regulations, e.g. 14 CFR part 43.7, etc.

This report and its unique reference would then be used as the basis of CAR 21.75(e) approval by the CAA.

20. CONTINUED AIRWORTHINESS MANAGEMENT OF AIRCRAFT OPERATED UNDER CAR OPS 2A/H

The continuing airworthiness of an aircraft may be performed by an owner/operator's Nominated Airworthiness Coordinator directly employed by the owner/operator, an accepted CAMO as defined in Chapter 21, or a CAA approved CAR CAMO Continuing Airworthiness Management Organisation.

If the responsibility is to be discharged totally by the owner operator's employed Nominated Airworthiness Coordinator he must have sufficient aviation engineering background and experience.

Note: In case the operator has an in-house CAMO, a contract is not required.

Should the owner/operator wish to change his Nominated Airworthiness Coordinator then they should complete Form SM 64 and declare this change to the CAA for their acceptance.

The Postholder for Continuing Airworthiness in an AOC or a CAR CAMO organisation is responsible for continued airworthiness management

21. MAINTENANCE ARRANGEMENTS FOR AIRCRAFT OPERATED UNDER CAR OPS 2A/H OR CAR OPS 4

21.1 Continuing Airworthiness Management by a Nominated Airworthiness Coordinator and Accepted CAMOs

This Chapter is applicable to those general aviation and CAR OPS 4 aircraft that do not have their continuing airworthiness management performed by a CAA approved CAR CAMO.

Regulation CAR AIR.1 covers the standards of continuing airworthiness necessary for the CAA's acceptance of the arrangements for:

(a) the management of continuing airworthiness;

(b) maintenance programmes;

(c) aircraft records;

(d) the accomplishment of defect rectification, Line and Base Maintenance.

A turbine powered aircraft with maintenance arrangements satisfactory to the CAA may qualify for a certificate of airworthiness valid for a period not exceeding 24 months. CAR AIR.57 refers. Satisfactory maintenance arrangements are considered to be a suitable contract with an NAA approved continuing airworthiness management organisation managing aircraft of an equivalent type, weight and complexity, acceptable to the CAA.

Note: In case the operator has an in-house CAMO, a contract is not required.

Such contracts must be for a minimum of twelve months duration and up to date signed copies provided to the CAA. Copies of the contracts do not have to include the financial details.

Organisations approved by the following NAAs are considered to be acceptable organisations:

(a) EASA Part-M Subpart G / Part CAMO, as approved by an EASA Member State;

(b) CAR M Subpart G, as approved by the UAE GCAA;

(c) CAR OPS 1 or CAR OPS 3 Maintenance System Approval, as approved by the San Marino CAA;

(d) OTAR Part 39 Subpart E Continuing Airworthiness Management as approved by the Civil Aviation Authority of the Cayman Islands (CAACI);

(e) OTAR Part 39 Subpart E Continuing Airworthiness Management as approved by the Bermuda Civil Aviation Authority (BCAA);

(f) UK CAA Part M Subpart G / Part CAMO, as approved by the UK CAA.

If during the validity of a 24 month certificate of airworthiness the owner/operator decides that they no longer wish to have contracts with an acceptable continuing airworthiness management organisation, the CAA must be advised immediately the contract is terminated and the aircraft will be subject to a CAA inspection, the 24 month C of A revoked and a new 12 month C of A issued.

The cost of the inspection will be borne by the owner/operator. The foregoing does not apply if the owner/operator changes from one acceptable continuing airworthiness organisation to another acceptable continuing airworthiness management organisation during the 24 month period of C of A validity.

Should the owner/operator choose not to have fixed, long term contracts as described above, this may be accepted by the CAA but the certificate of airworthiness in this case would be valid for a period not exceeding 12 months and CAA inspection of the aircraft and associated records would be required to renew the C of A for a further period.

For aircraft operated under CAR OPS 2A/H or CAR OPS 4, close liaison should be maintained with the Airworthiness Coordinator to ensure that the maintenance is being performed to a satisfactory standard and so that he can fulfil his responsibilities in accordance with CAR AIR Subpart B. For commercially operated aircraft under CAR OPS 1 or CAR OPS 3, all maintenance must be performed and certified by an appropriately approved maintenance organisation.

With regards to aircraft operating under CAR OPS 2A/H with a 24-month or 36-month Certificate of Airworthiness validity transferring over to operating under CAR OPS 1 or CAR OPS 3. If the CAR OPS 1/3 operator's Subpart M organisation, in accordance with Appendix 1 to OPS 1.890 or OPS 3.890, holds the privileges for a Certificate of Airworthiness renewal declaration, the validity of the Certificate of Airworthiness may remain (or in case of a 36 months validity will be reduced to) 24 months.

In all other cases, the validity period of the Certificate of Airworthiness is limited/reduced to 12 months from the date it was issued or the Airworthiness Review has been performed.

21.2 Continuing Airworthiness Management by a CAA Approved CAR CAMO Organisation

CAR CAMO is a non-mandatory approval for continuing airworthiness management of CAR OPS 2A/H aircraft. It allows for aircraft managed by a CAA approved CAR CAMO to have a not exceed 36-month certificate of airworthiness validity.

If during the validity of a 36-month certificate of airworthiness the owner/operator decides that they no longer wish to have contracts with an approved CAR CAMO continuing airworthiness management organisation, the CAA must be advised immediately the contract is terminated and the aircraft will be subject to a CAA inspection, the 36-month C of A revoked and a new 12 month C of A issued.

The cost of the inspection will be borne by the owner/operator. The foregoing does not apply if the owner/operator changes from one approved CAR CAMO continuing airworthiness management organisation to another approved CAR CAMO continuing airworthiness management organisation during the 36 month period of C of A validity.

Should the owner/operator choose not to have fixed, long term contracts as described above, this may be accepted by the CAA but the certificate of airworthiness in this case would be valid for a period not exceeding 12 months and CAA inspection of the aircraft and associated records would be required to renew the C of A for a further period.

With regards to aircraft operating under CAR OPS 2A/H with a 36-month certificate of airworthiness validity transferring over to operating under CAR OPS 1 or CAR OPS 3. The aircraft must have been inspected by the CAA and the certificate of airworthiness issued/renewed in the previous 12 months.

At the time the aircraft goes on the AOC it must have had the C of A renewed or issued in the previous 12 months and the certificate of airworthiness will have to expire within 12 months from this date.

In some cases, this will therefore involve an inspection by the CAA to renew the certificate of airworthiness and amend the expiry date to ensure that the validity of the certificate does not exceed 12 months.

21.3 CAA Validated Licensed Aircraft Engineers

A CAA validated Licensed Aircraft Engineer may be authorised to perform and certify limited Line Maintenance and defect rectification on CAR OPS 2A/H and CAR OPS 4 aircraft. CAP 16 should be referred to in order to establish the requirements to be authorised. Maintenance by a CAA validated Licensed Aircraft Engineer is normally limited to Line Maintenance and defect rectification only.

Line Maintenance is limited to:

(a) Trouble shooting

(b) Component replacement including engines and propellers

(c) Minor Scheduled Maintenance and/or checks including visual inspections that will detect obvious unsatisfactory conditions/discrepancies but do not require extensive in depth inspection. It may also include internal structure, systems and powerplant items which are visible through quick opening access panels/doors.

(d) Minor repairs and minor modifications which do not require extensive disassembly and can be accomplished by simple means, in an uncontrolled open environment on the Line and not requiring specialist equipment or tooling.

(e) Airworthiness Directives and Service Bulletins that do not require extensive disassembly, specialised techniques, equipment, tooling or facilities and can be accomplished by simple means and in accordance with CAR GEN.103.

Maintenance tasks falling outside the above criteria are considered to be Base Maintenance and required to be performed by an appropriately approved maintenance organisation.

Advice should be sought from the CAA if there is any doubt to whether any proposed maintenance activities falls within a validated engineer's privileges.

An engineer certifying under their validated licence must be familiar with, and comply with, CAR GEN Subparts A, B, C, and F.

22. REPORTING OF OCCURRENCES

All persons engaged in aviation have a duty to report occurrences to the Regulatory Authorities to enable the dissemination of safety information to all members of the aviation community. Reporting of occurrences relating to aircraft registered in San Marino should be done using the CAA Centrik web portal. Reference should be made to CAP 21 for instructions and guidance. In case an online submission is not possible Form SM 20 has to be used.

Pilots, engineers, CAMOs and AMOs are all responsible for reporting any occurrence that may hazard or endanger an aircraft so that a suitable investigation may be carried out with a view to preventing a repetition of the occurrence in the future. The regulations for Mandatory Occurrence Reports, including what must be reported, by whom and when, are contained in CAR GEN, Subpart F.

23. MINIMUM EQUIPMENT LISTS

In accordance with CAR OPS 1/3 and CAR OPS 2A/H and CAR OPS 4, aircraft shall have a Minimum Equipment List (MEL) which is derived from the Master Minimum Equipment List (MMEL) appropriate to the San Marino Type Acceptance.

For instance, if the aircraft is accepted as meeting the FAA TCDS then the FAA MMEL is the basis for the operator's MEL, if the EASA TCDS is accepted then the EASA MMEL is the basis for the operator's MEL, if the Transport Canada TCDS is accepted then the Transport Canada MMEL is the basis for the operator's MEL and if the ANAC TCDS is accepted then ANAC MMEL is the basis for the operator's MEL.

CAP 03 contains the CAA policies and requirements for Minimum Equipment Lists.

For aircraft operated under CAR OPS 2A/H or CAR OPS 4 the CAA may issue an approval to make use of the appropriate MMEL and will be limited to a 30 day period during which time the customised MEL for the aircraft must be prepared and submitted to the CAA and approved.

Application for the approval of an MEL is made using Form SM 03 and an approval to use the MMEL for 30 days is Form SM 29.

24. AIRWORTHINESS DIRECTIVES

24.1 Introduction

This chapter provides guidance material on the requirements for the acceptance, issue and applicability of Mandatory Directives

In accordance with CAR 21 Subpart B the investigation and acceptance of an aircraft Type Certification will be documented by a Type Acceptance Certificate (TAC) issued by the CAA. The issue of the TAC will be based on the Type Certification granted by one of the following National Authorities:

(a) Federal Aviation Administration (FAA)

(b) Transport Canada (TCCA)

(c) European Aviation Safety Agency (EASA)

(d) UK Civil Aviation Authority (UK CAA)

(e) Agência Nacional de Aviação Civil (ANAC)

The acceptance of the aircraft by the CAA can therefore be based on either the State of Type Design Certification or the State of Type Certification that has validated the State of Type Design Certification.

Below are the accepted States and the websites where the applicable ADs can be found.

(a) Federal Aviation Administration (FAA)
https://drs.faa.gov/browse

(b) Transport Canada (TCCA)
https://wwwapps.tc.gc.ca/Saf-Sec-Sur/2/cawis-swimn/AD_as.aspx

(c) European Aviation Safety Agency (EASA)
https://ad.easa.europa.eu/

(d) UK Civil Aviation Authority (UK CAA)
https://www.caa.co.uk/commercial-industry/aircraft/airworthiness/continuing-airworthiness/airworthiness-directives/

(e) Agência Nacional de Aviação Civil (ANAC)
https://sistemas.anac.gov.br/certificacao/DA/DAE.asp

24.2 Record Keeping

The continued airworthiness records require a current status of airworthiness directives (AD). These should identify the applicable airworthiness directives including revision or amendment numbers and the means of compliance. Where an airworthiness directive is generally applicable to the aeroplane or component type but is not applicable to the particular aeroplane or component, then this should be identified as appliance AD.

The airworthiness directive status includes the date when the airworthiness directive was accomplished, and where the airworthiness directive is controlled by flight hours/flight cycles or date it should include the aeroplane or engine or component total flight hours/cycles or date, as appropriate.

For repetitive airworthiness directives, only the last application should be recorded in the airworthiness directive status. The status should also specify which part of a multi-part directive has been accomplished and the method, where a choice is available in the AD.

Some gas turbine engines are assembled from modules and a true total time in service for a total engine is not kept. When owners and operators wish to take advantage of the modular design, then total time in service and continuing airworthiness records for each module is to be maintained.

The continuing airworthiness records as specified are to be kept with the module and should show the modifications, repairs and compliance with any mandatory requirements pertaining to that module.

24.3 Airworthiness Directives – State of Type Certification

The issue of an Airworthiness Directive (AD) by the State of Type Certification listed on the Type Acceptance Certificate (TAC) will be automatically adopted by the CAA without any further investigation. Operators and owners of aircraft shall therefore comply directly with the requirements of the AD.

24.4 Airworthiness Directives - State of Type Design

The issue of an Airworthiness Directive (AD) by the State of Design will be automatically adopted by the CAA without any further investigation, which includes the engines, propellers and equipment.

Operators and owners of aircraft shall therefore comply directly with the requirements of the AD when it is a required AD by the State of Type Certification listed on the Type Acceptance Certificate (TAC) and replicated on the aircraft certificate of airworthiness

24.5 Examples of Applicable Airworthiness Directives

Aircraft registered in San Marino may be certificated to any of the internationally recognised certification standards of the FAA, EASA, Transport Canada, UK CAA or in certain circumstances ANAC. The certification standard is declared at the initial issue of the certificate of airworthiness and this certification standard will be retained in normal circumstances for the whole of the period that the aircraft remains on the SM register.

In simple terms, the certificate of airworthiness states the CAA accepted TCDS, e.g. FAA. EASA, TCCA etc. The CAA require compliance with the mandatory continued airworthiness requirements that is required by that State.

For instance, if an aircraft, where the FAA is not the State of design, is presented for certification to the CAA and the last State of Registry was the FAA then that aircraft should be declared to conform to the relevant FAA TCDS as this will be stated on the FAA Export Certificate of Airworthiness. It will be in compliance with FAA ADs and therefore FAA ADs will continue to be applicable to the aircraft, but also to the engines, propellers and equipment when it is registered in San Marino.

However, if for example the same aircraft type, for which EASA is the State of Design, is presented to the CAA and this aircraft comes from an EASA State, then EASA applicable ADs, will be applicable to the aircraft, and the ADs from the State of Design will be applicable to the engines, propellers and equipment, just as if it was still on an EU Member States Register. It can be seen from the above that it is essential that the Nominated Airworthiness Coordinator or, if applicable, the contracted CAMO have access to a list of the equipment fitted to the aircraft to enable them to determine which ADs are applicable.

Airworthiness Directives are widely published on NAA websites and other propriety information systems. operators and aircraft owners therefore must ensure they have ready access to the necessary mandatory safety data for continued airworthiness purposes.

24.6 Mandatory Airworthiness Action in the Absence of a Published Airworthiness Directive

If the CAA concludes that mandatory airworthiness action is necessary, for instance, to address the findings of an investigation into an occurrence, incident or accident it will encourage the State of Type Design and/or the State of Type Certification to work with the Type Certificate Holder and introduce the required AD. Assuming the satisfactory issue of an AD no further OTAA action would be necessary. The AD would be adopted within as per paragraphs 24.2 and 24.3 above.

If mandatory AD action is considered necessary by the CAA and the State of Design and/or State of Certification does not agree, the CAA will initiate their own mandatory AD action for compliance by owners and operators of San Marino registered aircraft. The San Marino Airworthiness Directive will be promulgated on the CAA website and distributed to Operators and aircraft owners.

25. ALTERNATIVE METHOD OF COMPLIANCE (AMOC)

In some cases maintenance organisations or owner/operators will request that the NAA which issued an AD accept an alternative method of addressing the condition that instigated the AD in the first place. If the AD is one that is applicable to an aircraft registered in San Marino, it is possible that the Airworthiness Coordinator or Postholder for Continuing Airworthiness may request that the AMOC be applied to the SM registered aircraft and accepted by the CAA.

Alternatively, if an AMOC has been issued/approved by the NAA that issued the AD for aircraft on their Register and the applicant was the type certificate holder of the specific aircraft for which the application is being made, this can be considered by the CAA as technical justification for the AMOC. If not, then the NAA that issued the AD and subsequently accepted/approved the AMOC must be contacted by the applicant and obtain the originating NAA's agreement that the AMOC may be applied to the San Marino registered aircraft. They need not approve the AMOC but they should signify their agreement that the AMOC is acceptable for approval by the San Marino CAA.

Recommendations or agreements solely from the OEM/TCH are not acceptable as justification.

This may be acceptable provided the NAA that issued the AD and subsequently accepted the AMOC is contacted by the applicant, and obtains the originating NAA's agreement that the AMOC may be applied to the SM registered aircraft. If an AMOC has been issued/approved by the NAA that issued the AD for aircraft on their register, the applicant was the type certificate holder and applicable to the specific aircraft for which the application is being made, this can be considered by the CAA as technical justification for the AMOC.

Should any AMOCs be applicable to an aircraft before it is issued a San Marino C of A, then this should be highlighted to the CAA on the Form SM 02 before the CAA inspection of the aircraft records so that the necessary originating NAA's agreement can be obtained and presented to the CAA Inspector for his acceptance. Form SM 98 is used for an application for an AMOC.

26. OPERATIONS IN DESIGNATED AIRSPACES

There are a number of internationally designated and controlled airspaces where additional aircraft equipment, specifications or performance are required before entry into such airspace is granted.

Such airspaces include the North Atlantic High Level Airspace (NAT HLA), Required Navigation Performance (RNP) areas, Reduced Vertical Separation Minima (RVSM) and All Weather Operations (AWO).

This list is not exhaustive and additional designated airspaces are being declared on a regular basis.

All of these designated airspace operations require an airworthiness or maintenance input and the Airworthiness Coordinator in conjunction with the contracted CAMO, if applicable, should address these requirements in the Maintenance Programme, Minimum Equipment List or the maintenance instructions to the Maintenance Organisations.

27. EMERGENCY LOCATOR TRANSMITTERS

All aircraft registered in San Marino are required to carry Emergency Locator Transmitters (ELTs) or Personal Locator Beacons (PLBs) of a type and quantity required by CAR OPS 1.820, 2.414 or 3.820, as applicable. All ELTs/PLBs operating at 406 MHz must be registered with the San Marino Rescue Coordination Centre (RCC). The information required is listed on the Form SM 09 but the following notes are provided to assist the applicant:

(a) Transmitter identification (expressed in the form of an alphanumerical code of 15 hexadecimal characters); The ELT/PLB shall be uniquely coded with a digital message that contains one of the following protocols as appropriate:

(1) The ELT or PLB (as applicable) Serial Number

(2) Aircraft Operator Designator and Serial Number

(3) Mode "S" 24-bit Aircraft Address

(4) Aircraft Nationality and Registration Marks

ELT/PLB coding should be accomplished in accordance with ICAO Annex 10 Volume III and further guidance can also be found in COSPAS-SARSAT Guidelines Document Ref: C/S G.005. https://cospas-sarsat.int/en/documents-pro/system-documents

(b) Transmitter manufacturer, model and, when available, manufacturer's serial number. This will enable the RCC to confirm the correct ELT/PLB by the transmission format.

(c) The ELT/PLB location on the aircraft, e.g.: permanently fitted to aircraft, fitted to FWD life raft, portable device etc

(d) COSPAS-SARSAT type approval (CSTA) number; will confirm that ELT/PLB is registered and an approved unit

(e) If a PLB has been purchased in another part of the world it is likely that it has been pre-programmed for the country of origin. This needs to be changed to a San Marino beacon code at the time of purchase by having your San Marino MID, (or 'Country Code') 268, and the CSTA Number and PLB Manufacturers Serial Number programmed into the PLB.

(f) The COSPAS-SARSAT System is primarily a marine based system and every country has been allocated a Maritime Identification Digits (MID) code. The MID code for San Marino is 268 and these figures must be embedded in the 15bit Hexadecimal ELT Code to enable the COSPAS-SARSAT operators to contact San Marino RCC whose responsibility it is to organise any SAR activities.

(g) Name, email address (postal and e-mail) and emergency telephone number of the owner and operator.

(h) Name, email address (postal and e-mail) and telephone number of other emergency contacts (two, if possible) to whom the owner or the operator is known.

(i) Aircraft manufacturer and type.

(j) Colour of the aircraft.

It is essential that at least one of the emergency contacts provided on the form is available at all times, even when the aircraft is not flying, who knows the current whereabouts of the aircraft and can contact the crew or the Airworthiness Coordinator or the maintenance organisation if the aircraft is undergoing maintenance.

The organisation which monitors the Search and Rescue satellite constellation does not have any responsibility in organising a rescue attempt. That function is the responsibility of the RCC of the country of registration, so it is essential that the San Marino RCC has all the information available to identify the aircraft, confirm that the distress signal is genuine, and organise and coordinate any rescue attempts.

It is also vital that any false warnings are identified quickly so that expensive search and rescue operations are aborted as soon as possible, and the SAR units are available for another genuine emergency.

From the above it can be seen that there must be some person whose contact details are available to the San Marino RCC and who can be contacted at any time of the day or night and who also knows the current whereabouts of the aircraft and can contact the crew.

28. PREVENTION OF FLIGHT

In exceptional circumstances when the CAA inspector deems it prudent, it may be necessary in the interests of air safety to prevent an aircraft from further flight.

All the CAA inspectors carry an Authorisation from the SM Director General that gives them the power to prevent further flight. This authorisation is a legal instrument and it is mandatory that owners, operators and others concerned with the operation of the aircraft abide by the directions of the Inspector.

The circumstances when this action will be necessary will be very rare; nevertheless the provision to prevent further flight is written in the aviation legislation of San Marino and can be used in exceptional circumstances.

The actual action taken will vary in each circumstance and may vary between the inspector requiring that an engineer make an entry in the aircraft Tech Log which will have the effect of preventing further fight until the defect is rectified to removal of the certificate of airworthiness from the aircraft until the inspector is again satisfied with the airworthiness of the aircraft.

A formal letter from the Director General suspending the C of A will be sent to the owner or operator of the aircraft. When the CAA is satisfied that the aircraft is again airworthy a further letter reinstating the certificate of airworthiness will be sent.

Both these letters will be held on the aircraft file and reference will be made to them in any future cases of a similar nature.

29. PARTS AND COMPONENTS ELIGIBLE FOR FITMENT

No component may be fitted unless it is in a satisfactory condition, has been appropriately released to service accompanied by an acceptable form of documentation.

Standard parts can only be fitted to an aircraft or a component when the maintenance data specifies the particular standard part. Standard parts shall only be fitted when accompanied by evidence of conformity traceable to the applicable standard.

Material being either raw material or consumable material shall only be used on an aircraft or a component when the aircraft or component manufacturer states so in relevant maintenance. Such material shall only be used when the material meets the required specification and has appropriate traceability.

All material must be accompanied by documentation clearly relating to the particular material and containing conformity to specification statement plus, both the manufacturing and supplier source. On the following pages are tables describing what documentation is required for each type of part from the different acceptable sources.

NEW PARTS	
Type of Part	**Documents required**
Components from an EU Manufacturer	EASA Form 1
Components from a USA Manufacturer	FAA Form 8130-3
Components from a UK Manufacturer	UK CAA Form 1
Components from a Brazilian Manufacturer	An Authorised Release Certificate Form 003 issued by an organisation approved by the Brazilian Civil Aviation Authority (ANAC)
Components from a Canadian Manufacturer	An Authorized Release Certificate TC Form 24-0078 or TC Form One issued by an organisation approved by Transport Canada
PMA Parts	FAA Form 8130-3 is required - the CAA will accept FAA PMA parts in accordance with EC Decision 2007003/C - the CAA will accept PMA parts when the part is non-critical (Note: consult the EC Decision 2007003/C for a correct definition of critical) - The FAA Form 8130-3 should state in the "Remarks" field "This PMA Part is not a critical component."
Standard Parts	A Certificate of Conformity showing evidence of conformity, traceable to the applicable standard.
Consumables	A statement of conformity with the specification/name of the product stated, plus the manufacturer and supplier source.
Raw Material	A statement of conformity with the specification stated, plus the manufacturer and supplier source.

MAINTAINED PARTS	
Type of Part	**Documents required**
Components from an EASA Part 145 Approved Maintenance Organisation (AMO)	EASA Form 1
Components from a FAA FAR 145 approved Repair Station	FAA Form 8130-3
Components from a UK CAA Part-145 Approved Maintenance Organisation (AMO)	UK CAA Form 1
Components from a Transport Canada CAR 573 approved Repair Station	Transport Canada Form TCCA 24-0078 or TC Authorized Release Certificate Form One release documents number.
Components from a San Marino CAR 145 approved maintenance organisation that has the capability and scope defined in their San Marino CAA approved MOE or MOE Supplement.	Parts must have been removed from a San Marino registered aircraft of a type included in the aircraft scope of work and refitted to the same aircraft. A Technical Logbook entry and CRS will describe the work performed and reference the in-house workshop certification. The workshop certification shall be included in the aircraft records.
PMA Parts	FAA Form 8130-3, or EASA Form 1 or UK CAA Form 1 - the CAA will accept FAA PMA parts in accordance with EC Decision 2007003/C - the CAA will accept PMA parts when the part is non-critical (Note: consult the EC Decision 2007003/C for a correct definition of critical) - The FAA Form 8130-3 should state in the “Remarks” field “This PMA Part is not a critical component.”
Standard Parts	Not applicable
Consumables	Not applicable
Raw Material	Not applicable

Aircraft withdrawn from service are often used as a source of spare parts, a process sometimes described as “parting out”. These parts, although serviceable at the time the aircraft was placed in storage, may have been affected adversely by storage conditions, including especially environmental factors, or by the length of storage. The records for the aircraft and its parts prior to the aircraft being placed into storage will need to be researched in order to ascertain the previous maintenance history, and airworthiness directive, modification and repair status of the parts being removed.

Any unusual events immediately prior to storage, e.g. heavy landings or lightning strikes, will also have to be considered when deciding on the serviceability of the parts being removed. It is important that the part removal process be planned and controlled in a manner as close as possible to that adopted for routine maintenance tasks on in-service aircraft. The following points in particular should be considered.

(a) the means by which the part is removed should be in accordance with the normal maintenance data (e.g. maintenance manuals), using the tooling specified;

(b) adequate access equipment should be provided;

(c) if conducted in the open, disassembly should cease during inclement weather;

(d) all work should be carried out by appropriately qualified maintenance personnel;

(e) all open connections should be blanked;

(f) a protected and enclosed quarantine storage area for the parts being removed should be provided in the immediate vicinity of the work area and

(g) normal maintenance documentary controls should be used, e.g. the use of work sheets or cards to record component removals, and label identification to show serviceability status.

An assessment for condition and eventual return to service of each removed part will need to be conducted by a suitably approved organisation. The extent of the work necessary before the part is returned to service may, depending on the factors noted above, range from a simple external visual inspection to a complete overhaul.

When an aircraft has been involved in an accident, the title to the salvage may pass from the insured owner to other persons (e.g. aircraft insurers); this salvage may be offered for sale either complete or as separate aircraft items in an “as is, where is” condition. While some items may be totally unaffected by the accident or incident which caused the aircraft to be declared as salvage, it is essential to obtain clear evidence that this is the case. If such evidence cannot be obtained, the item may not be returned to service.

Before overhaul and reinstallation can be considered, all such items must therefore be subject to airworthiness assessment and inspection in the light of adequate knowledge of the circumstances of the accident, subsequent storage and transport conditions, and with evidence of previous operational history obtained from valid airworthiness records. Confirmation of this assessment in the form of an airworthiness release is essential. In particular, if a crash load is sufficient to take any part above its proof strength, residual strains may remain which could reduce the effective strength of the item or otherwise impair its functions.

Loads higher than this may of course crack the item, with an even more dangerous potential. Further, a reduction in strength may be caused by virtue of the change of a material’s characteristics following overheat from a fire. It is therefore of the utmost importance to establish that the item is neither cracked, distorted or overheated. The degree of distortion may be difficult to assess if the precise original dimensions are not known, in which case there is no option but to reject the item. Any suggestion of overheating would be cause for a laboratory investigation into significant change of material properties.

30. SUSPECT UNAPPROVED PARTS

With the constant increase in the cost of materials, components and spares, the problem of unapproved parts being offered for sale to the aviation industry has been an ever growing one.

Owners and operators of aircraft registered in San Marino are advised to be particularly aware of this problem when ordering parts, material or components for their aircraft and should ensure that all such parts are accompanied with the correct release documentation and any suspected unapproved parts identified are brought to the attention of the CAA.

31. INSTRUMENTS & PLACARDS

Instruments and placards should be located in the appropriate places, installed, and legible in the English language. Dual language may be permitted, provided one of the languages is English. The primary language in the flight deck must be English.

32. AOC OPERATOR'S WITH SUB-CONTRACTED CONTINUING AIRWORTHINESS MANAGEMENT SUBPART M SUPPORT

32.1 Introduction

32.1.1 This section of the CAP provides clarification about possible sub-contracting of CAR OPS 1/3 Operator's Subpart M continuing airworthiness tasks, sometimes known as Technical Services, Support Services or Engineering, herein after called continuing airworthiness management services and being performed by a Continuing Airworthiness Management Organisation (CAMO).

The accomplishment of Subpart M continuing airworthiness tasks forms an important part of the Operators AOC responsibility with the Operator remaining accountable for satisfactory completion irrespective of any contractual arrangements that may be established in accordance with this CAP. Frequently the question raised is; is it permitted to contract to non-approved organisations? Related questions are: what are the respective roles and responsibilities of the Operators; their sub-contracted organisations and CAA's when such arrangements are to be established.

32.1.2 CAR OPS 1/3 does not provide for organisations to be independently approved to provide CAR-OPS 1/3 SUBPART M continuing airworthiness management services on behalf of CAR OPS 1/3 Operators. The approval of such activity is vested in the Operators' Subpart M Maintenance System Approval.

32.1.3 However, it is recognised that performance of continuing airworthiness management tasks requires personnel who are trained and competent in the disciplines associated with these activities for the support of an AOC, which would not necessarily be in the hands of the aircraft Operator.

It is therefore acknowledged that there are cases where the outsourcing of continuing airworthiness management tasks may be preferable.

Therefore, Organisations may provide such sub-contracted continuing airworthiness management services but are considered to do so as an integral element of the Operator's Approved Maintenance Management System, irrespective of any other CAR approval that they may hold.

The sub-contracted Continuing Airworthiness Management Organisation therefore acts without direct CAA approval for this activity, regulatory monitoring being exercised through the Operators' Maintenance System Approval.

Note: Nothing in this CAP overrides the CAR OPS 1/3 requirement that an Operator shall ensure the airworthiness of the aircraft and the serviceability of both operational and emergency equipment. It therefore follows that where an AOC holder enters such a contract they will need to actively manage such arrangement s to exercise their airworthiness responsibility.

32.2 References

- OPS 1/3.175 General Rules for Air Operator Certification
- OPS 1/3.890 Maintenance Responsibility
- OPS 1/3.895 Maintenance Management
- OPS 1/3.900 Quality System
- OPS 1/3.905 Operator's Maintenance Management Exposition

Note: Reference should also be made to the above referenced associated AMC/ACs.

32.3 CAR OPS 1/3 Subpart M Support Arrangements

32.3.1 CAR OPS 1/3 SUBPART M support includes activities such as:

(a) Airworthiness Directive analysis and planning,

(b) Service Bulletin analysis,

(c) Planning of maintenance,

(d) Reliability monitoring, engine health monitoring,

(e) Maintenance programme development and amendments,

Note: This list is not exhaustive

32.3.2 The operator is ultimately responsible and therefore accountable for the airworthiness of its' aircraft. To exercise this responsibility the Operator must be satisfied that the actions taken by sub-contracted organisations meet the standards required by CAR OPS 1/3 and that of the Operator. The Operator's management of such activities should therefore be accomplished by active control through direct involvement and/or by agreement with recommendations from the sub-contracted organisation, using personnel who meet the criteria of CAR OPS 1/3.175 as appropriate to the duties to be carried out

The Operator's management control associated with sub-contracted continuing airworthiness management services will be reflected in the associated written contract and are to be in accordance with the Operator's policy and procedures defined in his MME. When such activities are carried out in accordance with this CAP the Operator's maintenance management system is considered to be extended to the sub-contracted Continuing Airworthiness Management Organisation.

32.3.3 Arrangements for sub-contracting may be accepted by the CAA when it is satisfied that the standards set forth by this CAP have been met. Except for engines and auxiliary power units, such arrangements would normally be limited to one organisation per aircraft type for any combination of the activities described in Appendix A to this section.

Where arrangements are made with more than one organisation the Operator must demonstrate to the satisfaction of the CAA adequate co-ordination controls are in place and that the individual responsibilities are clearly defined in related contracts.

An example of the type of continuing airworthiness management service activities, which may be sub-contracted, is that of an engine fleet management system. This is where the contractor provides suitable engine management systems including engine reliability control, to standards that meet the Operators needs while in compliance with the relevant CAR OPS 1/3 requirements.

32.3.4 Arrangements whereby the sub-contracted organisation independently sub-contracts to other organisations substantial elements of the continuing airworthiness management service activities will not normally be accepted by the CAA.

32.3.5 The CAA while investigating the acceptability of the Operators proposed sub-contracted continuing airworthiness management service arrangements will consider all other such contracts that are in place in terms of sufficiency of resources, expertise, management structure, facilities and liaison between the Operator, the sub-contracted Continuing Airworthiness Management Organisation and where applicable contracted CAR 145 maintenance organisation(s).

32.3.6 For arrangements set out in this CAP to be acceptable, the CAA will need to satisfy itself that the arrangements are, and continue, to meet the requirements of CAR OPS 1/3. The CAA will therefore audit such arrangements as part of the Operators maintenance system. The Operator will ensure that any findings arising from the CAA monitoring of the arrangements will be actioned to the satisfaction of that CAA.

32.3.7 The sub-contracted Continuing Airworthiness Management Organisation will need to agree to notify the respective Operators and CAA of any subsequent changes affecting paragraph 31.3.5 contracts as soon as practical to enable to determine continued acceptance of the arrangements. Failure to do so may invalidate the CAA acceptance.

32.3.8 Paragraph 4 to this section provides guidance on the aspects of controlling sub-contracted continuing airworthiness management service arrangements to be considered as applicable to such arrangements. However, this is neither exhaustive nor prescriptive; the topics to be considered are those functions which are applicable to the contract.

32.3.9 The CAA will signify the acceptance of the sub-contracted continuing airworthiness management arrangements by issuance of the Operator's Maintenance System Approval (Form SM 87).

Note: Acceptance of such arrangements confers no regulatory approval of the sub-contracted Continuing Airworthiness Management Organisation.

32.3.10 To actively control the standards of the sub-contracted continuing airworthiness management services it is a prerequisite that the Operator must employ a person or group of persons who are trained and competent in the disciplines associated with the CAR OPS 1/3 Subpart M.

As such they are responsible for determining what maintenance is required, when it must be performed and by whom and to what standard, to ensure the continued airworthiness of the aircraft being operated.

Note: CAR OPS 1/3.175 include competency requirements for operators' maintenance management personnel and AMC OPS 1/3.895(b) provides guidance on establishing adequacy of qualified persons and resources.

32.3.11 The Operator must conduct a pre-contract audit to establish that the sub-contracted Continuing Airworthiness Management Organisation can achieve the standards required by the Operator and CAR OPS 1/3 with respect to those activities to be sub-contracted.

32.3.12 The Operator must ensure that the sub-contracted Continuing Airworthiness Management Organisation has sufficient qualified personnel who are trained and competent in the functions to be sub-contracted. In assessing the adequacy of personnel resources the Operator is to consider the needs of those activities that are to be sub-contracted, while considering the sub-contracted Continuing Airworthiness Management Organisations' existing commitments.

32.3.13 To be appropriately approved to sub-contract continuing airworthiness management services the Operator shall have procedures for the management control of these arrangements. The Operator's MME should contain relevant procedures to reflect his control of those arrangements made with the sub-contracted Continuing Airworthiness Management Organisation.

32.3.14 Sub-contracted continuing airworthiness management service activities should be addressed in a contract between the Operator and the sub-contracted organisation. The contract should also specify that the Continuing Airworthiness Management Organisation is responsible to inform the operator who is in turn responsible to notify the CAA of any subsequent changes that affect their ability to support the contract.

32.3.15 Organisations providing sub-contracted continuing airworthiness management services to support CAR OPS 1/3 Operators are to use procedures which set out how the organisation fulfils its responsibility to those sub-contracted activities. Such procedures may be developed by either the sub-contracted Continuing Airworthiness Management Organisation or the Operator.

32.3.16 Where the sub-contracted Continuing Airworthiness Management Organisation develops its own procedures these should be formulated to be compatible with the CAR OPS 1/3 Operator's MME and the terms of the contract. These are accepted by the CAA as extended procedures of the Operator which form an integral part of the Operator's maintenance arrangements, and as such should be cross-referenced from the MME. One current copy of the sub-contracted organisation's relevant procedures should be kept by the Operator and are to be accessible to the CAA for review when needed.

Note: Should any conflict arise between the Continuing Airworthiness Management Organisation's procedures and those of the Operator then the policy and procedures of the MME will prevail.

32.3.17 The contract should also specify that such procedures may only be amended with the agreement of the CAR OPS 1/3 Operator being responsible for ensuring that such amendments satisfy the needs of their MME and compliance with CAR OPS 1/3 Subpart M.

The Operator should nominate who will be responsible for continued monitoring and accepting or not accepting subsequent amendments of the sub-contracted organisation's procedures.

The controls used to fulfil this function being clearly set out in the amendment section MME detailing the level of operator involvement. Note: In accepting the level of CAR OPS 1/3 Operator involvement in the amendment process the CAA may consider the support provided by the sub-contracted Continuing Airworthiness Management Organisation to other CAR OPS 1/3 Operators.

When reviewing the Operator's Maintenance System for approval, the CAA will check that both the Operator's and sub-contracted Continuing Airworthiness Management Organisation's procedures reflect the sub-contracted activities and interface appropriately with the Operator's MME.

32.3.18 Whenever any elements of the continuing airworthiness management tasks are sub-contracted the Operator's maintenance management personnel must have access to all relevant data in order that they can fulfil their responsibilities.

Note: The Operator retains authority to override where necessary any recommendations of the sub-contractor in the interest of the continuous airworthiness of their aircraft.

32.3.19 The Operator's control should ensure that the sub-contracted Continuing Airworthiness Management Organisation continues to have qualified technical expertise and sufficient resources to perform the sub-contracted functions while in compliance with the relevant procedures. Failure to do so may invalidate the CAR OPS 1/3.885 approval of the Operators maintenance management system.

32.3.20 The contract must provide for CAA access and their monitoring/auditing.

32.3.21 The contract will address the Operator's responsibility to ensure that any findings arising from the CAA's monitoring of the arrangements will be remedied to the satisfaction of the CAA.

33. CAA AUTHORISATION OF PILOT MAINTENANCE

The commander of an aircraft operating under CAR OPS 2A/H, holding an ATPL or CPL licence, may be considered by the CAA to perform and certify limited, simple maintenance tasks if the CAA consider that the specified task can be performed to the correct standard. The privileges of an authorisation may only be exercised when the aircraft is operating away from a supported location.

Consideration of tasks that may be accomplished will not include those requiring extensive disassembly, specialised techniques, equipment, tooling or facilities or cannot be accomplished by simple means and in accordance with CAR GEN.103.

If any tooling, equipment, materials or parts are required then these must be controlled by the Airworthiness Coordinator or CAR CAMO organisation to ensure they are available to the pilot when performing an authorised task.

For aircraft operated under CAR OPS 1 or CAR OPS 3 pilot authorisations may be granted by their contract maintenance organisation if approved to do so. An authorisation issued by the CAA does not include trouble shooting or defect rectification. A CAA authorisation when issued will not exceed two years validity.

A CAA authorisation will specify the task and the revision status of the approved data that the task is performed against and has been reviewed an accepted by the CAA. For example an Airworthiness Directive will authorise the pilot to perform and certify the AD at a specific revision status and should this change then a further application will have to be made so that a further review may be performed by the CAA and the Certificate of Authorisation amended if satisfied.

The operator's Airworthiness Coordinator or Postholder for Continuing Airworthiness is required to keep and maintain all records associated with applications and authorisations granted by the CAA. An authorised pilot is required to produce his certificate to any authorised person within a reasonable time.

In the case of an authorised pilot he/she must perform the maintenance actions themselves. They cannot be performed by another person and then certified by the authorised pilot.

A pilot authorised by the CAA shall enter in the Logbook, Technical Log Book or other record required by paragraph GEN.57(b)(1) a release to service statement that;

"certifies that the work specified except as otherwise specified was carried out in accordance with the Republic of San Marino CAR GEN Subpart C and in respect to that work the aircraft/aircraft component is considered ready for release to service."

and enter beside the statement of release to service:

(a) their signature; and

(b) their appropriate CAA authorisation reference including the issue number; and,

(c) the date of entry.

The system of authorisation is in two stages.

APPLICATION STAGE ONE

The first stage of an application is for the applicant to apply to the CAA using Form SM 142A for them to determine if the task can be accepted as one that can be accomplished by a pilot to the correct standard if properly trained. If the CAA is satisfied that the task could be accomplished by an appropriately trained pilot the applicant is informed and asked to submit a FORM SM 142B along with evidence of the training and competence.

APPLICATION STAGE TWO

Training involves task training (OJT) on the aircraft and theory training on the San Marino maintenance regulations, e.g. CAR GEN Subparts B, C, D and F and the operator's company procedures

A Form SM 142B is submitted, signed by operator's Airworthiness Coordinator or Postholder for Continuing Airworthiness and includes the evidence of the required training.
The Airworthiness Coordinator or Postholder for Continuing Airworthiness declares that he/she considers the pilot as competent to undertake the task(s). Competence is established with regard to:

(a) The relevant knowledge and skills of the pilot

(b) An appropriate attitude towards safety and observance of procedures

(c) Knowledge of the San Marino CAA regulations and the operator's maintenance and airworthiness management procedures.

The OJT practical task training must be of sufficient content and duration. Evidence of the task training must include precise details of the task being trained; who performed the training; the duration of the training and a signature confirming this training by the Quality Manager of a CAR 145 maintenance organisation or an accepted equivalent under CAR GEN.010.

Alternatively, the conduct of the training and confirmation of this may be done by an appropriate San Marino CAA validated licensed aircraft engineer if the task is within the privileges of the validation.

The OJT practical task training must be performed on the same model and type of aircraft that has been stated on the Form SM 142A

The operator's Airworthiness Coordinator or Postholder for Continuing Airworthiness is required to perform the training on the CAR GEN regulations and any operator procedures for maintenance and airworthiness management procedures applicable to performing the task, e.g. Technical Log completion, notifying the Airworthiness Coordinator or Postholder for Continuing Airworthiness if the results of the task may indicate an unserviceability etc.

Authorisation Renewal

The renewal of an authorisation is made on the same Form SM 142A accompanied by the same information. This is so that the CAA can verify that no changes to the task have taken place. A Form SM 142B may be included at the same time if the applicant is satisfied that no changes have taken place.

A requirement for the renewal is that the same task training and regulation training as for the initial issue of the authorisation is performed as recurrent training, to ensure the pilot remains competent.

Variation

If during the validity of an authorisation the approved data changes a new application using Form SM 142A and Form SM 142B will be required and the authorisation re-issued if the CAA is satisfied that it can be accomplished by an appropriately trained pilot.

If a pilot applies to include an additional maintenance task to be included then the task training for all the tasks, current and proposed should be accomplished to maintain the validity of the authorisation expiry date. By this method all the authorised tasks will have the same expiry date.

34. MAINTENANCE CONTROL MANUAL

A Maintenance Control Manual (MCM) is required for aircraft operated under CAR OPS 2A, OPS 2H or OPS 4 and having a C of A with a 36 month validity, but not required for aircraft operated under CAR OPS 2A, OPS 2H or OPS 4 that have a C of A validity for 12 or 24 months, although it is strongly recommended. A Maintenance Control Manual is for the use and guidance of maintenance and operations personnel.

The operator's Maintenance Control Manual should be developed according to industry codes of practice or to the Authority's guidance material, and should at a minimum contain information about;

(a) the means for complying with the aeroplane maintenance procedures;

(b) the means of recording the names and duties of the person or persons required;

(c) the maintenance programme;

(d) the methods used for the completion and retention of the operator's required continuing airworthiness records;

(e) the procedures for complying with the service information reporting requirements;

(f) the procedures for implementing action resulting from mandatory continuing airworthiness information;

(g) a system of analysis and continued monitoring of the performance and efficiency of the maintenance programme, in order to correct any deficiency in that programme;

(h) the aeroplane types and models to which the manual applies;

(i) the procedures for ensuring that unserviceabilities affecting airworthiness are recorded and rectified; and

(j) procedures for advising the Authority, as the State of Registry of significant in-service occurrences.

Note: The design of the manual should observe Human Factors principles.

Where the continuing airworthiness of an aircraft is contracted to a CAA approved CAR CAMO organisation their Continuing Airworthiness Management Exposition (CAME) becomes the owner/operator's Maintenance Control Manual.

35. AIRCRAFT PARKING AND STORAGE

An aircraft is normally parked or moored on a concrete apron where necessary mooring facilities are available. The aircraft may be secured during normal weather conditions by heading the aircraft into the wind and installing wheel chocks. If freezing temperatures are expected, all water should be drained and lines purged.

It is essential that the OEM procedures and operators' procedures for parking and storage are followed to preserve the safety and airworthiness of the aircraft whenever the aircraft is parked or stored. Particular emphasis should be made during parking and storage where insects and larger animals may have rendered the aircraft unsafe and unairworthy.

Insects can block the Pitot Probes/Static Ports including tubes and animals will often make nests or store food in openings in the aircraft such as engines, control surfaces, vents and probes. Whenever possible, these openings shall be covered to minimize the likelihood of blocking Air Data Systems and animal nesting. In addition, these locations should also be inspected regularly during storage as well as during return to service preparation as both can significantly impact aircraft safety and performance.

When storing and aircraft a record of the completing the storage process should be recorded in the Technical Log Book and a an entry made when the aircraft is de-preserved to provide evidence that the aircraft is ready to return to normal flight.

36. PAINTING OF AIRCRAFT

Control must be exercised over the painting of aircraft exterior surfaces. The removal and application of paint is only part of the process. The Type Certificate Holder (TCH) or Supplemental Type Certificate (STC) Holder's instructions for surface finish changes also include maintenance requirements. These could include such things as panel/component removal and refit, structural inspections, corrosion removal, function checks and aircraft weighing.

The term painting embraces the associated processes of stripping and such terms as refinishing and refurbishing, as well as preparation, inspection, and the return to service. Satisfactory maintenance and airworthiness control must be exercised over the painting of an aircraft. Appropriate management must be exercised by the Operator when considering painting of aircraft, as existing paint removal and application of new paint may not be part of the TC or STC Holder's instructions.

The task of painting an aircraft or making a change to its surface finish is a maintenance task and consequently a Certificate of Release to Service must be issued upon completion of the process. The Operator's Nominated Airworthiness Coordinator (NAC) or Maintenance Post Holder must always be satisfied of the standard of work being carried out, and therefore must ensure that the management of painting and the actual allocated task of painting is under the direct supervision of an Approved Maintenance Organisation (AMO) and provide them with the specific work requirement to issue a CRS when the task is complete.

The person or organisation will be responsible for the painting process and any associated maintenance to ensure that the task is completed in accordance with approved data and to subsequently issue the Certificate of Release to Service.

Specialist painting organisations are not entitled to issue any certification in respect of the airworthiness status of an aircraft following painting unless the organisation also holds the appropriate aircraft maintenance organisation approval. Painting performed at such establishments would have to be controlled and directly supervised by an appropriately approved AMO through approved subcontract procedures. As with all subcontracting, the approved maintenance organisation retains responsibility for all the work performed

Simple repairs and minor touch up are considered to be Line Maintenance when conditions are appropriate and can be performed and certified by an appropriately validated aircraft maintenance engineer or an appropriately approved maintenance organisation.

The Type Certificate Holder (TCH) or Supplemental Type Certificate (STC) Holder's instructions and standards for preparation and painting of the aircraft must be followed. Any deviations from these are a change to the Type Design and must be approved by the CAA under CAR 21 Subpart C.

37. CHANGES TO EXTERNAL LIVERY WITH THE USE OF FILM LAYER (FOLIS) APPLICATION

Paint has long been used as a means to protect aviation products, for decorative purposes and to comply with requirements for external markings. During recent years there has been a significant evolution in the application of printed film layers (sometimes known as 'vinyl wrap' or foil) to aviation products. However, there is little common industry standardised guidance regarding the subject.

Changing the external livery of an aircraft, in particular from paint to a film layer, may affect the compliance of the product with several airworthiness requirements and, if not implemented using approved data, lead to safety concerns such as a reduced ability to detect structural damage beneath the film layer.

An application for a design change is required when external livery material and process including the scope of its application to the product is not addressed in existing applicable design data such as the SRM or AMM Chapter 20. Application of a film layer over a significant area of the aircraft may require a major design change approval i.e. STC.

Revised or new Instructions for Continued Airworthiness (ICA) for maintaining the changed livery may be required. Existing approved maintenance requirements may necessitate that the adhesive film is either removed, so inspections such as GVI (General Visual Inspection), DET (Detailed inspections), Dye Penetrant or UT (Non Destructive Testing) can be performed, or alternatively a change in inspection might be appropriate

Film layers (foils) are considered as parts and are therefore subject to conformance with CAR 21 Subpart K and appropriate authorised release documents supplied with the parts.

38. TEMPORARY REGISTRATION MARKINGS

San Marino Registration Marks that are required by CAR GEN Subpart H are required to be painted or affixed by any other means ensuring a similar degree of permanence.

Registration markings that are adhesive, vinyl decal type markings, are considered to be temporary markings, and should be removed, and permanent markings applied at the earliest appropriate maintenance opportunity e.g. a hangar maintenance visit, but not to exceed eighteen months or 1,000 Flight hours whichever occurs first.

39. CHECK FLIGHTS

Check Flights are to be carried out under the control of the operator. Flight test requirements from the Continuing Airworthiness Management Organisation or contracted CAR 145 maintenance organisations may be included in the flight test but must be agreed by the operator.

If the Type Certificate Holder's maintenance recommendations/airworthiness instructions says that A Check Flight is to be made following certain maintenance depending on the requirements of the relevant authorities of the country in which the aircraft is registered, the Check Flight is not mandatory but is recommended by the CAA. If the Type Certificate Holder's maintenance recommendations/airworthiness instructions include a requirement for a Check Flight but does not include this statement regarding state of registration requirements, then a Check Flight is required.

When the Type Certificate Holder requires a Check Flight and the operator is unsure as to whether this can be conducted under the certificate of airworthiness or a Permit to Fly, the CAA should be consulted for their determination.

40. DISPOSAL OF SCRAPPED PARTS AND MATERIALS

Owners, operators and those responsible for the disposal of aircraft parts and materials should consider the possibility that such parts and materials could be misrepresented and sold as serviceable at a later date. Caution should be exercised to ensure that unsalvageable/scrap aircraft components and materials are disposed of in a manner that does not allow them to be returned to service.

Caution should be exercised to ensure that the following types of parts and materials are disposed of in a controlled manner that does not allow them to be returned to service:

(a) parts with non-repairable defects, whether visible or not to the naked eye;

(b) parts that are not within the specifications set forth by the approved design and cannot be brought into conformity with applicable specifications;

(c) parts and materials for which further processing or rework cannot make them eligible for certification under an approved system;

(d) parts subjected to unacceptable modifications or rework that is irreversible;

(e) life-limited parts that have reached or exceeded their life limits, or have permanently missing or incomplete records;

(f) parts that cannot be returned to an airworthy condition due to exposure to extreme forces or heat;

(g) principal structural elements removed from a high-cycle aircraft for which conformity cannot be accomplished by complying with the mandatory requirements applicable to ageing aircraft.

Unserviceable/scrapped parts should always be segregated from serviceable parts until they are eventually disposed of.

Mutilation of the component is the accepted way to prevent the parts being returned to service. Mutilation should be performed in a way that the components become permanently unusable for their originally intended use and cannot be reworked or camouflaged to provide the appearance of being serviceable by:

- Crushing or flattening
- Cutting or sawing into multiple pieces
- Tearing or bending beyond repair
- Drilling multiple holes through critical load-bearing areas
- Grinding or machining away critical features
- Melting or chemical destruction, where applicable
- Removal and destruction of identification plates, serial numbers, and certification markings

The disposal of scrap aircraft parts and materials for legitimate non-flight uses, such as training and education, research and development, or non-aviation applications where mutilation is not appropriate, the following methods should be used to prevent misrepresentation:

- permanently marking or stamping the parts, subparts and material as ‘NOT SERVICEABLE’. Ink stamping is not an acceptable method;
- removing original part number identification;
- removing the data plate;
- maintaining a tracking system, by serial number or other individualised data, to record transferred scrap aircraft parts and material, and
- include written instructions concerning disposition and disposal of such parts and materials in any agreement or contract transferring the parts and materials.

Scrapping of parts and materials may not be appropriate in certain cases when there is an ongoing evaluation process to determine whether a part or material may be restored to an airworthy condition. Examples of these cases include the extension of life limits, the re-establishment of in-service history records or the approval of new repair methods and technologies. In these cases, such parts should be segregated from serviceable parts until the decision has been made as to whether these parts can be restored to an airworthy condition or be scrapped.

APPENDIX A

OPERATOR CONTROL OF SUB-CONTRACTED CONTINUING AIRWORTHINESS TASKS

A1. Introduction

This section describes topics, which may be applicable in such a sub-contract arrangements. It therefore follows that where relevant, the Operator is to establish to a level which meets the intent of CAR OPS 1/3 and satisfies the CAA, the necessary maintenance management, controls, policies and associated supporting procedures with a sub-contracted Continuing Airworthiness Management Organisation

A2 Scope of Work

The type of aircraft and their registrations, engine types and/or component subject to the continuing airworthiness management services contract should be specified in the contract.

A3 Maintenance Programme (MP) Development and Amendment

The Operator may sub-contract the preparation of the draft MP and any subsequent amendments. However, the Operator remains responsible for assessing that the draft proposals meet his needs and obtaining CAA approval. The relevant procedures should specify these responsibilities.

The contract should also stipulate that any data necessary to substantiate the approval of the initial programme or an amendment to this programme should be provided for the Operator's agreement and/or the CAA up on request.

A4 Maintenance Programme Effectiveness and Reliability

The Operator must have in place a system to monitor and assess the effectiveness of the MP based on maintenance and operational experience. The collection of data and initial assessment may be made by the sub-contracted organisation; the required actions are to be endorsed by the Operator.

Where reliability monitoring is used to establish MP effectiveness, this may be provided by the sub-contracted Continuing Airworthiness Management Organisation and should be specified in the relevant procedures. Reference is to be made to the Operators approved MP and reliability programme. Participation of the Operator's personnel in reliability meetings with the sub-contracted organisation should also be specified.

In providing reliability data the sub-contracted Continuing Airworthiness Management Organisation is limited to working with primary data/documents provided by the CAR OPS 1/3 Operator or data provided by the Operator's contracted maintenance organisation(s) from which the reports are derived.

Note: The pooling of reliability data is permitted while in compliance with CAP 13.

A5 Permitted Variations to Maintenance Programme Periods (also known as time limit deviations)

The reasons and justification for any proposed variation of scheduled maintenance may be proposed by the sub-contracted organisation with ultimate agreement being granted by the Operator within the limits set out in the MP. How the operator agreement is given is to be specified in the relevant procedures. For variations outside the scope of the approved MP the Operator is to obtain approval by the CAA.

A6 Scheduled Maintenance

Where the sub-contracted Continuing Airworthiness Management Organisation is to plan and define the maintenance checks or inspections in accordance with the approved MP, the required liaison, including feedback to the Operator is to be defined.

The planning control and documentation should be specified in the appropriate supporting procedures. These procedures should typically set out the Operator's level of involvement in each type of check. This will normally involve assessing and agreeing to a work specification on a case by case for base maintenance checks. While for routine line maintenance Checks this may be controlled on a day-to-day basis by the Continuing Airworthiness Management Organisation subject to appropriate liaison and Operator controls to ensure timely compliance. This typically may include, but is not necessarily limited to:

- Applicable work package, including job cards,
- Scheduled component removal list,
- AD's to be incorporated,
- Modifications to be incorporated

The associated procedures should ensure that the Operator is advised in a timely manner on the accomplishment or otherwise of such tasks.

A7 Quality Monitoring

The Operator’s quality system will monitor the adequacy of the sub-contracted Continuing Airworthiness Management Organisation arrangements for compliance with the contract and CAR OPS 1/3. The terms of the contract should therefore include a provision allowing the Operator to perform a quality surveillance (including audits) upon the sub-contracted organisation. The aim of the surveillance is primarily to investigate and judge the effectiveness of those sub-contracted activities and thereby to ensure compliance with CAR OPS 1/3 and the contract.

A8 Access by the CAA

The contract should specify that the sub-contracted Continuing Airworthiness Management Organisation should grant access to the CAA whenever they deem necessary.

A9 Maintenance Data

The maintenance data used for the purpose of the contract as well as, whenever relevant, the CAA, must be specified, together with those responsible for providing such documentation. The operator should ensure such data including revisions is readily available to the Operator's maintenance management personnel and those in the sub-contracted Continuing Airworthiness Management Organisation who may be required to assess such data.

Note: The CAA will normally disseminate airworthiness information of an urgent nature primarily to owners and operators, the Operator should therefore establish a 'fast track' means of ensuring that such data is treated in a timely manner. This maintenance data may include, but is not necessarily limited to:

- *Maintenance Programme,*
- *AD's,*
- *Service Bulletins,*
- *Major repairs/modification data,*
- *Aircraft Maintenance Manual,*
- *Engine overhaul manual,*
- *Aircraft IPC,*
- *Wiring diagrams,*
- *Trouble shooting manual,*

A10 Airworthiness Directives (ADs)

While the various aspects of AD assessment, planning and follow-up may be accomplished by the sub-contracted Continuing Airworthiness Management Organisation, embodiment must be certified by a CAR 145 or accepted equivalent maintenance organisation.

The Operator is responsible for ensuring timely embodiment of applicable AD's and is to be provided with notification of compliance. It therefore follows that the Operator should have clear policies and procedures on AD embodiment supported by defined procedures which will ensure that the Operator agrees to the proposed means of compliance.

The relevant procedures should specify:

(a) What information (e.g. AD publications, maintenance records, flight hours/cycles, etc.) the sub-contracted Continuing Airworthiness Management Organisation needs from the Operator and in order to perform those actions.

(b) What information (e.g. AD planning listing, detailed engineering order, etc.) the Operator needs from the sub-contracted Continuing Airworthiness Management Organisation in order to ensure timely compliance with AD's.

Note: To fulfil their above responsibility, Operators should ensure that they are in receipt of current mandatory continued airworthiness information for the aircraft and equipment that they operate.

A11 Service Bulletin(SB)/Modifications

The sub-contracted Continuing Airworthiness Management Organisation may be required to review and make recommendations on embodiment of SB's and other associated non-mandatory material based on a clear Operator policy. The contract should specify if the sub-contracted Continuing Airworthiness Management Organisation provides SB Non-Mandatory Modification technical analysis to the Operator for agreement.

A12 Life Limit Controls & Component Control/Removal Forecast

Where the sub-contracted Continuing Airworthiness Management Organisation performs planning activities, it should be specified that the organisation should be in receipt of the current flight cycles; flight hours; landings and/or calendar controlled details as applicable, at a frequency to be specified in the contract. The frequency should be such that it allows the organisation to properly perform the sub-contracted planning functions. It therefore follows that there will need to be adequate liaison between the Operator, his CAR 145 maintenance organisation(s) and the sub-contracted Continuing Airworthiness Management Organisation.

Additionally, the contract should specify how the operator will be in possession of all current flight cycles, flight hours etc. in order that the operator may assure the timely accomplishment of the required maintenance.

A13 Engine Health Monitoring

If the Operator contracts the on-wing engine health monitoring to the sub-contracted Continuing Airworthiness Management Organisation, the organisation should be in receipt of all the relevant information to perform this task, including any parameter reading deemed necessary to be supplied by the Operator for this control. The contract should also specify what kind of feedback information (such as engine limitation, appropriate technical advice, etc.) the organisation should provide to the Operator.

A14 Defect Control

Where the Operator has sub-contracted the day-to-day control of technical Log deferred defects to his sub-contracted Continuing Airworthiness Management Organisation this should be specified in the contact and is to be adequately described in the appropriate procedures. The Operators MEL/CDL will provide the basis for establishing which defects may be deferred, and associated limits. The procedures will also need to define the responsibilities and actions to be taken for defects such as AOG situations, repetitive defects, and damage beyond the Type Certificate Holder's limits.

Adequate liaison between the Continuing Airworthiness Management Organisation and the contracted CAR 145 maintenance organisations is required such that they are aware of defects being identified that may need analysis and further actions taken.

The sub-contracted Continuing Airworthiness Management Organisation must make a positive assessment of potential deferred defects and consider potential hazards arising from the cumulative effect arising from any combination of defects and liaise with the Operator to gain his agreement.

Note: Deferment of MEL/CDL allowable defects can be accomplished by a contracted CAR 145 organisation in compliance with the relevant Technical Log procedures, subject to the acceptance by the aircraft commander.

A15 Mandatory Occurrence Reporting

All incidents and occurrences that fall within the reporting criteria defined in CAR OPS 1/3 Sub-Part D 1/3.420 and CAR 145 .60 are to be reported as required by the respective requirements. The Operator is to ensure adequate liaison exists with the Continuing Airworthiness Management Organisation and the CAR 145 organisation.

A16 Maintenance Records

These may be maintained and kept by the sub-contracted Continuing Airworthiness Management Organisation on behalf of the Operator who remains the owner and has ultimate responsibility for these documents. However, the Operator must be provided with the current status of Airworthiness Directive compliance and life limited components in accordance with agreed procedures. The Operator is also to be provided with unrestricted and timely access to original records as and when needed, or have on-line access to the appropriate information systems.

A17 Check Flight Procedures

Check Flights are to be carried out under the control of the Operator. Flight test requirements from the sub-contracted Continuing Airworthiness Management Organisation or contracted CAR 145 maintenance organisations may be included in the flight test but must be agreed by the operator.

A18 Communication between the Operator and sub-contracted Continuing Airworthiness Management Organisation.

To exercise their airworthiness responsibility, the Operator will need to be in receipt of all relevant reports and relevant maintenance data. Each time exchange of information between the Operator and the sub-contracted organisation is necessary. The contract should specify what information should be provided and when (i.e. on what occasion or at what frequency) it must be transmitted in order that the necessary agreement may be given.

Meetings provide an important corner stone whereby the. Operator can exercise part of its responsibility for ensuring the airworthiness of the operated aircraft. They should be used to establish good communications between the Operator, the sub-contracted Continuing Airworthiness Management Organisation and, where different to the foregoing, the contracted CAR 145 organisation.

The terms of the contract should include whenever appropriate the provision for a certain number of meetings to be held between involved parties. Details of the types of liaison meetings and associated terms of reference of each meeting should be documented. The meetings may include but are not limited to all or a combination of: -

(a) Contract Review.

Before the contract is applicable, it is important that the technical personnel of both parties that are involved in the application of the contract meet in order to be sure that every point leads to a common understanding of the duties of both parties.

(b) Workscope Planning meeting.

Workscope planning meetings may be organised so that the tasks to be performed may be commonly agreed.

(c) Technical Meeting

Scheduled meetings may be organised to review on a regular basis and agree actions on technical matters such as AD's, SB's, future modifications, major defects found during shop visit, reliability, etc.

(d) Quality Meeting

Quality meetings may be organised to examine matters raised by the Operator's quality surveillance and to agree upon necessary corrective actions.

(e) Reliability Meeting.

When a Reliability Programme exists, the contract should specify the Operator's and CAR 145 approved/accepted Organisation's respective involvement in that programme, including the participation to reliability meetings. Provision to enable the CAA participation in the periodical reliability meetings should also be provided.