

ROYAUME DE BELGIQUE
MINISTÈRE DES COMMUNICATIONS
ET DE L'INFRASTRUCTURE

Administration de l'Aéronautique

CIRCULAIRE

CIR/AIRW-11

Date **08/01**

Edition : **4**

Objet :

Cette circulaire a pour objectif de définir les conditions que doit respecter l'exploitant pour assurer la maintenance des aéronefs utilisés en transport aérien commercial.

Réf. :

Les différentes références utilisées pour rédiger cette circulaire sont listées au verso de cette page.

Le Directeur Général,

L'édition 4 comprend :

E. VAN NUFFEL

46 pages datées : **08/01**

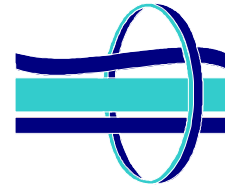
Références :

- 1) Arrêté Royal du 15 mars 1954 réglementant la Navigation Aérienne.
- 2) Règlement fixant les mesures techniques à prendre pour l'exploitation dans le transport aérien commercial des avions d'un poids total maximum autorisé égal ou supérieur à 5.700 kg, établi par l'Arrêté Ministériel du 13 février 1970, en particulier les § 2.6 et 2.7.
- 3) Règlement fixant les mesures techniques en matière d'exploitation des aéronefs d'un poids total maximum autorisé inférieur à 5.700 kg utilisés dans le transport aérien commercial, établi par l'Arrêté Ministériel du 12 septembre 1991, en particulier le § 2.2.
- 4) Arrêté Ministériel du 2 août 1990 déterminant les travaux de maintenance auxquels doivent être soumis les aéronefs, les modalités d'introduction de la demande du renouvellement du certificat de navigabilité ainsi que les documents à produire en vue d'établir le maintien de la navigabilité des aéronefs.
- 5) Arrêté Ministériel du 12 juillet 1988 portant réglementation de la délivrance et de la tenue du carnet de route des aéronefs.
- 6) Joint Aviation Requirement JAR OPS 1/3 Subpart M and relevant parts of A, B, C.

Objet de la circulaire

1. L'exploitant ne peut obtenir un certificat de transporteur aérien, le modifier et en maintenir la validité sans que le système de maintenance de l'exploitant ait été approuvé par l'Administration de l'Aéronautique en conformité avec l'annexe à la présente circulaire.
2. L'exploitant doit démontrer à l'Administration de l'Aéronautique qu'il possède la capacité professionnelle et l'organisation pour répondre aux exigences de maintenance correspondant à la nature et à la taille de ses opérations.
3. L'exploitant doit satisfaire aux exigences de maintenance décrites dans l'annexe à la présente circulaire pour tous les avions opérés figurant sur son certificat de transporteur aérien.
4. L'exploitant d'aéronefs d'une masse maximum au décollage supérieur à 10 tonnes ou dont le nombre maximum autorisé de sièges passagers est égal ou supérieur à 20 devra se conformer aux dispositions de la présente circulaire à dater du 01 avril 1998.
5. L'exploitant d'aéronefs d'une autre catégorie que ceux spécifiés à l'article précédent devra se conformer aux dispositions de la présente circulaire à dater du 01 décembre 2000.
6. L'exploitant qui à la date de parution de la présente circulaire, ne dispose pas d'un certificat de transporteur aérien ou qui demande une modification importante de ce certificat devra être conforme aux dispositions de la présente circulaire et son annexe avant le début des opérations.

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*CIVIL AVIATION ADMINISTRATION, BELGIUM
a member of the
JOINT AVIATION AUTHORITIE*

**MAINTENANCE OF
AIRCRAFT
COMMERCIAL AIR
TRANSPORT**

I. GENERAL

(a) An operator shall not operate an aircraft for the purpose of commercial air transportation other than in accordance with this Circulaire Airworthiness 11, his Air Operator Certificate (hereinafter referred to as AOC) and his approved Operations Manual.

(b) Each aircraft shall be operated in compliance with the terms of its Certificate of Airworthiness and within the approved limitations contained in its Aircraft Flight Manual.

II. OPERATIONAL DIRECTIVES

(a) The Belgian Civil Aviation Administration (hereinafter referred to as BCAA) may direct by means of an Operational Directive (issued by the BCAA under the Circular format) that an operation shall be prohibited, limited or subject to certain conditions, in the interests of safe operations.

(b) Operational Directives state:

- (1) The reason for issue;
- (2) Applicability and duration; and
- (3) Action required by the operator(s).

III. MINIMUM EQUIPMENT LIST

(a) An operator shall establish, for each aircraft, a Minimum Equipment List (hereinafter referred to as MEL) approved by the BCAA. This shall be based upon, but no less restrictive than, the relevant Master Minimum Equipment List (MMEL, if this exists) accepted by the BCAA (See Circular CIR/OPS-16).

(b) An operator shall not operate an aircraft other than in accordance with the MEL unless permitted by the BCAA. Any such permission will in no circumstances permit operation outside the constraints of the Master Minimum Equipment List

IV. DOCUMENTS

1. Documents to be carried

An operator shall ensure that the following documents or copies thereof are carried on each flight:

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- (a) Certificate of Registration;
- (b) Certificate of Airworthiness;
- (c) Noise Certificate (if applicable);
- (d) Air Operator Certificate;
- (e) Aircraft Radio Licence;
- (f) Third party liability Insurance Certificate(s);
- (g) Journey Logbook ; and
- (h) Each flight crew member shall, on each flight, carry a valid flight crew licence with appropriate rating(s) for the purpose of the flight.

2. Manuals to be carried

- (a) An operator shall ensure that:
 - (1) The current parts of the Operations Manual relevant to the duties of the crew are carried on each flight;
 - (2) Those parts of the Operations Manual (including the Operator's Minimum Equipment List) which are required for the conduct of a flight are easily accessible to the crew on board the aircraft; and
 - (3) The current Aircraft Flight Manual is carried in the aircraft unless the BCAA has accepted that the Operations Manual Part B contains relevant information for that .

3. Additional information and forms to be carried

- (a) An operator shall ensure that, in addition to the documents and manuals prescribed in 1. and 2. above, the following information and forms, relevant to the type and area of operation, are carried on each flight:
 - (1) Operational flight plan ;
 - (2) Aircraft Technical Log containing at least the information required in chapter XVIII (a);
 - (3) Details of the filed ATS flight plan;
 - (4) Appropriate NOTAM/AIS briefing documentation;
 - (5) Appropriate meteorological information;
 - (6) Mass and balance documentation as specified in Circular CIR/OPS-13;

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(7) Notification of special categories of passenger such as security personnel, if not considered as crew, handicapped persons, inadmissible passengers, deportees and persons in custody;

(8) Notification of special loads including dangerous goods including written information to the commander ;

(9) Current maps and charts and associated documents ;

(10) Any other documentation which may be required by the States concerned with this flight, such as cargo manifest, passenger manifest etc.; and

(11) Forms to comply with the reporting requirements of the BCAA and the operator, such as the Technical Flight Incident Report (hereinafter referred to as TFIR, see circular CIR/AIRW 18), etc.

(b) The BCAA may permit the information detailed in sub-paragraph (a) above, or parts thereof, to be presented in a form other than on printed paper. An acceptable standard of accessibility, usability and reliability must be assured.

4. Information retained on the ground

(a) An operator shall ensure that:

(1) At least for the duration of each flight or series of flights;

(i) Information relevant to the flight and appropriate for the type of operation is preserved on the ground; and

(ii) The information is retained until it has been duplicated at the place at which it will be stored or, if this is impracticable,

(iii) The same information is carried in a fireproof container in the aircraft.

(b) The information referred to in subparagraph (a) above includes:

(1) A copy of the operational flight plan where appropriate;

(2) Copies of the relevant part(s) of the aircraft technical log;

(3) Route specific NOTAM documentation if specifically edited by the operator;

(4) Mass and balance documentation if required; and

(5) Special loads notification.

V. ACCESS TO OPERATOR'S ORGANISATION

An operator shall grant the BCAA access to his organisation and aircraft and shall ensure that, with respect to maintenance, access is granted to any associated JAR-145 maintenance organisation, to determine continued compliance with applicable rules.

VI. PRODUCTION OF DOCUMENTATION AND RECORDS

An operator shall:

- (1) Give any person authorised by the BCAA access to any documents and records which are related to flight operations or maintenance; and
- (2) Produce all such documents and records, when requested to do so by the BCAA, within a reasonable period of time.

VII. PRESERVATION OF DOCUMENTATION

- (a) An operator shall ensure that any original documentation, or copies thereof, that he is required to preserve is preserved for the required retention period even if he ceases to be the operator of the aircraft.

VIII. PRESERVATION, PRODUCTION AND USE OF FLIGHT RECORDER RECORDINGS

- (a) Preservation of recordings
 - (1) Following an accident, the operator of an aircraft on which a flight recorder is carried shall, to the extent possible, preserve the original recorded data pertaining to that accident, as retained by the recorder for a period of 60 days unless otherwise directed by the investigating authority.
 - (2) Unless prior permission has been granted by the BCAA, following an incident that is subject to mandatory reporting (confer Appendix to European Union Directive 94/56/CE and conditions requiring the issue of a TFIR), the operator of an aircraft on which a flight recorder is carried shall, to the extent possible, preserve the original recorded data pertaining to that incident, as retained by the recorder for a period of 60 days unless otherwise directed by the investigating authority.
 - (3) Additionally, when the BCAA so directs, the operator of an aircraft on which a flight recorder is carried shall preserve the original recorded data for a period of 60 days unless otherwise directed by the investigating authority.

(4) When a flight data recorder is required to be carried aboard an aircraft, the operator of that aircraft shall:

(i) Save the recordings for the period of operating time except that, for the purpose of testing and maintaining flight data recorders, up to one hour of the oldest recorded material at the time of testing may be erased; and

(ii) Keep a document which presents the information necessary to retrieve and convert the stored data into engineering units.

(b) Production of recordings

The operator of an aircraft on which a flight recorder is carried shall, within a reasonable time after being requested to do so by the BCAA, produce any recording made by a flight recorder which is available or has been preserved.

(c) Use of recordings

(1) The cockpit voice recorder recordings may not be used for purposes other than for the investigation of an accident or incident subject to mandatory reporting except with the consent of all crew members concerned.

(2) The flight data recorder recordings may not be used for purposes other than for the investigation of an accident or incident subject to mandatory reporting except when such records are:

(i) Used by the operator for airworthiness or maintenance purposes only; or

(ii) De-identified; or

(iii) Disclosed under secure procedures.

IX. MANAGEMENT AND ORGANISATION OF AN AOC HOLDER

(a) General

(1) An operator must have a sound and effective management structure in order to ensure the safe conduct of air operations. Nominated post holders must have proven competency in civil aviation.

(2) In the context of this paragraph, "competency" means that an individual must have a technical qualification and managerial experience acceptable to the BCAA, as appropriate.

(3) The operator must have nominated an accountable manager acceptable to BCAA who has corporate authority for ensuring that all operations and maintenance activities can be financed and carried out to the standard required by the BCAA.

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- (b) Nominated post holders
- (1) The operator must have, among others, a nominated post holder, acceptable to the BCAA, who is responsible for the maintenance system.
 - (2) A description of the functions and the responsibilities of the nominated post holders, including their names, must be contained in the Maintenance Management Exposition and the BCAA must be given notice in writing of any intended or actual change in appointments or functions.
 - (3) The operator must make arrangements to ensure continuity of supervision in the absence of nominated post holders.
 - (4) The operator must satisfy the BCAA that the management organisation is suitable and properly matched to the operating network and scale of operation.
 - (5) A person nominated as a post holder by the holder of an AOC must not be nominated as a post holder by the holder of any other AOC, unless acceptable to the BCAA. Nominated post holders must be contracted to work sufficient hours such that the individual can fulfil the management functions associated with the size and scope of the operator's business.
 - (6) More than one of the nominated posts may be filled by one person if acceptable to the BCAA.

Note : The requirements relating to the appointment of the nominated post holder responsible for the maintenance system in accordance with paragraph (b) (1) above are prescribed in Chapter XIV.

X. ISSUE, VARIATION AND CONTINUED VALIDITY OF AN AOC

(a) An operator will not be granted an AOC, or a variation to an AOC, and that AOC will not remain valid unless:

(1) Aircraft operated have a standard Certificate of Airworthiness issued in accordance with ICAO Annex 8 by a JAA Member State.

(2) The maintenance system has been approved by the BCAA in accordance with this Circular ; and

(3) He has satisfied the BCAA that he has the ability to:

(i) Establish and maintain an adequate organisation;

(ii) Establish and maintain a quality system in accordance with Chapter XV;

(iii) Comply with required training programmes; and

(iv) Comply with maintenance requirements, consistent with the nature and extent of the operations specified, including the relevant items prescribed in Chapter IX.

(b) Notwithstanding the provisions of Chapter XII (f), the operator must notify the BCAA as soon as practicable of any changes to the information submitted in accordance with sub-paragraph (a) above

(c) If the BCAA is not satisfied that the requirements of subparagraph (a) above have been met, the BCAA may require the conduct of one or more demonstration flights, operated as if they were commercial air transport flights.

XI. MAINTENANCE ORGANISATIONS

(a) An operator shall not operate an aircraft unless it is maintained and released to service by an organisation appropriately approved/accepted in accordance with JAR-145 except that pre-flight inspections need not necessarily be carried out by the JAR-145 organisation.

(b) This Circular prescribes aircraft maintenance requirements needed to comply with the operator certification requirements in chapter X .

(c) The following definitions from JAR-145 shall apply to this Circular:

(1) Pre-flight inspection - means the inspection carried out before flight to ensure that the aircraft is fit for the intended flight. It does not include defect rectification.

(2) Approved standard - means a manufacturing, design, maintenance or quality standard approved by the BCAA.

(3) Approved by the BCAA - means approved by the BCAA directly or in accordance with a procedure approved by the BCAA.

(d) Reference to aircraft includes the components fitted to or intended to be fitted to the aircraft.

XII. APPLICATION FOR AND APPROVAL OF THE OPERATOR'S MAINTENANCE SYSTEM

(a) To obtain the approval of the maintenance system, an applicant for the initial issue, variation or renewal of an AOC shall submit the following document (See Note 1 to Note 4):

(1) The official name and business name, address and mailing address of the applicant;

(2) The shareholder(s);

(3) A description of the proposed operation;

(4) The identification of their main operating base and associated line stations;

(5) A description of the management organisation;

(6) The name of the accountable manager;

(7) The names of the nominated post holders, including those responsible for the maintenance system and the quality system together with their qualifications and experience;

(8) The maintenance management exposition;

(9) The operator's aircraft maintenance programme(s);

(10) The aircraft technical log system (see Chapter XVIII and Appendix 10) and the technical flight incident report form ; and

(11) Where appropriate, the technical specification(s) of the maintenance contract(s) between the operator and any JAR-145 approved maintenance organisation.

(12) The type and number of aircraft.

(b) An applicant for the initial issue, variation and renewal of an AOC who meets the requirements of this Circular, in conjunction with an appropriate JAR-145 approved/accepted maintenance organisation's exposition, is entitled to approval of the maintenance system by the BCAA. (See note 5 and 6)

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(c) The application for an initial issue of an operator's maintenance system approval must be submitted at least 90 days before the date of intended operation.

(d) The application for the variation of an operator's maintenance system must be submitted at least 30 days, or as otherwise agreed, before the date of intended implementation.

(e) The application for the renewal, where appropriate, of an operator's maintenance system approval must be submitted at least 30 days, or as otherwise agreed, before the end of the existing period of validity.

(f) Other than in exceptional circumstances, the BCAA must be given at least 10 days prior notice of a proposed change of a nominated post holder.

Note 1 : Grant or variation cannot be achieved until the BCAA is in possession of completed files and documents.

Note 2 : This information is required to enable the BCAA to conduct its investigation into the application, to assess the volume of maintenance work necessary and the locations at which it will be accomplished.

Note 3 : The applicant should inform the BCAA where base and scheduled line maintenance is to take place and give details of any contracted maintenance which is provided in response to Chapter XIV (a) or (c) hereafter.

Note 4 : At the time of application, the Operator should have arrangements for all base and scheduled line maintenance in place for an appropriate period of time, as acceptable to the Authority. The operator should establish further arrangements in due course before the maintenance is due.

Base maintenance contracts for high-life time checks may be based on one time contracts, when the BCAA considers that this is compatible with the operator's fleet size.

Note 5 : The approval of an operator's maintenance system in accordance with this circular will be indicated by means of a letter containing the following information :

- a. Air Operator Certificate number;
- b. Name of the Operator;
- c. Type(s) of aircraft for which the maintenance system has been accepted;
- d. Reference identification of the operator's approved aircraft maintenance programme(s) related to (c) above
- e. Reference identification of the operators approved maintenance management exposition ;
and
- f. Any limitations imposed by the BCAA on the grant or variation.

Note 6 : Approval may be limited to specified Aircraft, to specific locations or by other means like operational limitations if considered necessary by the BCAA in the interests of safe operation.

Note 7 : Detailed requirements are given in Chapters X and XII .

XIII. MAINTENANCE RESPONSIBILITY

(a) An operator shall ensure the airworthiness of the aircraft and the serviceability of both operational and emergency equipment (See Appendix 1) by:

- (1) The accomplishment of pre-flight inspections (see Appendix 2);
- (2) The rectification to an approved standard of any defect and damage affecting safe operation, taking into account the minimum equipment list and configuration deviation list if available for the aircraft type (see note 1);
- (3) The accomplishment of all maintenance in accordance with the approved operator's aircraft maintenance programme specified in chapter XVII (see note 2);
- (4) The analysis of the effectiveness of the operator' s approved aircraft maintenance programme (with regard to spares, established defects, malfunctions and damage, and if necessary the amendment of the maintenance programme (this amendment will involve the approval of the BCAA).
- (5) The accomplishment of any operational directive, airworthiness directive and any other continued airworthiness requirement made mandatory by the BCAA. Until formal adoption of JAR-39, the operator must comply with the airworthiness directives notified by the BCAA and those issued by the Responsible Authority of the State of Manufacture of the aircraft, its engines and components (see note 3) ; and
- (6) The accomplishment of modifications in accordance with an approved standard and, for non-mandatory modifications, the establishment of an embodiment policy (see note 4).

(b) An operator shall ensure that the Certificate of Airworthiness (hereinafter referred to as C of A, see circular CIR/AIRW 19) for each aircraft operated remains valid in respect of:

- (1) The requirements in sub-paragraph (a) above;
- (2) The calendar expiry date specified in the Certificate;
- (3) The Certificate of Maintenance Review ; and
- (4) Any other maintenance condition specified in the Certificate.

(c) The requirements specified in subparagraph (a and b) above must be performed in accordance with procedures acceptable to the BCAA .

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Note 1 : " The operator should have a system to ensure that all defects affecting the safe operation of the aircraft are rectified within the limits prescribed by the approved MEL or CDL as appropriate and that no postponement of such defect rectification can be permitted unless the Operator's agreement and in accordance with a procedure approved by the BCAA."

Note 2 : " The operator should have a system to ensure that all aircraft maintenance checks are performed within the limits prescribed by the approved aircraft maintenance programme and that, whenever a maintenance check cannot be performed within the required time limit, its postponement is allowed with the Operator's agreement and in accordance with a procedure approved by the BCAA".

Note 3 : "Any other continued airworthiness requirement made mandatory by the BCAA" include type certification related requirements such as: Certification Maintenance Requirements, Life Limited Parts, Airworthiness Limitations, etc...

Note 4 : An operator should establish a policy, and work to that policy, to assess non-mandatory information related to the airworthiness of the aircraft, such as Service Bulletins, Service Letters and other information on the aircraft and its components from the design organisation, the manufacturer or the related airworthiness authorities.

XIV. MAINTENANCE MANAGEMENT

(a) An operator must be appropriately approved in accordance with JAR-145 to carry out the requirements specified in Chapter XIII (a)(2), (3), (5) and (6) except when the BCAA is satisfied that the maintenance can be contracted to an appropriate JAR-145 approved/accepted organisation. (See Appendix 3).

(b) An operator must employ a person or group of persons acceptable to the BCAA to ensure that all maintenance is carried out on time to an approved standard such that the maintenance responsibility requirements prescribed in Chapter XIII are satisfied, and to ensure the functioning of the quality system required by Chapter XV. The person, or senior person as appropriate, is the nominated postholder referred to in Chapter IX (b) (1). The Nominated Postholder for Maintenance is also responsible for any corrective action resulting from the quality monitoring prescribed in chapter XV. (See Appendix 4)

(c) The Nominated Postholder for Maintenance should not be employed by a JAR 145 approved/accepted Organisation under contract to the Operator, unless specially agreed by the Authority .This paragraph only applies to contracted maintenance and therefore does not affect situations where JAR 145 approved/accepted Organisation and the Operator are the same organisation. The BCAA should only accept that the proposed person be employed by the JAR 145 Organisation when it is manifest that he/she is the only available competent person in a position to exercise this function, within a practical working distance from the Operator's offices.

(d) When an operator is not appropriately approved in accordance with JAR-145, arrangements must be made with such an organisation to carry out the requirements specified in Chapter XIII (a)(2), (3), (5) and (6). Except as otherwise specified in paragraphs (e), (f) and (g) below, the arrangement must be in the form of a written maintenance contract between the operator and the JAR-145 approved/accepted maintenance organisation detailing the functions specified in Chapter XIII (a)(2), (3), (5) and (6) and defining the support of the quality functions of Chapter XV. Aircraft base and scheduled line maintenance and engine maintenance contracts, together with all amendments, must be acceptable to the BCAA and should include all the requirements contained in JAA maintenance leaflet n°15. The BCAA does not require the commercial elements of a maintenance contract. (See Appendix 5).

(e) Notwithstanding paragraph (d) above, the operator may have a contract with an organisation that is not JAR 145 approved/accepted , provided that:

- 1) for aircraft or engine maintenance contracts, the contracted organisation is a JAR-OPS / Circ Airw 11 Operator of the same type of aircraft,
- 2) all maintenance is ultimately performed by JAR 145 approved/accepted organisations,
- 3) such a contract details the functions specified in Chapter XIII (a) (2), (3), (5) and (6) and defines the support of the quality functions specified in chapter XV.
- 4) The contract, together with all amendments, is acceptable to the BCAA. The BCAA does not require the commercial elements of a maintenance contract.

(f) Notwithstanding paragraph (d) above, in the case of an aircraft needing occasional line maintenance, the contract may be in the form of individual work orders to the Maintenance organisation.

(g) Notwithstanding paragraph (d) above, in the case of aircraft component maintenance, including engine maintenance, the contract may be in the form of individual work orders to the Maintenance Organisation.

(h) An operator must provide suitable office accommodation at appropriate locations for the personnel specified in sub-paragraph (b) above, such that the incumbents, whether they be maintenance management, planning, technical records or quality staff, can carry out their designated tasks in a manner that contributes to good maintenance standards. In the smaller operators, the BCAA may agree to these tasks being conducted from one office subject to being satisfied that there is sufficient space and that each task can be carried out without undue disturbance. Office accomodation should also include an adequate technical library and room for document consultation.

XV. QUALITY SYSTEM

(a) For maintenance purposes, the operator's quality system, as required by Circular CIR/OPS 18, must additionally include at least the following functions:

- (1) Monitoring that the activities of Chapter XIII are being performed in accordance with the accepted procedures;
- (2) Monitoring that all contracted maintenance is carried out in accordance with the contract; and
- (3) Monitoring the continued compliance with the requirements of this Circular.

(b) Where the operator is approved in accordance with JAR-145, the quality system may be combined with that required by JAR-145.

XVI. OPERATOR'S MAINTENANCE MANAGEMENT EXPOSITION

(a) An operator must provide an operator's Maintenance Management Exposition containing details of the organisation structure (see Appendix 7) including:

(1) The nominated postholder responsible for the maintenance system required by Chapter IX (b) (1) and the person, or group of persons, referred to in Chapter XIV (b);

(2) The procedures that must be followed to satisfy the maintenance responsibility of Chapter XIII and the quality functions of Chapter XV except that where the operator is appropriately approved as a maintenance organisation in accordance with JAR-145, such details may be included in the JAR-145 exposition.

(b) An operator's maintenance management exposition and any subsequent amendment must be approved by the BCAA.

(c) Further guidance material concerning the maintenance management exposition can be found in Joint Aviation Authorities Information Leaflet Maintenance n° 19. A copy of this document is available on request at the BCAA.

XVII. OPERATOR'S AIRCRAFT MAINTENANCE PROGRAMME

(a) An operator must ensure that the aircraft is maintained in accordance with the operator's aircraft maintenance programme. The programme must contain details, including frequency, of all maintenance required to be carried out. The programme will be required to include a reliability programme when the BCAA determines that such a reliability programme is necessary. (See Appendix 8).

(b) An operator's aircraft maintenance programme and any subsequent amendment must be approved by the BCAA. (See Appendix 9).

XVIII. OPERATOR'S AIRCRAFT TECHNICAL LOG

(a) An operator must use an aircraft technical log system (see Appendix 10) containing the following information for each aircraft:

(1) Information about each flight necessary to ensure continued flight safety;

(2) The current aircraft certificate of release to service;

(3) The current maintenance statement giving the aircraft maintenance status of what scheduled and out of phase maintenance is next due except that the BCAA may agree to the maintenance statement being kept elsewhere;

- (4) All outstanding deferred defects that affect the operation of the aircraft (acceptable deferred defects sheets) ; and
 - (5) Any necessary guidance instructions on maintenance support arrangements.
- (b) The aircraft technical log and any subsequent amendment must be approved by the BCAA.

XIX. MAINTENANCE RECORDS

- (a) An operator shall ensure that the aircraft technical log is retained for 24 months after the date of the last entry.
- (b) An operator shall ensure that a system has been established to keep, in a form acceptable to the BCAA, the following records for the periods specified (see Appendix 11);
- (1) All detailed maintenance records in respect of the aircraft and any aircraft component fitted thereto - 24 months after the aircraft or aircraft component was released to service;
 - (2) The total time and flight cycles as appropriate, of the aircraft and all life-limited aircraft components - 12 months after the aircraft has been permanently withdrawn from service;
 - (3) The time and flight cycles as appropriate, since last overhaul of the aircraft or aircraft component subjected to an overhaul life - Until the aircraft or aircraft component overhaul has been superseded by another overhaul of equivalent work scope and detail;
 - (4) The current aircraft inspection status such that compliance with the approved operator's aircraft maintenance programme can be established - Until the aircraft or aircraft component inspection has been superseded by another inspection, of equivalent work scope and detail;
 - (5) The current status of airworthiness directives applicable to the aircraft and aircraft components - 12 months after the aircraft has been permanently withdrawn from service; and
 - (6) Details of current modifications and repairs to the aircraft, engine(s), propeller(s) and any other aircraft component vital to flight safety - 12 months after the aircraft has been permanently withdrawn from service(See note 1).
- (c) An operator shall ensure that when an aircraft is permanently transferred from one operator to another operator the records specified in paragraphs (a) and (b) are also transferred and the time periods prescribed will continue to apply to the new operator (See note 2 and note 3).

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Note1 : For the purpose of this paragraph, a "component vital to flight safety" means a component that includes Life Limited Parts or is subject to Airworthiness Limitations or a major components such as, undercarriage and flight controls.

Note 2 : Where an operator terminates his operation, all retained maintenance records should be passed on to the new operator or, if there is no operator stored as required by the BCAA.

Note 3 : A "permanent transfer" does not generally include the dry lease-out of an aircraft when the duration of the lease agreement is less than 6 months. However the Authority should be satisfied that all maintenance records necessary for the duration of the lease agreement are transferred to the lessee or made accessible to them.

XX. CONTINUED VALIDITY OF THE AIR OPERATOR CERTIFICATE IN RESPECT OF THE MAINTENANCE SYSTEM

An operator must ensure continued validity of the Air Operator's Certificate in respect of the maintenance system.

a) Any change of aircraft type, of accountable manager, of nominated postholder, of quality manager or of maintenance contract between the operator and a JAR 145 approved maintenance organisation requires the submission of an acceptable amendment to the operator's Maintenance Management Exposition.

XXI. LEASING OF AIRCRAFT

An operator may not conclude any leasing agreement with another operator unless :

- (a) The requirements of Circular CIR/OPS-05 have been complied with; and
- (b) Prior approval or acceptance, as appropriate, has been obtained from the BCAA in accordance with the procedures described in the Circular CIR/OPS-05.

XXII. MISCELLANEOUS

(a) Further guidance material concerning contracted maintenance can be found in Joint Aviation Authorities Information Leaflet n° 15. A copy of this document is available on request at the BCAA.

(b) In respect of JAR-145 organisations, conditions that could seriously hazard the aircraft shall be reported to the BCAA in accordance with JAR 145.60 and IEM 145.60.

APPENDIX 1 - MAINTENANCE RESPONSIBILITY - AIRWORTHINESS

1. The requirement means that the operator is responsible for determining what maintenance is required, when it has to be performed and by whom and to what standard, in order to ensure the continued airworthiness of the aircraft being operated.
2. An operator should therefore have adequate knowledge of the design status (type specification, customer options, AD's, modifications, operational equipment) and required and performed maintenance. Status of aircraft design and maintenance should be adequately documented to support the performance of the quality system (See Chapter XV).
3. An operator should establish adequate co-ordination between flight operations and maintenance to ensure that both will receive all information on the condition of the aircraft necessary to enable both to perform their tasks.
4. The requirement does not mean that an operator himself performs the maintenance, this is to be done by a JAR-145 Approved Maintenance Organisation (See Chapter XIV) but that the operator carries the responsibility for the airworthy condition of aircraft it operates and thus should be satisfied before the intended flight that all required maintenance has been properly carried out.
5. When an operator is not appropriately approved in accordance with JAR-145, the operator should provide a clear work order to the maintenance contractor. The fact that an operator has contracted a JAR-145 Approved Maintenance Organisation should not prevent him from checking at the maintenance facilities on any aspect of the contracted work if he wishes to do so to satisfy his responsibility for the airworthiness of the aircraft.

APPENDIX 2 - MAINTENANCE RESPONSIBILITY - PREFLIGHT INSPECTION

1. With regard to the pre-flight inspection it is intended to mean all of the actions necessary to ensure that the aircraft is fit to make the intended flight. These should typically include but are not necessarily limited to:

- a. A walk-around type inspection of the aircraft and its emergency equipment for condition including, in particular, any obvious signs of wear, damage or leakage. In addition, the presence of all required emergency equipment should be established;
- b. Inspection of the Technical log to ensure that the intended flight is not adversely affected by any outstanding deferred defects and that no required maintenance action shown in the maintenance statement is overdue or will become due during the flight;
- c. That consumable fluids, gases etc. uplifted prior to flight are of the correct specification, free from contamination, and correctly recorded;
- d. That all doors are securely fastened;
- e. Control surface and landing gear locks, pitot/static covers, restraint devices and engine/aperture blanks have been removed;
- f. That all the aircraft's external surfaces and engines are free from ice, snow, sand, dust etc.

Note : The performance of the de-icing and anti-icing activities does not require a JAR 145 approval.

2. Tasks such as oil and hydraulic fluid uplift and tyre inflation may be considered as part of the preflight inspection, if acceptable to the BCAA. The related pre-flight inspection instructions should address the procedures to determine where the necessary uplift or inflation results from an abnormal consumption and possibility requires additional maintenance action by the JAR 145 approved/accepted Maintenance Organisation.

3. An operator should publish guidance to maintenance and flight personnel and any other personnel performing pre-flight inspection tasks, as appropriate, defining responsibilities for these actions and, where tasks are contracted to other organisations, how their accomplishment is subject to the quality system of Chapter XV. It should be demonstrated to the BCAA that the preflight inspection personnel have received appropriate training for the relevant preflight inspections tasks. The training standard for personnel performing the pre-flight inspections should be described in the Operator's Maintenance Management Exposition.

4. The fact that the performance of preflight inspections is an Operator's maintenance responsibility does not necessarily means that such personnel performing preflight inspection tasks report to the Nominated Postholder for Maintenance, but that the Nominated postholder for maintenance is responsible to determining the content of preflight inspection and setting the qualification standards should be monitored by the Operator's Quality System.

APPENDIX 3 MAINTENANCE MANAGEMENT - MAINTENANCE ORGANISATIONS

1. The requirement is intended to provide for the possibility of the following three alternative options:

- a. An operator to be approved in accordance with JAR-145 to carry out all maintenance of the aircraft and aircraft components;
- b. An operator to be approved in accordance with JAR-145 to carry out some of the maintenance of the aircraft and aircraft components. This, at minimum, could be limited to line maintenance but may be considerably more but still short of option (a);
- c. An operator not approved in accordance with JAR-145 to carry out any maintenance.

2. An operator or prospective operator may apply for any one of these options but it will be for the BCAA to determine which option may be accepted in each particular case.

2.1. To make this determination the BCAA will apply the primary criteria of relevant operator experience in carrying out some or all maintenance on comparable aircraft. Therefore where an operator applies for option (a) - all maintenance - the BCAA will need to be satisfied that the operator has sufficient experience of carrying out all maintenance on a comparable type. For example, assuming that the experience is judged satisfactory, then it is reasonable from the maintenance viewpoint to add a different wide bodied aircraft to an existing wide bodied fleet. If the experience is not satisfactory or too limited the BCAA may choose either to require more experienced management and/or more experienced release to service staff or may refuse to accept the new wide bodied aircraft if extra experienced staff cannot be found. Option (b) or (c) may be possible alternatives.

2.2. Where an operator applies for option (b) - some maintenance, or the BCAA has been unable to accept an application for option (a) - then satisfactory experience is again the key but in this case the satisfactory experience is related to the reduced maintenance of this option. If the experience is not satisfactory or too limited the BCAA may choose to require more experienced staff or may refuse to accept the application if such staff cannot be found. Option (c) may be the possible alternative. Option (c) accepts that the operator either does not have satisfactory experience or has only limited experience of some maintenance.

2.3. The BCAA will require an operator to enter into a contract with an appropriately approved JAR-145 organisation except that in some cases where the BCAA believes that it is possible to obtain sufficient satisfactorily experienced staff to provide the minimal maintenance support for option (b), in which case option (b) would apply.

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2.4. In respect of this paragraph, 'experience' means staff who have proven evidence that they were directly involved with at least line maintenance of similar aircraft types for not less than 12 months. Such experience should be demonstrated to be satisfactory. An operator is required to have enough personnel meeting the requirement of Chapter XIV to manage the maintenance responsibility whichever option is used.

APPENDIX 4 - MAINTENANCE MANAGEMENT - POSTHOLDERS

1. The person or group of persons employed should represent the maintenance management structure of the operator (for maintenance) and be responsible for all maintenance functions. Dependent on the size of the operation and the organisational set-up, the maintenance functions may be divided under individual managers or combined in nearly any number of ways. This includes combining the functions of 'accountable manager' see Chapter IX (a) (3), 'nominated postholder' see Chapter IX (b) (1), responsible for maintenance system, and the quality monitoring function (see Chapter XV) so long as the quality monitoring function remains independent of the functions to be monitored. In the smallest organisation this may lead to the quality monitoring function being performed by the accountable manager if suitably qualified. Consequently the smallest organisation consists of at least two persons except that the BCAA may agree to the quality monitoring function being sub-contracted to another operator's quality monitoring department or a suitably qualified independent person acceptable to the BCAA.
2. The actual number of persons to be employed and their necessary qualifications is dependent upon the tasks to be performed and thus dependent on the size and complexity of the operation (route network, line or charter, ETOPS, number of aircraft and the aircraft types, complexity of the aircraft and their age), number and locations of maintenance facilities and the amount and complexity of maintenance contracting. Consequently, the number of persons needed, and their qualifications, may differ greatly from one operator to another and a simple formula covering the whole range of possibilities is not feasible.
3. To enable the BCAA to accept the number of persons and their qualifications, an operator should make an analysis of the tasks to be performed, the way in which he intends to divide and/or combine these tasks, indicate how he intends to assign responsibilities and establish the number of man/hours and the qualifications needed to perform the tasks. With significant changes in the aspects relevant to the number and qualifications of persons needed, this analysis should be updated.
4. The BCAA does not necessary expect that the credential of each person of the Maintenance Management Group of Persons are individually submitted to the BCAA for their acceptance. However, the Manager of the Maintenance Management Group of Persons, and any manager reporting directly to him should be individually acceptable to the Authority.
5. The BCAA should only accept that the proposed person by the JAR 145 Organisation when it is manifest that he/she is the only available competent person in position to exercise this function, within a practical working distance from the Operator's offices.

APPENDIX 5 - MAINTENANCE MANAGEMENT - CONTRACTS

1. Where an operator is not approved to JAR-145 or an operator's maintenance organisation is an independent organisation, a contract should be agreed between the operator and the JAR-145 Approved Maintenance Organisation that specifies, in detail, the work to be performed by the JAR-145 Approved Maintenance Organisation.

2. Both the specification of work and the assignment of responsibilities should be clear, unambiguous and sufficiently detailed to ensure that no misunderstanding should arise between the parties concerned (operator, maintenance organisation and the BCAA) that could result in a situation where work that has a bearing on the airworthiness or serviceability of aircraft is not or will not be properly performed.

3. Special attention should be paid to procedures and responsibilities to ensure that all maintenance work is performed, service bulletins are analysed and decisions taken on accomplishment, airworthiness directives are completed on time and that all work, including non-mandatory modifications is carried out to approved data and to the latest standards.

4. The IATA Standard Ground Handling Agreement (SGHA) contains very little about aircraft maintenance and does not address the operators maintenance responsibility in an acceptable manner. Operators, who are currently using the IATA Standard Ground Handling Agreement, should include in an appendix to this agreement all the requirements of the JAA Maintenance Leaflet N° 15 not addressed in the SGHA.

For the actual lay out the IATA Standard Ground Handling Agreement may be used as a basis, but this does not preclude the BCAA from ensuring that the content of the contract is acceptable to them, and especially that the contract allows the Operator to properly exercise its maintenance responsibility. Those parts of a contract that have no bearing in the technical or operational aspects of airworthiness are outside the scope of this paragraph.

5. In the case of a contract with an organisation that is not JAR 145 approved/accepted, the Operator's Maintenance Management Exposition should include appropriate procedures to ensure that all this contracted maintenance is ultimately performed on time by JAR 145 approved/accepted organisations in accordance with data acceptable to the BCAA . In particular the Quality System procedures should place great emphasis on monitoring compliance with the above. The list of JAR 145 approved/accepted contractors, or reference to this list, should be included in the Operator's Maintenance Management Exposition.

6. Such a maintenance arrangement does not absolve the Operator from its overall Maintenance Responsibility. Specifically, in order to accept the maintenance arrangement, the BCAA should be satisfied that such arrangement allows the Operator to ensure full compliance with the requirements of the chapter XIII Maintenance Responsibility.

The purpose of the subparagraph (e) of chapter XII is to authorise a primary maintenance arrangement with an organisation wich is not JAR 145 approved/accepted Maintenance organisation, when it proves that such arrangement is in the interest of the Operator by simplifying the management of its maintenance, and the Operator keeps an appropriate control of it. Such an

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arrangement should not preclude the Operator from ensuring that all maintenance is performed by a JAR 145 approved/accepted organisation and complying with the chapter XIII maintenance responsibility requirements.

Typical examples of such arrangements follow:

Component maintenance:

The Operator may find it more appropriate to have a primary contractor, that would despatch the components to appropriately approved organisations, rather than himself sending different types of components to various JAR 145 approved/accepted maintenance organisations. The benefit for the operator is that the management of maintenance is simplified by having a single contact point for component maintenance. The Operator remains responsible for ensuring that all maintenance is performed by JAR 145 approved/accepted Organisations and in accordance with the approved standard.

Aircraft, engine and component maintenance:

The operator may wish to have a maintenance contract with another non JAR 145 approved JAR OPS / Circ.Airw.11 operator of the same type of aircraft. A typical case is that of a dry-leased aircraft between JAR-OPS / Circ.Airw.11 Operators, where the parties, for consistency or continuity reasons (especially for short term lease agreements), find it appropriate to keep the aircraft under the current maintenance arrangement. Where this arrangement involves various JAR 145 approved/accepted contractors, it might be more manageable for the lessee Operator to have a single contract with the lessor operator. Such an arrangement should not be understood as a transfer of responsibility to the lessor Operator : the lessee Operator, being the JAR OPS / Circ.Airw.11 approved Operator of the aircraft, remains responsible for the maintenance of aircraft in performing the Maintenance responsibility functions (chap XIII), and employing the Maintenance Management group of persons (chap XIV).

In essence, this subparagraph does not alter the intent of chapter XIV (a), (b) and (d) in that it also requires that the Operator has to establish a written maintenance contract acceptable to the Authority and, whatever type of acceptable arrangement is made, the Operator is required to exercise the same level of control on contracted maintenance, particularly through the chapter XIV (b) Maintenance Management Group of Persons and chapter XV Quality system.

The intent of the paragraph f & g of the chapter XIV is that maintenance contracts are not necessary when the Operator's maintenance system, as approved by the BCAA, specifies that relevant maintenance activity may be ordered through one time work orders. This include obvious reasons occasional line maintenance and may also include aircraft component maintenance up to engines, so long as the BCAA considers that the maintenance is manageable through work orders, both in term of volume and complexity. It should be noted that this paragraph implies that even where base maintenance is ordered on a case by case, there must be a written maintenance contract.

APPENDIX 6 QUALITY SYSTEM

The primary purpose of the Quality System is to monitor compliance with the approved procedures specified in an operator's Maintenance Management Exposition to ensure compliance with this Circular and thereby ensure the maintenance aspects of the operational safety of the aircraft. In particular, this part of the Quality System provides a monitor of the effectiveness of maintenance, reference Chapter XIII, and should include a feedback system to ensure that correctives actions are both identified and carried out in a timely manner.

1. An operator should establish a plan acceptable to the BCAA to show when and how often the activities as required by Chapter XIII will be monitored. In addition, reports should be produced at the completion of each monitoring investigation and include details of discrepancies or non compliance with procedures or requirements.
2. The feedback part of the system should address who is required to rectify discrepancies and non compliance in each particular case and the procedure to be followed if rectification is not completed within appropriate timescales. The procedure should lead to the Accountable Manager specified in Chapter IX (a) (3) .
3. To ensure effective compliance with Chapter XV the following elements have been shown to work well:
 - a. Product sampling - the part inspection of a representative sample of the aircraft fleet;
 - b. Defect sampling - the monitoring of defect rectification performance;
 - c. Concession sampling - the monitoring of any concession to not carry out maintenance on time;
 - d. On time maintenance sampling - the monitoring of when (flying hours/calendar time/flight cycles etc.) aircraft and their components are brought in for maintenance;
 - e. Sampling reports of unairworthy conditions and maintenance errors.

Note : that Chapter XV includes other self-explanatory monitoring elements.

APPENDIX 7 MAINTENANCE MANAGEMENT EXPOSITION

1. The purpose of the Maintenance Management Exposition is to set forth the procedures, means and methods of the operator. Compliance with its contents will assure compliance with requirements of this Circular, which in conjunction with an appropriate JAR-145 Approved Maintenance Organisation Exposition, is a prerequisite for obtaining an acceptance of the operator's maintenance system by the BCAA.

2. Where an operator is appropriately approved as a JAR-145 Approved Maintenance Organisation, the Exposition of the maintenance organisation may form the basis of the Operator's Maintenance Management Exposition in a combined document as follows:

JAR-145 Exposition (MOE)

- Part 1 Management
- Part 2 Maintenance Procedures
- Part L2 Additional Line Maintenance Procedures
- Part 3 Quality System Procedures
- Part 4 Contracted JAA Operators
- Part 5 Appendices (sample of documents)

Part 3 must also cover the functions specified by Chapter XIII, Quality System.

Additional parts (MME) should be introduced covering the following:

- Part 0 General Organisation
- Part 6 JAR-OPS Maintenance Procedures

3. Where an operator is not approved in accordance with JAR-145 but has a maintenance contract with a JAR-145 Approved Maintenance Organisation, the Maintenance Management Exposition (MME) should comprise:

- Part 0 General Organisation
- Part 1 JAR-OPS Maintenance Procedures
- Part 2 Quality System
- Part 3 Contracted Maintenance

Note : This layout is also applicable to Operators who are JAR 145 approved but may wish to have separate MOE and MME.

4. Personnel are expected to be familiar with those parts of the Exposition that are relevant to the maintenance and airworthiness co-ordination work they carry out.

5. The operator will need to specify in the Exposition who should amend the document, particularly where there are several parts.

6. The person responsible for the management of the Quality System should be responsible for monitoring and amending the Exposition unless otherwise agreed by the BCAA, including associated procedures manuals, and the submission of proposed amendments to the BCAA for approval. The BCAA may agree a

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procedure, which will be stated in the amendment control section of the Exposition, defining the class of amendments which can be incorporated without the prior consent of the BCAA.

7. Part 0 "General Organisation" of the Maintenance Management Exposition should include a corporate commitment by the operator, signed by the Accountable Manager confirming that the Maintenance Management Exposition and any associated manuals defines the organisation compliance with CIR/AIRW-11 and will be complied with at all times.

8. Annex 3 contains the statement of the "Corporate commitment by the Operator" to be signed by the accountable manager'. This statement shall be used without amendment.

9. Whenever the accountable manager is changed it is important to ensure that the new accountable manager signs the exposition statement at the earliest opportunity as part of the acceptance by the BCAA. Failure to carry out this action invalidates the operator maintenance system approval.

10. Annexes 1 and 2 contain examples of Exposition lay-outs. JAA Maintenance Leaflet N° 19 provides additional guidance to AOC holders in order to prepare an acceptable Maintenance Management Exposition

11. The BCAA needs to receive a copy of all parts of the MME or MMOE.

12. The operator may only use paper system for publication of the Maintenance Management Exposition .

ANNEX 1 TO APPENDIX 7 - MAINTENANCE MANAGEMENT EXPOSITION FOR AN OPERATOR WHO IS ALSO APPROVED IN ACCORDANCE WITH JAR-145.

The Exposition may be put together in any subject order and subjects combined so long as all applicable subjects are covered.

PART 0 GENERAL ORGANISATION

0.1. Corporate commitment by the Operator.

0.2. General information:

- Brief description of organisation
- Relationship with other organisations
- Fleet composition
- Type of operation
- Line station locations

0.3. Maintenance Management personnel:

- Accountable Manager
- Nominated postholder
- Maintenance co-ordination
- Duties and responsibilities
- Organisation chart(s)
- Manpower resources and training policy

0.4. Notification procedure to the JAA regarding changes to the Operator's maintenance arrangements/locations/ personnel/activities/approval

0.5. Exposition amendment procedures.

(1) PART 1 MANAGEMENT

(1) PART 2 MAINTENANCE PROCEDURES

(1) PART L2 ADDITIONAL LINE MAINTENANCE PROCEDURES

(1) PART 3 QUALITY SYSTEM PROCEDURES

Qualifying operator's maintenance personnel not covered by JAR-145.

Note : The Quality System procedures shown in Appendix 2 to Appendix 7 (Part 2 Quality System) must also be taken into account.

(1) PART 4 CONTRACTED JAA OPERATORS

(1) PART 5 APPENDICES (Sample of Documents)

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(1) = These Parts comprise the Exposition of the JAR-145 approved maintenance organisation.

PART 6 JAR OPS MAINTENANCE PROCEDURES

- 6.1. Aircraft technical log utilisation and MEL application;
 - 6.2. Aircraft maintenance programme - Development and amendment;
 - 6.3. Time and maintenance records, Responsibilities, Retention, Access;
 - 6.4. Accomplishment and control of Airworthiness Directives;
 - 6.5. Analysis of the effectiveness of the maintenance programme;
 - 6.6. Non-mandatory modification embodiment policy;
 - 6.7. Major modification standards;
 - 6.8. Defect reports:
 - Analysis
 - Liaison with manufacturers and Regulatory Authorities
 - Deferred defect policy;
 - 6.9. Engineering activity;
 - 6.10. Reliability programmes
 - Airframe
 - Propulsion
 - Components;
 - 6.11. Pre-flight Inspection:
 - Preparation of aircraft for flight
 - Sub-contracted Ground Handling functions
 - Security of Cargo and Baggage loading
 - Control of refuelling, Quantity/Quality
 - Control of snow, ice, dust and sand contamination to an approved standard;
 - 6.12. Aircraft weighing;
 - 6.13. Certificate of Airworthiness renewal procedure
 - 6.14. Flight test procedures;
- Note : could be covered in Part 2, Maintenance Procedures.
- 6.15. Technical Flight Incident Report;
 - 6.16. Preservation, production and use of flight recorder recording;

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6.17.Documents to be carried on board;

6.18.Organisation of the maintenance in case of operations conducted from a base established outside Belgium;

6.19.Procedures for specific operations (ETOPS, CAT II/III, ...);

6.20.Sample of documents, Tags and Forms used;

ANNEX 2 TO APPENDIX 7 - MAINTENANCE MANAGEMENT EXPOSITION FOR AN OPERATOR WHO IS NOT APPROVED IN ACCORDANCE WITH JAR-145.

The Exposition may be put together in any subject order so long as all applicable subjects are covered.

PART 0 GENERAL ORGANISATION

(as shown in Annex 1 to Appendix 7)

PART 1 JAR OPS MAINTENANCE PROCEDURES

(as shown in Annex 1 to Appendix 7, Part 6 entitled – JAR OPS Maintenance procedures)

PART 2 QUALITY SYSTEM

- 2.1. Maintenance quality policy, plan and audit procedures;
- 2.2. Monitoring of maintenance management activities;
- 2.3. Monitoring the effectiveness of the maintenance programme;
- 2.4. Monitoring that all maintenance is carried out by an appropriate JAR-145 organisation:
 - Aircraft maintenance
 - Engines
 - Components;
- 2.5. Monitoring that all contracted maintenance is carried out in accordance with the contract, including sub-contractors used by the maintenance contractor;
- 2.6. Quality audit personnel.

PART 3 CONTRACTED MAINTENANCE

- 3.1. Maintenance contractor selection procedure;
- 3.2. Detailed list of maintenance contractors;
- 3.3. Relevant technical procedures identified in the maintenance contract(s).

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ANNEX 3 TO APPENDIX 7 - CORPORATE COMMITMENT BY THE OPERATOR.

This exposition defines the organisation and procedures upon which the BCAA Approval of(*quote organisation's name*).... under the " Code de l'air / Luchtwetboek " and CIR/AIRW-11 is based.

These procedures are approved by the undersigned and must be complied with, as applicable, in order to ensure that all maintenance of(*quote organisation's name*).... fleet of aircraft is carried out on time to an approved standard.

It is accepted that these procedures do not override the necessity of complying with any new or amended regulation published by the BCAA from time to time where these new or amended regulations are in conflict with these procedures.

It is understood that the BCAA will approve this organisation whilst the BCAA is satisfied that the procedures are being followed. It is understood that the BCAA reserves the right to suspend, vary or revoke the maintenance system approval of the organisation, as applicable, if the BCAA has evidence that the procedures are not followed and the standards not upheld.

It is further understood that suspension or revocation of the approval of the maintenance system would invalidate the AOC.

(Date)
(Signed)

Accountable Manager and(*quote position*)....

For and on behalf of(*quote organisation's name*)....

**APPENDIX 8 OPERATOR'S AIRCRAFT MAINTENANCE PROGRAMME -
CONTENT**

1. The aircraft maintenance programme should be managed and presented by the operator to the BCAA.
2. Where implementation of the content of an approved operator's aircraft maintenance programme is accomplished by an appropriately approved JAR-145 Approved Maintenance Organisation, it therefore follows that the JAR-145 Approved Maintenance Organisation should have access to the relevant parts of the approved operator's aircraft maintenance programme when the organisation is not the author. Implementation means preparation and planning of the maintenance tasks in accordance with the approved maintenance programme.
3. The aircraft should only be maintained to one approved operator's aircraft maintenance programme at a given point in time. Where an operator wishes to change from one approved operator's aircraft maintenance programme to another such approved programme, a transfer Check/Inspection may need to be performed, as agreed with the BCAA, in order to implement the change.
4. The operator's aircraft maintenance programme should contain a preface which will define the maintenance programme contents, the inspection standards to be applied, permitted variations to task frequencies and, where applicable, any procedure to escalate established check/inspection intervals. Annex 1 to this Appendix provides detailed guidance on the content of an approved operator's aircraft maintenance programme.
5. Where an operator wishes to use an aircraft with the initial operator's aircraft maintenance programme based upon the Maintenance Review Board Report (hereinafter referred to as MRBR) process, any associated programme for the continuous surveillance of the reliability, or health monitoring of the aircraft should be considered as part of the aircraft maintenance programme.
6. Where an aircraft type has been subjected to the MRBR process, an operator should normally develop the initial operator's aircraft maintenance programme based upon the MRBR.
7. The documentation supporting the development of operator's aircraft maintenance programmes for aircraft types subjected to the MRBR process should contain identification cross reference to the MRBR tasks such that it is always possible to relate such tasks to the current approved operator's aircraft maintenance programme. This does not prevent the approved operator's aircraft maintenance programme from being developed in the light of service experience to beyond the MRBR recommendations but will show the relationship to such recommendations.
8. Some approved operator's aircraft maintenance programmes, not developed from the MRB Process, utilise reliability programmes. Such reliability programmes should be considered as a part of the approved maintenance programme.
9. Reliability programmes should be developed for aircraft maintenance programmes based upon MSG logic or those that include condition monitored components or that do not contain overhaul time periods for all significant system components.

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10. Reliability programmes need not be developed for aircraft maintenance programmes of aircraft of 5700 kg and below or that do contain overhaul time periods for all significant system components.

11. The purpose of a reliability programme is to ensure that the aircraft maintenance programme tasks are effective and their periodicity is adequate. It therefore follows that the actions resulting from reliability programme may be not only to escalate or delete maintenance tasks, but also de-escalate or add maintenance tasks, as necessary.

12. A reliability programme provides an appropriate means of monitoring the effectiveness of the maintenance programme.

**ANNEX 1 TO APPENDIX 8 - OPERATOR'S AIRCRAFT MAINTENANCE
PROGRAMME**

1. General requirements
 - 1.1. The maintenance programme should contain the following basic information.
 - 1.1.1. The type/model and registration number of the aircraft, engines and, where applicable, auxiliary power units and propellers.
 - 1.1.2. The name and address of the operator.
 - 1.1.3. The operator's reference identification of the programme document; the date of issue and issue number.
 - 1.1.4. A statement signed by the operator to the effect that the specified aircraft will be maintained to the programme and that the programme will be reviewed and updated as required by paragraph 5.
 - 1.1.5. Contents/list of effective pages of the document.
 - 1.1.6. Check periods which reflect the anticipated utilisation of the aircraft. Such utilisation should be stated and include a tolerance of not more than 25%. Where utilisation cannot be anticipated, calendar time limits should also be included.
 - 1.1.7. Procedures for the escalation of established check periods, where applicable and acceptable to the BCAA.
 - 1.1.8. Provision to record date and reference to approved amendments incorporated in the programme.
 - 1.1.9. Details of pre-flight maintenance tasks which are accomplished by maintenance staff and not included in the Operations Manual for action by flight crew.
 - 1.1.10. The tasks and the periods (intervals/frequencies) at which each part of the aircraft, engines, APU's, propellers, components, accessories, equipment, instruments, electrical and radio apparatus, and associated systems and installations should be inspected, together with the type and degree of inspection.
 - 1.1.11. The periods at which items as appropriate, should be checked, cleaned, lubricated, replenished, adjusted and tested.
 - 1.1.12. Details of specific structural inspections or sampling programmes.
 - 1.1.13. Details of the corrosion control programme, when applicable.
 - 1.1.14. The periods and procedures for the collection of engine health monitoring data.

1.1.15. The periods at which overhauls and/or replacements by new or overhauled parts should be made.

1.1.16. A cross-reference to other documents approved by the BCAA which contain the details of maintenance tasks related to mandatory life limitations, Certification Maintenance Requirements and Airworthiness Directives (hereinafter referred to as AD notes).

Note : To prevent inadvertent variations to such tasks or intervals these items should not be included in the main portion of the maintenance programme document, or any planning control system, without specific identification of their mandatory status.

1.1.17. Details of, or cross-reference to, any required Reliability Programme or statistical methods of continuous Surveillance.

1.1.18. A statement that practices and procedures to satisfy the Programme should be to the standards specified in the Type Certificate Holder's Maintenance Instructions. When practices and procedures are included in a customised Operator's Maintenance Manual approved by the Authority, the statement should refer to this manual.

1.1.19. Each maintenance task quoted should be defined in a definition section of the Programme.

2. Programme basis

2.1. Operator's Aircraft Maintenance programmes should normally be based upon the Maintenance Review Board Report, where available, and the Type Certificate holder's Maintenance Planning Document or Chapter 5 of the Maintenance Manual, (i.e. the Manufacturer's recommended Maintenance Programme). The structure and format of these maintenance recommendations may be re-written by the operator to better suit his operation and control of the particular maintenance programme.

2.2. For a newly type-certificated aircraft, where no previously approved Maintenance Programme exists, it will be necessary for the operator to comprehensively appraise the manufacturer's recommendations (and the MRB Report where applicable), together with other airworthiness information, in order to produce a realistic Programme for approval.

2.3. For existing aircraft types it is permissible for the operator to make comparisons with maintenance programmes previously approved. It should not be assumed that a Programme approved for another operator will automatically be approved for the operator. Evaluation is to be made of aircraft/fleet utilisation, landing rate, equipment fit and, in particular, the experience of the maintenance organisation must be assessed. Where the BCAA is not satisfied that the proposed maintenance programme can be used as is by the Operator, the BCAA should request the Operator to introduce appropriate changes to it, such as additional maintenance tasks or de-escalation of check frequencies, or to develop the aircraft initial maintenance programme based upon the Manufacturer's recommendations.

3. Amendments
 - 3.1. Amendments (revisions) to the approved Programme should be raised by the operator, to reflect changes in the type certificate holder's recommendations, modifications, service experience, or as required by the BCAA. Reliability programmes form one important method of updating approved programmes.
4. Permitted variations to maintenance periods
 - 4.1. The Operator may only vary the periods prescribed by the Programme with the approval of the BCAA.
5. Periodic review of maintenance programme contents
 - 5.1. Operator's approved aircraft Maintenance Programmes should be subject to periodic review to ensure that they reflect current Type Certificate holder's recommendations, revisions to the Maintenance Review Board Report, mandatory requirements and maintenance needs of the aircraft.
 - 5.2. The Operator should review the detailed requirements at least annually for continued validity in the light of operating experience.

**APPENDIX 9 OPERATOR'S AIRCRAFT MAINTENANCE PROGRAMME -
APPROVAL**

1. The documentation issued by the BCAA to approve the operator's aircraft maintenance programme may include details of who may issue certificates of release to service in a particular situation and may define which tasks are considered as base maintenance activity. Development of the approved operator's aircraft maintenance programme is dependent upon sufficient satisfactory in service experience which has been properly processed. In general, the task being considered for escalation beyond the MRB limits should have been satisfactorily repeated at the existing frequency several times before being proposed for escalation. Annex 1 to Appendix 8 gives further guidance.

2. The BCAA may approve a part of or an incomplete operator's aircraft maintenance programme at the start of operation of a new aircraft type or a new operator, subject to the limitation that the approved operator's aircraft maintenance programme is only valid for a period that does not exceed any required maintenance not yet approved. The following examples illustrate just two possibilities :

2.1. A new aircraft type may not have completed the acceptance process for structural inspection or corrosion control. It therefore follows that the operator's aircraft maintenance programme cannot be approved as a complete programme but it is reasonable to approve for a limited period, say, 3000 hrs or 1 year;

2.2. A new operator may not have established suitable maintenance arrangements for the high-life time checks. It therefore follows that the Authority may be unable to approve the complete operator's aircraft maintenance programme, preferring to opt for a limited period.

3. If the BCAA is no longer satisfied that a safe operation can be maintained, the approval of an operator's aircraft maintenance programme or part of it may be suspended or revoked. Events giving rise to such action include:

3.1. An operator suspending the operation of that aircraft type for at least one year;

3.2. Periodic review of the approved operator's aircraft maintenance programme by the BCAA shows that the operator has failed to ensure that the programme reflects the maintenance needs of the aircraft such that safe operation can be assured.

APPENDIX 10 OPERATOR'S AIRCRAFT TECHNICAL LOG

1. The operator's aircraft technical log is a system for recording defects and malfunctions discovered during the operation and for recording details of all maintenance carried out on the particular aircraft to which the operator's aircraft technical log applies whilst that aircraft is operating between scheduled visits to the base maintenance facility. In addition, it is used for recording operating information relevant to flight safety and should contain maintenance data that the operating crew need to know. Where a means of recording defects or malfunctions in the cabin or galleys that affect the safe operation of the aircraft or the safety of its occupants, separate from the aircraft technical log, is used, this should be regarded as forming part of the aircraft technical Log system.

2. The operator's aircraft technical log system may range from a simple single section document to a complex system containing many sections but in all cases it should include the information specified for the example used here which happens to use 5 section document / computer system:

Section 1 should contain details of the registered name and address of the operator, the aircraft type and the complete international registration marks of the aircraft.

Section 2 should contain details of when the next scheduled maintenance is due, including, if relevant any out of phase component changes due before the next maintenance check. In addition this Section should contain the current Certificate of Release to Service, for the complete aircraft, issued normally at the end of the last maintenance check.

Note : The flight crew does not need to receive such details if the next scheduled maintenance is controlled by other means acceptable to the BCAA.

Section 3 should contain details of all information considered necessary to ensure continued flight safety. Such information includes:

- i. The aircraft type and registration mark;
- ii. The date and place of take-off and landing;
- iii. The times at which the aircraft took off and landed;
- iv. The running total of flying hours, such that the hours to the next schedule maintenance can be determined. The flight crew does not need to receive such details if the next scheduled maintenance is controlled by other means acceptable to the BCAA;

v. Details of any failure, defect or malfunction to the aircraft affecting airworthiness or safe operation of the aircraft including emergency systems, and any failure, defect or malfunctions in the cabin or galleys that affect the safe operation of the aircraft or the safety of its occupants that are known to the commander. Provision should be made for the commander to date and sign such entries, including, where appropriate, the nil defect state for continuity of the record. Provision should be made for a Certificate of Release to Service or , if agreed by the BCAA , the alternate abbreviated Certificate of Release to Service following rectification of a defect or any deferred defect or maintenance check carried out. Such a certificate appearing on each page of this section should readily identify the defect(s) to which it relates or the particular maintenance check as appropriate.

The alternate abbreviated certificate of release to service consists of the following statement “ JAR 145.50 release to service” in place of the full certification statement specified in AMC 145.50(b) para 1.

When the BCAA agrees to the use of alternate abbreviated certificate of release to service, the introductory section of the Technical Log should include an example of the full certification from AMC 145.50(b) para 1 together with a note stating; “ The alternate abbreviated certificate release to service used in this technical log satisfies the intent of JAR 145.50(a) only. All other aspects of JAR 145.50 (b) shall be complied with”.

vi. The quantity of fuel and oil uplifted and the quantity of fuel available in each tank, or combination of tanks, at the beginning and end of each flight; provision to show, in the same units of quantity, both the amount of fuel planned to be uplifted and the amount of fuel actually uplifted; provision for the time when ground de-icing and/or anti-icing was started and the type of fluid applied, including mixture ratio fluid/water.

vii. Pre-flight inspection signature.

In addition to the above it may be necessary to record the following supplementary information:

- The time spent in particular engine power ranges where use of such engine power affects the life of the engine or engine module. Maximum or Inter Contingency Power are two examples.
- The number of landings where landings affect the life of an aircraft or aircraft component.
- Flight cycles or flight pressure cycles where such cycles affect the life of an aircraft or aircraft component

Note 1 : Where Section 3 is of the multi sector 'part removable' type then such 'part removable' sections should contain all of the foregoing information where appropriate.

Note 2 : Section 3 should be designed such that one copy of each page may remain on the aircraft and one other copy may be retained on the ground until completion of the flight to which it relates. See also chapter IV of this circular Information retained on the ground.

Note 3 : Section 3 lay-out should be divided to show clearly what is required to be completed after flight and what is required to be completed in preparation for the next flight.

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Section 4 should contain details of all deferred defects that affect or may affect the safe operation of the aircraft and should therefore be known to the aircraft commander. Each page of this section should be pre-printed with the operator's name and page serial number and make provision for recording the following:

- i. A cross reference for each deferred defect such that the original defect can be identified in the particular Section 3 Sector Record Page.
- ii. The original date of occurrence of the defect deferred.
- iii. Brief details of the defect.
- iv. Details of the eventual rectification carried out and its Certificate of Release to Service or a clear cross-reference back to the document that contains details of the eventual rectification.

Section 5 should contain any necessary maintenance support information that the aircraft commander needs to know. Such information would include data on how to contact maintenance engineering if problems arise whilst operating the routes etc.

The aircraft Technical Log System can be either a paper or computer system or any combination of both methods.

APPENDIX 11 MAINTENANCE RECORDS

1. The operator should ensure that he always receives a complete JAR-145 Certificate of Release to Service such that the required records can be retained. The system to keep the maintenance records should be described in the operator's maintenance management exposition or in the relevant JAR-145 exposition.
2. When an operator arranges for the relevant maintenance organisation to retain copies of the maintenance records on his behalf, he will nevertheless continue to be responsible for the records under Chapter XIX (b) relating to the preservation of records. If he ceases to be the operator of the aircraft, he also remains responsible for transferring the records to any other person who becomes the operator of the aircraft.
3. Keeping maintenance records in a form acceptable to the BCAA normally means in paper form or on a computer database or a combination of both methods. Records stored in microfilm or optical disc form are also acceptable.
4. Paper systems should use robust material which can withstand normal handling and filing. The record should remain legible throughout the required retention period.
5. Computer systems should have at least one backup system which should be updated at least within 24 hours of any maintenance. Each terminal is required to contain programme safeguards against the ability of unauthorised personnel to alter the database.
6. Microfilming or optical storage of maintenance records may be carried out at any time. The records should be as legible as the original record and remain so for the required retention period.
7. Information on times, dates, cycles etc. as required by Chapter XIX above referred to as 'summary maintenance records' are those records that give an overall picture on the state of maintenance of the aircraft and any life-limited aircraft component. The current status of all life limited aircraft components should indicate the component life limitation, total number of hours, accumulated cycles or calendar time and the number of hours/cycles/time remaining before the required retirement time of the component is reached.
8. The current status of Airworthiness Directives (AD) should identify the applicable AD's including revision or amendment numbers. Where an AD is generally applicable to the aircraft or component type but is not applicable to the particular aircraft or component, then this should be identified. The AD status includes the date when the AD was accomplished, and where the AD is controlled by flight hours or cycles, as appropriate. For repetitive AD's, only the last application should be recorded in the AD 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.

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9. Details of current modification and repairs means the substantiating data supporting compliance with the airworthiness requirements. This can be in the form of a Supplemental Type Certificate, Service Bulletin, Structural Repair Manual or similar approved document. If the airworthiness data for modification and repair is produced by the JAR-145 organisation in accordance with existing national regulations all detailed documentation necessary to define the change and its approval should be retained.

10. The substantiating data may include:

- a. Compliance programme;
- b. Master drawing or drawing list, production drawings, installation instructions;
- c. Engineering reports (static strength, fatigue, damage tolerance, fault analysis, etc.);
- d. Ground and flight test programme and results;
- e. Mass and balance change data;
- f. Maintenance and repair manual supplements;
- g. Maintenance programme changes and instructions for continuing airworthiness; and
- h. Aircraft flight manual supplement.

11. Maintenance records should be stored in a safe way with regard to fire, flood, theft and alteration.

12. Computer backup discs, tapes etc., should be stored in a different location from that containing the current working discs, tapes, etc. and in a safe environment.