Cooperative Development of Operational Safety and Continuing Airworthiness

COSCAP - South Asia

Master Minimum Equipment List/ Minimum Equipment List Policy and Procedures Manual

***M**aster **M**inimum **E**quipment **L**ist/*
Minimum Equipment List
Policy and Procedures Manual

(INSERT NAA/COUNTRY)

Foreword

This Manual has been prepared in accordance with *the Civil Aviation Rules / Regulations of* **(Insert country)** for the use and guidance of Civil Aviation Authority and Industry personnel and contains all the relevant information with respect to the philosophy, development and approval of the Master Minimum Equipment List (MMEL) and Minimum Equipment List (MEL).

(Insert NAA/country) Operations and Airworthiness Inspectors are expected to use good judgement in matters where specific guidance has not been given and be aware of the need for revision to the present information as new requirements evolve.

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Original signed by

Director General
Civil Aviation Authority
(Insert NAA/country)

Record of Amendments

Amendment No.	Date	Pages Affected	Date Entered	Initials

Acronyms

AFM	Aircraft Flight Manual
AMO	Approved Maintenance Organization
AWM	Airworthiness Manual
CARs	Civil Aviation Regulations
CDL	Configuration Deviation List
DDG	Dispatch Deviation Guide
DDPG	Dispatch Deviation Procedures Guide
ETOPS	Extended Range Twin Operations
FARs	Federal Aviation Regulations
IFR	Instrument Flight Rules
IMC	Instrument Meteorological Conditions
MCM	Maintenance Control Manual
MEL	Minimum Equipment List
MMEL	Master Minimum Equipment List
OPI	Office of Principal Interest
PAI	Principal Airworthiness Inspector
POI	Principal Operations Inspector
VFR	Visual Flight Rules
VMC	Visual Meteorological Conditions

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Chapter 1
Introduction

Definitions

The definitions of specific words and phrases used in this manual are found at Appendix A.

The Master Minimum Equipment List

> A Master Minimum Equipment List (MMEL) is an approved document created specifically to regulate the dispatch of an aircraft type with inoperative equipment. It establishes the aircraft equipment allowed to be inoperative under certain conditions for a specific type of aircraft and still provide an acceptable level of safety. The MMEL contains the conditions, limitations and procedures required for operating the aircraft with these items inoperative. The MMEL forms the basis for development and review of an individual operator's Minimum Equipment List (MEL).

A **(Insert country)** operator will frame its MEL based on the MMEL duly approved by the authority of the country of manufacture of the aircraft.

Dispatch with Inoperative Equipment

The MEL is an alleviating document. Its purpose is not, however, to encourage the operation of aircraft with inoperative equipment. It is never desirable that aircraft be dispatched with inoperative equipment and such operations are permitted only as a result of careful analysis of each item to ensure that the required level of safety is maintained. A fundamental consideration in permitting the dispatch of aircraft with inoperative equipment is that the continued operation of an aircraft in this condition should be minimized. The limitations governing repair intervals are discussed later in this document.

Legal Basis

(Insert country) Civil Aviation Rules (CARs) provide that the operation of an aircraft with equipment and/or instruments inoperative may be approved through the use of a Minimum Equipment List.

Where a Master Minimum Equipment List has been approved for a particular type of aircraft by the authority of the country of manufacture of the aircraft, a Minimum Equipment List shall not be approved for that type of aircraft unless it complies with the minimum standards set out in that MMEL.

Installed Equipment

Most large transport aircraft are designed and certified with a significant amount of redundancy in their systems, such that the minimum standards of airworthiness are satisfied by a substantial margin.

Many of these aircraft also have installed instruments and equipment that are not required for safe operation under all operating conditions, e.g., instrument lighting in day VMC. Other equipment, such as entertainment systems or galley equipment, may be installed for passenger convenience.

Equipment Included in the MMEL

The MMEL lists those items of equipment - including optional equipment - which may be inoperative for the dispatch of a flight e.g. entertainment items which, when inoperative, do not affect airworthiness.

> It is important to note that any item related to the airworthiness of the aircraft, and not included in the MMEL, must be operative prior to flight. Items required by the **(Insert country)** Civil Aviation Regulations (and which are not listed in the MMEL,) are required to be operative for dispatch.

Chapter 2
Master Minimum Equipment List

2.1 Acceptance Authority

The Chief / Director Airworthiness (some States may like to delegate this responsibility to the Chief/ Director Flight Standards) has the responsibility for the overall acceptance of MMELs. The source MMEL shall only be the MMEL that has been approved by the authority of the country of manufacture of the aircraft.

2.2 MMEL Philosophy

This chapter provides an insight into the criteria that govern the determination of an acceptable MMEL item and the methods of justification to be used in the development of a MMEL.

2.2.1 Level of Safety

The MMEL identifies the equipment which may be inoperative while maintaining the level of safety of the aircraft type dictated by the minimum standards specified for the design in the type basis and operation by the State of manufacture. It should be noted that although the airworthiness standards, require that aircraft be designed with certain systems and components, the MMEL will permit the operation, for short periods, of that aircraft with such items of equipment inoperative if the required level of safety can be maintained. To establish the equipment for any given operating condition, the authority must consider various factors relating to safe operation when such equipment is inoperative. These include the consequence to the aircraft and its occupants of further failures, change in crew workload and/or degradation in crew efficiency and degradation in crew capability to cope with adverse environmental conditions.

2.2.2 Maintaining the Level of Safety

a) The authority will base its decision, as to whether a particular proposal for a MMEL is to be approved, on the criterion that the level of safety required by the standards specified for the design and operation of the aircraft type can be maintained. This finding will be based on the substantiated ability to maintain the required level of safety with an item of equipment inoperative.

b) This substantiation will be achieved by one or more of the following means:

1. the adjustment of operating limitations;
2. transfer of the function to an operating component;
3. reference to other instruments or components performing the required function or providing the required information;
4. change in operating procedures; and/or
5. change in maintenance procedures.

2.2.3 Example of Justification of a MMEL Item

a) To illustrate this, consider a MMEL proposal requesting that an aircraft be permitted to dispatch with the differential pressure indicator on the cockpit pressurization control panel inoperative.

b) The standards specified for the design and operation of the aircraft type requires that pressurized cabins must have instruments at the pilot or flight engineer station to show the pressure differential between the cabin air pressure and atmospheric pressure.

c) In order to meet the criteria, the MMEL proposal would have to stipulate that the following conditions be met:

1. the cabin altimeter must be operative; and

2. a chart showing the relationship between the aircraft and cabin altitude for the normal operating pressure differential (e.g. 8 PSI) must be available to the crew in flight.

d) Consequently, the flight crew, with reference to the aircraft's altimeter, the cabin altimeter and the specified chart, would be able to determine that the appropriate cabin pressure differential was being maintained during flight.

e) Providing that dispatching with the cabin pressure differential indicator inoperative did not seriously impact crew workload and/or efficiency and was acceptable in terms of further failures, this MMEL item would be acceptable.

f) This acceptability is based on the evaluation of the foregoing factors showing that the level of safety dictated by the minimum standards specified for the design and operation of the aircraft type, would be maintained.

g) The continued reliability of an aircraft system and the probability of total system failure, following the dispatch of an aircraft with inoperative equipment, must be considered for some MMEL items.

2.2.4 Methods of Justification of MMEL Items

The assessment of an acceptable level of safety for a MMEL item often involves more than one of the following methods of justification:

a) the equipment may be considered optional;
b) the equipment may be considered redundant;
c) a quantitative safety analysis; and/or
d) a qualitative analysis.

2.2.5 Optional Equipment

When aircraft are approved with optional equipment on board which is over and above the required equipment, there is no necessity for such equipment to be operative if it is in excess of that required for safe operations for a particular flight condition or route of flight. Inclusion in the MMEL can be accepted on this basis.

2.2.6 Redundant Items

If the purpose or function of the considered component/system can be carried out by some other items of equipment, then it may be accepted on a redundancy basis with the provision that the alternative equipment can be confirmed to be operative. Redundancy cannot be claimed as justification for inclusion of an item if the two (or more) sources of the function or information are required by the aircraft type certification basis. In this case, another means of justification such as the safety analysis method must be used.

2.2.7 Quantitative Safety Analysis

a) The increasing dependency of modern aircraft on the safe operation of their complex systems has resulted in the development of structured techniques to achieve the necessary level of safety. This level of safety is based upon the principle that the hazard resulting from an event should be inversely proportional to the probability of its occurrence. Compliance is usually demonstrated by conducting a system safety assessment.

b) The safety assessment establishes the major, hazardous or catastrophic situations or failure conditions which the system is capable of producing and the allowable probability of occurrence. For those systems whose failure is critical, i.e., results in hazardous or catastrophic situations, a numerical probability analysis is usually required to demonstrate compliance with the allowable probability of occurrence. For non-critical components/systems, the safety assessment may be greatly simplified. The risk of any specific failure condition is a function of failure rate, the number of such systems and the time of exposure to risk.

c) When items of equipment from systems performing critical functions, are included in the MMEL, account shall be taken of their inoperability in the safety assessment. The additional risk resulting from occasional flights with such equipment inoperative should be established and should be compatible with the allowable probability of occurrence established during the certification process.

d) If the item cannot be justified by the previous means or criteria, then a safety analysis must be carried out involving a quantitative analysis of the likely risk of the worst effects that can result from additional failures, events and/or environmental conditions occurring during a flight with the particular inoperative item in question. It must be shown that, bearing in mind the reduced exposure time when operating under a MMEL, the probability of a particular hazard has not been increased beyond the levels dictated by the minimum standards specified for the design and operation of the aircraft type.

2.2.8 Qualitative Safety Analysis

If an item is to be acceptable for inclusion in a MMEL, a qualitative analysis must be used to consider the impact that the proposed inoperative item has on all other aspects of the aircraft's operation. The qualitative analysis must consider the impact on crew workload, the impact of multiple MMEL items, and the complexity of maintenance and/or operational procedures. It may reflect experience with previous MMEL approvals.

Note: A previous MMEL approval of the same item on another aircraft type does not in itself imply that the required level of safety has been met. Factors which must be considered are similarity of system operation and similarity of the aircraft operational role.

2.3 Development of a MMEL

Aircraft manufacturers must produce a MMEL if they wish their aircraft to be operated with specified equipment inoperative. Where possible, the approval process for such a MMEL will take place concurrently with the type certification process, but the development of an approved MMEL is not a condition of aircraft type certification.

2.3.1 MMEL Source

The development and approval of a MMEL is heavily dependent on the aircraft manufacturer as the primary source of information on any new aircraft and its systems. An authority will not normally undertake either the origination or production of MMELs. The drafting of a MMEL is the manufacturer's responsibility.

2.3.2 MMEL Justification

The MMEL must be supported by appropriate engineering justification and special procedures where applicable. The engineering justification may include a quantitative and/or qualitative safety analysis, a rationale showing system redundancy, AFM limitations or any other technical justification supporting the prescribed level of safety.

2.4 Source MMELs Policy

(Insert NAA/country) shall accept MMELs approved by the regulatory authority of the country of manufacture, as published. Operators are to incorporate source MMEL amendments as soon as they are available. **(Insert NAA/country)** is to be informed immediately of the amendment. The amendment to an operator MEL is to be submitted to the Authority for approval prior to useage.

2.5 Third Country MMELs

(Insert NAA/country) will not normally accept a MMEL produced by a third country (an example would be a U.S. MMEL for a European aircraft). However, exceptions may be made, particularly for older aircraft, if no other source is available. Such MMELs should be submitted through and be supported by the aircraft manufacturer with appropriate engineering justification.

2.6 Temporary or Interim MMEL Revisions

Manufacturers may issue temporary or interim revisions to their MMELs which may not be incorporated into the permanent revision for some time. Temporary or interim MMEL revisions may be incorporated into an operator's MEL, upon receipt and after necessary approval of **(Insert NAA/country)**.

2.7 MMEL Format

a) Each MMEL should contain a cover/approval page, a Log of Revisions, a Reason for Changes page, a List of Effective Pages, a Table of Contents, an explanation of the symbols used in the MMEL and a definition of any terms having special meaning in the context of the MMEL. Each item of equipment listed in the MMEL shall be described and identified in accordance with the Air Transport Association (ATA) specification 100 code system (See Appendix M). The number of each item of equipment installed and the number required to be operative for dispatch shall be stated in the appropriate columns.

b) Any conditions associated with inoperative equipment, required to maintain a level of safety, shall be included in the “Remarks or Exceptions” column.

c) When practicable, the switch, lever, gauge or indicator of a particular item of equipment, should be identified. Source MMELs may indicate a requirement to placard inoperative equipment by use of an asterisk (*) in column 4 to inform crew members of its condition.

d) For operator MELs, a definition shall be added which shall state that each inoperative item must be placarded to inform and remind the crewmembers and maintenance personnel of the equipment condition.

2.8 MMEL Page Format

a) MMELs will be published in the "four column format" where columns 1 to 4 will contain respectively the name of the item and category, number installed, number required for dispatch and remarks or exceptions.

b) A sample page is provided in Appendix C. Other formats may be accepted for MMELs provided they are clear and unambiguous. Each MMEL/MEL will be preceded by an acceptable preamble. An example is given in Appendix D.

2.9 Operating and Maintenance Procedures

Any inoperative item of equipment in the MMEL which would require an operational or maintenance procedure to ensure the required level of safety, shall be so identified by an appropriate symbol in the "Remarks or Exceptions" column of the MMEL. This will normally be "O" for an operational procedure and "M" for a maintenance procedure. (O) (M) means both operational and maintenance procedures are required. Details of such procedures must be made available for review during the MMEL acceptance process as they form part of the justification supporting inclusion of an item in the MMEL. Where

applicable, the limitations, procedures and remarks for individual MMEL items should cover at least day, night, VMC, IMC, ETOPS, icing, rain, and Category II/III.

2.10 Prohibited Items

a) The MMEL shall not include any item of equipment which, if inoperative, is likely to significantly affect the take-off, landing or climb performance of the aircraft or associated landing speeds presented in the approved AFM (Aircraft Flight Manual) unless the AFM specifies the effect and the MMEL draws attention to this fact.

b) No item shall be included in the MMEL which conflicts with the limitations or invalidates the emergency procedures of the AFM or of an airworthiness directive unless the AFM or directive provide otherwise.

c) The MMEL shall not include any part or structural component of the aircraft which is the subject of the Configuration Deviation List (CDL).

2.11 Repair Interval Categories

a) The maximum time an aircraft may be operated between the discovery of an inoperative item and its repair will be specified in the MMEL. Passenger convenience items such as reading lights may have no specified repair interval (no category).

b) The category of all other inoperative items will be determined according to the time intervals specified below.

Category A

Items in this category shall be repaired within the time interval specified in the "Remarks or Exceptions" column of the operator's approved MEL. Whenever the proviso in the "Remarks or Exceptions" column of the MMEL states cycles or flight time, the time interval begins with the next flight. Whenever the time interval is listed as flight days, the time interval begins on the flight day following the day of discovery.

Category B

Items in this category shall be repaired within 3 consecutive calendar days excluding the day of discovery.

Category C

Items in this category shall be repaired within 10 consecutive calendar days, excluding the day of discovery.

Category D

Items in this category shall be repaired within 120 consecutive calendar days, excluding the day of discovery. To be considered for placement in Category D, the

item must be of an optional nature, or excess equipment which an operator may, at his/her discretion, deactivate, remove from or install on an aircraft.

To be approved for Category D, the item must meet the following criteria:

1. the absence of the item does not affect crew workload;
2. the pilots do not rely on the function of that item on a routine or continuous basis; and,
3. the pilot's training, subsequent habit patterns and procedures do not rely on the use of that item.

Category Format

The category of each item in the MMEL is to be inserted in column 1 adjacent to column 2.

2.12 MMEL Procedures

2.12.1 General

This section details the procedures that is followed in the organization, approval and publication of the MMEL.

2.12.2 Draft MMEL

1. The draft MMEL is to be originated by the manufacturer and should be submitted to Authority as early as possible in the type certification process. Inputs from the aircraft operator should be made to the originator and, if supported by the manufacturer, should be included in the submission to Authority.

2. The draft MMEL must be accompanied by appropriate engineering justification.

3. Applicable operating and maintenance procedures must be supplied in sufficient detail to permit an understanding of each associated MMEL item. Approval of the procedures themselves will not be a part of the MMEL approval process, but rather, the MEL approval process.

4. For large aircraft, these procedures are normally contained in a manufacturer's document such as a Dispatch Deviation Procedure Guide (DDPG), or a Dispatch Deviation Guide (DDG). For smaller aircraft, where these documents are not available from the manufacturer, the operator is responsible for developing their own procedures and having them approved.

2.12.3 Draft MMEL Review

A review of the draft MMEL will be undertaken prior to approval. Following review by the appropriate specialists and decisions on individual MMEL items the changes required to the draft MMEL will be passed back to the originator.

2.12.4 Approval and Publication

The originator will incorporate the required changes for approval by the Authority. The originator will then publish the final version of the revision or temporary revision and return hard copies or an acceptable electronic copy to the Authority. The originator may also distribute hard copies of the MMEL on request.

1.1.5 Revisions to MMELs

Once a MMEL approval is issued, requests for revisions may be initiated by the operator or aircraft manufacturer. In any event, the manufacturer's participation is usually required in support of this revision activity.

a) Approval of Revisions

All proposed revisions, together with engineering justification and sufficient details of applicable operating and maintenance procedures to permit understanding of each item shall be submitted to the Authority.

b) Approval Process

Requests for revisions to a MMEL will be reviewed by the Authority. Once the required changes have been approved, they will be passed back to the originator for inclusion in the MMEL.

c) MMEL Revision Status

The manufacturer or operator may determine the current approved revision status of any MMEL from the Authority.

Chapter 3

MEL Policy and Procedures

3.1 MEL Purpose

The MEL is a joint operations and maintenance document prepared for or by an operator to:

a) identify the minimum equipment and conditions for an aircraft to maintain the Certificate of Airworthiness in force and to meet the operating rules for the type of operation;

b) define operational procedures necessary to maintain the required level of safety and to deal with inoperative equipment; and

c) define maintenance procedures necessary to maintain the required level of safety and procedures necessary to secure any inoperative equipment.

3.2 MEL Definition

While the MMEL is for an aircraft type, the MEL is tailored to the operator's specific aircraft and operating environment and may be dependent upon the route structure, geographic location, and number of airports where spares and maintenance capability are available etc. The MMEL cannot address these individual variables, nor standard terms such as "As required by Regulations". **It is for these reasons that a MMEL cannot be approved for use as a MEL.** It falls on the operator to develop Operations "O" and Maintenance "M" procedures, or to use a DDPG or DDG, where these documents are available.

Note: Air Operators currently using an approved company MEL or in the process of amending or developing a new MEL must ensure that all regulatory references are in accordance with the **(Insert NAA/country)** *Regulations*, and Standards.

3.2.1 Equipment Required by Operating Regulation

When an item of equipment is required to be installed and operative under particular circumstances by the **(Insert country)** Aviation Regulations such equipment may be defined in the remarks column of the MEL by the words "As required by Regulation".

3.3 MEL Intent

Except as authorized by the Director General under the rules, operation of an aircraft with aircraft equipment inoperative or removed is prohibited unless an operator does so in compliance with an approved MEL.

3.4 MEL Limitation

The content of an operator's approved MEL cannot be less restrictive than the content of the source MMEL for that aircraft type.

3.5 Audit of Operator MELs

(Insert NAA/country) will audit the operator's conformance to MEL requirements on an ongoing basis, and as part of any company audit. Significant non-conformances may result in the MEL approval being withdrawn under the rules.

3.6 Applicability

3.6.1 Legal Basis

a) CAR **(Insert number)** stipulates that the Director General may approve a MEL for each type of aircraft, in accordance with the MMEL/MEL Policy and Procedures Manual. Where a source MMEL has been accepted, the Director General shall approve a minimum equipment list in respect of each operator of that type of aircraft, provided that the requirements set out in the MMEL/MEL Policy and Procedures Manual are met.

b) CAR **(Insert number)** stipulates that a MEL is mandatory for aircraft registered and used in **(Insert country)** for commercial purposes in commuter and airline categories.

c) CAR **(Insert number)** states that where a MEL has been approved with respect to the operator of an aircraft, no person shall conduct a takeoff in that aircraft with equipment that is unserviceable or removed unless the aircraft is operated in accordance with the conditions or limitations specified in the minimum equipment list. The one exception specified recognizes the superiority of an Airworthiness Directive (AD) over the conditions or limitations specified in the MEL.

3.7 Administrative Procedures

3.7.1 Approval Authority

In accordance with **(Insert Civil Aviation Rule)** (delegation of authority), the authority and responsibility for MEL approval rests with the Chief,/Director of Airworthiness (some States may like to delegate this responsibility to the Chief, /Director Flight Standards).

3.7.2 Initial Application Information

When an operator expresses the intent to operate an aircraft eligible to use an MEL, the Airworthiness Directorate will provide them with the following information:

a) the current requirements of the CARs;

b) a copy of the MMEL/MEL Policy and Procedures Manual.

c) the information necessary, where applicable, for developing their own MEL.

3.7.3 MMEL Status

The operator must ensure that they use the latest version of the source MMEL to develop their MEL. **(Insert NAA/country)** reserves the right to add an overriding limitation.

3.7.4 MMEL Acquisition

Approved MMELs may be acquired from the foreign Civil Aviation Authority. Alternatively, operators may obtain MMELs directly from the manufacturer, who normally provide MMELs along with a revision service. It is the responsibility of the operator to provide a complete set of source MMEL documents to the **(Insert NAA/country)** and also ensure a proper revision service.

3.7.5 Operator MEL Development

a) Development

The operator will develop their MEL and all subsequent amendments, as a joint operations and maintenance document; based on the current MMEL revision. The operator's MEL shall be approved by at least one senior company official from each respective department (Operations and Maintenance) prior to the MEL request cover sheet being submitted to **(Insert NAA/country)**.

b) Substantiation

The operator must provide adequate substantiating documents to support their MEL submissions to their POI/PAI. These documents will provide additional information relating to the operator's MEL program. Any additional MEL items which do not appear in the MMEL will require substantiation for consideration, and must be accompanied by a description of the appropriate Operational or Maintenance procedures. The POI/PAI will review the request, and if valid, will forward the submission to Chief / Director of Airworthiness for review and approval.

c) Copies

The operator must submit two copies of the joint operations / maintenance MEL document to the responsible POI/PAI.

3.8 Civil Aviation Authority Inspector Responsibility

3.8.1 Operations

The Chief, / Director Flight Standards in consultation with the POI is responsible for vetting the operator's MEL with respect to the operations functions and procedures, ensuring that all of the operational procedures produced and published by the air operator are relevant to the required task.

3.8.2 Airworthiness

a) The Chief, / Director Airworthiness in consultation with the PAI is responsible for vetting the operator's MEL with respect to the maintenance functions and procedures, and ensuring that all of the maintenance procedures produced and published by the air operator are relevant to the required task.

b) Both **(Insert NAA/country)** Operations and Airworthiness personnel must concur prior to an approval being granted for an operator's MEL application.

3.8.3 **(Insert NAA/country)** MEL Approval Time

Provided that the operator submits a MEL that complies with the MMEL/MEL Policy and Procedures Manual, **(Insert NAA/country)** will endeavor to approve the document within 60 days. The format for the letter of approval is found in Appendix F.

3.8.4 Interim Approvals

(Insert NAA/country) will not grant an operator interim approval while the MEL is undergoing the review process, nor will approval be given to use a MMEL as a MEL.

3.8.5 MEL Distribution

An approved or revised MEL is deemed to be in force upon receipt from **(Insert NAA/country)** However, the operator may have 10 calendar days or as specified in the operator's approved system, (if necessary) to distribute and implement the new document. In all cases, copies are required for:

a) each aircraft;
b) Senior Company Official - Maintenance;
c) Senior Company Official -Operations;
d) Dispatch (if applicable);
e) Maintenance Coordinator (if applicable);
f) any other personnel as required;
g) the POI and PAI

3.8.6 MEL Updates

It is the operator's responsibility to ensure that their MEL is reviewed and updated as required. The MEL should be reviewed by the operator at least annually to ensure that it incorporates any changes to the operation, aircraft or to the **(Insert country)** Regulations. A revision to the MMEL, will require that the operator review and amend their MEL, as necessary. The MEL development, processing and approval procedures should be reviewed as part of the operator's quality assurance program.

3.8.7 MEL Amendments

a) Amendments to MELs will be handled according to the process outlined in this document for initial approval.

b) Where a source MMEL revision is more restrictive, the operator must submit an appropriate amendment to the MEL for approval immediately on receipt of the MMEL revision. Priority is to be accorded when dealing with such revisions.

c) Where a Dispatch Deviation Procedures Guide (DDPG) or equivalent document is available; or where a MMEL revision does not affect a procedure, the time for MEL amendment remains at 60 days. Where a DDPG or equivalent document is not available; or where the MMEL revision affects a procedure, the MEL amendment time is 120 days.

3.8.8 MEL Categorization

When a source MMEL is initially categorized, the MEL shall be amended to conform to the MMEL as per Section 2.11 The category of each item in the MEL shall be inserted in column 1 adjacent to column 2. An operator must submit his/her MEL amendment for categorization within 120 days of the categorized MMEL approval date

3.9 Conformity to the MMEL

3.9.1 Modification of MMELs

Operators may disagree with the content of the MMEL and request changes to their MEL. These suggestions for changes, accompanied by appropriate substantiation, should be forwarded through their POI/PAI for assessment. The Chief, / Director of Airworthiness will review submissions and may modify the MMEL. Invariably the foreign CAA (approving authority of the source MMEL) or the manufacturer is to be approached by **(Insert NAA/country)** CAA prior to a decision.

3.9.2 MEL Content

a) The operator's MEL must reflect the current source MMEL limitations unless otherwise authorized. When a revision is issued to a MMEL the operator's MEL need not be revised if the change is less restrictive than the existing MEL.

b) Except as noted above, all items installed in an operator's aircraft which are addressed in the most recent accepted version of the source MMEL shall be included in the MEL. At the same time, an operator or pilot retains the option to refuse any alleviation, and may choose not to dispatch with any particular MEL item inoperative.

3.9.3 Administrative Control Items

Some operators use their MEL as a comprehensive document to control items for tracking and informational purposes. In such cases, operators' MELs may include items not contained in the MMEL; however, no relief may be granted for these administrative control items unless conditions and limitations are contained in an approved document other than the MMEL (e.g., aircraft flight manual). Administrative control items and passenger convenience items may not include items or subsystems of items which are addressed in the MMEL. Operators seeking to add administrative control items to their MEL must submit their request to their PAI or POI with appropriate substantiation. (See Appendix A, Definition 2.)

3.9.4 Passenger Convenience Items

Passenger convenience items are those items related to the convenience, comfort, or entertainment of an operator's passengers. They may include items such as galley equipment, movie equipment, ash trays, stereo equipment, and overhead reading lamps. Passenger convenience items do not carry a specific repair interval, and need not be listed in an operator's MEL, if they are not addressed in the MMEL. The exceptions to this rule are:

a) Where passenger convenience items serve a second function, such as movie equipment being used for cabin safety briefings, operators must develop and include operational contingency procedures in case of an equipment malfunction.

b) Where passenger convenience items are part of another aircraft system, for example - the electrical system, procedures must be developed and included in the MEL for deactivating and securing in case of malfunction.

3.9.5 MEL Audits

a) Whenever an audit is conducted, the operator’s MEL shall be reviewed. The review shall ensure that the MEL conforms to **(Insert NAA/country)** regulations, current policies and procedures.

b) Special attention should be given to operating rules that may have been amended since the MEL was last approved. It shall be confirmed that the latest revisions to the MMEL - if more restrictive, have been incorporated into the MEL.

3.10 MEL Development Procedures

3.10.1 MEL Basic Format

The MEL must include the following: a List of Effective Pages, a Table of Contents, the Minimum Equipment List Preamble, Notes and Definitions, a section for each aircraft system addressed, the letter of approval and amendment record page. Operators must specify the MMEL revisions and any other documents such as a DDPG, used in the development of their MEL

3.10.2 MEL Page Format

a) MEL format is at the discretion of the operator, provided that it is clear and unambiguous. However, it is recommended that the MEL page format follow the MMEL page format of four columns (See Appendix C). The page numbering, and individual MEL items, however, must be in accordance with the ATA 100 code system (See Appendix M).

b) The MEL may incorporate only one item per page or as considered appropriate by the operator when operations and/or maintenance procedures are required. If no procedures are required, or the required action is simple, multiple items may appear on a single page.

3.10.3 List of Effective Pages

a) A List of Effective Pages (LEP) will be used to ensure that each MEL is up-to-date. It must list the date of the last amendment for each page of the MEL. **(Insert NAA/country)** will stamp and initial the List of Effective Pages to indicate the approval status of the contents of the MEL. The date and revision status of each page of the MEL must correspond to that shown on the List of Effective Pages.

1. Only those pages of the LEP that list the date and revision status of each MEL page need to be stamped and initialled.

2. The **(Insert NAA/country)** stamped and initialled LEP must be retained on file. Copies of the company MELs may be issued with stamped LEPs. The copies must detail the location within the company where the approved MEL is retained.

3.10.4 Table of Contents

The Table of Contents page shall list the section for each aircraft system utilizing the ATA 100 listing as found in the MMEL. Pages will be numbered with the ATA system number followed by the item number for that system (e.g., the page following 27-2-1 would be 27-2-2).

3.10.5 MEL Preamble

The purpose of the Minimum Equipment List Preamble is to provide direction to company personnel on the philosophy and use of the MEL. **(Insert NAA/country)** publishes a MEL preamble which is acceptable for use by an operator (See Appendix D.). An operator may choose to develop their own preamble but it must contain at least the information contained in the **(Insert NAA/country)** version.

3.10.6 Notes and Definitions

Notes and Definitions are required to allow the user to interpret the MEL properly. As a minimum, the notes and definitions contained in Appendix A will be used in the MEL. Additions and deletions to the notes and definitions may be applied to the operator's MEL as required.

3.10.7 Operating and Maintenance Procedures

a) Dispatch with inoperative items is often acceptable only with the creation of special operating or maintenance procedures.

b) Where the MMEL indicates that this is the case, the operator must establish, publish and obtain approval for appropriate procedures. Procedures recommended by the aircraft manufacturer in most cases can be adopted for this purpose, but the ultimate responsibility for providing acceptable procedures to be approved in the MEL rests with the operator. These procedures will ensure that a satisfactory level of safety will be maintained (See Section 3.15.1).

c) The operator, when comparing the MEL against the MMEL must insure that where the (O) or (M) symbols appear, an operating or maintenance procedure has been developed that provides clear direction to the crew members and maintenance personnel of the action to be taken. This procedure must be included in the MEL.

d) The only exception is when the procedure is contained in another document that is available:

1. to the flight crew on the flight deck, such as an Aircraft Flight Manual, Aircraft Operating Manual, or the Company Operations Manual;

2. to the flight attendants, such as a Company Operations Manual or Flight Attendant Manual;

3. to the maintenance crew, such as an Aircraft Maintenance Manual (e.g. - the Airbus Aircraft Deactivation Procedures Manual), Maintenance Control Manual, etc..

e) In these cases, the MEL may refer to a section of the appropriate document.

f) It is not acceptable to reference the *Civil Aviation Regulations* or similar documents, as these are not carried on board the aircraft and could be subject to misinterpretation. The objective is to provide personnel with clear, concise

direction on how they are to proceed. Where the MMEL column 4 states "as required by Regulation", this wording shall not appear in the MEL; rather, a synopsis of the Regulation shall appear.

3.10.8 Approval of Operating and Maintenance Procedures

Manufacturers may choose to produce operating and maintenance procedures such as Dispatch Deviation Procedure Guides, for use by operators. These procedures may be inserted into the appropriate MEL pages, and submitted by the operator, to form part of the MEL. Dispatch Deviation Procedures Guides, Dispatch Deviation Guides, and other similar documents cannot be approved by **(Insert NAA/country)**, nor can they replace the MEL. If the aircraft manufacturer has not published operating or maintenance procedures, the operator must develop appropriate procedures and submit them to **(Insert NAA/country)** for approval.

3.10.9 Operations Manual Procedures

The operator must establish procedures in the company Operations Manual for the use and guidance of crew members when using the MEL. The procedures must agree with those in the Maintenance Control Manual. The operator may choose to include all procedures/instructions in the MEL itself; in which case the Operations Manual will only be required to reference this document.

3.11 Repair Interval Categories

The maximum time an aircraft may be operated between the deferral of an inoperative item and its repair will be specified in the MEL and where the MMEL has been categorized. Passenger convenience items such as reading lights and entertainment units must include a category. Most of these items will be a “D” category provided any (M) procedure (in the case of electrically supplied items) is applied.

Category A

Items in this category shall be repaired within the time interval specified in the “Remarks and Exceptions” column of the operator's approved MEL Whenever the proviso in the “Remarks or Exceptions” column of the MMEL states cycles or flight time, the time interval begins with the next flight. Whenever the time interval is listed as flight days, the time interval begins on the flight day following the day of discovery.

Category B

Items in this category shall be repaired within three consecutive calendar days, excluding the day of discovery.

Category C

Items in this category shall be repaired within 10 consecutive calendar days, excluding the day of discovery

Category D

Items in this category shall be repaired within 120 consecutive calendar days, excluding the day of discovery.

3.12 MEL Item Repair Interval Extension Program

3.12.1 Purpose

Under certain conditions, such as a shortage of parts from manufacturers, or other unforeseen, situations, air operators may be unable to comply with specified repair intervals. This may result in the grounding of aircraft. To preclude that from happening, a MEL Item Repair Interval Extension Program has been instituted that will allow operators, under controlled conditions, to obtain extensions to MEL repair interval categories. The following paragraphs give instructions to Principal Airworthiness Inspectors (PAIs) and to Principal Operations Inspectors (POIs) in consultation with Chief/Director of Flight Standards and Airworthiness to administer an operator's MEL Item Repair Interval Extension programs provided operators have an acceptable system of control in place.

3.12.2 Approval

a) Principal Airworthiness Inspector (PAI) or Principal Operations Inspector (POI) responsible for the Operator shall be notified within one working day, any time it becomes necessary to continue or extend the item repair interval period beyond the expiry date. When requested for of any extension, the **(Insert NAA/country)** Inspector receiving such notification shall ensure that his/her counterpart fully informed as soon as possible (See Section 3.12.4).

b) For all extensions, the operator shall complete Schedule 1 (See Appendix B), or provide the information to **(Insert NAA/country)** in an equivalent and acceptable format. A copy of the completed schedule must accompany the journey log entry as follows:

1. "this aircraft is operating on a MEL item repair interval extension as specified in the attached Schedule";

2. a copy of the completed Schedule 1 (or the equivalent document) shall be retained on file by the operator for a period of thirty-six months, for auditing purposes. A review may result in changes to the period of the extension, or may be used to determine abuse of the process;

3. prior to the approval or amendment of the operator's MEL to include this policy, **(Insert NAA/country)** personnel must ensure that the provisions of this section have been fully addressed.

c) The extension of Category A items shall be pre-authorized on a case by case basis by the Principal Airworthiness Inspector (PAI) and the Principal Operations Inspector (POI) for the affected operator in consultation with Chief/Director of Flight Standards and Airworthiness.

Note: Certain items qualify for time-limited dispatch as specified in the Type Certificate Data Sheets. The notation "And no extensions are authorized" will appear in the MEL for such items.

3.12.3 Program Procedures

Maintenance Control Manual (MCM)

To ensure that operators obtain extensions on MEL repair intervals only when necessary, the following elements must be adequately addressed in the MCM. Some of the elements listed below are already required as part of an operator's maintenance program. They are restated here to emphasize their importance with respect to the MEL Interval Extension Program. This list is not all inclusive and Airworthiness personnel should take any other appropriate factors into account as necessary:

a) Authority

The operator must assign authority to the appropriate level of the maintenance department for seeking approval of interval extensions. Procedures must be established and implemented to ensure that extensions are not sought without approval from the assigned operations and maintenance management level. The authorized operations and maintenance manager will indicate his/her approval for seeking the extension in writing.

b) Communications

Operator's maintenance and operations divisions must establish clear lines of communication to show that a MEL item repair extension will not be sought unless both parties agree that the extension is clearly warranted.

c) Parts/Equipment Control

The operator must establish and implement procedures that will ensure where parts and/or equipment are needed to rectify a MEL defect, and that these established procedures are acted upon in the most timely manner possible.

d) Maintenance Control

The operator must establish and implement procedures to ensure that where required, all maintenance actions required to rectify a defect are initiated in the most timely manner possible.

e) Records

In addition to the existing maintenance record keeping requirements, operators must indicate what records will be used for this program. Of primary interest will be records that convey maintenance approval for seeking a MEL item interval extension and any other records that indicate maintenance, parts, or equipment control actions. A control sheet or other similar means should be used to track all events related to the extended MEL item up to and including rectification. The

operator must be able to provide all records necessary to clearly justify a MEL interval extension, when requested.

f) Audits

The operator must include the MEL Item Interval Extension Program in their system of internal audits at an initial frequency of 12 months or less.

3.12.4 POI/PAI Communications

(Insert NAA/country) Airworthiness and Operations Inspectors responsible for each operator requesting this extention must establish clear lines of communication throughout the approval and ongoing surveillance of this program. Communication should ensure that where an operator requests an extension, both the PAI and the POI are made aware of this report on an urgent basis. The operator has a requirement to report the request of a MEL item repair interval extension to the PAI or POI atleast two days in advance. It is the responsibility of the **(Insert NAA/country)** Inspector who receives notification from an operator to ensure that her/his counterpart is made aware of the request as soon as possible.

3.12.5 Program Administration

Events beyond the Operator's Control

The core of this program is to ensure that operators do not substitute MEL item repair interval extensions as a means to reduce or eliminate the need to repair MEL defects in accordance with the established category limit. Operators are not to use the extension program as a normal means of conducting MEL item repairs. Extensions will only be considered valid and justifiable when events beyond the operator’s control have precluded rectification.

It is recognized that while MEL item repair interval categories have been established, it may not be possible in every case to repair aircraft in the time allotted for each MEL item. Several factors may influence the operator's ability to comply with the specified interval.

These factors include:

a) Parts shortages from manufacturers that affect all operators equally. Parts shortages can result from material, labour, or shipping problems but must be clearly outside the operator's control.

b) Inability to obtain equipment necessary for proper troubleshooting and repair. Operators must, to the maximum extent possible, have the necessary equipment available to perform troubleshooting and repair of MEL items. Equipment shortages or unserviceabilities may be encountered that cannot be directly controlled by the operator for the specified MEL item.

An unwillingness on the part of the operator to obtain parts or equipment to rectify the defect in the most timely manner possible will be grounds for review of extention.

Abuse, as determined by the operator's PAI and POI will result in withdrawal of extension privileges.

3.12.6 Program Compliance

Attempts have been made to define abuse of this program in quantitative terms. Abuse can be determined based on the correct application of approved procedures. Airworthiness and Operational personnel must ensure that operators establish and implement a sound program and that ongoing surveillance ensures compliance with approved procedures. The number of times this privilege is given is expected to be low. The actual number of MEL interval extensions will vary from one operator to another due to individual circumstances. Emphasis should not be placed on how many MEL item repair interval extensions are given, but rather on the correct application of approved procedures for the issue of the extension.

3.13 Deferral of Items

Procedures for the deferral of MEL items will be included as part of the operator's Maintenance Control Manual (MCM). The operator must ensure that the Operations Manual and the MEL reference the aforementioned procedures in the MCM, or duplicates the same (See Appendix K for sample procedures) .

3.13.1 Requirements

These procedures comprise a method for:

a) deferral and/or rectification of inoperative equipment;
b) placarding requirements as per the MEL;
c) dispatching of aircraft with deferred MEL item(s);
d) a remote deferral system;
e) controlling categorized times; and
f) the training of company personnel who are responsible for MEL compliance procedures.

3.13.2 Review of Deferred Items

The operator must establish procedures whereby the Maintenance and Flight Departments periodically review the deferred items, in order to ensure that any accumulation of deferred items neither conflict with each other nor present an unacceptable increase in flight or cabin crew workload. Notwithstanding the categorization of item repair intervals, it should be the aim of each MEL document holder to ensure that inoperative items are repaired as quickly as possible. It is **(Insert NAA/country)** policy that optional inoperative equipment should be repaired or removed from an aircraft. POIs and PAIs are expected to encourage this practice with their operators.

3.14 Placarding

All inoperative items must be placarded to inform crew members of equipment condition.

While the MEL for some items may require specific wording, the majority of items leave the placard wording and location to be determined by the operator.

The operator shall provide the capability and instructions to the flight crew to ensure that the placard is in place prior to the aircraft being dispatched.

Note: The exclusion of an asterisk in a MMEL does not preclude the requirement for placarding.

3.14.1 Requirements to Placard/Placard Control

Placarding will be carried out in accordance with the placarding procedures established and set out in the operator's approved MCM. The method of placarding control must ensure that all inoperative items are placarded and placards are removed and accounted for when the defect is cleared.

3.14.2 Procedures

The equipment/system shall be placarded so as to inform the crew members of the inoperative condition(s) of the item. To the extent practicable, placards must be located as indicated in the MEL, or adjacent to the control or indicator affected.

3.14.3 Placard Criteria

Placards should be self adhesive. The placard may be in two parts. Part One should list a description of the defect and the defect control number and should be attached to the log book for crew reference. Part Two should list the system affected and the defect control number and be fixed in the appropriate location. A MEL control sheet attached to the log book could serve the same purpose as Part One above.

3.14.4 Multiple Placards

If more than one placard is required for a MEL item, provision must be made to ensure that all placards are removed when the defect is cleared.

3.14.5 Temporary Placards

If a defect occurs at a base where maintenance personnel are not available, the flight or cabin crew may install a temporary placard as required by the MEL. The aircraft may continue on a planned itinerary to a base where maintenance will rectify or re-defer in accordance with the approved deferral system.

3.15 Dispatch

"Dispatch" for the purpose of the MEL/MMEL refers to the moment the airplane starts its takeoff roll. In the case of a helicopter, it refers to the moment the helicopter commences air or ground taxi. The MEL is approved on the basis that equipment will be operative for takeoff unless the appropriate MEL procedures have been carried out. The operator's MEL shall include procedures to deal with any failures which occur between the start of taxi or push back and takeoff brake release. Any failure which occurs after takeoff commences shall be dealt with as an in-flight failure, by reference to the appropriate section of the aircraft flight manual, if necessary. After takeoff commences, no MEL action is required, until the completion of the next landing.

3.15.1 Operational and Maintenance Items

a) Any item of equipment in the MEL, which when inoperative would require an operating or maintenance procedure to ensure the required level of safety, shall be so identified in the "remarks" or "exceptions" column of the MEL. This will normally be "O" for an operating procedure, or "M" for a maintenance procedure. (O)(M) means both operating and maintenance procedures are required.

b) (O) Items

1. Aircraft with inoperative equipment requiring an operating procedure may be returned to service following completion of the required MEL procedure for deferral.

2. Operating procedures are normally carried out by qualified flight or cabin crew, but may be accomplished by other qualified, approved personnel.

c) (M) Items

1. Aircraft with inoperative equipment requiring a maintenance procedure may be returned to service following completion of the required MEL procedure for deferral.

2. Maintenance procedures are normally accomplished by maintenance personnel, but some elementary maintenance tasks may be carried out by crew members or other qualified, approved personnel (See Section 3.15.2).

3. Air crews may not perform maintenance procedures if the defect involves an item designated in the MEL with a *(M#) - Maintenance Personnel Required*. In this circumstance, the aircraft may not proceed until authorized maintenance personnel carry out the specified procedure **(Not all MMELs use the annotation M#)**.

3.15.2 Elementary Work

Some elementary work called for in the MEL may be accomplished by crew members, or others, who have been trained and approved to do so according to the regulations and standards in Maintenance Standard.

3.16 Training

3.16.1 Training Program — Ground Personnel

Operators shall develop a MEL training program for ground personnel, to be included in the MCM and operations manual, as appropriate, which must be approved prior to an operator receiving approval to operate with a MEL. The training should include those sections of the MCM /operations manual procedures dealing with the use of the MEL, placarding of inoperative equipment, deferral procedures, dispatching, and any other MEL related procedures (See Appendix L). Ground personnel includes dispatchers and maintenance engineers.

3.16.2 Training Program — Crew Members

Operators shall provide crew members with MEL training and shall detail such training in their Company Operations Manual. The training will include the purpose and use of a MEL, instruction on company MEL procedures, elementary maintenance procedures, and pilot-in-command responsibility (See Appendix L). Crew members include pilots, flight engineers, and flight attendants.

3.16.3 Training Program — Recurrent

Recurrent training shall be conducted, annually, to refresh procedural knowledge and ensure company personnel are aware of any changes in MEL procedures.

3.17 MELs for Leased Aircraft

3.17.1 MELs for Leased Foreign Registered Aircraft

a) **(Insert NAA/country)** leasing regulations require that leased aircraft must be of a type certificated for registration in **(Insert country)**. A leased aircraft must have a MMEL approved by the state of manufacture and accepted by **(Insert NAA/country)** in accordance with the criteria set out in Sections 2.3 to 2.10 of this document.

b) The MEL for a particular leased foreign registered aircraft must not be less restrictive than the **(Insert NAA/country)** approved MEL for the same type of aircraft operated by a **(Insert country)** operator and must be accepted by **(Insert NAA/country)** in accordance with the criteria set out in Sections 2.3 to 2.11 of this document. The MEL must be available in English, appropriate to the personnel using the MEL.

c) The foreign country of registration of the leased aircraft may require that their aircraft be operated in accordance with their approved MEL, in which case any less

restrictive changes to this MEL must be approved by the foreign authority. **(Insert NAA/country)** may require more restrictive changes to the MEL because of **(Insert country)** regulations and operating conditions. It is the responsibility of the **(Insert country)** lessee to determine the requirements of the foreign authority and **(Insert NAA/country)** for the use of a MEL on the leased aircraft.

3.17.2 MELs for Foreign Leased **(Insert country)** Registered Aircraft

a) **(Insert NAA/country)** reviews each lease and approves or accepts the use of a MEL on such aircraft based on whether a bilateral airworthiness agreement or a technical arrangement exists between **(Insert NAA/country)** and the foreign regulatory authority and it has been determined that the MMEL/MEL procedures are acceptable.

b) If there is no agreement between **(Insert NAA/country)** and the foreign authority a review of the foreign operator's MEL is conducted to determine that it is consistent with the source MMEL.

3.18 (Insert NAA/country) MEL Administrative Procedures

3.18.1 MEL Priority

MEL approvals and amendments are to be considered a top priority for **(Insert NAA/country)** personnel charged with their review. **(Insert NAA/country)** personnel will attempt to minimize approval/turnaround times for MEL submissions, depending on existing tasking and availability.

3.18.2 Administrative Procedures

a) If all requirements have been met following the MEL review process, then the POI and PAI will initial the MEL Approval Form and stamp and initial the List of Effective Pages. The letter of approval authorizing the operator's MEL is then signed by the Chief, / Director of Airworthiness.

b) One copy of the MEL will be returned to the operator along with the **(Insert NAA/country)** approval letter. The standard format for a MEL approval letter can be found in Appendix F. The other copy of the MEL shall be retained in the CAA. If changes to the MEL are required before approval, a copy is returned to the operator along with the requested changes.

c) A copy of the approval letter will form part of the MEL, in accordance with the operator's approved system.

3.18.3 MEL Library

a) In order to manage MEL issues effectively, and in a timely fashion, Chief, / Director of Airworthiness shall establish and maintain up-to-date files of all the operators' MELs including the initial approval documentation together with the MEL Co-ordination Sheet. These documents must be retained with each subsequent revision of the MEL.

b) The MEL libraries must also contain adequate reference documents such as Dispatch Deviation Guides, and so on, for the types of aircraft operated. **(Insert NAA/country)** Personnel responsible for the administration of the MELs are expected to submit requests for appropriate manuals and documentation to allow for efficient handling of operator's MEL issues.

Master Minimum Equipment List Definitions

1. Systems Definitions: Systems numbers are based on the Air Transport Association (ATA) Specification Number 100 and items are numbered sequentially.

a) **"Item"** (Column 1) means the equipment, system, component, or function listed in the "Item" column.

b) **"Number Installed"** (Column 2) is the number (quantity) of items normally installed in the aircraft. This number represents the aircraft configuration considered in developing this MMEL. Should the number be a variable (e.g., passenger cabin items) a number is not required.

"*"** symbol in Column 1 indicates an item which is not required by regulation but which may have been installed on some models of aircraft covered by this MMEL. This item may be included on the operator's MEL after the approving office has determined that the item has been installed on one or more of the operator's aircraft. The symbol, however, shall not be carried forward into the operator's MEL. It should be noted that neither this policy nor the use of this symbol provide authority to install or remove an item from an aircraft. The "***" symbol may be considered equivalent to the term **"if installed"**.

c) **"Number required for dispatch"** (Column 3) is the minimum number (quantity) of items required for operation provided the conditions specified in Column 4 are met.

Note: Where the MMEL shows a variable number required for dispatch, the MEL must reflect the actual number required for dispatch or an alternate means of configuration control approved by **(Insert NAA/country).**

d) **"Remarks or Exceptions"** (Column 4) in this column includes a statement either prohibiting or permitting operation with a specific number of items inoperative, provisos (conditions and limitations) for such operation, and appropriate notes.

e) **A "vertical bar" (change bar)** in the margin indicates a change, addition or deletion in the adjacent text for the current revision of that page only. The change bar is dropped at the next revision of that page.

f) **"Approved"** means approved by the Director General.

g) **"Master Minimum Equipment List"** means a document approved by the Director General that establishes the aircraft equipment allowed to be inoperative under conditions specified therein for a specific type of aircraft.

h) **"Minimum Equipment List"** means a document approved by the Director General that authorizes an operator to dispatch an aircraft with aircraft equipment inoperative under the conditions specified therein.

i) **"Director General"** means the Director General of Civil Aviation Authority.

2. "**Administrative Control Items**" means an item listed by the operator in the MEL for tracking and informational purposes. It may be added to an operator's MEL provided no relief is granted, or provided conditions and limitations are contained in an approved document such as the Structural Repair Manual. If relief other than that granted by an approved document is sought for an administrative control item, a request must be submitted to **(Insert NAA/country)**. If the request results in review and approval, the item becomes an MMEL item rather than an administrative control item.

3. "**Airplane/Rotorcraft Flight Manual**" (AFM/RFM) is the document required for type certification and approved by **(Insert NAA/country)**. The approved AFM/RFM for the specific aircraft is listed on the applicable Type Certification Data Sheet.

4. "**Alphabetical symbol**" in Column 4 indicates a proviso (condition or limitation) that must be complied with for operation with the listed item inoperative.

5. "**As Required by Regulation**", "**As required by FAR**", and other similar statements mean that the listed item is subject to certain provisions (restrictive or permissive) expressed in such regulations as *the **(Insert NAA/country)** Regulations*, *Federal Aviation Regulations* or the *Airworthiness Manual* etc. Unless the MMEL provides otherwise, the items specified by these requirements must be operative.

6. "**Deleted**" in the remarks column after a sequence item indicates that the item was previously listed but is now required to be operative if installed in the aircraft.

7. "**Deactivated and Secured**" means that the specified component must be put into an acceptable condition for safe flight. An acceptable method of deactivating and securing will be established by the operator for inclusion in his/her MEL.

8. "**Day of discovery**" is the calendar day an equipment/instrument malfunction was discovered. This day is excluded from the calendar days or flight days specified in the MMEL for the repair of an inoperative item of equipment, and is applicable to all MMEL items in categories A,B,C, and D.

9. "**Engine Indicating Crew Alerting System (EICAS), Electronic Centralized Aircraft Monitoring System (ECAM) or similar systems**" that provide electronic messages refer to a system capable of providing different priority levels of systems information messages (e.g., Warning, Caution, Advisory, Status and Maintenance). An airplane discrepancy message may or may not affect dispatchability Refer to the specific MMEL for the aircraft type.

10. "**Excess Items**" means those items installed that are excess to the requirements

11. "**ETOPS**" refers to extended range operations of a two-engine airplane which has a type design approval for ER operations and complies with the provisions of ETOPS Regulations

12. "**Federal Aviation Regulations (FARs)**" means the applicable portions of the *Federal Aviation Act* and *Federal Aviation Regulations*.

13. "**Flight Day**" means a 24 hour period (e.g. from midnight to midnight) - either Universal Coordinated Time (UCT) or local time, as established by the operator, during which at least one flight is initiated for the affected aircraft.

14. "**Icing Conditions**" means an atmospheric environment that may cause ice to form on the aircraft or in the engine(s).

15. "**Inoperative**" means a system and/or component malfunction to the extent that it does not accomplish its intended purpose and/or is not consistently functioning normally within its approved operating limit(s) or tolerance(s).

16. "**Inoperative components of an inoperative system**" Inoperative items which are components of a system which is inoperative are usually considered components directly associated with and having no other function than to support that system. (Warning/caution systems associated with the inoperative system must be operative unless relief is specifically authorized per the MMEL).

17. "**M**" symbol indicates a requirement for a specific maintenance procedure which must be accomplished prior to operation with the listed item inoperative. Normally these procedures are accomplished by maintenance personnel; however, other personnel may be qualified and authorized to perform certain functions. Procedures requiring specialized knowledge or skill, or requiring the use of tools or test equipment must be accomplished by maintenance personnel (see (**M#)** below). The satisfactory accomplishment of all maintenance procedures, regardless of who performs them, is the responsibility of the operator. Appropriate procedures are required to be published as part of the operator's manual or MEL.

18. "**M#**" symbol indicates a requirement for maintenance personnel to accomplish a **"(M)**" procedure.

19. **"Maintenance Instruction"** Indicates maintenance instructions that must be accomplished prior to operation with the listed item inoperative, as per **"(M)"** procedure above.

20. "**Notes**" Column 4 provides additional information for crewmember or maintenance consideration. Notes are used to identify applicable material which is intended to assist with compliance, but do not relieve the operator of the responsibility for compliance with all applicable requirements. Notes are not a part of the provisos.

21. "**O**" symbol indicates a requirement for a specific operations procedure which must be accomplished in planning for and/or operating with the listed item inoperative. Normally these procedures are accomplished by a crew member; however, other personnel may be qualified and authorized to perform certain functions. The satisfactory accomplishment of all procedures, regardless of who performs them, is the responsibility of the operator. Appropriate procedures are required to be published as a part of the operator's manual or MEL. Recording of the accomplishment of required specific operations procedures in the log book will be accomplished by adding the following statement to the "Instructions for Journey Log Book Use" found in the Operator's Journey Log Book to cover those items requiring Operations Procedures.

    Note: The (M) and (O) symbols are required in the operator's MEL unless otherwise authorized by **(Insert NAA/country)**.

22. **"Operating Instruction"** Indicates operating instructions that must be accomplished prior to operation with the listed item inoperative, as per **"(O)"** procedure above.

23. "**Passenger Convenience Items**" means those items related to passenger convenience, comfort or entertainment such as, but not limited to, galley equipment, movie equipment, ash trays, stereo equipment, overhead reading lamps, etc.

24. "**Visual Flight Rules**" (VFR) is as defined in the *CARs*. This precludes a pilot from filing an Instrument Flight Rules (IFR) flight plan.

25. "**Placarding**" Each inoperative item must be placarded to inform and remind the crewmembers and maintenance personnel of the equipment condition.

    Note: To the extent practical, placards should be located adjacent to the control or indicator for the item affected; however, unless otherwise specified, placard wording and location will be determined by the operator.

26. "**_**" symbol in Column 2 and/or Column 3 indicates a variable number (quantity) of the item installed.

    Note: Where the MMEL shows a variable number installed, the MEL must reflect the actual number installed or an alternate means of configuration control approved by **(Insert NAA/country)**.

27. "**Visual Meteorological Conditions**" (VMC) means the atmospheric environment is such that would allow a flight to proceed under the Visual Fight Rules applicable to the flight. This does not preclude operating under Instrument Flight Rules.

28. "**Visible Moisture**" means an atmospheric environment containing water in any form that can be seen in natural or artificial light; for example, clouds, fog, rain, sleet, hail, or snow.

29. "**Repair Intervals**" All users of an MEL must effect repairs of inoperative systems or components, deferred in accordance with the MEL, at or prior to the repair times established by the following letter designators:

    "Category A" Items in this category shall be repaired within the time interval specified in the "Remarks or Exceptions" column of the operator's approved MEL. Whenever the proviso in the "Remarks or Exceptions" column of the MMEL states cycles or flight time, the time interval begins with the next flight. Whenever the time interval is listed as flight days, the time interval begins on the flight day following the day of discovery.

    "Category B" Items in this category shall be repaired within three (3) consecutive calendar days, excluding the day of discovery. For example, if it were discovered at 10 a.m. on January 26th, the three day interval would begin at midnight the 26th and end at midnight the 29th.

"Category C" Items in this category shall be repaired within ten (10) consecutive calendar days, excluding the day of discovery For example, if it were discovered at 10 a.m. on January 26th the ten day interval would begin at midnight the 26th and end at midnight February 5th.

"Category D" Items in this category shall be repaired within one hundred and twenty (120) consecutive calendar days, excluding the day of discovery.

MEL Item Repair Interval Extension Authority -

Schedule 1

DATE

1. Aircraft type/registration	
2. ATA MEL Number / Item	
3. Repair Interval (Category)	
4. Reason for **Requesting** Extension	
5. Date / Location item became unserviceable	
6. Original date / Location **of** item scheduled for repair	
7. Name of item required	
8. Part number	
9. Date part ordered / vendor	
10. 1st confirmed delivery date	
11. New date repair scheduled	
12. **(Insert NAA/country)** Representatives notified:(names, titles)	
13. Company Director Quality Assurance **(signed)**	
14. Time limit valid to:	: (z) (d) (m) (y)
15. **(Insert NAA/country)** approved:	date:

NOTE: A fully completed copy of the extension form must accompany the journey log book entry as follows:

"*This aircraft is operating on a MEL item repair interval extension as specified in the attached Schedule.*"

This documentation must be completed prior to flight and retained in company files for a period of thirty-six months from the date of the extension. Extensions for Category A items must be pre-approved by the **(Insert NAA/country)** PAI and POI and authorized by the Chief, / Director of Airworthiness prior to dispatch of the aircraft.

Copies: 1. Director of Quality Assurance
2. **(Insert NAA/country)** Chief, /Director Airworthiness
3. Aircraft Journey Log Book

Civil Aviation Authority **(Insert NAA/country)**

MASTER MINIMUM EQUIPMENT LIST

Aircraft -	**Revision No. -** 5	**Page**
Canadair CL600 \ 601 \ 601-3A \ 601-3R \ 604	**Date:** January 06 / 97	29-1

System and Sequence No. Item. 1.		**2. Number installed**	**3. Number required for dispatch**	**4. Remarks or Exceptions**
29 – HYDRAULICS				
11-1 Electric Motor Driven Hydraulic Pumps (System 1 and 2)	C	2	1	(M) One may be inoperative provided: a) Affected pump is selected off and is deactivated, and b) Both Engine Driven Hydraulic Pumps are operative.
11-2 Hydraulic Accumulator Pressure Gauges Systems 1, 2, and 3)	C	3	0	(M) All may be inoperative provided accumulator pre-charge is checked using a suitable gauge before the first flight of the day.
11-3 Hydraulic Accumulators (Systems 1,2, and 3)	B	3	1	System 1 and /or System 2 accumulator(s) may be inoperative.
11-4 Engine Driven Hydraulic Pumps	C	2	1	(M) One may be inoperative provided all other hydraulic pumps are operative.
11-5 Hydraulic Heat Exchanger Cooling Fan (600 \ 601 \ 601-3A \ 601-3R)	C	1	0	May be inoperative provided ground operation of hydraulic systems 1 and 2 is limited to 30 minutes when OAT is above 45 degrees C.

(Insert NAA/country)

Minimum Equipment List (Aircraft Type)

Preamble

All equipment installed on an aircraft in compliance with the Airworthiness Standards and the Operating Rules must be operative. However, CAR permits the publication of a Minimum Equipment List (MEL) where compliance with certain equipment requirements is not necessary under all operating conditions. Experience has shown that with the various levels of redundancy designed into aircraft, operation of every system or installed component may not be necessary when the remaining operative equipment can provide the required level of safety.

A Minimum Equipment List (MEL) is developed by the operator to improve aircraft utilization and thereby provide more convenient and economic air transportation for the public. The approved MEL includes those items of equipment related to airworthiness and operating regulations and other items of equipment **(Insert NAA/country)** finds may be inoperative and yet maintain the required level of safety by applying appropriate conditions and limitations; it does not contain obviously required items such as wings, flaps, and rudders. The MMEL is the basis for development of individual operator MELs which take into consideration the operator's particular aircraft equipment configuration and operational conditions. Operator MELs, for administrative control, may include items not contained in the MMEL; however, relief for administrative control items must be approved. An operator's MEL may differ in format from the MMEL, but cannot be less restrictive than the MEL. The individual operator's MEL, when approved, permits operation of the aircraft with inoperative equipment.

Equipment not required by the operation being conducted and equipment in excess of the requirements are included in the MEL with appropriate conditions and limitations. The MEL must not deviate from the Aircraft Flight Manual Limitations, Emergency Procedures or with Airworthiness Directives. It is important to remember that all equipment related to the airworthiness and operating regulations of the aircraft not listed on the MEL must be operative.

Suitable conditions and limitations in the form of placards, maintenance procedures, crew operating procedures and other restrictions as necessary are specified in the MEL to ensure that the required level of safety is maintained.

The MEL is intended to permit operation with inoperative items of equipment for a period of time until repairs can be accomplished. It is important that repairs be accomplished at the earliest opportunity. In order to maintain the required level of safety and reliability the MEL establishes limitations on the duration of and conditions for operation with inoperative equipment. When an item of equipment is discovered to be inoperative, it is reported by making an entry in the Aircraft Maintenance Record/ Journey Logbook. The item is then either repaired or deferred as per the MEL. Alternatively, the aircraft must be in compliance with CAR which specify the requirements for operating an aircraft subject to the conditions of a flight permit and the subordinate position of a MEL with regard to an Airworthiness Directive (AD) for the same Item.. MEL conditions and limitations do not relieve the operator from determining that the aircraft is in a safe condition for operation with items of equipment inoperative.

Operators are responsible for exercising the necessary operational control to ensure that the required level of safety is maintained. When operating with multiple inoperative items, the interrelationships between those items and the effect on aircraft operation and crew workload must be considered.

Operators are to establish a controlled and sound repair program including the parts, personnel, facilities, procedures, and schedules to ensure timely repair.

When using the MEL, compliance with the stated intent of the preamble, definitions, and the conditions and limitations specified in the MEL is required.

MEL Co-ordination and Approval Form

MEL Approval Form		
Operator	*Operator File Number*	
MMEL	*Aircraft Certification File Number*	
Operations Submission	*Aircraft Model*	*Revision No. and Date*
Aircraft Certification	*Aircraft Model*	*Revision No. and Date*

I confirm that the submitted operating and maintenance procedures are acceptable, considering this operator's facilities, personnel and route structure.

Airworthiness Representative

Operations Representative

Sample - MEL Approval Letter

The (Aircraft Type) Minimum Equipment List updated to revision **(Insert number)** and received by this office on March 23, 20**, has been reviewed and is acceptable in its form and content. The (Aircraft Type) MEL is approved for use by (Operator's Name) with the understanding that **(Insert NAA/country)** may require further amendments to the (Aircraft Type) MEL as regulatory requirements or airworthiness standards are modified.

The list of effective pages has been date stamped and approved (or as specified for the operator) and this together with the letter of approval form part of your approved Minimum Equipment List.

Chief,/Director of Airworthiness
For Director General **(Insert NAA/country)**

(Insert NAA/country) Approved Minimum Equipment List

Sample Page

(Company's Name)	MINIMUM EQUIPMENT LIST	PAGE
De HAVILLAND DHC-8 Series 100/300	Amendment: 4 DATE: 01 Apr 95	24-38-1

ATA System and Sequence Number ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED	4. REMARKS OR EXCEPTIONS
24. ELECTRICAL POWER				
24-38 BAT HOT Caution or Warning Lights	C	2	0	(O) May be inoperative provided the associated Battery Temperature Indicator operates normally.

PLACARDING

Placard appropriate BAT HOT caution/warning light(s) at annunciator panel in the cockpit.

OPERATING PROCEDURES:

1. Apply DC power to aircraft DC electrical system.

2. At BATTERY TEMPERATURE monitor panel, check that the associated battery temperature indication(s) (Main and/or Aux) reads approximately ambient (OAT) temperature.

NOTE: If aircraft has been recently operated and/or sitting in the hot sun, the indicated temperature may be higher. If the outside air temperature (OAT) is below 15°C, only the first green segment on indicator will be illuminated.

(Some text deleted from sample for brevity)

MAINTENANCE PROCEDURES:

None required.

MAINTENANCE INSTRUCTIONS:

NOTE: Do not open BATT TEMP CAUT LTS 28 VDC R Ess Bus Circuit Breaker at Right DC Circuit Breaker Panel.

(Company's Name)	MINIMUM EQUIPMENT LIST	PAGE
De HAVILLAND DHC-8 Series 100/300	Amendment: 4 DATE: 01 Apr 95	21-3-1

ATA System and Sequence Number	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED	4. REMARKS OR EXCEPTIONS
21. Air Conditioning				
21-3 Equipment Cooling Fan (wardrobe)	**D**	1	0	(M) May be inoperative provided the equipment cooling fan is deactivated.

PLACARDING:

Placard Equipment Cooling Fan on avionics bay door above wardrobe.

OPERATING INSTRUCTIONS:

Conditioned air must be provided within 30 minutes for OAT above 30° C, aircraft on ground and power on.

MAINTENANCE PROCEDURES:

1. Open and clip the associated FAN circuit breaker at right 115 VAC BUS on avionics circuit breaker panel.

2. Conditioned air is made available within 30 minutes for OAT above 30° C, aircraft on ground and power on.

Revision Required to MEL - *Sample Letter*

Dear Operator;

This letter is to advise you that the **(Insert Manufacturer / Foreign Country NAA)** MMEL for the aircraft, from which your MEL is based, has been revised. In order to maintain your MEL approval, please submit an amendment to your MEL incorporating Revision No. **(Insert number)** no later than 60 days from the date of this letter.

If you are unable to obtain a copy of the MMEL revision, you may contact this office at

_____.

Chief,/Director of Airworthiness
For Director General **(Insert NAA/country)**

Flow Chart - (Insert NAA/country)MEL Approval

1.Is there an approved MMEL for this aircraft? (foreign MMEL)	--- No ---	Discontinue; advise operator.
Yes		
2.Acquire a current copy of MMEL if applicable.		Acquire from Manufacturer and/or Foreign Aviation Authority.
3.Do I have a current AFM?	--- No ---	Acquire manual.
Yes		
4.Do I have a copy of the **(Insert NAA/country)** MMEL/MEL Policy and Procedures Manual	--- No ---	Acquire manual.
Yes		
5.Does the MEL contain a list of effective pages	--- No ---	Include a list of effective pages.
Yes		
6.Does the MEL contain a table of contents?	--- No ---	Include table of contents.
Yes		
7. Does the MEL include the preamble or program rules?	--- No ---	Include preamble or program rules.
Yes		

8.Does the MEL contain a section for the notes and/or definitions?	--- No ---	Include notes and/or definitions.
Yes		
9. Does the MEL format follow an acceptable format ?	--- No ---	Suggest acceptable format.
Yes		
10. Check each item against MMEL.		
11. Are the operator's (O) procedures clear and understandable?	--- No ---	Rewrite - procedures must be clear.
Yes		
12. Are operator's (M) and (M#) procedures clear and understandable?	--- No ---	Rewrite - procedures must be clear.
Yes		
13. Are all items at least as restrictive as the MMEL?	--- No ---	Items cannot be less restrictive
Yes		
14. Does the operator 's Operations Manual and MCM include instructions for the use of the MEL?	--- No ---	Establish and publish procedures in the Ops. Manual and MCM.
Yes		
15. Does the operator have a MEL training program?	--- No ---	Operator to establish MEL training program.

STOP - If any answer to questions 5 to 9 or l1 to l5 is no, return MEL to operator for corrective action.

Flow Chart

Operator Development of Minimum Equipment List

1.	Is there a MMEL for this aircraft type?	--- No---	Discontinue.
	---Yes---		
2.	Acquire a current copy from foreign CAA or manufacturer.		
3.	Do I have a current copy of the AFM?	--- No---	Acquire AFM
	---Yes---		
4.	Do I have a current copy of CARs	---No---	Acquire. CAR
	---Yes---		
5.	Do I have a current copy of the **(Insert NAA/country)** MEL Policy and Procedures Manual?	---No---	Acquire Manual
	---Yes---		
6.	Have I included the MEL preamble and/or program instructions?	---No---	Include Instructions
	---Yes---		
7.	Do I have a list of effective pages?	---No---	Establish list of effective pages.
	---Yes---		

8.	Is there a table of contents included in my MEL? ---Yes---	--- No ---	Include table of contents.
9.	Does my MEL include all notes and definitions for the use of the MEL? ---Yes---	--- No ---	Include notes and definitions.
10.	Do I have a MEL format based on the **(Insert NAA/country)** MMEL/MEL Manual ---Yes---	--- No ---	Establish format as suggested in Manual
11.	Develop MEL		
12.	Are my (O) procedures clearly written? ---Yes---	--- No ---	Rewrite to ensure procedures are included and clearly understandable
13.	Are my (M) procedures clearly written? ---Yes---	--- No ---	Rewrite to ensure procedures are included and clearly understandable
14.	Are all items at least as restrictive as the MMEL? ---Yes---	--- No ---	All items must be at least as restrictive.

STOP - Go back and re-check last 3 items to ensure they are complete

15.	Have I established procedures for the use of my MEL in my Ops. Manual and MCM? ---Yes---	--- No ---	Establish procedures for both Manuals.
16.	Have I established a training program for use of this MEL? ---Yes---	--- No ---	Establish training program.
17.	Submit MEL to Chief,/Director of Airworthiness for approval.		

Operations Manual Amendment Guide

MEL Defect Deferral Suggested Procedures

Disclaimer

This sample is provided to operators as a means of defect control.

It is not intended to be used as a guide or checklist for those air operators who have existing procedures that currently meet the intent of regulatory requirements.

The procedures developed below are specifically for a Company Operations Manual. These procedures should be identical to those found in the MCM and may also be copied into the MEL.

MEL DEFECT DEFERRAL PROCEDURES

NOTE: **Use of this MEL may not guarantee compliance with Regulations outside of (Insert country) nor other procedures such as; Company Operation Specifications, ETOPs, RVSM, CAT II/III, etc.**

1.1 Defects and Their Control - General

a) All defects will be entered in the aircraft Journey Log Book. (If applicable interior cosmetic defects may be entered in a Cabin Defect Log Book.)

b) Prior to flight all defects shall be actioned and certified or deferred in accordance with the procedures set forth in the Company Operations Manual (COM), Maintenance Control Manual (MCM) and Minimum Equipment List (MEL).

c) For each aircraft a defect will have a unique number assigned to it for tracking purposes.

1.2 Deferred Defect Restrictions

a) Any defect may be deferred provided it is included in the approved MEL and the aircraft must be operated in accordance with any conditions or limitations specified therein.

b) Where the conditions or limitations specified in a MEL are in conflict with the requirements of an airworthiness directive, the airworthiness directive prevails.

c) If any doubt exists as to the deferral of an item, consultation between operations and maintenance is required.

d) Once a defect has been established as being deferrable by the restrictions set forth in Section 1.2 above, the following procedures will be used.

1.3 Deferring Procedures and Control - Maintenance

If a defect has been deferred by the flight crew (Section 1.4) re-defer in accordance with the following.

a) The defect will be entered in the Journey Log Book as "*deferred in accordance with MEL ATA #..."* and signed by a qualified AME.

b) A placard will be placed in the aircraft as described by the MEL.

c) The Journey Log must be checked to ensure that when operating with multiple inoperative items, the interrelationship between those items and the effect on aircraft operation and crew workload will be considered.

d) The deferral will be tracked by Quality Assurance to ensure a timely rectification with regard to the categorization.

e) After defect rectification, remove the placard from the aircraft and

i. Follow the procedures in the MCM for placarding control.

OR

ii. For multiple copy Journey Log, afix the placard to the maintenance copy of the defect rectification.

OR

iii. For single copy bound type Journey Log, afix the placard adjacent the maintenance rectification.

f) It is mandatory that all defects not cleared when the Journey Log Book expires be transferred to the new Journey Log Book with all details.

1.4 Use of MEL - Flight Crew

Once a defect has been established as being deferrable by the restrictions set forth in Section 1.2, the Pilot-in-Command (PIC) may defer the defect in accordance with the MEL providing the following procedures are adhered to:

a) The Pilot-in-Command will enter the defect in the Journey Log Book.

b) The Pilot-in-Command will advise the Maintenance department as soon as practicable.

c) Where required the flight crew will adhere to all column 4 restrictions and perform (O) procedures as applicable.

d) (M) Maintenance Procedures may be actioned and deferred by Flight Crews who have been trained to do so under the authority of "Elementary Work".

e) Flight Crews may not perform Maintenance procedures if the defect involves an item designated in the MEL as **(M#)** - which denotes MAINTENANCE PERSONNEL REQUIRED. The aircraft may not proceed until maintenance carries out the procedures found in Section 1.3.

f) The Journey Log must be checked by the Pilot-in-Command for multiple inoperative items. The interrelationship between those items and the resultant effect on aircraft operation and crew workload will be considered by the PIC before making a go / no-go decision.

g) Appropriate placard(s) will be installed by the flight crew in accordance with the instructions in the MEL.

h) The Pilot-in-Command will enter in the Journey Log Book, adjacent to the defect, under what authority the defect has been deferred ie. "*deferred in accordance with MEL ATA Number...*", the time of day, his/her signature and pilot's licence number.

i) If any doubt exists, this does not preclude the pilot from consulting maintenance to confirm that the ATA item and procedure has been deferred correctly prior to subsequent dispatch.

j) The aircraft may proceed on a planned itinerary to a base where maintenance will rectify or re-defer the defect in accordance with the procedures in the MCM.

1.5 Journey Log Book Procedures

"O" and "M" Procedures

PRIOR TO EACH DEPARTURE:

Where an "O" and/or "M" Procedure is required PRIOR TO EACH DEPARTURE, the Pilot-in-Command will ensure all required actions are completed in accordance with the MEL.

PRIOR TO EACH FLIGHT DAY:

Where an "O" and/or "M" Procedure is required PRIOR TO EACH FLIGHT DAY, the Pilot-in-Command will ensure all required actions are completed in accordance with the MEL.

Initial and Recurrent MEL Training - Sample Syllabus

Note: If elementary work is to be carried out by crew members, this practice needs to be addressed in the MEL training syllabus in the Operations Manual and the MCM, including the particular items approved.

1.1 MEL Origin and Philosophy

a) MMEL background and development.

b) MEL background and development.

1.2 General MEL Content

a) Approval Letter

b) List of effective pages

c) Table of contents

d) Preamble

e) Definitions

f) ATA Chapters, Page format, Page numbering, System and item titles, categorization, columns, remarks and exceptions, placarding, (O) and (M) procedures.

1.3 Specific Use of the MEL

a) A review of items from a variety of systems including those with no procedures, (O), (M), (M#), (O) and (M), as applicable.

b) Practical demonstration of MEL use versus hypothetical situations at and away from a maintenance base.

c) Supervised 'hands on' use of a MEL, until familiar with the location, contents and procedures, including those at or away from a maintenance base.

1.4 Examination

a) A written or practical test to ensure that the training has been adequate.

1.5 Company Forms

Adequate company records must be developed to document MEL training (initial and recurrent) to be added to the employee's training records. If the aircrew are to exercise elementary maintenance privileges, training forms must include an area describing what is being certified, and a place for sign off by an AME.

Appendix M

Air Transport Association (ATA) 100 Aircraft System Specifications

Note: This list is not comprehensive and does not include subsystems. It is intended only to give a general overview of the ATA 100 groupings.

Group : Airframe						Group : Power Plant		Group : Structure	
1.	General	23V	Digital Voice	34C	TCAS	70	Standard Practice Engine	16	Sound
2	Power Off	24	Electrics	34D	Doppler, TANS	71	Powerplant	45	Active Schematics
3	Minimum Equipment Requirement	25	Equipment & Furnishings	34E	EFIS, EIS Ctrl/Se IDS	72T	Engine Turbine	51	Structures
4	Flight	26	Fire	34F	FMC, PMS	72R	Engine Reciprocating	52	Doors
5	Operational Spec./ Time	27	Flight Controls	34G	Ground Proximity Warning System	73	Engine Fuel & Control	53	Motion Hardware
6	Dimensions	27E	EFCS (Fly by Wire)	34H	Windshear	74	Engine Ignition	53A	Motion Performance
7	Lifting and Shoring	27F	Flaps/Slats	34I	IRS, INS, AHRS	75	Engine Bleed Air	54	Nacelles/Pylons
8	Levelling and Shoring	28	Fuel	34N	GPS, Long Range Nav Systems	76	Engine Controls	55	Stabilizrs
9	Towing and taxiing	29	Hydraulics	34T	TMS	77	Engine Indicating	56	Wiindows
10	Parking and Mooring	30	Ice and Rain	34W	Weather Radar	78	Engine Exhaust	57	Wings
11	Placards	31	EIS Warning ECAM, EICAS	35	Oxygen	79	Engine Oil	60	Standard Practices Propellers
12	Servicing	31A	DEFDAU (MD90) ADAS (MD11)	36	Pneumatics	80	Engine Starting	62	Rotors
16	Sound	31R	AIDS	37	Oxygen	81	Turbines	63	Rotor drive
20	Standard Practice Airframe	31W	CAWS, MAWEA,WES	38	Warter / Waste	82	Engine Wate Injection	64	Tail Rotor
21	Air Conditioning and Pressurization	32	Landing Gear & Brakes	39	Electrical Panels & Parts	83	Accessory Gearboxes	65	Tail Rotor Drive
22	Autoflight	33	Lighting	45	BITE, CMC	85	Visual	66	Floding Blades Pylons
23	Communications	34	Navigation	49	APU	91	Charts	67	Rotors, Flight Drive
23A	ACARS	34A	Flight Instruments			97	facilities	85	Visual
						99	IOS	97	Hardware
								99	Instructor Facilities