# Transport Canada
# Civil Aviation

# M M E L
# Guidance Book

# Revision 06

Approved:_____

W.R. Jupp
Chief
Aircraft Certification Flight Test

Date: 15 February 2002

# TRANSPORT CANADA
# MMEL GUIDANCE BOOK
## INTRODUCTION

## Introduction

This Transport Canada Civil Aviation (TCCA) MMEL Guidance Book has been compiled to provide a centralized source of guidance information to facilitate the review and standardization of TCCA MMELs and MMEL Supplements for which Aircraft Certification Flight Test (AARDC) is responsible. This guidance material is made available to the Aviation Community at large to encourage feedback and to provide guidance to operators and manufacturers when seeking relief.

THIS MATERIAL IS FOR GUIDANCE ONLY AND DOES NOT NECESSARILY APPLY NOR WILL IT AUTOMATICALLY BE GRANTED TO ALL AIRCRAFT. RELIEF FOR EACH AIRCRAFT MUST BE JUSTIFIED THROUGH THE APPROPRIATE REVIEW GROUP.

TO PERMIT OPERATOR FLEXIBILITY, IT IS NOT REQUIRED THAT THE MEL WORDING REFLECTS PRECISELY THE WORDING IN THE GUIDANCE BOOK OR THE MMEL AS LONG AS THE INTENT OF THE RELIEF IS SATISFIED AND THE MEL IS NOT LESS RESTRICTIVE.

In developing MMELs, no item shall be included which conflicts with the limitations or invalidates the emergency procedures of the Aircraft Flight Manual or of an Airworthiness Directive (AD) unless the AFM or AD provide otherwise. In some instances when performance and or handling qualities are significantly affected, it may be necessary to have Transport Canada approve specific limitations and or operating procedures and include this detail in a Flight Manual Supplement (e.g. nosewheel steering, anti–skid braking, ground spoilers, etc. inoperative).

While some MMEL items are generic in nature and identical wording can be used for all aircraft types, other items will differ from aircraft to aircraft. The material provided herein is to be used as guidance only. To repeat from the Forward of TP9155, “Transport Canada Inspectors/Engineers are expected to use good judgement in matters where guidance is not given”. Users are encouraged to provide feedback to correct or amplify the guidance material and to provide additional items which may be suitable for inclusion.

The format of the guidance is to provide suggested wording for the “Remarks or Exceptions” column and any amplification or explanation including references is included under DISCUSSION. It is again emphasized that an item need not contain the precise wording and every effort should be made to minimize the number of items in Canadian MMEL Supplements. Items may be applicable to both fixed and rotary wing aircraft but no specific guidance has been provided for the rotary wing community.

## Introduction (cont'd)

The MMEL Guidance Book Working Group first formed in Ottawa on March 16, 1993 and is comprised of representatives from:

Aircraft Certification

Flight Test (Chair), Engineering

Maintenance and Manufacturing

Commercial and Business Aviation

Airline Inspection

Operational Standards

Cabin Safety Standards

TC GMEL Program Manager

Air Transport Association of Canada

Commercial Air Operators

Domestic Aircraft Manufacturers

CUPE

AOSH

# TRANSPORT CANADA
# MMEL GUIDANCE BOOK
## LIST OF EFFECTIVE PAGES

| ITEM # | Page | Description | Rev. | Date |
|---|---|---|---|---|
| | N/A | Approval Page | 6 | 15 Feb. 02 |
| | I-1 of 2 | Introduction –1 | 6 | 15 Feb. 02 |
| | I-2 of 2 | Introduction –2 | 6 | 15 Feb. 02 |
| | LEP- 1 of 8 | List of Effective Pages –1 | 6 | 15 Feb. 02 |
| | LEP- 2 of 8 | List of Effective Pages –2 | 6 | 15 Feb. 02 |
| | LEP- 3 of 8 | List of Effective Pages –3 | 6 | 15 Feb. 02 |
| | LEP- 4 of 8 | List of Effective Pages –4 | 6 | 15 Feb. 02 |
| | LEP- 5 of 8 | List of Effective Pages –5 | 6 | 15 Feb. 02 |
| | LEP- 6 of 8 | List of Effective Pages –6 | 6 | 15 Feb. 02 |
| | LEP- 7 of 8 | List of Effective Pages –7 | 6 | 15 Feb. 02 |
| | LEP- 8 of 8 | List of Effective Pages –8 | 6 | 15 Feb. 02 |
| | LOR-1 of 1 | Log of Revisions | 6 | 15 Feb. 02 |
| | RFC-1 of 11 | Reasons for Changes –1 | 6 | 15 Feb. 02 |
| | RFC-2 of 11 | Reasons for Changes –2 | 6 | 15 Feb. 02 |
| | RFC-3 of 11 | Reasons for Changes –3 | 6 | 15 Feb. 02 |
| | RFC-4 of 11 | Reasons for Changes –4 | 6 | 15 Feb. 02 |
| | RFC-5 of 11 | Reasons for Changes –5 | 6 | 15 Feb. 02 |
| | RFC-6 of 11 | Reasons for Changes –6 | 6 | 15 Feb. 02 |
| | RFC-7 of 11 | Reasons for Changes –7 | 6 | 15 Feb. 02 |
| | RFC-8 of 11 | Reasons for Changes –8 | 6 | 15 Feb. 02 |
| | RFC-9 of 11 | Reasons for Changes –9 | 6 | 15 Feb. 02 |
| | RFC-10 of 11 | Reasons for Changes –10 | 6 | 15 Feb. 02 |
| | RFC-11 of 11 | Reasons for Changes –11 | 6 | 15 Feb. 02 |
| | DEF-1 of 2 | Definitions -1 | 6 | 15 Feb. 02 |
| | DEF-2 of 2 | Definitions -2 | 6 | 15 Feb. 02 |

| ITEM # | Page | Description | Rev. | Date |
|---|---|---|---|---|
| 21.1 | 21-1 of 12 | Air Conditioning and Pressurization Control Modes | 6 | 15 Feb. 02 |
| 21.1 | 21-2 of 12 | Air Conditioning and Pressurization Control Modes (cont'd) | 6 | 15 Feb. 02 |
| 21.2 | 21-3 of 12 | Cabin Altitude Indicator | 6 | 15 Feb. 02 |
| 21.3 | 21-4 of 12 | Cabin Altitude Warning System | 6 | 15 Feb. 02 |
| 21.4 | 21-5 of 12 | Cabin Rate of Climb Indicator | 6 | 15 Feb. 02 |
| 21.5 | 21-6 of 12 | Differential Pressure Indicator | 6 | 15 Feb. 02 |
| 21.6 | 21-7 of 12 | Equipment and Avionics Cooling Fans | 6 | 15 Feb. 02 |
| 21.7 | 21-8 of 12 | Outflow/Safety Valves | 6 | 15 Feb. 02 |
| 21.8 | 21-9 of 12 | Air Conditioning Packs | 6 | 15 Feb. 02 |
| 21.8 | 21-10 of 12 | Air Conditioning Packs (cont'd) | 6 | 15 Feb. 02 |
| 21.9 | 21-11 of 12 | Recirculation Fans | 6 | 15 Feb. 02 |
| 21.10 | 21-12 of 12 | Crew Rest Facility - Bunk | 6 | 15 Feb. 02 |
| 22.1 | 22-1 of 4 | Autopilot Disconnects | 6 | 15 Feb. 02 |
| 22.2 | 22-2 of 4 | Autopilot Disconnected Warning System | 6 | 15 Feb. 02 |
| 22.3 | 22-3 of 4 | Autopilot | 6 | 15 Feb. 02 |
| 22.4 | 22-4 of 4 | Mach Trim System | 6 | 15 Feb. 02 |
| 23.1 | 23-1 of 18 | ACARS (ARINC Communications Addressing and Reporting System) Including Printer | 6 | 15 Feb. 02 |
| 23.2 | 23-2 of 18 | Audio Control Panels | 6 | 15 Feb. 02 |
| 23.3 | 23-3 of 18 | Communication Systems (VHF, UHF, HF, etc) | 6 | 15 Feb. 02 |
| 23.4 | 23-4 of 18 | Selective Calling (SELCAL) System | 6 | 15 Feb. 02 |
| 23.5 | 23-5 of 18 | Flight Deck Speakers | 6 | 15 Feb. 02 |
| 23.6 | 23-6 of 18 | Cockpit Voice Recorder | 6 | 15 Feb. 02 |
| 23.7 | 23-7 of 18 | Boom Microphones (Including Headset Mic) | 6 | 15 Feb. 02 |
| 23.8 | 23-8 of 18 | Crew Member Interphone System | 6 | 15 Feb. 02 |
| 23.8 | 23-9 of 18 | Crew Member Interphone System (cont'd) | 6 | 15 Feb. 02 |
| 23.8 | 23-10 of 18 | Crew Member Interphone System (cont'd) | 6 | 15 Feb. 02 |
| 23.9 | 23-11 of 18 | Passenger Address System | 6 | 15 Feb. 02 |
| 23.9 | 23-12 of 18 | Passenger Address System (cont'd) | 6 | 15 Feb. 02 |

| ITEM # | Page | Description | Rev. | Date |
|---|---|---|---|---|
| 23.9 | 23-13 of 18 | Passenger Address System (cont'd) | 6 | 15 Feb. 02 |
| 23.10 | 23-14 of 18 | Handsets | 6 | 15 Feb. 02 |
| 23.10 | 23-15 of 18 | Handsets (cont'd) | 6 | 15 Feb. 02 |
| 23.11 | 23-16 of 18 | Alerting System | 6 | 15 Feb. 02 |
| 23.12 | 23-17 of 18 | Pre–Recorded Announcement (Passenger Briefing System | 6 | 15 Feb. 02 |
| 23.13 | 23-18 of 18 | Active Noise and Vibration Suppression System | 6 | 15 Feb. 02 |
| 24.1 | 24-1 of 2 | Electrical Power Sources and Bus Ties | 6 | 15 Feb. 02 |
| 24.2 | 24-2 of 2 | Electrical Power Source Monitoring Devices | 6 | 15 Feb. 02 |
| 25.1 | 25-1 of 21 | Emergency Locator Transmitter | 6 | 15 Feb. 02 |
| 25.2 | 25-2 of 21 | Flight Attendant Seat/Seat Assembly (Single and Dual Position) | 6 | 15 Feb. 02 |
| 25.2 | 25-3 of 21 | Flight Attendant Seat/Seat Assembly (Single and Dual Position) (cont'd) | 6 | 15 Feb. 02 |
| 25.3 | 25-4 of 21 | "Fasten Seat Belt While Seated", Signs or Placards | 6 | 15 Feb. 02 |
| 25.4 | 25-5 of 21 | Flight Deck Crew member Safety Belts (Includes Shoulder Harness) | 6 | 15 Feb. 02 |
| 25.5 | 25-6 of 21 | Megaphone | 6 | 15 Feb. 02 |
| 25.6 | 25-7 of 21 | Observer Seats (Including Associated Equipment) | 6 | 15 Feb. 02 |
| 25.7 | 25-8 of 21 | Overhead Storage Bin(s)/Cabin And Galley Storage Compartment/Closets | 6 | 15 Feb. 02 |
| 25.8 | 25-9 of 21 | Passenger Convenience Items | 6 | 15 Feb. 02 |
| 25.9 | 25-10 of 21 | Passenger Seats | 6 | 15 Feb. 02 |
| 25.9 | 25-11 of 21 | Passenger Seats (cont'd) | 6 | 15 Feb. 02 |
| 25.10 | 25-12 of 21 | Pilot Seat Adjustments | 6 | 15 Feb. 02 |
| 25.11 | 25-13 of 21 | Overhead (Stowage) Rack with Restraining Device | 6 | 15 Feb. 02 |
| 25.12 | 25-14 of 21 | Lavatory NO SMOKING Placards | 6 | 15 Feb. 02 |
| 25.13 | 25-15 of 21 | Flight Attendant Flashlights/Flashlight Holders | 6 | 15 Feb. 02 |
| 25.14 | 25-16 of 21 | First Aid Kit | 6 | 15 Feb. 02 |
| 25.15 | 25-17 of 21 | Emergency Medical Kit | 6 | 15 Feb. 02 |

| ITEM # | Page | Description | Rev. | Date |
|---|---|---|---|---|
| 25.15 | 25-18 of 21 | Emergency Medical Kit (cont'd) | 6 | 15 Feb. 02 |
| 25.16 | 25-19 of 21 | Exterior Lavatory Door Ashtrays | 6 | 15 Feb. 02 |
| 25.17 | 25-20 of 21 | Cargo Compartment Lining Panels | 6 | 15 Feb. 02 |
| 25.18 | 25-21 of 21 | Crew Rest Facilities - Bunk | 6 | 15 Feb. 02 |
| 26.1 | 26-1 of 13 | APU Fire Detection System | 6 | 15 Feb. 02 |
| 26.2 | 26-2 of 13 | APU Fire Extinguishing System | 6 | 15 Feb. 02 |
| 26.3 | 26-3 of 13 | Baggage or Cargo Compartment Smoke Detectors | 6 | 15 Feb. 02 |
| 26.4 | 26-4 of 13 | Engine Fire Detection Loops | 6 | 15 Feb. 02 |
| 26.5 | 26-5 of 13 | Engine/APU Fire Extinguisher Discs (Thermal and Discharge) | 6 | 15 Feb. 02 |
| 26.6 | 26-6 of 13 | Engine Overheat Detection Loops | 6 | 15 Feb. 02 |
| 26.7 | 26-7 of 13 | Portable Fire Extinguishers | 6 | 15 Feb. 02 |
| 26.8 | 26-8 of 13 | Lavatory Fire Extinguishing Systems | 6 | 15 Feb. 02 |
| 26.8 | 26-9 of 13 | Lavatory Fire Extinguishing Systems | 6 | 15 Feb. 02 |
| 26.9 | 26-10 of 13 | Lavatory Smoke Detection Systems | 6 | 15 Feb. 02 |
| 26.9 | 26-11 of 13 | Lavatory Smoke Detection Systems | 6 | 15 Feb. 02 |
| 26.10 | 26-12 of 13 | Main Landing Gear Bay Overheat Detection System | 6 | 15 Feb. 02 |
| 26.11 | 26-13 of 13 | Crew Rest Facility - Bunk Smoke Detection System | 6 | 15 Feb. 02 |
| 27.1 | 27-1 of 9 | Aileron and Rudder Trim Indicators | 6 | 15 Feb. 02 |
| 27.2 | 27-2 of 9 | Control Surface Position Indicators | 6 | 15 Feb. 02 |
| 27.3 | 27-3 of 9 | Control Wheel Trim Switches | 6 | 15 Feb. 02 |
| 27.4 | 27-4 of 9 | Flap Position Indicator | 6 | 15 Feb. 02 |
| 27.5 | 27-5 of 9 | Lift Dump and/or Drag Device Indicator | 6 | 15 Feb. 02 |
| 27.6 | 27-6 of 9 | Pitch Trim Position Indicating System | 6 | 15 Feb. 02 |
| 27.7 | 27-7 of 9 | Rudder Pedal Adjustment | 6 | 15 Feb. 02 |
| 27.8 | 27-8 of 9 | Stall Warning System | 6 | 15 Feb. 02 |
| 27.9 | 27-9 of 9 | Takeoff Configuration Warning System | 6 | 15 Feb. 02 |
| 28.1 | 28-1 of 6 | Fuel Indication System | 6 | 15 Feb. 02 |

| ITEM # | Page | Description | Rev. | Date |
|---|---|---|---|---|
| 28.2 | 28-2 of 6 | Fuel Transfer System | 6 | 15 Feb. 02 |
| 28.3 | 28-3 of 6 | Fuel Tank Temperature Indication | 6 | 15 Feb. 02 |
| 28.4 | 28-4 of 6 | Fuel Tank Measuring Sticks | 6 | 15 Feb. 02 |
| 28.5 | 28-5 of 6 | Main Fuel Tank Pumps | 6 | 15 Feb. 02 |
| 28.6 | 28-6 of 6 | Pressure Refueling System | 6 | 15 Feb. 02 |
| 30.1 | 30-1 of 12 | Anti–Ice/De–Ice System Test | 6 | 15 Feb. 02 |
| 30.2 | 30-2 of 12 | Ice Detection Systems | 6 | 15 Feb. 02 |
| 30.3 | 30-3 of 12 | Ice and Rain Protection | 6 | 15 Feb. 02 |
| 30.4 | 30-4 of 12 | Liquid Rain Repellant System | 6 | 15 Feb. 02 |
| 30.5 | 30-5 of 12 | Pitot Heaters | 6 | 15 Feb. 02 |
| 30.6 | 30-6 of 12 | Pitot Heat Indicating System | 6 | 15 Feb. 02 |
| 30.7 | 30-7 of 12 | Powerplant Ice Protection | 6 | 15 Feb. 02 |
| 30.8 | 30-8 of 12 | Static Source Heaters | 6 | 15 Feb. 02 |
| 30.9 | 30-9 of 12 | Total Air Temperature (TAT) Probe Heater System | 6 | 15 Feb. 02 |
| 30.10 | 30-10 of 12 | Wing Deicer Boot Advisory Indications | 6 | 15 Feb. 02 |
| 30.11 | 30-11 of 12 | Windshield Wipers | 6 | 15 Feb. 02 |
| 30.12 | 30-12 of 12 | Windshield/Window Heaters | 6 | 15 Feb. 02 |
| 31.1 | 31-1 of 4 | Clock | 6 | 15 Feb. 02 |
| 31.2 | 31-2 of 4 | Engine Indicating and Crew Alerting System (EICAS) | 6 | 15 Feb. 02 |
| 31.3 | 31-3 of 4 | Flight Data Recorder | 6 | 15 Feb. 02 |
| 31.4 | 31-4 of 4 | Aural Warning Systems | 6 | 15 Feb. 02 |
| 32.1 | 32-1 of 1 | Parking Brake | 6 | 15 Feb. 02 |
| 33.1 | 33-1 of 14 | Cockpit and Instrument Panel Lighting System | 6 | 15 Feb. 02 |
| 33.2 | 33-2 of 14 | Emergency Lighting, External | 6 | 15 Feb. 02 |
| 33.3 | 33-3 of 14 | Emergency Lighting, Internal | 6 | 15 Feb. 02 |
| 33.4 | 33-4 of 14 | Floor Proximity Emergency Escape Path Markings | 6 | 15 Feb. 02 |

| ITEM # | Page | Description | Rev. | Date |
|---|---|---|---|---|
| 33.5 | 33-5 of 14 | Logo Lights | 6 | 15 Feb. 02 |
| 33.6 | 33-6 of 14 | Landing/Taxi Lights | 6 | 15 Feb. 02 |
| 33.7 | 33-7 of 14 | Anti–Collision Light System | 6 | 15 Feb. 02 |
| 33.8 | 33-8 of 14 | Position Light System | 6 | 15 Feb. 02 |
| 33.9 | 33-9 of 14 | No Smoking/Fasten Seat Belt/Return to Cabin Lights | 6 | 15 Feb. 02 |
| 33.9 | 33-10 of 14 | No Smoking/Fasten Seat Belt/Return to Cabin Lights (cont'd) | 6 | 15 Feb. 02 |
| 33.10 | 33-11 of 14 | Passenger Compartment Lighting | 6 | 15 Feb. 02 |
| 33.11 | 33-12 of 14 | Strobe Light (or High Intensity) System | 6 | 15 Feb. 02 |
| 33.12 | 33-13 of 14 | Wing Inspection (Ice) Lights | 6 | 15 Feb. 02 |
| 33.13 | 33-14 of 14 | Crew Rest Facility - Bunk Interior Lighting | 6 | 15 Feb. 02 |
| 34.1 | 34-1 of 15 | Altitude Alerter Systems | 6 | 15 Feb. 02 |
| 34.2 | 34-2 of 15 | Flight Director | 6 | 15 Feb. 02 |
| 34.3 | 34-3 of 15 | Flight Instruments | 6 | 15 Feb. 02 |
| 34.4 | 34-4 of 15 | Ground Proximity Warning System | 6 | 15 Feb. 02 |
| 34.4 | 34-5 of 15 | Ground Proximity Warning System (cont'd) | 6 | 15 Feb. 02 |
| 34.5 | 34-6 of 15 | Magnetic Compass (Standby) | 6 | 15 Feb. 02 |
| 34.6 | 34-7 of 15 | Navigation and Approach Aid Equipment | 6 | 15 Feb. 02 |
| 34.6 | 34-8 of 15 | Navigation and Approach Aid Equipment (cont'd) | 6 | 15 Feb. 02 |
| 34.7 | 34-9 of 15 | Outside Air Temperature (or equivalent) | 6 | 15 Feb. 02 |
| 34.8 | 34-10 of 15 | Radio Altimeter | 6 | 15 Feb. 02 |
| 34.9 | 34-11 of 15 | ATC Transponder and Automatic Altitude Reporting System | 6 | 15 Feb. 02 |
| 34.10 | 34-12 of 15 | Traffic Alert and Collision Avoidance System | 6 | 15 Feb. 02 |
| 34.11 | 34-13 of 15 | Vertical Speed Indicators | 6 | 15 Feb. 02 |
| 34.12 | 34-14 of 15 | Weather Radar | 6 | 15 Feb. 02 |
| 34.13 | 34-15 of 15 | Windshear Detection and Guidance System | 6 | 15 Feb. 02 |
| 35.1 | 35-1 of 9 | Crew Member Oxygen System | 6 | 15 Feb. 02 |
| 35.2 | 35-2 of 9 | Lavatory Oxygen | 6 | 15 Feb. 02 |

| ITEM # | Page | Description | Rev. | Date |
|---|---|---|---|---|
| 35.3 | 35-3 of 9 | Passenger Oxygen System | 6 | 15 Feb. 02 |
| 35.3 | 35-4 of 9 | Passenger Oxygen System (cont'd) | 6 | 15 Feb. 02 |
| 35.4 | 35-5 of 9 | Portable Oxygen Dispensing Units (Bottle and Mask) | 6 | 15 Feb. 02 |
| 35.5 | 35-6 of 9 | Protective Breathing Equipment Smoke Hoods | 6 | 15 Feb. 02 |
| 35.6 | 35-7 of 9 | Passenger Service Units (Drop Down Oxygen) | 6 | 15 Feb. 02 |
| 35.6 | 35-8 of 9 | Passenger Service Units (Drop Down Oxygen) (cont'd) | 6 | 15 Feb. 02 |
| 35.7 | 35-9 of 9 | Crew Rest Facility - Bunk Drop Down Oxygen Masks | 6 | 15 Feb. 02 |
| 36.1 | 36-1 of 1 | Pneumatics (ETOPS) | 6 | 15 Feb. 02 |
| 38.1 | 38-1 of 3 | Potable Water Systems | 6 | 15 Feb. 02 |
| 38.2 | 38-2 of 3 | Lavatory Waste Systems | 6 | 15 Feb. 02 |
| 38.2 | 38-3 of 3 | Lavatory Waste Systems (cont'd) | 6 | 15 Feb. 02 |
| 49.1 | 49-1 of 1 | Auxiliary Power Unit (APU) | 6 | 15 Feb. 02 |
| 52.1 | 52-1 of 11 | Emergency Exits and Escape Slides (Aircraft Crew Only) | 6 | 15 Feb. 02 |
| 52.1 | 52-2 of 11 | Emergency Exits and Escape Slides (Aircraft Crew Only) (cont'd) | 6 | 15 Feb. 02 |
| 52.2 | 52-3 of 11 | Emergency Exits and Escape Slides (Passenger Carrying Operations) | 6 | 15 Feb. 02 |
| 52.2 | 52-4 of 11 | Emergency Exits and Escape Slides (Passenger Carrying Operations) (cont'd) | 6 | 15 Feb. 02 |
| 52.2 | 52-5 of 11 | Emergency Exits and Escape Slides (Passenger Carrying Operations) (cont'd) | 6 | 15 Feb. 02 |
| 52.2 | 52-6 of 11 | Emergency Exits and Escape Slides (Passenger Carrying Operations) (cont'd) | 6 | 15 Feb. 02 |
| 52.2 | 52-7 of 11 | Emergency Exits and Escape Slides (Passenger Carrying Operations) (cont'd) | 6 | 15 Feb. 02 |
| 52.2 | 52-8 of 11 | Emergency Exits and Escape Slides (Passenger Carrying Operations) (cont'd) | 6 | 15 Feb. 02 |

| ITEM # | Page | Description | Rev. | Date |
|---|---|---|---|---|
| 52.2 | 52-9 of 11 | Emergency Exits and Escape Slides (Passenger Carrying Operations) (cont'd) | 6 | 15 Feb. 02 |
| 52.3 | 52-10 of 11 | Door(s) Indication System | 6 | 15 Feb. 02 |
| 52.4 | 52-11 of 11 | Narrow-Body All Cargo Aircraft Slide Relief | 6 | 15 Feb. 02 |
| 61.1 | 61-1 of 1 | Propeller Synchrophasing System | 6 | 15 Feb. 02 |
| 73.1 | 73-1 of 2 | Full Authority Digital Engine Control (FADEC) | 6 | 15 Feb. 02 |
| 73.2 | 73-2 of 2 | Fuel Flow/Pressure Indications | 6 | 15 Feb. 02 |
| 77.1 | 77-1 of 3 | Engine Instruments | 6 | 15 Feb. 02 |
| 77.2 | 77-2 of 3 | Engine Vibration Monitors | 6 | 15 Feb. 02 |
| 77.3 | 77-3 of 3 | Primary Power Setting Instruments | 6 | 15 Feb. 02 |
| 78.1 | 78-1 of 1 | Thrust Reversers | 6 | 15 Feb. 02 |

## Log of Revisions

When revisions are received and inserted, record the relevant information in the appropriate columns below

| Revision No. | Date | Date Revised | Revised By |
|---|---|---|---|
| Original | 24 Sept 1993 | | |
| 1 | 11 Feb 1994 | | |
| 2 | 21 Dec 1994 | | |
| 3 | 27 Mar 1997 | | |
| 4 | 31 Mar 1998 | | |
| 5 | 05 May 2000 | | |
| 6 | 15 Feb. 2002 | | |

| ITEM # | Item and Description of Change |
|---|---|
| Various | General: |
| | This Revision resulted from a complete review of the Guidance Book by the TC MMEL Guidance Book Working Group and other specialists. Meetings were held in Ottawa in July, August and October 2001. |
| | Editorial revisions include replacing “Provided” with “May be inoperative provided:”, capitalizing the first letter of the first word of each proviso, changing “CAM” to “AWM”, ensuring that a “Reference:” and a “FAA Differences:” line was included in the DISCUSSION for each item, and replacement of “TC” with “TCCA”. |
| | Other changes were introduced to align the relief with recently added and revised CARs, align the proviso wording with equivalent FAA Policy Letters and to clarify inconsistencies. In addition, new items were included at the request of manufacturers, aircraft operators, MMEL and GMEL authors. |
| | Change bars are used only for significant changes from the Revision 5 version of this document. Formatting changes, the capitalization of the first letter in the sub-paragraphs, and changes from “TC” to “TCCA” are not highlighted as changes. |
| | DEFINITIONS |
| DEF-1 | New definitions were provided for: |
| | “crew rest facility – bunk” inserted at request of Cabin Safety |
| | “all cargo operations” and “cargo attendants” definition revised for clarification. |
| DEF-2 | New definition was provided for: |
| | “extended overwater operations” reprinted from FAR 1.1 and |
| | “flight cycle” |
| | “flight” and “operative” revised for clarification. |
| | ATA 21 – AIR CONDITIONING |
| 21.1 | Air Conditioning and Pressurization Control Modes - Added to DISCUSSION that packs are considered to be operative and described content of (M) & (O). |
| 21.2 | Cabin Altitude Indicator - Editorial. |

| ITEM # | Item and Description of Change |
|---|---|
| 21.3 | Cabin Altitude Warning System - Editorial. |
| 21.4 | Cabin Rate of Climb Indicator - Editorial. |
| 21.5 | Differential Pressure Indicator – Removed the (M) procedure. |
| 21.6 | Equipment and Avionics Cooling Fans -(M) deleted and remarks clarified. |
| 21.7 | Outflow/Safety Valves – added proviso for ensuring that extended overwater operations are not conducted to reflect the new definition. |
| 21.8 | Air Conditioning Packs - Editorial |
| 21.9 | Recirculation Fans – New item adding restriction of cargo carriage. |
| 21.10 | Crew Rest Facility – Bunk – New item providing GB coverage of new configuration. |
| | **ATA 22 – AUTO FLIGHT** |
| 22.1 | Autopilot Disconnects - the initial approach altitude restored as proviso in lieu of a fixed altitude AGL and the disconnect function elevated to Cat B for operations without autopilot. |
| 22.2 | Autopilot Disconnected Warning System – References updated adding FAA PL 101. This includes elevation of item from Cat C to Cat B. |
| 22.3 | Autopilot - Format revised reflecting various autopilot configurations. Phrase " including RVSM" deleted as it is part of "enroute operation". |
| 22.4 | Mach Trim System - Phrase " including RVSM" deleted as it is part of "enroute operation". Discussion amended to reflect that some aircraft require system for entire envelope. |
| | **ATA 23 - COMMUNICATIONS** |
| 23.1 | ACARS (ARINC Communications Addressing and Reporting System) Including Printer - added an (O) procedure to align with proviso. |
| 23.2 | Audio Control Panels – Editorial. Proviso removed for category D item because it was adequately address in the first proviso. |
| 23.3 | Communication Systems (VHF, UHF, HF, etc.) - This item used to be "Cabin Service Interphone System (Flight Deck to Cabin, Cabin to Cabin)", which has been moved and split as follows: Cabin Service Interphone System is now numbered 23.8 and titled "Crew Member Interphone System" and includes the old 23.8 plus all of 23.3 except the visual and aural warning relief which is now in 23.11 and the handset relief which is now in 23.10.<br><br>The category A relief and the associated discussion justifying that relief was removed because it conflicts with AWM 525.1307(d) and, in some cases, it conflicts with existing operational regulations. |

| ITEM # | Item and Description of Change |
|---|---|
| 23.4 | Selective Call (SELCAL) System – This item has been moved from 23.11 and the old 23.4 "Communication Systems (VHF, UHF, HF, etc.)" has been renumbered from 23.4 to 23.3. |
| 23.5 | Flight Deck Speakers – This item has been renumber from 23.6 and provisos revised to include statement in DISCUSSION.and requirement to have an additional headset. The old 23.5 "Cockpit Voice Recorder" has been moved to 23.6. |
| 23.6 | Cockpit Voice Recorder – Editorial changes including a renumbering from 23.5 to 23.6. The old 23.6 "Flight Deck Speakers" has been moved to 23.5. |
| 23.7 | Boom Microphones (Including Headset Mic) - Editorial . |
| 23.8 | Crew Member Interphone System – This item has been expanded to include the old Flight Deck to Ground Interphone System plus the old 23.3 Cabin Interphone guidance. For aircraft being operated in compliance with the provisions of 725.104(2), NPA 1999-233 proposed that the A category be revised to state "three flight cycles…" instead of the "one flight day" previously allowed. The provisos and the relief have also been revised as a result of the security enhancements such as the requirement for the flight deck door to remain closed and locked. Provisions have also been added for Crew Rest Facilities – Bunk. This guidance material is compatible with FAA PL 9 at Rev 5 as issued with FAA Global Change GC 109. A TCCA global change with this new relief has been issued as TC GC 5. |
| 23.9 | Passenger Address System – This item has been moved from 23.10 and the old 23.9 "Pre–recorded Announcement (Passenger Briefing System)" has been moved to 23.12.- For aircraft being operated in compliance with the provisions of 725.104(2), NPA 1999-233 proposed that the A category be revised to state "three flight cycles…" instead of the "one flight day" previously allowed. . Provisions have also been added for Crew Rest Facilities – Bunk. |
| 23.10 | Handsets – This is new relief. The old 23.10 "Passenger Address System" has been moved to 23.9. |
| 23.11 | Alerting System – This is new relief, some of which was removed from the old 23.3. The old 23.11 "Selective Call (SELCAL) System" has been renumbered 23.4. |
| 23.12 | Pre–recorded Announcement (Passenger Briefing System) – Editorial. This item has been renumbered from 23.9 and the old 23.12 "Active Noise and Vibration Suppression System" has been renumbered from 23.12 to 23.13. |
| 23.13 | Active Noise and Vibration Suppression System – This item has been moved from 23.12. Changes are editorial. |

| ITEM # | Item and Description of Change |
|---|---|
| | **ATA 24 – ELECTRICAL POWER** |
| 24.1 | Electrical Power Sources and Bus Ties - Editorial. |
| 24.2 | Electrical Power Source Monitoring Devices - Editorial |
| | **ATA 25 – EQUIPMENT/FURNISHING** |
| 25.1 | Emergency Locator Transmitter (ELT) - Recent revisions to CAR 605.38 and CAR 605.39 have introduced different repair interval criteria depending upon the operational category of the aircraft. Remarks revised to refer to regulations. FAA establishes similar criteria. |
| 25.2 | Flight Attendant Seat Assembly (single or dual position) – Verbiage revised to reflect more closely the contents of FAA PL 97 Revision 2. DISCUSSION still retains the statement, "The above mentioned relief is only permissible if more than one flight attendant is assigned to duty or more than one seat or seat assembly is located in the passenger cabin." |
| 25.3 | "Fasten Seat Belt While Seated" Signs or Placards – the Lavatory door "No Smoking" sign or placard has been relocated to GB item 25.12 and the FAA differences revised. |
| 25.4 | Flight Deck Crew Member Safety Belts (Includes Shoulder Harness) – Editorial |
| 25.5 | Megaphone – Editorial |
| 25.6 | Primary Observer Seat (Including Associated Equipment) - Revised Title, (M) Procedures added and proviso added to second option to require seat be removed, stowed or secured in the retracted position. |
| 25.7 | Overhead Storage Bin(s)/Cabin And Galley Storage Compartment/Closets – Item expanded to include cabin and galley storage compartments/closets in concert with new FAA PL 104. Category D relief revised to Category C. |
| 25.8 | Passenger Convenience Items – Editorial |
| 25.9 | Passenger Seats (includes seat back) - Added Underseat Baggage Restraining Bars sub-item. |
| 25.10 | Pilot Seat Adjustments – Editorial |
| 25.11 | Overhead (Stowage) Rack With Restraining Device - Editorial |
| 25.12 | Lavatory NO SMOKING Placards – New item based on CAR 705.76 (c). |
| | Underseat Baggage Restraining Bars relocated to item 25.9. |
| 25.13 | Flight Attendant Flashlights/Flashlight Holders – Editorial |
| 25.14 | First Aid Kit – Provisos for First Aid Kit Seal reworked to permit relief for missing or inoperative seals when the kit contains items in excess of the required contents. |

| ITEM # | Item and Description of Change |
|---|---|
| 25.15 | Emergency Medical Kit – Consumable items upgraded to Category A – one flight day and provisos reworded to permit relief for consumable items in excess of the required contents of the kit. Emergency Medical Kit Seal rewarked as per item 25.14. Other changes were editorial. |
| 25.16 | Exterior Lavatory Door Ashtrays - Note added indicating that interior ashtrays are not required by regulations plus editorial changes. |
| 25.17 | Cargo Compartment Lining Panels – New item restricting cargo carriage if liners are damaged or missing. ULD Note added. |
| 25.18 | Crew Rest Facilities – Bunk - New item added to provide relief for this new installation. |
| | **ATA 26 – FIRE PROTECTION** |
| 26.1 | APU Fire Detection System – Revised format for clarification purposes. Restriction for ETOPS beyond120 minutes added. |
| 26.2 | APU Fire Extinguishing System –Editorial |
| 26.3 | Baggage or Cargo Compartment Smoke Detectors - Smoke Detectors in excess of requirements added with editorials. FAA PL # corrected. |
| 26.4 | Engine Fire Detection Loops – Reworded for clarification. Restriction for ETOPS beyond 120 minutes added. |
| 26.5 | Engine/APU Fire Extinguisher Discs (Thermal and Discharge) – Editorial |
| 26.6 | Engine Overheat Detection Loops - Reworded for clarification. Restriction for ETOPS beyond 120 minutes added. |
| 26.7 | Portable Fire Extinguishers – Editorial |
| 26.8 | Lavatory Fire Extinguishing Systems – Additional proviso added that lavatories with inoperative fire extinguishing system can only be used by crew members. Updated reference to PL 24 Rev. 3. This change has been included in TCCA GC 5. |
| 26.9 | Lavatory Smoke Detection Systems – Deleted first option to permit dispatch with lavatory smoke detection system inoperative if the lavatory fire extinguishing system is operative. Updated provisos to include use by crew members and reworded to be more compatible with FAA PL 24 Rev. 3. These changes are included in TCCA GC 5. |
| 26.10 | Main Landing Gear Bay Overheat Detection System - Editorial |
| 26.11 | Crew Rest Facility - Bunk Smoke Detection System - New item providing GB coverage of new configuration. |

| ITEM # | Item and Description of Change |
|---|---|
| | **ATA 27 – FLIGHT CONTROLS** |
| 27.1 | Aileron and Rudder Trim Indicators - A note added to explain purpose of (O) procedure. Other editorial changes. |
| 27.2 | Control Surface Position Indicators - Editorial |
| 27.3 | Control Wheel Trim Switches- - Editorial |
| 27.4 | Flap Position Indicator – Proviso d) reworded for clarity and other editorial changes. |
| 27.5 | Lift Dump and/or Drag Device Indicator - Editorial |
| 27.6 | Pitch Trim Position Indicating System - Editorial |
| 27.7 | Rudder Pedal Adjustment - Editorial |
| 27.8 | Stall Warning System - Editorial |
| 27.9 | Takeoff Configuration Warning System - Editorial |
| | **ATA 28 – FUEL SYSTEM** |
| 28.1 | Fuel Tank Indications – Editorial and DISCUSSION expanded to include statement. “For aircraft equipped with FMS calculated fuel used or fuel flow, this may be considered equivalent to fuel flow indications.” |
| 28.2 | Center Tank Fuel Pumps – Editorial and relief expanded to permit 2/0 with provisos. |
| 28.3 | Fuel Tank Temperature Indication - Editorial |
| 28.4 | Fuel Tank Measuring Sticks - Editorial |
| 28.5 | Main Fuel Tank Pumps – Reference to ETOPS greater than 120 minutes added. |
| 28.6 | Pressure Refueling System - Editorial |
| | **ATA 30 – ICE AND RAIN PROTECTION** |
| 30.1 | Anti–ice/De–ice System Test – Editorial and sub-item for Windows and Probes added. |
| 30.2 | Ice Detection Systems - Added comment in DISCUSSION that…” the specific temperatures used in the TCCA icing definition are slightly higher than those used by the FAA.” |
| 30.3 | Ice and Rain Protection – Editorial |
| 30.4 | Liquid Rain Repellant System - Editorial |

| ITEM # | Item and Description of Change |
|---|---|
| 30.5 | Pitot Heaters - RVSM removed from remarks. DISCUSSION verbiage clarified. |
| 30.6 | Pitot Heat Indicating System – Editorial and 138 minutes ETOPS replaced by 120 minutes consistent with other ETOPS items. |
| 30.7 | Engine Intake Anti–icing and/or De–icing System – Relief clarified in Remarks column. |
| 30.8 | Static Source Heaters. RVSM reference in Remarks column removed. DISCUSSION expanded to include ground operations where ice and slush may be splashed onto the static sources. (See TCCA icing definition in applicable AFM). |
| 30.9 | Total Air Temperature (TAT) Probe Heater System – Editorial |
| 30.10 | Wing Deicer Boot Advisory Indications – Editorial |
| 30.11 | Windshield Wipers – Editorial and High Speed mode added. Airbus relief for pilot not flying side removed per AWM 525.773. |
| 30.12 | Windshield/Window Heaters - Forward facing windows separated from side facing windows and provisos added. |
| | **ATA 31 – INDICATING/RECORDING SYSTEMS** |
| 31.1 | Clock - Editorial |
| 31.2 | Engine Indicating and Crew Alerting System (EICAS) - Editorial |
| 31.3 | Flight Data Recorder - "Required" and "not required" parameters repair intervals added per FAA PL 87 Rev. 4. Requirements outlined in PL 87 Rev. 5 will not be applied in Canada. Revised proviso with addition of "verified" and added an (O) to require a crew procedure to verify the CVR is operative for the case where both the CVR and FDR are required by regulations.. |
| 31.4 | Aural Warning Systems – New item to remove relief in Airbus MMELs. |
| | **ATA 32 – LANDING GEAR** |
| 32.1 | Parking Brake – Editorial |
| | **ATA 33 - LIGHTS** |
| 33.1 | Cockpit and Instrument Panel Lighting System - Editorial |
| 33.2 | Emergency Lighting External – Removed NOTE 1 which is no longer required because definition is now in the Definitions section of the GB. Other editorial changes. |

| ITEM # | Item and Description of Change |
|---|---|
| 33.3 | Emergency Lighting System, Internal - Reformatted for clarification and added provisions for Crew Rest Facility – Bunk.. |
| 33.4 | Floor Proximity Emergency Escape Path Markings - Title change to CARs title. Reformatted for clarification. Photoluminescent Tape Systems added. DISCUSSION expanded to clarify relief. |
| 33.5 | Logo Lights - Editorial |
| 33.6 | Landing/Taxi Lights - Editorial |
| 33.7 | Anti–Collision Light System Lights - Editorial |
| 33.8 | Position Light System Light Bulbs – Number required for dispatch changed from “6” to “-“. |
| 33.9 | NO SMOKING/FASTEN SEAT BELT/RETURN TO CABIN Lights - Discussion of possible Crew Rest Facility – Bunk relief add and other editorial changes. |
| 33.10 | Passenger Compartment Lighting – Editorial |
| 33.11 | Strobe Light (or High Intensity) System – Editorial |
| 33.12 | Wing Inspection (Ice) Lights – Corrected relief for airplanes where view from the flight compartment is restricted. |
| 33.13 | Crew Rest Facility – Bunk Interior Lighting – New item for new aircraft configuration. |
| | **ATA 34 – NAVIGATION EQUIPMENT** |
| 34.1 | Altitude Alerting System - Editorial including RVSM phrase removed. |
| 34.2 | Flight Director - Editorial including RVSM phrase removed. DISCUSSION expanded to cover repair interval considerations. |
| 34.3 | Flight Instruments - Editorial |
| 34.4 | Ground Proximity Warning System – Expanded to reflect FAA PL 54 Rev. 6. Also, relief provided for when GPWS is not required by regulations. |
| 34.5 | Non-stabilized Magnetic Compass - Title change and editorial. (O) procedures added. |
| 34.6 | Navigation and Approach Aid Equipment - Marker Beacon relief tied to routine and non routine operations. GPS Approach Data Base relief added per AC 20-138 and AC 20-130A. |
| 34.7 | Outside Air Temperature – Editorial |
| 34.8 | Radio Altimeter – Example added in Discussion for clarification. |
| 34.9 | ATC Transponder and Automatic Altitude Reporting System – Editorial |

| ITEM # | Item and Description of Change |
|---|---|
| 38.2 | Lavatory Waste Systems – Title changed and new proviso add to permit the pilot-in-command to determine if dispatch should be allowed based on the length of the flight. This item has been revised in FAA PL 83 at Rev. 4 and has been included in TCCA GC 5. Other editorial changes to require one lavatory to be operative for multi-lavatory equipped aircraft and to permit usage of operative components. |
| | **ATA 49 – AIRBORNE AUXILIARY POWER** |
| 49.1 | Auxiliary Power Unit (APU) – Editorial and DISCUSSION expanded with statement that relief may be prohibited for ETOPS if the APU has been determined to be essential equipment during the ETOPS approval process (e.g. A 310). |
| | **ATA 52 - DOORS** |
| 52.1 | Emergency Exit/Escape Slide (Aircraft Crew Only) - Editorial |
| 52.2 | Emergency Exits and Escape Slide (Passenger Carrying Operations) - Discussion adds requirement for Category B for inoperative doors in the cargo compartment of freighter and combi aircraft. (Ref. Note 10 of provisos) and FAA differences expanded. |
| 52.3 | Door(s) Indication System - Editorial |
| 52.4 | Narrow-Body All Cargo Aircraft Slide Relief - Editorial |
| | **ATA 61 - PROPELLERS** |
| 61.1 | Propeller Synchrophasing System – DISCUSSION expanded to address repair intervals dependent on workload and fatique factors. |
| | **ATA 73 – ENGINE FUEL AND CONTROL** |
| 73.1 | Full Authority Digital Electronic Control (FADEC) – Remarks clarified. |
| 73.2 | Fuel Flow/Pressure Indications – DISCUSSION clarifies determination of repair category. |
| | **ATA 77 – ENGINE INDICATING** |
| 77.1 | Engine Instruments - Editorial |
| 77.2 | Engine Vibration Monitors - Editorial |
| 77.3 | Primary Power Setting Indicators - Editorial |

| ITEM # | Item and Description of Change |
|---|---|
| | **ATA 78 – ENGINE EXHAUST AND THRUST REVERSER** |
| 78.1 | Thrust Reversers - Editorial |

## Definitions

The following definitions either reflect the Canadian Aviation Regulations (CARs) or are unique to the Guidance Book and are provided for clarification.

"aircraft crew" for the purposes of this document, means the operating crew members including the flight crew members, flight attendants, aircraft maintenance personnel and supervisory crew members.

"all cargo operations" for the purposes of this document, ~~means a flight where~~ *requires that* all crew members are seated on the flight deck. For small business aircraft, which do not allow the carriage of other crew members in the flight compartment, situated on the jump seat is considered equivalent.

"alternate procedures" means that the air operator (carrier) needs to develop normal, abnormal and/or emergency procedures, as applicable, for the associated item.

"any in excess of those required by regulations" means that the equipment required by the Canadian Aviation Regulations must be operative and only excess equipment may be inoperative.

"as required by regulations" may include such things as Canadian Aviation Regulations (CARs), both operational and design related; Aviation Occupational Safety and Health (AOSH) regulations, etc. It is noted that detailed relief provided in the CARs is only applicable where a MEL is not required.

"cargo attendants" no definition in the CARs; however, for the purpose of this document the persons listed as crew members in *the crew member definition*~~(a)~~ below are considered cargo attendants.

"crew member", for the purposes of this document, unless otherwise specified, in addition to the CAR 101.01 (1) definition includes:

a) a person whose presence on board the aircraft is necessary for:

(1) the safety of the flight,

(2) the safe handling of animals,

(3) the safe handling of dangerous goods,

(4) the security of valuables or confidential cargo,

(5) the preservation of fragile or perishable cargo, or

(6) the handling of cargo.

b) aircraft maintenance personnel, and

c) supervisory crew members and non-operating crew members and/or flight attendants who are qualified on aircraft type.

*"Crew Rest Facility - Bunk": means a Bunk that meets the Society of Automotive Engineers (SAE) Aerospace Recommended Practice (ARP) 4101/3, Crew Rest Facilities, used in conjunction with ARP 4101, Flight Deck Layout and Facilities, or a similar facility located elsewhere onboard the aircraft for the intent of flight attendant rest.*

## Definitions (cont'd)

*"extended over-water operations" means an operation over water at a horizontal distance of more than 50 nautical miles from the nearest shoreline.*

"flight" means the *period from the start of the takeoff roll to the first landing.* ~~time from brakes-off to brakes on at the first landing destination. This does not mean that reverse thrust can be used in lieu of brakes at the first landing location.~~

"flight attendant" (CARs) means a crew member, other than a flight crew member, who has been assigned duties to be performed in the interest of the passengers in a passenger-carrying aircraft.

"flight crew member" (CARs) means a crew member assigned to act as pilot or flight engineer of an aircraft during flight time.

*"flight cycle" means the period from the start of the takeoff roll to the first landing.*

"non-combustible materials" for MMEL purposes is addressed by the following NOTE in those items where applicable "Note Unit Load Devices (ULDs) may be carried in the associated compartment provided no cargo is carried on or in their devices. For ballast purposes, use of bags (made of fibreglass or kevlar) or sand or ingots on non-magnetic metals (such as lead) is acceptable."

"non-passenger carrying operation" for the purpose of this document means a flight where crew members are the only occupants of the aircraft.

"observer's seat" refers to a seat on the flight deck of an airplane, of which there are usually one or two. The primary observer's seat is used for official purposes such as Transport Canada check rides, company training etc.

"official capacity" for the purpose of this document with respect to the occupant of the observer's seat includes flight training, Transport Canada/company check rides, a crew member, or a person authorized by the air operator in accordance with procedures specified in the air operator's company operating manual.

"operative" for the purpose of this document means that a system or component will accomplish its intended *function* ~~purpose and is consistently functioning normally within its design operating limits and tolerances~~. When an MMEL item specifies that an item of equipment must be operative it does not *necessarily* mean that its operational status must be verified; it is to be considered operative unless reported or is known to be malfunctioning.

"passenger" means a person, other than a crew member, who is carried on board an aircraft.

"protective breathing equipment" (CARs) means equipment designed to cover the eyes, nose and mouth of the wearer, or the nose and mouth where accessory equipment is provided to protect the eyes, and to protect the wearer from the effects of smoke, carbon dioxide or other harmful gases.

"safety belt" (CARs) means a personal restraint system consisting of either a lap strap or a lap strap combined with a shoulder harness.

"shoulder harness" (CARs) means any device that is used to restrain the upper torso of a person and that consists of a single diagonal upper torso strap or dual upper torso straps.

**ITEM**: 21.1 AIR CONDITIONING AND PRESSURIZATION CONTROL MODES

| | | | | | |
|---|---|---|---|---|---|
| 1. | Automatic Pressurization Control Systems. | C | 2 | 1 | (M) ~~Provided~~*May be inoperative provided* the manual pressurization control system and one autopilot are operative. |
| | Automatic Pressurization Control Systems. | C | 2 | 0 | (M)(O) ~~Provided~~*May be inoperative provided*:<br>a) Flight is conducted in an unpressurized configuration, and<br>b) Cargo is not carried in associated compartment.<br>NOTE:<br>Unit Load Devices (ULDs) may be carried provided cargo is not carried on or in these devices. For ballast purposes, use of bags (made of ~~fibreglass~~*glass fibre* or kevlar) of sand or ingots of non-magnetic metals (such as lead) is acceptable. |
| | Automatic and Manual Pressurization Control Systems | C/D | - | 0 | (M)(O) ~~Provided~~*May be inoperative provided*:<br>a) Flight is conducted in an unpressurized configuration,<br>b) Extended overwater flight is prohibited, and<br>c) Cargo is not carried in associated compartment.<br>NOTE:<br>Unit Load Devices (ULDs) may be carried provided cargo is not carried on or in these devices. For ballast purposes, use of bags (made of ~~fibreglass~~*glass fibre* or kevlar) of sand or ingots of non-magnetic metals (such as lead) is acceptable. |

**DISCUSSION:**

**References:** Nil.

**ITEM**: 21.1 AIR CONDITIONING AND PRESSURIZATION CONTROL MODES (cont'd)

This item is an example and relief for a specific aircraft will need to be tailored accordingly. For example, depending on the workload assessment it may not be necessary to have an operative autopilot in a manual pressurization situation.

*The relief proposed above is based on the premise that the air conditioning packs are operating normally.* In permitting auto and/or manual modes to be inoperative it must be assured that AFM emergency procedures can be accomplished.

*(O) addresses unpressurized flight and manual pressurization. (M) addresses operability of required equipment, e.g. outflow valves for smoke clearing, autopilot, if required.*

If no specific unpressurized configuration is defined in the AFM, it must be confirmed that the aircraft has met its basis of certification when unpressurized. If an unpressurized configuration has been certified, adequate guidance must be provided to ensure a smoke removal capability. Based on certification findings, an unpressurized configuration must account for smoke clearance, electrical equipment cooling, ditching, and ventilation. A cat D may be allowable for some aircraft and not for others, e.g. the B767 is assigned a cat C for unpressurized flight and this has been accepted by Transport Canada. In some cases the cargo compartment fire detection/extinguishing system may have been certified only with a fully operative air conditioning system. Therefore, when parts of the air conditioning system are inoperative, the smoke detection/fire extinguishing system must also be considered inoperative. In this case the MMEL must include a proviso that the affected compartment be empty. Carriage of non–combustible materials is not an acceptable alternative as no satisfactory definition of "non–combustible materials" has ever been agreed.

**FAA Differences**: ~~imilar to FAA except t~~The FAA *definition* ~~allows the carriage~~ of non-combustible materials *is slightly different than that of TCCA*.

**ITEM**: 21.2 CABIN ALTITUDE INDICATOR

| | | | | |
|---|---|---|---|---|
| 2. Cabin Altitude Indicator | C | - | 0 | ~~(M)~~(O) *May be inoperative* provided:<br>a) The cabin differential pressure indicator is operative, and<br>b) A chart is provided to convert cabin differential pressure to cabin altitude. |
| | D | - | 0 | (O) May be inoperative provided flight is conducted in an unpressurized configuration. |

**DISCUSSION:**

**References:** Nil.

See item 21.1 DISCUSSION for unpressurized flight considerations.

The (O) for unpressurized flight will ensure that the procedures are clearly defined for the flight crew members.

**FAA Differences:** TCCA permits a category D for unpressurized flight whereas the FAA assigns a category C.

**ITEM**: 21.3 CABIN ALTITUDE WARNING SYSTEM

| | | | | | |
|---|---|---|---|---|---|
| 3 | Cabin Altitude Warning System | C | 1 | 0 | *May be inoperative* provided flight is conducted at or below 10,000 feet above MSL. |

**DISCUSSION:**

**References:** Nil.

The cabin altitude warning system provides an alert when the cabin altitude reaches some pre–selected altitude such as 10,000 ft above MSL. Frequently monitoring the cabin altitude during flight above this altitude is not considered sufficient to permit dispatch with the warning light inoperative.

**FAA Differences:** FAA relief is identical to TCCA**.**

**ITEM**: 21.4 CABIN RATE OF CLIMB INDICATOR

| | | | | | |
|---|---|---|---|---|---|
| 4. Cabin Rate of Climb Indicator | C | 1 | 0 | ~~(M)~~ | *May be inoperative* provided all other instruments and functions of the pressurization system are ~~-~~operative. |
| | D | 1 | 0 | (O) | *May be inoperative* provided flight is conducted in an unpressurized configuration. |

**DISCUSSION:**

**References:** Nil.

See item 21.1 DISCUSSION for unpressurized flight considerations.

The cabin rate of climb indicator provides immediate feedback if operating in manual mode. Without this feedback the work load could be unacceptably high; therefore the proviso that all other aspects of the pressurization system must operate normally.

Some aircraft may have sufficient redundancy such that the next single failure does not result in manual mode, e.g. an aircraft may have two automatic pressurization systems. For these aircraft it would not be necessary that all other functions of the pressurization system be operative, see B767.

**FAA Differences:** TCCA permits a category D for unpressurized flight whereas the FAA assigns a category C.

**ITEM**: 21.5 DIFFERENTIAL PRESSURE INDICATOR

| | | | | | |
|---|---|---|---|---|---|
| 5. Differential Pressure Indicator | C | 1 | 0 | ~~(M)~~(O) | ~~Provided~~*May be inoperative provided*:<br>a) The cabin altitude indicator is operative, and<br>b) A chart is provided to convert cabin altitude to cabin differential pressure. |
| | D | 1 | 0 | (O) | May be inoperative provided flight is conducted in an unpressurized configuration. |

**DISCUSSION:**

**References:** Nil.

See item 21.1 DISCUSSION for unpressurized flight considerations.

**FAA Differences:** TCCA permits a category D for unpressurized flight whereas the FAA assigns a category C.

**ITEM**: 21.6 EQUIPMENT AND AVIONICS COOLING FANS

| | | | | | |
|---|---|---|---|---|---|
| 6. Equipment and Avionics Cooling Fans | C | - | - | ~~(M)~~ | *Relief dependent upon certification requirements, see discussion.* ~~One or all may be inoperative.~~ |

**DISCUSSION:**

**References:** Nil.

~~he (M) addresses deactivating the fan(s) which may be as simple as pulling and collaring a circuit breaker.~~

Cooling fans are often installed to provide supplemental cooling to aircraft equipment as a means of providing a stable reduced operating temperature to enhance reliability of the equipment or to prevent the equipment from exceeding its thermal limitation thereby resulting in failure of the unit.

Equipment and/or avionics cooling fans may be inoperative provided it can be demonstrated that the equipment for which the fan has been installed does not exceed its operating thermal limit in the absence of supplemental cooling. The air temperature of the cabin, flight compartment and/or equipment location area may need to be restricted to defined values and/or exposure periods of elevated temperatures during which the protected equipment may operate without convective cooling provided by a fan(s).

If the function of the equipment being protected from excessive temperatures is deemed to be non–essential to continued safe flight and landing or for which dispatch relief has already been granted in the MMEL, the associated cooling fan may be inoperative without restrictions.

**FAA Differences:** *FAA relief is* ~~S~~*s*imilar to TCCA**.**

**ITEM**: 21.7 OUTFLOW/SAFETY VALVES

| | | | | |
|---|---|---|---|---|
| 7. Outflow/Safety Valves | C | - | - | (M)(O) May be inoperative open provided:<br>a) Flight is conducted in an unpressurized configuration, and<br>b) *Extended overwater operations are not conducted.* ~~flight is not conducted greater than 50 nautical miles from shore.~~<br>May also be inoperative closed (see DISCUSSION). |

**DISCUSSION:**

**References:** ~~CAM~~*AWM* 525.801, ~~CAR 602.57 to .63~~*FAR 1.1*

Relief has been granted for outflow valve(s) inoperative open and closed; however there are several things to consider:

1. Depending on their location, emergency procedures may require that the outflow valves be closed prior to ditching in order to prevent water from entering the aircraft. Hence the proviso to not operate over water greater than 50 nautical miles from shore (this is considered equivalent to the FAA "extended overwater operation" definition FAR 1.1).
2. Procedures must be established for operating the aircraft unpressurized.
3. Smoke removal tests must be reviewed in order to determine the acceptability of permitting any outflow valve(s) inoperative open or closed. It would not be possible to dispatch with all valves inoperative closed because of smoke removal considerations and the possibility of over pressurization.

**FAA Differences:** FAA relief is similar to TCCA.

**ITEM**: 21.8 AIR CONDITIONING PACKS

| | | | | | |
|---|---|---|---|---|---|
| 8. Air Conditioning Packs | C | 2 | 1 | | Except for extended range operations, one may be inoperative provided flight is conducted at or below FL XXX. |
| | D | 2 | 0 | (M)(O) | ~~Provided~~*May be inoperative provided*:<br>a) Flight is conducted in an unpressurized configuration,<br>b) Both recirculation fans, if installed, are operative, and<br>c) Cargo is not carried in associated compartment.<br>NOTE:<br>Unit Load Devices (ULDs) may be carried provided cargo is not carried on or in these devices. For ballast purposes, use of bags (made of ~~fibreglass~~*glass fibre* or kevlar) of sand or ingots of non-magnetic metals (such as lead) is acceptable. |
| Pack supporting Class C Fire Protection/Fire Detection on Main Deck Combi/All Cargo Configurations | C | ~~1~~- | ~~1~~- | | May be inoperative provided main deck cargo is not carried.<br>NOTE:<br>Unit Load Devices (ULDs) may be carried provided cargo is not carried on or in these devices. For ballast purposes, use of bags (made of ~~fibreglass~~*glass fibre* or kevlar) of sand or ingots of non-magnetic metals (such as lead) is acceptable. |

**DISCUSSION:**

**References:** Nil.

This item is an example and for each aircraft the associated justification will specify the maximum operating altitude. This may be a function of the effects of a further failure e.g. loss of the remaining Air Conditioning Pack and also of the continued availability of essential functions such as smoke clearance. For both Air Conditioning Packs inoperative, there will need to be appropriate altitude restrictions based on compliance with CARs relating to unpressurized flight and limitations arising from certification in this configuration.

**ITEM**: 21.8 AIR CONDITIONING PACKS (cont'd)

No extended range operations permitted.

See item 21.1 for the DISCUSSION regarding unpressurized flight conditions.

For dispatch with one air conditioning unit or one bleed inoperative, the MMEL should specify the maximum operating altitude, which would have been determined during certification smoke clearing tests.

For both Air Conditioning Packs inoperative there will need to be appropriate altitude restrictions based on certification tests and no Extended Range Operations. On combi/all cargo, relief for the pack supporting fire protection/fire detection is possible if cargo is not carried in the main deck cargo area configurations.

**FAA Differences:** *FAA relief is* ~~S~~*s*imilar to TCCA.

***ITEM**: 21.9 RECIRCULATION FANS*

| | | | | |
|---|---|---|---|---|
| *9. Recirculation fans* | *C* | *-* | *0* | *(M)(O) May be inoperative provided:*<br>*a) Both A/C packs and pressurization system operate normally, and*<br>*b) Cargo is not carried in the associated compartment.*<br>*NOTE:*<br>*Unit Load Devices (ULDs) may be carried provided no cargo is carried on or in these devices. For ballast purposes, use of bags (made of glass fibre or kevlar) of sand or ingots of non-magnetic metals (such as lead) is acceptable.* |

***DISCUSSION:***

***References:** Nil.*

*This is a new Guidance Book item to address the recirculation fans exhausting through the cargo compartments. Aircraft certification requirements such as smoke detection capability with inoperative recirculation fans must be considered when developing MMEL relief.*

***FAA Differences:** FAA relief is similar to the TCCA.*

***ITEM**: 21.10 CREW REST FACILITY - BUNK*

| | | | | | |
|---|---|---|---|---|---|
| *10. Crew Rest Facility – Bunk Environmental Control System.* | | | | | |
| *1) Temperature Control* | *C* | *1* | *0* | *(M)* | *May be inoperative provided heater is deactivated.* |
| *2) Ventilation* | *C* | *1* | *0* | *(M)* | *May be inoperative provided:*<br>*a) Heater is deactivated, and*<br>*b) Supply/boost fan is deactivated.* |
| *3) Temperature Indicator* | *D* | *1* | *0* | | |

***DISCUSSION:***

***References:** Nil.*

*This is a new Guidance Book item to address the air conditioning aspects of the crew rest facility - bunk. Aircraft certification requirements must be considered when developing MMEL relief in this area.*

***FAA Differences:** No FAA guidance currently available.*

**ITEM**: 22.1 AUTOPILOT DISCONNECTS

| | | | | |
|---|---|---|---|---|
| 1. Autopilot Disconnects | C | - | - | One may be inoperative provided:<br>a) The autopilot is not u*tilized at less than* ~~sed below~~ *the initial approach altitude*~~XXX ft AGL~~, and<br>b) The pilot flying has the operative disconnect. |
| | ~~C~~*B* | - | 0 | ~~Provided~~*May be inoperative provided* the autopilot is not used. |

**DISCUSSION:**

**References:** FAA PL 93 *(Original, Aug. 97)*

A review of autopilot hardover tests will determine the relief which can be permitted for this item and the specific altitude. Some MMELs specify the initial approach altitude but this may not be appropriate for all aircraft nor is it meaningful for VFR operations.

Consideration must be given to what other functions are performed by the disengage buttons, e.g. stick pusher.

**FAA Differences:** FAA does not permit relief for all disconnects. ~~FAA specifies an initial approach altitude in some cases.~~

**ITEM**: 22.2 AUTOPILOT DISCONNECTED WARNING SYSTEM

| | | | |
|---|---|---|---|
| 2. Autopilot Disconnected Warning System ~~C~~*B* | 1 | 0 | ~~Provided~~*May be inoperative provided* the autopilot is not used. |

**DISCUSSION:**

**References:** ~~CAM~~*AWM* 25.1309 (c), *FAA PL 101 (GC 75) Aug 99.*

Because ever increasing emphasis is being placed on the use of the autopilot for flight operations, an operative warning of disconnection is considered necessary. If required by the basis of certification, there is really no compensating factor. For some aircraft such as the B767, parts of the Disconnected Warning System may be inoperative as there are other indications. In these cases it may be appropriate to limit autopilot use to 1500 ft AGL or above.

**FAA Differences:** *FAA relief is* ~~i~~dentical to TCCA.

**ITEM**: 22.3 AUTOPILOT

| | | | | |
|---|---|---|---|---|
| 3. Autopilot | ~~B~~*C* | ~~1~~- | ~~0~~*1* | *Any in excess of operational requirements may be inoperative.* ~~Except where enroute operations, including RVSM, require its use, may be inoperative.~~ |
| | *B* | - | *0* | *May be inoperative except where enroute operations require its use.* |
| | D | ~~1~~- | 0 | ~~Provided~~*May be inoperative provided* routine procedures do not require its use. |

**DISCUSSION:**

**Reference:** FAA PL 101 (GC 75) Aug 99.

In recognizing the foreign authority responsibility, TC will not change a cat B for a foreign airplane trusting that the cat B was assigned for valid certification and generic (human factor) operational reasons by the foreign authority. For domestic airplanes TC will assign a category appropriate to the airplane after discussion with the manufacturer and operational regulators. ~~It is noted that while cat B is appropriate for some airplanes in some operations this may not be appropriate in other cases, e.g. smaller airplane such as the DHC 100 on short routes. Arguably this small aircraft workload warrants an autopilot but that is a separate and never ending discussion point.~~

The cat D relief is to cater to mixed fleets where for aircraft of the same type some have autopilots and some do not, with no crewing restrictions. The MEL authors will need to assign the appropriate category depending on specific aircraft fleets and operations.

**FAA Differences:** FAA assigns a cat B as discussed in PL 101 and cat C for small single engine aircraft.

**ITEM**: 22.4 MACH TRIM SYSTEM

| | | | | |
|---|---|---|---|---|
| 4. Mach Trim System | C | 1 | 0 | *May be inoperative provided:*<br>*1)* ~~Except where e~~Enroute operations ~~including RVSM~~ *do not* require its use, *and*<br>*2)* ~~may be inoperative provided~~ Operations are conducted at or below XXX KIAS/ .XXM when autopilot disengaged. |

**DISCUSSION:**

**References:** Nil.

~~his relief is copied from the RJ MMEL and has been added to the Guidance Book to capture the enroute operations limitation.~~*Some aircraft require the Mach trim system to be functional throughout the whole flight envelope, so this relief may not be appropriate to all aircraft.*

~~**FAA** identical on RJ.~~***FAA Differences**: FAA relief is similar to TCCA.*

**ITEM**: 23.1 ACARS (ARINC COMMUNICATIONS ADDRESSING AND REPORTING SYSTEM ) INCLUDING PRINTER

| | | | | | |
|---|---|---|---|---|---|
| 1. ACARS (ARINC Communications Addressing and Reporting System) Including Printer | C | - | 0 | *(O)* | ~~Provided~~*May be inoperative provided* alternate procedures are established and used. |
| | D | - | 0 | | ~~Provided~~*May be inoperative provided* routine procedures do not require its use. |

**DISCUSSION:**

**References:** Nil.

In some MMELs the system and printer are written as separate items with identical wording. The cat D allows extended relief for operations where the ACARS is not used routinely. Similar relief could be used for Airborne Flight Information Systems.

**FAA Differences**: *FAA relief is* ~~I~~*i*dentical to TCCA.

**ITEM**: 23.2 AUDIO CONTROL PANELS

| | | | | |
|---|---|---|---|---|
| 2. Audio Control Panels | | - | - | Must be operative for each person on flight deck duty including any person occupying the forward observer seat(s) in an official capacity. |
| Primary Observer Seat Panel | B | 1 | 0 | |
| Primary Observer Seat Panel | D | 1 | 0 | ~~Provided~~*May be inoperative provided* the seat is not required to be available in an official capacity for extended periods of time. |
| Secondary Observer Seat Panel | D | 1 | 0 | ~~Provided the seat is not used.~~ |

**DISCUSSION:**

**References:** CAR~~s~~ 703.21; *CAR* 704.21; *CAR* 705.27, FAA PL 56 *(Rev. 3, Jan. 2001)*

For the purposes of this item, "official capacity" includes flight training, Transport Canada/company check rides, and crew member or passenger who has authority and valid reason to occupy.

The denial of relief reflects the need for flight deck crew communication while wearing smoke masks and or oxygen equipment (i.e. during an emergency).

It is noted that, at times, there may be components of the audio control panel inoperative; however, the panel is still adequate for flight. MMELs at this time do not address sub-components (e.g. ADF ident function) and it is considered the captain's decision to dispatch with necessary equipment operative.

**FAA Differences:** FAA requires observer seat (or a passenger seat) to be available for their use at all times, TCCA does not have this passenger seat requirement.

**ITEM**: 23.~~4~~*3* COMMUNICATION SYSTEMS (VHF, UHF, HF, ETC)

| | | | | |
|---|---|---|---|---|
| 3. Communication Systems (VHF, UHF, HF, etc.) | D | - | 2 | Any in excess of those required by regulation and not powered by a standby or emergency bus may be inoperative. |
| ~~If two radios are required by the aircraft basis of certification and only two are installed.~~ | ~~A~~ | ~~2~~ | ~~1~~ | ~~One may be inoperative for one flight day provided it is not powered by a standby or emergency bus.~~ |

**DISCUSSION:**

**References:** ~~CAM~~*AWM* 525.1307 (d), FAA PL 95 *(Original,* Aug*. 19*95~~7~~*)*

The design standard for transport category airplanes requires ”two systems for two-way radio communications ...”; therefore, the number required for dispatch should normally be two. Furthermore, the intent of the design standard is that no single failure should result in failure of all communications systems. Therefore, during MMEL deliberations, radio power supplies and electrical system architecture will need to be considered (e.g. it may be inappropriate to dispatch if both radios are powered from the same bus). ~~There is really no compensating factor for dispatch with only one radio. However, in order to provide a capability to get to a maintenance facility, and in view of the Mean Time Between Failure (MTBF) of modern radio equipment, cat A, one flight day relief is considered acceptable.~~

For non-transport category airplanes the number required for dispatch should be shown as variable since the design standard does not require a communication system; the operational requirements would apply.

For transport category rotorcraft the number required for dispatch should be consistent with that design standard.

The proviso regarding the emergency power situation is consistent with the principle that equipment which is required to complete an emergency procedure cannot be inoperative.

**FAA Differences:** FAA is inconsistent in assignment of category. The FAA may not address design standard requirements (i.e. two required for dispatch for a FAR 25 airplane); they show a variable number required for dispatch. The FAA has also addressed sub-systems of the radios. It is TCCA position that the pilot must make a judgment as to whether or not the radio can perform its intended function and sees no need at this time to address sub-systems.

**ITEM**: 23.~~11~~*4* SELECTIVE CALL (SELCAL) SYSTEM

| | | | | | |
|---|---|---|---|---|---|
| ~~11~~*4*. Selective Call (SELCAL) System | C | 1 | 0 | (O) | *May be inoperative* ~~P~~*p*rovided alternate procedures are established and used. |
| | D | 1 | 0 | | *May be inoperative* ~~P~~*p*rovided routine procedures do not require its use. |

**DISCUSSION:**

**References:** Nil.

The cat D allows extended relief for operations where the SELCAL is not used routinely.

**FAA Differences:** *FAA relief is* ~~I~~*i*dentical to TCCA.

**ITEM**: 23.~~6~~*5* FLIGHT DECK SPEAKERS

| | | | | |
|---|---|---|---|---|
| ~~6~~*5*. Flight Deck Speakers | C | 2 | 0 | *May be inoperative* provided:<br>a) Procedures are not dependent on their use,<br>b) Headsets are installed and used by each person on flight deck duty,<br>*c) All aural alerts, messages and other communication which are normally routed through the flight deck speakers must be audible through the headsets, and*<br>*d) A spare headset must be readily available for crew use.* |

**DISCUSSION:**

**References:** Nil.

~~ll aural alerts, messages and other communication which are normally routed through the flight deck speakers must be audible through the headsets.~~

With smoke masks on, a typical installation has the pilot talk through the co–pilot's speaker and the co–pilot through the pilot's speaker. If there are emergency (e.g. smoke) procedures which require the crew to establish communication then relief for both cannot be granted, but depending on flight test results, relief for one might be possible.

**FAA Differences:** *FAA relief is* ~~I~~*i*dentical to TCCA.

**ITEM**: 23.~~5~~*6* COCKPIT VOICE RECORDER

| | | | | |
|---|---|---|---|---|
| ~~5~~*6*. Cockpit Voice Recorder | | | | |
| If CVR and FDR required by regulations: | A | 1 | 0 | *May be inoperative* ~~P~~*p*rovided:<br>a) The Flight Data Recorder is operative, and<br>b) Repairs are made within three flight days. |
| If only CVR required by regulations: | A | 1 | 0 | *May be inoperative* ~~P~~*p*rovided repairs are made within three flight days. |
| If CVR not required by regulations: | D | - | 0 | |

**DISCUSSION:**

**References:** CAR~~s~~ 605.33, *CAR 605*.34; *CASS* 625.33, FAA PL 29 *(Rev. 3, Aug. 1997)*

The MMEL may need to contain all relief options. The MEL must reflect the correct situation for each specific aircraft/operation.

***FAA Differences:*** *FAA relief is similar to TCCA*~~Similar to FAA~~. The FAA PL refers specifically to air carrier. TC relief includes cat D for equipment not required by regulations.

**ITEM**: 23.7 BOOM MICROPHONES (INCLUDING HEADSET MIC)

| | | | | |
|---|---|---|---|---|
| 7. Boom Microphones | | | | |
| Installations with CVR and FDR | | | | |
| If CVR required to be capable of recording boom microphone. | A | - | 0 | May be inoperative for three flight days provided the FDR is operative. |
| If CVR not required to be capable of recording boom microphone. | D | - | 0 | May be inoperative. |
| Installations with only CVR | | | | |
| If CVR required to be capable of recording boom microphone. | A | - | 0 | May be inoperative for three flight days. |
| If CVR not required to be capable of recording boom microphone. | D | - | 0 | May be inoperative. |

**DISCUSSION:**

**References:** CAR~~s~~605.33, *CAR 605*.34; *CASS* 625.33, FAA PL 58 (*Rev. 3, July 2001- GC 100, July 2001*~~GC 46 Aug 97~~)

Although this relief was written in the context of a headset boom microphone, it could apply to any other boom microphone, e.g. goose neck, and the appropriate relief would apply. The title clarifies what is meant by a boom mic.

**FAA Differences:** FAA PL refers to specific operating rules, TCCA item significantly different to reflect the CARs.

**ITEM**: ~~———~~23.~~3~~*8 CREW MEMBER* ~~CABIN SERVICE~~ INTERPHONE SYSTEM ~~(FLIGHT DECK/CABIN and CABIN/CABIN)~~

| | | | | | |
|---|---|---|---|---|---|
| 8. Crew Member Interphone System<br>*1) Passenger Configuration*<br>a) Flight Deck/Cabin and Cabin/Cabin | B | - | 1 | (O) | *May be inoperative* ~~P~~*p*rovided:<br>a) *An operative flight deck/cabin interphone (two way) is at an operative flight attendant seat, and* ~~the PA system is operative, and~~<br>b) Alternate *communications* procedures *between the affected flight attendant station(s)* are established and used*.* |
| | A | - | 1 | (O) | For aircraft being operated in compliance with the provisions of 725.104(2), may be inoperative for ~~one flight day~~*three flight cycles* provided:<br>a) Alternate procedures are established and used,<br>b) *The* ~~Passenger~~ *public* address system is operative,<br>c) The aircraft is not being operated from a maintenance base,<br>d) Self-extension relief is not applied to this item,<br>e) A second flight attendant is added to the crew at the first opportunity,<br>f) The aircraft is not being operated from a flight attendant base without adding a second flight attendant, ~~and~~<br>g) Where a second flight attendant is carried, that flight attendant shall be assigned to a flight attendant station, or, for aircraft that are equipped with only one flight attendant station, to an aisle passenger seat at the overwing exit row~~.~~*, and* |

**ITEM**: 23.~~3~~*8 CREW MEMBER* ~~CABIN SERVICE~~ INTERPHONE SYSTEM ~~(FLIGHT DECK/CABIN and CABIN/CABIN)~~ (Cont'd)

| | | | | | |
|---|---|---|---|---|---|
| ~~3~~*8. Crew Member* ~~Cabin Service~~ Interphone System ~~(Flight Deck/Cabin and Cabin/Cabin)~~ - (Cont'd) | | | | | |
| *1) Passenger Configuration (cont'd)* | | | | | *h) Operations procedures are specified in the air operator's company operations manual.* |
| | A | 1 | 0 | (O) | May be inoperative for non-passenger carrying operations for one flight day provided:<br>a) Crew members are the only occupants of the aircraft, and<br>b) Alternate procedures are established and used. |
| *b)* Flight Deck to Ground | C | 1 | 0 | (O) | *May be inoperative* ~~P~~*p*rovided alternate procedures are established and used. |
| | D | 1 | 0 | | *May be inoperative* ~~P~~*p*rovided procedures are not dependent on its use. |
| *c) Flight Deck and/or Cabin/Crew Rest Facility - Bunk* | *C* | *-* | *-* | *(O)* | *May be inoperative provided:*<br>*a) The passenger address system is operative,*<br>*b) Alternate procedures are established and used, and*<br>*c) The Pilot-in-Command is advised that all crew have been briefed.* |
| | *D* | *-* | *-* | *(M)(O)* | *May be inoperative provided:*<br>*a) Associated Crew Rest Facility - Bunk is not occupied, and*<br>*b) Associated Crew Rest Facility - Bunk is placarded INOPERATIVE – DO NOT USE* |
| 2) Cargo/Passenger Combi Configurations (cargo compartment located between flight deck and passenger compartment) | | 1 | 1 | | *Crew member interphone system must be operative.* |
| *3) Cargo Configuration* ~~All Cargo Operations~~ | | | | | |
| *a) Flight Deck/Cabin and Cabin/Cabin* | D | 1 | 0 | | *May be inoperative* ~~P~~*p*rovided all crew members are on the flight deck. |

**ITEM**: 23.~~3~~*8* ~~CABIN SERVICE~~ *CREW MEMBER* INTERPHONE SYSTEM ~~(FLIGHT DECK/CABIN and CABIN/CABIN)~~ (Cont'd)

| | | | | | |
|---|---|---|---|---|---|
| *3) Cargo Configuration* (cont'd) | | | | | |
| *b) Flight Deck to Ground* | *C* | *1* | *0* | *(O)* | *May be inoperative provided alternate procedures are established and used.* |
| | *D* | *1* | *0* | | *May be inoperative provided procedures are not dependent on its use.* |

**DISCUSSION:**

**References:** CAR 705.73, CAR 705.16 (3)(c), CAR 705.16 (3)(d), *CASS 725.104(2),* FAA PL 9 ***(****Rev. 5, Oct. 2001 GC 109 Oct. 2001)*

The guidance requiring that the *crew member* ~~cabin~~ interphone system be operative *at all times*~~in certain conditions~~ is based on the physical *separation*~~remoteness~~ of the cabin from the flight deck *as a result of the security recommendations that the flight deck door remain closed and locked.*~~.~~ It is essential that flight crew members and flight attendants be able to communicate during critical phases of flight and during an in–flight emergency.

For non-passenger carrying flights conducting operations in an air transport service pursuant to Airline Operations regulated by CAR 705, alternate procedures referred to in proviso b) must be in compliance with the requirements of CAR 705.16 (3)(c) and (d).

*For aircraft being operated in compliance with the provisions of CASS 725.104(2), NPA 1999 233 proposed that the A category be revised to state "three flight cycles…" instead of "one flight day" previously allowed.*

The cat B assigned to the cabin/flight deck interphone is to better ensure the availability of this equipment ~~which~~ *that* might be essential in an emergency situation. The cat B must be used for all Part 25 airplanes and is consistent with the category assigned to the PA system, item 23.10.

**FAA Differences:**. To permit getting the aircraft to a repair facility, TCCA relief permits non-passenger carrying operation with the entire system inoperative and no requirement for the PA System to be operative

**ITEM**: 23.~~10~~*9* PASSENGER ADDRESS SYSTEM

| | | | | | |
|---|---|---|---|---|---|
| 9. Passenger Address System | | | | | |
| 1) Passenger Configuration | B | 1 | 0 | (O) | *May be inoperative* ~~P~~*p*rovided:<br>a) Alternate procedures are established and used,<br>b) Flight deck/cabin interphone (two way) with associated calls (e.g. chimes) is operative, and<br>c) Megaphone(s) is/are readily available and operative.<br>*NOTE:*<br>*Any station that operates normally may be used.* |
| | *C* | *-* | *0* | *(O)* | *May be inoperative provided:*<br>*a) It is not required by regulations and*<br>*b) Alternate, normal and emergency procedures, and/or operating restrictions are established and used.*<br>*NOTE:*<br>*Any station that operates normally may be used.* |
| | A | 1 | 0 | (O) | For aircraft being operated in compliance with the provisions of *CASS* 725.104(2), may be inoperative for *three flight cycles* ~~one flight day~~ provided:<br>a) Alternate procedures are established and used,<br>b) Flight deck/cabin interphone (two way) with associated calls (e.g. chimes) is operative,<br>c) Megaphone(s) is/are readily available and operative,<br>d) The aircraft is not being operated from a maintenance base,<br>e) Self-extension relief is not applied to this item,<br>f) A second flight attendant is added to the crew at the first opportunity, |

**ITEM**: 23.9 PASSENGER ADDRESS SYSTEM (Cont'd)

| | | | | |
|---|---|---|---|---|
| ~~10~~*9*. Passenger Address System (Cont'd) | | | | g) The aircraft is not being operated from a flight attendant base without adding a second flight attendant, and<br>h) Where a second flight attendant is carried, that flight attendant shall be assigned to a flight attendant station, or, for aircraft that are equipped with only one flight attendant station, to an aisle passenger seat at the overwing exit row~~.~~*, and*<br>*i) operations procedures are specified in the air operator's company operations manual.* |
| | *B* | *-* | *0* | *(*O) For aircraft with 19 or fewer seats may be inoperative provided:<br>a) Alternate procedures are established and used, and<br>b) Required standard safety briefings are given to passengers using a means that will ensure the briefings are audible to each passenger. |
| | A | 1 | 0 | (O) May be inoperative for non-passenger carrying operations for one flight day provided:<br>a) Crew members are the only occupants of the aircraft, and<br>b) Alternate procedures are established and used. |
| *2) Cargo Configuration (Courier/Supernumerary Address System)* | *D* | *1* | *0* | *May be inoperative provided all crew members are on the flight deck.* |
| *3) Crew Rest Facility - Bunk* | *C* | *-* | *-* | *(O) May be inoperative provided:*<br>*a) Flight deck and Cabin/Crew Rest Facility – Bunk interphone (two way) with associated calls (e.g. chimes) is operative,* |

**ITEM**: 23.9 PASSENGER ADDRESS SYSTEM (Cont'd)

| | | | | |
|---|---|---|---|---|
| *9. Passenger Address System (cont'd)*<br>*3) Crew Rest Facility – Bunk (cont'd)* | *D* | *-* | *-* | *(M)(O)* | *b) Crew Rest Facility – Bunk drop down oxygen system is operative,*<br>*c) Alternate procedures are established and used, and*<br>*d) The Pilot-in-Command is advised that all crew have been briefed.*<br>*May be inoperative provided:*<br>*a) Associated Crew Rest Facility - Bunk is not occupied, and*<br>*b) Associated Crew Rest Facility - Bunk is placarded INOPERATIVE – DO NOT USE.* |

**DISCUSSION:**

**References:** CAR 705.16 (3)(c), CAR 705.16 (3)(d),CAR 705.74, CAR 705.89, CAR 704.34, CAR 724.34, CAR 703.39, CAR 723.39, CAR 604.18/18, FAA PL 9 *(Rev. 5, Oct. 2001 GC 109 Oct. 2001)*

Although megaphones are only required on aircraft types certified to carry 60 or more passengers, they are considered a condition for granting relief for the PA system on aircraft configured with 20 or more passenger seats.

For non-passenger carrying flights conducting operations in an air transport service pursuant to Airline Operations regulated by CAR 705, alternate procedures referred to in proviso b) must be in compliance with the requirements of *CAR* 705.16 (3)(c) and (d).

*For aircraft being operated in compliance with the provisions of CASS 725.104(2), NPA 1999-233 proposed that the A category be revised to state "three flight cycles…" instead of the "one flight day" previously allowed.*

It is noted that relief without an operative megaphone has been permitted on large airplanes (e.g. DHC 7 Ice Reconnaissance) with only crew members on board. Proposals of a "one of nature" will be reviewed by Cabin Safety Standards to ensure that an equivalent level of safety is maintained.

**FAA Differences:** TCCA permits carriage of crew members in a non-passenger carrying operation with the PA System inoperative and no requirement for the interphone.

***ITEM**: 23.10 HANDSETS*

| | | | | | |
|---|---|---|---|---|---|
| *10. Handsets* | | | | | |
| *1) Passenger Configuration* | | | | | |
| *a) Flight Deck Handset* | *C* | *1* | *0* | *(O)* | *May be inoperative provided:*<br>*a) Flight deck to cabin communication operates normally, and*<br>*b) Alternate procedures are established and used.* |
| | *D* | *1* | *0* | | *May be inoperative provided routine procedures do not require its use.* |
| *b) Cabin Handset(s)* | *B* | *-* | *-* | *(O)* | *May be inoperative provided:*<br>*a) Fifty percent of cabin handsets operate normally,*<br>*b) Operative handset(s) is located at an operative flight attendant seat, and*<br>*c) Alternate communications procedures between the affected flight attendant station(s) are established and used.*<br>*NOTE:*<br>*Any station that operates normally may be used* |
| *c) Crew Rest Facility - Bunk Handset* | *C* | *-* | *-* | *(O)* | *May be inoperative provided:*<br>*a) The passenger address system is operative,*<br>*b) Alternate procedures are established and used, and*<br>*c) The Pilot-in-Command is advised that all crew have been briefed.* |
| | *D* | *-* | *-* | *(M)(O)* | *May be inoperative provided:*<br>*a) Associated Crew Rest Facility - Bunk is not occupied, and*<br>*b) Associated Crew Rest Facility - Bunk is placarded INOPERATIVE – DO NOT USE.* |

***ITEM**: 23.10 HANDSETS (cont'd)*

| | | | | |
|---|---|---|---|---|
| *10. Handsets (cont'd)* | | | | |
| *2) Cargo/Combi Configuration* | | | | |
| *a) Flight Deck Handset* | *D* | *1* | *0* | |
| *b) Cargo Compartment Handsets* | *D* | *2* | *0* | *Handsets located in the cargo compartment may be inoperative or inaccessible.*<br><br>*NOTE:*<br>*This includes the handset at L1 (and R1 when R1 is located in the main deck cargo compartment)* |

***DISCUSSION:***

***References:*** *FAA PL 9 (Rev. 5, Oct. 2001 GC 109 Oct. 2001)*

***FAA Differences:*** *TCCA permits relief for handsets located in the cargo compartment.*

***ITEM**: 23.11 ALERTING SYSTEM*

| | | | | |
|---|---|---|---|---|
| *11.* | *Alerting System* | | | |
| | *1) Passenger Configuration* | | | |
| | *a) Visual Alert (flight compartment)* | *B* | *1* | *0* | *May be inoperative provided the flight deck aural alert is operative.* |
| | *b) Visual Alert (cabin)* | *B* | *1* | *0* | *May be inoperative provided:*<br>*a) The PA system is operative, and*<br>*b) Affected alert is not used for lavatory smoke detector alerting.* |
| | *c) Aural Alert (cabin)* | *B* | *1* | *0* | *May be inoperative provided:*<br>*a) The PA system is operative, and*<br>*b) Affected alert is not used for lavatory smoke detector alerting.* |
| | *2) Cargo Configuration* | | | |
| | *a) Visual Alert (flight compartment)* | *B* | *1* | *0* | *May be inoperative provided the aural alert is operative.* |
| | *b) Courier/ Supernumerary Visual Alert* | *B* | *1* | *0* | *May be inoperative provided Courier/Supernumerary address system is operative.* |
| | *c) Courier/ Supernumerary Aural Alert* | *B* | *1* | *0* | *May be inoperative provided Courier/Supernumerary address system is operative.* |

***DISCUSSION:***

***References:** FAA PL 9 (Rev. 5, Oct. 2001 GC 109 Oct. 2001)*

***FAA Differences:** FAA relief is similar to TCCA.*

**ITEM**: 23.~~9~~*12* PRE–RECORDED ANNOUNCEMENT (PASSENGER BRIEFING SYSTEM)

| | | | | | |
|---|---|---|---|---|---|
| ~~9~~*12*. Pre–recorded Announcement (Passenger Briefing System) | C | 1 | 0 | (O) | *May be inoperative* ~~P~~*p*rovided alternate procedures are established and used. |
| All Cargo Operations. | D | 1 | 0 | | *May be inoperative* ~~P~~*p*rovided all crew members are on the flight deck. |

**DISCUSSION:**

**References:** CAR 705.43

If the flight attendant(s) is (are) unable to provide the standard safety briefing in both official languages, pursuant to CAR 705.43, an acceptable alternate means of compliance could be to provide printed copies of the standard safety briefings.

**FAA Differences:** *FAA relief is* ~~i~~*i*dentical to TCCA.

**ITEM**: 23.1~~2~~*3* ACTIVE NOISE AND VIBRATION SUPPRESSION SYSTEM

| | | | |
|---|---|---|---|
| 1~~2~~*3*. Active Noise and/or Vibration Suppression System (ANVS System) | 1 | 0 | |

**DISCUSSION:**

**References:** Nil.

This was originally included as part of the Passenger Convenience Item but was moved here to harmonize with the FAA in terms of ATA assignment. No category has been assigned because no aircraft safety related issues have been identified related with the non-availability of this equipment.

**FAA Differences:** *FAA relief is* ~~i~~dentical to TCCA.

**ITEM**: 24.1 ELECTRICAL POWER SOURCES AND BUS TIES

| | | | | |
|---|---|---|---|---|
| 1. Electrical Power Sources and Bus Ties | B/C | - | - | See DISCUSSION. |

**DISCUSSION:**

**References:** TC TP 6327 (ETOPS), FAA PL~~s~~ 27 *(Rev. 1, Aug. 1997)*, *PL* 40 *(Rev. 1, Aug. 1997)*, *PL* 64 *(Rev. 1, Aug. 1997)*, FAA AC 120-42A (E~~T~~*R*OPS)

To the extent possible, the MMEL shall be constructed such that after any subsequent single in–flight electrical power system failure, sufficient instruments and equipment remain operative to provide for navigation, communications, and aircraft operation and monitoring. Such systems must remain operative for the period of time which is limited only by the range of the airplane. For these purposes, battery power may not be considered a power source.

For 3 and 4 engine aircraft, a category C may be applicable where more than two power sources are available. Justification for this MMEL relief may require an electrical load analysis assuming the next worst subsequent electrical failure (loss of power source) has occurred, in order to demonstrate capability for continued safe flight without a cascade failure effect upon other electrical sources or loss of essential services. It may be necessary to implement electrical load shedding procedures to substantiate acceptable electrical loads when dispatching with a power source inoperative. For new items or new aircraft a load analysis and load shedding procedures are required.

**FAA Differences:** *FAA relief is* ~~S~~*s*imilar to TCCA.

**ITEM**: 24.2 ELECTRICAL POWER SOURCE MONITORING DEVICES

| | | | | |
|---|---|---|---|---|
| 2. Electrical Power Source Monitoring Devices | C | - | 0 | May be inoperative when the associated power source is inoperative. |
| | B | - | - | See DISCUSSION. |

**DISCUSSION:**

**References:** Nil.

In general, electrical power source monitoring devices (voltmeters, loadmeters, temperature indicators and caution/warning lights) may be inoperative if dispatch is permitted with the associated power source inoperative. MMEL relief may be restricted to a specific monitoring equipment channel(s) associated with inoperative/disabled electrical power sources. Relief has been permitted with monitoring devices inoperative (e.g. B1900, SA226/227) with considerations such as load requirements within the capability of one generator, associated light annunciator is operative, and in some cases no flight in icing conditions, VMC, VFR, etc.

**FAA Differences**: *FAA relief is* ~~S~~*s*imilar to TCCA.

**ITEM**: 25.1 EMERGENCY LOCATOR TRANSMITTER

| | | | | |
|---|---|---|---|---|
| 1. Emergency Locator Transmitter | * | - | - | *As required by regulations.* |
| ~~If required by regulations~~ | ~~C~~ | - | - | |
| ~~If not required by regulations~~ | ~~D~~ | ~~-~~ | ~~-~~ | |
| ~~If in excess of that required by regulations~~ | ~~D~~ | ~~-~~ | ~~-~~ | ~~NOTE:~~<br>~~The operator's MEL must state the minimum number of ELTs required on the aircraft in accordance with the size of the aircraft and the area of operation.~~ |

**DISCUSSION:**

**References:** CAR 605.38, *CAR 605*.39

*Recent revisions to CAR 605.38 and CAR 605.39 have introduced different repair interval criteria depending upon the operational category of the aircraft. For development of the MEL , refer to the CAR that applies to the type of operation and the specific type of aircraft involved.*

**FAA Differences:** *FAA establishes similar criteria in the determination of the relief for ELTs where aircraft are separated into categories of operation and the size of the aircraft.* ~~FAA (B1900D) assigns a cat C "As required by regulations" and cat C "no scheduled service". This is interpreted as being no relief. For MMELs sampled, no relief was provided for the B777 and B727.~~

**ITEM**: 25.2 FLIGHT ATTENDANT SEAT/SEAT ASSEMBLY (SINGLE/DUAL POSITION)

| | | | | |
|---|---|---|---|---|
| 2. Flight Attendant Seat~~/Seat~~ Assembly (single or dual position) | | | | |
| *1) Required Flight Attendant Seats* | B | - | - | (~~O~~*M*)(~~M~~*O*) *One seat position or assembly (dual position) may be inoperative provided:*~~When more than one flight attendant is assigned to duty or more than one seat or seat assembly is located in the passenger cabin, one seat or assembly (single or dual position) may be inoperative provided:~~<br>a) Affected seat *position* or seat assembly is not occupied,<br>b) ~~affected f~~*F*light attendant(s) *displaced by inoperative seat(s)* occupies *either an adjacent flight attendant seat or* the passenger seat~~(s)~~ *which is* most accessible to *the inoperative seat(s), so as to most effectively perform assigned duties,*~~assigned exit,~~<br>c) Alternate procedures are established and used *as published in crewmember manuals*,<br>d) Folding type seat *stows automatically or is* ~~is removed, stowed or~~ secured in the retracted position, and<br>e) Passenger seat~~(s)~~ assigned to flight attendant~~(s)~~ is placarded 'FOR FLIGHT ATTENDANT USE ONLY'.<br>NOTES:<br>1. *An automatic folding seat that will not stow automatically* ~~If the automatic stow feature of a folding seat is inoperative, the seat~~ is considered inoperative.<br>*2. A seat position with a missing or inoperative safety belt (including shoulder harness) or headrest renders the seat inoperative.* |

**ITEM**: 25.2 FLIGHT ATTENDANT SEAT/SEAT ASSEMBLY (SINGLE/DUAL POSITION) - (cont'd)

| | | | | | |
|---|---|---|---|---|---|
| 2. Flight Attendant Seat Assembly (single or dual position) (cont'd) | D | - | - | (M) | Seats/assemblies in excess of requirements and not assigned to a flight attendant may be inoperative provided they are not occupied, are placarded and are:<br>a) Properly stowed, or<br>b) Secured in the retracted position, or<br>c) Removed. |

**DISCUSSION:**

**References:** ~~CAM~~*AWM* 523.785; *AWM* 525.785, *AWM 525*.803, CAR~~s~~ 605.24; *CAR* 705.41, *CAR 705*.75; *CASS* 725.41, *CASS 725*.104, FAA PL 97 *(Rev. 2, Feb. 2001)*

The above mentioned relief is only permissible if more than one flight attendant is assigned to duty or more than one seat or seat assembly is located in the passenger cabin. This is for safety reasons to ensure that at least one flight attendant is seated in a proper flight attendant seat in the cabin.

A flight attendant seat must be located in the passenger cabin; this excludes a seat located in the cargo area of a passenger/cargo combi configured aircraft. Individual operators, when operating with inoperative seats must consider the locations and combinations of seats to ensure that the proximity to exits and distribution requirements of the applicable regulations are met.

This item has been split into 'seats required by regulation' and 'seats in excess of requirements and not assigned to a flight attendant' to facilitate separate categorizations. If "extra" flight attendants are carried and duties assigned, then the seat occupied by that flight attendant is no longer considered excess to requirements and that seat must meet the appropriate design requirements. Hence the wording "assigned" in the cat D relief.

The item will need to be tailored since not all aircraft have seat assemblies.

Consistent with the CARs, this item refers to a "safety belt", and "shoulder harness" .

In response to a request for relief it has been decided that the use of flight attendant seats with no shoulder harness is not acceptable because of safety reasons and a Dryden recommendation to require a shoulder harness.

**FAA Differences:** FAA *relief is similar to TCCA.* ~~allows relief when the aircraft is equipped with only one flight attendant seat.~~

**ITEM**: 25.3 "FASTEN SEAT BELT WHILE SEATED" ~~"NO SMOKING"~~ SIGNS OR PLACARDS

| | | | |
|---|---|---|---|
| 3. "Fasten Seat Belt While Seated", C<br>~~"No Smoking"~~ Signs or Placards<br><br>~~"No Smoking"~~ | - | - | One or more signs or placards may be illegible or missing provided a legible sign or placard is readable from each occupied passenger seat. |

**DISCUSSION:**

**References:** ~~CAM 525.791(a),(b) and (e)~~FAA PL 89 *(Original, Aug. 1997)*

*The Lavatory door "No Smoking" sign or placard has been moved to Item 25.12.*

**FAA Differences**: - TCCA *relief is similar to the FAA relief.* ~~also includes "No Smoking" sign or placard.~~

**ITEM**: 25.4 FLIGHT DECK CREW MEMBER SAFETY BELTS (INCLUDES SHOULDER HARNESS)

| | | | | |
|---|---|---|---|---|
| 4. Flight Deck Crew Member Safety Belts (Includes Shoulder Harness) | | | | Flight deck crew member safety belts (includes shoulder harness) must be operative. |
| Primary Observer Seat Safety Belt | B | 1 | 0 | ~~Provided~~*May be inoperative provided* the seat is removed, stowed, or secured in the retracted position. |
| | D | 1 | 0 | ~~Provided~~*May be inoperative provided* the seat is not required to be occupied in an official capacity for extended periods of time. |
| Secondary Observer Seat(s)Safety Belt(s) | D | - | 0 | ~~Provided~~*May be inoperative provided* the seat is not used. |

**DISCUSSION:**

**References:** CAR~~s~~ 605.27, *CAR* 705.75, ~~CAM~~*AWM* 523.785; *AWM* 525.785

"Official capacity" for the purpose of this document with respect to the occupant of the observer's seat includes flight training, Transport Canada/company check rides, crew member, or a person authorized by the air operator. If the basis of certification does not require flight deck crew member safety belts (includes shoulder harness) then "as required by regulation" may be used in order that the appropriate operational regulations govern.

**FAA Differences:** *FAA relief is* ~~S~~*s*imilar to TCCA.

**ITEM**: 25.5 MEGAPHONE

| | | | | | |
|---|---|---|---|---|---|
| 5. Megaphone | D | - | - | (M)(O) | Any in excess of those required by regulations may be inoperative or missing provided:<br>a) The inoperative megaphone is removed from the passenger cabin and its location is placarded INOPERATIVE, or it is removed from the installed location, secured out of sight and the megaphone and its installed location are placarded INOPERATIVE.<br>b) Required distribution is maintained, and<br>c) Procedures are established to alert crew members of inoperative or missing megaphones. |
| All cargo operations | D | - | 0 | | May be inoperative provided all crew members are on the flight deck. |

**DISCUSSION:**

**References:** CAR 705.89, FAA PL 47 *(Rev. 1, Aug. 1997)*

The megaphone could be considered as a backup when the PA system is inoperative.

**FAA Differences:** TCCA allows the megaphone to remain in the cabin.

**ITEM**: 25.6 OBSERVER SEATS (INCLUDING ASSOCIATED EQUIPMENT)

| | | | | | |
|---|---|---|---|---|---|
| 6. Primary Observer Seat (Including Associated Equipment) | B | 1 | 0 | *(M)* | ~~Provided~~*May be inoperative provided* the seat is removed, stowed, or secured in the retracted position. |
| | D | 1 | 0 | *(M)* | ~~Provided~~*May be inoperative provided:*<br>*a).* The seat is not required to be occupied in an official capacity for extended periods of time *and*<br>*b)* ~~.~~*The seat is removed, stowed, or secured in the retracted position.* |
| 6. Secondary Observer Seat(s)<br>*** (Including Associated Equipment) | D | - | 0 | | ~~Provided~~*May be inoperative provided* procedures do not require its use. |

**DISCUSSION:**

**References:** ~~CAM~~*AWM* 525.785, CAR~~s~~ 703.21, *CAR* 704.21, *CAR* 705.27, FAA PL 56 *(Rev. 1, Jan. 2001)*

Observer's seat associated equipment includes safety belt, shoulder harness, audio control panel, oxygen system, microphone, headset, lights, etc.

"Official capacity" for the purpose of this document with respect to the occupant of the observer's seat includes flight training, Transport Canada/company check rides, crew member, or a person authorized by the air operator.

**FAA Differences:** FAA requires observer's seat (or a passenger seat) to be available for their use at all times, TCCA does not have the passenger seat as an in lieu requirement. FAA assigns category A, two flight days. TCCA allows a cat B or a cat D where appropriate.

**ITEM**: 25.7 OVERHEAD ~~(STOWAGE)~~*STORAGE BIN(S)/CABIN AND GALLEY STORAGE COMPARTMENT/CLOSETS* ~~RACK (OR BIN) WITH LIDS/DOORS~~

| | | | |
|---|---|---|---|
| 7. *Overhead Storage Bin(s)/Cabin And Galley Storage Compartment/Closets* ~~Overhead (Stowage) Rack (Or Bin) Lids/Doors~~ | ~~D~~*C* | - | - | (M) ~~Provided~~*May be inoperative provided*:<br><br>a) *Procedures are established to secure compartment CLOSED, or remove the lid/door,* ~~that portion of the overhead rack or bin is not used for stowage,~~<br><br>b) *Compartment is not used for storage of emergency equipment, and* ~~the lid/door is secured closed or removed, and~~<br><br>c) *Affected compartment is not used for storage of any item(s) except for those permanently affixed.* ~~the bin is placarded "INOPERATIVE DO NOT USE".~~<br><br>NOTES:<br><br>1. If no partitions are installed, the entire overhead stowage compartment is considered ~~to be~~ one bin.<br><br>2. An inoperative lid/door latch renders the door inoperative. |

**DISCUSSION:**

**References:** CAR~~s~~ 602.86; *CAR* 705.42, *FAA PL 104 (Original, June 2000, GC 82, June 2000)*

Category D is *not* considered appropriate in that specific cabin luggage storage rules and regulations will drive the repair urgency.

**FAA Differences**: *FAA relief is* ~~*s*~~*S*~~S~~imilar to TCCA.

~~Could not find in **FAA** MMELs.~~

**ITEM**: 25.8 PASSENGER CONVENIENCE ITEMS

| | | | |
|---|---|---|---|
| 8. Passenger Convenience Items N/A | - | - | Passenger convenience items as expressed in this MMEL are those related to passenger convenience, comfort or entertainment, such as, but not limited to – galley equipment, movie equipment, ash trays, stereo equipment, and overhead reading lamps. Items addressed elsewhere in this document shall not be included.<br><br>(M) and (O) procedures may be required and included in the MEL.<br><br>NOTE:<br><br>1. Exterior lavatory door ash trays are not considered convenience items.<br><br>2. Galley equipment restraining devices such as latches, etc. must be serviceable or the compartment must not be used for storage and placarded "INOPERATIVE - DO NOT USE".<br><br>3. Movie equipment individual screens, if applicable, must be capable of being stowed.<br><br>4. Audio or audio-visual entertainment equipment which is used as the sole means of providing safety briefings and demonstrations is not considered a passenger convenience item. |

**DISCUSSION:**

**References:** *TP 9155 Para 3.9.4 (Rev. 3, Oct. 97)*~~CAR 602.86 (1)~~, FAA PL 33 *(Rev. 3, June 2001, GC 99, June 2001)*

Potable water systems and lavatory systems are not considered passenger convenience items and are addressed as items 38.1 and 38.2.

**FAA Differences:** *FAA requires M & O procedures for passenger convenience items to be listed an air carriers appropriate document, not specifically in the in the operators MEL.* Notes 2 - 4 are not in the FAA PL item.

**ITEM**: 25.9 PASSENGER SEATS

| | | | | | |
|---|---|---|---|---|---|
| 9. Passenger Seats (includes seat back) | D | - | - | (M) | May be inoperative provided:<br><br>a) It does not block or restrict access to an emergency exit,<br>b) It does not restrict any passenger from access to the main aisle, and<br>c) The affected seat(s) is not used and is blocked and placarded 'DO NOT OCCUPY'.<br><br>NOTE:<br>1. A seat with an inoperative safety belt is considered inoperative.<br>2. For single aisle configurations and for seats in the left and right (outboard) sections of two aisle aircraft, the affected seat(s) may include the seat behind and/or the adjacent outboard seats.<br>3. For the centre section of two aisle configurations, the "affected" seat may only be the seat aft of the inoperative seat. |
| Recline Mechanism | D | - | - | (M) | *May be inoperative* ~~P~~*p*rovided the seat is secured in the upright position. |
| *Underseat Baggage Restraining Bars* | *C* | *-* | *-* | *(O)* | *May be inoperative or missing provided:*<br><br>*a) Baggage is not stowed under associated seat or seat assembly,*<br>*b) Associated seat or seat assembly is placarded "DO NOT STOW BAGGAGE UNDER THIS SEAT", and*<br>*c) Procedures are established to alert crew members of inoperative or missing restraining bar.* |

**ITEM**: 25.9 PASSENGER SEATS (cont'd)

**DISCUSSION:**

**References:** ~~CAR 605.22, .24~~, ~~FAA PL 79~~*CAR 725.42; 602.86; 705.42, 605.22, 605.24*, *FAA PL 79 (Rev. 2, Mar. 2001, GC 96, Mar. 2001)*

*The basis of certification of the seat or seat assembly will need to be verified to determine if an inoperative or missing under seat baggage restraining bar affects the integrity of the seat.*

This item does not include tray tables which may, if inoperative in the unstowed position, render the seat or seat row behind the seat to which the tray table is attached inoperative. A tray table inoperative in the stowed position is considered a passenger convenience item.

CAR 605.24 requires shoulder harnesses for passenger seats under specified conditions. In this case, a missing or inoperative safety belt and/or shoulder harness renders the seat inoperative.

**FAA Differences:** *TCCA adds a "missing" reference.* ~~**FAA**~~ Some additions in TCCA MMEL due to CARs. For clarification TCCA has added NOTES 2 and 3 regarding affected seats. The FAA MMEL statement about the number of inoperative seats not affecting the required number of flight attendants is not applicable in Canada and must be deleted from TCCA MMELs.

**ITEM**: 25.10 PILOT SEAT ADJUSTMENTS

| | | | | | |
|---|---|---|---|---|---|
| 10. Pilot Seat Adjustments | C | - | - | (M) | Vertical and fore/aft adjustment may be inoperative provided the seat is secured in a position to meet individual pilot requirements. |

**DISCUSSION:**

**References:** Nil.

Some pilot seat adjustment designs do not lend themselves to be secured when inoperative. A practical means of securing the seat position must be developed and used.

~~**Identical to**~~ **FAA Differences:** *No FAA PL for this item and dispatch relief varies between aircraft types.*~~.~~

**ITEM**: 25.11 OVERHEAD (STOWAGE) RACK WITH RESTRAINING DEVICE

| | | | | |
|---|---|---|---|---|
| 11. Overhead (Stowage) Rack With Restraining Device | D | - | - | May be inoperative provided:<br><br>a) That portion of the overhead rack is not used for stowage, and<br><br>b) The rack is placarded "INOPERATIVE DO NOT USE". |

**DISCUSSION:**

**References:** CARs 602.86; *CAR* 705.42

**FAA Differences:** Not in FAA MMELs.

**ITEM:** 25.12 ~~UNDERSEAT BAGGAGE RESTRAINING BARS~~LAVATORY NO SMOKING PLACARDS

| | | | |
|---|---|---|---|
| 12. ~~Underseat Baggage Restraining Bars~~*Lavatory NO SMOKING Placards* | ~~C~~*B* | - | - | *May be missing provided periodic inspections of the affected lavatory is carried out by a crew member at intervals not exceeding 30 minutes.* ~~(O) May be inoperative or missing provided:~~ |

**DISCUSSION:**

**References:** ~~CAR 725.42; 602.86; 705.42~~*CAR 705.76(c)* ~~FAA PL 79~~

*This item added to address unique Canadian requirements.*

**FAA Differences:** ~~**A** TC adds a "missing" reference. The basis of certification of the seat or seat assembly will need to be verified to determine if an inoperative or missing under seat baggage restraining bar affects the integrity of the seat.~~ *No FAA PL addressing this item.*

**ITEM**: 25.13 FLIGHT ATTENDANT FLASHLIGHTS/FLASHLIGHT HOLDERS

| | | | | | |
|---|---|---|---|---|---|
| 13. Flight Attendant Flashlights/Flashlight Holders | | | | | |
| Flashlights | C | - | 0 | (O) | May be inoperative or missing provided the flight attendant assigned to the associated seat has a flashlight of equivalent characteristics readily available. |
| Holders | C | - | 0 | (M)(O) | May be inoperative or missing provided alternate stowage provisions are provided. |

**DISCUSSION:**

**References:** CAR~~s~~ 705.79, *CAR 705*.97

The (O) is to ensure that the crew are aware of the flashlight (holder) change in terms of its location and/or alternate stowage provisions.

**FAA Differences:** Similar. For TCCA, the item is shown as two items to ensure that stowage provisions are addressed. This will ensure that the flashlights are readily available from the flight attendant station in an emergency situation yet not stored in an inappropriate location (e.g. seat back pocket for such items of mass).

**ITEM**: 25.14 FIRST AID KIT

| | | | | | |
|---|---|---|---|---|---|
| 14. First Aid Kit | D | - | - | (O) | Any kit or items contained in the kit in excess of those required by regulations may be incomplete or missing provided:<br>a) Required distribution is maintained, and<br>b) Procedures are established to alert crew members of missing or incomplete kits. |
| First Aid Kit Seal | B | - | - | | The seal affixed on the exterior of the first aid kit may be missing or inoperative provided:<br>a) The first aid kit is fully equipped or the kit has a maximum of one missing item~~, that was used after the flight left a base where the item could be replaced,~~<br>b) The kit includes a list of its contents,<br>c) An inventory is taken on the content of the kit prior to departure, *and*<br>~~d) No additional seal is available, and~~<br>~~e~~*d*) Procedures are established to alert crew members of:<br>*1)* ~~t~~*T*he missing or broken seal*, and*<br>*2 The need to perform an inventory under proviso c).* |

**DISCUSSION:**

**References:** CAR~~s~~ 602.60; *CAR* 604.39; *CAR* 705.90; CASS 725.90, FAA PL 73 *(Rev. 1, Aug. 1997)*

**FAA Differences:** TCCA adds (O) and provisions for missing or broken seals and/or first aid kits with up to one item missing *over and above the required contents*.

**ITEM**: 25.15 EMERGENCY MEDICAL KIT

| | | | | | |
|---|---|---|---|---|---|
| 15. Emergency Medical Kit | D | - | - | (O) | Any kit or items contained in the kit in excess of those required by regulations may be incomplete or missing provided procedures are established to alert crew members of missing or incomplete kits. |
| Consumable Items | ~~B~~*A* | - | - | (O) | One consumable item, as required by CASS 725.91, may be missing *for one flight day* provided:<br>a) The emergency medical kit is equipped with more than one of the consumable items that is missing,<br>b) The kit includes a list of its contents, *and*<br>c) ~~The consumable item was used after the flight left a base where the item could be replaced,~~<br>~~d~~c) Procedures are established to alert crew members of the missing item~~,~~. ~~and~~<br>~~e) Missing consumable item is replaced at first base where that item is available~~<br>NOTES:<br>1. For the purpose of this relief, a consumable item is considered to be an item that once removed from the kit cannot be reused.<br>2. For the purpose of this relief, the use of a syringe and needle with the associated dose of medication is considered to be one consumable item. |
| Emergency Medical Kit Seal | B | - | - | (O) | The seal affixed on the exterior of the emergency medical kit may be missing or broken provided: |

**ITEM**: 25.15 EMERGENCY MEDICAL KIT (Cont'd)

| | | | |
|---|---|---|---|
| Emergency Medical Kit Seal (cont'd) | | | a) The emergency medical kit is fully equipped or the kit has a maximum of one missing consumable item, ~~- that was used after the flight left a base where the item could be replaced,~~<br>b) The kit includes a list of its contents,<br>c) An inventory is taken on the content of the kit prior to departure, *and*<br>~~d) No additional seal is available, and~~<br>~~e~~*d*) Procedures are established to alert crew members of*:* ~~the missing or broken seal.~~<br>*1)* the missing or broken seal~~.~~ *and*<br>*2) the need to perform an inventory under proviso c).* |

**DISCUSSION:**

**References:** CAR 705.91, CASS 725.91, FAA PL 73 *(Rev. 1, Aug. 1997)*

**FAA Differences:** *FAA relief is* ~~I~~*i*dentical to TCCA. It is noted that the FAA PL makes the statement that no relief is permitted for the emergency medical kit implying that there is only one kit on board and it must be complete. TCCA adds (O) and provisions for missing consumable items *over and above the required contents* and for missing or broken seals.

**ITEM**: 25.16 *EXTERIOR* LAVATORY ~~ENTRY~~ DOOR ~~OR ENTRY AREA~~ ASHTRAYS

| | | | | |
|---|---|---|---|---|
| 16. *Exterior* Lavatory ~~Entry~~ Door ~~or Entry Area~~ Ashtrays | | | | |
| For airplanes with more than one lavatory door or entry area ashtray. | C | - | - | One may be missing on the entire aircraft. |
| For airplanes with only one lavatory door or entry area ashtray. | B | - | 0 | May be missing.<br><br>*NOTE: Interior lavatory ashtrays considered under passenger convenience items and are not required by regulations.* |

**DISCUSSION:**

**References:** CAR 705.76, ~~AD~~ *FAA AD* 74-08-09 R2, 96 07 29, FAA PL 85 *(Rev. 2, Feb. 2000)*

Although industry has requested additional relief this is not possible since the Airworthiness Directive must take precedence over the MMEL. If additional relief is requested, it will need to be incorporated into the AD itself. It is also noted that an extension for this item is not possible since the AD takes precedence.

**FAA Differences:** TCCA expands title to reflect an entry area. FAA assigns category A, 10 calendar days and A, three calendar days rather than category C and B (FAA *does not permit category A* extension~~s rules for category A items are different than for category C and B items~~).

***ITEM**: 25.17 CARGO COMPARTMENT LINING PANELS*

| | | | |
|---|---|---|---|
| *17. Cargo Compartment Lining Panels*<br>*C* | *-* | *-* | *Liner panels may be damaged or missing provided cargo is not carried in the associated compartment.*<br>*NOTE:*<br>*Unit Load Devices (ULDs) may be carried in the associated compartment provided no cargo is carried on or in these devices. For ballast purposes, use of bags (made of glass fibre or kevlar) of sand or ingots of non-magnetic metals (such as lead) is acceptable.* |

***DISCUSSION:***

***References:*** *AWM 525.855*

***FAA Differences:*** *No FAA PL for this item but TCCA relief consistent with MMEL for B757.*

***ITEM**: 25.18 CREW REST FACILITIES - BUNK*

| | | | | | |
|---|---|---|---|---|---|
| *18. Crew Rest Facilities - Bunk* | | | | | |
| *1) Crew Rest Facility - Bunk Main Entry Door* | *C* | *-* | *0* | *(M)* | *May be inoperative provided:*<br>*a) Associated Crew Rest Area is not used and personal items are removed, and*<br>*b) Associated Crew Rest Area door is locked closed and placarded, INOPERATIVE – DO NOT ENTER.*<br>*NOTE:*<br>*These provisions are not intended to prohibit associated Crew Rest Area inspections by crewmembers.* |
| | *C* | *-* | *0* | *(M)* | *May be inoperative provided associated Crew Rest Area door is removed and securely stowed inside crew rest area or removed from the aircraft.* |
| *2) Crew Rest Facility - Bunk Restraint System* | *C* | *-* | *-* | *(M)* | *One or more may be inoperative provided:*<br>*a) Affected bunk is placarded INOPERATIVE – DO NOT USE*<br>*b) Procedures are established and used to alert crewmembers that the bunk restraint system cannot be used.* |

***DISCUSSION:***

***References:*** *Nil.*

***FAA Differences:*** *No FAA PL for this item but relief consistent with B777.*

**ITEM**: 26.1 APU FIRE DETECTION SYSTEM

| | | | | | |
|---|---|---|---|---|---|
| 1. APU Fire Detection System<br>Detection Loops | C/D | - | 1 | ~~(O)~~ | *Except for ETOPS beyond 120 minutes, one loop may be inoperative.* ~~Provided the APU is considered inoperative and is not used.~~ |
| | C/D | - | 0 | *(M)* | *May be inoperative for ground operations only provided:*~~Provided:~~<br>a) The APU ~~is used for ground operations only and~~ is continuously monitored,<br>b) The APU external control system is operative, and<br>c) The APU is shut down before taxi. |

**DISCUSSION:**

**References:** FAA PL 40 (ETOPS) *(Rev. 1, Aug. 1997)*

Dispatch with the detection system inoperative even if the protection (auto–shutdown) and extinguishing systems were operative is not acceptable since the flight crew would not know the reason for an auto shutdown and would be unable to carry out the appropriate emergency procedure.

Depending on monitoring and automatic shutdown features available it may be necessary to have the APU monitored by a fire guard outside the aircraft in the vicinity of the APU and consideration may also be given to not having passengers on board; hence the (~~O~~*M*) procedure.

In the absence of an APU external control system, automatic shutdown features may be required to be operative. This would address the inability to shut down the APU from the external panel and reflect the difficulty communicating with the flight deck to initiate shutdown.

The choice of category C or D in the MEL should reflect how the MEL is used operationally, e.g. if the APU is routinely used to start the aircraft, then a category C would be considered appropriate.

~~Due to the increased reliability of fire detection loops, the ETOPS restriction has been deleted.~~ Any ETOPS limitations will be addressed during the extended range approval and it is noted that this relief is neither automatic nor necessarily retroactive.

**FAA Differences:** *TCCA relief is identical to the FAA.*~~TC permits relief for ETOPS with no restrictions whereas the FAA does not necessarily permit relief for ETOPS beyond 120 minutes.~~

**ITEM**: 26.2 APU FIRE EXTINGUISHING SYSTEM

| | | | |
|---|---|---|---|
| 2. APU Fire Extinguishing System C/D | 1 | 0 | ~~Provided~~*May be inoperative provided* the APU is considered inoperative and is not used. |

**DISCUSSION:**

**References:**

The choice of category C or D in the MEL should reflect how the MEL is used operationally, e.g. if the APU is routinely used to start the aircraft, then a category C would be considered appropriate.

**FAA Differences**: *FAA relief is* ~~I~~identical to TCCA.

**ITEM**: 26.3 BAGGAGE OR CARGO COMPARTMENT SMOKE DETECTORS

| | | | | |
|---|---|---|---|---|
| 3. Baggage or Cargo Compartment Smoke Detectors | C | - | 0 | ~~Provided~~*May be inoperative provided* cargo is not carried in the associated compartment.<br>NOTE:<br>Unit Load Devices (ULDs) may be carried in the associated compartment provided no cargo is carried on or in these devices. For ballast purposes, use of bags (made of ~~fibreglass~~*glass fibre* or kevlar) of sand or ingots of non-magnetic metals (such as lead) is acceptable. |
| *Smoke Detectors in excess of requirements.* | *C* | *-* | *-* | *May be inoperative provided certification requirements are met with the remaining serviceable detectors.* |

**DISCUSSION:**

**References:** ~~CAM~~*AWM* 525.858, FAA PL ~~97~~*102 (Original, Sept. 1999)*

~~A definition of non combustible materials has not been agreed by TC, hence the guidance above.~~

Some alleviation to the number of detectors required may be granted depending on the class of compartment, access, and ability of remaining detectors to perform the intended function.

**FAA Differences:** TCCA has not yet accepted a definition of non-combustible materials, hence no permission to carry non-combustible cargo or luggage as the FAA permits.

**ITEM**: 26.4 ENGINE FIRE DETECTION LOOPS

| | | | | |
|---|---|---|---|---|
| 4. Engine Fire Detection Loops | C | ~~2~~- | ~~1~~- | *Except for ETOPS beyond 120 minutes, one loop per engine may be inoperative.* |
| ~~For ETOPS~~ | ~~A~~ | ~~2~~ | ~~1~~ | ~~One loop per engine may be inoperative for one flight.~~ |

**DISCUSSION:**

**References:** *AWM 525.1203*, FAA PL 40 (ETOPS) *(Rev. 1, Aug. 1997)*

Any ETOPS limitations will be addressed during the extended range approval and it is noted that this relief is neither automatic nor necessarily retroactive.

**FAA Differences:** TCCA *relief* identical to FAA. ~~relief for ETOPS with no restrictions whereas the FAA does not necessarily permit relief for ETOPS beyond 120 minutes.~~

**ITEM**: 26.5 ENGINE/APU FIRE EXTINGUISHER DISCS (THERMAL AND DISCHARGE)

| | | | | |
|---|---|---|---|---|
| 5. Engine/APU Fire Extinguisher Discs (Thermal and Discharge) | C | 2 | 0 | May be missing provided adequate charge is confirmed prior to the first flight of each day. |

**DISCUSSION:**

**References:**

**FAA Differences:** *FAA relief* ~~I~~identical to TCCA.

**ITEM**: 26.6 ENGINE OVERHEAT DETECTION LOOPS

| | | | | |
|---|---|---|---|---|
| 6. Engine Overheat Detection Loops | C | ~~2~~ - | ~~1~~ - | *Except for ETOPS beyond 120 minutes, one loop per engine may be inoperative.* |
| ~~For ETOPS~~ | ~~A~~ | ~~2~~ | ~~1~~ | ~~One loop per engine may be inoperative for one flight day.~~ |

**DISCUSSION:**

**References:** FAA PL 40 *(Rev. 1, Aug. 1997)*

Any ETOPS limitations will be addressed during the extended range approval and it is noted that this relief is neither automatic nor necessarily retroactive.

**FAA Differences:** *FAA relief* ~~i~~identical to TCCA.

**ITEM**: 26.7 PORTABLE FIRE EXTINGUISHERS

| | | | | |
|---|---|---|---|---|
| 7. Portable Fire Extinguishers | D | - | - | (M)(O) Any in excess of those required by regulations may be inoperative or missing provided:<br>a) The inoperative fire extinguisher(s) is/are removed from the passenger cabin, flight deck, and/or class E cargo compartment that is accessible to crew members during flight, and its location is placarded INOPERATIVE, or it is removed from the installed location, secured out of sight and the fire extinguisher and its installed location are placarded INOPERATIVE.<br>b) Required distribution is maintained in the passenger compartment on each deck, the flight deck and each class E cargo compartment that is accessible to crew members during flight, as applicable, and<br>c) Procedures are established to alert crew members of missing portable fire extinguishers. |

**DISCUSSION:**

**References:** CAR~~s~~ 602.*59*~~60~~; *CAR* 604.41; *CAR* 704.83; *CAR* 705.93, FAA PL 75 *(Rev. 1, Aug. 1997)*

The number of required fire extinguishers in the passenger compartment is dependent on the seating capacity of the aircraft. Proviso c), with the (O), will ensure proper crew handovers and preclude any confusion in an emergency situation. The Canadian Aviation Regulations also require a fire extinguisher in the flight compartment. This fire extinguisher forms part of those required by regulations.

**FAA Differences:** TCCA has added the (O) and proviso (c) requirements for completeness. TCCA allows removal from the aircraft.

**ITEM**: 26.8 LAVATORY FIRE EXTINGUISHING SYSTEMS

| | | | | | |
|---|---|---|---|---|---|
| 8. Lavatory Fire Extinguishing Systems | C | - | ~~0~~ - | (M)(O) | *For each lavatory the lavatory fire extinguishing system* ~~M~~*m*ay be inoperative provided the lavatory smoke detection system is operative. |
| | C | - | 0 | (M)(O) | *For each lavatory the lavatory fire extinguishing system* ~~M~~*m*ay be inoperative provided:<br>a) Lavatory is not used *by passengers* for any purpose,<br>b) Lavatory waste receptacle is empty,<br>c) Lavatory door is locked closed and placarded "INOPERATIVE - DO NOT ENTER", ~~and (where applicable)~~<br>d) Access to waste receptacle from outside the lavatory must be secured closed and placarded "INOPERATIVE - DO NOT USE"*, and*.<br>*e) Lavatory is used only by crew members.* |
| Aircraft that provide passenger access to an emergency exit through the lavatory | C | - | 0 | (M)(O) | *Lavatory fire extinguishing system* ~~M~~*m*ay be inoperative provided:<br>a) Lavatory is not used for any purpose except in an emergency requiring a rapid deplanement or evacuation,<br>b) Lavatory waste receptacle is empty,<br>c) Lavatory door is locked closed and placarded "INOPERATIVE - DO NOT ENTER" except during takeoff and landing when a door MUST be secured or locked open, and<br>d) Access to waste receptacle from outside the lavatory must be secured closed and placarded "INOPERATIVE - DO NOT USE". |
| *Non-passenger Carrying Operations* | B | - | 0 | | *For each lavatory the lavatory fire extinguishing system* ~~M~~*m*ay be inoperative for non-passenger carrying operations provided: |

**ITEM**: 26.8 LAVATORY FIRE EXTINGUISHING SYSTEMS (cont'd)

| | | | | | |
|---|---|---|---|---|---|
| 8. Lavatory Fire Extinguishing Systems (cont'd)<br>*Non-passenger Carrying Operations (cont'd)* | | | | | a) Crew members are the only occupants of the aircraft and<br>b) Occupants have been briefed as to which lavatory fire extinguishing system(s) is/are inoperative. |
| All Cargo Operations | C | - | 0 | (O) | ~~Provided~~*For each lavatory the lavatory fire extinguishing system may be inoperative provided* crew members have been briefed as to which lavatory fire extinguishing system(s) is inoperative. |
| | D | - | 0 | (M)(O) | ~~Provided~~*For each lavatory the lavatory fire extinguishing system may be inoperative provided*:<br>a) Crew members have been briefed as to which lavatory fire extinguishing system(s) is inoperative, and<br>b) The waste receptacle is emptied, secured closed and placarded, INOPERATIVE - DO NOT USE.<br>NOTE:<br>The abovementioned provisos are not intended to preclude crew member lavatory inspections which must be detailed in the (O) procedures. |

**DISCUSSION:**

**References:** CAR 705 .~~67(d),~~ 76, FAA PL 24 *(Rev. 3, Oct. 2001 GC 109 Oct. 2001)*

The first option is possible in that the smoke detection system is considered adequate to alert the crew to take appropriate action.

The associated NOTE with this relief emphasizes that the referenced inspections must be detailed in the (O) procedures and carried out as part of the means of demonstrating an acceptable level of safety.

*This item is revised to reflect FAA Policy Letter 24 Revision 3.*

**FAA differences:** FAA PL refers specifically to 121 operators. TCCA addresses aircraft which use the lavatory as an escape route. TCCA adds proviso d) where applicable for safety reasons. TCCA permits expanded relief with the system inoperative for category B. TC requires an (O) for all cargo relief and if a category D is used, adds a more restrictive proviso, both for safety reasons.

**ITEM**: 26.9 LAVATORY SMOKE DETECTION SYSTEMS

| | | | | | |
|---|---|---|---|---|---|
| 9. Lavatory Smoke Detection Systems | C | - | 0 | (M)(O) | *For each lavatory, the lavatory smoke detection system may be inoperative* ~~P~~*p*rovided:<br>a) Lavatory is not used *by passengers* for any purpose,<br>b) Lavatory waste receptacle is empty,<br>c) Lavatory door is locked closed and placarded INOPERATIVE – DO NOT ENTER, ~~and~~<br>d) Access to waste receptacle from outside the lavatory must be secured closed and placarded INOPERATIVE - DO NOT USE*, and*<br>*e) Lavatory is used only by crew members,* |
| Aircraft that provide passenger access to an emergency exit through the lavatory | C | - | 0 | (M)(O) | ~~Provided~~*For each lavatory the lavatory smoke detection system may be inoperative provided*:<br>a) Lavatory is not used for any purpose except in an emergency requiring a rapid deplanement or evacuation,<br>b) Lavatory waste receptacle is empty,<br>c) Lavatory door is locked closed and placarded ”INOPERATIVE - DO NOT ENTER” except during takeoff and landing when a door MUST be secured or locked open, and<br>d) Access to waste receptacle from outside the lavatory must be secured closed and placarded ”INOPERATIVE - DO NOT USE”. |
| *Non-passenger Carrying Operations* | B | - | 0 | (O) | *For each lavatory the lavatory smoke detection system* ~~M~~*m*ay be inoperative for non-passenger carrying operations provided:<br>a) Crew members are the only occupants of the aircraft, and |

**ITEM**: 26.9 LAVATORY SMOKE DETECTION SYSTEMS (cont'd)

| | | | | | |
|---|---|---|---|---|---|
| 9. Lavatory Smoke Detection Systems (cont'd)<br>*Non-passenger Carrying Operations (cont'd)* | | | | | b) Occupants are briefed as to which smoke detection system(s) is/are inoperative. |
| All Cargo Operations | C | - | 0 | (O) | ~~Provided~~*For each lavatory the lavatory smoke detection system may be inoperative provided* crew members have been briefed as to which lavatory smoke detection system(s) is inoperative. |
| | D | - | 0 | (O) | ~~Provided~~*For each lavatory the lavatory smoke detection system may be inoperative provided*:<br>a) Crew members have been briefed as to which lavatory smoke detection system(s) is inoperative, and<br>b) The lavatory is placarded, INOPERATIVE - DO NOT ENTER.<br>NOTE:<br>The abovementioned provisos are not intended to preclude crew member lavatory inspections which must be detailed in the (O) procedures. |

**DISCUSSION:**

**References:** CAR 705. ~~67(d), .~~76; AARX Policy Letter No. 96, FAA PL 24 *(Rev. 3, Oct. 2001)*

The lavatory fire extinguishing system is not in itself considered sufficient compensation for an inoperative smoke detector as it only protects against one source of fire. Periodic inspections are also required to ensure detection of smoke from sources other than the waste receptacle.

The associated NOTE with this relief emphasizes that the referenced inspections must be detailed in the (O) procedures and carried out as part of the means of demonstrating an acceptable level of safety. An aircraft may not be dispatched with an inoperative smoke detection system if garbage bags will be placed in the lavatory (Ref. AARX Policy Letter 96 "Stowage of Disposable Waste in Aircraft Lavatories" dated 26 Jul 96.

*This item is revised to reflect FAA Policy Letter 24 Revision 3.*

**FAA Differences.** For safety reasons, TCCA requires more provisos and is more conservative in the all cargo case. TCCA permits the carriage of crew members with the system inoperative as a category B.

**ITEM**: 26.10 MAIN LANDING GEAR BAY OVERHEAT DETECTION SYSTEM

| | | | | |
|---|---|---|---|---|
| 10. Main Landing Gear Bay Overheat Detection System | B | 1 | 0 | (~~O~~*M*)(~~M~~*O*) ~~Provided~~*May be inoperative provided*:<br>a) Brakes are inspected prior to each flight and are cool to the touch,<br>b) Landing gear is left extended for a minimum of ten minutes after takeoff,<br>c) Takeoff performance is in accordance with the AFM (Flight with Landing Gear Down), and<br>d) Takeoff is not conducted in icing conditions.<br>NOTE:<br>In case of engine failure after V1, performance is the prime consideration and the landing gear should be retracted normally until performance penalty with gear down is not a problem. Pilots must consider the effects associated with delayed raising of landing gear or lowering landing gear during operation from contaminated runways in icing conditions. |

**DISCUSSION:**

**References:** Nil

A shorter time at b) could be acceptable if substantiation is provided.

**FAA Differences**: TC*CA* does not accept the Brake Temperature Monitoring System as an equivalent system. Cat B assigned to remaining relief (cat C for FAA) since leaving the landing gear down only addresses hot brakes and does not necessarily address other fire sources.

**ITEM**: 26.11 CREW REST *FACILITY*~~AREA~~ *- BUNK* SMOKE DETECTION SYSTEM

| | | | | |
|---|---|---|---|---|
| 11. Crew Rest *Facility - Bunk*~~Area~~ Smoke Detection System | ~~C~~ | ~~1~~ | ~~0~~ | ~~(M) Provided:~~ |
| *1) Bunk* | C | - | 0 | (M) *One or more may be inoperative provided*:<br>*a) Affected bunk is placarded INOPERATIVE – DO NOT USE, and*<br>*b) Procedures are established and used to alert crewmembers.* |
| *2) Common Area* | *C* | - | *0* | *(M) May be inoperative provided:*<br>a) Crew rest area is empty,<br>b) Crew rest area door is locked and placarded ”INOPERATIVE - DO NOT ENTER”, and<br>c) Crew rest area is not used for any purpose. |

**DISCUSSION:**

**References:** Nil.

*Any in excess of certification requirements may be inoperative.*

**FAA Differences:** No FAA equivalent.

**ITEM**: 27.1 AILERON AND RUDDER TRIM INDICATORS

| | | | | | |
|---|---|---|---|---|---|
| 1. Aileron and Rudder Trim Indicators | C | - | - | (O) | ~~Provided~~*May be inoperative provided*, prior to each flight, the rudder (aileron) trim is:<br>a) Visually checked for full, free and correct movement, and<br>b) Confirmed neutral.<br>*NOTE:*<br>*The (O) procedure is required to detail the means of complying with provisos a) and b).* |

**DISCUSSION:**

**References:** ~~CAM~~*AWM* 23.677(a), 25.677(b).

*On some aircraft such as the* ~~The (O) ((M) used on~~ DHC 8-400 *the (O) procedure will not be sufficient to satisfy the provisos and an (M) procedure will be required.* ~~) procedure needs to detail how to comply with the provisos.~~

**FAA Differences:** FAA assign a cat B on DHC 8-300.

**ITEM**: 27.2 CONTROL SURFACE POSITION INDICATORS

| | | | | |
|---|---|---|---|---|
| 2. Control Surface Position Indicators<br><br>Conventional Indicators | C | 2 | 0 | (~~O~~*M*)(~~M~~*O*) ~~Provided~~*May be inoperative provided*:<br>a) The affected control surface(s) is visually checked for full, free and correct movement prior to each flight, and<br>b) The affected indicator is deactivated or covered. |
| Indication is on Multifunction Display, EICAS or ECAM Type Display | C | 2 | 0 | (~~O~~*M*)(~~M~~*O*) ~~Provided~~*May be inoperative provided*:<br>a) The affected control surface(s) is visually checked for full, free and correct movement prior to each flight, and<br>b) A placard identifying the inoperative indicator must be affixed to the instrument panel adjacent to the applicable CRT. |

**DISCUSSION:**

**References:**

There is no design requirement for control surface position indicators. However, on aircraft with powered control surfaces they are usually incorporated and may be used in the system safety analysis. The visual check prior to each flight is considered adequate compensation.

**FAA Differences:** *FAA relief is* ~~S~~*s*imilar to TCCA. Additional provisions are included by TCCA for aircraft which use multifunction displays for control surface position indicators.

**ITEM**: 27.3 CONTROL WHEEL TRIM SWITCHES

| | | | | |
|---|---|---|---|---|
| 3. Control Wheel Trim Switches | C | 2 | 1 | One may be inoperative for the pilot not flying provided the standby pitch trim system is operative. |

**DISCUSSION:**

**References:**

Relief may be granted provided a standby pitch trim system or trim wheel is available and suitably located. Trim capability through the autopilot system or a stability augmentation system is not an acceptable back–up to cater to the next failure, that is, failure of the remaining control wheel trim switch.

**FAA Differences**: Similar ~~**to FAA**~~ but TC*CA* will accept a C category.

**ITEM**: 27.4 FLAP POSITION INDICATOR

| | | | | |
|---|---|---|---|---|
| 4. Flap Position Indicator | C | 1 | 0 | ~~Provided~~*May be inoperative provided*:<br>a) Flaps are visually checked for full travel prior to each takeoff,<br>b) Flap operation is not restricted,<br>c) Flaps are visually checked for proper setting and no asymmetry prior to each takeoff, and<br>d) A *gated* flap pre-select ~~(gated)~~ system is installed. |

**DISCUSSION:**

**References:** ~~CAM~~*AWM* 23.699, 25.699

It is not considered reasonable for flight crew members to have to leave the flight deck to perform this check, nor is it considered acceptable to have other crew members perform a check for which they are not qualified. Some aircraft have visual markings on the wing structure which indicate the flap position.

Notwithstanding the paragraph above, relief has been permitted on B90 type airplanes which do not have special markings to determine flap position. Considerations in granting such relief included stall speed spread zero to full flap, simple flap system, straight wing, “benign” stall characteristics, angle of attack indication and stall warning and protection equipment.

Depending on aircraft configurations, special considerations shall be given to other systems (e.g. takeoff warning, landing gear aural warning systems, etc.) which may rely on normal flap position indicator operation.

For some large aircraft relief for one of two indicators has been permitted with no proviso.

**FAA Differences**: *FAA relief identical to TCCA.*

**ITEM**: 27.5 LIFT DUMP AND/OR DRAG DEVICE INDICATOR

| | | | | |
|---|---|---|---|---|
| 5. Lift Dump and/or Drag Device Indicator | B | 1 | 0 | *May be inoperative.* |

**DISCUSSION:**

**References:** ~~CAM~~*AWM* 525.697, *AWM 525*.699, AMA 525.697

If relief is permitted, an operational procedure may be required to detail how the function of the indicator is transferred to the pilots (e.g. checks, aircraft response, etc.).

Any warning indication, if installed, may have been required by Airworthiness Manual 525.699 or equivalent. In granting relief, consideration should be given to other reliable means to determine lift and/or drag device extension. Relief could also be given if it was shown that inadvertent deployment of the device in all flight regimes was not hazardous (see AMA 525.697).

Examples: 757, 767, MD 80 – No relief (TC Supp), A300, DC 9 – Relief permitted

**FAA Differences:** FAA has no Policy Letter but in general grants relief. TC is more stringent in application of the hazard evaluation principles encompassed in AMA 525.697.

**ITEM**: 27.6 PITCH TRIM POSITION INDICATING SYSTEM

| | | | | |
|---|---|---|---|---|
| 6. Pitch Trim Position Indicating System | C | 1 | 0 | ~~Provided~~*May be inoperative provided*, prior to each flight, the longitudinal trim is visually checked for:<br>a) Full, free and correct movement, and<br>b) Appropriate position for takeoff. |

**DISCUSSION:**

**References:** ~~CAM~~*AWM* 23.677(a), 25.677(b).

Relief is not appropriate for large aircraft, especially those with all moving stabilizers, if it is difficult to visually determine the trim position for take–off. However, some aircraft have more than one indicator and relief may be permitted provided the faulty indicator is not visible.

Consideration should be given to automatic trim systems wherein trim surface positions would be unknown if this dispatch configuration were permitted.

**FAA Differences**: *FAA relief is* ~~S~~similar.*to TCCA.*

**ITEM**: 27.7 RUDDER PEDAL ADJUSTMENT

| | | | | | |
|---|---|---|---|---|---|
| 7. Rudder Pedal Adjustment | C | 1 | 0 | (M) | ~~Provided~~*May be inoperative provided*:<br>a) The rudder pedals can be secured in a position which meets individual pilot requirements, and<br>b) Full and unrestricted movement of the rudder and brake pedal deflection is possible at both pilot stations. |

**DISCUSSION:**

**References:** Nil.

**FAA Differences**: *FAA relief is identical to TCCA.*

**ITEM**: 27.8 STALL WARNING SYSTEM

| | | | | |
|---|---|---|---|---|
| 8. Stall Warning System | B | 1 | 0 | ~~Provided~~*May be inoperative provided*:<br>a) The inoperative system is deactivated,<br>b) Flight is conducted in accordance with the AFM CG limitations, and<br>c) Flight is not conducted in known or forecast icing conditions. |

**DISCUSSION:**

**References:**

Consideration of aircraft handling qualities and stall characteristics will be a determining factor in assigning the category, a C category may be acceptable.

An inoperative stall warning system may impact other systems such as the related FAST/SLOW indicator and the stick pusher system, appropriate NOTES must be included in the MMEL.

**FAA Differences**: *FAA relief is identical to TCCA.*

**ITEM**: 27.9 TAKEOFF CONFIGURATION WARNING SYSTEM

| | | | |
|---|---|---|---|
| 9. Takeoff Configuration Warning System | 1 | 1 | *Must be operative.* |

**DISCUSSION:**

**References:** ~~CAM~~*AWM* 525.703, FAA PL 5 *(Rev. 1, Aug. 1997)*

In order to avoid accidents which result from improper takeoff configuration and because there is no reliable alternative to the takeoff configuration warning system, this item must be operative.

On aircraft which do not include the system as part of the basis of certification, relief will need to be addressed on an individual basis considering service history, etc.

**FAA Differences**: *FAA relief is similar to TCCA.* ~~.~~ FAA PL 5 specifically addresses air carrier. FAA does not include “configuration” in the title.

**ITEM**: 28.1 FUEL INDICATION SYSTEM

| | | | | |
|---|---|---|---|---|
| 1. Fuel Tank Indications | C | ~~2~~- | ~~1~~- | (O)(M) ~~Provided~~*One may be inoperative provided*:<br>a) Fuel quantity and balance is determined by other approved means prior to each flight,<br>b) Fuel flow indications are operative,<br>c) The low level warning (if fitted) is operative, and<br>d) The auto and/or manual balance system is operative. |

**DISCUSSION:**

**References:**

In general a C category is satisfactory. However, based on insufficient service experience a category B may be more appropriate.

The (O) should address in flight operations, particularly actions to be taken in the event of an engine failure to ensure the AFM fuel imbalance limitation is observed.

*For aircraft equipped with FMS calculated fuel used or fuel flow, this may be considered equivalent to fuel flow indications.*

The fuel indication for an inoperative tank is not required. For aircraft with only wet wings, i.e. no center tank, consideration should be given to dispatching such that fuel transfer is not required.

Relief has been permitted for a wing tank indication inoperative and fuel in a center tank which must be transferred to the wings.

**FAA Differences:** FAA has no Policy Letter but should accept *TCCA position*.

**ITEM**: 28.2 FUEL TRANSFER SYSTEM

| | | | | |
|---|---|---|---|---|
| 2. Center Tank Fuel Pumps | C | 2 | 1 | ~~Provided~~*One pump may be inoperative provided* tank remains empty. |
| | C | 2 | 1 | ~~Provided~~*One pump may be inoperative provided*:<br>a) Fuel quantity in main tanks is adequate to reach a suitable airport in the event the remaining pump fails,<br>b) Center tank fuel is included as part of the zero fuel weight,<br>c) Center tank quantity indication is operative,<br>d) Effect on airplane balance, in the event fuel cannot be used, is accounted for, and<br>e) Low PRESS light is operative.. |
| | *C* | *2* | *0* | *Both pumps may be inoperative provided:*<br>*a) Center tank remains empty and*<br>*b) Center tank quantity indication is operative* |

**DISCUSSION:**

**References:**

2/0 relief may be permitted but consideration must be given to leakage possibility.

**FAA Differences**: *FAA relief is* ~~S~~*s*imilar on approved MMELs. FAA has no Policy Letter but should accept *TCCA position.*.

**ITEM**: 28.3 FUEL TANK TEMPERATURE INDICATION

| | | | | |
|---|---|---|---|---|
| 3. Fuel Tank Temperature Indication | C | ~~1~~- | ~~0~~- | *May be inoperative.* |

**DISCUSSION:**

**References:**

There is no Canadian design or operational requirement. However, each aircraft will need to be evaluated as there may be a need to apply a minimum operating temperature if this indication is not available.

**FAA Differences**: FAA may give relief with operating temperature limitations based on the AFM.

**ITEM**: 28.4 FUEL TANK MEASURING STICKS

| | | | | |
|---|---|---|---|---|
| 4. Fuel Tank Measuring Sticks | C | - | 0 | ~~Provided~~*May be inoperative provided* fuel quantity is determined by other approved means. |

**DISCUSSION**

**References:** Nil.

**FAA Differences:** No FAA PL exists for this item.

**ITEM**: 28.5 MAIN FUEL TANK PUMPS

| | | | | | |
|---|---|---|---|---|---|
| 5. Main Fuel Tank Pumps | C | 4 | 3 | (O) | Not usually permitted to be inoperative for ETOPS *beyond 120 minutes* but could be justified for a specific airplane. |

**DISCUSSION:**

**References:** FAA PL 40 *(Rev. 1, Aug. 1997)*

**FAA Differences**: *FAA relief is* ~~*l*~~*identical to TCCA*~~FAA~~.

**ITEM**: 28.6 PRESSURE REFUELING SYSTEM

| | | | | |
|---|---|---|---|---|
| 6. Pressure Refueling System | C | 1 | 0 | *May be inoperative.* |

**DISCUSSION:**

**References:**

**FAA Differences:** *FAA relief is* ~~*i*~~identical to TCCA.

**ITEM**: 30.1 ANTI–ICE/DE–ICE SYSTEM TEST

| | | | | |
|---|---|---|---|---|
| 1. Anti–ice/De–ice System Test | | | | |
| *a) Airframe and Engine* | C | 1 | 0 | (M) ~~Provided~~*May be inoperative provided* an alternate means is used to confirm the system is operative prior to dispatch into known or forecast icing conditions. |
| *b) Windows and probes* | *C* | *-* | *0* | *(M) or (O) Flight or maintenance crew must physically verify window/probe heat operates normally before each departure.* |

**DISCUSSION:**

**References:**

**FAA Differences:** *FAA relief is* ~~*i*~~identical to TCCA.

**ITEM**: 30.2 ICE DETECTION SYSTEMS

| | | | | | |
|---|---|---|---|---|---|
| 2. Ice Detection Systems | C | 1 | 0 | | ~~Provided~~*May be inoperative provided* flight is not conducted in known or forecast icing conditions. |
| | C | 2 | 1 | (O) | ~~Provided~~*May be inoperative provided* wing and engine anti–icing equipment is turned on if the OAT on the ground is below +10 degrees C or in flight if the SAT is below +5 degrees C with visible moisture present. |

**DISCUSSION:**

**References:** FAA PL 40 *(Rev. 1, Aug. 1997)*

Ice detection systems are not specifically required by airworthiness standards. However, aircraft design considerations have resulted in detection systems being fitted, e.g. where there is no reliable way for the pilot to visually determine the presence of ice. In granting relief for ice detection systems, airplane service history and the effect of ice on performance and handling qualities should be considered. Depending on the service history of the airplane an additional “no night flight” restriction may be appropriate.

**FAA Differences:** *FAA relief is similar to TCCA, but the specific temperatures used in the TCCA icing definition are slightly higher than those used by the FAA.*

**ITEM**: 30.3 ICE AND RAIN PROTECTION

| | | | | |
|---|---|---|---|---|
| 3. Ice and Rain Protection | | | | |
| Airframe Anti–icing and/or De–icing System | C | 1 | 0 | ~~Provided~~*May be inoperative provided* flight is not conducted in known or forecast icing conditions. |
| Elevator Horn Heaters | C | 1 | 0 | ~~Provided~~*May be inoperative provided* flight is not conducted in known or forecast icing conditions. |
| Propeller Anti–icing and/or De–icing System | C | 1 | 0 | ~~Provided~~*May be inoperative provided* flight is not conducted in known or forecast icing conditions. |

**DISCUSSION:**

**References:** FAA PL 40 *(Rev. 1, Aug. 1997)*, *FAA PL* 94 *(Rev. Original, Aug. 1997)*

The above-mentioned alleviations must be considered in the context of each aircraft and may not be applicable in all cases. For example – at a NASA/FAA Tailplane Icing Workshop in Cleveland, Ohio (4–6 Nov. 91), which TC attended, it was recommended that inoperative deicing equipment on turbo–prop aircraft be category B versus C. This policy was implemented on the Jetstream 3101, 3201 in the Original TC Supplement, Feb. 92 in view of a Jetstream accident which was caused by tailplane icing.

Propeller or liquid paste deicer shall not be used in lieu of an operative Propeller Anti–icing and/or De–icing System except where the AFM specifically approves its use.

**FAA Differences:** *FAA relief is* ~~S~~*s*imilar to *TCCA*~~the FAA~~, except that the FAA PL does not address relief specifics such as category.

**ITEM**: 30.4 LIQUID RAIN REPELLANT SYSTEM

| | | | |
|---|---|---|---|
| 4. Liquid Rain Repellant System | | | *Relief not required if system has been deactivated or removed.* |

**DISCUSSION:**

**References:**

In accordance with Canadian environmental regulations, the fluid used in rain repellant systems is banned and these systems are to be disabled accordingly. Any associated MMEL relief must be deleted.

**FAA Differences:** FAA has never accepted a rain repellant system in lieu of a wiper system. The FAA position regarding the environmental issue is not known.

**ITEM**: 30.5 PITOT HEATERS

| | | | | |
|---|---|---|---|---|
| 5. Pitot Heaters | B | 2 | 1 | Except where enroute operations ~~including RVSM~~ require its use, may be inoperative provided:<br>a) Flight is conducted in day VMC,<br>b) Flight is not conducted in visible moisture, and<br>c) Flight is not conducted in known or forecast icing conditions. |
| | B | 3 | 2 | |

**DISCUSSION:**

**References:** ~~CAM~~*AWM* 23.1419 (b), 25.1323 (e), TP 1490E, Manual of All Weather Operations (Cat II and III), FAA PL 40 *(Rev. 1, Aug. 1997)*

The 3/2 relief applies in the case where the three *referenced* pitot systems *feed the primary airspeed and altitude indication system* ~~are redundant~~ *and not* ~~, i.e. the third pitot system cannot be a system for only~~ *the* standby instruments. *(Ie. The standby pitot heaters are considered a fourth system for this case.)* Consideration may also need to be given for architectures where there is more than one heating system for each pitot system.

**FAA Differences**: *FAA relief is* ~~i~~dentical to *TCCA*.

**ITEM**: 30.6 PITOT HEAT INDICATING SYSTEM

| | | | | |
|---|---|---|---|---|
| 6. Pitot Heat Indicating System | B | - | 0 | Except for ETOPS in excess of ~~138~~*120* minutes, may be inoperative provided:<br>a) Flight is not conducted in known or forecast icing conditions, and<br>b) All other elements of the pitot heat system are confirmed operative. |

**DISCUSSION:**

**References:** ~~CAM~~*AWM* 25.1326 (no ~~CAM~~*AWM* 23 equivalent), TCCA TP 6327 (ETOPS), FAA PL 40 (ETOPS) *(Rev. 1, Aug. 1997)*, *FAA PL* 90*(Original, Aug. 1997)*

~~CAM~~*AWM* 25.1326 requires an indication of pitot heat operation if that pitot system is a source for flight instruments. There is no need to check that "other elements of the pitot heat system are operative" if relief has been granted for those other elements (see Item 30.5).

**FAA Differences:** *FAA relief is* ~~I~~*i*dentical to TCCA. ~~TC ETOPS limit is 138 minutes rather than 120 minutes.~~

**ITEM**: 30.7 POWERPLANT ICE PROTECTION

| | | | | |
|---|---|---|---|---|
| 7. Engine Intake Anti–icing and/or De–icing System | C | ~~2~~- | ~~1~~- | ~~Provided~~*One engine system may be inoperative provided* flight is not conducted in known or forecast icing conditions. |

**DISCUSSION:**

**References:** Letter 5011–1 (AARDD) dated 9 Nov 88, TC TP 6327 (ETOPS), FAA PL 40 (ETOPS) *(Rev. 1, Aug. 1997)*

Relief for the Engine Intake Anti–icing and/or De–icing System can only be permitted if satisfactory resistance to icing with the protection system inoperative has been demonstrated during the certification program. Powerplant instrument probes requiring ice protection must also be considered.

No relief for ETOPS if inoperative closed. Relief has been granted for a valve open with several performance related provisos (see B 767).

**FAA Differences:** *FAA relief is* ~~i~~identical to TCCA

**ITEM**: 30.8 STATIC SOURCE HEATERS

| | | | | |
|---|---|---|---|---|
| 8. Static Source Heaters | B | 2 | 1 | Except where enroute operations ~~including RVSM~~ require its use, one may be inoperative provided flight is not conducted in known or forecast icing conditions. |

**DISCUSSION:**

**References:** ~~CAM~~*AWM 5*23.1325(b)(3), *AWM 5*25.1325(b), FAA PL 40 *(Rev. 1, Aug. 1997)*

At least one static source must be heated unless it was confirmed during icing certification that icing in flight had no effect on static sources.

*The prohibition of flight into known or forecast icing conditions includes ground operations where ice and slush may be splashed onto the static sources. (See TCCA icing definition in applicable AFM).*

~~CAM~~*AWM* 25.1325(b) requires that the instruments which require static pressure operate normally even when the airplane is exposed to icing conditions. Because of their location and as determined during certification flight tests, it may be that static sources are unaffected by flight in icing.

**FAA Differences**: *FAA relief is* ~~–~~*i*dentical to TCCA.

**ITEM**: 30.9 TOTAL AIR TEMPERATURE (TAT) PROBE HEATER SYSTEM

| | | | | | |
|---|---|---|---|---|---|
| 9. Total Air Temperature (TAT) Probe Heater System | C | 1 | 0 | (O) | Except for ETOPS beyond 120 minutes, all may be inoperative provided flight is not conducted in known or forecast icing conditions. |

**DISCUSSION:**

**References:** FAA PL 40

**FAA Differences**: *FAA relief is ~~i~~*identical to ~~F~~*TCCA*~~AA~~.

**ITEM**: 30.10 WING DEICER BOOT ADVISORY INDICATIONS

| | | | | |
|---|---|---|---|---|
| 10. Wing Deicer Boot Advisory Indications | C | - | 0 | ~~Provided~~*May be inoperative provided*:<br><br>a) Boot operation is monitored visually from the flight deck, and<br><br>b) The appropriate wing inspection light(s) (or alternate means) are operative for night operations. |

**DISCUSSION:**

**References:**

**FAA Differences:** No FAA PL available for this item.

**ITEM**: 30.11 WINDSHIELD WIPERS

| | | | | |
|---|---|---|---|---|
| 11. Windshield Wipers | C | 2 | 0 | One or both may be inoperative provided flight is not conducted in precipitation within five nautical miles of the airport of take–off or intended landing. |
| Low Speed | C | 1 | 0 | ~~Provided~~*May be inoperative provided* high speed is operative. |
| *High Speed* | *C* | *1* | *0* | *May be inoperative provided the low speed is operative.* |
| Park Function | C | 1 | 0 | ~~Provided~~*May be inoperative provided* the wipers can be parked out of the pilots' view. |

**DISCUSSION:**

**References:** ~~CAM~~*AWM* 523.773; *AWM* 525.773.

If an alternate means was certified then the five nautical mile restriction may not apply. For Airbus products relief for one inoperative on the pilot-not-flying side has been permitted for three flights with no "five nautical mile restriction". However, this relief is not considered appropriate in view of the *requirements of AWM 525.773 and has been deleted from this item.* ~~References and needs to be resolved.~~

**FAA Differences:** FAA has no Policy Letter but *the FAA airworthiness requirements for this item* ~~relief~~ *are identical to the TCCA requirements.* ~~appears to be identical. FAA is not clear as to the relief for one inoperative.~~

**ITEM**: 30.12 WINDSHIELD/WINDOW HEATERS

| | | | | | |
|---|---|---|---|---|---|
| *12. Windshield/Window Heaters* | | | | | |
| *Forward Facing Windows*~~12. Windshield/Window Heaters~~ | C | ~~3~~ | ~~2~~ | *(M)* | One may be inoperative provided*:* ~~flight is not conducted in known or forecast icing conditions.~~<br>*a) Flight is not conducted in known or forecast icing conditions,*<br>*b) Associated windshield pneumatic anti-fog system (if installed) operates normally, and*<br>*c) Associated window heat is deactivated.* |
| *Side Facing Windows* | *C* | *2* | *0* | *(M)* | *One or both may be inoperative provided the associated window heat is deactivated.* |
| | ~~A~~ | ~~3~~ | ~~1~~ | | ~~Two may be inoperative for three flight days provided flight is not conducted in known or forecast icing conditions.~~ |

**DISCUSSION:**

**References:** ~~CAM~~*AWM* 523*.773, AWM 523.775,* ~~and~~ *AWM* 525.773 (b)*, AWM 525.775*, FAA PL 40 *(Rev. 1, 1997)*

If the pilot's side window is not openable but has been shown during certification to be equivalent to a Direct Vision (DV) window, relief for its heating must not be permitted, (see RJ MMEL).

Relief has been permitted for all heaters to be inoperative with the defog system operative and no flight in icing. This sort of relief will be aircraft dependant.

**FAA Differences:** FAA has no Policy Letter but relief appears to be identical *to TCCA*.

**ITEM**: 31.1 CLOCK

| | | | | |
|---|---|---|---|---|
| 1. Clock | C | - | - | Aircraft clock may be inoperative provided a reliable and functioning timepiece is readily available to all flight deck crew members. |

**DISCUSSION:**

**References:** CAR 602.59(2)(f), ~~CAM~~*AWM* 525.1303(a)(2) (no *AWM* 523 requirement)

Consideration must be given to clock inputs into other aircraft systems.

**FAA Differences:** FAA makes reference to VFR and IFR when granting relief.

**ITEM**: 31.2 ENGINE INDICATING AND CREW ALERTING SYSTEM (EICAS)

| | | | |
|---|---|---|---|
| 2. Engine Indicating and Crew Alerting System (EICAS) | - | - | See DISCUSSION. |

**DISCUSSION:**

**References:** FAA PL 25 *(Rev. 10, Oct. 2000)*

Relief for some aspects of the EICAS has been granted for aircraft such as the B 767 and B 747 as category A, one flight day. This relief has been accepted unchanged by Transport Canada. Relief for the RJ has been permitted for one of the two Engine Displays as a category B.

Relief will be aircraft specific depending on failure analysis, next failure, reversion capabilities, etc.

**FAA Differences:** *FAA relief is ~~i~~*identical to TCCA.

**ITEM**: 31.3 FLIGHT DATA RECORDER

| | | | | | |
|---|---|---|---|---|---|
| 3. Flight Data Recorder | | | | | |
| If FDR and CVR required by regulations: | A | 1 | 0 | *(O)* | ~~Provided~~*May be inoperative provided*:<br>a) Cockpit Voice Recorder is *verified* operative, and<br>b) Repairs are made within three flight days. |
| If only FDR required by regulations: | A | 1 | 0 | | ~~Provided~~*May be inoperative provided* repairs are made within three flight days. |
| *Digital FDR Recording Parameters required by regulations.* | *A* | - | - | | *May be inoperative provided:*<br>*a) Cockpit Voice Recorder is operative, and*<br>*b) Repairs are made within twenty calendar days.* |
| Digital FDR Recording Parameters not required by regulations. | A | - | - | | May be inoperative provided repairs are made before the completion of the next heavy maintenance visit. |
| If not required by regulations: | D | 1 | 0 | | |

**DISCUSSION:**

**References:** CAR 605.33, *CAR 605*.34, *CAR* 625.33, FAA PL 87 *(Rev. 4, Oct. 2000)*

The MMEL may contain all relief options. The MEL shall reflect the correct situation for each specific aircraft/operation.

**FAA Differences:** FAA PL 87 has incorporated the statement to the effect that dispatch is not permitted from an airport where repairs can be made, but TC does not wish to return to this convention. The FAA PL also refers to air carrier. TC includes some cat D relief for an FDR which is not required.

***ITEM**: 31.4 AURAL WARNING SYSTEMS*

| | | | |
|---|---|---|---|
| *4. Aural Warning Systems* | | | *Must be operative.* |

***DISCUSSION:***

***References:***

***FAA Differences:*** *FAA relief is identical to TCCA.*

**ITEM**: 32.1 PARKING BRAKE

| | | | |
|---|---|---|---|
| 1. Parking Brake | 1 | 1 | See DISCUSSION. |

**DISCUSSION:**

**References:** ~~CAM~~*AWM 5*25.735(d) (no ~~CAM~~*AWM 5*23 equivalent), FAA PL 92 *(Original, Aug. 1997)*

If relief is granted, the crew would be unable to set the parking brake following an engine fire on the ground as part of the evacuation procedure if this emergency procedure is in the AFM. The parking brake must be operative on Part 25 airplanes.

Although there is no ~~CAM~~*AWM* 523 requirement, prior to granting relief, consideration should be given to service experience, related accidents or incidents and single or two pilot operation.

**FAA Differences:** *FAA relief is i*~~l~~dentical to TCCA.

**ITEM**: 33.1 FLIGHT COMPARTMENT AND INSTRUMENT LIGHTING SYSTEM

| | | | | |
|---|---|---|---|---|
| 1. Cockpit and Instrument Panel Lighting System | C | - | - | Individual lights may be inoperative provided remaining lights are:<br>a) Sufficient to clearly illuminate all required instruments, controls and other devices for which it is provided,<br>b) Positioned so that direct rays are shielded from flight crew member's eyes, and<br>c) Lighting configuration and intensity is acceptable to the flight crew. |
| | D | - | 0 | May be inoperative for day operations. |

**DISCUSSION:**

**References:** ~~CAM~~*AWM 5*23.1381; *AWM 5*25.1381, FAA PL 77 *(Rev. 1, Aug.1997)*

Due to higher workload considerations, extra care may be required in permitting dispatch with reduced lighting for single pilot aircraft.

Consideration must be given such that adequate lighting will be available following any subsequent single in-flight electrical or lighting failure.

**FAA Differences:** TCCA adds cat D relief.

**ITEM**: 33.2 EMERGENCY LIGHTING, EXTERNAL

| | | | | | |
|---|---|---|---|---|---|
| 2. Emergency Lighting, External | C | - | 0 | | May be inoperative for day operations.<br><br>Some relief may be acceptable for night operations provided certification has been shown with the reduced lighting. |
| | A | - | 0 | (O) | May be inoperative for one flight day provided:<br><br>a) Aircraft crew are the only occupants of the aircraft, and<br><br>b) Alternate procedures for that aircraft type are established and used.<br><br>NOTE~~S~~:<br><br>~~1. For the purposes of this item, "aircraft crew" means the operating crew members including the flight crew members, flight attendants, aircraft maintenance personnel and supervisory crew members.~~<br><br>~~2~~*1*. The operators MEL must state the maximum number of aircraft crew permitted. |

**DISCUSSION:**

**References:** ~~CAM~~*AWM* 25.812

NOTE #1 requires the operator to state the maximum number of aircraft crew permitted. The maximum number of aircraft crew would be determined by adding the number of the operating crew members that would likely be scheduled on that aircraft type, plus the number of maintenance personnel who would likely be scheduled to remain with the aircraft when flying to destinations where the air operator does not have any contracted maintenance agreement, plus the maximum number of supervisory crew members who would likely be carrying out an in-flight check ride at one time.

For some northern operations, because of local geographical features and low light conditions, this relief may not be appropriate in that it would be too alleviating. The MEL will need to provide the appropriate relief.

**FAA Differences:** FAA has no Policy Letter. FAA assigns a category B whereas TC assigns a category C. TC also permits more flexibility by granting one flight day relief with no provisos other than aircraft crew only. This is considered an acceptable risk in view of the aircraft crew's familiarity with emergency exits and emergency procedures training. While some might argue that a category D would be appropriate, the external emergency lighting is considered generally necessary for crew as well as passengers, hence the cat A relief.

**ITEM**: 33.3 EMERGENCY LIGHTING, INTERNAL

| | | | | | |
|---|---|---|---|---|---|
| 3. Emergency Lighting, Internal | | - | - | | Must be operative. |
| | C | - | - | | Individual light bulbs, etc. may be inoperative provided compliance is shown with minimum acceptable lighting as required by certification documents. |
| *Crew Rest Facility - Bunk* | *D* | - | - | *(M)* | *May be inoperative provided:*<br>*a) Crew Rest Facility – Bunk is not occupied, and*<br>*b) Crew Rest Facility – Bunk is placarded "INOPERATIVE – DO NOT USE".* |

**DISCUSSION:**

**References:** ~~CAM~~*AWM* 25.812.

As the proviso requires that the certification standard be met, category C is acceptable.

Although it could be argued that crew familiarity with the aircraft and flashlight availability might compensate for inoperative emergency lighting, it is necessary that all on board be able to locate and operate exits, which might include a smoke filled aircraft during day operations. Therefore, relief for all cargo operations has been deleted.

The certification documents referenced in the proviso must be obtained from the aircraft manufacturer or the holder of the Supplemental Type Certificate, whoever installed the lighting system.

**FAA Differences:** FAA *relief is* ~~S~~*s*imilar to TCCA.

**ITEM**: 33.4 FLOOR PROXIMITY *EMERGENCY ESCAPE PATH MARKINGS* ~~LIGHTING~~

| | | | | | | |
|---|---|---|---|---|---|---|
| 4. | Floor Proximity *Emergency Escape Path Markings* ~~Lighting System~~ | ~~C~~ | 1 | 1 | | *System* must be operative. ~~Individual lights may be inoperative provided compliance is shown with minimum acceptable lighting as required by certification documents.~~ |
| | *Electrical Lighting Systems* | *C* | *-* | *-* | | *Individual lights may be inoperative provided compliance is shown with minimum acceptable lighting as required by certification documents.* |
| | *Photoluminescent Tape Systems* | *C* | *1* | *-* | | *Specified sections of the photoluminescent tape may be inoperative provided compliance is shown with minimum acceptable lighting as required by certification documents.* |
| | All Cargo Operations. | D | 1 | 0 | *(O)* | *May be inoperative.* |

**DISCUSSION:**

**References:** CAR 705.16, .78, ~~CAM~~*AWM* 25.812 (e).

As the proviso requires that the certification standard be met, category C is acceptable *for either system*. *For the electrical lighting systems, the MMEL and MEL must identify the lamps that may be inoperative based on the certification tests.* ~~The manufacturer must identify what lamps may be inoperative based on certification tests. The details of the relief must be determined during the writing of the MMEL so that this information is readily available to the authors of the MELs.~~

*Similarly, for the photoluminescent tape systems, whether installed on the aircraft as a modification or during the aircraft certification process, certification information including the following must be determined and included in the MMEL and MEL: The maximum total length of tape that can be inoperative, The maximum length of each inoperative section of tape, The condition that the tape section on the adjacent side of the aisle must be operative, and The condition that the inoperative tape is not adjacent to the wing exit or door marking strip.*

CAR 705.16 provides some exemptions to CAR 705.78 regarding the number and functions of crew members who may be carried on-board in addition to flight crew members. In cases where additional crew members are carried on-board and can not be accommodated in flight deck seats, then they shall have access to the most convenient, readily accessible and operative passenger emergency exit. The internal emergency pathway lighting from the exit shall be operative and the emergency lights on the escape assist device (inflatable slide or stairs) shall be operative.

**FAA Differences:** This item will usually be included in a TC Supplement since the FAA wording refers to specific certification documents which may not be applicable in Canada. *However,* ~~it is also noted the FAA certification regarding which lights might be inoperative would normally be accepted.~~ *the FAA certification findings are normally accepted when they are specific enough to identify which lights or tape sections may be inoperative.*

**ITEM**: 33.5 LOGO LIGHTS

| | | | | |
|---|---|---|---|---|
| 5. Logo Lights | D | - | 0 | *May be inoperative.* |

**DISCUSSION:**

**References:**

**FAA Differences:** *FAA relief is i*~~*l*~~dentical to TCCA.

**ITEM**: 33.6 LANDING/TAXI LIGHTS

| | | | | |
|---|---|---|---|---|
| 6. Landing/Taxi Lights | C | - | - | As required by regulations. |
| | D | - | 0 | May be inoperative for day operations. |

**DISCUSSION:**

**References:** ~~CAM~~*AWM 5*23.1383; *AWM 5*25.1383, CAR 605.16(1)(i)*, CAR* 702.42*, CAR* 703.64*, CAR* 704.62(3)*, CAR* 705.68

CAR 705 requires two landing lights for night operations whereas the other referenced CARs require only one light. The design standard does not require landing and taxi lights but only addresses what needs to be accomplished for certification. During certification it must be demonstrated by flight test that the lighting configuration (landing and/or taxi lights) anticipated for dispatch is acceptable. There is no need to cater in the MMEL to the next failure after dispatch since the consequences will be different depending on the type of operation. The MEL may need to be more restrictive (e.g. dispatch for 705 operator would require three lights and for the other operations would require two) depending on the operation, i.e. operating into poorly lit airports. Manufacturers may also wish to limit the dispatch configuration for reasons such as reliability.

**FAA Differences:** *FAA relief is s*~~S~~imilar to TCCA.

**ITEM**: 33.7 ANTI–COLLISION LIGHT SYSTEM

| | | | | | |
|---|---|---|---|---|---|
| 7. | Anti–Collision Light System, Lights | C | 4 | 2 | Either upper and lower red fuselage strobe lights or white wing tip strobe lights may be inoperative. |
| | | C | 4 | 0 | May be inoperative for day operations. |

**DISCUSSION:**

**References:** ~~CAM~~*AWM 5*23.1401; *AWM 5*25.1401

Although there is no operating regulation, it is general practice to use the rotating beacon type anti–collision light(s) as an indication of engine(s) running on the ground. Therefore once installed, even if it was not required by the design standard, a category C is considered appropriate. The example relief is from the B767 which TC*CA* has accepted unchanged.

Some aircraft may have strobe lights installed which are equivalent to an approved rotating beacon system. These aircraft may also have a rotating beacon(s) with the strobe, where the rotating beacon(s) does not meet the anti-collision lighting requirements. Relief will be granted accordingly.

**FAA Differences:** *FAA relief is* ~~i~~dentical to TCCA.

**ITEM**: 33.8 POSITION LIGHT SYSTEM

| | | | | |
|---|---|---|---|---|
| 8. Position Light System Light Bulbs | C | ~~6~~- | 3 | One bulb at each position (wing tip*s* and aft) must be operative. |
| | C | ~~6~~- | 0 | May be inoperative for day operations. |

**DISCUSSION:**

**References:** ~~CAM~~*AWM 5*23.1385 *to AWM –523.*1397; *AWM 5*25.1385 *to –AWM 525.*1397, CAR 605.17, FAA PL 91*(Original, Aug. 1997)*

Relief may be given for one bulb (of 2) for each of the position lights (left/right wingtip plus tail). Relief may be worded differently to reflect a specific aircraft configuration, e.g. B767.

A strobe light in close proximity to the tail position light may not be an acceptable substitute, since strobes are often turned OFF on the ground because of their high intensity.

**FAA Differences:** The FAA PL only addresses the issue of substituting a strobe light for an inoperative tail position light.

**ITEM**: 33.9 NO SMOKING/FASTEN SEAT BELT/RETURN TO CABIN LIGHTS

| | | | | | |
|---|---|---|---|---|---|
| 9. No Smoking/Fasten Seat Belt/Return to Cabin Lights | C | - | - | (M)(O) | Passenger seats, flight attendant seats or lavatories from which a light is not readily legible shall not be occupied and must be blocked and placarded ”DO NOT OCCUPY”. |
| | C | - | - | (O) | The affected seats or lavatories may be occupied provided:<br>a) The crew call/cabin interphone system including associated chimes and PA system are operative, and<br>b) Procedures are established and used to alert flight attendants and notify passengers when seat belts should be fastened and smoking prohibited.<br>For aircraft with 19 or fewer seats (e.g. Beech BE–300) only the b) proviso is necessary. |
| | A | - | - | (O) | May be inoperative for one flight day for non-passenger carrying operations provided:<br>a) Crew members are the only occupants of the aircraft, and<br>b) Alternate procedures are established and used. |
| *Aural Tone Function* | C | - | 0 | (O) | ~~Aural tone function m~~*May be inoperative provided alternate procedures are established and used*. |
| *Automatic Function* | C | - | 0 | (O) | ~~Automatic function m~~*May be inoperative* provided:<br>a) Manual control function is operative, and<br>b) Alternate procedures are established and used. |
| All Cargo Operations. | D | - | 0 | | *May be inoperative* ~~P~~*p*rovided all crew members are on the flight deck. |

**ITEM**: 33.9 NO SMOKING/FASTEN SEAT BELT/RETURN TO CABIN LIGHTS (cont'd)

**DISCUSSION:**

**References:** CAR 705.16 (3)(c) and (d)

For non-passenger carrying flights conducting operations in an air transport service pursuant to Airline Operations regulated by CAR 705, alternate procedures referred to in proviso b) must be in compliance with the requirements or CAR 705.16 (3)(c) and (d).

*Consideration should be given to the applicability of this requirement to the Crew Rest Facility – Bunk as a crew member may be changing clothes, etc.*

For clarification it is noted that this item refers to lights whereas item 25.3 addresses signs and placards.

**FAA Differences:** *FAA relief is* ~~S~~similar to TCCA.~~Some simplification with respect to previous TC wording in order to harmonize with FAA. Revised relief permits crew members in addition to flight crew members to be carried on board with the entire system inoperative.~~

**ITEM**: 33.10 PASSENGER COMPARTMENT LIGHTING

| | | | | |
|---|---|---|---|---|
| 10. Passenger Compartment Lighting | C | - | - | Must be sufficient for crew members to perform their duties. |

**DISCUSSION:**

**References:**

For cargo and non-passenger carrying operations there must be sufficient lighting for the inspection of cargo for the verification of cargo restraint or for fire fighting purposes.

Passenger compartment means all except flight deck and cargo areas.

**FAA *Differences:*** FAA has no guidance but relief is similar.

**ITEM**: 33.11 STROBE LIGHT (OR HIGH INTENSITY) SYSTEM

| | | | | |
|---|---|---|---|---|
| 11. Strobe Light (or High Intensity) System | C | - | 0 | *May be inoperative.* |

**DISCUSSION:**

**References:**

Although there is no Canadian operational regulation, once installed it is in the interest of safety to have the system operative. A category C is considered an acceptable compromise in order to not discourage such an installation.

**FAA Differences:** FAA does have an operational requirement for strobes, therefore is more restrictive for night operations; and assigns a cat C.

**ITEM**: 33.12 WING INSPECTION (ICE) LIGHTS

| | | | | |
|---|---|---|---|---|
| 12. Wing Inspection (Ice) Lights | C | 2 | 0 | One or both may be inoperative provided a portable lamp/light of adequate capacity for wing and/or control surface inspection is available for night operations in icing conditions. |
| | C | 2 | 0 | One or both may be inoperative provided flight is not conducted in known or forecast icing conditions at night. |
| | C | 2 | 0 | One or both may be inoperative for day operations. |
| For passenger and cargo airplanes where view of the wing surfaces from the flight deck is restricted. | C | 2 | 0 | One or both may be inoperative provided ground deicing procedures do not require their use. ~~, and a portable lamp/light of adequate capacity for wing and/or control surface inspection is available for night operations in icing conditions.~~ |
| | C | 2 | 0 | One or both may be inoperative for day operations. |

**DISCUSSION:**

**References:** ~~CAM~~*AWM* 525.1403, FAA PL 72 *(Rev. 2, Aug. 1997)*

**FAA Differences:** *FAA relief is* ~~i~~*i*dentical to TCCA. FAA PL 72 only *applies to* ~~addresses the ground de-icing/wing visibility issue and only for~~ air carrier aircraft.

***ITEM**: 33.13 CREW REST FACILITY -BUNK INTERIOR LIGHTING*

| | | | |
|---|---|---|---|
| *13. Crew Rest Facility - Bunk Interior Lighting* C | - | - | *One or more lights may be inoperative provided*<br>*a) A minimum of one light operates in common area, and*<br>*b) Emergency lighting system operates normally.* |

***DISCUSSION:***

***References:***

***FAA Differences:** No FAA PL exists for this item.*

**ITEM**: 34.1 ALTITUDE ALERTING SYSTEM

| | | | | | |
|---|---|---|---|---|---|
| 1. Altitude Alerting System | A | 1 | 0 | (O) | Except where enroute operations~~,~~ ~~including RVSM,~~ require its use, may be inoperative provided:<br>a) Autopilot altitude hold is operative, and<br>b) Repairs are made within three flight days. |
| | D | 2 | 1 | | *One may be inoperative.* |
| If not required by design standard and no autopilot installed. | C | 1 | 0 | (O) | May be inoperative. |

**DISCUSSION:**

**References:** CAR 605.36, FAA PL 39 *(Rev. 3, Mar. 2001), FAA PL 84 (Rev. 1, Aug. 1997)*

The (O) must address increased altitude awareness.

Although there may be no requirement for an altitude alerting system in some aircraft, once installed, a category C is considered appropriate for pilot dependency and safety reasons. These aircraft may not have an autopilot installed in which case the autopilot would not be a condition of relief. For aircraft which have more than one altitude alerting system, a category D is assigned to the excess equipment.

**FAA Differences:** FAA does not address aircraft which do not require this equipment by design standard. ~~A category assigned to smaller (FAR 23 and SFAR 41) aircraft is inconsistent. FAA assigns a cat C to excess equipment. FAA PL does not address enroute operations.~~

**ITEM**: 34.2 FLIGHT DIRECTOR

| | | | | |
|---|---|---|---|---|
| 2. Flight Director | C | - | 0 | Except where enroute operations~~,~~ ~~including RVSM,~~ require its use, may be inoperative provided:<br>a) Approach procedures are not dependent on its use, and<br>b) Autopilot is considered inoperative,<br>c) Windshear escape guidance is considered inoperative, and<br>d) TOGA switches are considered inoperative.<br>~~NOTE:~~<br>~~Windshear escape guidance will be inoperative. However, all remaining windshear functions will be available.~~ |

**DISCUSSION:**

**References:** TP 1490E Manual of All Weather Operations (Categories II and III)

*The C category may be upgraded to an A or B at the MEL level based on operational considerations such as the amount of reliance that is placed on the FD and the level of training with the FD inoperative.*~~-~~

AFM will identify any approaches which cannot be flown if the FD is inoperative as a result of certification flight tests. This relief is copied from the RJ MMEL. The 2/1 relief would only include provisos a) and b).

**FAA Differences:** No FAA *PL exists for this item.* ~~identical on RJ.~~

**ITEM**: 34.3 FLIGHT INSTRUMENTS

| | | | | |
|---|---|---|---|---|
| 3. Flight Instruments | | | | |
| Standby Attitude Indicator | | | | |
| If required by regulation | B | 1 | 0 | May be inoperative for day VMC provided *the instrument face* ~~it~~ is covered. |
| If not required by regulation | | | | |
| (e.g. some SA 227 models) | C | 1 | 0 | ~~Provided~~*May be inoperative provided* an EADI is not installed. |
| (if no gyroscopic rate of turn indicator) | C | 1 | 0 | May be inoperative for day VMC. |
| Turn and Slip Indicators | C | 2 | 0 | May be inoperative for day VFR. |
| | C | 2 | 1 | |

**DISCUSSION:**

**References:** ~~CAM~~*AWM 5*23*.1303* and *AWM 5*25.1303, *AWM 525.*1321, *AWM 525.*1525, CAR~~s~~ 605.14, *CAR 605*.16, *CAR 605*.18, *CAR 605*.41; *CASS* 625.41, FAA PL 30 *(Rev. 1, Aug. 1997)*

No relief for standby airspeed indicator or standby altimeter, if they were required by certification.

~~CAM~~*AWM 5*23 and *5*25 .1303 and .1321 list the flight instruments and navigation equipment which must be installed at each pilot station. ~~CAM~~*AWM* 523 and 525 .1525 state that the kind of operation to which the airplane is limited is established by the category in which it is eligible for certification and by the installed equipment.

The CARs contain operational requirements regarding flight instruments. In reviewing the operational and airworthiness requirements it may be possible to permit some instrument alleviation (not for basic 'T') with restrictions e.g. day VFR, single pilot, etc. Flight instruments in the basic "T" (airspeed, attitude, altitude and heading) must be installed and operative at each pilot station as required by the applicable regulations. Alternate instrument location or alternate means of display such as "compacted modes" or standby instruments will not be considered unless certified as a primary means of display.

For smaller aircraft operated single pilot, relief for right side T instruments has been granted with certain restrictions. Operational considerations or requirements may be more restrictive and could be reflected in the MEL. If two pilots are required, then two sets of primary flight instruments are considered necessary.

It is noted that some European manufacturers grant relief for T instruments and the TC Supp will need to be amended accordingly.

**FAA Differences:** FAA sometimes includes operational regulation details in the relief.

**ITEM**: 34.4 GROUND PROXIMITY WARNING SYSTEM

| | | | | | |
|---|---|---|---|---|---|
| 4. Ground Proximity Warning System *– If Required by Regulations.* | *A* | *-* | *0* | *(O)* | *May be inoperative provided:*<br>*a) Alternate procedures are established and used, and*<br>*b) Repairs are made within three flight days.* |
| ~~If required by regulations~~ | | | | | |
| 1) Modes 1 to 4 | A | - | 0 | (O) | May be inoperative provided:<br>a) Alternate procedures are established and used, and<br>b) Repairs are made within three flight days. |
| 2) Test Mode | A | 1 | 0 | | May be inoperative provided:<br>a) The GPWS is considered inoperative, and<br>b) Repairs are made within three flight days. |
| 3) Glideslope Deviation (Mode 5) | B | 2 | 0 | | One or both may be inoperative. |
| 4) Advisory Callouts *** | C | - | 0 | (O) | May be inoperative provided alternate procedures are established and used. |
| 5) Windshear Mode *** | C | - | 0 | (O) | May be inoperative provided*:* ~~alternate procedures are established and used.~~<br>*a) Alternate procedures are established and used, and*<br>*b) Windshear Detection and Avoidance System operates normally.* |
| | *C* | *-* | *0* | *(O)* | *May be inoperative provided:*<br>*a) Alternate procedures are established and used, and*<br>*b) Takeoffs and landings are not conducted in known or forecast windshear conditions.* |
| 6) *TAWS (*Enhanced GPWS*)* *** | C | - | 0 | | *May be inoperative.* |

**ITEM**: 34.4 GROUND PROXIMITY WARNING SYSTEM (cont'd)

| | | | | |
|---|---|---|---|---|
| 4. *Ground Proximity Warning System – If Not Required by Regulations*.~~If not required by regulations.~~ | D | - | 0 | *May be inoperative.* |

**DISCUSSION:**

**References:** CAR~~s~~ 605.37; *CAR* 705.78, FAA PL 54 *(Rev. 6, Jan. 2001)*

This relief is predicated on the air carrier's development and use of a flight crew operational procedure for increased aircraft altitude and performance awareness.

If there is no CAR requirement for a GPWS in an aircraft and no pilot dependency argument, category D may be appropriate. However, because of the strong safety argument it is recommended that a foreign category C be retained and the relief not be automatically downgraded to a D.

**FAA Differences:** TCCA grants three flight days for repair whereas the FAA permits only two.

**ITEM**: 34.5 *NON-STABILIZED* MAGNETIC COMPASS ~~(STANDBY)~~

| | | | | | |
|---|---|---|---|---|---|
| 5. *Non-stabilized* Magnetic Compass ~~(Standby)~~ | B | 1 | 0 | *(O)* | May be inoperative provided any combination of three gyro or INS(IRU) stabilized compass systems are operative. |
| | B | 1 | 0 | *(O)* | May be inoperative provided:<br>a) Any combination of two gyro or INS(IRU) stabilized compass systems ~~are~~ operat*e normally*~~ive~~, and<br>b) Aircraft is operated:<br>(1) With dual independent navigation capability, and<br>(2) Under positive radar control by ATC during the en-route flight phase, or one of the navigation systems is a TSO'd GPS which provides track information. |
| | C | - | - | (O) | May be inoperative for flights that are entirely within areas of magnetic unreliability provided at least two stabilized directional gyro systems are installed, operative and used in conjunction with approved free gyro navigation techniques. |

**DISCUSSION:**

**References:** CAR 605.14, FAA *PL* 10 *(Rev. 1, Aug. 1997)*

Takes into account operators who have updated equipment and/or operate in areas where magnetic information is unreliable.

**FAA Differences:** TCCA adds the possibility of GPS in place of positive radar control. FAA does not include INS(IRU) in a). FAA is cat B for third option.

**ITEM**: 34.6 NAVIGATION AND APPROACH AID EQUIPMENT

| | | | | |
|---|---|---|---|---|
| 6. Navigation and Approach Aid Equipment | | | | |
| VOR/ILS, | C | - | - | Any in excess of those required by regulations and not powered by an emergency or standby electrical bus may be inoperative. |
| ADF, DME~~, Marker Beacon~~ Systems | D | - | - | Any in excess of those required by regulations may be inoperative. |
| GPS, FMS, MLS, INS, LORAN, *Marker Beacons* | | | | |
| If used routinely | C | - | - | May be inoperative provided alternate procedures are established and used. |
| If not used routinely | D | - | - | May be inoperative provided routine procedures do not require its use. |
| Wording for the FMS where RNP operations have been approved | C | - | - | Except where enroute operations require its use, may be inoperative provided alternate procedures are established and used. |
| ***GPS/FMS Enroute Data Base*** | *C* | - | - | *May be out of currency provided:*<br>a) *Current Aeronautical Charts are used to verify Navigation Fixes prior to dispatch,*<br>b) *Procedures are established and used to verify status and suitability of Navigation Facilities used to define route of flight, and*<br>*c*) *Approach Navigation Radios are manually tuned and identified.* |
| *GPS/FMS Approach Data Base* ~~GPS/FMS Data Base~~ | C | - | - | *May be out of currency provided approaches are not conducted using associated system.*~~May be out of currency provided:~~<br>~~Current Aeronautical Charts are used to verify Navigation Fixes prior to dispatch,~~<br>~~Procedures are established and used to verify status and suitability of Navigation Facilities used to define route of flight, and~~<br>~~Approach Navigation Radios are manually tuned and identified.~~ |

**ITEM**: 34.6 NAVIGATION AND APPROACH AID EQUIPMENT (cont'd)

**DISCUSSION:**

**References:** CAR 605.18, *FAA AC 20-138, FAA AC 20-130A,* FAA~~——~~ *PL* 3 *(Rev. 1, Aug. 1997)*~~(DME)~~, *PL* 63 *(Rev. 2, Aug. 1997*~~(Emergency Equipment)~~, *PL* 98 *(Original, Jan. 1999)*~~(Navigation Database)~~

Items such as VOR, ILS, GPS, etc., serve as primary navigation and approach aid equipment in Canada and a cat C is considered appropriate.

Cat D equipment may or may not be installed and/or used by an operator. The MEL must reflect, through categorization, the nature of a specific operation (e.g. pilot dependency, frequency of use, etc.). TC has adopted a cat C for Out-of Date Data Base information as per the FAA policy.

**FAA Differences:** FAA PL 3 only addresses DME. TCCA policy on Navigation Database *includes the FAA AC 20-138 and 20-130A guidance whereas this material is not yet included in*~~identical to~~ FAA PL 98.

**ITEM**: 34.7 OUTSIDE AIR TEMPERATURE (or equivalent)

| | | | | |
|---|---|---|---|---|
| 7. Outside Air Temperature (or equivalent) | N/A | - | - | See DISCUSSION. |

**DISCUSSION:**

**References:**

Some indication of ambient temperature is required in order to determine icing conditions as well as correct power settings. Conversion charts may be required depending on temperature indication and format of performance information.

**FAA Differences:** *FAA relief is ~~i~~*identical to TCCA.

**ITEM**: 34.8 RADIO ALTIMETER

| | | | | |
|---|---|---|---|---|
| 8. Radio Altimeter | C | - | 0 | May be inoperative provided approach minimums or operating procedures are not dependent on its use. |

**DISCUSSION:**

**References:**

Consideration should be given to other equipment which may require radio altimeter information, e.g. ILS, Autoland, GPWS, TCAS, Master Warning/Master Caution inhibits, Stick pusher inhibits. If there is other system dependency, the repair category of that other system will govern the radio altimeter repair category. *(for example, if the radio altimeter is a required input to another system such as the GPWS, the repair interval for the GPWS should be applied to the radio altimeter).*

Although the radio altimeter may not be required, once installed it is available to the pilots and there is some pilot dependency. Therefore a cat C is considered appropriate.

**FAA Differences:** ~~entical to~~ *No* FAA. ~~does not have a~~ PL that addresses this item.

**ITEM**: 34.9 ATC TRANSPONDER and AUTOMATIC ALTITUDE REPORTING SYSTEM

| | | | | |
|---|---|---|---|---|
| 9. ATC Transponder and Automatic Altitude Reporting System | | | | |
| ~~If required by regulations~~ | C | 1 | 0 | *As required by regulations.* |
| If not required by regulations | D | - | 0 | *May be inoperative.* |

**DISCUSSION:**

**References:** CAR 605.35, FAA PL 76 *(Rev. 1, Aug. 1997), PL 84 (Rev. 1, Aug. 1997)*

Note that TCAS relief may drive this relief.

Depending on the design (e.g. CL 604) the following may be required in the MMEL:

NOTE:

Transponder and Flight Director/Autopilot must use same ADC data for RVSM operations.

**FAA Differences:** *FAA relief is* ~~I~~*i*dentical to TCCA.

**ITEM**: 34.10 TRAFFIC ALERT AND COLLISION AVOIDANCE SYSTEM

| | | | | | |
|---|---|---|---|---|---|
| 10. Traffic Alert and Collision Avoidance System (TCAS) | | | | | |
| TCAS II System | | | | | |
| 1) TCAS System | C | - | 0 | (M) | May be inoperative provided the system is deactivated and secured. |
| 2) Combined Traffic Alert (TA) *** and Resolution Advisory (RA) Dual Displays | C | 2 | 1 | (O) | May be inoperative on the non–flying pilot side provided TA and RA elements and audio functions are operative on flying pilot side. |
| 3) RA Display System(s) | C | 2 | 1 | (O) | One may be inoperative on non–flying pilot side. |
| | C | - | 0 | (O) | May be inoperative provided:<br>a) All Traffic Alert display elements and voice command audio functions are operative, and<br>b) TA only mode is selected by the crew. |
| 4) TA Display System(s) | C | - | 0 | (O) | May be inoperative provided all installed RA display and audio functions are operative. |
| TCAS I System | | | | | |
| 1) TCAS System | C | - | 0 | (M) | May be inoperative provided the system is deactivated and secured. |
| 2) TCAS Display System(s) | C | - | 0 | (O) | May be inoperative provided all installed audio functions are operative. |

**DISCUSSION:**

**References:** FAA PL 32 *(Rev. 5, Apr. 2000)*

Wording may need to be changed to reflect a specific configuration.

For some designs, failure of a VSI/TRA would cause loss of the VSI function and result in a limitation for IFR flight at night; see Item 34.11 Vertical Speed Indicators.

Although TCAS is not required in Canada, a category C is considered appropriate because of crew dependency (situational awareness) considerations.

**FAA Differences:** *FAA relief is* ~~D~~*d*ifferent *than*~~from~~ TCCA in that TCAS I relief for TC*CA* is expanded to permit dispatch with display inoperative as done for TCAS II.

**ITEM**: 34.11 VERTICAL SPEED INDICATORS

| | | | | |
|---|---|---|---|---|
| 11. Vertical Speed Indicators | | | | |
| If required by design standard | C | 2 | 1 | One may be inoperative for day VFR. |
| If not required by design standard | C | 2 | 1 | For single pilot operations, the operative VSI must be on the side of the aircraft of the pilot flying. |
| | C | 2 | 0 | Both may be inoperative for day VFR. |

**DISCUSSION:**

**References:** ~~CAM~~*AWM 5*25.1303(b)(3), CAR 605.16, *CAR 605*.18

There is no ~~CAM~~*AWM 5*23 design requirement for a VSI. In any case the CARs specify the requirement.

If the aircraft was certified with a VSI, it may be appropriate to grant relief on PNF side (e.g. DHC 8) for day VFR. Consistent with the CARs, it is considered reasonable to require this instrument for the higher workload night environment as well as IFR. However, relief is not considered appropriate for aircraft such as the B767, DC9 (withdrawn at Rev. 22). Relief is 2/1, cat B on B1900; 2/1 cat C no restrictions on B400 but no relief on the Lear 60. The relief is clearly aircraft dependent with considerations such as size, distance of flight deck above ground, handling qualities, etc.

**FAA Differences:** FAA has no *Policy Letter for this item but the FARs consider the VSI as required equipment for Transport category aircraft.*~~guidance material~~.

**ITEM**: 34.12 WEATHER RADAR

| | | | | |
|---|---|---|---|---|
| 12. Weather Radar | D | - | - | Any in excess of those required by regulations may be inoperative. |

**DISCUSSION:**

**References:** CAR 703.65, *CAR* 704.64, *CAR* 705.70, FAA PL 40 *(Rev. 1, Aug. 1997)*

ETOPS has specific requirements. TCAS may drive this relief as the same display may be used.

**FAA Differences:** The FAA *has been* inconsistent in assigning a category for the item, (B767 and DC9-D, B1900-C).

**ITEM**: 34.13 WINDSHEAR DETECTION and GUIDANCE SYSTEM

| | | | | | |
|---|---|---|---|---|---|
| 13. Windshear Detection and Guidance System | | | | | |
| If required by regulation. | C | 1 | 0 | (O) | May be inoperative provided alternate procedures are established and used. |
| If not required by regulation. | D | 1 | 0 | (O) | May be inoperative provided alternate procedures are established and used. |

**DISCUSSION:**

**References:** FAA PL 67 *(Rev. 2, Nov. 2000)*

There is no Canadian operational or aircraft certification requirement.

Since there is not the day--to--day crew dependency on the system as there is for TCAS, and since the system is passive until wind shear is detected; once installed, but not required by regulation, a category D is considered appropriate.

**FAA Differences:** The FAA does not assign a cat D. FAA only addresses air carrier with system installed in accordance with FAR 121.358.

**ITEM**: 35.1 CREW MEMBER OXYGEN SYSTEM

| | | | | | |
|---|---|---|---|---|---|
| 1. Crew Member Oxygen System | | | | | |
| Bottle Pressure Indication | C | 1 | 0 | (M) | *May be inoperative provided an acceptable method is used to confirm that adequate oxygen is available for the intended flight.* ~~Provided:~~<br>~~a) another method is used to confirm that adequate oxygen is available for the intended flight, and~~<br>~~b) the oxygen system is confirmed to be operative.~~ |
| EICAS (or equivalent) Pressure Indication | C | 1 | 0 | (M) | ~~Provided~~*May be inoperative provided an acceptable method is used to confirm that adequate oxygen is available for the intended flight*~~:~~*.*<br>~~a) another method is used to confirm that adequate oxygen is available for the intended flight, and~~<br>~~b) the oxygen system is confirmed to be operative.~~ |
| Observer Seat | B/D | 1 | 0 | | ~~Provided~~*May be inoperative provided* it is selected OFF and the seat is not occupied.<br>*NOTE:*<br>*This relief must be checked because there may be designs where shutting off the Observer oxygen disables the supply to one of the crew members.* |

**DISCUSSION:**

**References:** CAR 605.31

Although the oxygen system is not required by CARs below 10,000 ft above MSL, because of the oxygen requirements of smoke removal emergency procedures, it is not appropriate to grant relief for the crew members' equipment.

*The procedure to check that the oxygen system is confirmed to be operative is a standard AFM pre-flight check list item, not dependent upon the serviceability of the pressure indicator. It has therefore been removed from the provisos.*

Category B/D is consistent with observer's seat dispatch relief (see item 25.6).

**FAA Differences:** Observer seat relief may differ.

**ITEM**: 35.2 LAVATORY OXYGEN

| | | | | | |
|---|---|---|---|---|---|
| 2. Lavatory Oxygen | C | 1 | 0 | (O) | May be inoperative provided:<br>a) The lavatory is not used for any purpose, and<br>b) The lavatory door is locked and placarded ”INOPERATIVE DO NOT ENTER”. |
| | C | 1 | - | (O) | May be inoperative provided the aircraft is not operated above FL 250. |

**DISCUSSION:**

**References:** CAR 605.31

**FAA Differences:** No FAA Policy Letter *exists for this item*.

**ITEM**: 35.3 PASSENGER OXYGEN SYSTEM

| | | | | | |
|---|---|---|---|---|---|
| 3. Passenger Oxygen System | | | | | |
| Entire System | B | 1 | 0 | (O) | May be inoperative provided:<br>a) Minimum en route altitude does not exceed 13,000 ft above MSL,<br>b) All air conditioning packs are operative,<br>c) Pressurization system is operative,<br>d) Flight remains at or below FL 250,<br>e) Portable oxygen units are provided for all crew members and 10% of the passengers; for half an hour (supplemental oxygen), and<br>f) Passengers are appropriately briefed. |
| Automatic Presentation System | B | 1 | 0 | | May be inoperative provided:<br>a) The manual deployment system is operative, and<br>b) Flight remains at or below FL 300. |
| Individual *PSUs*~~Dispensers~~ | | | | ~~(M)~~ | ~~May be inoperative or missing provided~~ *Refer to item 35.6.*<br>~~a) appropriate seat or bank of seats is placarded INOPERATIVE and not occupied, and~~<br>~~b) no more than two consecutive banks of seats and their adjacent banks of seats have missing or inoperative dispensers.~~ |
| All Cargo Operations | D | 1 | 0 | | May be inoperative provided:<br>a) Portable oxygen bottles are available to all crew members required to be off the flight deck, and<br>b) An automatic warning system is in the cargo area to alert of a decompression, if crew members are required to be in the cargo area during flight. |
| | D | 1 | 0 | | May be inoperative provided all crew members are on the flight deck. |

**ITEM**: 35.3 PASSENGER OXYGEN SYSTEM (cont'd)

**DISCUSSION:**

**References:** CAR 605.31; (first aid in *CAR* 703.68; *CAR* 704.67; *CAR* 705.72); ~~CAM~~*AWM* 523.1447; ~~CAM~~*AWM* 525.1447

Total amount of supplemental oxygen required in Portable Passenger Oxygen units (e) is in addition to the amount required for first aid oxygen in the CARs.

For the cat D relief, the automatic warning system should be aural, visual, or both depending on the flight deck warning system. The automatic warning system must be available in the cargo compartment and any other compartment such as a lavatory where the cargo compartment warning system may not be heard or seen.

**FAA Differences:** FAA identifies automatic deployment system under Passenger Service Units, does not specify a time under e).

**ITEM**: 35.4 PORTABLE OXYGEN DISPENSING UNITS (BOTTLE AND MASK)

| | | | | |
|---|---|---|---|---|
| 4. Portable Oxygen Dispensing Units (Bottle and Mask) | D | - | - | (~~O~~*M*)(~~M~~*O*)~~-~~ Any in excess of those required by regulation may be inoperative or missing provided:<br>a) Required distribution of operative units is maintained throughout the aircraft,<br>b) The inoperative portable oxygen dispensing unit is removed from the passenger cabin and its location is placarded INOPERATIVE, or it is removed from the installed location, secured out of sight and the portable oxygen dispensing unit and its installed location are placarded INOPERATIVE, and<br>c) Procedures are established to alert crew members of inoperative or missing equipment. |

**DISCUSSION:**

**References:** CAR~~s~~ 605.31; *CAR* 703.68, *CAR* 704.67, *CAR* 705.72, *CAR 705*.94

For all cargo operations portable oxygen units would be required for crew members likely to be in the cargo area during flight.

**FAA Differences:** ~~FAA requires the bottles to be serviced, replaced or removed at the next maintenance facility.~~*FAA MMELs include provisions for requiring that the bottles to be serviced, replaced or removed at the next maintenance facility.*

**ITEM**: 35.5 PROTECTIVE BREATHING EQUIPMENT

| | | | | |
|---|---|---|---|---|
| 5. Protective Breathing Equipment | D | - | - | (M)(O) Any in excess of those required by regulation may be inoperative or missing provided:<br>a) Required distribution of operative units is maintained throughout the aircraft,<br>b) The inoperative protective breathing equipment unit is removed from the passenger cabin and its location is placarded INOPERATIVE, or it is removed from the installed location, secured out of sight and the protective breathing equipment unit and its installed location are placarded INOPERATIVE, and<br>c) Procedures are established and used to alert crew members of inoperative or missing equipment. |

**DISCUSSION:**

**References:** CAR~~s~~ 703.67, *CAR* 704.66, *CAR* 705.71, FAA PL 43 *(Rev. 1, Aug. 1997)*

The (O) will establish procedures to alert crew members of the inoperative or missing equipment. The (M) will provide instructions to placard the unit or remove it from the aircraft.

**FAA Differences:** *FAA relief is* ~~*i*~~identical to TCCA

**ITEM**: 35.6 PASSENGER SERVICE UNITS (DROP DOWN OXYGEN)

| | | | | |
|---|---|---|---|---|
| 6. Passenger Service Units (Drop Down Oxygen) | | | | |
| Automatic Opening Feature of Door Latches | B | - | - | (M)(O) ~~Provided~~*May be inoperative provided*:<br>a) The door is confirmed inoperative unlatched,<br>b) The door secured closed,<br>c) The PSU oxygen system is operative,<br>d) The flight remains at or below FL 300,<br>e) The manual deployment system is operative,<br>f) No more than two consecutive banks of seats and their adjacent banks of seats have an inoperative automatic opening feature, and<br>g) Occupants are briefed on oxygen mask access.<br>NOTE:<br>The method of door closure must not hinder ready access to the first aid oxygen outlet. |
| Individual PSUs | D | - | - | (M)(O) May be inoperative with no flight altitude restriction provided:<br>a) Affected seats or banks of seats are blocked and placarded INOPERATIVE to prevent occupancy,<br>b) No more than two consecutive banks of seats and their adjacent banks of seats have an inoperative PSU, and<br>c) Units at assigned flight attendant locations are operative. |

**ITEM**: 35.6 PASSENGER SERVICE UNITS (DROP DOWN OXYGEN) (cont'd)

**DISCUSSION:**

**References:** CAR 605.31, ~~CAM~~*AWM 5*25.1441 to *AWM 525*.1453

The above mentioned first aid NOTE may not be applicable to all aircraft depending on the source/location of the first aid oxygen outlet.

Proviso d) in the cat B relief and b) in the cat D relief are only applicable on aircraft when flight attendants are carried. The reason that no more than two consecutive banks (a bank of seats is a grouping of two or more seats) of seats and their adjacent (cross aisle) banks of seats may have an inoperative automatic opening feature or an inoperative PSU is to enable flight attendants to carry out their immediate action procedure during a decompression.

The first (O) to establish procedures for no more than two consecutive banks of seats and their adjacent banks of seats to have a PSU with an inoperative automatic opening feature, and for occupants to be briefed on oxygen mask access.

The second (O) to establish procedures for no more than two consecutive banks of seats and their adjacent banks of seats to have an inoperative PSU. The (M) to detail blocking and placarding affected seats.

Refer to item 35.2 for Lavatory Oxygen.

**FAA Differences:** TC*CA* adds wording for clarification. TC*CA* permits cat D for individual PSUs (FAA cat B).

***ITEM**: 35.7 CREW REST FACILITY - BUNK DROP DOWN OXYGEN MASKS*

| | | | | | |
|---|---|---|---|---|---|
| *7. Crew Rest Facility - Bunk Drop Down Oxygen Masks* | *C* | *-* | *-* | *(M)(O)* | *One or more may be inoperative provided the associated bunk is not occupied and placarded INOPERATIVE – DO NOT USE.* |
| | *C* | *-* | *-* | *(O)* | *One or more may be inoperative and the associated bunk may be occupied provided the operating altitude is limited to FL 250 and below.* |
| | *C* | *-* | *-* | *(M)(O)* | *One or more may be inoperative and associated bunk may be occupied provided a portable oxygen bottle with mask attached is available for the associated bunk occupant.*<br>*NOTE:*<br>*Portable oxygen bottle must be properly secured in the associated bunk.* |

***DISCUSSION:***

***References:***

***FAA Differences:** FAA does not have a policy letter for this item.*

**ITEM**: 36.1 PNEUMATICS (ETOPS)

| | | | | |
|---|---|---|---|---|
| 1. Pneumatics (ETOPS) | C | - | - | No relief allowed for greater than 120 minutes ETOPS for any component which requires the “no flight in known or forecast icing conditions” proviso. |

**DISCUSSION:**

**References:** FAA PL 40 *(Rev. 1, Aug. 1997)*

*Improved forecasting of icing conditions may permit relief of these items beyond 120 minutes, as long as the new forecasting techniques have been accepted by the applicable authority.*

**FAA Differences:** ~~Identical~~ *FAA relief is similar* to *TCCA except that the* FAA *has expanded their discussion to permit alternate icing forecasting techniques*.

**ITEM**: 38.1 POTABLE WATER SYSTEMS

| | | | | |
|---|---|---|---|---|
| 1. Potable Water Systems | C | - | 0 | (M)(O) *System ~~M~~may be inoperative provided:*<br>a) Tank is drained and inspected to ensure no leakage, and<br>b) Procedures are established to deactivate applicable system components to prevent its use or servicing. |
| | *C* | *-* | *0* | *(M)(O) Individual components may be inoperative provided:*<br>*a) Associated components are deactivated or isolated, and*<br>*b) Associated system components are verified not to have leaks.* |

**DISCUSSION:**

**References:** FAA PL 83 (Rev. ~~3~~*4*, ~~Jan~~*Oct*. 2001)

Because there are two possible designs, one with the lavatory and potable water systems completely independent and one with the two systems linked, the MEL will need to provide appropriate system specific relief. The (M) procedure will need to address deactivation of components to include electrical and pressurization systems.

The (O) should address other means for water provision as well as the need to advise of system status during crew changes.

MEL authors should review the Aviation Occupational Safety and Health (AOSH) requirements.

*There is no change to this item with FAA PL 83 (Rev. 4, October 15, 2001).*

**FAA Differences:** TCCA does not limit this relief to only *air carrier*~~Part 25~~ aircraft. TC*CA* also changed wording for completeness and clarification.

**ITEM**: 38.2 LAVATORY *WASTE* SYSTEMS

| | | | | | |
|---|---|---|---|---|---|
| 2. Lavatory *Waste* Systems | | | | | |
| If more than one lavatory *(includes wheel-chair accessible lavatories).* | C | - | 1 | (M)(O) | May be inoperative provided:<br>a) Waste is drained and system is inspected for leakage,<br>b) Procedures are established to deactivate system components,<br>c) Lavatory door is locked closed and placarded INOPERATIVE - DO NOT ENTER, ~~and~~<br>*d) The Pilot in Command will determine if flight duration is acceptable with a FWD/Upper Deck lavatory unusable, and*<br>~~d~~*e*) There is at least one serviceable lavatory on the aircraft.<br>*NOTE:*<br>*Any portion of system which operates normally may be used.* |
| If one lavatory *(includes wheel-chair accessible lavatories).* | C | - | 0 | (M)(O) | May be inoperative provided:<br>a) Waste is drained and system is inspected for leakage,<br>b) Procedures are established to deactivate system components, ~~and~~<br>c) Lavatory door is locked closed and placarded INOPERATIVE - DO NOT ENTER.<br>*NOTE:*<br>*Any portion of system which operates normally may be used.* |

**DISCUSSION:**

**References:** FAA PL 83 *(Revision 4, Oct. 2001)*

Because there are two possible designs, one with the lavatory and potable water systems completely independent and one with the two systems linked, the MEL will need to provide spe cific system relief.

**ITEM**: 38.2 LAVATORY *WASTE* SYSTEMS *(cont'd)*

The (O) should address other means for water provision as well as the need to advise of system status during crew changes. The (O) procedures must also address details for lavatory inspections.

It is noted that Civil Aviation, Cabin Safety discussed this item with AOSH and it was agreed that some relief could be permitted. However, the subsequent opposing inputs to Flight Test on this item made it apparent that agreement could not be reached without further discussion. The proposed AOSH relief was cat B and A, one flight day, respectively while one industry input was for a "self regulated by off loading passengers" cat D. Rather than try to resolve these opposing positions and in view of the fact that lavatories were considered a passenger convenience item a short time ago, it has been decided to assign a cat C.

This will also harmonize with the FAA categorization. ~~It is proposed to review this item at the 1997 MMEL/MEL Working Group meeting to let all interested parties have an input to an agreed Canadian solution.~~ MEL authors should review the Aviation Occupational Safety and Health requirements to determine specific lavatory requirements (MELs can be more restrictive as necessary).

*This item is revised to reflect FAA Policy Letter 83, Revision 4.*

**FAA Differences:** TCCA added some detail to the item for clarification and required one lavatory to be operative for multi-lavatory equipped aircraft.

**ITEM**: 49.1 AUXILIARY POWER UNIT (APU)

| | | | | |
|---|---|---|---|---|
| 1. Auxiliary Power Unit (APU) C/D | 1 | 0 | *May be inoperative. (See Discussion for ETOPS considerations)* |

**DISCUSSION:**

**References:**

Because of the many variables to be considered in granting relief for an APU, it may be appropriate to include a NOTE in the MMEL to the effect that: Based on specific operational considerations the MEL may be more restrictive.

Assignment of a category C or D must be made in the context of:

1. optional/standard installation,
2. air and/or ground use, and
3. crew dependency.

*Relief may be prohibited for ETOPS if the APU has been determined to be essential equipment during the ETOPS approval process (e.g. A 310).*

Other considerations might be the need to de-ice with the engines off and the need for an APU to subsequently start the engines.

It is intended that foreign MMEL relief will be accepted. Relief for APU generated electrics, air, etc. should be the same category as the APU.

**FAA Differences:** *FAA relief is ~~i~~*identical to TCCA.

**ITEM**: 52.1 EMERGENCY EXIT AND ESCAPE SLIDES (AIRCRAFT CREW ONLY)

| | | | | |
|---|---|---|---|---|
| 1. Emergency Exit/Escape Slides (Aircraft Crew Only) | A | - | - | (M)(O) One emergency exit/slide may be inoperative for three flight days provided:<br>a) Only the aircraft crew are carried,<br>b) Affected emergency exit is verified closed, latched and locked prior to each flight,<br>c) Aircraft crew are advised of the nature (emergency exit and slide availability) and extent of the unserviceability and that evacuation procedures do not include affected exit, though opposite exit may be used,<br>d) A conspicuous sign or placard indicating that the exit is inoperative is attached to the exit, and<br>e) Emergency exit signs and lights associated only with the inoperative exit are obscured (NOTE 3).<br>NOTES:<br>1. For the purpose of this item, "aircraft crew" includes the operating crew members including the flight crew members, flight attendants, aircraft maintenance personnel and supervisory crew members.<br>2. The operator's MEL must state the maximum number of aircraft crew permitted.<br>3. Exit locator signs and emergency aisle path markings which are shared between two exits must not be obscured. |

**DISCUSSION:**

**References:** FAA PL 99 *(Original, Jan. 1999), FAA PL 1 (Rev. 2, Aug. 1997)*

**ITEM**: 52.1 EMERGENCY EXIT AND ESCAPE SLIDES (AIRCRAFT CREW ONLY) (cont'd)

This relief pertains to large aircraft with multiple entries on each side of the aircraft. It is intended for the aircraft crew only, to facilitate flying to a maintenance facility with only the aircraft crew on board.

NOTE #2 requires the operator to state the maximum number of aircraft crew permitted. The maximum number of aircraft crew would be determined by adding the number of the operating crew members that would likely be scheduled on the aircraft type, plus the number of maintenance personnel who would likely be scheduled to remain with the aircraft when flying to destinations where the air operator does not have any contracted maintenance agreement, plus the maximum number of supervisory crew members who would likely be carrying out an in-flight check ride at one time.

Emergency Exit/Escape Slide (Aircraft Crew Only) relief is not intended for all cargo operations.

This relief would not be applicable to aircraft such as the CL 600 which have no cockpit escape routes and no multiple emergency exits on each side of the aircraft. If this relief were granted for the CL 600, safety would be significantly reduced for the crew trying to escape with one emergency exit inoperative.

There must be at least a cockpit roof escape hatch or an escape path on each side of the cockpit; OR only flight crew members (pilots, and engineer if appropriate) are carried and there is at least one operative emergency exit on each side of the aircraft.

A door which is certified as an emergency exit is considered an emergency exit for MMEL purposes.

**FAA Differences:** FAA only addresses all cargo aircraft. FAA allows all slides except L1 and R1 to be inoperative, cat C. Exit L1 or R1 can be inoperative, cat B. FAA specifies essential crew members whereas TC*CA* is more specific. FAA does not assign (O) or (M).

**ITEM**: 52.2 EMERGENCY EXITS AND ESCAPE SLIDES (PASSENGER CARRYING OPERATIONS)

| | | | | |
|---|---|---|---|---|
| 2. Emergency Exits and Escape Slides (Passenger Carrying Operations) | A/B | | | (M)(O) One emergency exit/slide may be inoperative for one flight day provided:<br><br>a) Affected door is not used for passenger loading,<br><br>b) Affected exit is verified closed, latched and locked prior to each flight. Inoperative slide must be removed or deactivated or secured,<br><br>c) A conspicuous placard indicating that the exit is inoperative is attached to the exit in accordance with Note 2,<br><br>d) Emergency exit signs and lights associated only with the inoperative exit are obscured (Note 3),<br><br>e) Flight crew members and flight attendants are advised of the nature (emergency exit and slide availability) and extent of the unserviceability and that evacuation procedures do not include affected exit, though opposite exit may be used,<br><br>f) Passenger capacity limitations and blocked seating layouts are developed by the air carrier and approved by Transport Canada (Note 4) for inclusion in the carrier's MEL,<br><br>g) Restricted seating areas are clearly indicated by blocking with barrier tape prior to passenger boarding (Notes 5 and 6),<br><br>h) Main passenger aisle(s), (cross aisles if applicable), and exit access areas are not blocked, |

**ITEM**: 52.2 EMERGENCY EXITS AND ESCAPE SLIDES (PASSENGER CARRYING OPERATIONS) (cont'd)

| | | | |
|---|---|---|---|
| 2. Emergency Exits and Escape Slides (Passenger Carrying Operations) (cont'd) | | | i) A video pre-departure safety briefing that includes emergency exits is not conducted. The live pre-departure briefing must include:<br>1. Identification of the inoperative exit,<br>2. Instructions that the affected exit is not to be used,<br>3. Instructions regarding the most appropriate evacuation routing, and<br>4. Identification of the area which is prohibited from use during takeoff and landing.<br>j) Persons other than assigned flight attendants are not seated in the blocked area for taxi, takeoff and landing,<br>k) A flight attendant is stationed at the emergency exit opposite to the inoperative exit during take-off and landing (Note 7), and<br>l) Smoke removal procedures are not predicated on the use of the affected exit.<br>NOTES:<br>1. Relief is only permitted for a forward or overwing exit which can be readily opened. Relief for an aft exit does not require it to be readily opened.<br>Relief is not permitted for an evacuation slide which is fed by two exits. |

**ITEM**: 52.2 EMERGENCY EXITS AND ESCAPE SLIDES (PASSENGER CARRYING OPERATIONS) (cont'd)

| | | | |
|---|---|---|---|
| 2. Emergency Exits and Escape Slides (Passenger Carrying Operations) (cont'd) | | | NOTES: (cont'd)<br>2. The placard shall consist of the following (or approved equivalent):<br>a) A white circular disc of at least 25 cm in diameter with a red band around its periphery, and a red diagonal line across its diameter at a 45 degree angle ascending from left to right. The thickness of the red band and line is to be a minimum of 2.5 cm.<br>b) The following text below the disc - "NO EXIT" "SORTIE INUTILISABLE" in red letters at least 3.5 cm in height on a white background.<br>c) The placard shall be affixed by a means that will prevent it from being dislodged under the dynamic forces expected during an emergency landing (FAR 25.561 or equivalent depending on certification basis). It must not obscure the emergency exit window.<br>3. Exit locator signs and emergency aisle path markings which are shared between two exits must not be obscured.<br>4. Any application for MEL relief of this item must be accompanied by all supporting data including a configuration drawing indicating the seats that will be blocked. The request for relief must be submitted through the appropriate Region to the Director Commercial and Business Aviation Branch (AARX) for approval. |

**ITEM**: 52.2 EMERGENCY EXITS AND ESCAPE SLIDES (PASSENGER CARRYING OPERATIONS) (cont'd)

| | | | |
|---|---|---|---|
| 2. Emergency Exits and Escape Slides (Passenger Carrying Operations) (cont'd) | | | NOTES: (Cont'd)<br><br>5. If infrangible, the barrier tape must be removed after passenger boarding and after the announcement that the indicated areas are prohibited from use. If frangible, the tape may remain in place for takeoff and landing but must easily tear so as not to become a means of entanglement during an evacuation.<br><br>6. The seating capacity shall be determined by the use of the analysis method described in the Performance Standards Working Group Emergency Evacuation Subcommittee - Aviation Rule making Advisory Committee (ARAC) Report: "Emergency Evacuation Requirements and Compliance Methods that Would Eliminate or Minimize the Potential for Injury to Full Scale Evacuation Demonstration Participants" dated 93.04.02. In addition to the foregoing, a review of the cabin interior layout shall be conducted in order to identify appropriate zonal division lines.<br><br>7. A flight attendant may be stationed at the inoperative exit during taxi, take-off and landing.<br><br>8. For extended overwater operations, occupancy must not exceed the normal rated capacity of the remaining slide rafts, or the rated overload capacity of the slide rafts remaining after loss of one additional slide raft of greatest capacity, whichever is less. The minimum number of required ditching exits must be available as per FAR 25.807 or equivalent depending on the cert. basis. |

**ITEM**: 52.2 EMERGENCY EXITS AND ESCAPE SLIDES (PASSENGER CARRYING OPERATIONS) (cont'd)

| | | | |
|---|---|---|---|
| 2. Emergency Exits and Escape Slides (Passenger Carrying Operations) (cont'd) | | | NOTES: (Cont'd)<br><br>9. Weight and balance manifest must be revised as necessary to ensure proper loading limits are observed.<br><br>10. On all-cargo and combination passenger/cargo aircraft, exit(s) located in the cargo area may be inoperative except, where applicable at least one exit must be operative for flight crew evacuation purposes.<br><br>11. The carrier must keep a record, for examination by Transport Canada, of each instance where this relief has been exercised. This record must be forwarded quarterly to the Commercial and Business Aviation Branch (AARX). Following is a list of data which must be included in that record:<br><br>a) Carrier<br><br>b) Aircraft type, series and registration number<br><br>c) Location of aircraft<br><br>d) Date<br><br>e) exit involved<br><br>f) Seating capacity, number of passengers offloaded and number of passengers carried<br><br>g) Cause (including occupation of person involved) and nature of occurrence<br><br>h) Point in itinerary (departure, arrival, servicing, maintenance)<br><br>i) When and where repairs made |

**ITEM**: 52.2 EMERGENCY EXITS AND ESCAPE SLIDES (PASSENGER CARRYING OPERATIONS) (cont'd)

| | | | |
|---|---|---|---|
| 2. Emergency Exits and Escape Slides (Passenger Carrying Operations) (cont'd) | | | NOTES: (Cont'd)<br><br>j) Corrective action taken (e.g. training, procedures, design) to preclude recurrence<br>k) Number of hours inoperative<br>l) Flight itinerary to repair base<br>m) Estimated cost (including details) if relief had not been available.<br>n) Cumulative total of occurrences per 1000 departures |

**DISCUSSION:**

**References:** FAA PL1 *(Rev. 2, Aug. 1997)*

Since the initial door/slide relief was granted by the FAA and TC*CA* for the B747, DC10, L1011 and A300 aircraft, considerable discussion has taken place between industry and the regulatory authorities regarding the possible extension to other aircraft. After extensive discussion with industry and within Transport Canada further relief for passenger carrying operations is permitted under the following conditions:

1. The conditions under which short term relief is granted are based on the TC Guidance Book MMEL Working Group guidelines as detailed above.

2. Relief is only applicable to aircraft equipped with at least four Type I or greater floor level door exits arranged essentially at the front and rear of the airplane as facing pairs. The analysis method shall be used to determine seating capacity and arrangement in applications for new aircraft (not including 747, L1011, A310 and DC 10), although the method **may** also be used in determining seating capacity and arrangement for these four aircraft. All other details of this relief are also applicable to the B747, DC10, L1011 and A300 **except for the categorization (B) which will remain unchanged**. *It must be noted that the category B only applies to inoperative doors in the cargo compartment of freighter and combi aircraft. (Ref. Note 10 of provisos).*

3. **The initial intention of TC*CA* was that all MMEL/MEL relief for emergency exits/slides would have terminated on August 1, 1996.** This was to provide short term relief to operators while defining a time frame during which Transport Canada expected operators and manufacturers to identify and correct the problems which are causing these safety critical systems to be unavailable. Although TC*CA* and Industry have not resolved all interested parties concerns, it is considered appropriate to continue with the relief.

**ITEM**: 52.2 EMERGENCY EXITS AND ESCAPE SLIDES (PASSENGER CARRYING OPERATIONS) (cont'd)

4. Operators are to continue reporting each instance when this relief is utilized and provide detailed information concerning the occurrence. This information should also include the impact on their operation. This data bank will allow Transport Canada to closely track the problems being experienced and progress on their resolution, and to understand the implications if this relief is withdrawn.

5. TC*CA* will continue participating in domestic and international forums on this issue.

***FAA Differences:*** *The FAA does not provide door/slide relief for narrow body aircraft. TCCA uses the ARAC process to determine the seats to be blocked off while the FAA uses different techniques to determine the seats to be blocked off.*

**ITEM**: 52.3 DOOR(S) INDICATION SYSTEM

| | | | | |
|---|---|---|---|---|
| 3. Door(s) Indication System | N/A | 1 | 1 | No relief for a red door warning light, if opening of the door during takeoff would present a hazard. |
| | C | 1 | 0 | Relief may be granted for an amber door caution light but this assumes that the choice of an amber light during the certification of the aircraft was correct (see DISCUSSION). If, however, an immediate hazard could be present if a door were to become unsafe then no relief should be granted no matter what the light colour. |

**DISCUSSION:**

**References:** FAA Internal Letter, 17 Nov 89, PL 69 *(Rev. 1, Aug. 1997)*

A red visual warning shall be used for all outward opening doors whose opening during takeoff could present an immediate hazard to the airplane.

An amber caution light shall be used for all other doors, including plug door designs. Clearly, the colour of the warning indication light(s) must be based on an assessment of hazard and MMEL relief approved accordingly.

For EICAS it is unacceptable to dispatch with an amber message visible to the pilot, i.e. there must be a capability to hide the message.

**FAA Differences:** *FAA relief is* ~~S~~*s*imilar to TCCA. PL 69 only addresses the *B747, B757 and the* B767 *aircraft*.

**ITEM**: 52.4 NARROW-BODY ALL CARGO AIRCRAFT SLIDE RELIEF

| | | | | |
|---|---|---|---|---|
| 4. Narrow-Body all Cargo Aircraft Slide Relief | | | | |
| Main Cabin Exits/Slides (All Cargo Configuration) | C | - | - | All slides in the cargo area with the exception of L1 and R1 may be inoperative provided:<br>a) Exits L1 and R1 are accessible to all crew members, and<br>b) The aisle(s) between the flight deck and the cargo crew members' assigned seating location are not wholly or partially blocked by cargo. |
| | B | - | 0 | All slides may be inoperative provided:<br>a) All crew members are on the flight deck, and<br>b) An alternate means of egress is available |

**DISCUSSION:**

**References:** CAR 705, *CAR* 602.86(2)(a), AWM 525.809(a), *AWM* 525.810(2), FAA PL 99 *(Original, Jan. 1999)*

Narrow-body all cargo slide relief is intended for aircraft with multiple exits on both sides of the aircraft. Narrow-body all cargo aircraft require emergency exits for the flight crew to be a door or hatch in the external wall of the fuselage (AWM 525.809(a)). One of these must be located on each side or alternately an overhead hatch. These exits may be equipped with a rope as a means to assist personnel to ground level (AWM 525.810(2)). Generally the flight crew emergency exits are the sliding cockpit windows, equipped with ropes stored in a compartment in the upper sidewall above each sliding window. Relief is only applicable to all cargo operations conducting operations in an air transport service pursuant to Airline Operations regulated by CAR 705.

**FAA Differences:** FAA relief has been granted in accordance with Policy Letter 99. TCCA relief is more restrictive; it does not provide for relief without restrictions for the L1 or R1 exits.

**ITEM**: 61.1 PROPELLER SYNCHROPHASING SYSTEM

| | | | | |
|---|---|---|---|---|
| 1. Propeller Synchrophasing System | D | 1 | 0 | *May be inoperative.* |

**DISCUSSION:**

**References:**

*Although a category D has been assigned to the propeller synchrophasing system in the MMEL, the workload and fatigue aspects of being required to manually synchronize the propellers may require an upgrade to category C in the MEL. Each aircraft must be evaluated on its own merit..*

**FAA Differences:** The FAA assigns a category C.

**ITEM**: 73.1 FULL AUTHORITY DIGITAL ELECTRONIC CONTROL (FADEC)

| | | | | | |
|---|---|---|---|---|---|
| 1. | Full Authority Digital Electronic Control (FADEC) | A | - | - | May be dispatched with FADEC faults provided *repairs are made in accordance with times established by engine manufacturer. No extensions are authorized.* ~~the details are determined during the certification. The MMEL may identify the functions/component that may contain a fault, noting that the short term dispatch items have redundancy and there is no impact on operation.~~ |

**DISCUSSION:**

**References:** FAA PL 45 *(Rev. 1, Aug. 1997)*

The above mentioned generic phraseology is only a guide for the development of MELs. Details of reporting requirements, relief requested and granted, etc. will be resolved at the MMEL level with TC*CA* Aircraft Certification.

Other items covered under the TCDS Time Limited Dispatch (TLD) analysis may also be included in the MMEL in their respective ATA chapters.

It is noted that these items must not be extended under the MEL extension program. Therefore the following guidelines apply:

1. MELs must be developed with FADEC reference specifically to the operator's equipment,
2. TCDS-controlled items are not to be extended under current MEL extension guidelines,
3. TLD certification requirements are accomplished within the established time intervals,
4. TLD certification requirements are not adjusted or extended without TC*CA* Aircraft Certification Engineering approval, and
5. TCDS reliability reporting requirements are being met.

**FAA Differences:** *FAA relief is* ~~I~~*i*dentical to TCCA.

**ITEM**: 73.2 FUEL FLOW/PRESSURE INDICATIONS

| | | | | |
|---|---|---|---|---|
| 2. Fuel Flow/Pressure Indications | B/C | - | - | One may be inoperative provided appropriate related engine instruments and fuel quantity indications are operative. |

**DISCUSSION:**

**References:** ~~CAM~~*AWM* 523.1305(c)(2); *AWM* 525.1305(b)(5),(c)(2), FAA PL 11 *(Rev. 1, Aug. 1997)*

Appropriate related engine instruments could be, for example, N1, N2, etc. (aircraft specific) which would permit an assessment of engine performance without fuel flow information.

*The determination of the B or C category is dependent upon the engine instrumentation configuration of the specific aircraft being evaluated.*

**FAA Differences:** FAA assigns cat C to B767, cat B to SAAB 340. FAA does not permit relief for analog readout of fuel pressure indication.

**ITEM**: 77.1 ENGINE INSTRUMENTS

| | | | | |
|---|---|---|---|---|
| 1. Engine Instruments | | | | NOTE:<br>See 77.3 PRIMARY POWER SETTING INSTRUMENTS. |
| | C | - | - | For primary (NH (engine core), NP (propeller), ITT, etc.) and secondary (Oil Temp, Oil Press, etc.) engine indicators which have both analogue and digital readouts, the digital displays may be inoperative.<br>For the secondary indicators which have both analogue and digital readouts, the analogue displays may be inoperative provided the digital display uses some method such as colour changes to incorporate limitations. |
| | C | - | - | The N2 indicator, of a three spool engine, may be inoperative when the speed performs no control function and is effectively limited by the basic engine control and operation. |

**DISCUSSION:**

**References:** FAA PL 6 *(Rev. 1, Aug. 1997)*, *PL* 13 *(Rev. 1, Aug. 1997)*, *PL* 38 *(Rev. 1, Aug. 1997)*

Analogue indications provide the best rate information to assist in not exceeding limitations.

From a human factors perspective it is also easier to match analogue indicators (reduced work load) rather than having to interpret digital information. Some aircraft such as the RJ have only a digital presentation of oil pressure and oil temperature.

The A320 only presents oil pressure information to the pilot during the start and subsequently if some limitation is reached.

The information is available on a system synoptic page.

**FAA Differences:** *FAA relief is* ~~S~~*s*imilar to TCCA.

**ITEM**: 77.2 ENGINE VIBRATION MONITORS

| | | | | |
|---|---|---|---|---|
| 2. Engine Vibration Monitors | | | | |
| If required by the certification basis | C | - | 0 | ~~Provided~~*May be inoperative provided* an approved maintenance reliability program (which includes engine vibration monitoring) is in place. |
| For ETOPS | A | - | 0 | May be inoperative for one flight provided an approved maintenance reliability program (which includes engine vibration monitoring) is in place. |
| If not required by the certification basis | D | - | 0 | |

**DISCUSSION:**

**References:** ~~CAM~~*AWM* 525.1305(d)(3)

EVMs were introduced as an engine trend monitoring tool and the loss of a single data point (during ETOPS dispatch) is not considered significant. However, it is not considered appropriate to allow the same relief as for non-ETOPS due to the increased need to be able to confirm engine health prior to an extended range departure.

Based on specific design considerations or adverse service experience a more restrictive category could be assigned.

**FAA Differences:** *FAA relief is slightly different than TCCA.* As an example, the FAA permits EVM relief as a cat C on the B767 with no ETOPS mention.

**ITEM**: 77.3 PRIMARY POWER SETTING INSTRUMENTS (THREE/FOUR ENGINE AIRCRAFT)

| | | | | |
|---|---|---|---|---|
| 3. Primary Power Setting Indicators | B | - | - | Relief for a primary power setting indicator (TQ (torque), N1 (fan), N2 (engine core), EPR (engine pressure ratio)) can be permitted (three/four engine aircraft) provided alternate means of setting power are certified. |

**DISCUSSION:**

**References:** ~~CAM~~*AWM* 525.1305(d)(1), FAA PL 38 *(Rev. 1, Aug. 1997)*

Any relief would ~~-~~only be permitted if another instrument on the affected engine is also certified as a means of complying with the design standard, that is, the MMEL relief would be contingent on an airworthiness certification.

**FAA Differences:** *FAA relief is* ~~S~~*s*imilar to TCCA.

# MMEL GUIDANCE BOOK
## ATA 78 ENGINE EXHAUST AND THRUST REVERSER

**ITEM**: 78.1 THRUST REVERSERS

| | | | | | |
|---|---|---|---|---|---|
| 1. Thrust Reversers | C | - | - | (M)(O) | For large aircraft (more than 19 seats) at least 50% must be operative for dispatch<br>i.e.<br>2 for a 4 engine aircraft<br>2 for a 3 engine aircraft<br>1 for a 2 engine aircraft |
| | C | - | - | | Inoperative thrust reversers must be stowed and locked. |
| | C | - | - | | For <u>smaller aircraft</u> (19 seats or fewer, e.g. Learjet, Cessna 500, Gulfstream 1159) *both thrust reversers may be inoperative provided inoperative thrust reversers are stowed and locked.* ~~relief is granted for both thrust reversers~~. |

**DISCUSSION:**

**References:** FAA PL 26 *(Rev. 1, Aug. 1997)*

The requirement for 50% of the thrust reversers on <u>large aircraft</u> (more than 19 seats) to be operative has been adopted from the FAA policy (TCA AARXB, 10 May 91 refers). As an aside, it is noted that the FAA are considering requiring all thrust reversers to be operative for large two engine aircraft for increased safety (performance) reasons.

The JAA, in general, permit all thrust reversers to be inoperative as there is no airworthiness design requirement or performance credit given. There is considerable FAA/JAA/TC activity regarding operation from wet and contaminated runways and in some instances performance will be based on credit for thrust reversers. In these instances, dispatch would not be permitted or some sort of performance penalty would need to be applied.

The (M) and (O) procedures must address deactivation and operational procedures beyond those included in the AFM.

**FAA Differences:** Except for FAA inconsistencies TCCA *relief* is identical. FAA PL only addresses small turbojet airplanes.