Federal Aviation Administration

MMEL Policy Letter 32, Revision 7

Date: July 7, 2006
To: All Region Flight Standards Division Managers
    All Aircraft Evaluation Group Managers
From: Manager, Air Transportation Division, AFS-200
Reply to Attn of: Manager, Technical Programs Branch, AFS-260

MMEL GLOBAL CHANGE
PL-32 is designated as GC-145

This GC is an approved addendum to all existing MMEL documents. The operator may seek use of the specific relief contained in the policy letter by revising the Minimum Equipment List (MEL). In doing so, the sample proviso stating the relief in the policy letter must be copied verbatim in the operator's MEL. Approval of the revised MEL is gained utilizing established procedure, through the assigned Principal Operations Inspector (POI).

SUBJECT: Traffic Alert and Collision Avoidance System (TCAS)

MMEL CODE: 34 (Navigation)
REFERENCE: PL-32, Revision 6, dated October 16, 2002
            PL-32, Revision 5, dated April 6, 2002
            PL-32, Revision 4, dated February 17, 1999
            PL-32, Revision 3, dated August 15, 1997
            PL-32, Revision 2, dated June 3, 1997
            PL-32, Revision 1, dated June 18, 1990
            PL-32, Original, dated March 4, 1988
            PL-80, dated December 18, 1995

PURPOSE:
The purpose of this policy letter is to provide updated guidance to the Flight Operations Evaluation Board (FOEB) for standardized Master Minimum Equipment List (MMEL) relief for the Traffic Alert and Collision Avoidance System (TCAS).

DISCUSSION:
Revision 7 allows the TCAS II to be used when the audio functions are inoperative and adds relief for the airspace selection function.

Revision 6 removes reference to Precision Runway Monitoring (PRM) which does not require TCAS.

Revision 5 changes the TCAS relief Category from "C" to "B" for dispatch without TCAS except for those operators who are not yet required to have TCAS by Title 14 Code of Federal Regulations (14 CFR). In addition, before an operator can dispatch with an inoperative TCAS, this change requires the operator to evaluate the planned flight and determine that enroute or approach procedures do not require the use of TCAS.

Revision 4 aligns title and proviso terminology for TCAS with the name specified in the CFRs.

Revision 3 adds policy from PL-80, dated December 18, 1995, which provides policy for TCAS I to form one policy letter covering both TCAS systems.

Revision 2 removes the proviso that requires the Traffic Alert (TA) and Resolution Advisory (RA) display indications be visible to the non-flying pilot.

Revision 1 incorporates PL-80 and reformats policy without any change to policy.

TCAS II proposed policy for TCAS II relief was outlined in the original PL-32 in the automated MMEL system. Additional relief, until the equipment was required by 14 CFR, was developed by the Flight Operations Policy Board (FOPB). This proposed policy was entered as Request for Guidance (RFG) -28 and was also presented to various industry groups for comment. Comments received on RFG-28 were incorporated in PL-32 revision 1. The changes in PL-32 revision 1 included: use of proper abbreviations; revised repair category intervals; an additional entry to satisfy installations utilizing integrated (TA)/(RA)/Instantaneous Vertical Speed (IVSI) displays; and removal of the phrase "until required by FAR" to eliminate any misinterpretation of the effective date of the CFRs (December 1993). The intent was to promote the installation process, especially during the early stage of the TCAS Transition Plan (TTP) as well as support the use of a partial system.

Interim guidance was disseminated on June 16, 1995, for the approval and operational use of TCAS I so that certification of TCAS I could be approved by certain Aircraft Certification offices. This guidance was provided in draft Advisory Circular (AC) 20-TCAS. PL-80 replaced the MMEL example provision in Appendix 2 to AC 20-TCAS. The effective date for PL-80 was December 31, 1995. PL-80 relief did not revise or negate the relief provided for TCAS II in PL-32 Revision 1. Both equipment reliability and operational experience will dictate if any revision to this MMEL relief should be considered after the installation phase is complete.
The most significant change in Revision 5 was to change the relief category from "C" to "B" for the entire system when required by 14 CFR. The rationale and specific changes are detailed below. When TCAS was first being installed and procedures implemented, the Federal Aviation Administration's (FAA) FOPB decided Category "C" was the appropriate relief category while system problems were worked out, and pilots became accustomed to using it. The provisos and relief category intervals were intended to grant the operator sufficient relief, especially during the early stage of the TCAS Transition Plan (TPP). The intent promote the installation process, as well as support the use of a partial system. The first PL-32 discussion section stated that "both equipment reliability and operational experience will dictate if any revision to this MMEL relief should be considered after the installation phase is completed."

For the majority of operators (passenger airlines), the initial installation phase has been completed and TCAS has been in service for over ten years. TCAS has become a very important safety asset to the airspace structure - not only for its collision avoidance feature but also for its ability to provide pilots with greatly enhanced situational awareness. Pilots of airlines with required TCAS now rely heavily on the TCAS for situational awareness. Therefore, the FAA decided a revision to the original Category "C" is appropriate for these carriers and hence this policy letter will decrease the length of time the TCAS will be allowed to be inoperative by placing it in Category "B".

However, the TCAS system is unique, in that, it was not mandated for all operators at the same time. TCAS was not initially mandated for cargo carriers and hence their installation phase is not yet complete. In keeping with the original concept of allowing for a carrier to gain experience with a new system, the FAA believes it is logical to grant the same initial relief for all. Therefore, the repair category will remain at "C" for those operators who have installed TCAS but are not yet required by 14 CFR to have TCAS.

Another factor affecting TCAS the importance of TCAS is the FAA's effort to increase capacity. Since the time TCAS was developed and installation began, the FAA introduced several enhancements to increase the capacity of the air traffic system. These capacity enhancements generally result in a decrease in previous aircraft separation standards and hence require offsetting methods to maintain the same level of safety. The FAA used various avionic improvements as justification that these capacity enhancements can be safely accomplished. TCAS helped enhance the margin of safety because of its mid-air collision prevention ability.

The previous MMEL relief for TCAS was not contingent upon the type of operation being flown. There are now certain types of operations that require TCAS. Policy Letter, Revision 5, takes into consideration changing airspace environments. Its new proviso requires that, when dispatching an aircraft with an inoperative TCAS, the operator must ensure the enroute and approach procedures for that flight do not require TCAS. An example of operations that require TCAS is specific airspace limitations (Civil Aviation Authority imposed requirements).

**POLICY:**

Following discussion with members of the Aircraft Evaluation Group's, personnel at headquarters, and industry, the FOPB established the following policy.

No relief shall be granted for the voice command portion of the TCAS system when functioning in TA only. The audio will be provided via a speaker which may also service windshear and ground proximity equipment. Enhanced features (those above and beyond the basic TCAS system) may be inoperative provided that the inoperative feature do not degrade the system; for example, "Flight Level" traffic altitude selection feature for a traffic display.
The following standard MMEL proviso and repair category is adopted to provide standardization among all MMELs.

### 34 NAVIGATION

<table>
<thead>
<tr>
<th>XX-X</th>
<th>Traffic Alert and Collision Avoidance System (TCAS I)</th>
<th>B</th>
<th>-</th>
<th>0</th>
<th>(M) May be inoperative provided: a) System is deactivated and secured, and b) Enroute or approach procedures do not require its use.</th>
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<tr>
<td></td>
<td>Traffic Alert and Collision Avoidance System (TCAS II)</td>
<td>B</td>
<td>-</td>
<td>0</td>
<td>(M) May be inoperative provided: a) System is deactivated and secured, and b) Enroute or approach procedures do not require its use.</td>
</tr>
<tr>
<td></td>
<td>1) Combined Traffic Alert (TA) and Resolution Advisory (RA) Dual Display System (s)</td>
<td>C</td>
<td>2</td>
<td>1</td>
<td>May be inoperative on the non-flying pilot side provided: a) TA and RA visual display is operative on the flying pilot side, and b) TA and RA audio function is operative on flying pilot side.</td>
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<tr>
<td></td>
<td>2) Resolution Advisory (RA) Display System (s)</td>
<td>C</td>
<td>2</td>
<td>1</td>
<td>May be inoperative on non-flying pilot side.</td>
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<tr>
<td></td>
<td>3) Traffic Alert Display System (s)</td>
<td>C</td>
<td>-</td>
<td>0</td>
<td>(O) May be inoperative provided: a) Traffic Alert (TA) visual display and audio functions are operative, b) TA only mode is selected by the crew, and c) Enroute or approach procedures do not require its use.</td>
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<td></td>
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<td>(O) May be inoperative provided: a) RA visual display and audio functions are operative, and b) Enroute or approach procedures do not require its use.</td>
</tr>
</tbody>
</table>
4) Audio Functions  B  1  0  May be inoperative provided enroute or approach procedures do not require use of TCAS

*** 5) Airspace Selection Function  C  -  0

Each Flight Operations Evaluation Board (FOEB) Chairman should apply this Policy to affected MMELs through the normal FOEB process.

Greg Kirkland, Acting Manager,
Air Transportation Division, AFS-200

PL-32 reformatted 02/04/2010 with no change in content.