

RTCA Paper No. 185-16/SC135-708
August 12, 2016

SUMMARY OF THE SIXTY-SEVENTH MEETING

RTCA SPECIAL COMMITTEE 135
ENVIRONMENTAL CONDITIONS AND TEST
PROCEDURES FOR AIRBORNE EQUIPMENT

The Sixty-Seventh meeting of RTCA/SC-135 was held March 29th through 31st at the Honeywell, Inc. Deer Valley facility in Phoenix, AZ.

The following were in attendance:

Bradley Green, RTCA SC-135 Chairman
Gary Smith, SC-135 Secretary

Honeywell International, Inc.
Honeywell International, Inc.

Ballard, Doug
Beard, Susan
Borgstrom, Erik
Bowers, Joe
Common, David
Cummings, Elysabeth
Davidson, Steve
Donoghue, Bill
Falzone, Mike
Fitzsimmons, Elisha
Fletcher, Tim*
Folkersma, Alan
Hall, Pat*
Hatlestad, Jim
He, Terri*
Hofmann, Karan
Huynh, Joe

L-3 Communications
Rockwell Collins, Inc.
Element Materials Technology
American Airlines
Applied Technical Services, Inc.
Rosen Aviation
UTC Aerospace
UTC Aerospace
Garmin Ltd.
Rosen Aviation
Bell Helicopter Textron
GE Aviation
Elite Electronic Engineering
The Boeing Company
The Boeing Company
RTCA
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Jennings, David
Jordan, Howard
Kamath, Deepak*
Kerr, David
Kumbasar, A. Hakan
Lamb, John*
Lorraine, Charles
Marotta, Joe
Matheson, Evelyn
Mavier, Jerome
McMullen, Kyle
Milks, Terry
Nguyen, Lee
Ponçon, Marc*
Rehard, John
Sharpe, Harlan
Steinbach, Tim
Taurand, Christophe*
Tsuchiyama, Randy
Unal, Ayhun
VanDyke, Jacob
Vaughan, Merrill
Walen, David
Webb, Ken
Wills, Matthew

Rockwell Collins, Inc.
Hawker Beechcraft
GE Aviation
Garmin Ltd.
STM
Astronics Corporation
Rockwell Collins, Inc.
Honeywell International, Inc.
The Boeing Company
Airbus
NIAR
Rockwell Collins, Inc.
FAA
Airbus Helicopter
NTS
NIAR
Rockwell Collins, Inc.
Thales Group
Teledyne Control
STM
Honeywell International, Inc.
The Boeing Company
FAA
Rockwell Collins, Inc.
NIAR

* via Conference Bridge

In Accordance with the Federal Advisory Committee Act, Mr. Lee Nguyen of the Federal Aviation Administration was the designated Federal Employee for this meeting.

The agenda for the meeting was as follows:

1. Chairmen's Opening Remarks, Introductions.
2. Approval of Summary from the Sixty-Sixth Meeting – (RTCA Paper No. 014-16/SC135-705).
3. Review Working Group Activities.
4. Review Terms of Reference
5. Review DO-160G Errata Sheet
6. New / Unfinished Business
7. Establish date/locations for Next SC-135 Meetings.
8. Closing and Adjourn.

(Note that the following report is organized by Agenda Item, although some sections were conducted out of sequence in order to accommodate some members' schedules.)

Agenda Item 1 **Chairman's opening remarks, Introductions, Recognize Federal Representative**

The Sixty-seventh meeting of RTCA/SC-135 was called to order at 9:10 AM on the 31st of March, 2016. Chairman Brad Green opened the meeting by welcoming those in attendance. Lee Nguyen was introduced as the FAA designate representative for SC-135. Mr. Green reviewed the agenda for the meeting, and invited attendees in the room and those attending by conference bridge to introduce themselves.

Lee Nguyen (FAA) read the Public Meeting Announcement declaring that this advisory meeting was open to the public.

Karan Hoffman (RTCA) advised the meeting of RTCA policies regarding proprietary information in its publications, and also the current membership policy.

Agenda Item 2 **Approval of the Summary from the Sixty-Sixth Meeting**

SC-135 Secretary Gary Smith read the previous meeting's minutes, RTCA Paper No. 014-16/SC135-705. A motion was made and seconded to accept the minutes as presented, and the motion was approved unanimously.

Agenda Item 3 Review Working Group Activities, Review New Change Proposals

The Working Group discussions were centered on the Change Proposals submitted for Revision H.

This session led off with a discussion of aligning the revision letters of DO-160 and the DO-357 User Guide for the next revision. The general sentiment was that both documents should bear the same revision letter, to avoid confusion among document users, which would require advancing the revision level of DO-357. Marc Poncon agreed to pursue the issue with EUROCAE and report back at the October meeting.

The Change Coordinators described Change Proposals which were reviewed and dispositioned in their respective group meetings. The level of detail in the Plenary session discussions precludes accurate reporting here, so the following is a summary of the Change Proposals reviewed. The actual Change Proposals and any dispositions are found on the SC-135 Workspace and tracked in the Change Proposal Tracking Log, also found on the Workspace. Sections are presented in the order in which they occurred.

Section 22 – Erik Borgstrom, Change Coordinator. Erik reported that the Section 22 Working Group met in January. MIL-STD-46G CS117 was reviewed, and the intent of the Working Group is to keep the differences between CS117 and Section 22 to a minimum, as much as possible. The Working Group set target dates for revisions to Section 22 of DO-160H and the User Guide, with the draft to be voted on by January of 2018. Highlights include a new generator verification procedure and test procedure for cable injection tests, a new procedure for pin injection on AC power leads. Change Proposals are to be submitted in time to be worked at the next AE-2 meeting scheduled for May in Portland, OR.

Section 21 – Matt Wills, Change Coordinator. Five Change Proposals discussed:
H-14 – accepted pending addition of figure
H-28 – deferred until October, 2016
H-34 – accepted as modified
H-36 – not dispositioned
H-39 – rejected

Sections 19 and 20 – Jim Hatlestad, Change Coordinator. Four Change Proposals discussed:
UG-3 – deferred, pending a revised schematic
H-29 – accepted as modified
H-30 – deferred pending revised wording
H-35 – not dispositioned

Sections 1, 2 and 3 – David Kerr, Change Coordinator. David asked for help and support with updating these sections.

Section 16 – Brad Green for Joe Marotta, Change Coordinator. One Change Proposal:
UG-4 – deferred for additional work.

Sections 15 and 18 – Ken Webb, Change Coordinator. Two Change Proposals:
H-26 – Rejected; consider for User Guide
H-32 – accepted as modified
UG-5 – not dispositioned

Sections 9, 10, 11 and 14 – Harlan Sharpe, Change Coordinator. Two Change Proposals:
H-31 – not dispositioned
H-38 – not dispositioned

Sections 7 and 8, Merrill Vaughan, Change Coordinator. Four Change Proposals:
H-40 – rejected
H-41 – deferred for re-wording of definitions
H-42 – deferred until test reporting requirements are defined
H-43 – accepted

Sections 6, 12 and 13, John Rehard, Change Coordinator. One Change Proposal:
H-37 – accepted

Agenda Item 4

Review Terms of Reference

Item f. of the Terms of Reference (RTCA Paper No. 273-14/PMC-1283) stated that SC-135 would propose test conditions for 540 volt generators, and to break Section 16 into multiple sections, one for AC power systems, and one for DC power systems, and to break sections into emissions and susceptibility. Brad Green stated that in light of the SC-135 consensus to not break Section 16 into separate AC and DC sections, we would not pursue that particular proposal with EUROCAE WG-14, but the issue of 540 volt systems would remain for now.

Item j. of the Terms of Reference stated that SC-135 would chair a committee to align Audio Susceptibility test requirements between DO-160 and MIL-STD-461, and to bridge the gap between AF and RF susceptibility. Ken Webb volunteered to contact Marc Poncon to pursue this issue.

Agenda Item 5

Final DO-160G Errata Sheet

Secretary Smith reported that updated Errata had been re-formatted for consistency and to provide the errata page-by-page. Additional errors in content were recently discovered and the final document was not ready to present. The final Errata will be published before the next meeting.

Agenda Item 6

New/Unfinished Business

Doug Pope gave a presentation on Integrated Modular Avionics (IMA) and the questions posed for what constitutes acceptable DO-160 testing for these. Some questions posed include: Does every possible combination (configuration) of modules require testing? Is it sufficient to test an individual module, and if so, should it be installed in its integrated cabinet (rack), or tested separately? Discussion followed, regarding the creation of a Working Group and possibly a new Document to address testing IMAs. Brad Green asked for people to contact him if they are interested in a Task Group to address the IMA issue. Brad will call the group to meet and discuss how to proceed before the October meeting.

Agenda Item 8

Establish Date for Next SC-135 Meeting

The next SC-135 meeting is planned for October 25-27 at the FAA Southwest Region office in Fort Worth, TX.

Agenda Item 8

Closing and Adjourn

Brad Green asked for a motion to adjourn the meeting. A motion was offered, seconded, and unanimously approved. The meeting was adjourned at 3:01 PM on Thursday, March 31st, 2016.

Certified as a true and accurate summary of the meeting.

-S-
Bradley Green
Chairman

-S-
Gary Smith
Secretary