INTERNATIONAL AIRCRAFT MATERIALS FIRE TEST WORKING GROUP MEETING MINUTES

Hosted by EASA in Cologne, Germany

June 17-18, 2009

WEDNESDAY, JUNE 17, 2009

Burnthrough Update – R. Ochs

Rob provided a recap of what the NexGen burner is, why it was developed, uses of NexGen burner, and a description of the components of the NexGen burner. NexGen drawings are available on the FAA Fire Safety website at http://www.fire.tc.faa.gov.

Update – Remanufactured Stators and Turbulators: Marlin Engineering, Inc., was able to digitize the original stator and turbulator and remanufacture them. Photos of the original and prototype turbulator produced by Marlin Engineering, Inc., were shown. Photos of the original modified stator and the prototype stator were shown.
Comparison Tests: A new draft tube was made to fit the precise 4" round stator. Datum: Flame Temperature Measurements Comparison Testing: testing was performed on the picture frame sample holder with polyacrylonitrile (PAN) materials of 2 densities. Samples were kept in conditioning chamber until testing. Burnthrough results of these tests were presented. Results: new stator and turbulator had no significant effect on overall flame temperature and Burnthrough times of PAN. They can be considered equivalent.

Analysis and Design of the Federal Aviation Administration Fire Test Burner – Particle Image Velocimetry Applied to Fire Safety Research – R. Ochs

Rob provided an overview of the motivation for incorporating PIV research including development of a redesigned NexGen burner (independent of previous components that have limited availability, produces similar flame and test results, and increased accuracy and consistency). The original burner must be investigated first.
Methodology: utilize flow measurement techniques to study the operation of the burner and assess each component. A diagram was presented indicating how Particle Image Velocimetry (PIV) works. Images of the following were shown: Instantaneous Velocity Field, Mean Velocity Field, and Mean Vorticity Field. Analysis: the effect of the stator is apparent in the measured flow field.
Exit Air Flow from Turbulator: images of instantaneous velocity field, mean velocity field, and mean velocity and vorticity fields. Analysis: the effect of the turbulator is apparent. The magnitude of the velocity on the periphery of the flow field is significantly reduced by the action of the turbulator, from ~4 m/s to ~1 m/s.
Preliminary Flame Measurements were taken. Acquired Images – Single Camera and Dual Camera and where they were taken from were shown. The Timing Diagram was explained. Dual Camera Method Validation was completed.
Summary: PIV can be used to analyze the various components of the burner.
Peter Busch: Are you planning to test the various cone shapes? Rob: Yes, that is the last component of the burner to test using PIV.

Radiant Panel Round Robin Test Results – P. Cahill

Round Robin 10 Test Results: conducted in order to evaluate Metallized PEEK by independent labs and OEMs. This is the first time that this material has been distributed as a test sample in a round robin. Sample #5 was not Metallized PEEK. Graph of test results was presented. Graph of test results excluding Sample #5 was also shown. Graph "FAA vs. Vatell Calibration Usage" –

40% used Vatell calibration and 60% used FAA calibration. Summary: no significant difference was observed on the results reported from participating labs between FAA and Vatell calibration for this Metallized PEEK. Each lab's equipment appears to be functioning properly. If anyone is experiencing any problems with their equipment or operation, please do not hesitate to contact the FAATC.

Restraint of Leather Seat Cushions During Appendix F Seat Cushion (Fire Block) Testing – J. Davis

Objectives: reviewed available information on the subject (done)
Research – leather or top-coat shrinks? (current and ongoing)
Research effect of number of wires on fabric as baseline (current)
Survey of Leather Performance – 5 samples from each full hide: neck, leg, belly, armpit, and rump. Tests conducted on these samples: 12-second vertical, 60-second vertical, shrink length recorded, shrink length definition- distance from the lowest point of the top of the sample to the highest uncharred point at the bottom of the sample, subtracted from the initial sample length, and fire block performance. The first set of results was presented. Right now it is beginning to look like the major variant is the color process and top coat other than the manufacturer or area of the cow the leather is taken from.
Effect of wires – Baseline Tests on Fabric: 6 scenarios tested – various numbers of wires.
What's Next: agree on "preferred method" by email. There is an online group: http://tech.groups.yahoo.com/group/IAMFTWG/, get leather supplier to supply leather – volunteers?, Round Robin – before next meeting?, experiment – Velcro fastening, present results – final recommendation for preferred method.

Update on Flammability Testing of Magnesium Alloy Components – T. Marker

Tim provided a quick review of previous work in order to identify critical elements of magnesium alloy testing. Proposed Mag-Alloy Testing at FAATC: conduct 4 full-scale tests, postcrash fire scenario – baseline OEM aluminum frames, new seat backs, FHF seat cushions. Tim showed a video clip from the October 7, 2008, full-scale test and discussed the problems encountered. A post test photo was shown that indicated extent of seat involvement in fire. The seat backs (cushions, covers, and plastics) completely consumed during this test. Minimal melting of primary seat structure. Baseline Test 2 – December 18, 2008, full-scale test video was shown. A post test photo indicating level of involvement of seats was shown. What is the extent of damage to the primary components – legs, spreaders, etc.: very little melting of the primary structures.
Task Group Minutes – 3/4/2009: Repeat baseline test – procure additional 990 seats, fabricate new seat backs, test details, application of water, seat thermocouples. 24 triple 990 seats were purchased for next baseline test. Fabricate New Seat Backs: Over half of the seat structures have been completed for the next baseline test. We are waiting on foam and dress covers. What is the appropriate time to terminate the test? The test should be terminated when incapacitation is reached. Incapacitation model is not capable of "real-time" calculation. CO and temperature monitored every 30 seconds to determine test duration. Additional thermocouples will be added for next baseline test. Water will be applied post test. There will be a camera positioned next to the test article. Seat back cushions will be tested in lab-scale tests at FAATC. Status of Mag-Alloy Machining – they should be received by FAATC by next week. Antonio Chiesa: will you weigh the mag-alloy components? Tim: Yes, we can.
Future Considerations: All full-scale test results would help define an appropriate lab-scale test method or methods, which is the primary goal of the research. Although post crash full-scale test results will help in determining the safe application of magnesium in seat frames, other scenarios and testing will also be used. If magnesium alloys are determined safe for use in seat frames, lab test/tests will be developed. The next baseline test may be conducted sometime in the next month or so. Industry is welcome to observe the next baseline test. Please contact Tim Marker if you are interested in observing this test.

RTCA Update – P. Cahill/A. Thompson

New Advisory Circular (AC21-16F) identifies RTCA Document No. (RTCA/DO-160F) as an acceptable means of environmental qualifications for showing compliance with airworthiness requirements. The AC excludes Section 26, "Fire and Flammability" as it is not as stringent as FAA accepted methods. The AC will be issued this summer.
Progress To Date: First Task Group meeting was held in Naples, Florida, in March 2009. The purpose of this group is to draft a new Section 26 for inclusion into RTCA DO-160 document. Section 26 deals with flammability. Members agree the development of a test or tests for an "electronic" box will take longer than one year. In order to select the appropriate test method: define the product, define what needs tests (covers, internal components, printed circuit boards, etc.). determine what a small part is and does it fall under the small parts exclusion, determine configurations or parts to be tested, and determine which tests to conduct. Two units (SBU –Swift Broadband Unit) and the (HLD- High power, low noise amplifier). An example of an analysis sheet was shown and explained. Results from exercise for each of these units (HLD and SBU) and whether each respondent would perform tests on each unit and which tests the respondent would conduct.
Conclusions: The information gathered showed that considerable variations to flammability testing of electronic enclosures are possible with current interpretation of regulatory standards. We can use this information to offer specific guidance in RTCA DO-160, Section 26 to help reduce variations.
The Task Group will focus on Part 25 testing. The focus of this work is to come up with a test method that is accepted by the FAA.

Development of In-flight Flammability Test for Composite Fuselage – R. Ochs

Objective: develop a lab-scale test to determine the propensity of non-traditional fuselage material to propagate a flame. Materials to test: fiber-reinforced polymer composites. Use identical materials from intermediate scale – sample size 12"x24". Use radiant panel apparatus for lab scale testing: develop test parameters based on intermediate scale results (calibration heat flux, pre-heat, flame impingement time). Observations: surface color determines the amount of radiant heat absorbed by material. Intermediate scale testing will begin with non-aircraft materials.
Jim Peterson indicated that the emissivity needs to be measured.

Composite Material Fire Fighting – R. Ochs for J. Hode

Increased use of composites in commercial aviation has been well established.

Aqueous-film-forming-foam (AFFF) is commonly used at U.S. airports (MIL SPEC required by FAA). Is more extinguishing agent required to extinguish composite materials fires? Test Fire Requirements: reproducible, cost effective, and realistic. Material: must achieve self-sustained combustion or smoldering and test of agents and application technologies. FAA Burnthrough Test Method: NexGen Burner – this test method is the only one that presents a repeatable simulation of an external pool fire. Proposed test set-up: sample oriented to the burner in the same manner as insulation blanket samples. Thermocouples fixed to each of the four edges and front and back faces of sample. Schematic of proposed test set-up was shown. Testing in two stages. For your consideration: use of existing test methods allows greater confidence in results.

OSU and NBS Update – R. Hill for M. Burns

NBS Update – Photometric System Round Robin: FAA is currently conducting a Round Robin check out of the NBS Photometric System using neutral density light filters. No furnace heat or

pilot burner required. 21 labs have participated to date. Contact Mike Burns if you would like to participate. The results/data will be presented at the next Materials Working Group meeting.

FAA Heat Flux Gage Calibration Study: Dick showed graphs comparing each transducer (either Medtherm or Vatell) calibrated by Mike Burns to FAA transducer (FAA uses NIST Calibrated HFG).

Heat Flux Sensitivity Study – OSU/NBS: four different materials tested and identified as sample A, B, C, and D, the FAA HFG calibration slope was initially used for testing, the HFG slope was then increased (reducing heat flux) by 15% and tests repeated, both OSU and NBS data is presented in the following slides. Dick reviewed the results of the Heat Flux Sensitivity Study for samples A, B, C and D for the OSU and NBS.

What is the FAA going to do regarding the Heat Flux Transducer Issues? - R. Hill

FAA spoke to Vatell and Vatell believes that their calibration methods are correct. However, Vatell has agreed that they will sell transducers using an aviation standard (a transducer calibrated by NIST). The FAA will provide Medtherm and Vatell with transducers calibrated by NIST to be used for their aviation standard calibrations. Jeff Gardlin (FAA Regulatory side): The FAA approach will be to go forward and not go back and conduct checks retrospectively. A message will be sent out to all ACOs expressing that test labs should have transducers with calibrations that can be traced to NIST calibration (some wording to this effect – wording that indicates that somewhere along the lines the transducer was calibrated to the standard) within 15 months. Jeff is open to ideas of how to get this information out to industry. This information will also be communicated to other aviation authorities. Scott Campbell: What about previously manufactured parts and spares – say produced 2 years ago? Jeff: These should not be affected unless new type design data is generated. Scott: Sometimes our customers require rolling of part numbers on previously manufactured spare parts. Len John: Will there be comments solicited from industry? Jeff: We solicited comments during the March 2009 Materials Working Group meeting, and a Task Group exists on this. Jim Peterson questioned maintaining consistency in quality control. If we certified something as 50/50 and heat flux is changed and now quality control is 75/75, what do we do? There is no regulatory requirement that says the only method of quality control is using the heat release test. The quality control numbers for the heat release test may exceed the certification number. Is it possible to get a certification statement from the FAATC stating it is traceable to NIST to show our ACO office in Wichita? Jeff indicated that the FAA Transport Directorate can make sure the Wichita ACO office is aware of what has been done, etc.

<u>Calibration of Heat Flux Calorimeters – Historical Review</u> – D. Slaton

Historical data indicates that calibration levels have departed from the historical reference. The variation between original calibration levels and the higher levels today (based on the NIST calibration) are not crucial. Historical data provides support for a baseline calibration of a local “gold standard”. Dan discussed the situation. FAA Calibration Round Robin in 1993/1994 and NIST Calibration Round Robin in 2004 were both summarized. A report was produced on the NIST Calibration Round Robin in 2004.

<u>Development of an Improved Fire Test Method and Criteria for Electrical Wiring - Update</u> – T. Marker for J. Reinhardt

Additional Work Recommendation: The NFPA and ASTM International concluded and recommended in their previous research studies, that the flammability of wires should be determined by bundling the wires, etc. 30-Degree Radiant Heat Panel Test for Electric Wire Radiant Heat Panel Test Results was shown. Conclusions: wire bundling did not affect the results of the aviation-grade wires (current).

Development of a New Flammability Test for Aircraft Ducting – Round Robin – Preliminary Results – T. Marker for J. Reinhardt

Micro-scale Combustion Calorimeter Test was used as a quick prediction tool for pass/fail of material in Radiant Heat Panel Test. Round Robin results were shown. Individual Lab Acceptance Criteria Results were presented. Precision Test Method: will analyze (statistically) recently collected data using ASTM E691-08.

Preliminary Conclusions: the average results of the labs matched the MSCC results: 9 materials passed, 2 failed.

THURSDAY, JUNE 18, 2009

Task Group Reports

Magnesium-Alloy Task Group – provided by T. Marker

During the general meeting the FAATC described the results of two full-scale baseline tests they had conducted using standard, aluminum-framed, OEM seat structures that were purchased in 2008. The purpose of these tests was to establish the current hazard level during a typical postcrash fire accident scenario. Subsequent tests using magnesium-alloy seat structures would determine if there is an increase in the overall hazard level as a result of the magnesium alloys.

During the Task Group session, the full-scale results were discussed in further detail, with a focus on the next (3rd) baseline test. As discussed at the previous task group meeting in March, the results of the first two baseline tests indicated higher than expected flame spread on the surface of the seat cushion backs. During both tests, the seat backs ignited quickly, burned vigorously, and were eventually consumed in the fire. This was an unacceptable test condition, since the primary goal of the full-scale tests was to evaluate the contribution of magnesium-alloy components used in the seat structure. It was agreed at the previous meeting that the performance of the seat back cushions was an issue, and the FAATC was concerned that the poor performance of the seat cushion backs could conceal any additional hazard generated by the magnesium-alloy components. The FAATC suggested that the easiest way to guarantee performance of the seat back would be to fabricate them from supplies of foam and dress cover that are of known performance values. Similarly, it was agreed that the composite (carbon/epoxy) back “hoop” structure was also a contributor to the unusually high flame spread and poor performance. To prevent this occurrence during future tests, a simple aluminum frame seat back structure was conceptualized, and fabrication of these units was initiated following the previous task meeting. The new seat back frames have been competed for the 3rd baseline test, and the fire-hardened foam and dress covers have been purchased. As of 6/26/09, several of the triple seats incorporating the new seat back have been completed.

This new seatback configuration should ensure a robust, realistic test condition without masking the performance of the magnesium alloy components. By extending the time of the test, the seat structures will be exposed to the heat from the fuel fire for a longer period, thereby inducing more melting of the primary structure, which is the intended outcome to determine any contribution from the magnesium-alloy components. The increased performance of the cushion materials should also enable a longer viewing time prior to smoke obscuration.

Additional items discussed during the Task Group session:

Planned Tests. The agreed-upon plan is to conduct a total of 4 additional full-scale tests. The first will be a baseline using the 990 seats with a modified seat back described above. The seat back frame will be fabricated by the FAATC using standard 2024 aluminum box in a 0.75 x 1.5-inch

cross section. If the test is executed as planned, two following tests will utilize magnesium alloy in the primary frame components, legs, spreaders, and cross tubes. A fourth test will be added in which the seat back frame will be constructed of magnesium alloy, in addition to the primary components.

Test details. There was considerable discussion over the length of the test, and what is the most appropriate point to extinguish the external fuel fire. During the first two baseline tests, the external fire was allowed to burn beyond the flashover point with extinguishing occurring at 3 minutes and ~5 minutes 30 seconds respectively. In both of these tests, both flashover and incapacitation were reached prior to 3 minutes. In the proposed 3rd baseline test it is targeted that flashover would occur at roughly 4 minutes to 4 minutes 30 seconds from initiation of the external fire. Incapacitation would occur in roughly the same time frame. If this proves to be true, we are looking to extinguish the external fuel fire at approximately 5 minutes. Reaching an incapacitation state is a desired criterion of this test, however since the model used to calculate incapacitation is not a real time model (i.e. data is obtained from the test after it is completed and subsequently input into the model to determine incapacitation), one earlier suggestion was to perform a real-time approximation by monitoring the CO and temperature at the two measuring stations in the cabin. This could be checked at 30 second increments. For example, at 4 minutes, if the levels are such that incapacitation has not been reached, the test will continue to 4 minutes 30 seconds, and the levels re-checked. Once flashover and incapacitation are reached, it would be permissible to extinguish the external fuel fire. Although this approximation can still be performed, it was agreed that for simplicity the test would be terminated at 5 minutes by extinguishing the external fuel fire.

Application of water. In addition to the test duration, the application of water on the seating materials was also discussed. For the purposes of having a good comparison between the baseline test and the subsequent magnesium-alloy tests, it was agreed at the previous meeting that water would be used in all tests, not just the magnesium-alloy tests. This would be accomplished using both a deluge nozzle positioned to knock down the cabin fire, and an additional stream nozzle aimed directly at the seat in the fire door. After discussing this plan again, it was determined that more useful information may be gained from the test by allowing a 5 minute observation period following fuel fire extinguishment. During the baseline test, this is not likely to be a concern. During the subsequent mag-alloy tests, there are several possibilities that may exist during this 5-minute observation period. For example, considering extremes, the fire could either be self extinguishing/diminishing without intervention, or conversely it could be increasing in intensity. Another possibility is it lies somewhere between these 2 extremes. The task group members agreed that useful information could be gained by not initially applying water to the cabin interior immediately following fuel pan extinguishment. Water application could be performed during the 5-minte observation period in the event the fire is obviously increasing in intensity, or there are visible signs of magnesium-alloy ignition. If it is difficult to determine if the fire is increasing in intensity or decreasing, water could be applied after certain parameters are met, for example increasing cabin temperature or seat frame temperatures. These details will be finalized prior to the execution of the mag-alloy full-scale tests.

<u>Electrical Wiring and Ducting Task Group</u> – T. Marker

John Reinhardt has a Google group. Contact John Reinhardt if you are interested in participating in this Task Group at John.Reinhardt@faa.gov or 609-485-5340.

<u>RTCA Task Group</u> – provided by P. Cahill

The Task Group agreed that the components on printed circuit boards (PCBs) should be removed before testing, and they agreed that PCBs should be tested using the 12-second vertical Bunsen burner test per the *Aircraft Materials Fire Test Handbook*. Some guidance on small parts will be discussed. However, no definition of a small part will be given. There was discussion on what

configurations would and would not have to be tested (such as a vented and non-vented enclosure). Alan Thompson will put together (what will be Section 26) the first draft and submit it to the Task Group members and to Lee Nguyen in the Washington FAA office and to Jeff Gardlin at the Directorate.

NexGen Burner Task Group – R. Ochs

Discussed new components (stators and turbulators) manufactured by Marlin Engineering, Inc. Rob will test these components in Park Oil Burner to see if they are compatible. Discussed burner cone shape – TG members will periodically take measurements of their cone shapes.

Composites – R. Ochs

Group will investigate gas burner developed by CEAT. Discussion on how to assess smoking of composite fuselage – this will be investigated/discussed by FAA. Dick Hill mentioned that there are currently no smoke requirements for these areas. This should not be considered in developing the test.

Contamination – provided by D. Slaton

Claude Lewis/Ray Cherry presented a status of their work evaluating in-service incidents and accidents where thermal acoustic insulation played a role in the fire event. Evaluation of the information attempted to determine the role of contaminants in the fire. Only 2 events were determined to have contaminates that clearly played a role in the fire. Ray Cherry has also developed a new arc testing machine to evaluated ignition and flame propagation on insulation films. Data was presented using various contaminates on different polymer films and results were compared to other testing presented previously by Boeing and Airbus. Additional testing is planned, at which time final reports will be completed including a recommendations to share the information with airline maintenance groups.

Restraint of Leather Seat Cushions – J. Davis

All the labs will continue to sample the leathers they have coming through their shops. We will then try to obtain 10-12 hides and run the same series of tests that we did on the fabric to observe effects. We will then try to have the labs agree on the same method to run the tests.

Harmonization of Flammability Requirements – provided by S. Campbell

The task group met Thursday morning which included representatives from Airbus, Boeing, Bombardier, Embraer, regulatory agencies, suppliers and various airlines. We discussed many subjects:

A/ Industry position for testing certain design features- Boeing has already solicited through their survey around March ’09 how industry approaches the substantiation of many design features and published their results. The results represented the most common approach and not necessarily the most/least stringent methods. Many in the task group did not participate in the survey nor have seen the results. The task group decided that we wanted everyone to have the opportunity to validate Boeing’s findings as a representative industry position.

B/ Current Seattle ACO requirements (Ditch & Pot, insert potting, panel edgefill)- The task group generally took issue with these new interpretations. i.e. requiring 60-second vertical Bunsen burner testing for Ditch and Pot, and requiring testing of insert potting.

C/ Boeing/ FAA issue paper- Lots of discussion as to why an issue paper was pursued and not an AC. Has the FAA coordinated with other world authorities? How will the issue paper affect companies outside the US? The FAA Issue Paper (Stage 2) and the proposed Boeing response (Stage 3) will be forwarded to the task group once they are released.

D/ Developing a process for generating similarity data- The group discussed the need for a standard process that can be used to establish similarity. It was important to many that such a process would not be the only process as some companies already have customized processes in place that have been acceptable. Since many companies supply to multiple OEMs, a universally accepted process would be very helpful to establish similarity trends. There were some inputs that coming up with a general process may be difficult due to the unique configurations used across industry. A draft proposal will be developed for review.

E/ Seat Special Conditions- The group didn't have much time to get into the details, but it is still apparent that there are multiple interpretations of these rules.

Recommendations/ Action Items:

1/ Provide the Boeing industry position data to the group for validation. This will either be accomplished though a "Google Group" website or by email within the next month.

2/ Recommend that the world aviation authorities meet/ discuss these issues and work with us to form harmonized policies.

3/ Recommend that the final guidance of the Design Feature MOC Issue Paper be released into an AC.

4/ Group members have been tasked to document processes used to establish similarity or propose ideas for such a process.

Heat Flux Transducers Task Group – D. Hill

We are going forward with getting transducers calibrated by NIST. We discussed having a small group to work on a standard. We are going forward so that when we get the transducers back from NIST, we will send one to Vatell and possibly one to Medtherm.

NexGen Burner for Seat Cushion Fire Testing – R. Ochs for D. Do

Lack of availability of burners for seat cushion fire testing has resulted in the need for a new burner.
Objective: configure a NexGen burner to achieve the calibration standards set in Chapter 7 of the Aircraft Materials Fire Test Handbook.
Equivalent Flow Rate – Rob explained how this was achieved with NexGen burner.
Graph of Average Flame Temperature – 2.25 80 degree PLP was presented and explained.
Final NexGen Burner Settings were achieved after many months of work. Measured Flame Temperatures bar chart comparison of Park Oil Burner to NexGen Burner. Measured heat flux between NexGen and Park was almost identical.
Seat Testing: sample sets were obtained from conditioning chamber. Tests were conducted using the NexGen and Park oil burners for comparison.
Summary: after much trial and error testing, the NexGen burner was able to achieve burner calibration according to the specifications in Chapter 7 of the Aircraft Materials Fire Test Handbook.
Future Work: there is some laboratory work to be done. Then more comparative testing will be conducted.

Considerations for the Future of Appendix F – J. Gardlin

Current State: Appendix F has grown and evolved through the years
There are 7 'parts' – only part 1 establishes requirements based on material (as opposed to usage). All requirements permit 'other approved method'. Current approach, whether by usage or material, is to list applicable parts explicitly.
Main Factors in Establishing Flammability Requirements: Nature of Threat: principally, Relative ability to mitigate: principally, and Potential contribution of item.
Tests and their applicability: Bunsen burner, Oil Burner (seats), Oil Burner (cargo liner), OSU/NBS, Radiant Panel, Oil Burner (insulation).
Jeff presented what the simplified structure might be for the Future of Appendix F. He reviewed the advantages of this new structure including: simpler to establish which test is required, should not be as much (or any) overlap, criteria not subject to obsolescence with new materials, and certain things could be qualified for general use without a specific application identified.
This very likely would be addressed through some sort of industry group – ARC or ARAC.

Thermal Acoustic Insulation Contamination – R. Cherry

This presentation summarizes some of the work carried out to investigate contamination of thermal acoustic insulation. A draft report has been prepared by RGW Cherry and Associates and submitted to Transport Canada for review. A number of areas were investigated in conducting this research. 10 In-flight fire occurrences between 1991 and 2004 were investigated to see if contamination were involved in the fires. Approximately 2/3 of the contaminants found on thermal acoustic insulation are dust/lint and corrosion inhibitors. Ray presented and explained results of tests conducted using the Transport Canada Arc Test Rig. Conclusions: the corrosion inhibiting compounds appear to perform least well in terms of flammability and further testing on cleaning fluids is needed. Transport Canada has authorized this testing to proceed. Suggested Mitigation: dust, lint, debris, grease, oils, hydraulic fluids, insecticides, etc. – DIRECTED CLEANING TASKS. Corrosion inhibiting compounds and cleaning fluids: further testing to determine required. Recommendations: the industry groups responsible for developing maintenance practices should be provided with the test results carried out under the auspices of the IAMFTWG Task Group so that they may be used to provide guidance. Consider AC-25-27 (contamination by corrosion inhibiting compounds of electrical wiring systems to address thermal acoustic insulation as well.

Sixth Triennial International Aircraft Fire and Cabin Safety Conference - R. Hill

The conference will be held October 25-28, 2010, at the Tropicana Hotel-Casino in Atlantic City, New Jersey, USA. Information will be posted to the FAA Fire Safety website as it becomes available (http://www.fire.tc.faa.gov). Please send abstracts to April Horner at April.ctr.Horner@faa.gov if you are interested in presenting at this conference. Abstract submissions will be accepted until December 31, 2009.

Next Meeting

The next meeting will be held October 21-22, 2009, at the Trump Taj Mahal Casino Hotel in Atlantic City, New Jersey.

2010 Meeting Hosts Needed

We are seeking hosts for the spring and summer 2010 Materials Working Group meetings. Ideally, one U.S. host and one international host.