INTERNATIONAL AIRCRAFT MATERIALS FIRE TEST WORKING GROUP MEETING

October 19-20, 2015

Agenda

Tropicana Hotel-Casino, Atlantic City, New Jersey, USA

MONDAY, OCTOBER 19, 2015

1:00-1:30 PM Welcome/Logistics/Participant Introductions

1:30-1:50 PM Magnesium Alloy Test, Development of Advisory Material – T.Marker (FAATC)

1:50-2:00 PM SAE Seat Committee Update-AS8049 – Bruce Gwynne (Magnesium-Elektron USA)

2:00-2:25 PM Full-Scale Testing of Thermoplastics Used in Aircraft Seats – T.Marker (FAATC)

2:25-2:40 PM Seat Flammability Test, Handbook Update – T. Salter (FAATC)

2:40-2:55 PM Cargo Liner Test – T. Salter (FAATC)

2:55-3:10 PM *Break*

3:10-3:20 PM VFP Update – R. Ochs (FAATC)

3:20-3:30 PM Inaccessible Area Fire Tests on Composite Structure – R.Ochs (FAATC)

3:30-3:45 PM Intermediate Wire and Wire Sleeving Tests – R. Ochs (FAATC)

3:45-4:05 PM Heat Release Rate Update – M. Burns

4:05-4:15 PM Radiant Panel Update – S. Rehn

4:15-4:25 PM RTCA – S. Rehn

4:25-4:40 PM Evacuation Slide Test – T. Marker (FAATC)

4:40-4:55 PM Airflow Study – T. Salter (FAATC)

TUESDAY, OCTOBER 20, 2015

9:00-9:20 AM ARAC Update – Jim Davis (Accufleet)

9:20-9:25 AM Material Change Similarity Overview – R. Lyon (FAATC)

9:25-9:40 AM Assessing Material Consistency Using MCC – Thomas Fabian (UL LLC)

9:40-9:50 AM Policy Statement Task Group: Updates – Dan Slaton (Boeing)

9:50 AM *Break*

10:00 AM-12:00 PM Task Group Meetings Session I:

Magnesium Alloy – T. Marker
VFP Composite/Ducting/Wiring – R. Ochs
OSU/HR2 – M. Burns (Room: Carousel A-C)
Seats – T. Salter (Room: Main Meeting Room)
Approved Material List – S. Campbell
Flame Retardants/Mat'l Change Similarity – R. Lyon (
RTCA – S. Rehn

12:00-1:30 PM *Lunch (on your own)*

1:30-3:30 PM Task Group Meetings Session II:

Magnesium Alloy – T. Marker
Radiant Panel – S. Rehn
Cargo – T. Salter (Room: Main Meeting Room)
Evacuation Slide – D. Do
Policy Statement Task Group – D. Slaton

3:30-3:45 PM *Break*

3:45-4:45 PM Task Group Reports

4:45-5:00 PM Additional Discussion/Closing

INTERNATIONAL AIRCRAFT MATERIALS FIRE TEST WORKING GROUP MEETING

October 19-20, 2015

Tropicana Hotel-Casino, Atlantic City, New Jersey, USA

MONDAY, OCTOBER 19, 2015

Development of a New Flammability Test for Magnesium Alloys – T. Marker

Results of Magnesium Alloy Flammability Test Round Robin III were presented. The use of magnesium alloy in other cabin areas is now being investigated. Determination of appropriate method of testing. The Task Group discussed the Use of Surface Area-to-Volume (SAV) to Predict Flammability as suggested by Enzo Canari during its June 2015. Samples were tested in various test apparatus: electric arc tester, radiant panel. Tim reviewed the items for discussion during this week's Task Group meeting. Slaton: it is interesting how you are building on the oil burner. Over the years we have tried to figure out how to come up with a material test method. You may still see that the oil burner is the most stringent test method as you work with the other test methods such as the radiant panel. Jensen: have you continued your efforts on finishes on magnesium such as anodized corrosion protection? Marker: we have laid that to rest at this point. We know that paints and coatings are required to be tested according to the vertical Bunsen burner. We were satisfied that that would be the preferred method.

Magnesium Aircraft Seats – SAE Update – Bruce Gwynne (Magnesium Elektron)

Bruce reviewed the current status: October 2014 - FAA: New Chapter of *Aircraft Materials Fire Test Handbook* – Chapter 25 - "Oil Burner Flammability Test for Magnesium Alloy Seat Structure". EASA: Final Special Condition issued to Airbus June 2015, but not yet published. SAE AS8049 C was published August 14, 2015 – magnesium ban removed. Ban will not be fully erased until TSO-C127c is issued – timing still uncertain. Another paragraph indicates that magnesium alloys shall not be used: SAE AS8056 Section: 3.2.1.8 Galley Carts, Containers and Associated Components. Custodian of AS8056 indicated that they would be willing to work with us.

Full Scale Testing of OSU Compliant and Non-OSU Compliant Seat Paneling Materials– T. Marker (FAATC)

Seat Panel Flammability Investigation was conducted at FAATC. Test set up photographs and a drawing are included in the presentation. Results of the full scale tests were reviewed. Jensen: Panels that size may fall under 60-second vertical Bunsen burner test. Question: How does this compare to a real life egress situation? Marker: 300 seconds is our internal benchmark. Hill: The Bunsen burner 60-second would be eliminating the after flame time, that material would then pass the 60-second test – under the new rule. Time to egress: we are looking at comparison and at a scenario that gives us a fairly long survivability rate. We set the time to give us a good comparison. The opinion is that when the materials burn close to the door and impinge on the seats in the door area, if it is in the door that material starts to burn and has a tendency to pull the fire in from outside because that material is burning. We saw this with seat tests years ago – the draft pulls the fire in from outside with the seats near the door area. Campbell: what was the configuration of that test? Marker: It was a rupture scenario. HP Busch: did you include toxic gases in the model? No, we did not input gases into the model.

Seat Flammability Test, Handbook Update – T. Salter (FAATC)

NexGen Burner Development – review of related work. Seat Cushion Round Robin Study was recently completed. NexGen Sonic vs. Park Burner – a 3-lab round robin study was conducted (including FAA lab). Test Cell Size Comparison – NexGen burners were used for this test series. Chapter 7 *Handbook* Updates: NexGen burner included in Chapter. There will be discussion on Chapter 7 during this week's Task Group meeting. Question: it appears that there are a lot of direct and indirect human elements in oil burner tests, would FAA be willing to define test cell volume, size, airflow, etc.? Salter: We are considering written test cell guidelines on size, airflow once we complete the test cell comparison study. We will also look into intake air location. These will not be requirements – they will guidelines.

Cargo Liner Test – T. Salter (FAATC)

Cargo Liner Round Robin Study: Tim discussed the types of materials used in this study. Burner Cone Deformation Study: 4 cone types were tested. Brief review of *Aircraft Materials Fire Test Handbook* Chapter 8 updates. There will be additional discussion during this week's Task Group meeting.

Development of a Flame Propagation Test Apparatus for - R. Ochs (FAATC)

Modifications (installation of traversing pilot flame) have been made to Airbus and Boeing machines since June 2015 Materials meeting.

CFRP Flammability Tests – Test Configuration Influence on Flame Propagation – R. Ochs (FAATC)

Test Series: flat panel tests, simulated structure and panel tests, simulated Primary Lithium battery powered Electronic Locator Transmitter (ELT) failure to CFRP panel.

Intermediate Scale Hidden Area Wire and Sleeving Tests – R. Ochs (FAATC)

Many small components – need to determine potential hazard and develop test configuration.

Heat Release Rate Updates – M. Burns (FAATC)

Mike reviewed the 4 main parameters for the DOE Draft Test Plan Concept. Any questions on the DOE? None.

OSU Airflow Measurement Test Plan. Questions? None.

Radiant Panel Update – Steve Rehn

The training video has been completed since the June 2015 Materials meeting. Round Robin samples are ready to be sent to participating labs. Questions?

RTCA – Steve Rehn

RTCA DO-160G is the current international standard for environmental testing of commercial avionics. Next revision is due January 2019. Goal: create an alternative test procedure to test the enclosure as a whole instead of testing the components separately or individually.

Evacuation Slide Test Method– T. Marker for D. Do (FAATC)

Standardized Power control for electrical furnace work is underway.

Airflow Study (Burner Test Cell) – T. Salter (FAATC)

TUESDAY, OCTOBER 20, 2015

ARAC (Aviation Rulemaking Advisor Committee) MFWG CONTINUATION OF TASK UPDATE – Jim Davis (Accufleet)

Benefit vs. cost investigation/determination. A Framework for Cost and Benefit Analysis was developed by the ARAC for the task. The Report was issued to TAE at the end of September 2015. TAE will meet on November 4, 2015, to consider report for referral to FAA.

Material Change Similarity Overview – R. Lyon (FAATC)

Currently using Microscale Calorimeter to assess individual chemical components of materials.

Assessing Material Consistency Using MCC – Thomas Fabian (UL LLC)

Thomas outlined UL's Compliance and Surveillance Program. UL's Follow Up Service for plastics was explained. UL is currently using MCC for surveillance as an optional technique. Lyon: What happens if two materials are not similar by MCC? Fabian: we are not using only the MCC. We are usually seeing a difference in other properties of the materials, also. If that happens, we have a discussion with the manufacturer. We help the manufacturer determine why it is different – this takes us down another path. Question: have you done any UL ratings on thermosets or just thermoplastics. Fabian: we need to come up with a consistent methodology for each thermoset.

Flammability Policy Statement – CSWG Recommendation to Restart Task Group – Dan Slaton (Boeing)

CSWG is the Cabin Safety Working Group through the ICCAIA. We believe it is a good time to restart this Task Group to discuss updates and modifications to the Policy Statement with the understanding that this Policy Statement is going to be a future AC. There will be a Task Group meeting this afternoon.

Task Group Reports:

Magnesium Alloy Task Group – T. Marker

Magnesium Alloy Flammability Task Group Notes Provided by Tim Marker (FAATC)

Task Group Report for Magnesium Alloy Flammability Test

The Task Group participants reviewed the 3 basic areas where magnesium alloys could be used in an aircraft cabin, and discussed the current/proposed methods of compliance to flammability requirements:
1. Primary Seat Components. The FAA had previously conducted full-scale testing on aircraft seats constructed of magnesium alloy at the FAA Technical Center (FAATC). The results indicated no significant increase in hazard level if certain types of magnesium were used in the construction of 5 primary components (legs, spreaders, cross tubes, seat back frames, and lower baggage bar frames). The FAA has indicated it would be acceptable for certain types of magnesium alloy to be used in these areas if the material meets the requirements of the new flammability standard described in Chapter 25 of the Aircraft Materials Fire Test Handbook. Applicants would still be required to apply for Special Conditions in order to complete the certification of the material for use on a commercial aircraft.

2. Non-Primary Seat Components. Industry had previously inquired about the potential use of magnesium alloys in other (non-primary) seat components, for example tray table arms. The FAA and the European Aviation Safety Authority (EASA) indicated that although these non-primary components were not represented during the full-scale demonstrations at the FAATC, they would not prevent magnesium alloy use in them in

certain applications if additional requirements were met. The FAA had previously proposed using the surface area-to-volume (SAV) ratio of seat components as a means of determining the suitability of using the new oil burner flammability test for qualification. At the previous International Aircraft Materials Fire Test Working Group (IAMFTWG) meeting in Bremen, EASA had proposed a maximum SAV ratio of 20 for solid seat components, and 40 for hollow components. These maximum ratios were based on the components that were tested during the full-scale demonstrations at the FAATC. The Task Group participants agreed the 20 and 40 maximum SAV ratios were appropriate.

3. Other non-Seat Components. There is still considerable interest in the use of magnesium alloy in other cabin components, based on feedback provided by members of the task group. The FAA determined this area of potential use should be separated into two main categories: those components that are accessible during flight, and those that are inaccessible. The FAA suggested that accessible components located at or below the typical height of a seat back frame could also be substantiated using the maximum allowable SAV ratios that were proposed for non-primary seat components. A good example of this would be galley cart frames. The Task Group participants concurred with this logic. The FAA also suggested that magnesium alloy use in inaccessible area components would be required to meet an ignition type of test, and prove it can self extinguish in a specified period of time, since the typical fire threat in an inaccessible area is an electrical arc, or small fire resulting from an electrical arc.

Additional Discussion. Based on the review summarized above, Task Group participants formulated questions and made suggestions to the Task Group leader. The initial discussion focused on the proposed SAV ratios of 20 and 40. One participant questioned the proposed SAV ratio for solid components, and gave an example of a particular application in which the SAV ratio would be exceeded, even though the presumed conclusion would be that the component would not pose a threat during a postcrash cabin fire. Another participant gave an example in which a U-shaped component could be "closed" along the open face, thus creating a "hollow" part. The hollow part would then only be required to meet the SAV ratio of 40. After considerable discussion, the FAATC responded that by using the proposed 20 and 40 SAV ratios, a large majority of the prospective components could be substantiated without further assessment. For those components that exceeded the proposed values, additional testing could then be imposed to ensure the magnesium use did not result in a flammability hazard. Some suggestions of the additional testing were: radiant panel testing; oil burner testing of a thin bar sample based on the thinnest cross section of the actual component; oil burner testing of the actual component. The suggested additional tests for components exceeding the SAV ratios were discussed further as follows:

1. Radiant Panel Testing. The FAATC had conducted tests on various thin samples of magnesium alloy. The testing indicated the thinner samples would ignite quicker than thicker samples, which was expected. The results were promising, suggesting a simple pass/fail criteria could be developed, for example requiring that the sample cannot ignite prior to a specific time, and also requiring it to self extinguish within a specified time period. The FAATC has agreed to continue with this testing, and Magnesium Elektron has agreed to help supply thin samples.

2. Oil Burner Testing of Thin Bars. From an earlier discussion involving a specific application in which the component's SAV ratio exceeded the proposed limit, yet the component would intuitively not create a hazard, a participant suggested oil burner testing based on the thinnest cross section. To clarify, if an irregular shaped tray table arm was solid, but had a SAV ratio of 25, it was suggested that a solid bar sample could be run at a thickness equivalent to the minimum cross section of the component. Although this seemed reasonable, participants agreed that the thin part would indeed melt more quickly, and likely begin to burn prior to the required 2-minute criteria. Another suggestion was to reduce the exposure time, and simply focus on weight loss. The FAATC agreed to investigate this concept by conducting oil burner tests on various thicknesses of bar samples.

3. Oil Burner Testing of Actual Component. Another suggestion for components that exceeded the SAV ratio was to simply test the actual component to determine flammability. The FAATC cautioned that this was not realistic, as a typical, irregular-shaped component could be tested in many different orientations, with each method giving a different result. For example, a typical seat spreader is a complex, irregular shape, and there would be endless possibilities in terms of how it could be exposed to the burner flame. Another participant suggested that a test sample could be "normalized", similar to the methodologies currently used for the multitude of cargo compartment fixtures and assemblies. In these cases, parts can be standardized to fit into the existing test fixture, to ensure reliable results. In the case of the flammability test for magnesium, it is possible that a bar sample could be formed based on an irregular-shaped component, which would greatly reduce the potential for various outcomes. The FAATC agreed to investigate this concept by conducting oil burner tests on various cross sections of bar samples.

Development of an Advisory Circular. A strawman Advisory Circular (AC) has been initiated to accompany any new Workbook chapter on magnesium alloy flammability if/when a new Rule is implemented. The AC would include such things as maximum allowable SAV ratios, how to test coated samples, interpretation of test results, how to properly calculate the percentage weight loss of a sample, and the determination of self-extinguishment. The Task Group participants suggested that additional language be developed and included in the AC to address the potential hazard from electrical power that is within proximity to magnesium alloy components. The example discussed in the Task Group referred to business and first-class seats, and more specifically, the amount of electrical power that is typically used to control and actuate the numerous components inside these units. The Task Group discussed the difficulty of limiting electrical wiring to within a certain distance from magnesium alloy components, as there is the potential for numerous components inside the seating unit. One Task Group participant suggested a more reasonable approach could be to limit the amount of power (voltage and current)

that a seat draws (i.e. if the seat has a circuit breaker of xx amps or less, then there could be no restriction on the proximity of the magnesium alloy component to the electrical wiring). The Task Group agreed that additional guidance and language describing limits on electrical wiring, electrical current, proximity of components to wiring should be included in the AC.

Update of discussion paper. The FAATC and EASA jointly developed a discussion paper that includes many of the concepts discussed during the past several Task Group meetings. In addition to a background on the topic of magnesium alloy use in aircraft cabin components, the paper focuses on proposed methodologies for substantiating magnesium alloy use via the oil burner. The FAATC has agreed to update the discussion paper based on the recent meeting, and recirculate to the Task Group participants.

Full-scale testing. The FAATC agreed to investigate the feasibility of running additional full-scale tests to determine the influence of height on the flammability of magnesium alloy components. During the Task Group discussion, the participants agreed that accessible area components that are located at a height no greater than the seat-back frame should be acceptable (ex: galley cart frames). However, questions arose over the use of magnesium alloy in the construction of components that were located higher up in the cabin, for example the stowage bin hardware. Participants agreed that during a postcrash fire accident, the upper elevations of the cabin would likely experience more severe conditions than at lower elevations, and it would be beneficial to determine what the performance of typical magnesium alloy components are in these areas. The FAATC will determine the most suitable test configuration/scenario to evaluate the performance of magnesium alloys in upper cabin locations.

Determination of SAV ratios of non-primary seat components used in Business and First Class seats. Magnesium Elektron has agreed to contact the major seat manufacturers to determine the typical SAV ranges of the most common components used in the various premium seating designs. The Task Group has tentatively agreed on maximum SAV ratios of 20 for solid components and 40 for hollow components, but these allowable ratios are based on a limited number of cases. If the inquiry reveals that these ratios are not appropriate, it would be possible to adjust the proposed limits.

Web-Ex Interim Task Group Meeting. The Task Group participants agreed to engage in an interim meeting via Webex to discuss these issues in the early-December timeframe (mid-January also possible). One airframe manufacturer advised that seat manufacturers be involved in the discussions, which was agreed to by the other participants.

VFP Task Group – R. Ochs

Ribbon Burner was discussed. We hope to get it in within a month and start scheduling tests. Possibly have a ‘go’ ‘no go’ decision by the end of this year. There is a little confusion about test configurations. We have to determine/select the types of material to test in our next comparative test series (by March 2016 Materials meeting). We

discussed the wire sleeving test. I'm waiting for additional comments on the draft Handbook Chapter. Jensen: did you address things like silicon wrapping tape around wires used as moisture barrier for connectors in your Task Group meeting? Ochs: We will look into that.

HR2 and OSU Task Group – M. Burns

HR2 and OSU Task Group Notes Provided by Mike Burns (FAATC)

Task group discussions started by review of the Hot Surface Igniter (HSI) document recently added to the FAA Fire Test Handbook (Chapter 5) Supplemental section. There was general approval of the document by all in attendance. To date, the HSI has proven to be a durable and helpful option available in keeping the upper pilot burner flames lit due to the off-gassing of some materials. There was a desire by the group to slightly improve the bracket design for better lateral support of the ceramic rod so it doesn't fall out of position if inadvertently bumped. Currently the rod sits in two open slots. Martin Spencer of Marlin Engineering has agreed to look into an easy design change to the brackets to accommodate such a feature. The handbook supplemental section will be updated once a new design is agreed upon by task group participants / users.

The OSU Airflow Split Round Robin draft test plan was discussed. There was a general approval of the test plan concept. One of the limitations for participants in the robin is a height restriction between the outlet of the exhaust stack and the lab's smoke evacuation hood above the unit. The airflow measuring adapter / anemometer requires a minimum of 16 inches of vertical clearance. Labs will need to verify this clearance prior to volunteering to participate in the round robin.

Task group members would like additional parameters recorded in the test plan to include:

- Upstream pressure reading from the orifice meter pressure port
- % Relative humidity of airstream through the unit

In the test plan there is a requirement to obtain system pressures in the lower plenum and interspace area between the two lower plates. The initial method was to use two separate measuring probes, however after further discussion each measurement can be obtained by placing a mark on the lower plenum probe. This probe can then be raised to the interspace area measurement mark to measure this pressure. The test plan will include precise measurement locations for both of these pressure readings and photos will be included in test plan.

For testing materials in the round robin the task group would like to burn 5 samples as opposed to the traditional three. Perry Riggenbach from Schneller, LLC had agreed to provide all necessary test coupons and will have them shipped to the FAA Tech Center (approximately 300 coupons).

The Tech Center is currently working on getting two separate measuring packages together that agree with each other (Airflow & Pressure). This way, one unit will be shipped Internationally and one will remain here in the States. Hopefully this will speed up the round robin process. The equipment will be mounted in hardened containers for better protection. Further instruction will be included in the test plan.

Once the equipment is verified to be operating correctly an email will be sent out to labs requesting their participation and will include the test plan. Labs are requested to review the plan and reply back to the Tech center confirming whether they are able to participate or not (clearance difficulties, etc.).

When the round robin participant list is finalized, test coupons will be shipped to each lab as well as two "daisy-chain" mailing lists. Once a lab makes the necessary airflow and pressure measurements (Phase I) they will know who to ship the equipment to next. When the test coupons arrive at a test lab, they are to be held in a conditioning chamber until instructed to test them (Phase II).

Next the HR2 Design of Experiment (DOE) Test Plan was discussed. There was general approval by all in attendance of the test plan concept. Yusuf Mansour of Boeing, Everett has been working closely with the Tech Center in organizing the DOE and presented some preliminary data to the group (presented by Theodoros Spanos). As far as the next steps go, there was discussion of using a Material Simulator software program (via MFM) for initial testing that could potentially be followed by actual material testing. Further discussion is planned between Tech Center and the Boeing group for these next steps.

Miscellaneous discussions included the announcement of a 2016 NBS round robin. This round robin will begin in the late spring / summer timeframe of next year. Any labs who recently acquired NBS test equipment (that I am not aware of) are asked to send me their contact information so I can update my NBS email group.

And finally a request was made by the Tech Center to task group members for any voluntary information that could be submitted concerning OSU Compressed air systems. This equipment can be made available as a data base for labs looking to possibly upgrade their equipment (I get this question a lot). If willing to provide this information, please include manufacturer, part numbers, specifications etc. for equipment such as:

- Air Compressor / Blower
- Air Storage Tank (Volume)
- Dryer / Separator
- Heat Exchanger (Cooling or Heating or both)
- Pressure regulator (Compressor) or VFD's (Blower)
- Other

<u>FAA Tech Center Contact Information</u>
Michael Burns
FAA Fire Safety R&D Team
Phone (609) 485-4985
Fax (609) 485-5158

Mailing Address:
William J. Hughes FAA Technical Center
Attn: Mike Burns; Building 203
Atlantic City International Airport, NJ 08405 USA

Seat Task Group – T. Salter

Seat Cushion Test Method Task Group Notes Provided by Tim Salter (FAATC)

Seat Cushion Test Method

The focus of the task group was centered on the newly updated Chapter 7 of the Handbook, which includes the use of the NexGen sonic burner. The updated chapter 7 was released for initial review to a select few labs that regularly participate in the seat cushion round robin tests. The task group has asked that more copies be sent out for a review period which will extend until the next Materials Working Group meeting scheduled for March 2016. Any suggestions or concerns expressed during this review period may be included in the update chapter if possible. The participants asked that the Handbook allow the use of only Jet-A or JP-8 jet fuels be used in the burner to reduce disparities in lab test results. Diesel and Kerosene fuel types are currently allowed in the Handbook for use in the seat cushion burner test. Some concern was expressed regarding the current minimum distance between the seat cushion sample and burner during the warm-up period of the test. This will likely be revised due to space limitations in some test labs. The conversion from standard to metric units outlined in the handbook should be reconsidered to avoid the number of significant digits resulting from the current unit conversion. More instruction should be included pertaining to test chamber airflow requirements as the current handbook guidelines are left widely open to interpretation and are somewhat vague.

Cargo Task Group – T. Salter

Cargo Liner Test Method Task Group Notes Provided by Tim Salter (FAATC)

Cargo Liner Test Method

The task group's main focus was the result of the most recent Round Robin test results. As with past round robins, the results continue to suggest that differences in data among labs are due to varying test cell environment conditions including ventilation airflow, cell size, hood proximity, and other items. There should be more guidelines provided for labs that would reduce the disparities in data, such as suggested airflow requirements suited for a particular lab based on test cell size. A periodic checklist, or maintenance schedule, for the burner should be provided such that labs know when to inspect the burner and what parts to ensure proper operation of the burner. The new Garolite materials used in the recent round robin burned through consistently and further use and investigation of this material should be pursued for future testing related to burner studies. Work will continue with the study of the test cell environment using the cargo liner burner test method and updates should be included in the presentation for the next materials meeting.

RTCA Task Group – S. Rehn

We discussed the two possible test methods and plan to investigate each test method. Alan Thompson (Element) has already begun running tests using each of these methods and showed video of these during the Task Group meeting. Alan reported on the results of the tests he has conducted so far.

Radiant Panel Task Group – S. Rehn

We discussed the plans for the Round Robin. We want to make sure there is no additional airflow coming through during the test that can influence the test results. We will get the size of the room where tests are being conducted from all participants. RR participants will take photos of their test set-ups.

Approved Materials Task Group – S. Campbell

Approved Materials Task Group Notes Provided by Scott Campbell (Zodiac Aerospace)

The Approved Materials Task Group met and discussed the following:

- Ley's discussion with PRI confirming flexibility to work directly with them hosting a site (SAE not needed).
- PRI can work to our industry developed specification (and accepted by the FAA)
- Jeff Gardlin confirmed the approach is feasible and committed the FAA to be involved and help select a team to work the Qualified Products Group (QPG)
- Phase 1 may include monolithic materials (plastics, wire, hook/loop, seals, rub strips, placards, tapes, adhesives, etc.) or repeatable systems such as insulation blanket systems.
-

Actions:

- Create a survey to gauge interest from those who would list and end users. At the meeting- appeared to be interest on both sides of the equation.
- Contact PRI to determine if companies can upload a link or data sheet for their listed products
- Flesh out an industry specification to qualify materials to the AML. Would include the listing process (including inspection, test and witness), continued compliance, factors requiring re-qualification (major/ minor), etc.

Policy Statement Task Group – D. Slaton

Policy Statement Task Group Notes Provided by Dan Slaton (Boeing)

Policy Statement Task Group report-out:

- Michael Jensen reviewed background of "questions of Interpretation" from 2013, and discussed new items that have come up since then.
- Identified other rule applicability (45degree, 60degree, oil burner color…)
- Overall, industry is happy with the Policy Statement and the value of standardization it provides.
- Jeff Gardlin mentioned that there is no plan to revise the PS at this time, and that an update will be addressed in a future AC in parallel with the NPRM activity.

Next Steps:

- Industry members identify existing MoCs where there are opportunities to clarify, simplify, expand etc… AND prepare a proposal.
- Industry members to propose new MoCs and prepare a proposal.
- Need member volunteers to lead development of each specific MoC.
- Consider developing a template for a standardized compliance report and how to identify/reference the MoC's.
- Consider where additional standard test configurations can be defined to simplify testing.
- Need to consider future updates required due to changes in the future NPRM (finishes on Mg, elimination of Smoke, Bunsen burner requirements (minimum 12 sec VBB), seat HR requirements, etc…), but this the priority focus currently is updates to use under the current regulations.
- Provide inputs by end of year so that a summary of MoCs to update/add can be prepared prior to the next meeting.

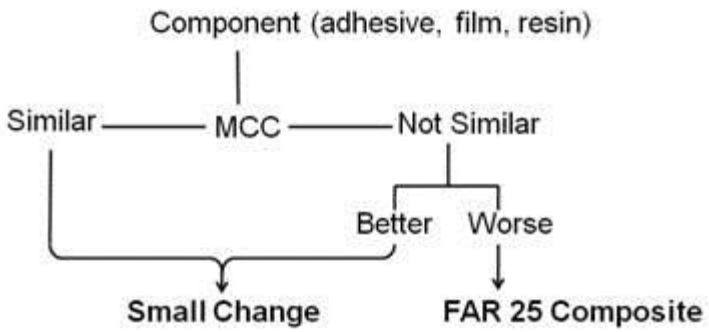
Michael Jensen presented a PPT briefing during Policy Statement Task Group meeting. The presentation is available on the FAA Fire Safety website at: http://www.fire.tc.faa.gov/pdf/materials/Oct15Meeting/Jensen-1015-Policy_Statement_Additions.pdf.

Material Change Similarity Task Group – D. Slaton (Boeing)

Material Change Similarity Task Group Notes Provided by Dan Slaton (Boeing)

Material Change Similarity Task Group report-out:

- Reviewed FAATC Microscale Cone Calorimetry (MCC) data analysis on some example materials. Provided a proposed data analysis approach using the Reproducibility/Repeatability factors found in ASTM D7309-13.
- A proposed process flow was discussed using MCC to evaluate a change in a material to assess the impact to flammability properties. The proposed process shown below allows a material change to be evaluated using MCC and compared to the existing material, and if equivalent, the material change is considered a minor change. If the results are not equivalent, the process allows additional evaluation of the changed material. The FAATC is developing modified MCC analysis methods (Flammability Index) to evaluate non-equivalent MCC results.



- The current industry approach to evaluate a material change is to perform traditional flammability tests on test configurations where the material is used. Development of standardized test configurations could simplify this approach. Meanwhile the process path where equivalent MCC results determine a minor change can be drafted into an Advisory Circular for review at the next meeting.

- A parallel effort is starting up to perform a MCC round robin study. Industry participants can contact Rich Walters at the FAATC for information. Industry is encouraged to participate by providing materials and participating in the round robin if they have MCC equipment.

Evacuation Slide Test Task Group – D. Do

Evacuation Slide Task Group Notes Provided by Dung Do (FAATC)

- We discussed the Updated Evacuation Slide Test Method . This updated method will use the power input of the furnace to provide the radiant heat for the Evacuation Slide Test. This power input of the furnace will provide a heat flux of 1.5 Btu/ft^2 sec at the distance of 2 inches in front of the furnace as required for the test
- I found that the updated test method, using the power input of the furnace will save about 10 minutes for the Test . The Power Input of the Furnace will be observed on the monitor during the test
- For the standardized furnace, we discussed that all labs must have the same radiant heat furnace used for the test in order to have the properly test results for the evacuation slide materials
- We discussed about that all Evacuation Slide Test Labs will conduct the calibration tests to compare the power inputs of the furnaces between labs
- We also talked about that we will have a Round Robin, using the Power Input of the furnace for the test. This Round Robin will be presented in the next meeting

Interested in participating in a Task Group?

Contact Task Group Leaders directly at:

Magnesium Alloy TG: Tim Marker @ Tim.Marker@faa.gov
VFP Task Group: Rob Ochs @ Robert.Ochs@faa.gov
HR2/OSU Task Group: Mike Burns @ Mike.Burns@faa.gov
Seat Test Task Group: Tim Salter @ Timothy.Salter@faa.gov
Cargo Liner TG: Tim Salter @ Timothy.Salter@faa.gov
Radiant Panel TG: Steve Rehn@ Steven.Rehn@faa.gov
RTCA Task Group: Steve Rehn @ Steven.Rehn@faa.gov
Approved Materials TG: Scott Campbell @ Scott.Campbell@zodiacaerospace.com
Policy Statement TG: Dan Slaton or Michael Jensen @ Daniel.B.Slaton@boeing.com or Michael.E.Jensen@boeing.com
Flame Retardants/Material Change Similarity TG: Dr. Rich Lyon or Dan Slaton @ Richard.E.Lyon@faa.gov or Daniel.B.Slaton@boeing.com
Evacuation Slide Test TG: Dung Do @ Dung.Do@faa.gov

2016 Meetings

March 16-17, 2016
Bordeaux, France
Hosted by Rescoll

June 7-8, 2016
Kansas City, Missouri
Hosted by AkroFire