U.S. Department
of Transportation
**Federal Aviation
Administration**

Technical Center

Atlantic City Int'l Airport
New Jersey 08405

October 26, 1993

Dear Group Participant:

Enclosed please find minutes from the October 4-5, 1993, meeting of the International Aircraft Materials Fire Test Working Group hosted by Schneller S.A. in Paris, France.

Please note that there are also several other important enclosures included in this package. Information and return forms for the February 2-3, 1993, meeting which will be hosted by Polyplastex International, Incorporated, in Clearwater, Florida, is included.

In preparation for our February meeting, the following Agenda items are proposed:

AGENDA ITEMS

FEBRUARY 2-3, 1994 MEETING

1. NBS Heating Element Round Robin - D. Johnson

2. OSU Standard Material Round Robin - H. Barrett (Polyplastex)

2A. OSU Standard Material - R. Felder (Schneller)

3. Calorimeter Round Robin - R. Hill

4. Comments on Chapter 7 and 8 - Oil Burner for Seat Cushions/Cargo Liners

5. Testing of Chamber Size Difference for Seat Test - R. Hill, W. Lampa (Deutsche Airbus)

6. Russian Round Robin Update - R. Hill

7. Discussion of Problems with Test Methods

This will be the last chance to add to the Handbook Appendices before printing. Therefore, you should come prepared, or if you are unable to attend, send items for consideration to the Group Coordinator prior to the meeting.

In addition to the above Agenda Items, the Working Group has been requested by the FAA/JAA/TCA Cabin Safety Team to review the following four areas for possible inclusion of advisory material into the Aircraft Material Fire Test Handbook:

1. Instructions for Continued Airworthiness: The identification and provision of necessary instructions to ensure that material systems continue to comply with the appropriate airworthiness standards under all foreseeable operating conditions.

Recognizing that the actual in-service evnironment and cleaning practices are typically quite different from the accelerated multiple cleaning scheme often used prior to certification to simulate in-service conditions, are additional measures necessary to ensure ongoing compliance? Alternatively, can more realistic and all-encompassing pre-certification use and cleaning schemes be developed?

Consider the range of materials, cloths, foams, carpets, thermoform and thermoset components.

2. Production Quality Assurance: What is the recommendation of the Working Group regarding repetitive testing of production articles, including frequency, in order to ensure continued conformity to the qualified configuration?

3. Minor Changes to Qualified Material Systems: Regarding compliance with the rate-of-heat-release and smoke emissions requirements, is there a sufficient database available to support a reasonably broad policy on the use of similarity as an acceptable means for qualification? Additionally, are there any small scale tests which can facilitate material selection or replacement?

4. Material Systems Renovation and Repair Procedures: Please provide recommendations on which repairs or renovations to in-service parts require re-qualification (and which should not), the procedures for qualifying such schemes, and how the relevant information should be provided to the operators. This request is with regard to material system qualified to Parts II, III, IV of Appendix F to FAR Part 25.

In order to facilitate this review, a general discussion of the four subject areas is planned, followed by the formation of four subgroups to research each area in depth and report back to the group at the next meeting. These subgroups will be tasked with not only scoping the problems but also recommending advisory material for the Handbook and defining the needs for additional testing and/or test method development. Because of the individual effort and short time frame required, participation by an individual will be limited to one subgroup. Hence the subgroups will meet concurrently at the conclusion of the Working Group meeting. Should you or someone else from your company wish to participate in a subgroup, but will be unable to attend the February Working Group Meeting, contact the Working Group Coordinator prior to the February meeting. Remember subgroup membership will require time and effort on your part!

If anyone has any additional items for the February meeting, please contact the Working Group Coordinator, April Horner, at 609-485-4471 or by fax at 609-485-5796, with your suggestions/input.

Draft copies of Chapters 7 and 8 of the Aircraft Materials Fire Test Handbook are included for your review and comments. Any comments or Appendix suggestions you have must be returned by ***TUESDAY, NOVEMBER 30, 1993***.

Sincerely yours,

Richard G. Hill
Program Manager

Enclosures

INTERNATIONAL AIRCRAFT MATERIALS FIRE TEST WORKING GROUP MEETING PACKAGE

OCTOBER 4-5, 1993, MEETING

HOSTED BY SCHNELLER S.A.

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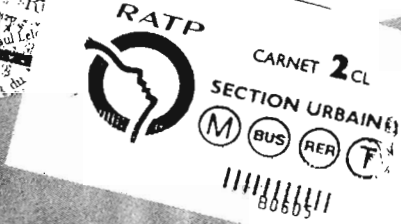

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INTERNATIONAL AIRCRAFT MATERIALS FIRE TEST WORKING GROUP MEETING MINUTES

Hosted by Schneller S.A., Paris, France

MONDAY, OCTOBER 4, 1993

D. HILL: Gave brief background and description of set-up of Working Group for new members.

ROUND ROBIN REVIEW ON REPLACEMENT HEATING ELEMENT FOR NBS SMOKE CHAMBER

D. JOHNSON: Reviewed results of previous Round Robin for two materials used by participating labs. Also, reviewed current Round Robin on comparison of calorimeters (presently used NBS transducer and the type used in the OSU). He pointed out that results showed good correlation.

UPDATE ON ASTM, F-706, ETC.

J. PETERSON (Boeing): F-706 has been disbanded in lieu of this Working Group. E5 will determine how information/data from F-706 will be handled.

PRESENTATION ON OSU HEAT RELEASE RATE REFERENCE SYSTEM

H. BARRETT (Polyplastex): Kit contains a mounting plate, Polycot paper, and water. Reviewed results from the 10 labs participating in Round Robin. Three heat fluxes were used in this study: 3, 3.5, and 4 Watts). Each lab tested three sets of six.

DISCUSSION OF WEST TEST METER

MEMBER QUESTION: Did you ever try dry-test meter?

H. BARRETT: I can't find one that is accurate enough.

D. HILL: Explained difference Incident and Absorbed heat fluxes.

MEMBER QUESTION: Will updated Handbook clarify Incident and Absorbed flux in 5.3.7?

D. HILL: Yes, it will.

H. BARRETT: Reviewed test plan to determine the effect of various heat fluxes through heat release chamber and reference material.

D. HILL: Hugh is doing this because it was a request from industry.

A copy of Hugh's presentation is included with this package.

CALORIMETER ROUND ROBIN

D. HILL: We are purchasing two calorimeters each from Thermogage, Medtherm, and High-Cal Engineering for this Round Robin. *Purpose*: Calorimeter calibration comparison - How do these compare to what we have? We will be able to see the differences between the three company's calibration. We will present results to group upon completion.

STANDARD MATERIALS ROUND ROBIN
(REINHARD FELDER-SCHNELLER)

D. HILL: Anyone who with ideas on different types of standard materials (different than those used by H. Barrett) contact Reinhard Felder at Schneller.

RUSSIAN HEAT RELEASE TEST METHOD ROUND ROBIN

D. HILL: Explanation and background on United States/Russian Testing. *Purpose*: VIAM would like use their Heat Release Device as an equivalent measure of safety for interior materials. We are in the process of developing a Round Robin test program with FAA Technical Center and VIAM. We would like 2 or 3 other labs to participate. We want to get a range of various materials so that we can be confident that we are testing a full range of materials that would be tested in this unit.

H. BARRETT: Does this test method use same specimen size?

D. HILL: No, it uses same sample size as NBS Chamber. He sketched an example of the VIAM Heat Release unit to give group an idea of what kind of unit it is. There is a large difference between their unit and an OSU. They use same pilot system for calibration and testing.

H. BARRETT: Is there a radiant heat source?

D. HILL: Yes, globars.

H. BARRETT: What type of airflow is it?

D. HILL: 3 liters per second.

J. PETERSON: How does the size compare to the OSU?

D. HILL: Smaller.

H. BARRETT: Is heat flux the same?

V. VOROBIEV (VIAM): We created our own transducer for the heat release machine. They use a different one from NBS.

D. HILL: We would like group members to come up with materials that they feel would be challenging to OSU to test in the VIAM machine. We would like 4 or 5 labs involved (supply 6 or 7 materials). Materials will be provided to FAA Technical Center to be forwarded to VIAM. (A Return Form is included in this package for those who would like to participate).

OSU - DISCUSSION ON CURRENT PROBLEMS

GROUP MEMBER: Suggested changing water in wet test meter at least every six months.

H. BARRETT: Uses 5% copper-sulfate and distilled water in wet test meter.

D. HILL: Should this recommendation go into Appendix? Would it be valuable to include some generalities that would describe some of the things to look for in calibrating the wet

test meter? Are there certain things that would be common to all wet test meters that should be noted?

GROUP CONSENSUS: Yes, it is worth including.

D. HILL: What are the generalities? How often should you check water, etc., in wet test meter? *ADD SOMETHING SIMILAR TO APPENDIX*: "There may be a problem unless water is checked periodically in wet test meter. Possibly, use distilled water to fill meter". Is there anything else group would like addressed?

D. HILL: Some U.S. airlines are only purchasing replacement panels that meet the new standards.
Are there any problems with OSU test itself?

GROUP MEMBER: The only consistent problem is the top pilot going out.

H. BETZ: What is deviation with OSU?

D. HILL: Percent standard deviations were down to single digits from the last large Round Robin we ran. In the past, we have supplied a standard material to each lab and that lab runs the material, and we receive and tabulate the data and supply that data to the regulatory authorities in each country.
Are there any other OSU problems? Is everyone testing materials the same way? Is everyone testing carpets the same way?

D. HILL: In the past we have discussed the Bunsen Burner test still being required for all materials that have to meet the OSU, and at the last two meetings decided that the Bunsen Burner test should remain a requirement.

H. BETZ: Discussed an example of a situation where Bunsen Burner test was valid.

D. HILL: In conclusion, we should keep Bunsen Burner test.

GROUP MEMBER: Gave an example of fabric for seat cushions passing the Oil Burner test and failing the Bunsen Burner test.

D. HILL: Are there any other problems with OSU test? Is there anything else we should add to the Handbook or Appendix on testing specific materials?

MEMBER QUESTION: When will there be an updated Handbook?

D. HILL: We have distributed draft copies of Chapters 1-6 and Appendices to the group and the regulatory authorities to be reviewed and commented on. Draft copies of Chapters 7 and 8 are included in this package for your comments. We are going to assume that everyone was happy with the December 1992 draft of Chapters 1-6 and Appendices.

BUNSEN BURNER TESTS

D. HILL: In the past, we have had discussions on sizes and shapes of chambers for Bunsen Burner tests.

Tom Faulkner of Atlas Electric gave brief presentation on new chambers from Atlas.

D. HILL: Are there any comments on Bunsen Burner?

J. Heath (Hunting Aircraft): In my opinion, 45° test is redundant.

CHAPTER 7 - OIL BURNER FOR SEAT CUSHIONS

D. HILL: *Section 7.6 - Preparation of Apparatus*: The major changes on the seat tests are in allowing some leeway for thermocouple temperature measurement in exchange for an airflow requirement through the burner. Other changes in Chapter 7 were reviewed.

CHAPTER 7 - APPENDIX

D. HILL: *Section 7.3.2.1 - Nozzle*: Note made that other nozzles can be used.
Section 7.3.4 - Thermocouples: Thermocouple degradation-it would be beneficial to you to check thermocouples periodically-possibly after every 50 hours of use. Reviewed static disks developed by Park Oil Burner and CEAT. Any questions on Chapter 7.

H. BETZ: What about chamber size? We feel it makes a difference, especially if chamber is too small.

D. HILL: That could be a problem. We have not looked into labs that have small, confined chambers for running tests.

S. MESSINA (Govmark): What is considered small?

D. JOHNSON: 10' x 10' and smaller.

D. HILL: Should we make restrictions on sizes or flow of oxygen?

H. BETZ: Definitely, some deviation is possible due to size of chamber. We run our tests in a smaller chamber and get higher numbers.

D. HILL: We can look at different test facility sizes very easily. We can run a couple of tests in two different size chambers at our facility-one in our 10' x 10' chamber and one in our large facility. We will run a series of at least one or two materials in the two different size chambers, and if there is a vast difference, we will discuss it at the next meeting and decide what to do. If anyone else wants to try this, let us know.

W. LAMPA (Deutsche Airbus): We did this in a small Round Robin within Germany and Switzerland.

D. HILL: You can send us some data, and we will compare it to what we get.

CHAPTER 8 - OIL BURNER TEST FOR CARGO LINERS

D. HILL: Section 8.7.8.1 - Patch Repairs: An approved way of testing patches was reviewed. Gave detailed explanation on testing of Seams, Joints, Fastening Systems, Lighting Fixtures, and Corners (*Section 8.7.8.2*). Stated that there are a couple of reports out from tests run at the FAA Tech Center.
Any questions on cargo liners? Does everyone understand why we have these tests and what they are?

REASONS FOR OIL BURNER TESTS-D. HILL

SEAT CUSHIONS: In a postcrash fire designed to slow down the spread of fire coming in from outside.

CARGO LINERS: If you have a fire in a cargo compartment, the majority of cargo compartments do not have suppression systems-they rely on cargo liners to contain the fire until oxygen is used up and fire dies down. This test is designed to represent a real fire in the cargo area.

AIRCRAFT INTERIOR MATERIALS CONTINUED COMPLIANCE

D. HILL: Reason for discussion: NTSB is questioning: Is FAA putting enough effort into continued compliance? Is enough data required to back up how long aircraft interior materials will maintain their fire resistance. Does industry have any suggestions? Should there be controls on dry cleaning fluids, specific solutions used, etc? Is there a need for some other test methods? Maybe for seats with some wear damage or run a wear test or fire block test?

H. BETZ: You can't check everything. Only 50% of the seats may be damaged.

D. HILL: In summary, it sounds like you have individual problems which can't be covered by running some kind of durability test. At a certain interval you must make certain that there is an inspection of materials and see if they are degrading and how much and what type of tests should be done on these materials.
NTSB is saying that somewhere the system is not working. They have come up with this because of testing seats from a fire or crash or seats going out of service, and they have failed the test. Do we need better tests from materials manufacturers? There is no basic requirement for suppliers to prove that their materials will comply over a given time. Everything is up to maintenance inspectors to determine.

GROUP MEMBER: You can't get a test to accurately represent what will happen to aircraft seats during usage in a certain number of years.

D. HILL: We may not be able to get a perfect test, but there may be something we can do that will be beneficial.

H. BETZ: Some substances breakdown fire blocking. For example, coke (soda), orange juice, sugar.

D. HILL: Is there a test you can do easily to find that out ahead of time on new materials?

H. BETZ: I don't think you can come up with a test to help the situation.

D. HILL: Does everyone agree that there should be a requirement for seat manufacturers to back up their claim that their seats will last for a certain number of years without any durability testing and proof. Are there test methods that need to be developed or used to test continued compliance? Is there a need to standardize a test?

S. MESSINA: I think you need to explore this further. I am suspicious of how well these seats hold up. I think you should start pulling seat at random.

D. HILL: What do airlines do? What are the procedures at the various airlines concerning continued compliance? The U.S. is already working on obtaining this information from airlines.

J. PETERSON (Boeing): Cargo Compartments: Cargo liners are there to confine fire to cargo compartments and protect aircraft structure from heat if there is a fire. Cargo liners suffer abuse with usage. For example: they get torn or holes in them with use.

D. HILL: The problem we run into is with seat compliance. The airlines are saying there is no problem, but we have found problems with seats (new and in-service) that have been tested from aircraft in the fleet. The authorities can't have two sets of rules. There must be one set of rules that applies to everyone. If we don't take care of the problem, something is going to be forced upon us by the authorities. We need a standard test as a basis for judgments as to how long you can keep these materials in compliance. It is up to the Principal Maintenance Inspector (PMI) to decide now, and if you have a standard test or two it would give him/her a basis for judgment.

T. GIBSON (CAA): CAA has a requirement that after every seat cover is cleaned on an aircraft one sample must be tested from each batch.

J. HEATH: How do you requalify a new change of color scheme without a destructive test?

D. HILL: We have many different aging type problems as we have discussed today. We have to look into it now. If there is a way we can work with industry to develop some durability tests, we would not recommend these tests to be requirements but as a means to make judgments as to how long these materials will last.

TUESDAY, OCTOBER 5, 1993

UPDATE ON OTHER FIRE TEST WORK AT FAA TECHNICAL CENTER - D. HILL

ADVANCED FIRE RESISTANT MATERIALS PROGRAM: Brief explanation given on development of this program at Tech Center. Dr. Thor Eklund is head of this group. Dr. Richard Lyon is materials person.

HALON REPLACEMENT PROGRAM: Brief explanation of program and its development. As part of this program test methods and performance standards will be developed for proposed halon replacement agents. We are not developing alternative agents at the Tech Center. We will develop test methods and performance criteria for regulatory authorities to determine acceptable protection systems. Program areas include: Cargo Compartments, Engine Nacelles, Lavatory Trash Bins, and Handheld Extinguishers. We have to do the following: develop test facilities at the Tech Center; develop test scenarios and minimum levels of protection; determine acceptable agents or systems; develop certification requirements. Explanation of establishment of International Halon Replacement Working Group.

FUSELAGE BURNTHROUGH: Brief explanation given on Tech Center's work on fuselage burnthrough.

DARCHEM PRESENTATION ON BURNTHROUGH PROJECT

Cliff Hall and Mark Snell of Darchem Engineering Ltd., gave an update on their Fuselage Burnthrough work.

GROUP OPEN FORUM

S. MESSINA: Does FAA approve laboratories?

D. HILL: No, FAA does not approve laboratories. We certify airplanes. We make sure that equipment is in compliance and tests are conducted properly.

H. BETZ: What is considered a retrofit? How many materials have to be replaced before it is considered a retrofit?

There was no standardized definition that everyone was in agreement on.

C. SCHOONIS (Schneller S.A.): What is the status of the Cabin Water Spray Program?

D. HILL: The CAA published their Benefit Analysis Report recently. We are working with CAA to have the system installed on an aircraft to get a more accurate idea of the cost of installation and maintenance of the system. Using some of the water to replace halon in some areas (baggage area) of the plane. The system is not meant for in-flight fires. It is meant for postcrash fires. *A question that comes up quite often is*: Why doesn't the FAA have a toxic gas requirement? *Answer*: Our requirement is the heat release. *Regulatory authorities in the U.S. asked the following question*: What happens when you have ABS on tray tables and arm rests? *Answer*: We ran full-scale tests to test the materials on the tray tables and arm rests, and a report on the findings has been written by FAA personnel. Is there anything else you would like to discuss?

MEMBER QUESTION: What about testing Kapton installation?

D. HILL: We developed an arc tracking testing method at the Tech Center.

MEMBER QUESTION: Will smoke toxicity become an FAA regulation?

D. HILL: No, we feel the best test is the heat release test.

SUMMARY/ACTION ITEMS D. HILL

ROUND ROBIN ON NBS: Are there any other labs interested in participating in this Round Robin? If so, contact Dick Johnson.

OSU: Hugh Barrett is still working on Standard Reference Material for OSU. Contact Hugh if you would like to participate in this Round Robin. Reinhard Felder is working on Standard Panel Reference Material. If you have suggestions or ideas, contact Reinhard.

OIL BURNER: Chapters 7 and 8 are included in this package for your review. Your comments must be returned to us by ***TUESDAY, NOVEMBER 30, 1993***. Also, send us information you want included in the Appendix.

OSU - RUSSIAN ROUND ROBIN: We need materials from group members. We want a variety of materials. Send us your ideas. Jim Peterson is checking into Boeing participation. Wolfgang Lampa said Deutsche Airbus will participate. **RUSSIAN ROUND ROBIN FORM** included in this package, return by ***TUESDAY, NOVEMBER 30,1993***.

S. MESSINA: Can we ask you to run a comparison test to check the numbers only (Cargo liners and OSU)?

D. HILL: Yes, we will run tests for comparison purposes when we have the time.

NEXT MEETING

The next meeting will be hosted by Polyplastex at the Sheraton Sand Key in Clearwater, Florida on Wednesday and Thursday, February 2-3, 1994. Detailed information is included

with this package. ***SHERATON SAND KEY REGISTRATION RETURN FORM*** included in this package.

An outline of planned Agenda Topics/Discussion is included.

FUTURE MEETINGS

If your company/organization would like to host a meeting, please return the **REQUEST TO HOST MEETING FORM** included in this package by ***TUESDAY, NOVEMBER 30, 1993***.

INTERNATIONAL AIRCRAFT MATERIALS FIRE TEST WORKING GROUP MEETING

Hosted by Schneller S.A., Paris, France

October 4-5, 1993

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PH: 54 71 12 12
FX: 54 71 12 01

A. Visser
K.L.M.
Schiphol Airport/PO Box 7700
NL-1117 ZL, Schiphol Airport
Netherlands
PH: 649 39 38
FX: 648 8233

Mr. Vladimir Vorobiev
VIAM
17 Radio Street
107005 Moscow
ɹssia
FX: 19 7 095 267 8609

Mr. Jon Welker
Aero Design Technology, Inc.
24908 Avenue Kearny
Valencia, CA 91355
PH: 805-257-1991
FX: 805-257-0332

Ms. Karen Whitbread
BP, Aerospace Composites
Avonmouth Road
Avonmouth
Bristol, England BS11 9DU
PH: 272 824 821 x277
FX: 272 824 640

Mr. Wolfgang Lampa
Deutsche Aerospace Airbus
Hunefeldstr. 1-5
D-28199 Bremen,
Germany
PH: 49 421 538 3484
FX: 49 421 538 4180

RUSSIAN ROUND ROBIN

INTERNATIONAL AIRCRAFT MATERIALS FIRE TEST WORKING GROUP

As discussed at the last meeting in Paris, France, the Technical Center and VIAM laboratories are planning a Round Robin to compare the VIAM Heat Release device with an OSU, and we would like materials that will show the wide range of materials that would be tested. Therefore, we are looking for labs to volunteer materials. If you have any suggestions on materials that you have available for testing, please note the type of material, its expected approximate OSU values, and any unusual characteristics in the space provided below. We will be tabulating these and selecting 7 to 10 materials to include in this Round Robin. This form must be returned by ***TUESDAY, NOVEMBER 30, 1993***, so that we may begin the Round Robin in a timely manner. Your cooperation is greatly appreciated and will make this effort a success.

PLEASE COMPLETE THE FOLLOWING INFORMATION:

NAME: _____

COMPANY: _____

PHONE: _____ **FAX:** _____

MATERIALS: _____

_____

_____

(OSU VALUES, UNUSUAL CHARACTERISTICS, ETC.) _____

_____

_____

_____

_____

RETURN THIS FORM BY FAX BY <u>TUESDAY, NOVEMBER 30, 1993</u> TO:

APRIL HORNER
FAX: 609-485-5796

<u>OR MAIL:</u>

Federal Aviation Administration (FAA) Technical Center
Fire Safety Branch, ACD-240, Building 287
Atlantic City International Airport, NJ 08405

U.S. Department of Transportation
Federal Aviation Administration

REQUEST TO HOST MEETING

INTERNATIONAL AIRCRAFT MATERIALS FIRE TEST WORKING GROUP

We have been asked to set up a schedule for future meetings so that group members may plan travel/budgeting in advance. Therefore, we are interested in determining which companies/organizations would like to host meetings in North America and outside the United States. The time frame we have established for the next five meetings is listed below. Please select which date would be most convenient for your company/organization. All requests should be returned to April Horner via fax at 609-485-5796, by ***TUESDAY, NOVEMBER 30, 1993***. Thank you for your support. The following meeting times have been established:

June 1994	**June 1995**
October 1994	**October 1995**
February 1995	

PLEASE COMPLETE THE FOLLOWING INFORMATION FOR THE CONTACT PERSON:

NAME: _____

COMPANY: _____

PHONE: _____ **FAX:** _____

DATE REQUESTED: _____

MEETING LOCATION (CITY, COUNTRY, ETC.): _____

_____

_____

RETURN THIS FORM BY FAX BY <u>TUESDAY, NOVEMBER 30, 1993</u> TO:

APRIL HORNER
FAX: 609-485-5796

<u>OR MAIL:</u>

Federal Aviation Administration (FAA) Technical Center
Fire Safety Branch, ACD-240, Building 287
Atlantic City International Airport, NJ 08405

U.S. Department of Transportation
Federal Aviation Administration

FEBRUARY 2-3, 1994
MEETING RETURN FORM

INTERNATIONAL AIRCRAFT MATERIALS FIRE TEST WORKING GROUP

The next meeting will be hosted by Polyplastex International Incorporated, at the Sheraton Sand Key in Clearwater, Florida, on Wednesday and Thursday, February 2 and 3, 1994. Lunch will be provided both days by Polyplastex. In addition, Working Group members are invited to a special dinner on February 2, 1994, hosted by Polyplastex (transportation will be provided). Please return this form to the Working Group Coordinator via fax if you plan to attend the February 2-3, 1994, meeting in Clearwater, Florida, so that we may have an accurate count of attendees.

PLEASE COMPLETE THE FOLLOWING INFORMATION IF YOU PLAN TO ATTEND:

NAME: _____

COMPANY: _____

PHONE: _____ **FAX:** _____

ADDRESS: _____

CITY, STATE, ZIP: _____

COUNTRY: _____

RETURN THIS FORM BY FAX BY MONDAY, JANUARY 10, 1994, TO:

APRIL HORNER
FAX: 609-485-5796

OR CALL:

PHONE: 609-485-4471

U.S. Department
of Transportation
Federal Aviation
Administration

SHERATON SAND KEY RESORT

POLYPLASTEX/FAA
International Aircraft Materials Fire Test Working Group Meeting
FEBRUARY 1-3, 1994

ACCOMMODATIONS:

RATE: $85.00 - SINGLE/DOUBLE OCCUPANCY
(Plus 10% tax - per day)

[ ] ADDITIONAL PERSON: $10.00
Note: Children under 18 stay FREE in same room as parent.

[ ] ROLLAWAY BED: $10.00

Number in Party:_____ Adults:_____

Arrival Date: _____ Departure Date:_____

A ONE NIGHT'S DEPOSIT MUST ACCOMPANY RESERVATION
(Please send check or credit card number to guarantee reservation)

We are pleased to offer your rate 3 days prior to and following your dates, upon availability.

Name:_____ Phone:_____

Company:_____

Address:_____

City:_____ State_____ Zip_____

Credit Card/
Number:_____ Exp.Date:_____

RESERVATIONS MUST BE RECEIVED PRIOR TO: JANUARY 1, 1994

Check-In time 3:00P.M.... Check-Out time 11:00A.M.

* Please send this form to:

Sheraton Sand Key Resort
1160 Gulf Blvd.
Clearwater Beach, FL 34630
PHONE: (813) 595-1611
FAX: (813) 596-8488

ATTN: Reservation Mgr.

DELEGATES MAY FAX RESERVATION.

U.S. Department
of Transportation
**Federal Aviation
Administration**

Technical Center

Atlantic City Int'l Airport
New Jersey 08405

November 29, 1993

Dear Group Participant:

Enclosed please find the Preliminary Agenda for the February 2-3, 1994, International Aircraft Materials Fire Test Working Group Meeting which will be hosted by Polyplastex International, Incorporated, at the Sheraton Sand Key in Clearwater Beach, Florida. You should have received a hotel reservation form and a Meeting Registration Form in the October 4-5, 1993, Meeting Minutes/Information Package sent to you last month. Please be sure these forms are completed if you plan to attend. If you need a copy of either of the forms, please contact April Horner, Working Group Coordinator, at 609-485-4471.

For those of you who may be interested in participating in one of the four Task Groups introduced in last month's package, some preliminary information/questions concerning these task areas is enclosed for your review. Remember, your input is important. If you are unable to attend the meeting, please participate via fax to 609-485-5796. Since these Task Groups will meet concurrently, if your organization would like to participate in more than one Task Group, a different representative must be assigned to each group.

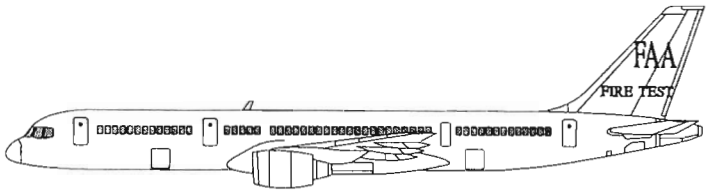
I look forward to seeing you in February.

Sincerely yours,

Richard Hill

Richard Hill
Program Manager

Enclosures



Preliminary Agenda
International Aircraft Materials Fire Test Working Group

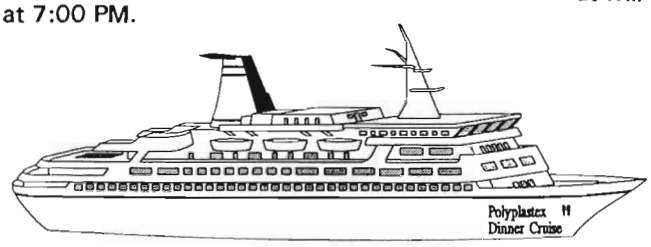
WEDNESDAY, FEBRUARY 2, 1994

8:30-8:45	Opening and Introductions
8:45-9:00	NBS Heating Element Round Robin
9:00-9:30	OSU Standard Material
9:30-9:45	Russian Round Robin Update
9:45-10:15	Testing of Chamber Size Difference for Seat Test.
10:15-10:30	Break
10:30-12:00	Heat Flux Transducers.
12:00-1:00	Lunch at Hotel
1:00-2:00	Comments on Chapter 7 and 8.
2:00-3:00	Comments on other Handbook Chapters.
3:00-3:15	Break
3:15-4:15	New Problems (All test methods).
4:15-5:00	Testing of Fiber Optic Cable.
6:00	Pick-up for Polyplastex Dinner Cruise

THURSDAY, FEBRUARY 3, 1994

8:30-9:00	General Discussion - Continued Airworthiness
9:00-9:30	Production Quality Assurance
9:30-10:00	Minor Changes to Qualified Material Systems.
10:00-10:15	Break
10:15-10:45	Material Systems Renovation and Repair
10:45-12:00	Subgroup meetings.
12:00-1:00	Lunch at Hotel
1:00-3:30	Subgroup meetings continued.
3:30-3:45	Break
3:45-4:15	Report from each subgroup.
4:15-4:45	General Discussion - New Business
4:45-5:00	Closing.

*Bus transportation provided by Polyplastex departing at 6:00 PM from Sheraton Sand Key Hotel. Boarding on the Paddleboat will begin at 7:00 PM.



As stated in the October 26, 1993, Minutes Package, the Working Group has been requested by the FAA/JAA/TCA Cabin Safety Team to review the following four areas for possible inclusion of advisory material into the Aircraft Material Fire Test Handbook. Thoughts, background information, and requests/concerns on the four areas are addressed below in order to provide members an opportunity to select which subgroup they will join.

#1 INSTRUCTIONS FOR CONTINUED AIRWORTHINESS

For those of you interested in participating in the Continued Compliance subgroup the following thoughts are provided:

1. The group can deal with continued compliance with any and all flammability requirements in the aircraft.
2. Consider the need for aging tests at time of material approval.
3. Need for spot checks (what to look for).
4. Is there a problem, or when is there a problem.
5. Smaller scale tests for continued testing.

Please come prepared with your input and to discuss this area.

#2 PRODUCTION QUALITY ASSURANCE

The formation of the Production Quality Assurance subgroup will take place in February 1994 at the next meeting of the International Aircraft Materials Fire Test Working Group meeting. For those members interested in joining this subgroup, I ask that you bring a copy of the types of testing and the frequency of testing performed on production articles at your facility. In order to ensure continued compliance with the FAR's, we will be looking at quality control and discussing ways to improve on current methodology.

#3 MINOR CHANGES TO QUALIFIED MATERIAL SYSTEMS

This subgroup is being formed to address the small material changes of interior sidewall, overhead, and bulkheads coming under the rate of heat release and smoke emission rules. Those interested in participating in this subgroup are asked to think about the questions asked in the minutes package of October 26, 1993, and consider other possible ways to minimize testing of similar interior components.

Perhaps we could evaluate a change in material for design or color that was not changed in its basic structure or material components. Maybe we could test a series of changes that could be used as guidelines for limiting changes without retesting.

Those interested in participating in this subgroup are asked to come prepared with suggestions and/or solutions that we as a group can evaluate.

#4 MATERIAL SYSTEMS RENOVATION AND REPAIR PROCEDURES

Please provide recommendations on which repairs or renovations to in-service parts require re-qualification (and which should not), the procedures for qualifying such schemes, and how the relevant information should be provided to the operators. This request is with regard to material systems qualified to Parts II, III, IV of Appendix F to FAR Part 25.

BACKGROUND: Various airline maintenance and inspection representatives often have questions regarding the procedures for re-qualifying material systems in the event that a repair or renovation is performed. The purpose of the group is to clarify what the procedures are and establish a unified position based on technical information.

GROUP QUESTIONNAIRE/RECOMMENDATIONS: Please bring any data or information regarding this aspect of material systems qualification. Consider the potential areas of concern that would likely be encountered where repairs are routinely executed.

EXAMPLE: Cargo liner patching and repair. When a rip, tear or breach of the cargo liner occurs, the liner is either replaced or, if the damage is not too severe, repaired. The repair generally consists of a patch of similar material which is bonded to the existing cargo liner with an epoxy type adhesive. This repair is often coated with an intumescent substance to resist heat. In order for this repair system to qualify for certification, the material which comprises the patch must initially pass the 2 GPH oil burner test. Additionally, the patch is required to remain attached to a sample cargo liner for the duration of the normal five minute oil burner test. Once this type of patching system is qualified, subsequent repairs can be made to cargo liners without further qualification or testing. Other types of cargo liner repairs can be made by riveting or mechanically fastening new material over the damaged area.

OTHER POTENTIAL AREAS OF CONCERN: Holes, punctures, or tears in cabin interior sidewall panels. What types of repairs have been made in the past? What is the maximum puncture size in a sidewall panel that can be repaired with a reasonable amount of confidence? If a repair is greater than a specified area or percentage of the panel, should it be replaced altogether? What types of adhesives or bonding mechanisms are used in the repair of sidewall panels? When the decorative film or tinting of a sidewall panel becomes worn, there have been reports of panels being resurfaced, or "wallpapered". How do these processes affect the overall fire hardness of the material? Do some types of coatings require re-qualification? What about painting sidewall panels or stowage bin doors? What amount of smoke or heat is given off during exposure to flames?

It may be possible to adopt the same criteria used in re-qualifying cargo liners to cabin sidewall repairs (ie: first qualify the wallpaper or cover material in the OSU by itself. If it passes, it could be used as a cover, provided it also displayed the ability to remain attached during OSU testing). What procedures do the panel manufacturers suggest? Airframe manufacturers? Airlines?

Rips or tears in the seat cushions. Are dress covers repaired, or are they simply discarded and replaced? If repairs are made, how? If a tear is encountered, is the underlying fire blocking material ever torn also? What types of repairs (if any) are made to the fire blocking material? Do repairs to the fire blocking present a problem with regard to the material's ability at preventing the more flammable urethane foam from becoming involved in the event of a fire? What is the maximum size tear or hole in the fire blocking material which will still provide adequate protection?

Rips or tears in the carpet. Can carpet repairs be made that won't adversely affect the fire retardency of the material (ie: are certain types of adhesives used that may cause the material to become more flammable)?