



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

Technical Center

Atlantic City Int'l Airport
New Jersey 08405

November 8, 1994

Dear Working Group Participant:

Enclosed please find the Minutes/Information Package from the October 4-5, 1994, International Aircraft Materials Fire Test Working Group meeting held in Hamburg, Germany.

Please note that this package contains a Meeting Return Form for the February 7-8, 1995, meeting which will be hosted by Douglas Aircraft Company in Long Beach, California. This form must be returned to April Horner via fax at 609-646-5229, by Friday, January 6, 1995. If you are unable to attend the upcoming meeting but would like to receive a copy of the minutes you must mark the appropriate box and return the form by the deadline. A map including hotel information in the area near Douglas is enclosed in this package.

A note from our host: Be sure to bring your U.S. Driver's License (if you are a U.S. resident) or your Passport with you to Douglas Aircraft as they will be checked by Security prior to admission to the Douglas facilities. Cameras and recording equipment are prohibited at the Douglas facility.

We look forward to your continued participation in the Working Group.

Sincerely yours,

Richard G. Hill
Program Manager

Enclosure

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INTERNATIONAL AIRCRAFT MATERIALS FIRE TEST WORKING GROUP MEETING MINUTES

Held at the Deutsche Aerospace Airbus, Hamburg, Germany

TUESDAY, OCTOBER 4, 1994

D. Hill: Gave background on the Working Group

UPDATES ON ONGOING ROUND ROBIN TESTS - D. JOHNSON

RUSSIAN ROUND ROBIN REVIEW

Participants were: Two labs in the United States, two labs in Europe, and the Russian lab. Ten (10) different materials were tested.

A Technical Note has been written summarizing the findings and will be available soon to those who are interested in it.

D. Hill/D. Johnson: Gave review of background on Russian Round Robin

HEAT FLUX TRANSDUCER UPDATE - D. JOHNSON

Background on Heat Flux Transducers Round Robin: There were 6 transducers: 2 from Medtherm, 2 from Hi-Cal Engineering, and 2 from Thermogage. Calibration data for each calorimeter was reviewed.

H. Lutz (Boeing): Will you be distributing a report on these findings?

D. Hill: We would like volunteers to get together a small group on this and review how these calibrations are done by the different companies. We plan for this group to meet in about 6 weeks at the FAA Technical Center. We will also ask a representative from these companies and a NIST representative and possibly someone from Sandia (Ned Keltner) to participate. We would like this group to put a report together. We must emphasize that if you volunteer for this group, you must have the time to help put the report together.

H. Lutz (Boeing): In these calibrations that you are plotting, I was under the understanding that you had sent 6 calorimeters to each manufacturer. Who's calibration are you plotting and who's numbers are represented in your viewgraphs?

D. Johnson: Are there any other questions on heat flux transducers? If you have any ideas on this, please let me know what they are.

H. Lutz (Boeing): Whatever method is adopted, please let it be published and used by all the labs.

D. Johnson: We will make recommendations in that hope.

D. Hill: According to the manufacturers there shouldn't be any difference, but there is. We will have to see what the group comes up with--possibly this group will want to design a

calorimeter to be used specifically in the OSU. We want this small group to make recommendations on what should be done next and how it should be handled.

D. Johnson: The time-consuming part of this process is done.

G. Danker (Akro Fireguard): Is this transducer thought to be the greatest source of problems in the OSU?

D. Johnson: To some companies it is. My suggestion is to take great care in how you set it up.

STANDARD PANEL TASK GROUP - D. JOHNSON

D. Johnson: Pete Brownell (Chairman of this group) from Albany International was unable to attend this meeting.

OSU STANDARD MATERIAL - REINHARD FELDER (Schneller)

He gave brief overview on this task group which has now become the Standard Panel Task Group. This round robin has 10 labs participating. We hope to have all data completed and be able to make a recommendation by the next meeting.

OSU STANDARD MATERIAL - HUGH BARRETT

D. Hill: We have lost contact with Hugh Barrett at present. *Please note:* your response as to the continuation of this task group is requested on the Meeting Return Form included in this package.

TASK GROUP REVIEW (Task Groups established February 1994)

D. Hill: Gave explanation on Task Groups #1-4 and background on why they were established.

TASK GROUP #1-CONTINUED COMPLIANCE - D. HILL

We have requested information from group members on seat material and Lufthansa provided a great deal of information.

Several airlines provided fire blocker foams and seats that have been in-service for a few years.

Doug Ingerson went to several airlines and inspected the seats that are presently in-service. Doug's findings were very comparable to the seats we have to test. He did note that many seats were stained on the top from perspiration and spills.

Doug is in the process of setting up for the tests on these materials and should begin to run the tests on these materials within the next two weeks.

Steve Beare (DuPont) has drafted something to be included in the Handbook. We will go over it tomorrow when our Task Group meets.

Hanns-Joerg Betz (Lufthansa) also provided comprehensive information.

TASK GROUP #2-PRODUCTION QUALITY ASSURANCE - D. HILL

Claude Lewis (TCA/iCST) gave a brief overview of what these Task Groups should address based on the meeting of the International Cabin Safety Team. There were 4 issues originally raised early in 1993 by the iCST. Production Quality Assurance being one of these 4 issues. A production quality testing program showed that materials were put on aircraft that do not meet Production Quality Assurance. We need to know what is in place right now and if anything should change--show should we achieve Production Quality Assurance. We need to get the OEM's, etc., involved.

D. Hill: We want to get something in writing so that when other countries manufacture airplanes and parts, they will have something to follow for testing, etc.

TASK GROUP #3-MINOR CHANGES TO QUALIFIED MATERIALS - D. Johnson

D. Johnson: The intent of this group was to establish some data in a presentable form to assure the regulatory group that there should be a reduction of tests.

Hanns-Joerg Betz (Lufthansa): Gave a presentation on the burns lengths of different seat fabrics.

C. Story (Magee Plastics): Do you think we have enough data as a group that color or texture has no bearing on the end results?

D. Hill: I would like to see each of these Task Groups put together a report with their data and give some recommendations based on what each group found. We will then be able to present these reports to the International Cabin Safety Team.

B. Williams (Delta): Is this information that the FAA regulatory authority people would accept as back up data for our recommendations to you?

D. Hill: These groups were formed with FAA Chairpeople so that the recommendations are acceptable to the regulatory authorities. Or if the FAA Technical Center people don't agree with the group's recommendations, we will tell the regulatory authorities why we don't agree with a Task Group.

D. Johnson: I think we are making great progress in this area.

**TASK GROUP #4-MATERIAL SYSTEMS RENOVATION AND REPAIR PROCEDURES -
T. MARKER**

Reviewed problems with interior renovations and his group's proposed solutions: use of a common substrate or three (3) or more representative substrates.

Cargo liner patching and repair - reviewed recommendations of group.

Reviewed results of filler tests in OSU and NBS chambers

Gave overview of future work

J. Garlin (FAA-Transport Directorate): Clarification on small parts exclusion: ie: a ceiling made up of one square foot panels is not excluded from testing. The 144 square inch rule refers only to heat release.

C. Story (Magee Plastics): We were told anything that fits in your hand is considered a small part.

D. Hill: Task Group Clarification: The reason you could only participate in one of these groups was to get the most out of each participant. A person would not have the time to fully participate in each group. Feel free to give your input or information to members of the other Task Groups or the Task Group leaders.

BLANKETS AND PILLOWS

D. Hill: There is no maintenance for blankets and pillows after purchase. Some airlines buy there blankets and pillows to bunsen burner specifications. The National Transportation Safety Board (NTSB) has asked the FAA to look into this.

J. Petrakis (FAA/AIR-120): The NTSB issued a recommendation to the FAA to develop a spec for pillows and blankets. They do not want us to regulate these as they are not part of the aircraft. We decided this group should take a look at this and see where we are going to head with it. Maybe we issue a TSO (we will have to see what this group comes up with.

D. Hill: According to the NTSB, the bunsen burner test is not an adequate test for the way blankets are stored and use on airplanes. We want to put a small group together to look at this issue. If blankets and pillows are going to meet a specification, it should be one that means something.

C. Lewis (TCA/iCST): Read a spec that applies to public buildings (an ASTM spec).

D. Hill: What we have to remember is we want to develop a test for small ignition sources that is meaningful for blankets and pillows and the way they are carried in the airplane. We don't want a test that is more severe than what we are subjecting the rest of the materials in the airplane to. If airlines are going to use a flammability standard to buy blankets and pillows to, then the airlines must believe this test is giving them something.

CLARIFICATION: We want to develop a test that is more representative of the threat, but it will still be an option to the airlines to use it, not a requirement. The fire threat idea cited by the NTSB was a blanket stored in a stowbin.

G. Danker (Akro Fireguard): The textile industry may already have something we can use for blankets and pillows.

D. Hill: There may be. That is why we are getting some people together to see what they know and can find out that will help us in developing this test. Does anyone know how they test a pillow to a bunsen burner test?

S. Beare (DuPont): There used to be a test for nursing homes that we might want to look into.

D. Hill: Does anyone have any idea how they test them to the FAR 25.853?

C. Story (Magee Plastics): I think the airlines test the pillow casings, not the actual fill.

H. Betz (Lufthansa): They are testing a lot of materials for hospitals. Maybe there is something we can get from this.

D. Hill: If you have any information on standards and do not have the time to participate in this task group, send us those standards. Sign up with April if you want to participate in this task group. We will put a package together of all the information/tests you give us and send it to those in this task group. Are there any other suggestions on how to handle the blankets and pillows? Do you think this is a good approach? By the next meeting we should have a package for the group to review.

H. Berg (Deutsche Airbus): This may create the question of new materials for blankets and pillows. One idea may be to reduce the flame temperature on the bunsen burner test.

D. Hill: Yes, it may be just changing the way you hold the material for the bunsen burner test.

H. Berg (Deutsche Airbus): Maybe you can use an additive in the material to reduce flammability.

D. Hill: We have to be careful of what we do because it could impact other areas.

S. Messina (Govmark) will send some information to us.

AIRCRAFT MATERIALS FIRE TEST HANDBOOK

NOTE: If there is a specific section of the Handbook draft you need a copy of prior to the final printing, call April Horner at 609-485-4471, or send her a fax a 609-646-5229, and ask her to send you a copy of that section.

The final draft should be going to the FAA Technical Editor for review at the beginning of 1995. We will have a better idea of the final printing schedule at the next Working Group meeting.

D. Hill: NOTE: Some people have gotten permission from certification authorities to run their test the way the updated Handbook is going to state it. However, some people feel that they can pick and choose the combinations of something from the update and something from the old Handbook when running their tests. You either do the whole test method as it is presented in the update (new test method) or run the old test the way it was until the new Handbook is distributed. Also, you have to be very careful on equipment like the OSU and NBS if someone makes a minor modification to software, it could change the readings you get. We coordinated with authorities in preparing the updated Handbook (FAA Northwest Mountain Region, CAA, JAA and Transport Canada were sent copies through the International Cabin Safety Team and given the opportunity to comment on the draft. We incorporated all the comments they sent back to us in the update.

D. Hill: Are there any questions on the Handbook?

H. Lutz (Boeing): Will there be any improved wording on how to adjust flow of gas and air to upper pilot in the updated Handbook?

D. Johnson: I believe that there is rather generous wording on this as far as plus or minus are concerned.

D. Hill: Any other problems on the OSU? How about the NBS Chamber?

R. Felder (Schneller): For the last several years in warm, humid weather, we have had problems with the photometer. Newport Scientific devised anew system, but we won't know if it works until June or July of next year when it gets humid again.

D. Johnson: The original ASTM requirement required the chamber to be in a climate controlled room.

R. Felder (Schneller): It is in a climate controlled room.

D. Hill: We do have a report out that shows that you can get equivalents with the new furnace. We can send you a copy if you would like one. How about the oil burner tests, seat tests or cargo liner tests?

Member Question: What about the standard cushion for the oil burner seat test?

D. Hill: We have talked about it at several meetings but never seem to get enough labs interested that attend meetings consistently.

Member Question: How many labs do we need?

D. Hill: Three (3) at a minimum or five (5) at a maximum.

A. DeRegt (Langenthal): What about chamber size?

D. Hill: When this problem first arose, we ran some tests in our chamber and out in our big test cell and did not see that much of a difference. Maybe it is because our chamber is ventilated very well. We really don't have that same problem even though our chamber is 10'x10'.

A. DeRegt (Langenthal): We do have a problem.

D. Hill: We can put the data together and see what we have got. I know there was a questions about fuel, and I believe we addressed that in the updated Handbook. Are there any other questions or seat tests or cargo liners? Any questions on bunsen burner tests? How about any other test methods: galley carts, trash receptacles?

TEST METHOD VIDEOS

D. Hill: We would like some volunteers to put together a rough outline of a script for each of the new films. Is there a need for new videos on the test methods? Are the videos that are out there useful? How many people have seen the video on the OSU? There are videos on the OSU and Oil Burner Tests. There are 2 videos for the OSU. If you want a copy of any of these videos in U.S. format, send a blank tape to April and let her know what video you need. If you want these videos updated, we need your help and input. We will work with you to update these videos. We will discuss this again at the next meeting. If you need European format, get one from someone in Europe who has it. We will show the videos at the February 7-8, 1995, meeting.

D. Hill: Are there any new topics you feel should be addressed to the group for discussion, etc.?

WEDNESDAY, OCTOBER 5, 1994

Individual Task Group meetings were held.

TASK GROUP SUMMARIES

TASK GROUP #1 - D. HILL

This group discussed the following:

- Current seat cushion testing at FAA Technical Center
- Discussion on development of test - life of seat (degradation of material)
- Group will be thinking about durability test and how it can be applied if necessary
- Reviewed write-up on cleaning and repair of fire blocked seats
- Discussion on cleaning of other fabrics --safe cleaner is a water-based or water soluble cleaner

TASK GROUP #2 - D. HILL

This group discussed the following:

- Discussion on round robin testing by authorities
- Most participants do comparative testing in their organizations now
- Discussion on the need to compile the methodologies for quality control for the original equipment manufacturers. How does their quality assurance program work (for OSU, NBS, Oil Burner tests).

ACTION ITEM: Any group members who have Quality Control procedures in their organizations, please send a copy to April Horner by November 10, 1994.

TASK GROUP #3 - D. JOHNSON

Points of the meeting include total agreement of no significant change of HRR results due to a texture or color change to approved panels. Statistical analysis letters from several contributing companies will be used when submitting support data to FAA. It was reported that different panels with the same paint surface still very close in HRR data.

Some FAA ACO's have agreements with manufacturers and users in regard to minor changes. The test plan is very important and care should be taken regarding process changes to the completed panel.

Question on FAA separation of RHR and smoke testing. Supporting data for reduction of testing of approved panel after minor changes will be accepted as separate test methods. (Per NW Directorate).

R. Felder (Schneller) will be doing statistical analysis on raw data supplied to him.

Attendees: H. Betz, A. De Regt, R. Felder, H. Lutz, B. McGee, C. Story, B. Sommerschuh, R.M. Johnson

TASK GROUP #4 - T. MARKER

See attached write-up provided by Tim Marker.

NEXT MEETING

The next meeting will be hosted by Douglas Aircraft in Long Beach, California, on Tuesday and Wednesday, February 7 and 8, 1995. If you plan to attend, you must complete and return the MEETING RETURN FORM by Friday, January 6, 1995. The meeting will be held at a Douglas facility. A map including hotel information is included in this package.

ADMINISTRATIVE NOTE

Please note this correction in the Minutes Package from the June 1994 meeting:

Page 3: BUNSEN BURNER TESTS

H. Betz: The position of the flame for bunsen burner tests for foam is not clearly defined.

P. Cahill: With plain urethane foam, it does not matter where the flame is placed.

H. Betz: The position of the flame does give different results with different foams.

Subgroup 4, Material Systems Renovation and Repair

Meeting minutes, October 5 @ Deutsche Aerospace Airbus, Hamburg

Three main areas of topic were discussed when the group divided into their respective subgroups.

I. Painting/Decorative laminating of interior panels. As discussed in previous working group meetings, the current dilemma that airlines' are faced with upon renovation of an aircraft interior relates to the certification tests which must be performed in order to qualify the particular renovation, whether it consists of sidewall/stowage bin painting or the use of decorative laminates over the existing panels, etc. Currently, the only means by which certification tests can be run to qualify this type of modification is to test the exact combination of base panel and the cover material (paint, laminate, etc) in both the O.S.U. and N.B.S. chambers. This is straightforward, provided the base panel is obtainable. In many instances, however, the manufacturer of the base panel no longer produces it, or worse yet, the company has gone out of business. One alternative (and very costly) method of running certification tests is to remove existing portions of the interior for use in conducting the required tests. This is most likely very prohibitive in that many airlines with small fleets simply cannot afford to do this.

Several operators attending the working group meetings in February 1994 had suggested the use of a common substrate or standardized test panel to conduct these types of tests on. By agreeing on a standard panel (both FAA & industry) that was abundant and showed good repeatability, the renovation problem could be solved. The operator could show compliance by simply conducting a baseline test and then the required "actual" test in which the paint or laminate scheme is applied to the standard panel. This too is a straightforward approach, but does not account for the "synergy" problem in which a particular paint or laminate may produce very low, and hence misleading, heat release rate (HRR) and smoke D_s numbers on the test panel, but may generate high heat/smoke in combination with the actual base panel that it is to be used in the aircraft. The other difficulty associated with this type of qualification test is that the standardized panel may yield baseline HRR and peak heat release numbers (without paint/laminate) in the range of 30 to 40, for example. By using the paint/laminate scheme over this standard panel, the numbers may escalate to a range between 50 to 60, but still easily pass the 65/65 test. However, the base panel that the scheme is to be applied over may yield baseline numbers approaching 65/65, so that any type of paint or laminate scheme applied over it would likely cause the system to exceed the 65/65 limit.

In light of this, another suggestion by a subgroup member during the June 1994 meeting was to use several common substrates or standardized panels so that a "history" of the paint/laminate

scheme could be developed. By running the scheme on three (or more) representative substrates, the synergy potential could be diminished, and a more realistic pass/fail approach could be instituted as well. If, for example, the worst case HRR increase of the paint/laminate scheme was 17 when tested on the three (or more) standard panels, then this scheme could only be used on base panels in which the HRR did not exceed 48 (65 minus 17). The same approach would hold for the peak heat release and smoke numbers.

The subgroup consensus at the latest October 1994 meeting was that three representative panels should be agreed upon in order to perform these tests. It was further agreed that aluminum, crush core, and honeycomb panels would give a representative cross section of panel types in-use. The subgroup was asked to submit their choice of actual panels/suppliers along with a list of criteria (price, availability, repeatability, etc) that they believe the panel choice should be based on by December 1, 1994 to the subgroup leader.

Another issue discussed relevant to this topic was the material that is between the base panel and the top layer of paint/laminate. For example, an aircraft that is purchased from another airline may not include information on the type of laminate that had been installed over the original interior panels. In some cases, this laminate does not simply "peel off" to facilitate re-laminating, and damage to the base honeycomb or crush core panel will result if attempts are made to do so. This leaves the airline with another dilemma: if they *must* install their new scheme over the existing scheme, how do they conduct qualification tests? Under normal circumstances, they could simply run their new paint/laminate scheme over the base panel (or three standard panels), but since they are uncertain of the composition of the existing layer of paint/laminate, there is no method of "recreating" the construction of it.

II Cargo Liner Patching/Repair.

No additional information was discussed at this meeting regarding the qualification of repairs made on cargo liners. A review of the subject follows.

The current criteria for qualifying a patch-type repair on a cargo liner is as follows:

A. The patch material must first be tested as a flat sheet, 16" X 24", in the ceiling position of the cargo liner apparatus (even if the patch is to be used in a sidewall application in service, it still must be tested in the ceiling position). In this position, it must resist burnthrough for 5 minutes and the temperature 4 inches from the backface must not exceed 400°F.

B. The patch must then be tested for adhesion by using a 4" X 4" patch placed over the exact type of liner that it is intended to be used on. This system is then tested in the ceiling position

of the cargo liner apparatus where the patch must remain adhered for 5 minutes.

In addition to the above criteria, it was the recommendation of several subgroup members that patches/cargo liner repairs also follow additional guidelines to prevent the patch from failing in service:

a. During the adhesion test, a 5" X 5" X 1" wide "L-shaped" void (or other "representative" void) should be removed from the liner, and an 8" X 8" patch should be tested for adhesion over the void, instead of the 4" X 4" void over no void. This would make the qualification test more realistic since there is always some degree of damage area under the patch in service. Damage due to rips or tears in liners typically follows the perpendicular axis from the point of puncture, causing an L-shaped damage pattern.

b. In addition to the requirement that the patch be tested for adhesion on the exact type of liner that it is intended to be used on in service, there should also be a requirement that the patch be tested for adhesion on the exact *thickness* as well. A patch may react quite differently when exposed to intense heat or flames when used on a variety of liner thicknesses because of the difference in resin content. The thicker liners, because of the additional amount of resin, release a significantly larger amount of heat during the test than a thinner liner would. By comparison, the thinner liner contains less fiberglass reinforcement and thereby provides less structural substance for the patch to remain adhered to. These factors may allow a patch to pass the test on a given thickness of liner, but ultimately fail in service on a different thickness liner.

c. The amount of patch overlap beyond the actual damaged area of liner is also critical in ensuring that the patch remains properly attached. The manufacturer must adequately specify this information so that repairs made in areas near edges or corners have sufficient overlap to prevent patch failure. If, for example, a particular patch requires a minimum of 2 inches overlap, then it could not be used for repairs that are less than 2 inches from a corner or seam.

d. The most common form of damage that cargo liners experience is rips or tears. In some instances, these tears may be of considerable length, rendering a single patch inadequate to fully cover the damage. When this type of damage is encountered, the only feasible method of repair is to "shingle" several patches over each other to accommodate the damage length. If a patch is intended for this type of use, it must exhibit the ability to remain adhered to itself during the adhesion test. One method of performing this test would be to take two 4" X 4" patches and overlap them in the center of the cargo liner; the width of overlap would be representative of the in-service overlap, as specified by the manufacturer.

e. The testing of neoprene coated fabric liner repairs or "soft" liner repairs was also discussed at earlier meetings. This type of liner is typically used as a partition separator, or control panel cover. Repairs made on these types of liners generally consist of a patch of identical material stitched to the liner using teflon or fiberglass thread. In order to qualify a repair of this type, the above guidelines should be followed as well.

III Use of Fillers.

As discussed in previous working group meetings, filling compounds or "fillers" are used (in some cases extensively) throughout aircraft cabins to make small repairs to holes, dents, cracks, etc. It was further determined that at least one major airframe manufacturer uses an automotive type body filler to perform "sand and sweep" repairs in which minor surface imperfections are corrected.

During the February 1994 meeting several group participants inquired into the applicability of the small parts exclusion (Appendix F, part I (a)(1)(v)) and the "144 square inch rule" to filler use. The participants felt that small repairs using fillers should fall under at least one of these exclusions. While it is unlikely that the use of a *very small amount* of filler (even the most flammable type) would render an aircraft cabin more flammable than a cabin without any filler, there must be a method of regulating its use. It is possible that an area of high wear or likely damage (from galley carts, for example) could accumulate an extensive amount of filler over a period of time, causing a marked increase in the flammability of the panels. This being the case, there are only two possible solutions to insure this does not occur: limit the amount/size of repairs (and hence, limit the amount of flammable material that enters the cabin) or establish pass/fail criteria for the repair procedure itself. Since the airlines do not have an accounting system in place to track the number/exact size of repairs using fillers, the only feasible method of regulation would be to establish pass/fail criteria on the repair procedure.

The group was in agreement that some preliminary tests should be conducted after the June 1994 meeting to determine typical HRR and smoke production numbers using a variety of fillers currently available, in conjunction with several base panels in the O.S.U. and N.B.S. chambers. It was further agreed that the fillers tested in the O.S.U. would be applied to a 2" X 2" central void in the 6" x 6" test panels, and to a 1" diameter void in the 3" x 3" N.B.S. panels. The group made a tentative agreement in June to use three brands of fillers: Bondo automotive type body filler, HSH Aerospace filler system, and a system supplied by Mankiewicz (due to logistical problems, the Tech Center did not receive the Mankiewicz filler in time to run the tests, so another type of automotive body filler was substituted). Panels were supplied by Schneller and KLM to complete the tests, the

results of which are included in appendix ?? Additionally, panels were sent to Mankiewicz so they could conduct several filler tests via Aerospatiale; their complete test results will be presented in the February 1995 meeting at Douglas Aircraft.

The results of the filler tests conducted at the Tech Center were briefly discussed, and the group acknowledged the three main findings:

1. Bondo automotive body filler produces high HRR and peak heat release, regardless of the type of substrate that it is applied over.
2. The thickness of the two brands of automotive body filler had a direct impact on the HRR and peak. In a majority of the sets of panels tested, the panel with the most filler weight (and hence, surface thickness) produced the highest HRR and peak HR.
3. There is at least one filler product currently available which met the modified O.S.U./filler test, as exhibited by the HSH system.

The question that still had the group participants concerned was what type of test should be agreed on as a standard. The tests conducted at the Tech Center were a good starting point, everyone agreed, but is there a test which would better decipher between fillers? Can we devise a test which would differentiate between A+, A-, and B+ fillers rather than just plain old *good* or *bad*? To help answer these questions the Tech Center has agreed to conduct additional filler tests using a variety of filler sample holders, which could vary the thickness and surface area of the filler being tested. Hopefully one of these combinations will produce a representative test which is able to better stack the various fillers. The tentative plan is to construct stainless steel sample holders containing 2" x 2", 3" x 3", and 4" x 4" voids in depths of 1/8", 1/4", and 1/2" (this plan is tentative, as it may be determined that circular voids in the sample holders are easier to manufacture). As a minimum, it is proposed that the three fillers used in the previous tests (Bondo, HSH, and Mankiewicz) be used again, including any other types of filler systems that are available.

FEBRUARY 7-8, 1995 MEETING RETURN FORM

INTERNATIONAL AIRCRAFT MATERIALS FIRE TEST WORKING GROUP

NOTE: YOU WILL NOT RECEIVE MINUTES OF THIS MEETING UNLESS THIS FORM IS RETURNED.

I will not be able to attend, but please send me the meeting minutes.

The next meeting will be hosted by Douglas Aircraft Company in Long Beach, California, on Tuesday and Wednesday, February 7-8, 1995. If you plan to attend the meeting please complete all of the information requested below and return this form to April Horner by fax at 609-646-5229 by Friday, January 6, 1995.

PLEASE COMPLETE THE FOLLOWING INFORMATION IF YOU PLAN TO ATTEND:

NAME: _____

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FAX: 609-646-5229**

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

INTERNATIONAL AIRCRAFT MATERIALS FIRE TEST WORKING GROUP MEETING

TUESDAY AND WEDNESDAY, FEBRUARY 7-8, 1994

DOUGLAS AIRCRAFT COMPANY
LONG BEACH, CALIFORNIA

