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

Technical Center

Atlantic City Int'l Airport
New Jersey 08405

July 2, 1992

Dear Group Participant:

Enclosed is a copy of the proceedings of the June 23-25, 1992, Working Group Meeting. Please review and take note of all action items. The process cannot work without your input. Please respond by July 31, 1992. For all the labs that were unable to attend, please join in by fax or mail.

The September meeting will be held at British Aerospace, Woodford, United Kingdom, on Tuesday and Wednesday, September 15 and 16, 1992. The enclosed form should be returned to British Aerospace by August 20, 1992.

A reminder that we are still soliciting papers for the February 1993 Materials Conference (Abstracts are due August 1, 1992) and would appreciate as many from the group as possible.

Hope to see you in Woodford!

Sincerely,

Richard Hill
Fire Safety Branch, ACD-240

Enclosures

International Aircraft Materials Fire Test Working Group

Hosted by:- British Aerospace Regional Aircraft Ltd

In order to ensure access to the Woodford site by attendees of the FAA W/G meeting it is necessary to forward certain information to the BAe security department. The information required is detailed below. Please supply as much of the required information as possible, in order to ensure your access to the site.

Attendee Details:-

1) Name:- _____

2) Representing:- _____

_____

_____

_____

_____

_____

6) Telephone No.:- _____

4) Citizenship:- _____

5) Passport No.:- _____

Travel :-

Arrival Airport:- _____

Flight No.:- _____

Arrival Time:- _____

Hotel Requirements:-

Room Type:- Single/Double

Number of Nights:- _____

Transport will be available from the hotel for the 2 days of the meeting.

Please FAX your completed information to:-

A J Allerton on (44) 61 955 3020

In case of difficulty please telephone:-

on (44) 61 955 3351

INTERNATIONAL AIRCRAFT MATERIALS FIRE TEST WORKING GROUP

FAA TECHNICAL CENTER

JUNE 23, 1992

ATTENDEES

NAME	COMPANY/ORGANIZATION	PHONE/FAX
RICHARD G. HILL	FAA TECHNICAL CENTER	PH:609-484-5997 FX:609-484-5796
RICHARD M. JOHNSON	FAA TECHNICAL CENTER	PH:609-484-6573 FX:609-484-5796
PAT CAHILL	FAA TECHNICAL CENTER	PH:609-484-6571 FX:609-484-5796
GUS SARKOS	FAA TECHNICAL CENTER	PH:609-484-4135
TIM MARKER	FAA TECHNICAL CENTER	PH:609-484-5976
MIKE BARRIENTOS	FAA TECHNICAL CENTER	PH:609-484-5976
DOUG INGERSON	FAA TECHNICAL CENTER	PH:609-484-5976
HUGH BARRET	POLYPLASTEX	PH:813-525-2173 FX:813-522-9069
STEVE BEARE	DuPONT	PH:302-999-2240 FX:302-999-2718
GIUSEPPE BIAMONTE	AVIO INTERIORS	PH:39-773-438346 FX:39-773-698296
SCOTT CAMPBELL	DOUGLAS	PH:310-497-6171 FX:310-593-5605
BRUNO CARRIERE	AEROSPATIALE	PH:33-61-18-09-06 FX:33-1-46-97-35-35
EDWARD S. CHAPLIN	FAA BRUSSELS, BELGIUM AIRCRAFT CERTIFICATION	PH:322.513.3830 X2717 FX:322.230.6899
JEFF CHIAPPONE	SCHNELLER, INC.	PH:216-673-1400 FX:216-673-7327
GREG CUMMINGS	AIM AVIATION	PH:206-235-2750 FX:206-228-0761
HERB CURRY	G.E. PLASTICS	PH:812-831-7769

NAME	COMPANY/ORGANIZATION	PHONE/FAX
JIM DAVIS	ACCUFLEET	PH:713-999-8800 FX:713-999-0055
ADRIAN DE REGT	LANGENTHAL (SWITZERLAND)	FX:63-232532
G.L.DION	DELSEN TESTING LABS CALIFORNIA	PH:818-247-4106 FX:818-247-4537
KAREN FOREST	FAA, ACO, CHICAGO	PH:312-694-7697 FX:312-694-7834
C.L.FOUSHEE	ALBANYINTERNATIONAL RESEARCH COMPANY	PH:206-746-8111 FX:206-641-8844
KRIS HAUGEN	AIM AVIATION, INC.	PH:206-235-2750 FX:206-228-0761
GERALD T. JEKA	L.I. BROUTMAN & ASSOC.	PH:312-842-4100 FX:312-842-3583
STEVE KIRKWOOD	BOEING	PH:206-234-2724
CLAUDE KURAS	AEROSPATIALE	PH:33-61-18-09-06 FX:33-1-46-97-35-35
WOLFGANG LAMPA	DEUTSCHE AIRBUS	PH:INT'L-421-3484 FX:INT'L-421-4180
CHERRY LEE	WEYERHAEUSER COMPANY	PH:206-425-2150 X5289/X5657 FX:206-636-6314
HANK LUTZ	BOEING	PH:206-234-3940
MICHAEL O'DONNELL	IMI TECH	PH:708-981-7676 FX:708-981-7806
JAMES M. PETERSON	BOEING	PH:206-237-8243 FX:206-237-0052
JEAN FRANCOIS PETIT	CEAT	PH:33-61-58-7410 FX:33-61-58-7478
BRENDA REED	DUNCAN AVIATION	PH:402-475-2611 FX:402-475-5541
PATRICK RYAN	DOUGLAS	PH:310-593-9946 FX:310-593-5663
M.M. SAID	POLYPLASTEX	PH:813-525-2173 FX:813-522-9069

NAME	COMPANY/ORGANIZATION	PHONE/FAX
ERIC SIMMONS	ORTECH INTERNATIONAL	PH:416-822-4111 X434 FX:416-822-1451
MATT SPAIN	DUNCAN AVIATION	PH:402-475-2611 FX:402-475-5541
JONAS TALANDIS	ATLAS ELECTRIC	PH:312-327-4520 FX:312-327-5787
SIEGFRIED TORBOHM	VAUTH & SOHN GERMANY	PH:011-4952729191 FX:011-4952726671
JAMES WALNOCK	DuPONT	PH:302-999-2088

ADDITIONAL ATTENDEES - JUNE 24, 1992

NAME	COMPANY/ORGANIZATION	PHONE/FAX
KUMAR AHUJA	NEWPORT SCIENTIFIC	PH:301-498-6700 FX:301-490-2313
ALLEN BLADEN	NEWPORT SCIENTIFIC	PH:301-498-6700 FX:301-490-2313
BOB CURREN	CHAMPLAIN CABLE	PH:802-655-2121
DOUGLAS FOX	DOVER AFB, DELAWARE	PH:302-677-5772
SONJA C. HEIKKILA	TRANSPORT CANADA	PH:613-952-4464 FX:613-996-9178
GEORGE HEWITT	HEATH TECNA	PH:206-872-7500 FX:206-395-3761
KARL KIESSLING	DOVER AFB, DELAWARE	PH:302-677-5772
CAROLE SAGRAVES	LANGENTHAL CORP	PH:919-969-9551 FX:919-969-5757
JAMES P. SMIGIE	ICI GENERAL PRODUCTS	PH:302-886-3529 FX:302-886-5302
KEN SPINDOLA	A L INTERNATIONAL	PH:508-339-7300 FX:508-337-8550
JOHN WALMA	FELL-FAB	PH:416-560-9230 FX:416-560-9846

ADDITIONAL ATTENDEES - JUNE 25, 1992

NAME	COMPANY/ORGANIZATION	PHONE/FAX
ISSA GHOREISHI	BOEING	PH:206-477-4252 FX:206-477-3300
JIM HOOVER	DuPONT	PH:302-999-3081 FX:302-999-3921

ACTION ITEMS

ALL INFORMATION FROM WORKING GROUP MEMBERS IS DUE BY JULY 31, 1992. THE INFORMATION WILL BE TABULATED AND RETURNED TO GROUP MEMBERS BY AUGUST 30, 1992, PRIOR TO THE NEXT WORKING GROUP MEETING.

OIL BURNER FOR CARGO LINERS

1) CONCERNING CONE FOR CARGO LINERS AND SEAT TESTS: RECOMMENDATIONS ON TYPE OF MATERIALS AND THICKNESS RANGE THAT SHOULD BE ALLOWED (INCLUDE VARIATION +/- IN THICKNESS) IN TEST METHODS. MEMBERS TO MEASURE THEIR CONES TO SEE WHAT THEY HAVE (SIZE, TYPE AND WARPAGE FACTOR).

   EVERYONE SHOULD ALSO INCLUDE INFORMATION ON HOW THEIR CONE IS PUT TOGETHER - FLANGED OR WELDED?

2) SHOULD THERE BE A TOLERANCE ON FUEL FLOW? SHOULD A NUMBER BE SPECIFIED?

3) WHAT TYPE OR RANGE OF FUEL SHOULD BE ALLOWED? REPRESENTATIVES FROM ALL NATIONS SHOULD PROVIDE INFORMATION ON THIS. SHOULD FUEL MIXTURES BE ALLOWED? INDICATE BTU RANGE.

4) UPON COMPLETION OF TABULATION OF INFORMATION RECEIVED IN RESPONSE TO THESE ACTION ITEMS, FAA WILL SEND OUT RANGE OF FLOW RATES TO BE COMMENTED ON.

5) PROVIDE INFORMATION AND PROBLEMS YOU HAVE WITH CALORIMETERS AND THERMOCOUPLES. HANK LUTZ VOLUNTEERED TO SEND INFORMATION BOEING HAS ON FILE.

6) SEND IN INFORMATION ON HOW LONG SPECIMENS REMAIN OUT OF CONDITIONING ROOM (HUMIDITY LEVEL AND TOLERANCES) BEFORE TESTING. WHAT ARE YOUR PROCEDURES? THIS INFORMATION SHOULD BE PROVIDED FOR CARGO LINERS AND SEAT CUSHIONS.

7) SEND COMMENTS ON HEAT FLUX TOLERANCES.

8) WHAT ARE ACCEPTABLE WAYS OF TESTING A JOINT, A SEAM AND/OR A PATCH?

OIL BURNER TEST FOR SEAT CUSHIONS

1) SEND SAME INFORMATION FOR BURNER CONE AS REQUESTED FOR CARGO LINERS.

2) PROVIDE INFORMATION ON INLET FLOW RATE MEASUREMENTS PROCEDURES SO THAT WE CAN DETERMINE TYPE OF AIRFLOW MEASUREMENTS.

3) WHAT PROBLEMS HAVE YOU RUN INTO WITH FUEL TEMPERATURE? WHY SHOULD FUEL TEMPERATURE BE MAINTAINED? THIS WILL BE INCLUDED IN APPENDIX.

4) MAP OUT FLAME AND ITS SIZE OF YOUR SEAT TEST. SUPPLY US WITH PHOTOS OR VIDEO WITH SCALE, IF POSSIBLE.

5) SEND INFORMATION ON HOW YOU CALIBRATE. WHAT WOULD BE AN ACCEPTABLE MEASUREMENT, AND WHAT IS YOUR RATIONALE FOR THIS? WHAT ALLOWANCES SHOULD BE GIVEN AND WHAT PROBLEMS CAN BE OVERCOME BY HAVING THE FLAME AT THIS TEMPERATURE?

6) SEND COMMENTS ON BURN LENGTH.

7) SEND INFORMATION FOR APPENDIX ON LEATHER (OR OTHER ODD MATERIALS) AND HOW IT DIFFERS FROM OTHER STANDARD MATERIALS SUCH AS WOOL/NYLON.

8) WHAT SHOULD WE DO WITH BUNSEN BURNER TEST? SHOULD IT BE USED FOR ALL OF THE COMPONENTS, SOME OF THE COMPONENTS, OR NOT AT ALL?

BUNSEN BURNER TEST

1) IS THERE A BETTER METHOD FOR DETERMINING BURN LENGTH ON CARPETS? HOW SHOULD DIFFERENT TYPES OF BACKING BE HANDLED? HOW DO YOU DETERMINE BURN LENGTH IN YOUR LABS?

2) COORDINATE WITH PAT CAHILL IN SENDING A FEW PIECES OF MATERIAL THAT PASS OSU AND NBS TESTS AND FAIL THE BUNSEN BURNER TEST. (HUGH BARRET, POLYPLASTEX, TO SEND SOME SAMPLES)

3) HOW BIG IS TOO BIG FOR A CHAMBER SIZE? SHOULD CHAMBER SIZE BE SPECIFIED (MAYBE WITH LARGE TOLERANCES)? SEND COMMENTS OR PROBLEMS WITH TOLERANCES TO PAT (SOME OF THIS INFORMATION WILL GO INTO APPENDIX).

4) WHAT WOULD BE A GOOD METHOD OF DETERMINING BURN LENGTH FOR A PARTICULAR TYPE OF MATERIAL?

OSU TEST

1) SUBMIT IDEAS ON PROCEDURE FOR HEAT FLUX MEASUREMENTS.

2) HOW DO EUROPEAN COMPANIES HANDLE HOLE SIZE TOLERANCE WITH METRIC MEASUREMENTS?

3) SHOULD WE HAVE CALORIMETERS CALIBRATED AT SAME PLACE? WHERE IS YOUR CONFIDENCE CONCERNING CALIBRATION OF CALORIMETER - IS IT WITH NIST? WHAT ARE YOUR THOUGHTS ON THIS?

4) HUGH BARRET (POLYPLASTEX) TO CHAIR GROUP TO WORK ON STANDARD MATERIALS.

5) HANK LUTZ (BOEING) TO PROVIDE SIGNIFICANT AMOUNT OF INFORMATION ON CALORIMETER CALIBRATION. HE WILL SUPPLY INFORMATION HE HAS FROM THREE DIFFERENT MANUFACTURERS ON HOW THEY CALIBRATE CALORIMETERS.

6) GROUP MEMBERS TO PROVIDE INFORMATION FOR APPENDIX ON PROBLEM OF PILOT FLAMES BEING EXTINGUISHED.

7) GROUP MEMBERS TO PROVIDE IDEAS ON CHANGING DOORS OF CHAMBER (POSSIBLE NEW MATERIALS FOR DOORS TO BE MADE FROM).

NBS TEST

1) CHECK E-5 FOR ANY REVISIONS THEY HAVE ON PILOT BURNER FLAMELETS. WORDING ON SIZE OF FLAME.

2) HOW MANY HOLES SHOULD UPPER PILOT BURNER HAVE?

3) DICK JOHNSON WILL CHECK WITH BOEING FOR A DEVICE TO CHECK PROPER LOCATION OF PILOT.

ELECTRICAL WIRE TESTING

1) DO YOU SEE THE NEED TO ESTABLISH AN ACTUAL SUBGROUP ON THIS TYPE OF TESTING?

2) DEUTSCHE AIRBUS IN THE PROCESS OF DEVELOPING A NEW TEST DEALING WITH CIRCUIT BREAKERS - WOLFGANG LAMPA TO SEND FAA UPDATES ON THIS.

3) BOB CURREN (CHAMPLAIN CABLE) TO SUPPLY INFORMATION HE HAS ON DRY TESTING.

4) JEAN FRANCOIS PETIT (CEAT) TO SEND INFORMATION ON TESTS DEVELOPED AND USED AT AEROSPATIALE.

5) ISSA GHOREISHI (BOEING) WILL SEND COPY OF THEIR TEST FOR CURRENT OVERLOAD.

GENERAL INFORMATION

1) DICK HILL WILL PROVIDE COMPLETE INFORMATION ON DATES AND LOCATION OF NEXT MEETING IN SEPTEMBER 1992, TO BE HELD AT BRITISH AEROSPACE.

2) GROUP MEMBERS WERE ASKED TO SIGN UP FOR SELECTION COMMITTEES TO REVIEW ABSTRACTS FOR ADVANCED MATERIALS CONFERENCE, TO BE HELD IN FEBRUARY 1993.

GENERAL MEETING AND DISCUSSION OF NEW BUSINESS-JUNE 24, 1992

DICK HILL

NEXT WORKING GROUP MEETING: TO BE HELD AT BRITISH AEROSPACE IN MANCHESTER, ENGLAND. DATES ARE SEPT. 15 & 16, 1992.

FEBRUARY 1993 ADVANCED MATERIALS CONFERENCE:

DATES: FEBRUARY 9-11, 1993
TUESDAY, WEDNESDAY, THURSDAY

LOCATION: ATLANTIC CITY, NEW JERSEY
TRUMP TAJ MAHAL HOTEL AND CASINO OR
TROP WORLD HOTEL AND CASINO
GROUP HAD NO HOTEL PREFERENCE

ABSTRACTS: REQUESTS FOR ABSTRACTS WILL BE SENT TO ALL AIRLINES IN THE WORLD, CHEMICAL/AIRCRAFT MATERIAL COMPANIES, AND UNIVERSITIES DOING CHEMICAL/MATERIAL RESEARCH. DUE DATE FOR ABSTRACTS HAS BEEN CHANGED TO AUGUST 1, 1992.

GROUP MEMBERS WERE ASKED TO SIGN UP TO BE ON A SELECTION COMMITTEE TO EVALUATE ABSTRACTS TO SELECT PAPERS TO BE PRESENTED AT CONFERENCE.

FEE: CONFERENCE FEE FOR ATTENDEES WILL BE APPROXIMATELY $150.

SPEAKERS: CONGRESSMAN LEWIS IS BEING INVITED TO SPEAK AT CONFERENCE. HE IS RESPONSIBLE FOR THE "AVIATION SAFETY ACT OF 1988".

CHAIRMAN: GROUP WAS ASKED TO SUGGEST PERSONS TO CHAIR SESSIONS OF CONFERENCE.

FEBRUARY 1993 WORKING GROUP MEETING:

A WORKING GROUP MEETING WAS TENTATIVELY SCHEDULED FOR MONDAY, FEBRUARY 8, 1993, PRIOR TO CONFERENCE. AT THIS MEETING THE GROUP WOULD REVIEW FINAL GROUP RECOMMENDATIONS.

A WORKING GROUP MEETING WOULD BE HELD ON FRIDAY, FEBRUARY 12, 1993, ONLY IF ABSOLUTELY NECESSARY TO FINALIZE ANY UNRESOLVED RECOMMENDATIONS.

OIL BURNER TEST FOR CARGO LINERS SUBGROUP - JUNE 23, 1992

DICK HILL

SECTION 8.1: WORD CHANGE NOTED: TAME SHOULD BE FLAME.

DICK HILL STATED: ALL ADVISORY MATERIAL WILL GO IN APPENDIX NOW, NOT FOOTNOTES.

SECTION 8.3.2.1: EXPLANATION: THE APPENDIX WILL INCLUDE VARIOUS TYPES OF ACCEPTABLE NOZZLES AND THEIR DESCRIPTIONS. THE TEST METHOD WILL SPECIFY REQUIREMENT AS TO TYPE OF NOZZLE TO BE USED.

EACH CHAPTER WILL HAVE ITS OWN APPENDIX.

SECTION 8.3.2.2: BURNER CONE: THICKNESS OF CONE OR TYPE OF MATERIAL FROM WHICH CONE IS MADE. DICK HILL ASKED FOR SUGGESTIONS FROM GROUP.

MEMBER COMMENT: THERE IS A VARIANCE IN WARM-UP TIME DEPENDING ON WHAT TYPE OF MATERIAL IS USED IN BURNER CONE.

DETERMINE A STANDARD MATERIAL FOR THIS AND OTHER TEST METHODS. THIS WOULD ELIMINATE SOME PROBLEMS IN WARM-UP TIME AND OTHER AREAS. SET STANDARD TYPE OF MATERIAL TO BE USED.

8.3.2.3 FUEL PRESSURE REGULATOR:

DICK HILL SUGGESTED: INCLUDE IN APPENDIX DIFFERENT WAYS OF MEASURING FLOW RATE.

HANK LUTZ (BOEING): FLOW SHOULD ACTUALLY BE MEASURED.MEASURE FLOW AND ADJUST FLOW RATE.

NOZZLE SUPPLIES 2.0 GAL/HR. SHOULD WE STATE VARIANCE SOMEWHERE FOR THIS? MAYBE IN THE APPENDIX - LIST VARIANCE TOLERANCES FOR FUEL RATE (FLOW ACCORDING TO FUEL TEMPERATURE).

SECTION 8.3.2.4 FUEL:

DICK HILL STATED: BETTER WORDING NEEDED: DEPENDING ON WHERE IN THE COUNTRY THE TEST SITE IS LOCATED THERE ARE DIFFERENT TYPES OF FUELS THAT ARE AVAILABLE. CHANGE WORDING TO INCLUDE A FAMILY OF FUELS TO BE USED AND MAYBE IN APPENDIX LIST SUGGESTIONS ON TYPES OF FUELS TO BE USED.

SECTION 8.3.2.5 BURNER AIRFLOW:

DICK HILL STATED: REQUIREMENTS CALL FOR MEASUREMENT OF AIR COMING OUT OF TUBE WITH HOT WIRE ANOMOMETER.

ONLY ONE LAB RESPONDED TO REQUEST FOR DATA FROM LAST MEETING.

FLOW RATE THROUGH BURNER NEEDS TO BE SPECIFIED.

SECTION 8.3.3.1 CALORIMETER MOUNTING:

DICK HILL STATED: SHOULD THE APPENDIX INCLUDE PROBLEMS LABS ARE HAVING WITH CALIBRATION?

SECTION 8.3.4 THERMOCOUPLES:

DICK HILL STATED: SAME THERMOCOUPLE WILL NOT BE REQUIRED IN OSU IN RESPONSE TO QUESTION AS TO WHETHER SAME THERMOCOUPLE WILL BE REQUIRED IN EVERY TEST.

SECTION 8.3.5 INSTRUMENTATION: OUTPUTS OF CALORIMETER AND THERMOCOUPLES MUST BE RECORDED

SECTION 8.5 SPECIMEN CONDITIONING:

DICK HILL STATED: THERE HAVE BEEN QUESTIONS ON EXACTLY WHAT LIMITS ON MATERIALS CONDITIONING (AS FAR AS HUMIDITY GOES) CAN BE ALLOWED.

DICK HILL ASKED: ANYONE NOT HAPPY WITH THESE REQUIREMENTS FOR CARGO LINER CONDITIONING? IS IT NECESSARY TO SPECIFY TIME FOR CONDITIONING?

MEMBER COMMENT: THERE IS A DISCREPANCY IN TIMING OF WHEN SPECIMENS ARE TAKEN OUT OF CONDITIONING AREA PRIOR TO TEST. SOME COMPANIES TAKE SPECIMENS OUT ONE AT A TIME, OTHERS TAKE ALL SPECIMENS TO BE TESTED THAT DAY OUT AT SAME TIME.

DICK HILL STATED: MAYBE TIME REQUIREMENTS SHOULD BE LISTED IN APPENDIX.

OUR OBJECT IS TO MAKE TESTING EASIER AND MORE REPEATABLE.

WHY DON'T WE LEAVE REQUIREMENT AS IT IS AND BREAK DOWN WHAT IS ALLOWED IN APPENDIX?

WE CANNOT DROP THIS STATEMENT OUT WITHOUT SEVERAL LABS RUNNING TESTS TO SEE IF IT MATTERS.

APPENDIX SHOULD INCLUDE ANY ODDITIES FROM TEXT. APPENDIX WOULD STATE ACCEPTABLE WAYS OF TESTING.

SECTION 8.6.7:

DICK HILL ASKED: SHOULD WE HAVE +/- ON HEAT FLUX ON TEMPERATURE?

MEMBER COMMENT: ONLY USE A MINIMUM NUMBER FOR TOLERANCES. THERE ARE PROBLEMS WITH CUSTOMERS LOOKING FOR LABS THAT GIVE THEM BEST RESULTS.

INCLUDE MINIMUM IN TEST METHOD AND LIST RANGES IN APPENDIX.

SECTION 8.7.3 MOUNTING OF THERMOCOUPLES:

DICK HILL ASKED: DID WE EVER DETERMINE WHERE MEASUREMENT SHOULD BE TAKEN FROM FOR DISTANCE MEASUREMENTS? MEASUREMENT SHOULD BE FROM INSIDE FACE (THIS MUST BE MODIFIED IN TEST METHOD).

APPENDIX 8A:

8.3.2: TECHNICAL INFORMATION SHOULD BE INCLUDED AS TO WHAT TABS ARE.

8.4.1: HOW TO TEST SEAMS, JOINTS, AND PATCHES MUST BE INCLUDED.

OIL BURNER FOR SEAT CUSHIONS SUB GROUP - JUNE 23, 1992

SECTION 7.3.2.5 BURNER AIRFLOW:

MEMBER CONCERNS: CONSISTENCY OF TEMPERATURE IS A FACTOR.

DICK HILL ASKED: IS YOUR PROBLEM THAT AS THE TEMPERATURE INCREASES THE BURNER IS NO LONGER IN CALIBRATION?

DICK HILL STATED: IN ORDER TO GET BURNER CALIBRATED AGAIN THE FUEL TEMPERATURE WOULD HAVE TO BE KEPT WITHIN A CERTAIN RANGE. MAYBE BEST PLACE TO ADDRESS THIS ISSUE IS IN APPENDIX.

SECTION 7.4.1 SPECIMEN PREPARATION: MOST OF THIS MATERIAL WAS PUT INTO APPENDIX.

HANK LUTZ (BOEING): THERE ARE PROBLEMS WITH MEASUREMENT REQUIREMENTS WITH LEATHER COVERS ON SEAT CUSHIONS.

SECTION 7.4.3 SEAT BACK CUSHION SPECIMEN: SOME DISCUSSION ON HOW SEATS SHOULD BE SIZED FOR TESTING.

DICK HILL REQUESTED: ANY INFORMATION YOU HAVE ON THIS SHOULD BE SUBMITTED TO GO INTO APPENDIX.

THE PARAGRAPH SHOULD BE REWORDED TO SAY: "SPECIMEN SHOULD BE FINISHED" AND SEAT REQUIREMENTS AND INFORMATION AND POSSIBLE PROBLEMS SHOULD BE INCLUDED IN APPENDIX.

SECTION 7.7.5 THERMOCOUPLES:

MEMBER SUGGESTION: SET PERCENTAGE. ALSO AVERAGE MUST BE ABOVE A CERTAIN AMOUNT.

SECTION 7.10.1 BURN LENGTH:

DICK HILL ASKED: WOULD IT BE BETTER TO SAY "ONE INCH FROM OPPOSITE SIDE" HERE OR IN APPENDIX STATE SOMETHING?

SECTION 7.8.1: WHAT IS AN ACCEPTABLE METHOD OF SECURING VARIOUS TYPES OF SEAT CUSHIONS? HOW MUCH SECURING? HOW MUCH OR WHAT TYPE OF WIRE OR WHAT OTHER TYPE OF MATERIAL SHOULD BE USED TO SECURE CUSHION?

DISCUSSION ON WHETHER TO KEEP BUNSEN BURNER TESTS:

DICK HILL STATED: THERE WAS A LOW RESPONSE TO PREVIOUS QUESTION ON TESTING SEAT CUSHIONS - ESPECIALLY FOAM AND FABRIC.

SHOULD WE KEEP BUNSEN BURNER TEST? SHOULD WE DROP BUNSEN BURNER TEST OR GO WITH SOMETHING IN BETWEEN?

MEMBER COMMENT: THERE ARE PROBLEMS WITH BUNSEN BURNER TEST WITH FOAMS.

DICK HILL'S SUMMARY ON OIL BURNER SUBGROUPS

- INFORMATION REQUESTED ON AIRFLOW THROUGH BURNER
- THERMOCOUPLES AND CALORIMETERS: TEMPERATURE SHOULD BE REDUCED AFTER LONG USAGE. LABS HAVE DIFFICULT TIME GETTING TWO THERMOCOUPLES CALIBRATED
- THERE WAS DISCUSSION ON RELAXING UPPER SIDE OF TOLERANCES ON REQUIREMENT (PLACE IN APPENDIX)

OSU SUBGROUP - JUNE 23, 1992

RICHARD JOHNSON

PRIOR TO THIS MEETING, MEMBERS HAD BEEN SENT CHANGES IN TEXT FROM LAST DISCUSSION.

CHAPTER 5: PREVIOUSLY SENT TO MEMBERS FOR REVISIONS AND SUGGESTIONS.

FIGURE 5.5B: PROPOSED ELIMINATION OF 3-HOLED BURNER. UPPER PILOT ORIGINALLY HAD 14 HOLES. INCREASED NUMBER OF HOLES WILL PROVIDE REIGNITION (THE MORE HOLES YOU PUT IN, THE MORE HEAT YOU PUT IN THERE). FURTHER EVALUATION IS NEEDED ON 15 HOLES - TESTING IS REQUIRED.

MEMBER SUGGESTION: TEXT SHOULD BE ADJUSTED TO FOLLOW HOW JUNCTIONS ARE SET UP AND LOCATED. TEXT DOES NOT STATE EXACTLY WHAT CONSTRUCTION OF THERMOPILE IS. ALSO INCLUDE A SCHEMATIC.

RADIANT HEAT SHIELDS:

MEMBER STATED: SUGGESTION HAD BEEN SENT ON LOCATING GLOW BARS AND SUPPORTING THEM. USE OF CERAMICS.

DICK HILL SUGGESTED: CHANGE WORDING TO REFLECT CERAMIC INSULATING MATERIAL OF SOME TYPE.

MEMBER ASKED: (CONCERNING HEAT FLUX UNIFORMITY):

IS THERE ANYTHING WE CAN DO TO DEVELOP A PROCEDURE FOR HEAT FLUX MEASUREMENTS? INSTRUCTION ON THIS IS NOT CLEAR IN RULES. THE WAY THE RULE IS STATED ALLOWS FOR SEVERAL DIFFERENT METHODS.

FIGURE 5.1A: FIGURE AND TEXT HAVE A DISCREPANCY IN THE MEASUREMENT OF THICKNESS OF ORIFICE. CHANGE TEXT TO 24/1000 TO MATCH FIGURE.

MEMBER COMMENT: AIR MANIFOLD: CAN WE SPECIFY +/- TOLERANCE ON HOLES?

DICK JOHNSON STATED: FROM FAA POINT OF VIEW, THE RULE IS CALLED OUT, BUT IF THERE IS A MANUFACTURER TOLERANCE ON THE DRILL, THEN MAYBE THE CHANGE CAN BE CONSIDERED.

MEMBER ASKED: CAN WE HAVE A TOLERANCE +/- ON WHAT HOLE SIZE IS AFTER IT IS DRILLED.

DICK HILL ASKED: HOW DO EUROPEANS HANDLE THIS PROBLEM DEALING WITH METRICS?

DICK HILL STATED: TEXT SHOULD INCLUDE HOLE SIZE AND APPENDIX SHOULD INCLUDE DRILL SIZE.

CALIBRATION OF CALORIMETER:

MEMBERS IN AGREEMENT: CALIBRATION OF CALORIMETER SHOULD BE ADDRESSED.

DISCUSSION ON WORK DONE BY NATIONAL BUREAU OF STANDARDS

MEMBER COMMENT: IT IS CRUCIAL THAT THIS BE RESOLVED

DICK HILL SUGGESTED: EVERYONE GETS THEIR CALIBRATION STANDARD FROM NIST, THEREFORE, EVERYONE IS ONLY ONE STEP AWAY FROM NIST NO MATTER WHERE THEY GET IT DONE--NIST OR FAA, ETC.

THIS INFORMATION WILL BE PUT INTO APPENDIX AS AN ACCEPTABLE METHOD TO SHOW COMPLIANCE.

AT SEVERAL MEETINGS WE HAVE TALKED ABOUT SEVERAL COMPANIES GETTING TOGETHER TO COME UP WITH STANDARD PANEL. HAS ANYONE COME UP WITH ANYTHING?

WOLFGANG LAMPA (DEUTSCHE AIRBUS): THEY HAVE ONLY ONE CALIBRATION METHOD FOR CALORIMETER AND THEY HAVE A MASTER CALORIMETER. THEY WOULD LIKE TO SEE ONLY ONE MASTER IN EUROPE.

HANK LUTZ (BOEING): THIS IS VERY CRITICAL BECAUSE THE CALIBRATION CURVE THAT MANUFACTURERS GIVE YOU HAS TO BE CORRECT. ONE METHOD MUST BE ARRIVED AT FOR CALIBRATION OF CALORIMETER. HE HAS SEVERAL DOCUMENTS ON CALIBRATION OF CALORIMETERS.

PILOT BURNERS:

MEMBER ASKED:

TEXT 5.3.8.2 (FIGURE): HOW IS LOCATION OF BURNER SPECIFIED. SIZE OF WINDOW AND LOCATION OF WINDOW ARE NOT STATED IN TEXT. TEXT SHOULD BE CHANGED.

OPTIONAL 14-HOLE BURNER:

MEMBER ASKED: IS 14-HOLE REQUIRED OR IS 14-HOLE OPTIONAL?

DICK JOHNSON CLARIFICATION: RULE SAYS 3-HOLE IS REQUIRED.

SPARK IGNITOR: RECOMMENDATIONS CAN BE MADE (TESTS SHOULD BE WATCHED)

SOME DISCUSSION ABOUT AUTO-IGNITORS OCCURRED

DICK JOHNSON STATED: AT THIS POINT IT CAN BE STRONGLY RECOMMENDED, BUT IT CANNOT BE MANDATED

MEMBER COMMENT: INFORMATION SHOULD GO INTO APPENDIX ON THIS

TEST SPECIMENS:

DICK HILL STATED: ALL ACCEPTABLE METHODS ARE TO BE LISTED IN APPENDIX RELATING TO STRANGE OCCURRENCES. FOR EXAMPLE, PANELS THAT ARE TOO THICK AND STICK OUT THE BACK.

SECTION 5.4.4 SPECIMEN ORIENTATION: SAMPLES SHOULD BE MARKED WITH SPECIFIC DIRECTIONS.

DISCUSSION ON MANUFACTURER MARKING SAMPLES IN A PARTICULAR WAY SO THEY ARE TESTED IN A CERTAIN WAY

MEMBER COMMENT: THERE IS A VARIANCE IN WHICH TEXTILES SHOULD BE TESTED IN BOTH DIRECTIONS. THIS SHOULD GO IN APPENDIX.

MEMBER ASKED: WHAT IF YOU HAVE A NEW MATERIAL THAT YOU HAVE A HINT OF A QUESTION OR A PROBLEM ON AND YOU RUN IT IN BOTH DIRECTIONS?

MEMBER SUGGESTION: RUNNING FIRST SAMPLE IN ONE DIRECTION AND SECOND SAMPLE IN ANOTHER DIRECTION AND THIRD SAMPLE IN WORST CASE DIRECTION. THIS WAY 2 SAMPLES HAVE BEEN RUN THROUGH IN WORST CASE DIRECTION.

DICK JOHNSON SUGGESTED: RECOMMEND THAT ARROWS ARE PUT ON SPECIMENS SO THAT EACH SET IS TESTED IN THE SAME DIRECTION TO ENSURE REPEATABILITY OF TESTS.

CALIBRATION BURNER: INCLUDE WHERE IT SHOULD BE LOCATED.

CALIBRATION GAS MANIFOLD:

MEMBER COMMENT: CHANGE WORDING IN TEXT TO INCLUDE THE FOLLOWING: INSTEAD OF NEEDLE VALVES USE A DEVICE TO METER THE FLOW.

THE WORD MANIFOLD WILL CHANGE TO MEANS

SECTION 5.6.5.4 HEAT FLUX DENSITY:

JIM PETERSON (BOEING): WILL PROVIDE ELABORATE PARAGRAPH TO BE INCLUDED IN APPENDIX

SECTION 5.6.5.6: PRECONDITIONING OF CHAMBER IS STATED IN THE HANDBOOK, BUT NO TIME LENGTH IS GIVEN AS TO HOW LONG TO PRECONDITION THE CHAMBER.

DICK JOHNSON SUGGESTED: 2 MINUTES

SECTION 5.8.4:

DICK JOHNSON STATED: FOR CERTAIN MATERIALS THIS REALLY HAS TO BE WATCHED.

SONJA HEIKKILA (TRANSPORT CANADA) ASKED: IS THERE ANYTHING IN THE RULES THAT REQUIRES THIS DATA TO BE REPORTED TO FAA?

KAREN FOREST (FAA ACO, CHICAGO): YES, THE INTENT IS FOR THE INFORMATION TO BE REPORTED.

SECTION 5.7.8:

MEMBER COMMENT: (CONCERNING PILOT FLAMES BEING EXTINGUISHED): HOW CAN WE ADDRESS THIS PROBLEM? HAS ANYONE ELSE SEEN THIS TYPE OF PROBLEM?

DICK JOHNSON STATED: HE HAD SENT OUT INFORMATION ON THIS TO THE OSU SUBGROUP.

FIGURE 5.1A RATE OF HEAT RELEASE APPARATUS:

SEVERAL QUESTIONS WERE RAISED CONCERNING THE GAUGE OR THICKNESS ON ORIFICE PLATES

DICK HILL SUGGESTED: DRAWING BE CHANGED TO WHATEVER IS REQUIRED. IF SEVERAL DIFFERENT MEASUREMENTS ARE ACCEPTABLE THEN THE RANGE SHOULD BE GIVEN TO INDICATE THAT. INCLUDE OTHER ACCEPTABLE THICKNESSES/GAUGES IN THE APPENDIX.

FIGURE 5.12: DICK JOHNSON EXPLAINED HOW TO MAKE 15th HOLE IN THE BURNER. EVERYONE IN AGREEMENT TO CHANGE TO 15-HOLE BURNER.

FIGURE 5.6: POSITION OF CALIBRATION BURNER AS SHOWN WAS DISCUSSED AS TO METRIC MEASUREMENTS BEING CORRECT AS SHOWN.

SONJA HEIKKILA (TRANSPORT CANADA): (CONCERNING CERTIFICATION OF A SYSTEM): IF THERE ARE MANY CHANGES HOW DO WE KNOW WHAT THE STATUS IS? WHAT HAPPENS TO THE COMPANIES WHO HAD THEIR UNITS CERTIFIED 2-4 YEARS AGO?

DICK JOHNSON'S SUMMARY OF OSU

- WORDING CHANGES ON CERAMIC HOLDERS DISCUSSED
- MEASUREMENT PROCEDURE FOR HEAT FLUX TRANSDUCER DISCUSSED
- SPECIMEN HOLDER THICKNESS CHANGE FROM 0.017 TO 0.018
- DISCUSSION ON CALIBRATION OF CALORIMETER - RECOMMENDED USE OF ONE CALORIMETER TO MEASURE CALIBRATION OF OTHER CALORIMETER

DICK HILL SUGGESTED: GET A REPRESENTATIVE FROM A CALORIMETER COMPANY TO COME IN AND TALK ABOUT HOW CALORIMETERS ARE CALIBRATED AND THE PROBLEMS THEY HAVE HAD WITH CALORIMETERS. WOULD THIS BE SOMETHING WORTH PURSUING?

MEMBER SUGGESTED: A ROUND-TABLE, OPEN FORUM INCLUDING NIST AND CALORIMETER MANUFACTURERS - POSSIBLY INVITE ALL CALORIMETER MANUFACTURERS TO SUCH A MEETING?

- LOOK FOR A NUMBER TO ELIMINATE TWO-DIRECTIONAL TESTING WITH OSU
- APPENDIX TO INCLUDE A PROCEDURE FOR DETERMINING HEAT FLUX DENSITY IN REGARD TO LENGTH OF TIME CALORIMETER IS LEFT IN PLACE
- SCHEMATIC OF THERMOPILE WILL BE INCORPORATED

DICK HILL REVIEWED: FAA IDEA OF PROPOSED CONFIGURATION CHANGE IN CHAMBER TO HELP PREVENT LEAKS (FAA WAS ONLY DOING RESEARCH TO IMPROVE UPON DETERIORATION.

DO YOU FEEL THAT THIS IS THE KIND OF RESEARCH WE SHOULD BE LOOKING AT?

MEMBER COMMENT: WE HAVE NEVER ADDRESSED WHAT MATERIAL CHAMBER DOORS ARE MADE OF.

MEMBER CONCERN: THERE IS SOME CONCERN OVER CHANGING SET-UP OF CHAMBER. A MAJOR MODIFICATION MAY BE IN ORDER SO THAT WOULD REQUIRE A RULE CHANGE.

DICK HILL STATED: IT COULD BECOME AN ALTERNATE TEST METHOD APPROACH, NOT NECESSARILY A RULE CHANGE

THERE WAS MUCH DISCUSSION ON THIS TOPIC

MEMBER SUGGESTED: IMPROVING ON WHAT IS ALREADY IN EXISTENCE; WORKING WITH ATLAS ON IMPROVING CURRENT EQUIPMENT.

SONJA HEIKKILA (TRANSPORT CANADA): RESTATED HER CONCERN ABOUT EQUIPMENT THAT WAS CERTIFIED SEVERAL YEARS AGO.

OTHER QUESTIONS

CHERRY LEE (WEYERHAEUSER COMPANY): (QUESTION CONCERNING SECTION 5.3.4, OSU AIR DISTRIBUTION SYSTEM: AT WHAT LOCATION DOES ONE MONITOR TEMPERATURE?

DICK JOHNSON STATED: TEMPERATURE IS MONITORED NEAR ORIFICE AND IN LOWER CHAMBER. HE USES WATER COOLING TO BRING TEMPERATURE DOWN.

SMOKE TEST FOR CABIN MATERIALS (NBS) - JUNE 24, 1992

SECTION 6.3.1.3: REMOVE 3A FROM FIRST PAGE

DICK JOHNSON SUGGESTED: TEXT CHANGE: "THE OPEN WATER-FILLED BOTTLE SHOULD BE VENTED TO THE OUTSIDE BECAUSE IT WILL BE OUTGASSING ALL THE TIME."

DISCUSSION AS TO WHERE SAMPLING PORT SHOULD BE LOCATED. SHOULD IT REMAIN AT THE TOP?

DICK JOHNSON STATED: APPENDIX SHOULD INCLUDE "X" NUMBER OF INCHES FROM CEILING OF CHAMBER.

FINAL GROUP DECISION: THE APPENDIX WILL INCLUDE "ON THE TOP OR WITHIN SIX INCHES OF THE TOP.

SECTION 6.3.1.6 RADIANT HEAT FURNACE:

SECTION 6.3.1.6.3:

HANK LUTZ (BOEING): THIS WRITE-UP DOES NOT COVER THE PROBLEM WITH THE CONTROLLERS. HE SUGGESTED ADDING SOMETHING IN THE APPENDIX: A DESCRIPTION OF OTHER ELECTRIC CONTROLLERS.

SECTION 6.3.1.6.4:

HANK LUTZ (BOEING): CALIBRATION OF HEAT FLUX DENSITY GAUGE IS AN INTERNATIONAL PROBLEM

DICK JOHNSON STATED: FAA HAS SUGGESTED THAT UNIT BE SENT BACK TO THE MANUFACTURER.

SECTION 6.3.1.8 PILOT BURNER FUEL:

DICK JOHNSON STATED: SECOND PARAGRAPH IMPORTANT.

MEMBER ASKED: HAVE THEY COME UP WITH ANY BETTER WAY TO DESCRIBE FLOW RATE MEASUREMENT?

DICK JOHNSON SUGGESTED: INFORMATION BE PUT INTO APPENDIX ON BOEING SPECS FOR MEASUREMENT DEVICE TO MAINTAIN PILOT FLAME TUBE POSITION

SECTION 6.3.1.9:

DICK JOHNSON STATED: ONE BLANKING PLATE HOLDER BE USED WITHOUT TRAY AS A BLANK CONSISTENTLY IN ALIGNMENT WITH THE FURNACE. THIS INFORMATION SHOULD BE INCLUDED IN APPENDIX.

THERE WAS GROUP AGREEMENT.

SECTION 6.3.1.9.1:

DICK JOHNSON STATED: PLACEMENT OF WIRES HAS TO BE OUTSIDE OF HOLDER.

HANK LUTZ (BOEING): AGREES WITH DICK HILL THAT THIS INFORMATION WAS LOOKED AT SEVERAL YEARS AGO AND HORIZONTAL PLACEMENT OF WIRES MADE A SIGNIFICANT DIFFERENCE IN DATA.

FINAL GROUP DECISION: ADDRESS PROBLEMS IN APPENDIX.

SECTION 6.3.2.4: GROUP AGREEMENT THAT RECOMMENDED METHOD OF KEEPING PILOT LIT SHOULD GO INTO APPENDIX.

SECTION 6.4 TEST SPECIMEN SELECTION AND PREPARATION:

NUMBER OF SPECIMENS:

DICK HILL SUGGESTED: INCLUDE IN APPENDIX "YOU MAY NEED TO HAVE 6 SPECIMENS"

SECTION 6.4.3: REMOVE 2nd SENTENCE OF 2nd PARAGRAPH. END PARAGRAPH AFTER THE WORD "CONSTRUCTION" IN 2nd PARAGRAPH.

SECTION 6.4.4 SPECIMEN ORIENTATION: IN WHAT SECTION DO YOU WANT PLACEMENT OF ARROW ON SPECIMEN LOCATED?

MEMBER ASKED: WHAT DID FAA LAB FIND ON SETTING SPAN? IS THIS INFORMATION LISTED IN HANDBOOK?

DICK JOHNSON STATED: THIS INFORMATION WILL BE LISTED IN APPENDIX.

DICK JOHNSON'S SUMMARY OF NBS

- APPENDIX TO STATE TUBE SHOULD BE VENTED OUTSIDE LABORATORY
- INCLUDE IN HANDBOOK: USING ONE HOLDER FOR ALIGNMENT AS A BLANKING PLATE HOLDER
- APPENDIX: SETTING CLEAR BEAM READING FOR AN OPTICAL DENSITY OF ONE FOR A COMPUTER SYSTEM

BUNSEN BURNER SUB GROUP - JUNE 23, 1992

PAT CAHILL

APPENDIX:

CATEGORIZATION OF MATERIALS:

POLYMERS
TEXTILES (INCL. DRAPERIES)
CARPETS
FOAMS

NOT ADDRESSED IN APPENDIX: DECORATIVE MATERIALS AND KEVLAR PRODUCTS

BURN LENGTHS ON THESE MATERIALS:

POLYMERS - THOSE MATERIALS THAT ARE PENETRABLE WITH A STYLUS-TYPE INSTRUMENT TO DETERMINE BURN LENGTH

TEXTILES - GO BACK TO WEIGHTS METHOD FOR BURN LENGTH

CARPETS - TEAR SPECIMENS WITH HANDS (THAT IS HOW ONE AIRLINE CARPET MANUFACTURER DOES IT)

FOAMS - NEW TYPES DEVELOPED AND NOW USED - HOW DO WE TEST THOSE

PAT STATED: WE ARE LOOKING FOR GUIDELINES FROM LABS AS TO HOW THEY DETERMINE BURN LENGTH

VIDEOTAPE PRESENTED TO SUBGROUP ON BURN LENGTHS

PAT QUESTIONED GROUP: WOULD EVERYONE LIKE SOME TYPE OF GUIDELINE TO USE IN THEIR LABS?

MEMBER COMMENT: IT IS NOW NECESSARY TO HAVE SOME GUIDELINES

DICK HILL STATED: SHOULD WE ELIMINATE BUNSEN BURNER FOR ALL THOSE MATERIALS THAT PASSED OSU AND SMOKE TEST

MEMBER COMMENT: SOME MATERIALS PASS OSU BUT STILL FAIL BUNSEN BURNER TEST

THERE WAS SOME DISCUSSION ON HOW SAMPLES ARE PREPARED IN LABORATORY

DISCUSSION ON ADHESIVE BOND AS IN OSU AND SMOKE TESTS AND HOW THEY STILL NEED TO GO THROUGH BUNSEN BURNER TESTS

MEMBER COMMENT: WHAT MATERIALS ARE OUT THERE THAT WILL PASS ONE TEST AND FAIL ANOTHER? COMPOSITE MATERIALS?

DICK HILL REQUESTED: LABS SEND SOME SAMPLES TO PAT CAHILL (HUGH BARRET OFFERED TO SEND SAMPLES)

DICK HILL ASKED: IS THERE A WAY OF CUTTING DOWN THE NUMBER OF BUNSEN BURNER TESTS?

IS THERE A WAY WE CAN GET OUT OF RUNNING BUNSEN BURNER TESTS ON 95% OF MATERIALS THAT PASS OSU AND NBS?

MEMBER COMMENT: BUNSEN BURNER TEST IS CHEAPER TO RUN THAN OSU

PAT STATED: PROBLEMS KEEP COMING UP WHEN PRESSURE IN GAS BOTTLES GETS LOW

PAT REVIEWED:

TEST METHOD CHANGE: (FOR APPENDIX) NATURAL GAS WITH 90% OR MORE METHANE CONTENT COULD BE USED IN TESTS

PROPANE MAY BE USED AS LONG AS IT MEETS MINIMUM FLAME TEMPERATURE, AND BURN LENGTHS ARE COMPARABLE TO THAT OF METHANE GAS

PAT ASKED: WHAT GASES ARE LABS CURRENTLY USING?

PLACEMENT OF FLAME FOR SAMPLES

PAT STATED: MOST TESTING REQUIRED TO DETERMINE WHERE FLAME SHOULD GO WAS PROBABLY NECESSARY

MEMBER QUESTION: WHAT DO WE DO ABOUT THICK SAMPLES?

CHAMBER SIZE AND AIRFLOW THROUGH THE CHAMBER

LARGE DRAFT-FREE CHAMBER:

PAT ASKED: HOW DO YOU MEASURE DRAFT-FREE CHAMBERS? HOW DO WE COME UP WITH A DRAFT-FREE, LARGE, ROOM-SIZE CHAMBER? DRAFT IS THE MAIN CONCERN.

MEMBER COMMENT: SOME COMPANIES TURN GAS OFF WHILE OTHERS MOVE FLAME AWAY. TURNING GAS OFF CREATES A VACUUM AND THAT MAKES A DIFFERENCE IN SOME CASES AS TO WHETHER THE MATERIAL PASSES OR FAILS. MAYBE THIS IS SOMETHING THAT SHOULD BE ADDRESSED IN HANDBOOK.

DICK HILL COMMENT: WE NEED A TEST METHOD WITH BUNSEN BURNER REQUIREMENT TO ELIMINATE VARIANCES. IT SHOULD BE SPECIFIED WHETHER THE FLAME SHOULD BE REMOVED (SWUNG AWAY OR TURNED OFF). THERE IS A DISCREPANCY BETWEEN REGULATION AND HANDBOOK.

GROUP'S FINAL DECISION WAS THAT FLAME SHOULD BE REMOVED (SWUNG AWAY) AS STATED IN HANDBOOK.

SUMMARY OF OUTCOME OF BUNSEN BURNER SUB GROUP AS GIVEN BY DICK HILL, 6/24/92:

- USE OF METHANE ONLY AS A GAS FOR THE BURNER IN THE TEST METHOD. APPENDIX SHOULD INCLUDE ALTERNATE TYPES OF GAS THAT MAY BE USED TO GET SIMILAR RESULTS.

- DEFINING BURN LENGTH: METHODS OF SHOWING BURN LENGTHS FOR DIFFERENT TYPES OF MATERIALS SHOULD BE ADDRESSED.

- ELIMINATED NEED FOR MEASURING FLAME TEMPERATURE IF USING 99% METHANE.

- A QUESTION WAS RAISED ON THE HORIZONTAL CHAMBER: WHAT WOULD BE TOO BIG OF A CHAMBER AND IS IT DRAFT-FREE?

ELECTRICAL WIRE TESTING - JUNE 25, 1992

PAT ASKED: WOULD THERE BE ANY INTEREST IN ACTUALLY FORMING A SUBGROUP OF WIRE AND CABLE PEOPLE AS PREVALENT AND PROMINENT AS THE OTHER SUBGROUPS ALREADY ESTABLISHED? SHE BELIEVES IT WOULD BE A GOOD IDEA TO FORM A REAL SUB GROUP. IT WOULD INVOLVE DEVELOPMENT OF NEW TESTS.

60 DEGREE FLAMMABILITY TEST

PAT ASKED: IS IT NECESSARY TO TEST EVERY WIRE GAUGE SIZE? SHE REVIEWED 60 DEGREE FLAMMABILITY TEST VIEWGRAPH.

SHE TALKED ABOUT STANDARDIZING WIRE SIZE SO FAA WOULD REQUIRE ONLY ONE STANDARDIZED TEST. PER A CONVERSATION SHE HAD WITH DOUGLAS, 22 GAUGE IS THE MOST COMMONLY USED SIZE.

SHOULD TESTING BE DONE PER LOT OR PER "X" AMOUNT OF FEET? SHE ASKED DOUGLAS AND BOEING REPRESENTATIVES PRESENT WHAT THEIR PROCEDURES WERE.

WIRE TESTING REQUIREMENTS ARE UNIQUE AS FAR AS THE FAA GOES. SHOULD WE PUT GUIDELINES IN THE HANDBOOK AS TO A PARTICULAR GAUGE BEING TESTED (NOT AS A RULE, BUT AS A GUIDELINE)? SHE PLANS TO HAVE MORE DATA ON OTHER GAUGES FOR THE NEXT MEETING.

SCOTT CAMPBELL (DOUGLAS): DOUGLAS DOES TESTING ONLY ON GAUGES THAT ARE GOING INTO THEIR PLANES (THE GAUGES OF WIRE CALLED FOR IN THE BLUEPRINTS FOR THEIR PLANES).

PAT STATED: SHE GETS QUESTIONS FROM AIRPLANE MANUFACTURERS: HOW DO WE GO ABOUT GETTING APPROVAL FOR THE WIRE WE ARE PUTTING IN OUR PLANES? THEIR ACO POLICY REQUIRES FAA PROJECT NUMBER BEFORE CERTIFICATION PROCESS CAN BEGIN.

WOLFGANG LAMPA (DEUTSCHE AIRBUS): WE GET WIRE THAT IS SOLD ALREADY CERTIFIED FROM THE WIRE MANUFACTURER.

ARC PROPAGATION TESTING:

PAT STATED: FAA HAS NO REGULATION AT THIS TIME. FAA IS NOT INUNDATED WITH HUGE PROBLEMS BECAUSE OF ARC PROPAGATION OR SMOKE FATALITIES AS A RESULT OF CRASHES.

WE RUN A 20 MINUTE NBS TEST ON WIRE AT FAA

FAA HAS DECIDED TO RUN A FULL-SCALE TEST WITH EMPHASIS ON LOOKING AT WIRE. WE WANT A REALISTIC AREA ON AN AIRPLANE WHERE WIRE INSULATION WOULD BE A BIG CONTRIBUTOR TO SMOKE, WHERE TEXTILES AND POLYMERS ARE NOT THE MAIN CAUSE OF THE SMOKE. RIGHT NOW FAA HAS NO INTENTION OF LOOKING AT TOXICITY TESTING.

WE HAVE DECIDED THAT THE MOST REALISTIC WAY OF DETERMINING THAT THIS IS SOMETHING WORTH PURSUING IS BY RUNNING A FULL-SCALE TEST. EVERYONE WILL BE UPDATED ON THE FOLLOWING CONCERNING THE FULL-SCALE TEST:

-WHEN TEST WILL BE CONDUCTED
-WHAT AREA OF THE PLANE WILL BE TESTED
-WHAT MATERIALS WILL BE IN THAT AREA
-FOOTAGE OF WIRE BEING TESTED

FAA FEELS AT LEAST THREE TESTS ARE REQUIRED. WE ARE LOOKING AT MID-FALL 1992 FOR THE FIRST TEST. WE WILL TRY TO SIMULATE, AS MUCH AS POSSIBLE, AN ACTUAL AIRCRAFT WORKING WITH AN AIRLINE. AT THIS POINT, WE HAVE NOT DETERMINED WHAT SOURCE OF FIRE WILL BE OR LENGTH OF TEST. WE MAY TRY TO SIMULATE AN ACTUAL INCIDENT.

GROUP MEMBERS: MEMBERS SHOWED INTEREST IN BEING PRESENT AT ACTUAL TEST.

ISSA GHOREISHI (BOEING): WILL YOU MIX DIFFERENT TYPES OF WIRE TOGETHER? WILL YOU SEND US A TEST PROCEDURE PRIOR TO THE TEST? ARE YOU GOING TO RUN THESE TESTS IN THE PASSENGER ZONE? WILL IT BE A PRESSURIZED ZONE?

PAT STATED: INITIAL TEST WILL NOT INCLUDE MIXED WIRES. AT THIS POINT THERE SHOULD BE NO PROBLEM IN SENDING OUT A PRELIMINARY TEST METHOD. WE ARE GOING TO TRY AND SIMULATE AN AREA IN THE PLANE. IT COULD BE A PRESSURIZED AREA BUT ONE WITH THE LEAST AMOUNT OF OTHER SMOKE CONTRIBUTORS (SUCH AS PLASTICS AND POLYMERS IN THE PASSENGER AREA). WE ARE STILL LOOKING INTO UNRESOLVED QUESTIONS CONCERNING THE TEST.

MEMBER QUESTION: WHAT SENSORS WILL BE USED FOR SMOKE DENSITY?

PAT STATED: WHAT WE HAVE IN THE FULL-SCALE TEST AREA ALREADY. (SHE OFFERED TO SHOW ANYONE INTERESTED THIS AREA AFTER THE MEETING).

WE ARE LOOKING TO SEE WHAT SMOKE FROM WIRES DOES. WE ARE LOOKING AT SMOKE AS AN INDICATOR TO TAKE THE PLANE DOWN AND NOT WHAT IT CAN LEAD TO.

WE MAY FIND OUT THAT A PARTICULAR WIRE TYPE IS A SMOKIER WIRE, BUT AT LEAST THIS WAY WE WILL HAVE SOMETHING THAT IS MORE REALISTIC-MAYBE MORE SO THAN THE NBS SMOKE CHAMBER. WE DO NOT KNOW WHAT WE ARE GOING TO GET FROM THIS TEST.

BOB CURREN (CHAMPLAIN CABLE): OFFERED NAME OF SOMEONE IN NAVY WHO DID WIRE SMOKE TESTING AND FOUND THAT THE CAUSE OF SMOKE WAS DUE TO WIRE INSULATION.

ARC TRACKING TESTING:

PAT STATED: THERE IS A WET AND A DRY TEST METHOD PROPOSED BY BSI AND THE DRY TEST HAS ALREADY BEEN APPROVED. THERE IS A METHOD THAT NASA AT WHITE SANDS AND KENNEDY SPACE CENTER ARE LOOKING AT. WE DO NOT KNOW WHERE THESE ARE GOING. NASA AT KENNEDY USES THE SAME TEST THAT FAA DOES AT THIS TIME.

WE INCORPORATE CIRCUIT BREAKERS INTO OUR TESTS BECAUSE FROM AN AVIATION POINT OF VIEW, PILOTS LIKE TO RESET CIRCUIT BREAKERS.

AT THIS TIME FAA DOES NOT PLAN TO DO ANY MORE WET TESTING.

JUST BECAUSE THERE IS A TEST DOES NOT MEAN THERE WILL BE A REGULATION.

WE USE A GRAPHITE TEST BECAUSE IT IS QUICK AND REPEATABLE. IT IS STRICTLY A RANKING. WE LOOK AT BURNBACK. WE LOOK AT TUBE EFFECTS. WE LOOK AT WELDS. WE ULTIMATELY WILL HAVE A PASS/FAIL REQUIREMENT BUT I DON'T KNOW WHERE WE ARE GOING WITH THIS. I DO NOT KNOW HOW MUCH EMPHASIS WE WILL CONTINUE TO PUT ON ARC TRACKING. IF THERE IS NOT GOING TO BE A RULE OR REGULATION BY THE FAA, I DO NOT KNOW HOW FAR WE WILL GO WITH THIS. FAA TESTS ARE MINIMUM PERFORMANCE REQUIREMENTS.

ISSA GHOREISHI (BOEING): BOEING LIKES TO HAVE A REQUIREMENT AND DESIGN THE TEST AROUND THE REQUIREMENT. WE HAVE A PASS/FAIL SYSTEM AT BOEING-- EITHER IT PASSES OR IT DOES NOT. BOEING INCORPORATES CIRCUIT BREAKERS INTO THEIR TESTS, AND THEY ARE RESET ONE TIME DURING THE TEST.

PAT STATED: IT IS HARD TO TELL WHETHER THERE WILL EVER BE AN ARC TRACKING REGULATION FROM FAA.

THE BSI METHOD IS NOW GOING TO BECOME AN ASTM TEST AND BOEING HAS A TEST THAT THEY REQUIRE IN THEIR SPECIFICS AND NASA HAS 2 DIFFERENT TESTS DEPENDING ON THE FACILITY.

CURRENT OVERLOAD TESTING

PAT ASKED: WOULD IT BE A MEANS TO REPLACE NBS CHAMBER FOR SMOKE?

ISSA GHOREISHI (BOEING): WE HAVE AN OVERLOAD TEST FOR HIGH TEMPERATURE WIRE.

PAT ASKED: IS THERE A PASS/FAIL CRITERIA?

ISSA STATED: YES, WE MAKE A BUNDLE OF 19 WIRES FROM APPROXIMATELY 200 AMPS TO 57 AMPS.

PAT ASKED: AT DOUGLAS, ARE YOU LOOKING AT AN ALTERNATIVE TO NBS CHAMBER?

SCOTT CAMPBELL (DOUGLAS): YES, WE ARE LOOKING FOR SOMETHING MAYBE EASIER TO SET UP THAN NBS TEST.

ISSA GHOREISHI (BOEING): THE TEST WE HAVE AT BOEING QUALIFIES WIRE FIRST. WE HAVE NBS SMOKE CHAMBER TEST FOR SMOKE.

PAT STATED: USAIR AND UNITED AIRLINES DO NOT FEEL THAT CURRENT OVERLOAD IS A PROBLEM.

PAT'S SUMMARY OF ELECTRICAL WIRE TEST MEETING

- FAA WILL GO AHEAD WITH DIFFERENT GAUGE SIZES AND FLAMMABILITY TESTS ON THEM.
- SHE RECEIVED NO RESPONSES ON VERTICAL TEST METHODS SHE DISTRIBUTED AT FLORIDA MEETING.
- SHE IS NOT GOING TO DO ANY MORE NBS SMOKE WORK AT THIS TIME. SHE HAS ENOUGH DATA ON THIS.

- EVERYONE WILL BE UPDATED ON PLANS FOR FULL-SCALE SMOKE TEST.

- IT IS IMPORTANT TO LOOK AT THE PROPAGATION OF DAMAGE. THIS IS IMPORTANT BECAUSE PILOTS LIKE TO RESET CIRCUIT BREAKERS.

BOB CURREN (CHAMPLAIN CABLE): (CONCERNING INSULATION IN ARC TRACKING) IT IS THE WAY THE MATERIALS ARE COMBINED AND THE RELATIVE DIFFERENCE IN THE THICKNESS OF THE WIRES THAT MAKE THE WIRE PASS OR FAIL.