



**Federal Aviation  
Administration**

# International Aircraft Materials Fire Test Forum Meeting

## Short Takes and Current Projects

Presented to: International Aircraft Materials Fire Test  
Forum, Virtual Meeting

By: Tim Marker, FAA Technical Center

Date: June 8, 2020



WELCOME TO  
~~Nouss, Germany~~

# Your living room

# How Will the IAMFTF Virtual Meeting Be Structured?

## 4-Day Meeting

Hours of meeting 9:00 am to 12:00 pm ESDT

## Initial 1-hour Webinars each day

Will take the place of the usual status/update presentations

Several topics covered in each webinar

## Additional 1-hour Zoom meetings

Will take the place of the usual task group meetings

Zoom meetings are independent of each other, not continuous

**INTERNATIONAL AIRCRAFT MATERIALS FIRE TEST FORUM MEETING**  
**Hosted by the FAA Technical Center, Fire Safety Branch**  
**Virtual Meeting**  
**June 8-11, 2020 Agenda**

**MONDAY, JUNE 8, 2020**

- 8:30-9:00 AM [Welcome/Logistics – T. Marker \(FAATC\)](#)
- 9:00-10:00 AM [Webinar 1: Magnesium Flammability Test Update; Oil Burner Testing Updates \(cargo liner test, seat cushion flammability test, insulation burnthrough test, powerplant testing update\)](#)
- 10:00-10:30 AM [Task Group Session 1: Magnesium Flammability – T. Marker \(FAATC\)](#)
- 10:30-11:00 AM [Task Group Session 2: Cargo Liner Test Project Updates – T. Salter \(FAATC\)](#)
- 11:00-11:30 AM [Task Group Session 3: Seat Cushion Flammability – T. Salter \(FAATC\)](#)
- 11:30-12:00 PM [Task Group Session 4: Insulation Burnthrough/Burner Video – T. Salter \(FAATC\)](#)

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## TUESDAY, JUNE 9, 2020

- 9:00-10:00 AM [Webinar 2: Vertical Flame Propagation \(VFP\) Test Update, including planned interlab study; Development of a New Flammability Test for Electronic Boxes \(RTCA DO-160\)](#)
- 10:00-11:00 AM [Task Group Session 1: Vertical Flame Propagation – T. Emami & R. Whedbee \(FAATC\)](#)
- 11:00-12:00 AM [Task Group Session 2: Electronic Box Flammability Project Update – S. Rehn \(FAATC\)](#)
- 12:00-1:00 PM [Task Group Session 3: Radiant Panel Test Update – S. Rehn \(FAATC\)](#)

# INTERNATIONAL AIRCRAFT MATERIALS FIRE TEST FORUM MEETING

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## WEDNESDAY, JUNE 10, 2020

- 9:00-10:00 AM [Webinar 3: HR2 Heat Release Test Update \(FAATC\), HR2 Technical Readiness Level 6 Update \(industry\), Observed Interactive Effects on OSU Apparatus \(industry\)](#)
- 10:00-11:30 AM [Task Group Session 1: Heat Release Testing – M. Burns & T. Emami \(FAATC\)](#)
- 11:30-12:00 PM [Task Group Session 2: Fire Containment Project Update – S. Campbell \(Safran\)](#)
- 12:00-12:30 PM [\(if needed\) Characterization of OSU Using Particle Image Velocimetry – T. Emami \(FAATC\)](#)

# INTERNATIONAL AIRCRAFT MATERIALS FIRE TEST FORUM MEETING

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June 8-11, 2020 Agenda

## THURSDAY, JUNE 11, 2020

- 9:00-10:00 AM [Webinar 4: Additive Manufacturing Update, including recent Bunsen burner testing; Material Change/Similarity Update](#)
- 10:00-11:00 AM [Task Group Session 1: Additive Manufacturing Testing – S. Rehn \(FAATC\) & T. Krause \(Airbus\)](#)
- 11:00-12:00 PM [Task Group Session 2: Material Change/Similarity – R. Lyon \(FAATC\) & J. Harris \(Boeing\)](#)
- 12:00-1:00 PM [Task Group Session 3: Disinfection Agents Impact on Interior Materials Flammability – J. Davis \(Accufleet\)](#)

# Additional Topics to Consider for Future:

Many new potential projects related to COVID-19 situation

- Impact of disinfection solutions on material flammability
- Impact of far ultraviolet C radiation on material flammability
- Air quality discussion, control of airborne illnesses; how can improvements impact material flammability?



# Purpose of Meeting and Expected Outcomes

Primary Objective: *Interactive discussion between FAA and industry on the development, refinement, and proper execution of FAA-mandated material fire tests.*

Secondary Topics may include:

*Full-Scale Testing and related fire research*

*Regulatory Issues*

*International harmonization of flammability regulations*

*NPRM (past and future)*

*Accident Investigations*

*Triennial conference and other Forum topics*

Expected Outcome: *Open exchange of ideas between FAA/industry to further refine material flammability tests.*

# What is the Purpose of the International Aircraft Materials Fire Test Forum?

*To jointly discuss (government + industry) problems, technology, and future R & D related to aircraft materials fire testing. It provides a forum for industry to express ideas and opinions related to this subject.*

*Not a typical conference format.*

*Interactive, Working Group format.\**

*Group relies heavily on the expertise, contributions, and participation of industry, to help fuel this meeting!*

*\*questions/comments welcome, but extensive debate should be reserved for Task Group sessions*

# Ground Rules for Webinars and Zoom Meetings

## Webinars Ground Rules

Use Q&A as the function to ask a question

Type in question (only panelist/host can see question)

One of the panelists will read questions as time permits

## Zoom meeting Ground Rules

Everyone PLEASE go on mute

Use Raised hand feature (under participants button) to ask a question

A panelist will call on participant to ask their question, as time permits

Once question has been answered, click raised hand to “un-raise”



# Status of FAA Technical Center

Fire Safety Branch has been  
100%

Telework since March 18

All physical testing at the laboratories temporarily halted

Recovery efforts being phased in at TBD dates

Currently still in Phase 0 (planning)

Phase 1 plan is developed (50% of workforce), awaiting go-ahead

# Aircraft Materials Fire Test Handbook – Appendix F (fire test labs)

## Labs that did not respond to May 2020 Lab Listing Accuracy Check

Send contact email for these labs to [april.ctr.horner@faa.gov](mailto:april.ctr.horner@faa.gov).

AIM Aerospace Inc. Renton, WA 98057	Chapters: 1*, 2*, 3*, 4*, 5*, 6*
CHESTNUT RIDGE FOAM INC. Latrobe, PA 15650	Chapters: 1*, 6*, 7*
Embraer Flammability Laboratory Sao Jose dos Campos – SP Brazil	Chapters: 1, 2, 3, 4, 5, 6, 7, 8, 10, 11, 12, 13, 15, 18, 19, 23, 24 (no tests offered commercially)
HAECO Americas Cabin Solutions Winston-Salem, NC 27107	Chapters: 1*, 3*, 4*, 5*, 6*, 7*
Parker Hannifin Corporation- <u>Stratoflex</u> Products Division Jacksonville, FL 32254	Chapter: 11 (not offered commercially)
Parker Hannifin Corporation- <u>Stratoflex</u> Products Division Fort Worth, TX 76114	Chapter: 11 (not offered commercially)
Tapis Corporation Dallas, TX 75247 Phone: 214-631-9700	Chapters: 1*, 2*, 3*, 4*, 5*, 6*

\*tests commercially available



# Fire Test Laboratories – Current Operational Status Document

Document sent to all on Materials e-Distribution List on April 29, May 8, and May 29, 2020.

64 labs have provided their current operational status including:

Open/Closed

Any External Test Witness Covid-19 Protocols

Positive/appreciative feedback received.

# Materials and Systems Forum Meetings

Way Forward (*Tentative*):

3-Day Combined Meeting in Atlantic City (October)

3-Day Combined Meeting in Europe (June)

2-Day Combined Meeting in U.S. (Feb)

# Materials and Systems Forum Meetings

## 3-Day Combined Meeting

Day 1 Materials Forum (8am to 5pm)

Day 2 Materials Forum (8am to 12pm)

Day 2 Lunch (12pm to 1pm)

Day 2 Systems Forum (1pm to 5 pm)

Day 3 Systems Forum (8am to 5 pm)



# Materials and Systems Forum Meeting Questionnaire

Both the Materials and Systems Forum Meetings chaired and administered by the Federal Aviation Administration (FAA) have been free to attend. We are conducting this survey to collect feedback on the meeting venue accommodations. Please answer the following nine (9) questions as related to the FAA-host meetings in the Atlantic City Area ...

Questionnaire sent to 692

Following Data Based on 180 responses

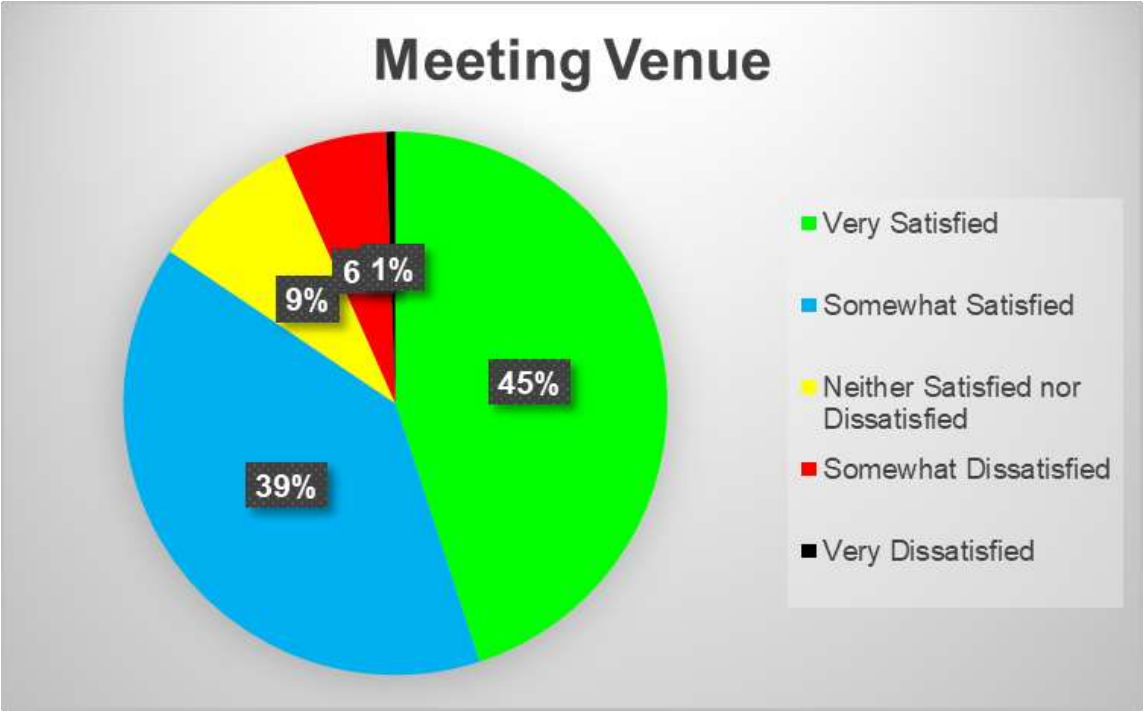
$$180 \div 692 = 26\%$$



# Materials and Systems Forum Meeting Questionnaire

## Question 1 (Meeting Venue)

How satisfied have you been with the meeting room accommodations selected for past meetings? Please base your rating on clarity of presentations, acoustics, comfort of seating, spaciousness, etc.



# Materials and Systems Forum Meeting Questionnaire

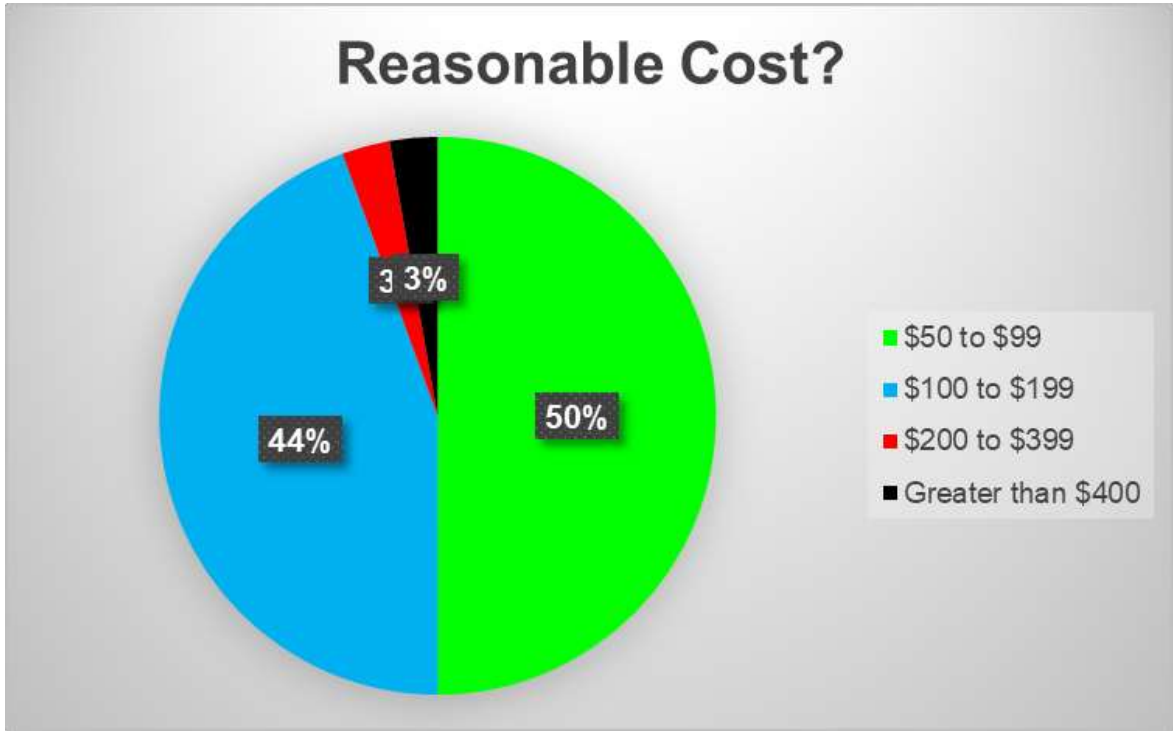
## Question 2 (Fee for Meeting)

Would you consider paying a nominal fee to attend future meetings, if this would ensure a higher quality of meeting space? This may include a larger meeting room, additional monitors for viewing presentations, coffee and light refreshments, better acoustics, additional microphones for audience questions, etc.



# Materials and Systems Forum Meeting Questionnaire

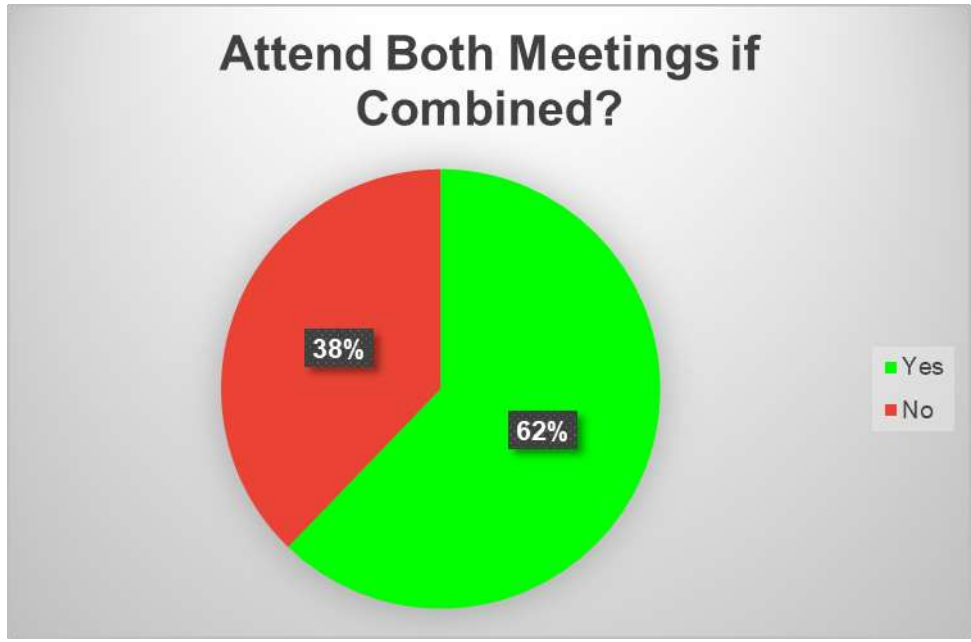
Question 3 (What is reasonable cost for Meeting fee)



# Materials and Systems Forum Meeting Questionnaire

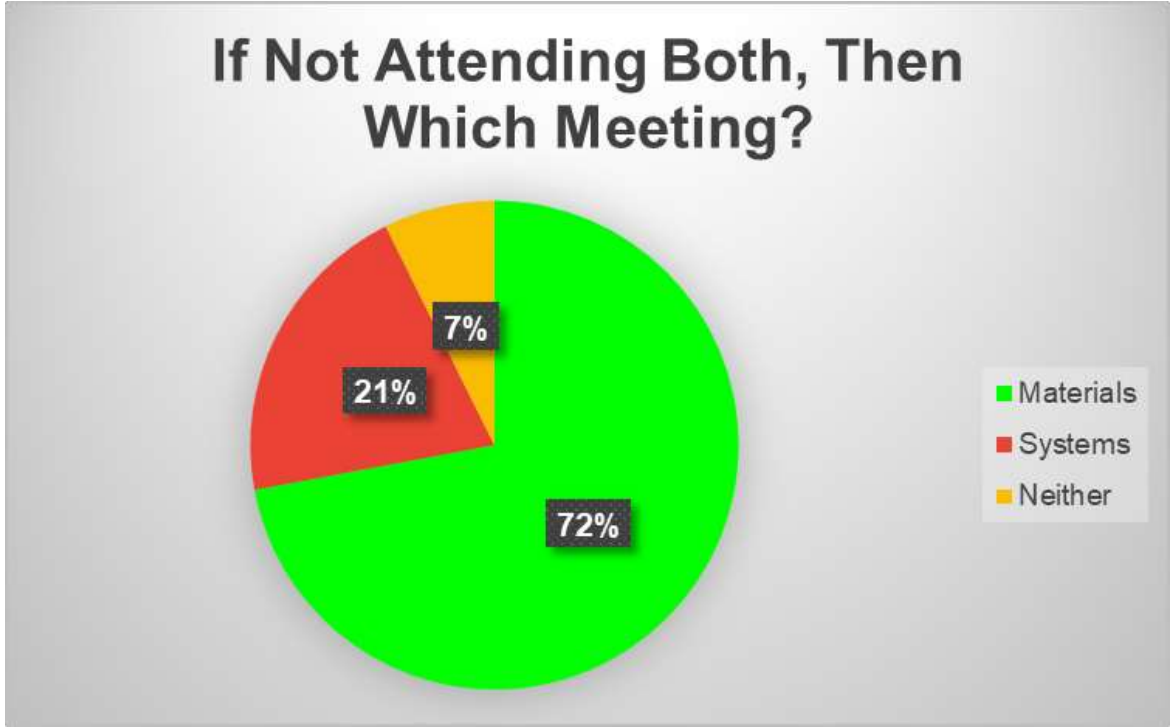
## Question 4 (Would you attend a combined Materials/Systems Meeting)

In the past, the FAA has combined the Fall Materials and Systems Forum meetings, to allow participants the option of attending both meetings in one week. By minimizing travel expenses, this option has boosted the attendance of both meetings. The FAA is planning to expand this format, and combine the summer meetings in Europe as well. The planned agenda would be a 3-day event, with the Materials Forum starting on Tuesday, and finishing just prior to lunch on Wednesday. The Systems Forum would begin after lunch Wednesday, and finish after a full day on Thursday. Given this proposed format, would you attend both meetings?



# Materials and Systems Forum Meeting Questionnaire

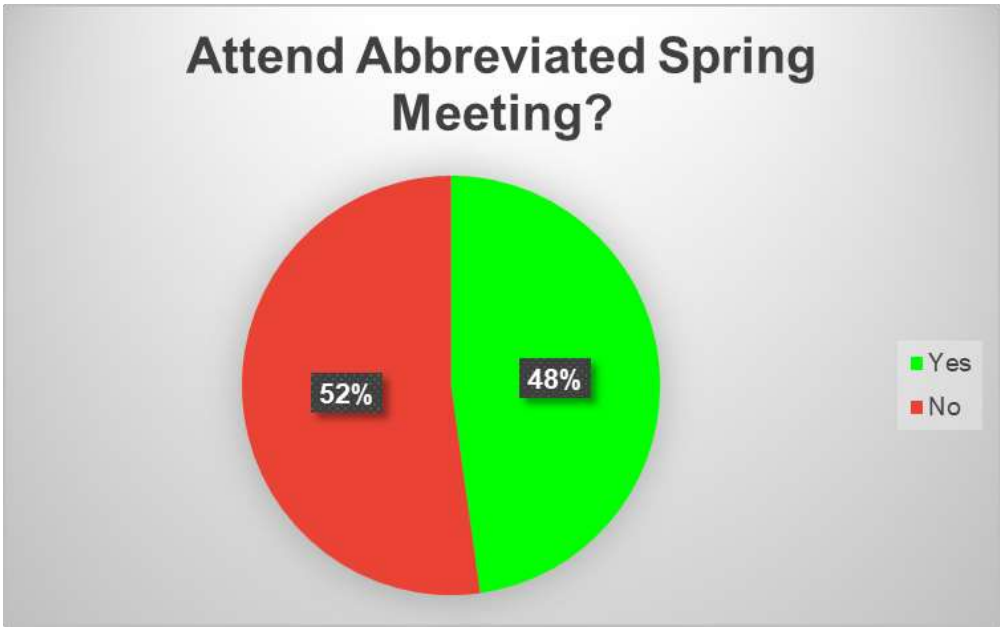
Question 4a (Which meeting if not both of combined Materials/Systems Meeting)



# Materials and Systems Forum Meeting Questionnaire

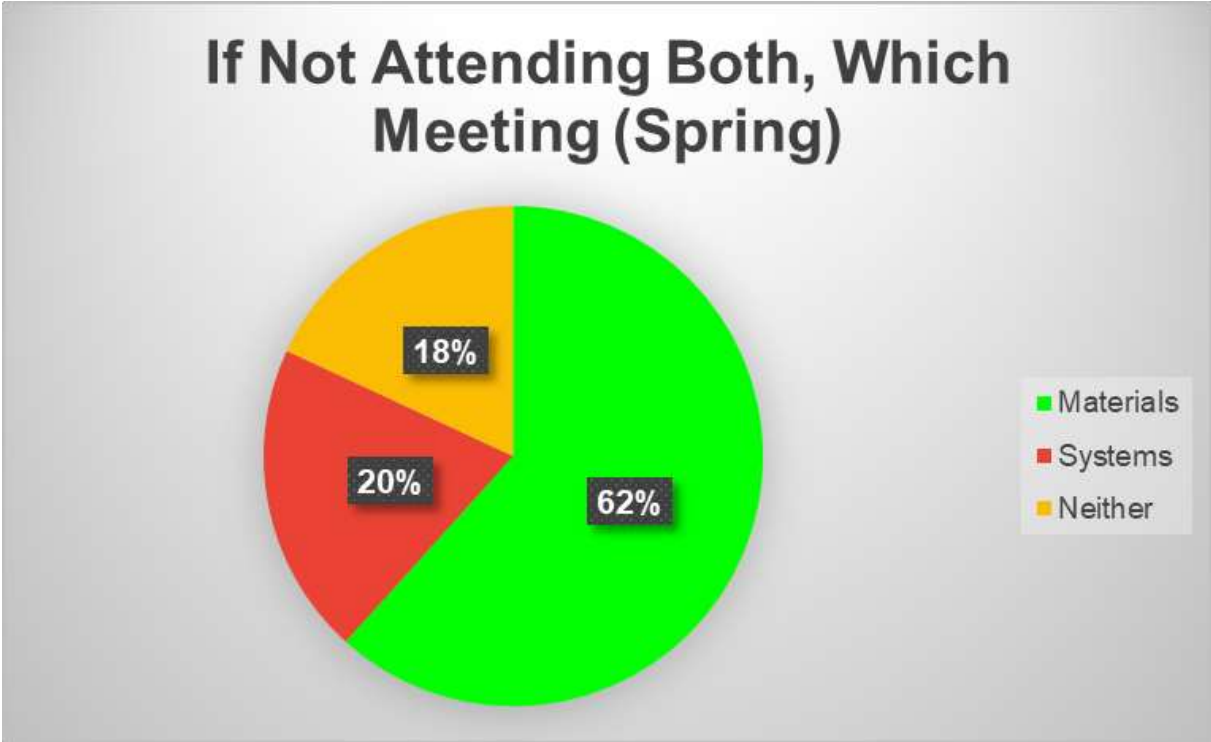
## Question 5 (Abbreviated combined Materials/Systems Meeting, would you attend)

The Materials Forum has traditionally conducted 3 meetings annually, while the Systems Forum has conducted 2. In an effort to further coordinate the output of both meetings, the FAA is considering conducting an abbreviated Spring meeting in the February time frame. The meeting would not involve Task Groups, but rather a status update on targeted areas of each Forum. One option would be to conduct two 1-day meetings of each Forum. Given this proposed format, would you attend both meetings?



# Materials and Systems Forum Meeting Questionnaire

Question 5a (Which meeting would you attend if not both of combined Spring Materials/Systems Meeting)

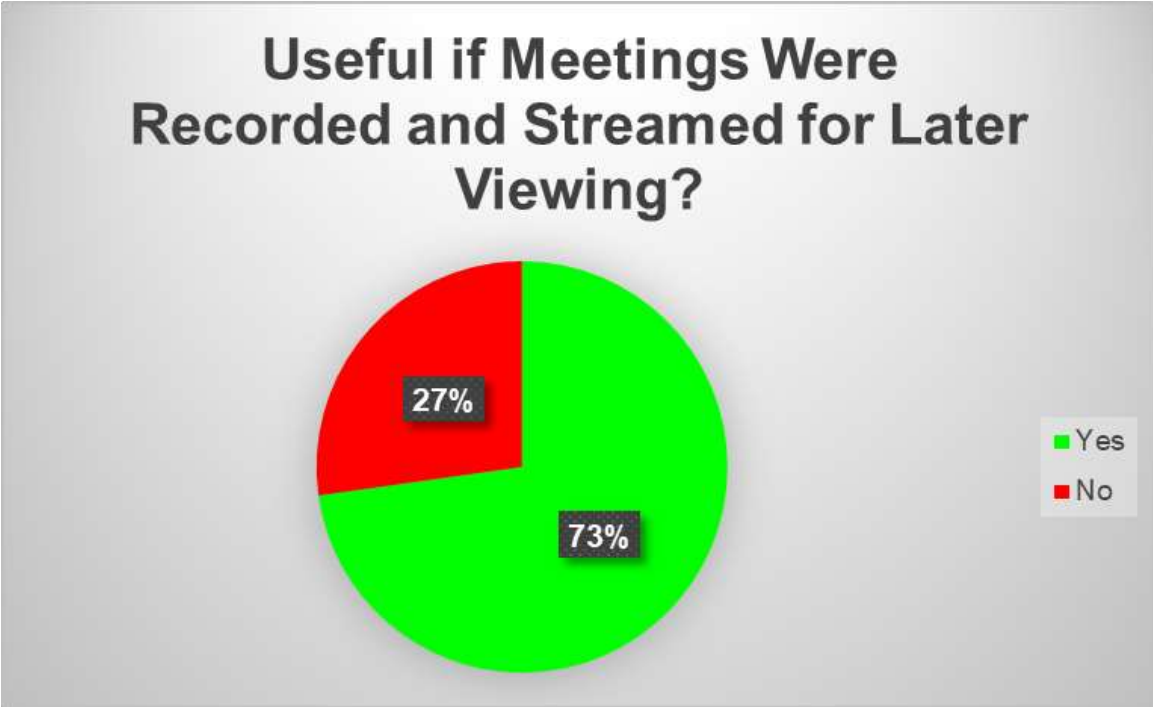




# Materials and Systems Forum Meeting Questionnaire

## Question 6 (Would you find it useful...)

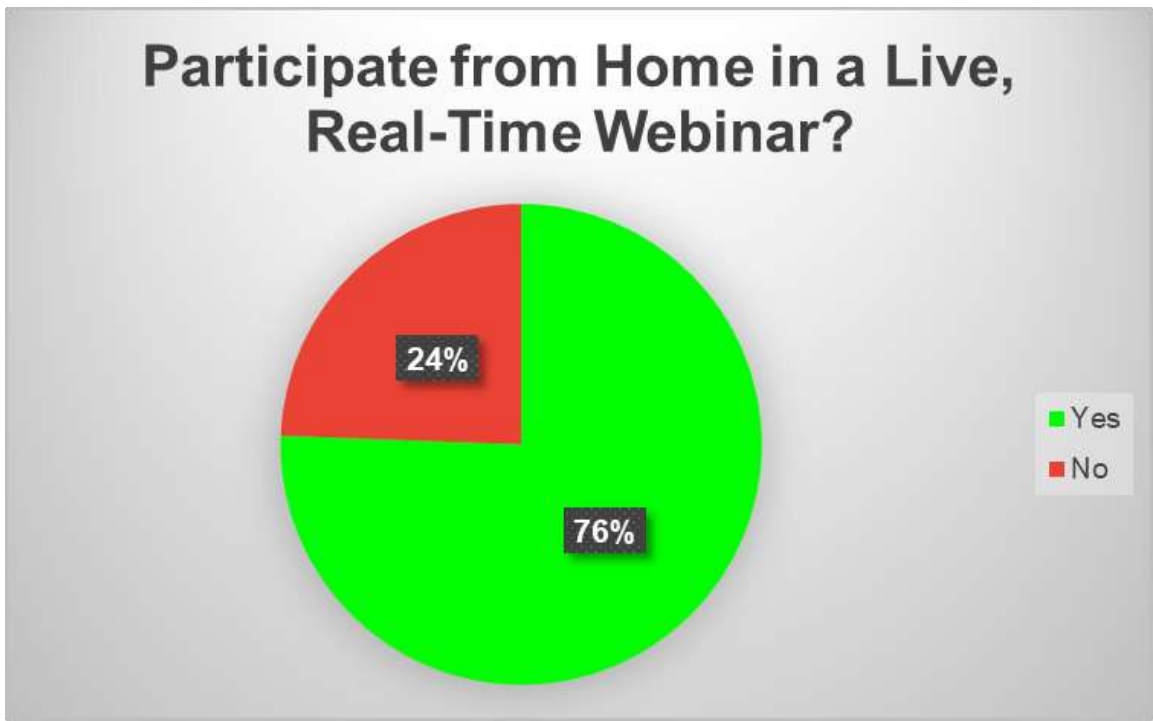
Would you find it useful if the Forum meetings were recorded and streamed online as a Webinar, and available for viewing later?



# Materials and Systems Forum Meeting Questionnaire

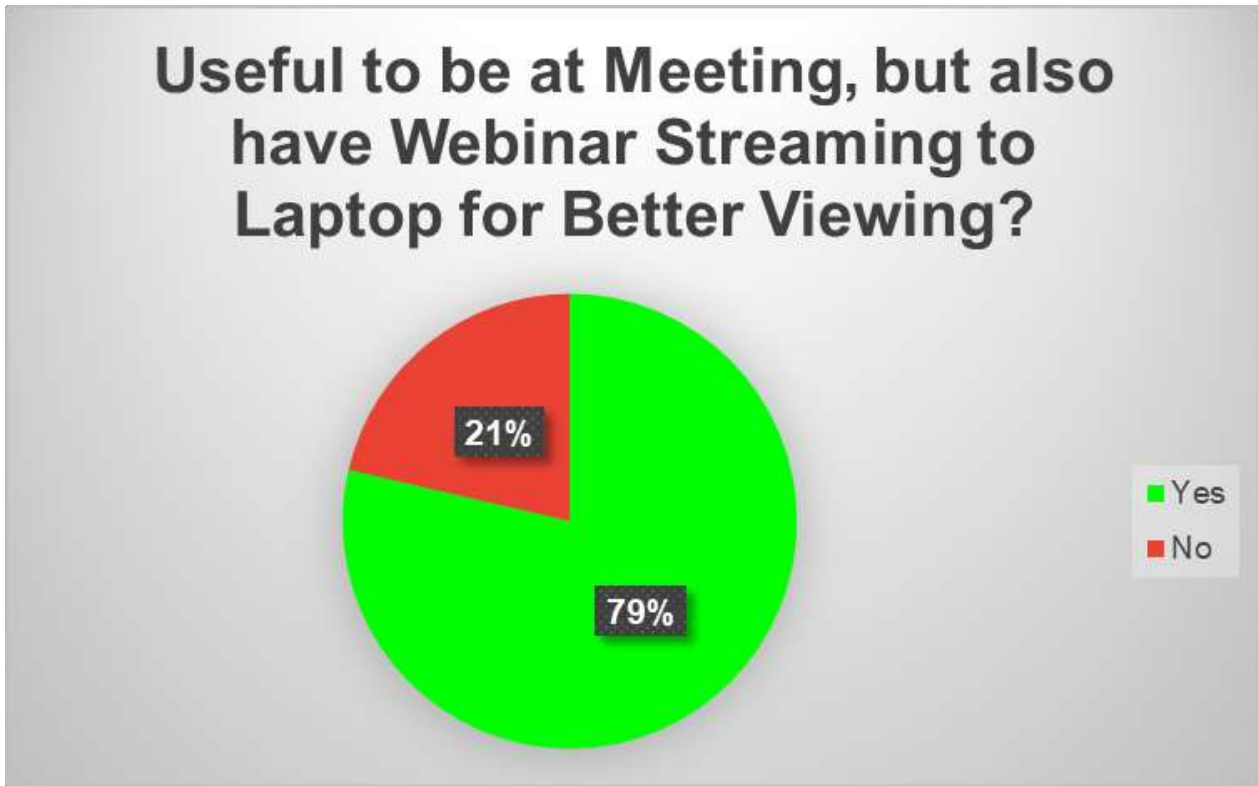
## Question 7 (Participate from home)

Would you participate from your home location in a live, real-time Webinar?



# Materials and Systems Forum Meeting Questionnaire

## Question 8 (Webinar Streaming at Meeting)



# Materials and Systems Forum Meeting Questionnaire

## Question 9 (Feedback)

Please provide any additional comments or feedback that will help improve the quality and experience of these meetings.

Comments overwhelmingly positive

Standard format of presentations, consistent title, identification of new vs historical data

Train speakers on use of microphone

Tables are very useful for taking notes, abundant outlets also helpful

A couple requests to move meeting back to Tropicana

Poll the attendees ahead of the meeting to better determine which Task Groups they plan to attend

Request meetings be 2 full days

# October Materials Fire Test Forum Meeting

## TENTATIVE DATES:

October 20-21, 2020

## LOCATION:

Resorts Casino-Hotel, Atlantic City, New Jersey, USA\*

## FORMAT:

Tuesday, October 20, 2020 Materials Forum Meeting (Full Day)

Wednesday, October 21, 2020 Materials Forum Meeting (Morning-Noon)

Wednesday, October 21, 2020 Systems Forum Meeting (Afternoon)

Thursday, October 22, 2020 Systems Forum Meeting (Full Day)

## \*Contingencies:

- DOT/FAA eases restrictions on in-person meetings.
- FAA Administrator approves our Meetings Request.
- NJ Governor allows indoor meetings (currently outdoor gatherings of 25 people maximum).
- Our ability to meet Covid-19 health/space protocols established by meeting venue.

# OSU and HR2 Refinement Work

How can we make this better?



# Research on Updating Heat Release Test (HR2)

*FAA + Industry Collaborative Effort*

- *FAA HR2 apparatus has completed rigorous calibration trials (FAA/Marlin)*  
*Is a sonic choke + air regulator superior to mass flow controller?*
- *TRL 5 completed; TRL6 (reproducibility) testing spooling up (FAA/Boeing/Airbus)*
- *Deatak HR2 apparatus now updated + voltage controller; good correlation with FAA HR2 (FAA/Deatak)*
- *Further refinement of non-intrusive (smooth) radiant heat source (FAA/Marlin)*

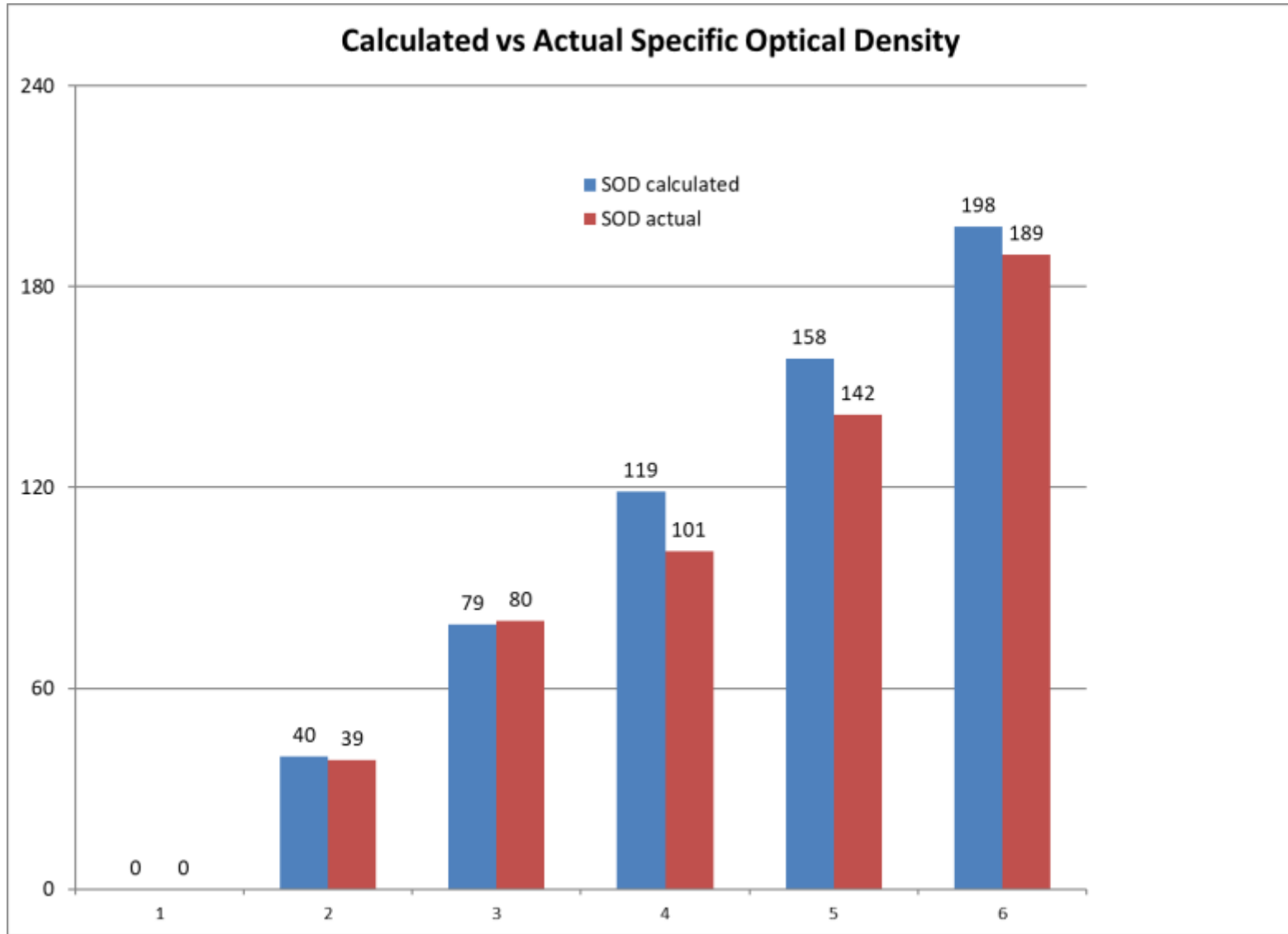


# Measurement of Smoke in HR2

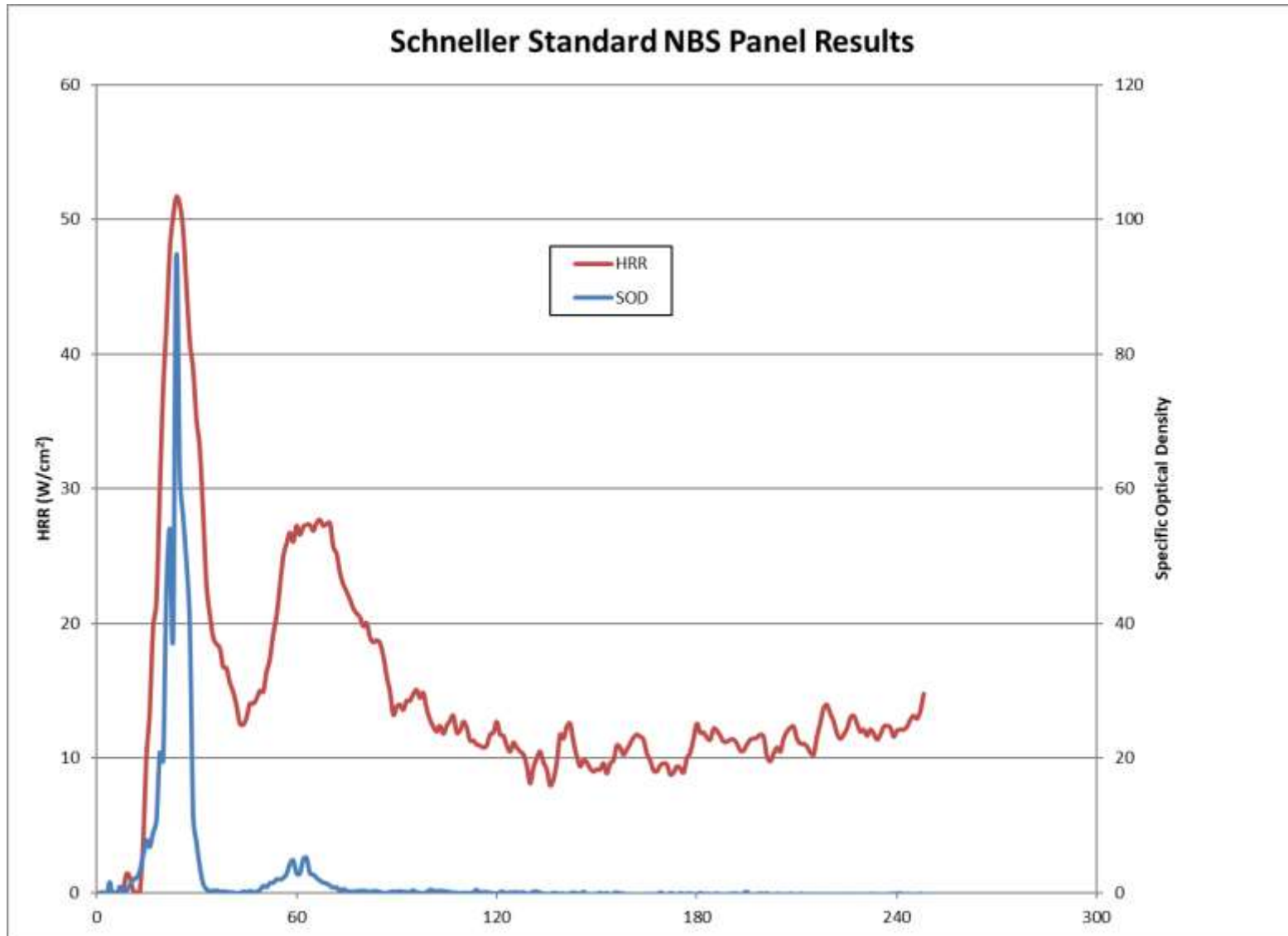




# Measurement of Smoke in HR2



# Measurement of Smoke in HR2



# Questions?



Happy Retirement to:

Hank Lutz of Boeing  
52 YEARS OF SERVICE!!

Randy Smith of Boeing  
? YEARS OF SERVICE!!