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FLAMMABILITY STANDARDIZATION TASK GROUP

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FAA Triennial International Fire & Cabin Safety Research Conference

Why Standardize?

- Rule Interpretation differences
- Test Method differences
- Test Specimen differences

- Provide Industry Wide Means of Compliance and Similarity Substantiation Criteria

History

- Boeing, Summer '08
- Boeing Survey, February '09
- Fire Test Working Group Meeting, March '09
Task Group Born
- Boeing/FAA Issue Paper, Spring/Summer '09
- FAA Transport Airplane Directorate/
Flammability Standardization Focus Group
Meeting

FAA Draft Policy Memo

ANM-115-09-XXX

- Issued August 20, 2009
- Purpose: To provide guidance on acceptable methods of compliance with the flammability requirements of 14CFR 25.853(a) and (d) for commonly constructed parts, construction details, and materials.
- Goal: Initiate an 18-month industry substantiation activity to validate the contents of the draft policy in support of the FAA issuing final policy around March 2011.

FAA Draft Policy Memo

- The policy memo divides materials and design features into 2 categories:
 - Methods that are acceptable and can be used as shown
(Attachment 2 Part 1).
 - Methods that are expected to be acceptable but require test data to support them
(Attachment 2 Part 2).

Attachment 2 Part 1

Part 1, acceptable methods without additional data

Reference Number	Feature / Construction	25.853(a) Bunsen Burner Test Requirement/Similarity	25.853(d) Heat Release and Smoke Test Requirement/Similarity
1	Panels, general	60-second vertical test data will substantiate configurations that only require 12-second vertical data. Vertical Bunsen burner data will substantiate configurations that only require horizontal Bunsen burner testing.	Test requirement is decided based on size criteria. 1) Test required if greater than 2 sq ft; 2) No test if less than 1 sq ft; and 3) Specific determination required between 1 and 2 sq ft.
27	Material versus installation	The part installation overrides the test method applicable to the material. For instance, carpet is substantiated using the 12-second Bunsen burner test unless the carpet is installed on the sidewall. Then it is tested as part of the sidewall using the 60-second Bunsen burner test.	Not applicable.

Attachment 2 Part 2

Part 2, methods of compliance that require supporting data

Reference Number	Feature / Construction	25.853(a) Bunsen Burner Test Requirement/Similarity	25.853(d) Heat Release and Smoke Test Requirement/Similarity
3	Core, density	Data from testing a lower density honeycomb core substantiates a higher density honeycomb core, provided the core is made from phenolic aramid (e.g., Nomex® and Kevlar®) paper, phenolic fiberglass, or aluminum).	Data from testing a core's lightest and heaviest densities substantiates all densities in between.
4	Core, cell size	Data from testing ANY core cell size/shape substantiates other core cell sizes/shapes of the same material, provided the core is made from phenolic aramid (e.g., Nomex® and Kevlar®) paper, phenolic fiberglass, or aluminum).	Data from testing a core's smallest and largest cell sizes substantiates all cell sizes in between.
5	Paint/Ink systems	Test the part with same chemistry paint/ink system. Test of one color substantiates other colors of the same paint/ink system. Substantiate unpainted with painted panel.	Test of a part with one color substantiates any other color with the same paint/ink chemistry. Additionally, testing of a painted part substantiates an unpainted part with the same construction.

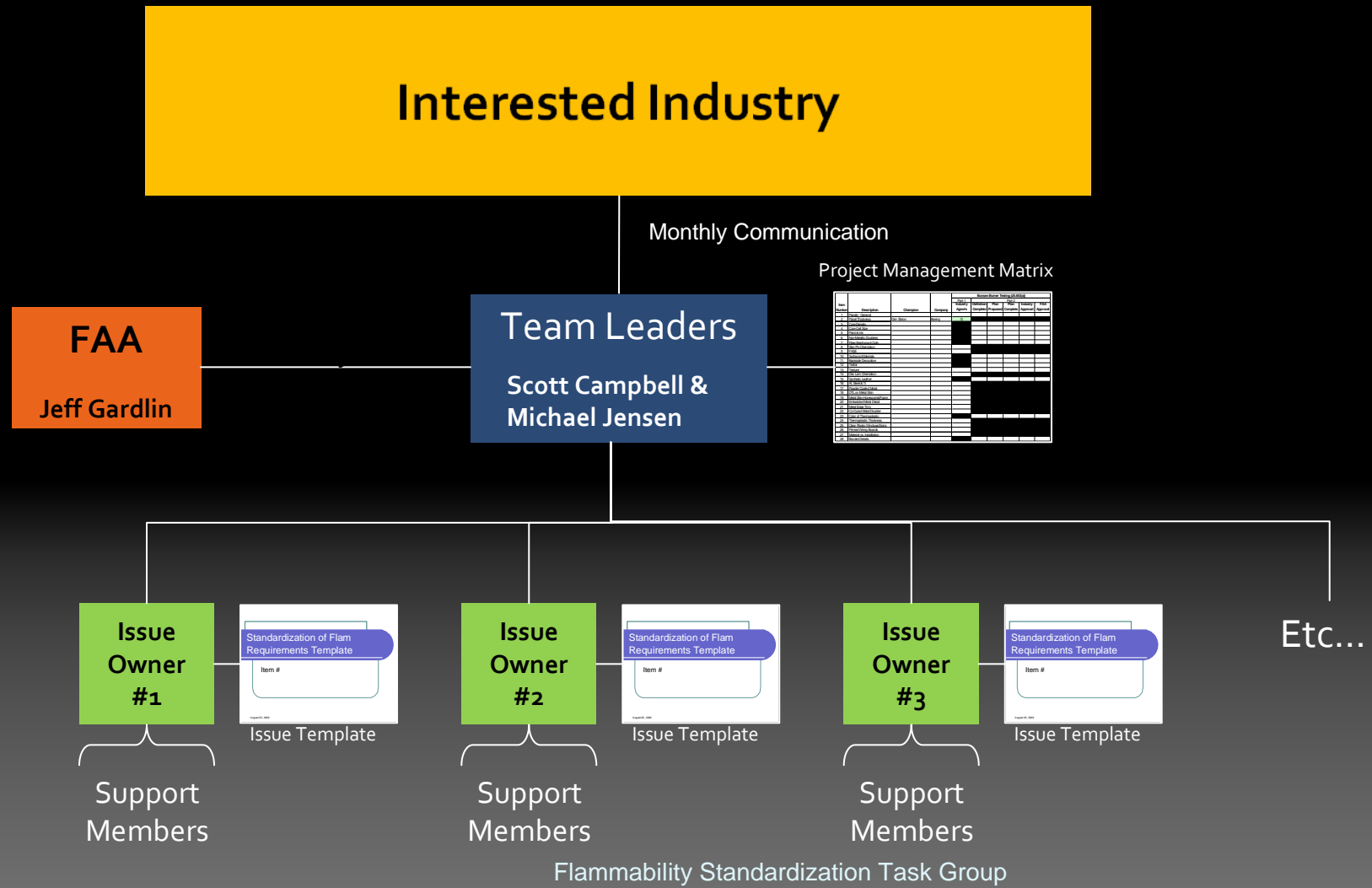
Flammability Task Team Charter

- The Flammability Standardization Task Group's mission is to validate and standardize acceptable flammability methods of compliance for commonly constructed parts, construction details, and materials. This activity will support the release of the FAA Guidance Policy Statement (AMN-115-09-XXX) in approximately February 2011.
- Additionally, to develop a standard process to establish future similarity claims/ Means of Compliance.

Industry Support

- The team organized in September 2009 and organized sub-teams around parts of the draft policy
- Approximately 200 people have been involved to date with the standardization effort
- Many companies have volunteered to supply data, materials and testing support for this activity.

Flammability Standardization Task Group Project Structure



Draft Policy Item Groupings

PANEL CONSTRUCTION

- 2, 24
Thickness
Mary Pacher
- 6, 7, 8, 9, 11
Skin Ply
Martin Spencer
- 3, 4
Core Variables
Jim DelPinto

PANEL FEATURES

- 20, 21, 22
Bonded Metal
Eva Ronnqvist
- 33, 43a-f
Edge Fill
Patrick Zimmerman, Klaus Boesser
- 42
Inserts
Dan Slaton

DECORATIVE/ COLOR

- 5a, 5b
Paint/Ink
Ingo Weichert
- 12, 13, 14
Tedlar, Texture and Pattern
Michael Miler
- 15
Synthetic Leather/Suede
Francisco Landroni
- 17
Powder Coated Metal
Bruce Gwynne, Phuong Ta
- 23a-c
Plastic Color
Michael Jensen

ATTACHED ITEMS

- 28-32, 34-37, 39-41
Bonded Features
Lisa Gras, Cheryl Hurst
- 38
Grommets
Lisa Gras, Cheryl Hurst
- 44
Fillet Seals
Hector Alcorta

OTHER

- 1, 27
General
Keith Couilliard
- 10
Surfacing Materials
Martin Spencer
- 16
Metal Parts
Bruce Gwynne, Phuong Ta
- 25
Clear Signs and Windows
Ke-winn Chan
- 26
Printed Wiring Boards
Jeff Smith

Task Group Leaders

Last	First	Ref Item	Organization
Alcorta	Hector	44	Bombardier
Boesser	Klaus	33, 42a - f	Sell GmbH
Campbell	Scott	Leader	C&D Zodiac
Chan	Ke-winn	25	Airbus
Couilliard	Keith	1, 27	Boeing
Del Pinto	Jim	3, 4	C&D Zodiac
Gras	Lisa	28 - 41	Jamco
Gwynne	Bruce	16, 17	Magnesium Elektron
Hurst	Cheryl	28 - 41	American Airlines
Jensen	Michael	23, co-lead	Boeing
Landroni	Francisco	15	Embraer
Miler	Michael	5b, 12, 13, 14	Schneller
Pacher	Mary	2, 24	Boeing
Ronnqvist	Eva	20, 21, 22	AIM Aerospace
Sattayatam	Pom	SharePoint	C&D Zodiac
Slaton	Dan	42	Boeing
Smith	Jeff	26	Gulfstream
Spencer	Martin	6 - 11	Heath Tecna
Ta	Phuong	16, 17	Goodrich
Weichert	Ingo	5a, 23b	Airbus
Zimmerman	Patrick	33, 42a - f	3M

Methodologies

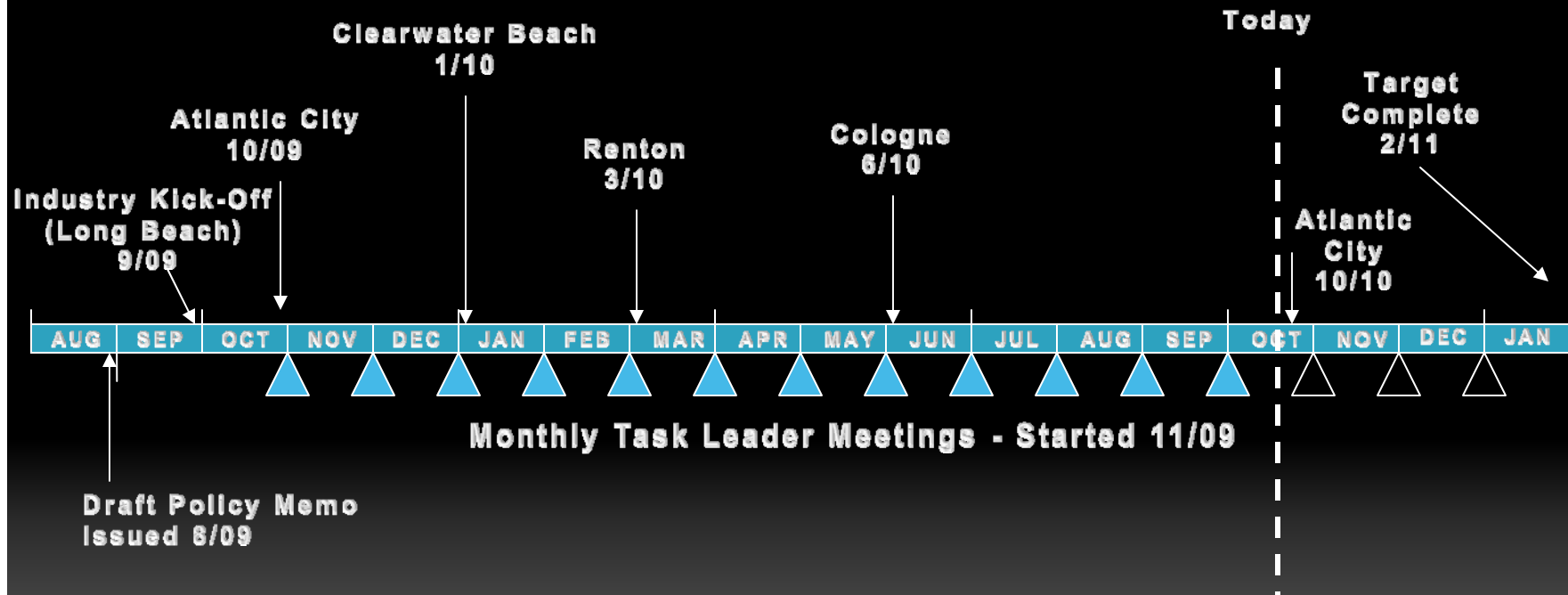
- Use of existing data (e.g., 5b – Color of Decorative Laminates)
- Develop New Data (e.g., 5a – Color of Paint)
- Use alternate test methods to validate part 2 items (e.g., Micro-scale Calorimetry and Foam Block tests)
- Analysis
- Validating “No Test” using testing or technical rationale
- Define key terms and concepts

Management Tools

- Monthly Task Group Leader WebEx and Conference Calls
- All Industry face to face meetings
- SharePoint

<https://portal.cdzodiac.com/sites/FSTG/default.aspx>

Timeline



FSTG SharePoint Site

- Online Collaboration
- File Libraries
- Discussion Forums
- Voting Polls
- Industry Team Status
- Total Transparency

Flammability Standardization Task Group

Flammability Standardization Task Group > Draft Proposal Announcements

Draft Proposal Announcements

Announcement location for draft proposals ready for review/comment/vote/approvals.

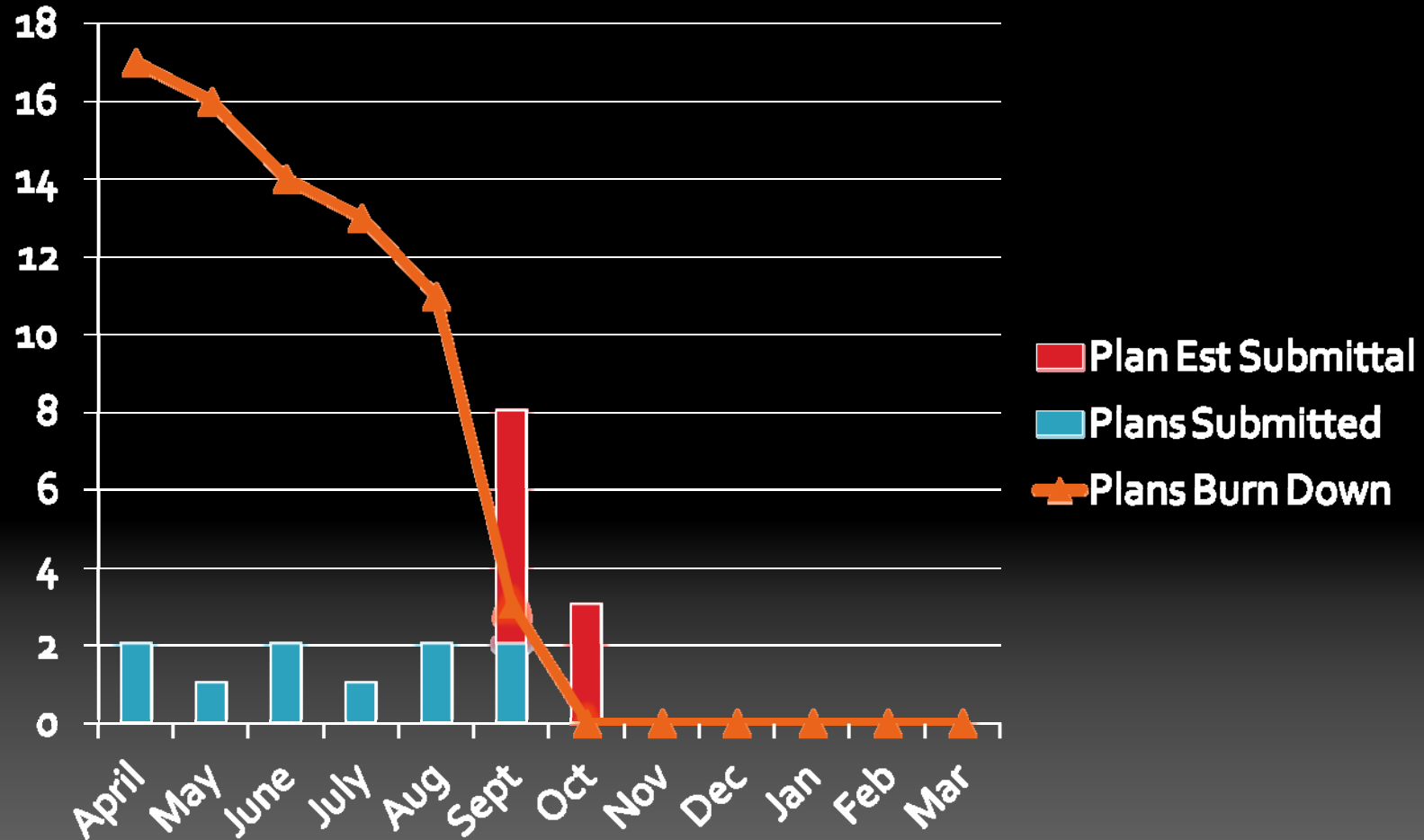
Title
Industry Team Proposal - item 25 is ready for peer review
Industry Team Proposal - item 42 is ready for peer review
Industry Team Proposal - item 28-32, 34-39-41, 44 is ready for peer review
Industry Team Proposal - item 5a is ready for peer review
Industry Team Proposal - item 14 is ready for peer review
Industry Team Proposal - item 27 is ready for peer review
Industry Team Proposal - item 15 is ready for peer review
Industry Team Proposal - item 43a-f is ready for peer review
Industry Team Proposal - item 33 is ready for peer review
Industry Team Proposal - item 13 is ready for peer review
Industry Team Proposal - item 1 is ready for peer review

Task Status

Item Number	Description	New Policy Part		DOCUMENT	Plan Status				
		25.853(a)	25.853(d)	Revision Level	Draft for Review	Final Draft for Review	Proposal Vote	FAA Submittal	FAA Approved
4	Core Cell Size	2	2	NC	9/1/2010				
5a	Paint Color	2	2	ISSUE 1	2/5/2010	3/31/2010	3/31/2010	4/22/2010	comments
5b	Decorative Laminate Color*	2	2	NC	6/1/2010	8/9/2010	8/9/2010	9/3/2010	
6	Non-Metallic Doublers	2	2	NC	5/5/2010	8/4/2010	8/9/2010	9/3/2010	
7	Fiber Reinforced Cloth	2	2	NC	5/5/2010	8/4/2010	8/9/2010	9/3/2010	
8	Skin Ply Orientation	1	1	NC					
9	FASE	1	1	NC					
10	Surfacing Materials	2	2	NC	5/5/2010	8/4/2010	8/9/2010	9/3/2010	
11	Backside Decorative	2	2	NC	5/5/2010	8/4/2010	8/9/2010	9/3/2010	
13	Texture	1	1	NC					
14	Dec Lam Orientation	1	2	NC	5/3/2010		5/3/2010	7/16/2010	8/2/2010
15	Synthetic Leather	2	1	NC	2/3/2010	4/15/2010	3/31/2010	6/9/2010	comments
16	Al, Steel & Ti	1	1	NC					
17	Powder Coated Metal	1	1	NC					
18**	DTL on Metal Skin	1	2						
19**	Metal Skin Honeycomb/Foam	1	2						
20	Embedded Metal Detail	1	1	NC					
21	Metal Edge Trim	1	1	NC					
22	Co-Cured Metal Doubler	1	1	NC					
23	Color of Thermoplastic	2	2	NC	4/6/2010	4/6/2010	5/28/2010	6/15/2010	6/15/2010
25	Clear Plastic Windows/Signs	1	1	NC					
26	Printed Wiring Boards	1	1	NC	4/19/2010	10/1/2010	10/15/2010	10/29/2010	
27	Material vs. Installation	1	N/A	NC					
28	Bonded Details/Attached Items*	2		NC	2/19/2010	4/6/2010	4/28/2010	8/3/2010	ECD?
			1	NC	4/20/2010	5/20/2010	8/9/2010	8/31/2010	
33	Edge Potting/Foam	2	1	NC	1/11/2010	6/17/2010	ECD?		
42	Bonded Inserts	2	2	ISSUE 1	2/19/2010	3/17/2010	3/17/2010	4/28/2010	comments
				A	9/18/2010				
43a	Ditch and Pot*	2	2	NC	7/13/2010	ECD?			
44	Fillet Seals	2	1	NC	6/18/2010	ECD?			

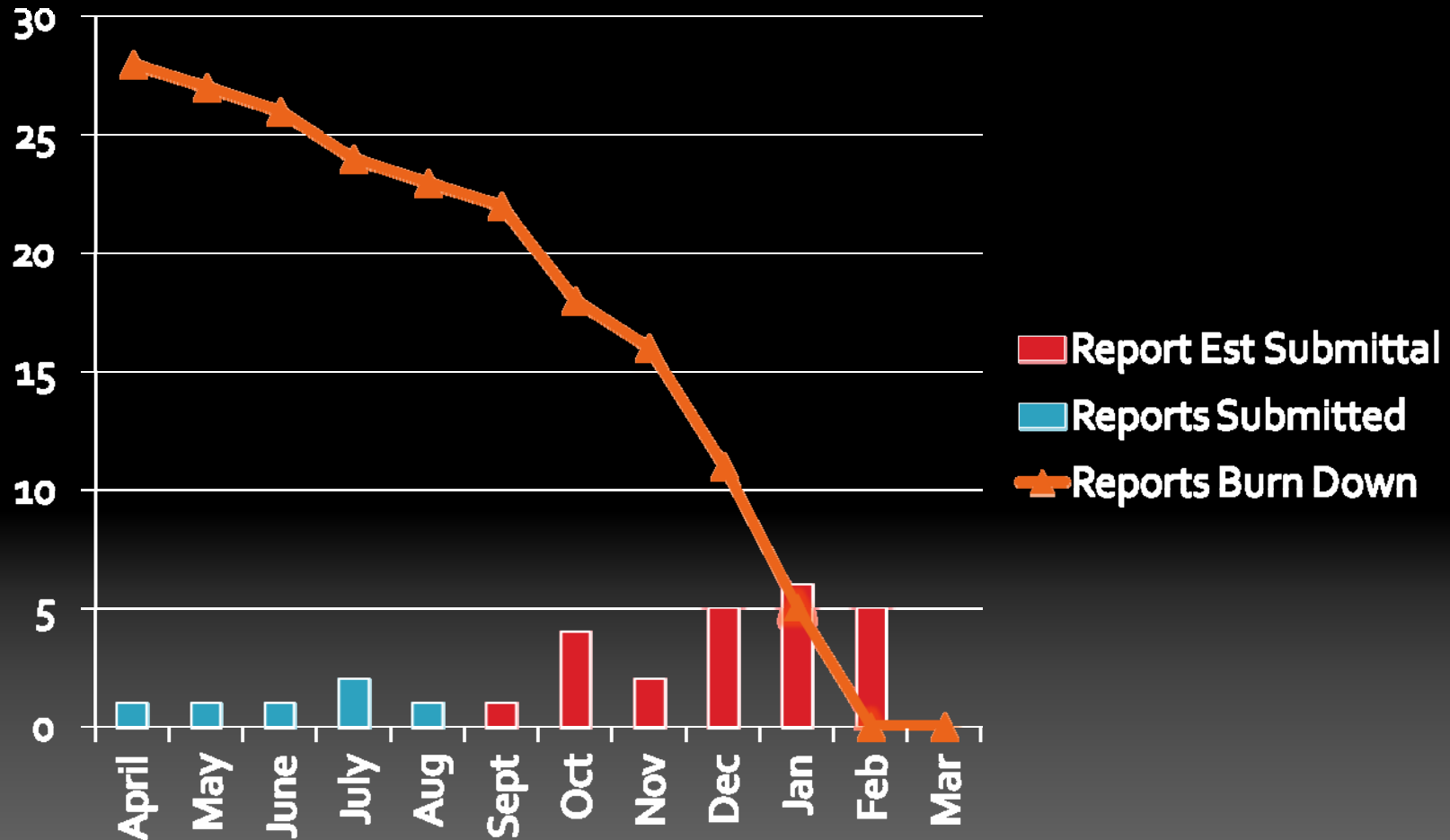
Burn Down of Tasks

2010-2011
Plan Submittals



Burn Down of Reports

2010-2011
Report Submittals



Proposal Example

- Item 23a – Color of Thermoplastics.

[Link to PDF](#)

Report Example

- Item 21 – Metal Edge Trim

[Link to PDF](#)

Risk Areas for On-Time Completion

- Task Team Leaders and participants are all “Volunteers”, this task competes with their normal work assignments.
- Task Group is very large with many diverse opinions
- Variability in the test methods themselves (particularly HR/SD) may lead to difficulty in substantiating items that have “no appreciable effect”
- Back and forth resolution of comments between FAA and Industry could take a significant amount of time.
- Rule creep continues to be a concern as different people add conservative observations and assumptions.

Industry Concerns

- MOCs increasing complexity of showing compliance.
- FAA interpretation of data scatter on reports
- FAA Implementation Schedule
 - No Review of memo prior to release
- Interpretation Issues and definitions



Lessons Learned

- Spend more time up front with definitions.
- Meet together more often.

Summary

- The industry has organized a voluntary support activity on an unprecedented scale
- A substantial commitment has been demonstrated in time and financial investment
- As these issues were generated from differences in interpretation, it is very important that the team take the appropriate time to minimize interpretation issues going forward.
- Must finish by February 2011!



Backup Slides

- Proposal and Report Examples

Report Example Pages 7-9

FAA Memorandum
ANM-115-09-XXX, "Policy Statement on Flammability Testing of Interior Materials"
Part 1, Reference Item #21, "Edge Trim, Metal"

3 PROJECT DEFINITION

3.1 CURRENT PROPOSAL

Currently, ANM-115-09-XXX is available as an undated draft. The current version has been uploaded to the FAA website on 20 August, 2009. Attachment 2, Part 2, reference item #21 reads (see Figure 1):

- 14 CFR 25.853 (a): "No test required provided edge trim is at least 0.02" thick.
- 14 CFR 25.853 (d): "No test required."

Part 1, acceptable methods without additional data

Item Number	Feature / Construction	25.853(a) Bunsen Burner Test Requirement/Similarity	25.853(d) Heat Release and Smoke test Requirement/Similarity
21	Edge Trim, metal	No test required provided edge trim is at least 0.02" thick.	No test requirement

Figure 1: Attachment 2, Part 2, Reference Item #21

No equivalent entry exists for reference item #21 in attachment 2, Part 2.

3.2 DEFINITION OF TERMS

In the interest of the overall stated goal of standardization of industry flammability practices, a clear definition of the term 'Edge Trim' should be provided so that confusion between different parties over their meaning shall be avoided. The industry task group sees the definition of significant key terms and their consistent use throughout the policy as a joint effort between the FAA and industry. Once these key terms have been defined, they should be listed in the policy memo and used consistently throughout the document.

3.2.1 Edge Trim, Metal

Edge trims, Metal, are defined as metal trim attached mechanically, by hook and loop fasteners, by double back tape or by adhesive to the edge of a sandwich panel. The metal edge trims can be formed metal, metal extrusions, machined or casted metal. Trims used as joints shall also be considered edge trim, metal. Examples of edge trims are shown in Figures 2 - 6.

Revision - NC, dated 2010-Jul-10

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Item 23 Excerpt Pages 6-8

FAA Memorandum ANM-115-09-XXX, "Policy Statement on Flammability Testing of Interior Materials"
Part 2, Reference Item #23a, "Color of Thermoplastics"

3 PROJECT DEFINITION

3.1 CURRENT PROPOSAL

Currently, ANM-115-09-XXX is available as an undated draft. The current version has been uploaded to the FAA website on 20 August, 2009. Attachment 2, Part 2, reference item #23 reads (see Figure 1):

Part 2, methods of compliance that require supporting data

Reference Number	Feature / Construction	25.853(a) Bunsen Burner Test Requirement/Similarity	25.853(d) Heat Release and Smoke Test Requirement/Similarity
23	Color of thermoplastics, attachment and floor panels	Data from testing an integrally colored material substantiates the same material type and thickness for a different color.	For integrally colored thermoplastics, conduct engineering tests on a variety of colors to determine the most critical color. Conduct a verification test on the color that produces the most critical values. The resulting data can be used to substantiate other colors of the same materials by statistically/critical case analysis.

Figure 1: Attachment 2, Part 2, Reference Item #23

No equivalent entry exists for reference item #23 in attachment 2, Part 1.

3.2 DEFINITION OF TERMS

In the interest of the overall stated goal of standardization of industry flammability practices, a clear definition of the terms "color," "thermoplastic," and "same" are provided so that confusion between different parties over their meaning shall be avoided. The industry task group sees the definition of significant key terms and their consistent use throughout the policy as a joint effort between the FAA and industry. Once these key terms have been defined, they should be listed in the policy memo and used consistently throughout the document.

3.2.1 COLOR - The complete visual appearance of a decorative sheet used in the interiors of transport category airplanes, including base color, prints, images, text or design.

3.2.2 THERMOPLASTIC - A polymer-based, single or multilayer heavy-gage, self-supporting sheet capable of being formed using heat multiple times.

3.2.3 SAME - The term "the same" in the context of this item refers to a thermoplastic from:
The same manufacturer or specification¹,
The same product family (same chemistry other than color pigmentation), and
The same nominal thickness (within industry standard tolerances).

1 - The specification must control the flammability properties and general chemistry (i.e., polycarbonate or Nylon) for materials to be the same from different manufacturers but qualified to the same specification, including types, classes, etc. that control chemical properties.

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Revision - 1
dated 2-July-2010

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