



Polymer and Ceramic Matrix Composites Coordination Meeting Agendas

July 2020

Virtual

TABLE OF CONTENTS

PMC & CMC MEETING SCHEDULE	2
COORDINATION AND JOINT MEETING AGENDAS	4
PMC/CMC COORDINATION	4
PMC FORUM	5
PMC/CMC FORUM	5
JOINT ENGINE APPLICATIONS MEETING.....	6
CERAMIC MATRIX COMPOSITES WORKING GROUP AGENDAS.....	7
DATA REVIEW.....	7
DESIGN AND ANALYSIS.....	7
MATERIALS AND PROCESSES.....	7
TESTING.....	8
POLYMER MATRIX COMPOSITES WORKING GROUP AGENDAS.....	9
COMPOSITES FOR SPACE	9
CRASHWORTHINESS	10
DAMAGE TOLERANCE TG (SAFETY MANAGEMENT)	11
DATA REVIEW.....	12
DISBOND AND DELAMINATION TG (SAFETY MANAGEMENT)	13
GUIDELINES.....	15
MATERIALS & PROCESSES.....	17
SAFETY MANAGEMENT	18
SANDWICH	19
STATISTICS.....	21
SUPPORTABILITY	22
TESTING.....	23

PMC & CMC MEETING SCHEDULE July 2020

	PMC Public/Main Meeting
	PMC Private/Working Meeting
	CMC Public/Main Meeting
	Joint Meetings
	Tutorials

			WEEK 1					
			MONDAY 7/6/2020	TUESDAY 7/7/2020	WEDNESDAY 7/8/2020	THURSDAY 7/9/2020	FRIDAY 7/10/2020	
Europe (pm)	EDT	PDT						
3:00	9:00	6:00	Damage Tolerance working meeting		Damage Tolerance working meeting	Safety Management		
3:30	9:30	6:30						
4:00	10:00	7:00			PMC/CMC Coordination		Guidelines Bolted Joints	
4:30	10:30	7:30			PMC Forum - Rev H Content	Debond/Delam working meeting		
5:00	11:00	8:00						
5:30	11:30	8:30				Sandwich	Sandwich working meeting	Statistics
6:00	12:00	9:00						Guidelines Bonded Joints
6:30	12:30	9:30			PMC/CMC Forum	Damage Tolerance		
7:00	1:00	10:00						
7:30	1:30	10:30					Data Review	
8:00	2:00	11:00		Engine Applications (PMC/CMC)				
8:30	2:30	11:30						
9:00	3:00	12:00					CMC Testing	
9:30	3:30	12:30						
10:00	4:00	13:00						

			WEEK 2						
			MONDAY 7/13/2020	TUESDAY 7/14/2020	WEDNESDAY 7/15/2020	THURSDAY 7/16/2020	FRIDAY 7/17/2020		
Europe (pm)	EDT	PDT							
3:00	9:00	6:00	Certification Tutorial Part 1	Certification Tutorial Part 2	Certification Tutorial Part 3	CMC Data Review			
3:30	9:30	6:30							
4:00	10:00	7:00							Guidelines Design, Building Block, Cert, etc
4:30	10:30	7:30			Debond/Delam				
5:00	11:00	8:00	Crashworthiness	Crashworthiness working meeting	Supportability SOBR working meeting	M&P			
5:30	11:30	8:30							
6:00	12:00	9:00					Supportability		
6:30	12:30	9:30	Testing	Spacecraft	Testing working meeting	CMC Design and Analysis			
7:00	1:00	10:00							
7:30	1:30	10:30							
8:00	2:00	11:00							
8:30	2:30	11:30							
9:00	3:00	12:00			CMC Materials and Processes				
9:30	3:30	12:30							

NOTE: Meetings links will be sent to all registered attendees for all meetings except PMC Private/Working Meetings.

			WEEK 3					
Europe (pm)	EDT	PDT	MONDAY 7/20/2020	TUESDAY 7/21/2020	WEDNESDAY 7/22/2020	THURSDAY 7/23/2020	FRIDAY 7/24/2020	
3:00	9:00	6:00						
3:30	9:30	6:30						
4:00	10:00	7:00	Coordination	Executive	Statistics Tutorial Part 1	Statistics Tutorial Part 2		
4:30	10:30	7:30						
5:00	11:00	8:00		M&P working meeting				
5:30	11:30	8:30						
6:00	12:00	9:00						
6:30	12:30	9:30						
7:00	1:00	10:00		Spacecraft working meeting			Core Task Group working meeting	
7:30	1:30	10:30						
8:00	2:00	11:00						
8:30	2:30	11:30						
9:00	3:00	12:00						
9:30	3:30	12:30						

			WEEK 4	
Europe (pm)	EDT	PDT	MONDAY 7/27/2020	TUESDAY 7/28/2020
3:00	9:00	6:00		
3:30	9:30	6:30		
4:00	10:00	7:00		M&P working meeting (Bonding Process)
4:30	10:30	7:30		
5:00	11:00	8:00		
5:30	11:30	8:30		
6:00	12:00	9:00		
6:30	12:30	9:30		
7:00	1:00	10:00		Spacecraft working meeting
7:30	1:30	10:30		
8:00	2:00	11:00		
8:30	2:30	11:30		
9:00	3:00	12:00		
9:30	3:30	12:30		

NOTE: Meetings links will be sent to all registered attendees for all meetings except PMC Private/Working Meetings.

COORDINATION AND JOINT MEETING AGENDAS

PMC/CMC COORDINATION

Tuesday July 7th 2020, 9:30 am -11:00 am ET

- **Introduction (25 minutes)** –Intro and Secretariat Update (Rachael Andrulonis) and Member Involvement (Cindy Ashforth)
- **Working Group Updates - Status of Sections, Challenges, Plans for This Meeting**
 - **PMC Working Groups Reports (5 minutes per group – total of 45 min)**
 1. Testing – Dan Adams/John Moylan
 2. Sandwich, includes Core – Larry Gintert/Melanie Violette/Zhi Chen
 3. Data Review – John Tomblin/Curt Davies
 4. Statistics – Beth Clarkson
 5. Supportability – Stephen Starnes/Joe Rakow
 6. M&P – Dan Ruffner/Margaret Royslance
 7. Bond Process – Howard Creel
 8. Disbond Delam – Ronald Krueger/Lisa McHugh
 9. Guidelines – Carl Rousseau/Steve Ward
 - **CMC Working Groups Reports (5 minutes per group – total of 20 minutes)**
 1. Data Review - Rajiv Naik
 2. Testing - Matt Opliger/Bob Zhou
 3. M&P - Doug Kiser/Leann Lehman
 4. Design and Analysis - Dave Thomas/Mark Noe

PMC FORUM

Tuesday July 7th 2020, 11:00 am -12:00 pm ET

- **PMC Working Groups focused on Rev H Content (15 minutes per group)**
 1. **Damage Tolerance – Patrick Enjuto/Mike Smeets/Doug Cairns/Simon Waite/Allen Fawcett**
 2. **Crashworthiness - Mostafa Rassaian**
 3. **Spacecraft – Jeremy Jacobs/Jeff Eichinger**
 4. **Safety Management – Cindy Ashforth/Larry Ilcewicz**

PMC/CMC FORUM

Tuesday July 7th 2020, 12:30 pm -1:30 pm ET

- **PMC/CMC Engagement**
 - **Review of Possible Collaboration Areas- Curt Davies (10 minutes)**
 - **Discussion of Collaborative Work Areas (45 minutes) – Facilitator led (Curt Davies)**
 - **Summary and Action Items (5 minutes) – Rachael Andrulonis**

JOINT ENGINE APPLICATIONS MEETING

Tuesday July 7th 2020, 2:00 pm -3:30 pm ET

- Welcome and Introductions (5 minutes) – Curt Davies
- Application of Composites to Engines (10 minutes) – Doug Ward
- Airframe and Engine Substantiation Differences (10 minutes) – Doug Ward
- Considerations Beyond AC 20-107B (30 minutes) – Cindy Ashforth
- Identification of Needs for Handbook (30 minutes) – Larry Gintert
- Summary and Action Review (5 minutes) – Rachael Andrulonis

CERAMIC MATRIX COMPOSITES WORKING GROUP AGENDAS

DATA REVIEW

Thursday July 16th 2020, 9:00 am -10:00 am ET

- Overview of Data Review Sections and discussion
- Review and discussion of Section 16 – Data Submission, Format, Requirements
- Review and discussion of Section 17 – Statistical Methods
- Review and discussion of Section 18 – CMC Property Data.
- New Business and Action Item Summary

DESIGN AND ANALYSIS

Thursday July 16th 2020, 2:00 pm -3:00 pm ET

Not yet available

MATERIALS AND PROCESSES

Wednesday July 15th 2020, 3:00 pm -4:00 pm ET

Not yet available

TESTING

Friday July 10th 2020, 3:00 pm -4:30 pm ET

- Introductions
- Vision and Goals
- Leadership
- Content to be Completed for Next Revision
- Participation
- Priorities

POLYMER MATRIX COMPOSITES WORKING GROUP AGENDAS

COMPOSITES FOR SPACE

Tuesday, July 14, 2020, 10-12 AM (Pacific), 1-3 PM (Eastern),

Industry Updates

Public domain info on important space & launch vehicle milestones since the last meeting

Presentations on New Content for YP

10-15 minute presentations followed by 5-10 minutes of discussion

- **19.3 Durability and Damage Tolerance (Resolving Negative Votes)** – Jeremy Jacobs
- **19.4 Spacecraft Sandwich Structure Unique Design Considerations**
 - **19.4.3 Cryogenic Sandwich Structural Design Complexities** – Jeff Eichinger
 - **19.4.4 Design Substantiation Testing and Analysis** – Stephanie Svetlik-Haley
- **19.6 Structural Redundancy / Fracture Critical Structures**
 - **19.6.1 Considerations for Non-Redundant Structures** – Will Guin

Working Meeting Planning

Working meetings will be held the following two weeks to further discuss and finalize the new written content before it is submitted to yellow pages. Topics to be defined during the meeting.

- **Working Meeting #1 (Tuesday July 21 from 10 to 1)**
- **Working Meeting #2 (Tuesday July 28 from 10 to 1)**

Discussion on Remaining Spacecraft Sections for Rev H (time permitting)

Current status, help needed, questions, etc.

- **19.7 Design Substantiation (unique aspects of spacecraft & launch vehicles)**
 - **19.7.2 Design Value Development**
 - **19.7.3 Analysis Supported by Test**
 - **19.7.4 Workmanship Verification**
 - **19.7.5 Structural Substantiation Approach**



CRASHWORTHINESS

Virtual, Monday July 13, 2020. 11:00 -1:00 pm ET

8:00A (PDT) Review of 2019 Wichita meeting action items (Mostafa)

- Preview of CW virtual side meeting on July 14
- Review of team progress on modeling challenges and limitations
- C-channel trigger mechanism study (Alan)

- Test activities of coupon characterization tests (Mostafa/ Aswini/ Dan/ Reza)
- C-channel with end features design definition (Dan/ Kevin)
- C-channel test specimen definition for sled testing (Mike/ Rudy)
- Joint DLR/UBC analysis team presentation of C-channel crush predictions (Thomas Feser/ Matthias/ Reza)

10:00 Meeting Adjourned

Working Meeting Agenda

Virtual, Tuesday July 14, 2020, 11:00 – 1:00 pm ET

8:00A (PDT)

- CW TG contributions to CMH-17 (*Mostafa*)
 - NASA ACP HEDI material characterization tests incl. others for Testing, Vol 1 Chapters 6 & 7 (*Mostafa, Mike, Rudy, Dan, Reza, Aswini, Luis*)
 - NASA ACP HEDI simulation methods for Guidelines, Vol. 3, Chapters 8 &12 (*Mostafa, Alan, Mike*)
 - CMH-17 CW, Vol. 3, Ch 6 Rev. G update (*Kevin, Mostafa, Reza, Joseph, Mike Puzin*)

- Standalone reports to release via NASA TM
 - CMH-17 CW WG Test Activities (*Mostafa, Dan, Mike, Luis, Aswini*)
 - HEDI Tech Transfer to CMH-17 (*Mostafa, Mike, Alan, Luis, Aswini*)

10:00 Meeting Adjourned

DAMAGE TOLERANCE TG (SAFETY MANAGEMENT)

Task Group Meeting (Wednesday, July 8, 1-2 pm ET)

1. Welcome, Introduction
2. Review of Working Meeting
3. Approve Content for Yellow Pages
4. Presentations and Discussion
 - a. Cirrus Case Study – Cirrus SR20 Life Extension (Jay Yeakle)
5. Adjourn

Working Meeting (Monday, July 6 - 9 – 3 pm ET & Wednesday, July. 8 – 9 – 12 pm ET)

1. HEWABI and Category 5 Damage
2. Residual Strength
 - a. Considerations for Stiffened Structure
3. Flights with Known Damage
4. Application of Probabilistic Methods
5. Inspection Maintenance Technology
6. Embraer Case Study – Technology Demonstrator
7. Defects, Damage and Inspection
 - a. §13.2 Inspection methods
8. ILX-34 Wingbox Demonstrator Case Study
9. Cirrus Case Study
10. Discussion on High Energy Dynamic Impact (HEDI) content
11. Content Development Addressing Damage Threat Assessment
12. Content Development Addressing Aging

DATA REVIEW

Thursday July 9, 2020 – 2-3 pm ET

1. **Introduction and Welcome** – John Tomblin, Curt Davies
2. **Approve Wichita October 2019 meeting minutes** – Rachael Andrulonis
3. **Overview of DRWG Content in CMH-17** – Rachael Andrulonis
4. **Data set update** - Rachael Andrulonis
 - a. Voting procedure review
 - b. Data set review schedule
5. **Toray Data Set Review** – Michelle Man
 - a. Status
 - b. Comments
 - c. Technical Issues
 - d. Recommended Approval Process
6. **NCAMP Qualification Programs – update and tentative CMH-17 submission dates**
 - a. Thermoplastic composite materials – T700/TC1225
 - b. Repair materials - T650/53201- PW
 - c. Adhesive materials
 - d. *Ceramic matrix composites → CMC Data Review Working Group*
 - e. *Polymer additive materials → AM Coordination Group*
7. **Other business-** Rachael Andrulonis
 - a. D-Test Software update
 - b. Fracture Properties in Volume 2
 - c. Core data requirements
8. **Agenda Item Review-** Rachael Andrulonis
9. **New business**

DISBOND AND DELAMINATION TG (SAFETY MANAGEMENT)
7/16/2020, 10 – 12 pm ET

- Approval of minutes of the October 23, 2019 meeting in Wichita, KS
- Overview of existing content in CMH-17 Vols. 1 and 3
- Update on action items for next handbook revision
 - Revise and update existing content for upcoming Volume 1H
 - Status of content development
 - Revise and update existing content for upcoming Volume 3H
 - Add section on decohesion elements for disbond/delam analysis
 - Albert Turon recently submitted new content for Vol. 3 chapter 8
 - This new content was posted to the Forum. Please review and familiarize yourself with the material before the meeting so we can have a productive discussion
 - Add section on delamination/disbonding arrest
 - Mehdi Yasaei recently submitted new content on Z-pinning for Vol. 3 chapter 8
 - This new content was posted to the Forum. Please review and familiarize yourself with the material before the meeting so we can have a productive discussion
 - Add fracture toughness data to CMH-17 Volume 2
 - Add new chapter on testing and analysis for sandwich face sheet/core disbonding to Volume 6A
 - Summary of recent activities
 - Update on ASTM test standardization efforts
 - Revised Road Map for Sandwich Disbond
- New Business
- **Presentation:** Edward H. Glaessgen, NASA Langley Research Center, *NASA's Transformational Technology and Tools Project: Methods for Development and Qualification of Bonded Composite Joints*
- Adjourn

Last minute changes will be posted to the CMH-17 Member Forum!

Disbond/Delamination TG – Working Meeting 7/9/2020, 10-12 pm ET

The meeting will focus on CMH-17 content development with respect to Sandwich Face Sheet/Core Disbonding.

- Content development for Vol 3H section 8.7.4 *Calculation of strain energy release rate interlaminar fracture mechanics* (Christian Berggreen)
 - Discuss and develop content outline for a new subsection on the *Crack Surface Displacement Extension* method (CSDE)
 - Discuss and develop content outline for a new subsection on the *Virtual Crack Extension* method (VCE)
 - Prepare outlines for approval by the Guidelines WG

- Content development for Vol 6A
 - Discuss recently revised outline for Vol 6A (Larry Gintert)
 - Review new content for revised introduction section (Zhi Chen)
 - Review new content under development for Chapter 4 (Larry Gintert)
 - Review plans for new Section 4.12 with disbond analyses examples and graphs with design parameters (Hoyt)
 - Review plans for expanding the Damage Tolerance section (Hoyt)
 - Update on existing work items regarding new sections on Sandwich Disbonding (all)

Last minute changes will be posted to the CMH-17 Member Forum!

GUIDELINES

Guidelines Working Group - Working Session Agenda Friday, 10 July 2020, 7:00 – 9:00 am PDT

- Review of new V3 Ch11 Bolted Joints chapter
- Discussion of comments from GWG forum
- Determine which sections to go to YPs

Guidelines Working Group - Working Session Agenda Friday, 10 July 2020, 10:00 – 12:00 pm PDT

- Review of V3 Ch10 Bonded Joints chapter
- Discussion of comments from YP review
- Determine if any revisions need to go to YPs

Guidelines Working Group - Working Session Agenda Friday, 17 July 2020, 7:00 – 9:00 am PDT

- Review of revised V3 Ch4 Building Block chapter
 - Sections 4.1 thru 4.3 revision by Enjuto, Smeets, Davis
 - Section 4.3.4 new V&V section by Wanthal et al (NASA ACP content)
 - Section 4.4.2.3 new military a/c historical section
 - Section 4.5 new schedule linked methodology example section
 - Additional Analysis V&V content (Boeing input)
- Discussion of comments from GWG forum
- Determine which sections to go to YPs

- Review of proposed new content for V3 Ch7 Design chapter including a) Design Requirements, Criteria and Constraints, b) IPT, c) Technology Readiness Criteria and d) Design Cost Models
- Create revised outline
- Determine authors and schedule

- Review of revised V3 Ch8 Analysis chapter
 - 8.7.3.2 delamination/disbonding arrest
 - 8.7.5 cohesive zone modeling for disbonding/delamination analysis.
 - 8.7.6 disbonding/delamination arrest methods such as stitching, Z-pinning
 - 8.8 general progressive damage failure criteria (ACP content)
- Discussion of comments from GWG forum
- Determine which sections to go to YPs

Guidelines Working Group Agenda Friday, 17 July 2020, 9:30 – 10:30 am PDT

Rousseau	Call to Order	9:30 am
Rousseau	Approval of Fall 2019 GWG WG Minutes	9:31 am
Yellow Page Review – status from working meetings		
Ward	V1 ch2.1.1 YP1 – 4 negatives	9:35 am
Ward	V3 ch8.2.5 YP1 – 0 negatives	
Rousseau	V3 ch10.2 YP1 – 0 negatives	
Cole	V3 ch10.5.4 YP1 – 1 negative	9:40 am
Cole	V3 ch10.6 YP1 – 0 negatives	
Rousseau	V3 ch10.4.1 YP2 – 0 negatives	
Cole	V3 ch10.5.2 bonded joint certification YP2 – 1 negative	9:45 am
Rousseau	V3 ch10.7 bonded joint analysis YP2 – 1 negative	9:50 am
Old Business and Open AIs – status from working meetings		
Rousseau	V1 Ch1 Definitions revision to be consistent with new D30, CMH17 work	9.55 am
Rousseau	[09-10] Adhesive Data inclusion in Handbook <ul style="list-style-type: none"> • Status of FAA/NIAR and D14.80 D5656 RR projects (defer to Rev J) <ul style="list-style-type: none"> ○ AFRL has fabricated coupons, test labs are chosen, shipping delayed 	9:57am
Waite/ Ashforth	V3 Ch3 Certification update – Summer 2020 YP [09-08]	10:00am
Ward / Enjuto	V3 Ch4 Building Block revision – Summer 2020 YP <ul style="list-style-type: none"> - Sections 4.1 thru 4.3 revision by Enjuto, Smeets, Davis - Section 4.3.4 new V&V section by Wanthal et al (NASA ACP content) - Section 4.4.2.3 new military a/c historical section - Section 4.5 new schedule linked methodology example section - Additional Analysis V&V content (Boeing input) 	10:05am
Ilcewicz	V3 Ch7 Design revision <ul style="list-style-type: none"> - Updated outline for 7.1, 7.2, 7.6 to include: a) Design Requirements, Criteria and Constraints, b) IPT, c) Technology Readiness Criteria and d) Design Cost Models 	10:10am
Ward / Krueger	V3 Ch8 Analysis revisions: <ul style="list-style-type: none"> - 8.7.3.2 delamination/disbonding arrest - 8.7.5 cohesive zone modeling for disbonding/delamination analysis. - 8.7.6 disbonding/delamination arrest methods such as stitching, Z-pinning - 8.8 general progressive damage failure criteria (ACP content) 	10:15am
Enjuto	V3 Ch 9 Stability – proposed additional buckling, stiffened panel content <ul style="list-style-type: none"> - Patrick Enjuto (Boeing) and Doug Grassaer (NSE) 	10:19am
Rousseau	V3 Ch 10 Bonded Joints revision [11-04] <ul style="list-style-type: none"> - Status of current draft and plan for YP re-ballots - [13-09] Coordination with Supportability WG – status - Al Fawcett to write V3 Ch10 section 10.8 (Hoyt, Charles, Will G to help) on bonded joint certification. 	10:20am
Ward	V3 Ch 11 Bolted Joints revision [11-05] <ul style="list-style-type: none"> - Status of draft to go to YPs 	10:25am
New Business		
	-	
Adjourn		10:30am

MATERIALS & PROCESSES

Not yet available

SAFETY MANAGEMENT

Thursday July 9th, 9 – 10:00 am ET

5 minutes	Welcome and Familiarization
15 minutes	FAA Composite Plan update
5 minutes	Open Safety Management Tasks
30 minutes	Update on Section 17.5 Composite Structural Technology Training content development
5 minutes	Wrap-up and Closing

SANDWICH

General Meeting - Wednesday 7/8 Noon – 1 PM Eastern Time

- Introductions and Roll Call (10 min)
- Working Group General Meeting Updates – Protocol for Content (20 min)
 - Existing content for which Sandwich WG is responsible (Volume 6)
 - Emerging New Content for Volume 6
 - Maintenance of Volume 6 Content
 - Outreach and training
- Review of Previous Meeting Minutes and Agenda Items Status (10 min)
- Discussion of New Content under Development (30 min)
- Core Data Task Group Plans and Status (10 min)
- Schedule of WG Activities (5 min)
- Wrap-up/Action Items (5 min)

Working Meeting - Thursday 7/9 Noon – 1:30 PM Eastern Time

- Overview of Volume 6 Rev A Content under Development (80 min)
 - Chapter 6 YP results
 - Chapter 1 updated introduction to strengthen damage tolerant design and sandwich disbond considerations
 - Chapter 2 updated draft – feedback and Yellow Pages preparation
 - Pin and Insert Data section submitted – should data move to Chapter 3?
 - Chapter 3 updates; Core Data – New content under development
 - Chapter 4 Design and Analyses – Improved introduction section discussing damage tolerant design and sandwich disbond considerations; improved damage tolerance subsection, new content for disbond analyses tools
 - Chapter 5 inputs from NASA ACP program?
 - Chapter 7 Supportability updated draft submitted; list of content moving from V3
 - Chapter 8 (NEW) Sandwich Structures Case Studies
- Core Data Task Group Coordination – Plans for Working Meeting (10 min)

Open Agenda Items:

- **09-10 Set up requirements for adhesive data for Rev. H** (Joint with Data Review, Guidelines, M&P, Testing)
This item is actively being worked by the Adhesive Bonding Task Group (Agenda Item 16-01, assigned to Data Review), led by Howard Creel. Interested Sandwich WG members are encouraged to participate in the Task Group. Further coordination between the groups is required. Item remains open.
- **13-01: Set up requirements for core data** (Joint w/ Guidelines and Testing)
This topic was covered in detail at the working meeting of the core data task group on Wednesday. See notes below. The group needs to engage Data Review and Statistics before data gets published. Core data will be published in Vol. 6A not Vol 2. *Susan Daggett, Shannon Jones*
- **13-04: Review content in Volumes 3 & 6, identify areas that need additional content**

Larry Gintert has created a file that has not been shared with everyone yet. The information will be shared first with other working groups who are responsible for Vol.3 content and the planned updates for Revision H. Intent is to close out this item soon.

- **13-05: Update Volume 6 Chapter 2 with new sandwich testing techniques/ standards (Susan, Tracy)**
This item is being actively worked and remains open.
- **13-07: Update Volume 6 Chapter 6 with current and evolving inspections techniques:**
Susan created content and received comments since the Charleston meeting. **Stephanie** independently created content that needs to be integrated. Item remains open.
- **13-08: Add information on CTE behavior to Volume 6 (Tracy):**
Tracy Colwell stepped back from CMH-17. **Stephanie** is ready to submit content to Vol 3H for Spacecraft sandwich. Spacecraft have some unique challenges related to CTE.
- **14-02: Add a chapter on testing and analysis for sandwich face sheet/core disbonding** (Joint with Damage Tol TG and Disbond/Delamination TG) Content is being written. A first draft is likely available after the Wichita fall meeting. **Larry** commented that **Zhi Chen's** proposed content should enlighten the reader before design and equations are discussed. The draft needs to be reviewed and possibly merged with existing content in Vol. 6 Section 4.1.
- **17-02: Review content in Chapter 7 and refresh as needed.** (Joe, Margaret)
Joe Spangler, Margaret Zalewska have been working on this item. Graphs could be further improved if required. Suggested to send current draft to yellow pages now and update figures later. Hopefully able to close out soon.

STATISTICS

Friday July 10th, 12 – 1 pm ET

Task Definition/Discussion	Responsible	Time Allotment
Review agenda and finalize schedule	Elizabeth Clarkson - NIAR	5
Review last meeting minutes and approve	Elizabeth Clarkson - NIAR	5
Status of Action Items	Elizabeth Clarkson - NIAR	20
STAT17 Revision?	Elizabeth Clarkson - NIAR	30
Shared Database Tutorial Status/Content	Elizabeth Clarkson - NIAR	30
How to deal with badly behaved data?	Elizabeth Clarkson - NIAR	30

Action Items

- Produce content for Section 8.4 regarding alpha levels, equivalency vs acceptance testing and why we use different alpha levels and what the effect of changing the alpha value has on the acceptance criteria – Beth Clarkson Due Nov 30, 2019
- 9-14 – Additional verbiage in support of analyzing nested design Rev H – Shannon Jones Dec 31, 2019
- Clarify wording to Section 8.3.7.1 Bullet 3 – Steve Ward – Summer 2020

SUPPORTABILITY

Agenda

Friday, July 17, 2020, 1:30 – 3 pm ET

Discussion Topic	Speaker	Time
Introduction to CMH-17 Supportability WG, current status and goals for Rev. H	Ilcewicz/Starnes/Rakow	10 Minutes
SoBR Yellow Page Results/Edit/Comment Review (two cycles since Oct. 2019 Wichita Meeting)	Gintert	25 Minutes
Case study Status and Planning (Purpose and details of the current 9 case studies)	Gintert	25 Minutes
<u>Remaining Section Schedules</u> <ul style="list-style-type: none"> • Design and Repair Substantiation (including Interdependences – summary section) • Repair analyses (Integrated with supporting data) • Case Studies #2,#3,#4,#5,#6 and #9 • Final Chapter 14 Consistency Updates 	Ilcewicz	10 Minutes
Repair Analysis Section Strategies and Plans	Rauschendorfer/Ilcewicz	15 Minutes
BRSL, including larger repairs and “Patch Off” Analyses and Supporting Tests	Boeing/FAA Research	30 Minutes
Summary and Wrap-up	Ilcewicz/Starnes/Rakow	5 Minutes

SoBR Working Meetings Held Tues. July 14 & Wed., July 15, 2020 (Next Aug. 11 & 12)

Detailed discussions of all active Chap. 14 & case studies (Preparing content for YP)

TESTING

Monday July 13th, 1 – 3 pm ET (Main)

Wednesday July 15th, 1:30 – 3 pm ET (Working)

Agenda Item	Section	Topic	Editor Presenter	Comments
Procedural	N/A	Open/Close	Moylan/Adams	
Procedural	N/A	Approval of minutes from previous meeting	Moylan/Adams	Approved by Acclamation
Announcement	N/A	Status of ASTM Standards, SAE activity, ISO activity, Misc. CMH-17 Notes	TBD	Update on new ASTM activities and ballots.
		Review of Yellow Page Comments and Negatives, Chapters 3, 6, and 7	Moylan and Adams	
	Vol 1, Ch 4	Outline for New Adhesive Characterization Testing Content	John Moylan	To be included in Volume 1 Update
	Vol 1, Ch 7	Outline for New Surface Preparation Testing and Bonded Joint Characterization Testing Content	Dan Adams	To be included in Volume 1 Update
11-10 and 09-10	Vol 1	Update Flexural Section	Dan Adams	To be included in Volume 1 Update
11-07	6.8.5	Add Mode III tests, update other fracture test methods	James Ratcliffe Mike Czabaj	To be included in Volume 1 Update
11-08 & 14.01	6.8.6.5	Update Notched Tension Section	Dan Adams	To be included in Volume 1 Update
11-09	7.4.2	Update Notched Compression Section	Dan Adams	To be included in Volume 1 Update
11-09	7.4.3	Damage Tolerance Tests: Review and add quasi-static indentation	Dan Adams	To be included in Volume 1 Update
	7.8	New Dynamic Testing Content	Mostafa Rassaian	From NASA ACP Program