



Minutes of the 40th MMPDS Coordination Meeting

Held in:

Denver, Colorado
September 19 - 23, 2022

Compiled by:

Battelle
505 King Avenue
Columbus, OH 43201-2693

Prepared for:

FAA William J. Hughes Technical
Atlantic City, NJ 08405

Copyright 2022 Battelle Memorial Institute. All rights reserved. Unauthorized duplication or distribution may violate the Copyright Laws of the United States and of other jurisdictions.

40th MMPDS Coordination Meeting – Table of Contents

Introduction of Attendees	1
Approval of the 40th MMPDS Meeting Minutes.....	1
Vice-Chairman Remarks	2
Summaries	3
Registrants Attendance	4
New Item Numbers Assigned in 2022	6
Closed Agenda Items	9
Final Minutes Agenda Item Summary	14

40th MMPDS Coordination Meeting

Introduction of Attendees

A list of 40th Coordination Meeting attendees, indicating the meetings they attended, has been incorporated into this document.

Approval of the 40th MMPDS Meeting Minutes

Per the Foreword of MMPDS-17, with a few exceptions, items are considered approved if no technical comments are received by Battelle within 30 days of circulation of these Final Minutes. This review period ends on December 29, 2022.

Items 15-36, 19-40, 21-04, 22-02, 22-08, 22-16, 22-27, and 22-32 generated significant discussion during the 40th meeting. For these items, attendees have an additional 30 days to review and provide technical comments to Battelle. These items will be considered approved 60 days after these Final minutes are circulated. This review period ends on January 28, 2023.

40th MMPDS Coordination Meeting

Vice-Chairman's Remarks - Walter Sippel

Thanks to everyone who participated in the 40th MMPDS General Coordination Committee meetings held in Denver, CO between September 19 and September 23. The Battelle team did an excellent job of preparing the Agenda, Handout, and meeting arrangements to keep the program moving forward.

This was the first face-to-face event since the fall of 2019. Nearly 70 people attended, more than half at their first live meeting and one-third at their first MMPDS meeting. It was great to see everyone again and to meet many new people. The program depends on you to succeed.

As described in the Foreword to MMPDS-17, the standard review period for Final Minutes is 30 days after posting. These Final Minutes are being sent to registered attendees and are available to Industry and Government Steering Group organizations through the member SharePoint site. If no negative technical comments are received within the review period, the item is formally approved. If negative technical comments are received before the deadline, the item will be held open for discussion at the 41st MMPDS GCC meeting.

There were several significant items. An unusually large number were placed on the 60-Day approval list. Readers have an additional 30 days to review these items. If negative technical comments are received within 60 days after the minutes are circulated the item will be held open for discussion next spring.

Perhaps the most anticipated are those items determined to be necessary to release the first edition of Volume II. Battelle proposed final content for Chapters 1, 9, and 10 with several relevant items on the 60-Day approval list. Please review the changes documented in the minutes and notify Battelle if something was captured inaccurately, incompletely, or incorrectly.

Battelle proposed final changes to the improved Indirect Methods. There was lively discussion of Table 9.2.4 for both Volumes. The decisions are so consequential that this item is also on the 60-Day review list. If these are accepted, the next release of the MMPDS Dashboard will include an official tool to complete the calculations.

As of this writing, Battelle and the FAA expect that the 41st Meeting will take place in Santa Ana, CA the week of March 26, 2023. Travel restrictions may require special accommodations, especially for members from outside the US. Battelle is continuing to monitor COVID-19 developments and will work with the GSG to announce any necessary changes.

Thanks again for attending the 40th MMPDS GCC meetings. Your commitment, dedication, and donation of your valuable time to maintain MMPDS is most appreciated. I look forward to seeing everyone in Santa Ana.

Best Regards,

MMPDS Chairman, Walter Sippel

Aerospace Engineer, Materials and Structural Properties Section, AIR-621

Technical Innovation Policy Branch, AIR-620



SUMMARIES

40th MMPDS Meeting Attendance			September 19th						September 20th		September 21st	September 22nd		September 23rd
Last Name	First Name	Company	ISG	GSG	ISG/GSG	FTG	ASG	MATSSG	MTG	FatWG	ETTG	GTG	PSG	GCC
Anderegg	David	Defense Logistics Agency			x	x			x		x	x	x	x
Anderson	Neil	The Boeing Company	x		x	x			x					
Ashforth	Cindy	Federal Aviation Administration									x			
Bach	Andreas	Novelis							x	x		x		x
Bakuckas	John	Federal Aviation Administration		x	x	x			x	x	x			
Bennett	Jay	NASA			x	x			x	x	x	x	x	x
Bihlman	Bill	Aerolytics/SAE									x			
Bittner	Peter	Constellium							x		x	x		x
Bray	Gary	Westmoreland	x		x	x			x		x	x		x
Cordner	Sam	NASA		x	x	x			x	x	x	x	x	x
Coronado	Peter	The Boeing Company												
Crill	Matthew	The Boeing Company	x		x		x		x		x	x		x
Crisler	Elizabeth	Textron Aviation (Cessna)	x		x	x			x	x	x	x		x
Daley	Nancy	Rocket								x	x	x	x	
Elwell	Abram	The Boeing Company	x		x	x			x		x	x		x
Fu	Eliana	Trumpf							x	x	x			
Gorelik	Michael	Federal Aviation Administration												
Gurrola	Bob	Howmet Aerospace	x		x	x					x	x		
Hahn	Michael	Northrop Grumman	x		x	x			x	x	x	x	x	x
Hall	Doug	Battelle Memorial Institute	x		x	x	x	x	x	x	x	x	x	x
Hasting	Will	Velo3D								x	x			
Haynes	Kyle	Norsk Titanium							x	x	x	x	x	
James	Mark	Federal Aviation Administration			x	x			x		x	x	x	
Jang	Younghwan	Korea Aerospace Industries							x		x			
Jeon	Hyunhee	Korea Aerospace Industries	x		x				x	x	x	x	x	
Johnson	Chloe	Elementum3D							x		x	x		
Jones	Marshall	US Navy			x						x	x	x	x
Kane	Michael	US Army			x				x	x	x	x		
Klenosky	Dan	Spirit Aero	x		x	x	x		x	x	x	x		
Ko	Deokhwang	Korea Aerospace Industries							x	x	x	x		
Krile	Bob	Battelle Memorial Institute									x			
Kwon	Yong-Nam	Korea Institute of Materials Science							x	x	x	x		x
Lamas	Jose Eduardo Goncalves	Embraer	x		x				x	x	x	x	x	
Lamb	Justin	Universal Alloy	x		x			x	x	x	x	x	x	
Larsen	Hilde Løken	Norsk Titanium							x	x	x	x	x	
Lechtenberg	Marianne	Northrop Grumman	x		x	x	x		x	x	x	x		
Liou	Richard	Collins Aerospace	x		x					x	x	x	x	x
Liu	George	US Army			x				x		x	x		
Maciejewski	Kimberly	Arconic	x		x	x			x	x	x	x		x
Mattison	Jacob	US Navy		x	x				x		x	x		x
Nagao	Kazuki	Honda R&D Americas, Inc.	x		x					x	x	x		
Nicholson	Shane	Parker LORD								x	x			
Niedzinski	Michael	Constellium							x					
Norimatsu	Koichi	IHI Corporation	x		x				x	x	x	x	x	x
O'Brien	Matthew	Northrop Grumman	x						x	x	x			x
Olsen	Kirk	Parker LORD	x		x	x			x	x		x	x	
Oshino	Hironobu	IHI Corporation	x		x	x			x	x	x	x	x	x
Pereira	Sebastien	Lockheed Martin									x	x		

40th MMPDS Meeting Attendance			September 19th						September 20th		September 21st	September 22nd		September 23rd
Last Name	First Name	Company	ISG	GSG	ISG/GSG	FTG	ASG	MATSSG	MTG	FatWG	ETTG	GTG	PSG	GCC
Phillips	Brandon	US Army			x						x			
Reakes	Clay	Battelle Memorial Institute	x		x	x	x	x	x	x	x	x	x	x
Riveria	Jesse	Supernal	x		x	x			x			x	x	
Rubadue	Jana	Battelle Memorial Institute							x		x	x		
Scalf	Cyndee	Battelle Memorial Institute												
Scheuring	Jason	Kaiser Aluminum										x		x
Schmitz	Aaron	3D Systems, Inc.												
Shannon	Carinne	Battelle Memorial Institute	x								x			
Shim	Sungyong	Korea Aerospace Industries												
Shivers	Brian	US Air Force							x					
Simkin	Zach	Senvol												
Sippel	Walter	Federal Aviation Administration		x	x	x	x		x	x	x	x	x	x
Smith	Ryan	GE Additive									x			
Snyder	Don	Bell Helicopter				x	x		x	x	x			
Sodouri	Pedrum	Norsk Titanium	x		x				x		x			
Steele	Leslie	Collins Aerospace	x		x	x			x	x	x	x	x	x
Steevens	Andrew	The Boeing Company	x		x	x	x		x		x	x		
Stepanova	Mariia	Norsk Titanium	x		x				x	x	x	x	x	
Stillinger	Jeffrey	Federal Aviation Administration			x	x			x	x	x	x	x	x
Sutton	Adam	Lockheed Martin	x		x	x			x	x	x	x		
Thomas	Bruce	Bombardier Aerospace	x		x	x	x		x		x	x	x	x
Thompson	Steven	US Air Force			x	x			x	x	x	x	x	
Tummons	David	The Boeing Company	x		x	x			x	x	x	x		x
Vogel	Bret	Textron Aviation (Cessna)	x		x	x	x		x		x	x		x
Wang	Annie	Senvol							x		x			
Wheelock	Paul	Rolls-Royce	x		x				x	x	x	x	x	x
White	Will	Battelle Memorial Institute				x					x	x		
Woish	Mason	Lockheed Martin	x		x	x			x	x				

40th MMPDS Coordination Meeting

New Item Numbers Assigned in 2022

22-01	Review Use of Grain Direction and Orientation.
22-02	Investigation of Remaining Materials of Table 8.1.2(b)
22-03	Fasteners Requested for Analysis
22-04	Proper use of "Gage"
22-05	Revise Fracture Toughness Table for Titanium Alloys
22-06	Combinability in Vol II
22-07	Update Tolerance Bound Figure in Section 9.2.4
22-08	Chapter 1 for Volume II
22-09	Preface for MMPDS Volume I and II
22-10	Uniformity Test for more than three bins
22-11	Directional Shear and Poisson Ratio Properties
22-12	Revision to Ferrium M54 Property Table
22-13	Considerations for the Development of Design Values
22-14	Modification to Section 9.2.2, V2
22-15	Test Plan for Fastener XXX
22-16	Addition of Final Heat Treatment Thickness Information
22-17	Correction to Table 3.7.5.0(b1) 7050-T7451 Plate
22-18	Section 9.2.1.5: Stress-Strain Properties
22-19	Corrections to Fatigue Curves for 2024 Aluminum Alloy
22-20	Correction to Fsu for 7050-T7451 Extrusion, AMS 4342
22-21	Sections 10.1 and 10.2: Introduction & One-Sample Acceptance Test
22-22	Definition of "Joint Allowable"

40th MMPDS Coordination Meeting

New Item Numbers Assigned in 2022

22-23	Clarify use of "Alloy" and "Product"
22-24	Update Section 1.4.6 for Historic Pin Shear
22-25	Clarify Legacy Alloy Review Guidelines
22-26	Update Table Format for Issue and Last Revised Information
22-27	Revision of Edgewise Bearing Section and References
22-28	Addition of SCC Resistance Caution
22-29	7160-T7651 Compression Stress-Strain Figure
22-30	Stabilization of AMS 4916 for Ti-8Al-1Mo-1V
22-31	FCG Analysis for Al 2024 Sheet
22-32	Update Table for AM-350 Stainless Steel
22-33	Microstructure Information Accessibility for MMPDS, V2
22-34	Stress Corrosion Cracking Resistance for 2297-T87 Aluminum Alloy Plate
22-35	Thickness Revision to AMS 4598 Tubes (ToughMet 3)
22-36	Stabilization of AMS 4916 for Ti-8Al-1Mo-1V Sheet, Strip, and Plate
22-37	Process Optimization and Material Allowables
22-38	Guidelines for Re-Inserting Chapter 8 Tables (Blind Fasteners)
22-39	Clarification of Joint Table Applications in Chapter 1
22-40	Correction of CTE for 2027 Aluminum Alloy

40th MMPDS Coordination Meeting

New Item Numbers Assigned in 2022

22-41	Investigate usage of terms A-Basis and B-Basis in Chapter 8
22-42	Correction to 7040-T7451 Plate Derived Properties
22-43	Specification Revision to Table 6.3.5.0(d) for 718 Forged Bar
22-44	Consent Agenda 40th MMPDS GCC
22-45	Ch. 1, Ch. 8, and Ch. 9 Changes Supporting Fatigue of Bolts
22-46	Update Stress Corrosion Data for Tables in 3.1.2
22-47	Update Introductory Section for 2014 Alloy
22-48	Addition of Shear and Bearing Sections in V2 Chapter 1 (1.4.6 and 1.4.7)
22-49	Review of Section 1.4.12 Fracture for V2
22-50	Addition of Sections on Thermal Properties and Influence Factors to Chapter 1 V1
22-51	Review of Section 1.6 Validation in V2
22-52	New Indirect Method with Regression
22-53	Review of Table 9.2.4.1
22-54	Revision of Shear Modulus Sections in Chapter 9 for V1 and V2
22-55	Examples to Clarify Table 9.4.2.1

40th MMPDS Coordination Meeting Final Minutes

CLOSED AGENDA ITEMS

Item No	Responsible Group		HDBK Volume	Chpt	Title	Type	40th Action	40th Meeting Description
	Final	Initial						
12-50	GTG-F	FTG	1	9	Evaluation of new Regression and Confidence Models for Lap Joint Tests	Agenda	Closed w no Action	The method proposed in Item 17-28 will be added to the Handbook. The method of this item is no longer needed.
15-36	GTG	ISG, GSG	1, 2	9	Modification of Indirect Analysis Equation	Agenda/ Handout	60 Day Approval with changes	B. Krile presented this agenda item. Discussed in MATSSG and GTG. Fix consistency in Table 9.2.4 for sample size showing indirect/reference for all applicable rows. Revise sentence when T99>T90. "If T99>T90, then discuss with the sponsor and present to the MMPDS Committee for remediation if needed". Create NEW ITEM 22-52 to add specific guidance for sample sizes in indirect using regression. Add sentence (editorially), to state that the new indirect method begins with MMPDS-2023. MATSSG noted that 20 heats would be very difficult and expensive and it would be easier to do 100 tests and do Direct. Vote on data size - 20/10/10. Passed. Only very few against. S-Basis requirement for DIRECT revised to 30/3/3. Agreed. Proposal: Replace the Indirect method. Reference the reduced ratio method in the legacy section. 2/3 need to pass. For: 31 - which passes. NEW ITEM 22-53 to review Table 9.2.4.1 and footnotes. Add editorial changes to MMPDS in other sections that reference the indirect method (per A. Elwell).
16-20	GTG	ETTG	2	9	Equivalence Testing Assuming Change in Process (From Item 11-40)	Agenda	Closed w no Action	D. Hall presented this agenda item. Recommend closing and use OSAT with a margin (legacy alloy procedure). Item 19-40 revises Section 9.4 legacy review. Item 22-21 creates a section for V2 CH10. There was discussion on the margin in the meeting.
19-40	GTG		1, 2	9	Review Section 9.4 Substantiation of Data	Agenda	60 Day Approval with changes	D. Hall presented this agenda item. Agreed changes: Delete sentence in 9.2.4.1 on the number of tests (170). Add after 30 samples... "for each applicable thickness range, grain direction, and product form ". Keep sentence in 2nd paragraph, "It is recommended that the test data... Section 9.2.5.1". Remove entire paragraph starting with sentence saying the S-Basis is an estimate of A-Basis. (2nd p after equation). Section 9.4.1 remove duplication starting from "This section defines to 9.4.2. (typo strep instead of step). (see pdf). Change 'design properties' to 'material allowables' multiple places. Change "at least 2 ksi..." to "greater than or equal to 2 ksi" where it appears. Fix flow chart figure to match new text. Editorially - make this table or bullet points for when to use 2ksi or 1ksi. See table in Chat. Additional grammar changes captured in pdf.

40th MMPDS Coordination Meeting Final Minutes

CLOSED AGENDA ITEMS

Item No	Responsible Group		HDBK Volume	Chpt	Title	Type	40th Action	40th Meeting Description
	Final	Initial						
21-04	GTG	ETTG	2	9	Section 9.1, 9.2, 9.3 for Volume II	Agenda	60 Day Approval with changes	D. Hall presented this agenda item. G. Bray (WMRT) noted that the extensometers were old wording. Make sure to get the updated correction.(see pdf) Section 9.1.5 Modify the end of the micrograph sentence . "...will be made accesable to HDBK users.." End of 9.1.6 last paragraph speaking to number of heats and lots depends on results of Item 15-36. Section 9.1.7.1 .S Thompson is concerned about "estimated A-Basis" phrase as it may lead to misuse. Stike sentence "Within these constraints... estimated A-Basis." Typo in 9.? on ASTM spec. (see pdf). Section 9.2.1.5 should be same as 9.2.1 on extensimeter. Original SS change to Class B-1 or better (remove Tuckermartens)" Strike 2nd sentence. (see pdf). Because AMS 7032 has been approved, Section 9.2.2.5 needs to be reviewed. Section 9.2.4 Table on C-Basis - see pdf (build cycles?) Table 9.2.4 change SS requirement from 6 lots to 3 to match other properties and fix matrix.
21-54	MTG		1	2	Clarification of Footnote "...Adequate Quality Control Testing"	Agenda	Approved and Closed	C. Shannon presented this agenda item. This item was discussed in ASG.
22-01	GTG		1		Review Use of Grain Direction and Orientation.	Agenda	Approved and Closed	C. Shannon presented this item.
22-02	FTG		1	8	Investigation of Remaining Materials of Table 8.1.2(b)	Agenda	60 Day Approval with changes	Add a footnote to the table to inform users that Columbium (Cb) and Niobium (Nb) are the same element.
22-04	GTG		1		Proper use of "Gage"	Agenda	Approved and Closed	C. Shannon presented this item.
22-07	GTG	ETTG	2	9	Update Tolerance Bound Figure in Section 9.2.4	Agenda	Approved w Changes and Closed	B. Krile presented this agenda item. A. Steevens pointed out some grammar comments (captured in CHAT). He suggests replacement of the word "created" in favor of "sampled from a single population" in the description of Figure 2

40th MMPDS Coordination Meeting Final Minutes

CLOSED AGENDA ITEMS

Item No	Responsible Group		HDBK Volume	Chpt	Title	Type	40th Action	40th Meeting Description
	Final	Initial						
22-08	GTG	ETTG	2	1	Chapter 1 for Volume II	Agenda/ Handout	60 Day Approval with changes	D. Hall presented this agenda item and updates in the handout. Add S-Basis to approved ABCD. Remove "cognizant" in multiple places (handout). Other editorial changes captured in pdf. (Attachment) S-Basis def. remove sentence "within those constraints..." See editorial corrections in Attachment pdf. Fix caption in Fig 1. remove tension and compression. Also remove it in the text referring to the figure. Make sure figure numbers and reference to figures are correct. Update Figure 1.4.6.(a) to use XYZ coordinates. (consider if the copyright to ASTM can be removed). Remove Fig 1.4.6(c) and related text. Fix caption for 1.4.6(b) removing shape of product. Remove "punch" and "blanking" shear historical paragraphs. Remove most of section 1.4.6.2. Revise section (ask D. Tummons (Boeing)). Replace 'as of this writing' with more definitive time, 'as of MMPDS-2023'. Figure 1.4.7.2(a) remove the round product form figure and remove reference to shape in the caption. Fix associated text. Delete most of text in 1.4.6 and 1.4.7 for this item and Open NEW ITEM 22-48 to cover these sections. Leave first sentence and ASTM reference and state something like this section will be updated. Section 1.4.9.2 editorial change as noted in pdf. Section 1.4.12. Fracture review and clean up editorially and open New Item 22-49 to cover additional changes. Open New Item 22-50 to add 1.4.15 and 1.4.16 to Vol 1. Open New Item 22-51 for 1.6 Review. At GTG it was decided to remove 1.4.14 on User Heat Treat. Update 'equivalency' and 'acceptance' language.
22-11	GTG	ASG	1	9	Directional Shear and Poisson Ratio Properties	Agenda	Approved w Changes and Closed	D. Tummons presented this agenda item in the ASG and GTG. ASG supported revisions. Chapter 9 will be continued as a NEW ITEM 22-54 for V1 and V2. Approve Chapters 1, 2, 3, and 5 with changes to fix the capitilization of "elastic modulus" and "modulus of rigidity". (They should not be capitilized.) Other changes were for Chapter 9 which will be in the new item. Since the requirement in 9.2.3.4.1 is beyond the reporting of the ASTM test for Poisson's ratio, it was decided to change from "must" to "should" and encourage ASTM to add plane and loading to the test spec. reporting sectopm. Discussed rewording (see Chat - G. Bray). Prior to equation 9.8.3.2, specify modulus is elastic modulus (see pdf).

40th MMPDS Coordination Meeting Final Minutes

CLOSED AGENDA ITEMS

Item No	Responsible Group		HDBK Volume	Chpt	Title	Type	40th Action	40th Meeting Description
	Final	Initial						
22-16	MTG		1	2	Addition of Final Heat Treatment Thickness Information	Agenda	60 Day Approval with changes	C. Shannon presented this agenda item. The assumption for MLX17 may be wrong. It may be a 2-inch bar, similar with what was sent to AFRL for testing. Approved all except MLX17. 60 Day on MLX17 - put "Unknown" and notify A&D.
22-19	MTG		1	3	Corrections to Fatigue Curves for 2024 Aluminum Alloys	Agenda	Approved and Closed	D. Hall presented this agenda item.
22-20	MTG		1	3	Correction to Fsu for 7050-T74511 Extrusion, AMS 4342	Agenda	Approved and Closed	C. Shannon presented this agenda item. Note that the temper designation was incorrect in the agenda 2nd paragraph.
22-21	GTG	ETTG	2	10	Sections 10.1 and 10.2: Introduction & One-Sample Acceptance Test	Agenda	Approved w Changes and Closed	D. Hall presented this agenda item. A. Steevens (Boeing) has a spelling error and some rewording (see Chat). In 10.2.3 revise "can be" to "shall be" and "historically MMPDS has used.... ", Delete next sentence. (see other minor changes in pdf). In 10.2.3 last paragraph, add "greater than or equal to" before 2 ksi. In the screen shot of the example, add the spec min. Will check for consistency and add table from A. Elwell.
22-22	GTG-F	FTG	1	1	Definition of "Joint Allowable"	Agenda	Approved and Closed	C. Reakes presented this item in the FTG. D. Hall presented it to the GTG for final approval.
22-24	GTG		1	1	Update Section 1.4.6 for Historic Pin Shear	Agenda	Approved w Changes and Closed	C. Shannon presented this agenda item. First red sentence, change "may be" to "may have been". (change 'that' to 'than')
22-26	GTG		1	9	Update Table Format for Issue and Last Revised Information	Agenda	Approved and Closed	C. Shannon presented this agenda item.
22-27	MTG		1	3	Revision of Edgewise Bearing Section and References	Agenda	60 Day Approval with changes	C. Shannon presented this agenda item. Changes were made to Section 3.1.2.1.1. Last sentence - change to "forgings are.." instead of 'is'. 3rd line - remove extra comma. Add new first sentence, "If data are unavailable for edgewise orientation reduction factors shall be applied." Table 1 - leave footnote in Table 3.7.10.0(c3) (highlighted in agenda). Table 2 - apply to all - including highlighted in list.
22-29	MTG		1	3	7160-T7651 Compression Stress-Strain Figure	Agenda	Approved w Changes and Closed	Fix figure to Long transverse and short transverse instead of long and short trans. Legend correct to 1.000 instead of 1.001 to match mechanical property table.
22-30	MTG		1	5	Stabilization of AMS 4916 for Ti-8Al-1Mo-1V	Agenda	Closed w no Action	D. Hall covered this Consent Agenda item in MTG. Same as 22-36. Close this item and use 22-36.
22-31	MTG		1	3	FCG Analysis for Al 2024 Sheet	Agenda	Approved w Changes and Closed	D. Hall presented this agenda item. Fix axis to include delta symbol. Fix Caption for figure (a) from sheet to plate. Confirm in minutes that test data met ASTM E647. Add specification number QQ-A-250/4 (determine current 4-digit).

40th MMPDS Coordination Meeting Final Minutes

CLOSED AGENDA ITEMS

Item No	Responsible Group		HDBK Volume	Chpt	Title	Type	40th Action	40th Meeting Description
	Final	Initial						
22-32	MTG		1	2	Update Table for AM-350 Stainless Steel	Agenda	60 Day Approval with changes	D. Hall covered this agenda item in MTG. The agenda included the elongation for annealed condition not SCT850. The correct elongation table (Table 3 in the specification) will be shown in the minutes for 60 Day review.
22-34	MTG		1	3	Stress Corrosion Cracking Resistance for 2297-T87 Aluminum Alloy Plate	Agenda	Approved and Closed	C. Shannon presented this agenda item. Approved pending publication of spec revision to increase SCC value. (There was a typo in agenda in title of Table 3.1.2.3.1(b)).
22-35	MTG		1	7	Thickness Revision to AMS 4598 Tubes (ToughMet 3)	Agenda	Approved and Closed	Consent Agenda. Note there was a typo in proposed 2nd bullet on thickness range. It should be 8.751 (not 8.251). Following the meeting it was confirmed that we do not need to re-analyze data for the reduced thickness range. The reduced thickness range only has the specification tensile minimums.
22-36	MTG		1	6	Stabilization of AMS 4916 for Ti-8Al-1Mo-1V Sheet, Strip, and Plate	Agenda	Approved and Closed	D. Hall covered this Consent Agenda item in MTG.
22-37	ETTG		2		Process Optimization and Material Allowables	Present.	Closed w no Action	Z. Simkin and A. Wang (Senvol) gave a presentation on application of machine learning. The slides will not be included in minutes.
22-40	MTG		1	3	Correction of CTE for 2027 Aluminum Alloy	Agenda	Approved and Closed	C. Shannon presented this agenda item. Note that the 12.5 is an average of the 4 temperature ranges.
22-42	MTG		1	3	Correction to 7040-T7451 Plate Derived Properties	Agenda	Approved and Closed	Approved to show the proposed corrections/changes to the table.
22-43	MTG		1	6	Specification Revision to Table 6.3.5.0(d) for 718 Forged Bar	Agenda	Approved and Closed	C. Shannon presented this Consent Agenda in MTG.
22-44	GCC		1		Consent Agenda 40th MMPDS GCC	Agenda	Closed w no Action	Each item was discussed during the appropriate Task Group session. This item is Closed w/No Action.

40th MMPDS Coordination Meeting Final Minutes

SORTED BY ITEM NUMBER

Item No	Responsible Group		HDBK Volume	Chpt	Title	Type	40th Action	40th Meeting Description
	Final	Initial						
04-21	FTG		1	8	Fastener Tables of Sunset Review Interest	On Hold	Continue	This item is on hold, pending items 12-105, 17-28
08-23	FTG		1	8	Sunset Review of Table 8.1.3.2.2(c), NAS1921C	On Hold	Continue	This item is on hold, pending items 12-105, 17-28
09-13	FTG		1	8	Sunset Review of Table 8.1.3.2.3(a), MS21140	On Hold	Continue	This item is on hold, pending items 12-105, 17-28
04-21	FTG		1	8	Fastener Tables of Sunset Review Interest	On Hold	Continue	This item is on hold, pending items 12-105, 17-28
08-23	FTG		1	8	Sunset Review of Table 8.1.3.2.2(c), NAS1921C	On Hold	Continue	This item is on hold, pending items 12-105, 17-28
09-13	FTG		1	8	Sunset Review of Table 8.1.3.2.3(a), MS21140	On Hold	Continue	This item is on hold, pending items 12-105, 17-28
11-05	MTG		1	1	AMS Coordination	Status	Continue	C. Shannon gave a status update. Recent activity will be included in the minutes.
11-38	FTG		1	8	Sunset Review of Flush Head, Mechanical Lock Spindle Blind Rivet Table 8.1.3.2.2(e) NAS 1921 M	On Hold	Continue	This item is on hold, pending items 12-105, 17-28
12-105	GTG-F	FTG	1	9	Modification to the Sunset Criteria Procedures	On Hold	Continue	This item is on hold, pending items 17-28
12-50	GTG-F	FTG	1	9	Evaluation of new Regression and Confidence Models for Lap Joint Tests	Agenda	Closed w no Action	The method proposed in Item 17-28 will be added to the Handbook. The method of this item is no longer needed.
12-89	MTG	PSG	1, 2		Target Materials for Propulsion Applications	Status	Continue	P. wheelock (Rolls-Royce) led discussion in PSG. L. Steele (Collins) and H. Oshino (IHI) agreed to Co-Chair group. Reminder, that this is not a Closed (Restricted) group. Companies are encouraged to send data.
13-34	MTG		1	5	Addition of AMS 4919 Ti-6-2-4-2 Plate Properties	Handout	Continue	C. Shannon presented this handout. Please let us know if you have data to contribute.
13-50	GTG		1, 2	9	ASTM Coordination	Status	Continue	S. Thompson (USAF) gave an update on ASTM E08, which is meeting end of October. Discussions on AM having to use non-standard test methods since there are no approved standard coupons for fatigue.
14-28	FTG		1	8	Sunset Review of Table 8.1.4.2(i), LGPL2SC-V Pin, 3SLC-C Collar in Clad 7075-T6	On Hold	Continue	This item is on hold, pending items 8-23, 12-105, 17-28

40th MMPDS Coordination Meeting Final Minutes

SORTED BY ITEM NUMBER

Item No	Responsible Group		HDBK Volume	Chpt	Title	Type	40th Action	40th Meeting Description
	Final	Initial						
15-13	MTG		1	multi	Clarification of Shear Orientation for Legacy Alloys	Agenda	Continue	C. Shannon presented this agenda item. Action on proposals: 1) approved, 2) approved, 3) approved, 4) approved, 5) yes - change footnote, 6) approved. Continue item to investigate additional tables.
15-19	GTG-F		1	9	Verification of Secondary Modulus Methods for Fasteners	Agenda	Continue	C. Reakes presented this item. ARTC Report 33 not located by AIA or FTG members. The ARTC report reference will not be added. Requested that FTG include tips in MMPDS for predicting target value for the 2ndary modulus prior to testing. Comments captured in presentaion.
15-36	GTG	ISG, GSG	1, 2	9	Modification of Indirect Analysis Equation	Agenda/ Handout	60 Day Approval with changes	B. Krile presented this agenda item. Discussed in MATSSG and GTG. Fix consistency in Table 9.2.4 for sample size showing indirect/reference for all applicable rows. Revise sentence when T99>T90. "If T99>T90, then discuss with the sponsor and present to the MMPDS Committee for remediation if needed". Create NEW ITEM 22-52 to add specific guidance for sample sizes in indirect using regression. Add sentence (editorially), to state that the new indirect method begins with MMPDS-2023. MATSSG noted that 20 heats would be very difficult and expensive and it would be easier to do 100 tests and do Direct. Vote on data size - 20/10/10. Passed. Only very few against. S-Basis requirement for DIRECT revised to 30/3/3. Agreed. Proposal: Replace the Indirect method. Reference the reduced ratio method in the legacy section. 2/3 need to pass. For: 31 - which passes. NEW ITEM 22-53 to review Table 9.2.4.1 and footnotes. Add editorial changes to MMPDS in other sections that reference the indirect method (per A. Elwell).
15-38	GTG		1	9	Reevaluation of Degrees of Freedom Calculation for Regression with Effect of Temperature	On Hold	Continue	No effort at this time. This item is on hold pending revision of the effect of temperature method.
16-12	FTG		1	8	Identifying Basis of Fastener Shear Strength on Remaining Tables	Handout	Continue	Several suppliers to provide data as noted in presentation. Battelle to analyze data when received.
16-13	FTG		1	8	Corrections to Table 8.1.3.2.2(c) NAS 1921C	On Hold	Continue	This item is on hold, pending items 8-23, 12-50, 12-105, 17-28
16-20	GTG	ETTG	2	9	Equivalence Testing Assuming Change in Process (From Item 11-40)	Agenda	Closed w no Action	D. Hall presented this agenda item. Recommend closing and use OSAT with a margin (legacy alloy procedure). Item 19-40 revises Section 9.4 legacy review. Item 22-21 creates a section for V2 CH10. There was discussion on the margin in the meeting.

40th MMPDS Coordination Meeting Final Minutes

SORTED BY ITEM NUMBER

Item No	Responsible Group		HDBK Volume	Chpt	Title	Type	40th Action	40th Meeting Description
	Final	Initial						
16-23	GTG		1	6	Re-evaluate Guidelines for Effect of Temperature Curves	On Hold	Continue	No effort at this time. This item is on hold pending revision of the effect of temperature method.
17-23	GTG		1	9	Legacy Alloy Review Strategy – Near Term	Status	Continue	D. Hall led discussion of this item. A General Agreement is being drafted for AMS specs to add periodic testing to new specifications. No response has been received from the email sent to attendees of the 39th meeting. Please complete the Excel form to identify data types you have and submit to Battelle.
17-28	GTG-F	FTG	1	9	Consideration of Origin in Multiple Regression Analysis for Joint Allowables	Agenda	Continue	The FTG approves of the method. An Agenda Item will be prepared for the 41st meeting to add content to Chapter 9.
17-45	MTG		1	3	Effect of Temperature Curves for 2395-T84 Extrusion	On Hold	Continue	No effort at this time. This item is on hold pending revision of the effect of temperature method.
17-52	GTG	FatWg	1	9	Review Section 9.6.1 - Load and Strain Control Fatigue	Status	Continue	D. Hall led discussion on this item. The focus is on load control first. Next meeting discuss what is missing and what should be deleted. Please send comments prior to the meeting. ASTM E08.04 subcommittee is planning on revising the fatigue statistical analysis standard E739 in near future.
17-56	MTG		1	3	FCG Analysis for 2397-T87 Plate	Status	Continue	D. Hall presented this item. Working on the analysis tool to complete this item. Plan to have this for the spring meeting.
17-61	GTG		1	9	Revising R-curve Requirement in Table 9.2.4	Status	Continue	D. Hall gave a status report. No updates at this time.
17-62	GTG	FatWg	1	9	Revising Fatigue Requirement in Table 9.2.4	Status	Continue	D. Hall led discussion on this item. Discussed some combination of number of tests and stress ratios. S. Thompson (USAF) noted that R. Rice determined that a minimum of 9 tests per stress per stress ratio is needed.
17-63	GTG	FatWg	1	9	Use of Box-Cox Transformation in the Fitting of Fatigue Data	Status	Continue	Continue
18-08	MTG		1	6	718 Investment Cast (AMS5383) Addition of Tensile A/B-basis and Elevated Temperature	Status	Continue	This item is being continued. The data supplier is trying to identify the casting thicknesses.
18-10	GTG	MATSSG	1	9	Data Requirements for Forgings	Agenda	Continue	C. Shannon presented this item discussed in MATSSG and ASG. Revise sentence to split forging and extruded shapes as circle size does not apply to forging. Remove "forging" from first sentence. Revise next sentence to "For forgings the cross sectional area from where the specimen was excised should be identified." Prepare final agenda for Spring.

40th MMPDS Coordination Meeting Final Minutes

SORTED BY ITEM NUMBER

Item No	Responsible Group		HDBK Volume	Chpt	Title	Type	40th Action	40th Meeting Description
	Final	Initial						
18-13	GTG		1	9	Guidelines for Exclusion of Low Secondary Property Test Values	On Hold	Continue	This item was on hold pending Item 15-36.
19-19	GTG	FatWg	1	9	Consideration of a new Equivalent Stress model for Load-Controlled Fatigue	On Hold	Continue	D. Hall led discussion on this item. This item has been on hold while improving the fatigue tool. Once the tool works, Battelle will try this equation.
19-25	GTG	ASG	1	9	Guidelines for Derived Properties for Legacy Alloys	Status	Continue	At the 37th meeting, it was decided to put this item on hold until Items 15-36 and 17-23 are resolved. Meanwhile, decisions will be made on a case-by-case basis.
19-34	GTG		1	9	Waive Requirement for Bearing and/or Shear Properties When Appropriate	Status	Continue	D. Hall led this discussion. Do we want a more concrete guideline, or continue with a case-by-case basis. GCC approved waiver request for an AM material based on its status as a Heat Resistant alloy. Primary interest is bearing. Change title to Waive Reqmts for Bearing When Appropriate
19-37	GTG-F	FTG	1	9	Establish a Guideline for Reinserting Chapter 8 Tables. (Solid Fasteners)	Agenda	Continue	FTG determined legacy review data from Chapters 2-7 should not be used for sunset review. Battelle to review sunset history to determine reason for the specific requirements.
19-38	ETTG		2		Process Intensive Materials & Technologies SDO Coordination	Status	Continue	D. Hall gave a status report on coordination with various groups.
19-40	GTG		1, 2	9	Review Section 9.4 Substantiation of Data	Agenda	60 Day Approval with changes	D. Hall presented this agenda item. Agreed changes: Delete sentence in 9.2.4.1 on the number of tests (170). Add after 30 samples... "for each applicable thickness range, grain direction, and product form ". Keep sentence in 2nd paragraph, "It is recommended that the test data... Section 9.2.5.1". Remove entire paragraph starting with sentence saying the S-Basis is an estimate of A-Basis. (2nd p after equation). Section 9.4.1 remove duplication starting from "This section defines to 9.4.2. (typo strep instead of step). (see pdf). Change 'design properties' to 'material allowables' multiple places. Change "at least 2 ksi..." to "greater than or equal to 2 ksi" where it appears. Fix flow chart figure to match new text. Editorially - make this table or bullet points for when to use 2ksi or 1ksi. See table in Chat. Additional grammar changes captured in pdf.
19-42	MTG		1	3	Confirmation of Design Properties of AMS 4202 for 7475-T7351 Aluminum Alloy Plate	Agenda	Continue	C. Shannon presented this item. See related GTG Items 19-40 and 22-25. Continue this item to consider changes at 2 ksi and 2 %.

40th MMPDS Coordination Meeting Final Minutes

SORTED BY ITEM NUMBER

Item No	Responsible Group		HDBK Volume	Chpt	Title	Type	40th Action	40th Meeting Description
	Final	Initial						
20-03	GTG		1	9	MMPDS Review & Approval Process	Status	Continue	D. Hall led discussion of this item. Agreed that the flowchart should be added to the HDBK. Change Handbook Process to MMPDS Process. Some discussion on colors making it hard to read text.
20-04	GTG	ETTG	2		V2: MMPDS Review & Approval Process	Status	Continue	D. Hall presented the process flow chart for V2.
20-09	MTG		1	3	Expansion of Thickness Range for 6061-T651 Plate	Status	Continue	The material spec is awaiting changes to tolerances in ANSI H35.2 which will be balloted later in the year. L and ST data are requested to extend the thickness range. (LT data already analyzed.)
20-10	MTG		1	3	Upgrade of Secondary Properties of 7075-T76511 Aluminum Alloy Extrusions	Status	Continue	Waiting on remainder of data. S. Thompson noted that the testing window is closing and that they need to get the data from Kaiser very soon.
20-13	ETTG		2		CMH-17/MMPDS Coordination & Collaboration	Status	Continue	D. Hall gave a status report. MMPDS & CMH-17 programs monitor each other's programs and share information useful to the other.
20-16	GTG	ETTG	2		MMPDS & Additive Metals - Program Plan	Agenda	Continue	D. Hall presented this agenda item. Jay B. expressed concern on having duplication in Ch1 and 9 in Volume I and 2. M. Gorelik (FAA) reminded the ET TG that there is not a government budget for generating data for V2. ET TG is relying on users to send data.
20-29	GTG		1, 2	9	Analysis of Bearing and Shear Properties with the new Indirect Method	Status	Continue	B. Krile gave a brief description of this item. Following acceptance of the new indirect method in Item 15-36, it will be possible to evaluate if this agenda item can expand the use case of indirect so that the reference property may be a shear or bearing from direct analysis, rather than a tensile, when the derived property of shear or bearing is desired.
20-30	GTG	ETTG	2	9	Components of Variance Analysis of AM, Cast, & Wrought Ti 6-4	Status	Continue	This item was not discussed due to lack of time. Request to consider multiple sources.
20-35	MTG		1	multi	Alloys Requested for Analysis	Status	Continue	D. Hall reviewed the top priorities from the 37th Agenda. Please send data!! Update and include in minutes.
20-36	MTG		1	multi	Request for Secondary Property Data	Status	Continue	D. Hall presented this item. Please send any non-lot release data. Battelle will accumulate and compile data. Battelle has a spreadsheet companies can complete to let us know if there are multiple companies that have data on the same material.
21-01	GTG	ETTG	2	1	Foreword to Volume II	Agenda	Continue	W. Sippel, FAA, discussed the Foreword. They are still finalizing. A copy will not be included in the minutes.
21-02	GTG	ETTG	2	9	Section 9.5 & 9.6 for Volume II	Status	Continue	D. Hall gave a status report.

40th MMPDS Coordination Meeting Final Minutes

SORTED BY ITEM NUMBER

Item No	Responsible Group		HDBK Volume	Chpt	Title	Type	40th Action	40th Meeting Description
	Final	Initial						
21-04	GTG	ETTG	2	9	Section 9.1, 9.2, 9.3 for Volume II	Agenda	60 Day Approval with changes	D. Hall presented this agenda item. G. Bray (WMRT) noted that the extensometers were old wording. Make sure to get the updated correction.(see pdf) Section 9.1.5 Modify the end of the micrograph sentence . "...will be made accesable to HDBK users.." End of 9.1.6 last paragraph speaking to number of heats and lots depends on results of Item 15-36. Section 9.1.7.1 .S Thompson is concerned about "estimated A-Basis" phrase as it may lead to misuse. Stike sentence "Within these constraints... estimated A-Basis." Typo in 9.? on ASTM spec. (see pdf). Section 9.2.1.5 should be same as 9.2.1 on extensimeter. Original SS change to Class B-1 or better (remove Tuckermartens)" Strike 2nd sentence. (see pdf). Because AMS 7032 has been approved, Section 9.2.2.5 needs to be reviewed. Section 9.2.4 Table on C-Basis - see pdf (build cycles?) Table 9.2.4 change SS requirement from 6 lots to 3 to match other properties and fix matrix.
21-10	FTG		1	8	Fatigue of PH13-8Mo Bolts	Agenda	Continue	C. Reakes discussed this item in FTG. 1) Need to add AMS spec for the base material, 2) Clarify that 626-66 is modified to make it from PH13-8Mo, 3) Modify NAS4003 note (see ppt), 4) Include max tensile strength as well as min. Also discussed in FatWg. Multiple discussions on leaving the R9 and R6 curves out. Discussions around leaving data but intentionally not showing curves.
21-13	MTG		1	5	Review of Section 5.5.3 Ti-10V-2Fe-3Al Comments and Properties	Agenda	Continue	C. Shannon presented this item. Please review this and let Battelle know if you have any comments. A final will be prepared for the spring meeting.
21-18	ETTG		2		Updates from V2WG Sub-teams	Status	Continue	D. Hall and team leads gave status reports on the DGA, M&M, C&Q, and C&D sub-teams.
21-20	GTG	ETTG	2	9	Microstructural Submittal Requirements	Handout	Continue	S. Cordner led discussion of this item. Looking at breaking down by process (i.e. LPBF, LP-DED, LW-DED, welding, etc), having a standard metallurgical sample for each process, including min cross-sectional area, providing min and max magnifications, specifying etching and not etched, and specifying a limit of how close the sample can be it other parts in the build (Example: for AM LPBF: do not print anything else within 1") . This is discussed in the M&M working group.
21-40	GTG	ETTG	2		Impact of Powder Re-use on AMS7000 625 LPBF	Status	Continue	This item was not discussed due to lack of time.

40th MMPDS Coordination Meeting Final Minutes

SORTED BY ITEM NUMBER

Item No	Responsible Group		HDBK Volume	Chpt	Title	Type	40th Action	40th Meeting Description
	Final	Initial						
21-42	MTG		1	6	Update for Haynes 230 Strength vs. Temperature curves	Status	Continue	D. Hall gave a status report. There were differences in the elevated temperature curves and stress strain curves. An agenda will be prepared for the Spring meeting. Please let Battelle know if you have data.
21-43	GTG		1	9	MMPDS use of ASTM E3076 for Slope Determination	Agenda	Continue	C. Shannon presented this agenda item. Change from 10.0% to 10%. Add language to Section 9.3 about not filtering data.
21-45	MTG		1	5	Analysis of FCGR and Load Control Fatigue data for Ti 6-2-4-2 per AMS4919	Status	Continue	D. Hall gave a status report. We have recieved the data. An agenda will be presented in the Spring.
21-46	ETTG		2	10	MMPDS Vol 2, Certification & Qualification "Further Showing"	Status	Continue	There was insufficient time to discuss this item in the ETTG, but L. Crisler (Textron) and J. Stillinger (FAA) gave a status report following the GTG. A copy of the slides will be included in the minutes.
21-48	GTG		1	9	Periodic Testing Options for Specifications	Status	Continue	D. Hall led discussion of this item. A General Agreement is being drafted for AMS Metals specs to add periodic testing to new specifications. Will also bring up to AMS AM.
21-52	MTG	ASG	1	3	Removal of 7075-T6xxx Design Allowables for Thick Sections	Agenda	Continue	C. Shannon presented this agenda item discussed in ASG. ASG would like to remove the values, but keep the columns and add a note "This alloy should not be used in design due to SCC.... " An agenda will be prepared for the Spring meeting. Would apply to various product forms. Some tables may be removed. Full breakdown will be provided in the prepared agenda.
21-53	ETTG		2	6	Analysis of 718 Laser Powder Bed Fusion per AMS7038	Status	Continue	W. Hasting gave a presentation. Asked to waive mandatory room temperature shear and bearing properties. Will do testing for compression and room temp modulus. GCC approved this waiver request with the additon of compression and room temperature modulus.
21-54	MTG		1	2	Clarification of Footnote "...Adequate Quality Control Testing"	Agenda	Approved and Closed	C. Shannon presented this agenda item. This item was discussed in ASG.
22-01	GTG		1		Review Use of Grain Direction and Orientation.	Agenda	Approved and Closed	C. Shannon presented this item.
22-02	FTG		1	8	Investigation of Remaining Materials of Table 8.1.2(b)	Agenda	60 Day Approval with changes	Add a footnote to the table to inform users that Columbium (Cb) and Niobium (Nb) are the same element.

40th MMPDS Coordination Meeting Final Minutes

SORTED BY ITEM NUMBER

Item No	Responsible Group		HDBK Volume	Chpt	Title	Type	40th Action	40th Meeting Description
	Final	Initial						
22-03	FTG		1	8	Fasteners Requested for Analysis	Status	Continue	
22-04	GTG		1		Proper use of "Gage"	Agenda	Approved and Closed	C. Shannon presented this item.
22-05	MTG		1	5	Revise Fracture Toughness Table for Titanium Alloys	Status	Continue	D. Hall presented led the discussion on this item. It was suggested that the Specification be identified in all fracture toughness tables (either expand scope of this item or new GTG item). This item will be moved to GTG.
22-07	GTG	ETTG	2	9	Update Tolerance Bound Figure in Section 9.2.4	Agenda	Approved w Changes and Closed	B. Krile presented this agenda item. A. Steevens pointed out some grammar comments (captured in CHAT). He suggests replacement of the word "created" in favor of "sampled from a single population" in the description of Figure 2

40th MMPDS Coordination Meeting Final Minutes

SORTED BY ITEM NUMBER

Item No	Responsible Group		HDBK Volume	Chpt	Title	Type	40th Action	40th Meeting Description
	Final	Initial						
22-08	GTG	ETTG	2	1	Chapter 1 for Volume II	Agenda/ Handout	60 Day Approval with changes	<p>D. Hall presented this agenda item and updates in the handout. Add S-Basis to approved ABCD. Remove "cognizant" in multiple places (handout). Other editorial changes captured in pdf. (Attachment) S-Basis def. remove sentence "within those constraints..." See editorial corrections in Attachment pdf. Fix caption in Fig 1. remove tension and compression. Also remove it in the text referring to the figure. Make sure figure numbers and reference to figures are correct. Update Figure 1.4.6.(a) to use XYZ coordinates. (consider if the copyright to ASTM can be removed). Remove Fig 1.4.6(c) and related text. Fix caption for 1.4.6(b) removing shape of product. Remove "punch" and "blanking" shear historical paragraphs. Remove most of section 1.4.6.2. Revise section (ask D. Tummons (Boeing)). Replace 'as of this writing' with more definitive time, 'as of MMPDS-2023'. Figure 1.4.7.2(a) remove the round product form figure and remove reference to shape in the caption. Fix associated text. Delete most of text in 1.4.6 and 1.4.7 for this item and Open NEW ITEM 22-48 to cover these sections. Leave first sentence and ASTM reference and state something like this section will be updated. Section 1.4.9.2 editorial change as noted in pdf. Section 1.4.12. Fracture review and clean up editorially and open New Item 22-49 to cover additional changes. Open New Item 22-50 to add 1.4.15 and 1.4.16 to Vol 1. Open New Item 22-51 for 1.6 Review. At GTG it was decided to remove 1.4.14 on User Heat Treat. Update 'equivalency' and 'acceptance' language.</p>
22-11	GTG	ASG	1	9	Directional Shear and Poisson Ratio Properties	Agenda	Approved w Changes and Closed	<p>D. Tummons presented this agenda item in the ASG and GTG. ASG supported revisions. Chapter 9 will be continued as a NEW ITEM 22-54 for V1 and V2. Approve Chapters 1, 2, 3, and 5 with changes to fix the capitalization of "elastic modulus" and "modulus of rigidity". (They should not be capitalized.) Other changes were for Chapter 9 which will be in the new item. Since the requirement in 9.2.3.4.1 is beyond the reporting of the ASTM test for Poisson's ratio, it was decided to change from "must" to "should" and encourage ASTM to add plane and loading to the test spec. reporting sectopm. Discussed rewording (see Chat - G. Bray). Prior to equation 9.8.3.2, specify modulus is elastic modulus (see pdf).</p>

40th MMPDS Coordination Meeting Final Minutes

SORTED BY ITEM NUMBER

Item No	Responsible Group		HDBK Volume	Chpt	Title	Type	40th Action	40th Meeting Description
	Final	Initial						
22-13	GTG	ETTG	2	9	Considerations for the Development of Design Values	Status	Continue	This item was not discussed due to lack of time.
22-15	FTG		1	8	Test plan for Fastener MS20426AD in 2024-T42	Handout	Continue	C. Reakes presented this Handout. 1) Design a test plan to extend the table, 2) Clarify paragraph that lot release data is undriven rivets.
22-16	MTG		1	2	Addition of Final Heat Treatment Thickness Information	Agenda	60 Day Approval with changes	C. Shannon presented this agenda item. The assumption for MLX17 may be wrong. It may be a 2-inch bar, similar with what was sent to AFRL for testing. Approved all except MLX17. 60 Day on MLX17 - put "Unknown" and notify A&D.
22-18	GTG	ETTG	2	9	Section 9.2.1.5: Stress-Strain Properties	Agenda	Continue	The section was included in 21-04, but will be kept open for revision of this section.
22-19	MTG		1	3	Corrections to Fatigue Curves for 2024 Aluminum Alloys	Agenda	Approved and Closed	D. Hall presented this agenda item.
22-20	MTG		1	3	Correction to Fsu for 7050-T74511 Extrusion, AMS 4342	Agenda	Approved and Closed	C. Shannon presented this agenda item. Note that the temper designation was incorrect in the agenda 2nd paragraph.
22-21	GTG	ETTG	2	10	Sections 10.1 and 10.2: Introduction & One-Sample Acceptance Test	Agenda	Approved w Changes and Closed	D. Hall presented this agenda item. A. Steevens (Boeing) has a spelling error and some rewording (see Chat). In 10.2.3 revise "can be" to "shall be" and "historically MMPDS has used.... ", Delete next sentence. (see other minor changes in pdf). In 10.2.3 last paragraph, add "greater than or equal to" before 2 ksi. In the screen shot of the example, add the spec min. Will check for consistency and add table from A. Elwell
22-22	GTG-F	FTG	1	1	Definition of "Joint Allowable"	Agenda	Approved and Closed	C. Reakes presented this item in the FTG. D. Hall presented it to the GTG for final approval.
22-23	GTG		1, 2		Clarify use of "Alloy" and "Product"	Status	Continue	C. Shannon led a discussion on this item. Lower priority, will do sections at a time.
22-24	GTG		1	1	Update Section 1.4.6 for Historic Pin Shear	Agenda	Approved w Changes and Closed	C. Shannon presented this agenda item. First red sentence, change "may be" to "may have been". (change 'that' to 'than')
22-25	GTG		1	9	Clarify Legacy Alloy Review Guidelines	Agenda	Continue	C. Shannon presented this agenda item. Change "beyond" to "above" in 2 places. Fix 1st sentence remove "significant" for increasing to spec min.

40th MMPDS Coordination Meeting Final Minutes

SORTED BY ITEM NUMBER

Item No	Responsible Group		HDBK Volume	Chpt	Title	Type	40th Action	40th Meeting Description
	Final	Initial						
22-26	GTG		1	9	Update Table Format for Issue and Last Revised Information	Agenda	Approved and Closed	C. Shannon presented this agenda item.
22-27	MTG		1	3	Revision of Edgewise Bearing Section and References	Agenda	60 Day Approval with changes	C. Shannon presented this agenda item. Changes were made to Section 3.1.2.1.1. Last sentence - change to "forgings are.." instead of 'is'. 3rd line - remove extra comma. Add new first sentence, "If data are unavailable for edgewise orientation reduction factors shall be applied." Table 1 - leave footnote in Table 3.7.10.0(c3) (highlighted in agenda). Table 2 - apply to all - including highlighted in list.
22-28	MTG	ASG	1	3	Addition of SCC Resistance Caution	Agenda	Continue	C. Shannon presented this agenda item which was discussed in the ASG. ASG would like the cautionary statement (in Agenda) on the temper to apply to the entire table (for alloys listed in 3.1.2.1.1) even when there are no ST data. Requested to add to cautionary statement "and may require further showing". Open New Item 22-46 to get recent data. Open New Item 22-47 to revise the introductory section for 2014 alloy.
22-29	MTG		1	3	7160-T7651 Compression Stress-Strain Figure	Agenda	Approved w Changes and Closed	Fix figure to Long transverse and short transverse instead of long and short trans. Legend correct to 1.000 instead of 1.001 to match mechanical property table.
22-30	MTG		1	5	Stabilization of AMS 4916 for Ti-8Al-1Mo-1V	Agenda	Closed w no Action	D. Hall covered this Consent Agenda item in MTG. Same as 22-36. Close this item and use 22-36.
22-31	MTG		1	3	FCG Analysis for AI 2024 Sheet	Agenda	Approved w Changes and Closed	D. Hall presented this agenda item. Fix axis to include delta symbol. Fix Caption for figure (a) from sheet to plate. Confirm in minutes that test data met ASTM E647. Add specification number QQ-A-250/4 (determine current 4-digit).
22-32	MTG		1	2	Update Table for AM-350 Stainless Steel	Agenda	60 Day Approval with changes	D. Hall covered this agenda item in MTG. The agenda included the elongation for annealed condition not SCT850. The correct elongation table (Table 3 in the specification) will be shown in the minutes for 60 Day review.
22-33	GTG	ETTG	2	9	Microstructure Information Accessibility for MMPDS, V2	Status	Continue	D. Hall lead discussion of this item.

40th MMPDS Coordination Meeting Final Minutes

SORTED BY ITEM NUMBER

Item No	Responsible Group		HDBK Volume	Chpt	Title	Type	40th Action	40th Meeting Description
	Final	Initial						
22-34	MTG		1	3	Stress Corrosion Cracking Resistance for 2297-T87 Aluminum Alloy Plate	Agenda	Approved and Closed	C. Shannon presented this agenda item. Approved pending publication of spec revision to increase SCC value. (There was a typo in agenda in title of Table 3.1.2.3.1(b))
22-35	MTG		1	7	Thickness Revision to AMS 4598 Tubes (ToughMet 3)	Agenda	Approved and Closed	Consent Agenda. Note there was a typo in proposed 2nd bullet on thickness range. It should be 8.751 (not 8.251). Following the meeting it was confirmed that we do not need to re-analyze data for the reduced thickness range. The reduced thickness range only has the specification tensile minimums.
22-36	MTG		1	6	Stabilization of AMS 4916 for Ti-8Al-1Mo-1V Sheet, Strip, and Plate	Agenda	Approved and Closed	D. Hall covered this Consent Agenda item in MTG.
22-37	ETT		2		Process Optimization and Material Allowables	Present.	Closed w no Action	Z. Simkin and A. Wang (Senvol) gave a presentation on application of machine learning. The slides will not be included in minutes.
22-38	GTG-F	FTG	1	8	Guidelines for Re-Inserting Chapter 8 Tables (Blind Fasteners)	Agenda	Continue	C. Reakes presented this agenda item. It was agreed to put it on hold until Item 19-37 is closed.
22-39	GTG-F	FTG	1	1	Clarification of Joint Table Applications in Chapter 1	Agenda	Continue	C. Reakes presented this Agenda. Text is to be changed to include discussion on influence factors in design values vs. joint allowables.
22-40	MTG		1	3	Correction of CTE for 2027 Aluminum Alloy	Agenda	Approved and Closed	C. Shannon presented this agenda item. Note that the 12.5 is an average of the 4 temperature ranges.
22-41	GTG-F	FTG	1	8	Investigate usage of terms A-Basis and B-Basis in Chapter 8	Status	Continue	
22-42	MTG		1	3	Correction to 7040-T7451 Plate Derived Properties	Agenda	Approved and Closed	Approved to show the proposed corrections/changes to the table.
22-43	MTG		1	6	Specification Revision to Table 6.3.5.0(d) for 718 Forged Bar	Agenda	Approved and Closed	C. Shannon presented this Consent Agenda in MTG.
22-44	GCC		1		Consent Agenda 40th MMPDS GCC	Agenda	Closed w no Action	Each item was discussed during the appropriate Task Group session. This item is Closed w/No Action.
22-45	FTG	GTG-F	1	multi	Ch. 1, Ch. 8, and Ch. 9 Changes Supporting Fatigue of Bolts	Handout	Continue	C. Reakes presented this item along with 21-10. The initial draft will be split into appropriate sections for Ch. 1, Ch. 8 and Ch. 9.
22-46	MTG		1	3	Update Stress Corrosion Data for Tables in 3.1.2		New	New item from 22-28 to collect recent SCC data to update Tables in 3.1.2.3.1.1.
22-47	MTG		1	3	Update Introductory Section for 2014 Alloy		New	New item from 22-28 to update intro section, specifically the SCC section.

40th MMPDS Coordination Meeting Final Minutes

SORTED BY ITEM NUMBER

Item No	Responsible Group		HDBK Volume	Chpt	Title	Type	40th Action	40th Meeting Description
	Final	Initial						
22-48	GTG	ETTG	2	1	Addition of Shear and Bearing Sections in V2 Chapter 1 (1.4.6 and 1.4.7)		New	This is from Item 22-08. The purpose is to totally revise Sections 1.4.6 and 1.4.7 for V2.
22-49	GTG	ETTG	2	1	Review of Section 1.4.12 Fracture for V2		New	This is from Item 22-08. The purpose is to do a review of this section for AM.
22-50	GTG		1	1	Addition of Sections on Thermal Properties and Influence Factors to Chapter 1 V1.		New	This is from Item 22-08. Add Sections 1.4.15 Thermal Properties and Section 1.4.16 Influence Factors to Volume 1, Chapter 1. A review of this section was requested regarding equivalence vs. acceptance.
22-51	GTG	ETTG	2	1	Review of Section 1.6 Validation in V2		New	This is from Item 22-08. A review of this section was requested. (Is this both V1 and V2?)
22-52	GTG		1, 2	9	New Indirect Method with Regression		New	This is from Item 15-36. Request to include additional guidance on balance of sample size and total sample size requirements for new indirect analysis with regression.
22-53	GTG		1, 2	9	Review of Table 9.2.4.1		New	This is from Item 15-36. Request to review table and footnote to assure that changes from 15-36 do not result in loss of guidance/requirements.
22-54	GTG		1, 2	9	Revision of Shear Modulus Sections in Chapter 9 for V1 and V2		New	This item is from Item 22-11 for changes in Chapter 9.
22-55	GTG		1, 2	9	Examples to Clarify Table 9.4.2.1	Agenda	New	This item is from Item 22-11 for changes in Chapter 9.