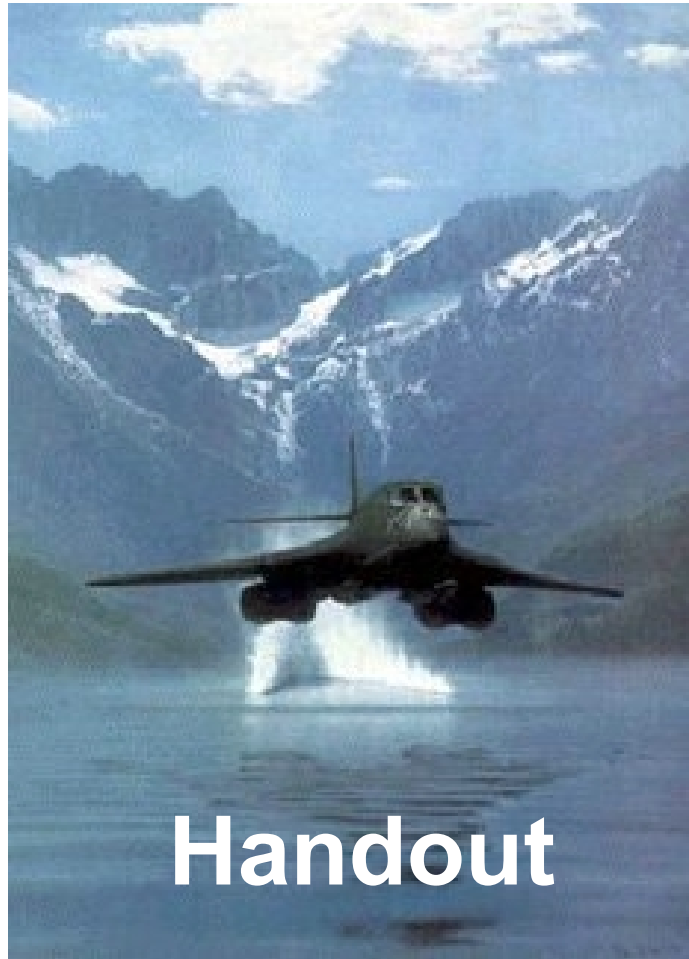


# **MIL-HDBK-5**

## **98<sup>th</sup> Coordination Meeting**



October 18-21, 1999  
Raleigh-Durham, North Carolina

## Meeting Times and Locations

### Monday, 18 October

10:15 – 12:00 pm	Airframer Steering Group	Oakwood
1:15 – 4:30 pm	Industry Steering Group	Hayes Barton & Cameron
3:15 – 4:30 pm	Government Steering Group	Oakwood
4:30 – 6:00 pm	Joint Industry Steering Group & Government Steering Group	Hayes Barton & Cameron

### Tuesday, 19 October

8:15 – 10:00 am	Statistics Working Group	Hayes Barton & Cameron
10:15 – 4:30 pm	Guidelines Task Group	Hayes Barton & Cameron
4:30 - 6:00 pm	Demonstration of Battelle's Website of MIL-HDBK-5	Hayes Barton & Cameron
7:00 - 9:30 pm	Government/Industry Steering Group on Titanium Castings for Airframe Structures	Hayes Barton & Cameron

### Wednesday, 20 October

8:30 – 10:00 am	Die Forging Working Group	Hayes Barton & Cameron
8:15 – 10:00 am	Joint Fastener Industry Working Group and Fastener Task Group	Oakwood & Mordecai
10:15 – 4:30 pm	Materials Task Group	Hayes Barton & Cameron
10:15 – 3:00 pm	Fastener Industry Working Group	Oakwood & Mordecai
10:15 – 3:00 pm	Fastener Task Group	Brentwood
3:15 – 4:30 pm	Joint Fastener Industry Working Group and Fastener Task Group	Oakwood & Mordecai

**Thursday, 21 October**

8:15 – 12:00 pm	MIL-HDBK-5 Coordination Group Meeting	Hayes Barton, Cameron, Mordecai, & Oakwood
1:15 – 4:30 pm	NASM – 1312	Hayes Barton, Cameron, Mordecai, & Oakwood

## List of Enclosures

<b>Agenda</b> for the 98 <sup>h</sup> MIL-HDBK-5 Coordination Meeting .....	7
<b>Item No. 97-5.</b> A- and B-Basis and Derived Properties for 7050-T7451 Aluminum Alloy Plate 6.001 to 8.000 Inches .....	15
<b>Item No. 98-2.</b> Design Properties for Russian Alloy 1163-T7 .....	47
<b>No Item No.</b> Incorporation of Fatigue Data on 7050-T7451 Thick Plate Into MIL-HDBK-5 .....	53
<b>No Item No.</b> Design Properties for Russian Alloy VT-16 Rod.....	61
<b>No Item No.</b> Typical Properties for HAYNES® 230® Sheet, Plate, and Bar .....	67
<b>Item No. 95-37.</b> Static Joint Strength of AHG AL905 100 Degree Flush Head 7050 Rivets in Clad 2024-T3 Sheet.....	79
<b>Item No. 99-1.</b> Proposed Modifications to Figure 9.2.6 – Procedure for Computation of $T_{99}$ and $T_{90}$ Values.....	107
<b>No Item No.</b> Significant Regressions with Significant Lack of Fit.....	111
<b>No Item No.</b> Regression for Skewed Data .....	113
<b>Item No. 98-7.</b> Complete Restructuring of Chapter9 Guidelines to Improve Usability.....	115
<b>No Item No.</b> Definitions Plus .....	117

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## **98<sup>th</sup> MIL-HDBK-5 COORDINATION MEETING**

DATE: October 21, 1999  
PLACE: Raleigh-Durham, North Carolina  
TIME: 8:15 a.m.

- I. Introduction of Attendees
- II. Chairman's Remarks
- III. Approval of the 97<sup>th</sup> Meeting Minutes
- IV. General Discussion Items
  - A. Retirements/Announcements
  - B. Special Presentations
  - C. ISG Status Report
- V. MIL-HDBK-5 Agenda
- VI. MIL-HDBK-5 Wrap Up Discussions
  - next meeting location (Fall 01)
  - timetable for scheduling of subsequent meetings
- VII. MIL-STD-1312 Meeting

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(Note: The attachments previously mailed with the agenda are not included in this handout.)

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**Agenda  
for the  
98<sup>th</sup> MIL-HDBK-5 Coordination Meeting  
to be held in  
Raleigh, North Carolina  
October 18-21, 1999**

**CHAPTER 1. GENERAL**

- No Item No.      **AMS Coordination. (GCC)** W. Benson, Battelle, will present a brief summary of SAE/AMS activities for presentation at the meeting.
- No Item No.      **Meetings of Potential Interest to MIL-HDBK-5 Coordination Members. (GCC)** W. Benson will review the list of current meetings.
- No Item No.      **Cancellation of Government Specifications and Subsequent Replacement Specifications. (GCC)** W. Benson will present a status report at the meeting.
- No Item No.      **Collection of Additional Fatigue, Fatigue Crack Growth, and Fracture Toughness Data. (GCC)** R. Rice, Battelle, will present a status report.
- No Item No.      **Special Presentation. (GCC)** R. Seeley, Haynes International, will give a presentation on ASME international materials acceptance procedures. Historically, the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code has used the ASTM materials specifications for incorporation of various materials into the ASME Code. In the last five years or so, there have been a number of requests to incorporate non-ASTM specifications into the Code. In response to these growing requests the Subgroup on International Materials Specifications was formed. This Subgroup has developed the necessary criteria for acceptance of non-ASTM material specifications and the ASME B&PV Code has accepted a number of these specifications. The criteria for acceptance and the general procedure for incorporation of non-ASTM material specifications into the Code will be described.
- No Item No.      **PMP Handbook Overview. (GCC)** J. Jackson, Battelle, will give a brief overview of the Preliminary Material Properties Handbook.
- No Item No.      **Discussion of ASTM Reference Standards. (GCC)** T. Kilinski, Battelle, will present a status report at the meeting.

- No Item No. **Industrial Steering Group. (GCC)** R. Rice will present a status report on ISG supported activities.
- No Item No. **Guidelines Task Group. (GTG)** All items marked (GTG) will be reviewed in the Guidelines Task Group meeting, which will be held on Tuesday, October 19, beginning at 10:15 am.
- No Item No. **Materials Task Group. (MTG)** All items marked (MTG) will be reviewed in the Materials Task Group meeting, which will be held on Wednesday, October 20, beginning at 8:15 am.
- No Item No. **Statistics Working Group. (SWG)** All items marked (SWG) will be reviewed in the Statistics Working Group meeting, which will be held on Tuesday, October 19, beginning at 8:15 am.

## CHAPTER 2. STEEL ALLOYS

- Item 98-10 **A- and B-Basis Properties for AerMet 100 (280 ksi). (MTG)** J. Jackson will present a status report at the meeting.

## CHAPTER 3. ALUMINUM ALLOYS

- No Item No. **Die Forging Working Group. (DFWG)** All items marked (DFWG) will be presented at the Die Forging Working Group meeting, which will be held on Wednesday, October 20, beginning at 8:15 am. See enclosed agenda.
- No Item No. **Special Presentation. (GCC)** P. Lequeu, Pechiney Rhenalu, will give a presentation on Pechiney aircraft materials develop activities. See enclosed attachment.
- No Item No. **Special Presentation. (MTG)** P. Brouwer, Alcoa, Inc., will give a presentation on 7055-T7X Replacement Products for 7178-7075-T6 Aluminum Alloys.
- Item 95-28 **Review of the Fracture Toughness Tables in Chapter 3. (MTG)**  
R. Rice will present a status report.
- Item 97-5 **A- and B-Basis and Derived Properties for 7050-T7451 Aluminum Alloy Plate, 6.001 to 8.000 inches. (MTG)** W. Benson will review a handout.
- Item 98-2 **Design Properties for Russian Alloy 1163-T7. (MTG)** J. Jackson will review a handout.

- Item 98-14      **A- and B-Basis Tensile Properties for 7150-T7751 Aluminum Alloy Plate. (MTG)** J. Jackson will present a status report.
- Item 98-15      **A- and B-Basis Tensile Properties for 7150-T7751 Aluminum Alloy Extrusions. (MTG)** J. Jackson will provide a status report.
- Item 98-16      **A- and B-Basis Tensile Properties for 7050-T74 Aluminum Alloy Die Forgings. (MTG)** W. Benson will provide a status report.
- Item 98-17      **A- and B-Basis Tensile Properties for 7050-T7452 Aluminum Alloy Die Forgings. (MTG)** W. Benson will present the attached agenda item.
- Item 98-18      **Clad 2524-T3 Sheet and Plate Typical Stress-Strain Curves. (MTG)** R. Rice will present a status report.
- Item 98-23      **Collection of Plane-Stress Fracture Toughness Data. (MTG)** R. Rice will present a status report.
- No Item No.      **Precision Modulus Procedure. (GTG)** T. Kilinski to give a status report. It is reasonably certain that ASTM E28 Committee will not endorse this procedure as either a stand-alone test method, or as an appendix to the existing elastic modulus (EXXX) method. Tom will discuss the possibility of incorporating this test method into a guideline within MIL-HDBK-5.
- No Item No.      **Incorporation of Fatigue Data on 7050-T7451 Thick Plate into MIL-HDBK-5. (MTG)** R. Rice will review a handout.

#### CHAPTER 4. MAGNESIUM ALLOYS

No items to present.

#### CHAPTER 5. TITANIUM ALLOYS

- No Item No.      **Special Presentation. (GCC)** T. Bayha, Howmet, will give a presentation on an allowables development effort on Ti-6Al-4V castings.
- No Item No.      **Typical Properties for Russian Alloy VT-16. (MTG)** J. Jackson will present a handout.

#### CHAPTER 6. HEAT RESISTANT ALLOYS

- No Item No.      **Typical Properties for Haynes 230 Sheet, Bar, and Plate. (MTG)** J. Jackson will present a handout.

## CHAPTER 7. MISCELLANEOUS ALLOYS AND HYBRID MATERIALS

- Item 95-35      **A- and B-Basis and Derived Properties Program for 6092/SiC/25p-T6P Particulate Extrusion. (MTG)** J. Jackson to present a status report.
- Item 95-36      **A- and B-Basis and Derived Properties Program for 6092/SiC/17.5p-T6P Particulate Reinforced Extrusion. (MTG)** J. Jackson will present a status report.
- Item 96-19      **A- and B-Basis and Derived Properties Program for 6092/SiC/17.5p-T6P Reinforced Rolled Sheet. (MTG)** J. Jackson to present a status report.

## CHAPTER 8. STRUCTURAL JOINTS

- Item 95-37      **Static Joint Strength of AHG AL905 100-Degree Flush Head 7050 Rivets in Clad 2024-T3 Sheet. (FTG)** S. Keener, Boeing Long Beach, will present a handout on the analysis of this item.
- No Item No.      **Fastener Industry Working Group. (FIWG)** The FIWG meeting items will be discussed on Wednesday, October 20, beginning at 10:15 am. Items to be discussed are described in the attached agenda.
- Item 99-8      **Inclusion of NAS 1921B (S) in Table 8.1.3.2.2(g). (FTG)** D. Richardson, Lockheed Martin, will present the attached item.
- No Item No.      **Addition of Brazing Strength Design Factors. (FTG)** S. Ford will present the item attached to the agenda to update Section 8.2.3.
- No Item No.      **Changes to Section 8.1.2 Solid Rivets. (FTG)** T. Kilinski will present an agenda item to update the text in Section 8.1.2 to coincide with the changes made in Revision G to footnote “e” of Table 8.1.2(a).
- Item 95-13      **Static Joint Strength of AF3222 Blind 100 Degree Flush Head Rivets in Clad 2024-T3 Sheet, and**
- Item 95-14      **Static Joint Strength of AF3223 Blind Protruding Head Rivets in Clad 2024-T3 Sheet. (FTG)** T. Kilinski will present agenda items on the design allowables tables. The parts were originally to be analyzed as a combined M7885 table. However, with the cancellation of the M7885 specification, the items have now been analyzed as individual company part tables.
- Item 95-15      **Static Joint Strength of CR3222 Blind 100 Degree Flush Head Rivets in Clad 2024-T3 Sheet, and,**

- Item 95-16      **Static Joint Strength of CR3223 Blind Protruding Head Rivets in Clad 2024-T3 Sheet. (FTG)** T. Kilinski will present agenda items on the design allowables tables. The parts were originally to be analyzed as a combined M7885 table. However, with the cancellation of the M7885 specification, the items have now been analyzed as individual company part tables.
- No Item No.      **Static Joint Strength of AF3212 Blind Flush Head Locked Spindle Aluminum Alloy Rivets in Clad 2024-T3 Sheet, and**
- No Item No.      **Static Joint Strength of CR3212 Blind Flush Head Locked Spindle Aluminum Alloy Rivets in Clad 2024-T3 Sheet, and**
- No Item No.      **Static Joint Strength of HC3212 Blind Flush Head Locked Spindle Aluminum Alloy Rivets in Clad 2024-T3 Sheet. (FTG)** T. Kilinski will present agenda items for these design allowables tables. These data were originally incorporated in the combined company analysis for M7885/3. However, with the cancellation of the M7885 specification, the individual company data have been reanalyzed as individual company part number tables.
- No Item No.      **Static Joint Strength of AF3213 Blind Protruding Head Locked Spindle Aluminum Alloy Rivets in Clad 2024-T3 Sheet, and**
- No Item No.      **Static Joint Strength of CR3213 Blind Protruding Head Locked Spindle Aluminum Alloy Rivets in Clad 2024-T3 Sheet, and**
- No Item No.      **Static Joint Strength of HC3213 Blind Protruding Head Locked Spindle Aluminum Alloy Rivets in Clad 2024-T3 Sheet. (FTG)** T. Kilinski will present agenda items for these design allowables tables. These data were originally incorporated in the combined company analysis for M7885/2. However, with the cancellation of the M7885 specification, the individual company data have been reanalyzed as individual company part number tables.
- No Item No.      **Static Joint Strength of AF3242 Blind Flush Head Locked Spindle Aluminum Alloy Rivets in Clad 2024-T3 Sheet, and**
- No Item No.      **Static Joint Strength of CR3242 Blind Flush Head Locked Spindle Aluminum Alloy Rivets in Clad 2024-T3 Sheet, and**
- No Item No.      **Static Joint Strength of HC3242 Blind Flush Head Locked Spindle Aluminum Alloy Rivets in Clad 2024-T3 Sheet. (FTG)** T. Kilinski will present agenda items for these design allowables tables. These data were originally incorporated in the combined company analysis for M7885/7. However, with the cancellation of the M7885 specification, the individual company data have been reanalyzed as individual company part number tables.

- No Item No.      **Static Joint Strength of AF3243 Blind Protruding Head Locked Spindle Aluminum Alloy Rivets in Clad 2024-T3 Sheet, and**
- No Item No.      **Static Joint Strength of CR3243 Blind Protruding Head Locked Spindle Aluminum Alloy Rivets in Clad 2024-T3 Sheet, and**
- No Item No.      **Static Joint Strength of HC3243 Blind Protruding Head Locked Spindle Aluminum Alloy Rivets in Clad 2024-T3 Sheet. (FTG)**  
 T. Kilinski will present agenda items for these design allowables tables. These data were originally incorporated in the combined company analysis for M7885/6. However, with the cancellation of the M7885 specification, the individual company data have been reanalyzed as individual company part number tables.

**CHAPTER 9. GUIDELINES FOR THE PRESENTATION OF DATA**

- Item 94-26      **Production Methods and Their Impact on Design Allowables. (SWG)**  
 J. Kinatader, Battelle, will present the attached agenda item.
- Item 98-3      **Procedure for Analyzing Lower Tail Censoring. (SWG)** J. Kinatader will present the attached agenda item.
- Item 99-1      **Proposed Modification to Figure 9.2.6-Procedure for Computation of  $T_{99}$  and  $T_{90}$  Values. (SWG)** J. Kinatader to present the attached agenda item.
- Item 99-4      **Selecting the Appropriate Regression Method. (SWG)** J. Kinatader to present the attached agenda item.
- No Item No.      **Correction to Formula for Skewness in Preliminary Material Properties Handbook. (SWG)** J. Kinatader to present the attached agenda item.
- No Item No.      **Significant Regressions with Significant Lack of Fit. (SWG)**  
 J. Kinatader to present a handout.
- No Item No.      **Regression for Skewed Data. (SWG)** J. Kinatader to present a handout.
- Item 98-7      **Complete Restructuring of Chapter 9 Guidelines to Improve Usability. (GTG)** R. Rice will review a handout.
- No Item No.      **Calculation of Metric Equivalent Design Properties From MIL-HDBK-5 Tables. (GTG)** R. Rice to present the attached agenda item.
- No Item No.      **Definitions Plus. (GTG)** R. Rice to present a handout.
- No Item No.      **Recommendation for Revision of Fastener Guidelines. (FIWG)** This item will be closed until the completion of the (No Item No.) task on

Revised Analytical Techniques for Analysis of Fastened Joints. After a revised analysis technique is chosen, the effort to revise the fastener guidelines will be reinstated.

No Item No.

**Revised Analytical Techniques for Analysis of Fastened Joints. (FIWG)**

A review of the recent technical efforts will be presented at the FTG meeting. T. Kilinski will summarize this review and give a status report at the main meeting.