

# **MINUTES**

**of the**

## **2<sup>nd</sup> MMPDS and 102<sup>nd</sup> MIL-HDBK-5 Coordination Meeting**

**held in**

**Cocoa Beach, FL**

**October 7-10, 2002**

**Compiled by**

**Battelle  
505 King Ave.  
Columbus, Ohio 43201-2693**

**For**

**FAA William J. Hughes Technical Center  
Atlantic City, NJ  
and  
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## **MINUTES OF THE 2<sup>ND</sup> MMPDS AND 102<sup>ND</sup> MIL-HDBK-5 COORDINATION MEETINGS**

Notes: For the sake of simplicity the traditional terminology of MIL-HDBK-5 or MIL-5 is maintained throughout these minutes. However, actions taken on these agenda items at the above meeting also apply to the new MMPDS Handbook, which will be issued by the FAA in early 2003.

Where reference is made to the “next coordination meeting” or the “3rd MMPDS meeting” it can be assumed this meeting will take place in April 2003 in the Las Vegas, NV area. Details concerning meeting arrangements are still being resolved. A formal meeting announcement will be distributed in June.

The site chosen for the 4th MMPDS meeting was New Orleans, LA. No meeting arrangements have yet been made, but the plan is for that meeting to take place in October 2003.

### **I. Chairman’s Remarks**

#### **Steven R. Thompson, DOD Co-Chair MIL-HDBK-5**

Welcome to the 102nd meeting of the MIL-HDBK-5 Coordination Committee. This is also the 2nd meeting of the MMPDS Coordination Committee. The purpose of these handbooks is to provide a repository of statistically reliable design allowables for use in the design of military and civilian aircraft. This process has been in existence since approximately 1938. Prior to MIL-HDBK-5, each branch of the service and the predecessor to the FAA, each aircraft company and metal producer had their own requirements or allowables. The use of MIL-HDBK-5 was required for all military systems and civilian aircraft for many years. Its use is endorsed by the FAA as well as the computational methods for design allowables. The handbook has become a global document with worldwide circulation and use. The MMPDS will continue this legacy.

MIL-HDBK-5 is maintained by the Air Force at Wright-Patterson AFB. Funding is currently provided solely by the FAA. Coordination support is counted on from other DoD agencies and the FAA. The document is continually updated and improved by your contributions at this meeting and through the efforts of Battelle as our support contractor.

The purpose of these bi-annual meetings is to allow members of the aerospace industry an opportunity to make suggestions for modifications and request additions to the document. The bi-annual meetings allow the Handbook to be timely and to keep up with changing needs within the community.

As with any specification document, it requires coordination between the supporting services and industrial groups represented. As a result of these meetings we can accomplish the coordination face-to-face and on-site. The use of task groups and the main meeting format serves this process quite well.

Our operating rules require that the membership have a chance to review items prior to discussion and approval. Item numbers are usually established at a meeting, printed in

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the minutes from that meeting and proposed action is documented in the agenda for the next meeting. After discussion it is either accepted or rejected. In practice there may be changes and modifications resulting from discussions at the meetings in which some items may be spread out over several meetings. It is not necessary to wait to suggest new items at a meeting. Items may be proposed at anytime during the year and they will be placed on the agenda for discussion at the next meeting.

Regarding the approval process....we are not a completely democratic organization. The Air Force has the responsibility as custodians of the Handbook for what goes in or comes out, as will the FAA with the MMPDS. It would, however, be shortsighted not to take the advice and expertise provided by the knowledge represented here today when making these decisions. We strive to do this by obtaining your consensus on each item. At times we have no alternative but to take a vote and go with the majority. Rarely will we as the regulatory and custodial agencies go against the popular choices made by the group.

**John Bakuckas, FAA Co-Chair MIL-HDBK-5** (The viewgraphs of Dr. Bakuckas' presentation are enclosed.)

I wanted to take this opportunity to provide a brief status update and inform the MIL-HDBK-5 community of the transition we are currently undergoing from MIL-HDBK-5 to the MMPDS. The objective of this transition is to maintain the standardized process of establishing statistically based allowables needed for aircraft certification and continued airworthiness. As far as the FAA is concerned, it is critical to maintain the MIL-HDBK-5 process that has evolved over the past 50 years under the custodianship of the USAF in developing the premier source for material and fastener allowables.

The MIL-HDBK-5 process provides a uniform level of safety regarding structural approvals within all FAA Aircraft Certification Offices. To sustain this requirement, an FAA – USAF Memorandum of Agreement was established to transition the custodianship of the MIL-HDBK-5 process. The legacy of the MIL-HDBK-5 process of establishing statistically based design allowables will be maintained. The FAA and USAF will continue teaming closely with industry and other government agencies to develop a replacement handbook entitled “Metallic Materials Properties Development and Standardization” (MMPDS). The new MMPDS document will be updated on a regular basis and ultimately replace MIL-HDBK-5 as the aviation industry standard for statistically based design properties of metallic materials.

On the last day of the fiscal year 2002, September 30, we were able to establish a contract vehicle with Battelle to continue supporting the MIL-HDBK-5 process and developing the MMPDS. Under this contract, the period of performance is 5 years and consists of a core and optional elements. The core element supports the development of material and fastener system allowables as well as the statistical guidelines and procedures. Currently, the core element is fully funded. The optional element deals with two parts. The first part will support the development of supplemental properties, and the second part will develop an electronic archive of the historic data and documentation. The optional

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elements can be exercised as funds become available. The final version of the document, MIL-HDBK-5J, is scheduled to be published in the February 2003 time frame. The first edition of the MMPDS will be published at the same time.

The MMPDS will be distributed two ways. The first is through the National Technical Information Service (NTIS). For a nominal fee, you will be able to get the MMPDS in four formats: (1) download a portable document format (PDF) at a cost of ~ \$8.95; (2) microfiche at \$12.00 plus shipping; (3) on a CD for \$18.95 plus shipping, and; (4) paper copy, \$29.50 plus shipping based on a 100 page document. The second way to get the MMPDS is through the FAA William J. Hughes Technical Center website, <http://actlibrary.tc.faa.gov>. Through this website, you will be able to download the MMPDS in PDF, free of charge.

Our goal in the transition is to maintain the MIL-HDBK-5 process for establishing statistically based material and fastener system allowables that are required for aircraft certification and continued airworthiness. As part of this process, government and industry coordination is essential to maintain the integrity of both design allowable development and guidelines development processes.

Finally, we need to have more sustainable sponsorship for the long-term health of the MMPDS. Currently, the FAA is solely funding this effort, we will have to undergo another transition in which the custodianship of the handbook is shared. The current Government Steering Group (GSG) is working towards that goal. We plan to strengthen the GSG and make a more broad-based and institutionalized group.

I want to thank all participants of the General Coordination Committee for their time and effort. I look forward to working with you to continue and improve the handbo

**II. Approval of 101<sup>st</sup> Meeting Minutes**

The minutes of the 101<sup>st</sup> meeting were approved as distributed.

**III. Order of Business**

The Order in which items were discussed followed the chronology of the final agenda, which was included on pages 7-13 of the meeting handout. Activity on specific agenda items is recorded in these minutes in order, by chapter. A list of new item numbers assigned at this meeting is also attached.



# Transition to Metallic Materials Properties Development and Standardization (MMPDS)

Table 8.1.2.2(j). Static Joint Strength of 100- Flush Head Aluminum Alloy (5056- H127) Solid Bolts in Machine-Countersunk Magnesium Alloy Sheet

Sheet thickness, in.	Tensile Strength, ksi			
	172°	74°	46°	124°
0.032	---	---	---	---
0.040	189	348	---	---
0.050	189	318	467	---
0.063	203	337	480	670
0.071	---	348	485	677
0.080	---	360	519	715
0.090	---	363	536	737
0.100	---	---	554	757
0.125	---	---	596	802

**Presented to:**

**2<sup>nd</sup> MMPDS and 102<sup>nd</sup> MIL-HDBK-5  
General Coordination Committee Meeting  
October 7-10, 2002  
Cocoa Beach, FL**





# **Transition to Metallic Material Properties Development and Standardization**

- ❖ **Objective: Maintain a standardized process for establishing statistically based allowables that comply with 14 CFR xx.613**
- ❖ **Approach:**
  - ◆ **2001 - FAA-USAF Memorandum of Agreement to transition custodianship**
  - ◆ **Maintain current MIL-HDBK-5 process, tasks and coordination meetings**
  - ◆ **Create new FAA document, “Metallic Materials Properties Development and Standardization, (MMPDS)” to replace MIL-HDBK-5**



# Status

- ❖ **September 2002: FAA Contract with Battelle to continue support of MIL-HDBK-5 process and development of MMPDS:**
  - ◆ **Period of Performance: 5 Years**
  - ◆ **Core element fully funded:**
    - Material and fastener system allowables
    - Statistical guidelines and procedures
  - ◆ **Optional element can be exercised as funds become available:**
    - Supplemental properties: fatigue, fracture, corrosion, and elevated temperature
    - Electrical archive of documentation and data
- ❖ **February 2003: First version of MMPDS and final version of MIL-HDBK-5**



# Distribution

- ❖ **U.S. Department of Commerce  
Technology Administration**  
National Technical Information Service  
5285 Port Royal Road  
Springfield, Virginia 22161  
(703) 605-6000  
<http://www.ntis.gov>
  - ◆ Download Portable Document Format – \$8.95
  - ◆ Microfiche - \$12.00 plus shipping
  - ◆ Customized CD – \$18.95 plus shipping
  - ◆ Paper Copy – \$29.50 plus shipping for 100 page document
  
- ❖ **FAA William J. Hughes Technical Center**  
<http://actlibrary.tc.faa.gov>  
Download Portable Document Format - free



# Summary

- ❖ **Maintain a standardized process for establishing statistically based allowables that comply with 14 CFR XX.613**
- ❖ **Active government/industry coordination is essential to maintain the integrity of the design allowable development and guideline development process**
- ❖ **A more equitable and sustainable sponsorship is needed for the long term health of MMPDS/MIL-5**
- ❖ **The GSG is working towards a more broad-based group**

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**CHAPTER 1. GENERAL**

- No Item No.     **AMS Coordination. (GCC)** Enclosed is a status report of draft AMS specifications and current AMS specifications being revised.
- No Item No.     **Meetings of Potential Interest to MIL-HDBK-5 Coordination Members. (GCC)** A list of meetings was included in the agenda. This list also contained relevant technical society websites.
- No Item No.     **Cancellation of Government Specifications and Subsequent Replacement Specifications. (GCC)** No government specifications included in MIL-HDBK-5 have been cancelled.
- No Item No.     **Special Presentation. (SWG)** R. Rice, Battelle, gave a special presentation Tuesday morning in the SWG on Development of Statistical Design Limits on Crack Growth Data. A copy of his presentation is included.
- No Item No.     **Special Presentation. (SWG)** R Rice gave a special presentation presented on behalf of A. Quilter, ESDU, Tuesday morning in the SWG. The topic was: Overview of Metallic Materials Data Handbook (European equivalent to MIL-HDBK-5). A copy of his presentation is included.
- No Item No.     **Special Presentation. (GTG)** S. Thompson, AFRL/MLSC, gave a special presentation Tuesday afternoon in the GTG on Determination and Presentation of Stress Corrosion Threshold Values. A copy of his presentation is included.
- No Item No.     **Special Presentation. (MTG)** M. Niedzinski, Pechiney, gave a special presentation Wednesday on The McCook Buy-Out and Its Effect on Their Emerging Aircraft Alloys. A copy of his presentation is included.
- No Item No.     **Special Presentation. (LAMWG)** W. Roy, Army, gave a special presentation Wednesday afternoon in the LAMWG on Army experience with Laser Additive Manufacturing (LAM). A copy of their presentation is included.

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- No Item No.     **Special Presentation. (LAMWG)** P. Kobryn, S. Thompson, and N. Ontko, AFRL, gave a special presentation Wednesday afternoon in the LAMWG on Air Force experience with LAM. A copy of their presentation is included.
- No Item No.     **Special Presentation. (LAMWG)** S. Fantle and B. Sova, Boeing, gave a special presentation Wednesday afternoon in the LAMWG on Boeing’s experience with LAM. A copy of their presentation is included.
- No Item No.     **Special Presentation. (GCC)** R. Brazill, Alcoa, gave a special presentation on Plane-Stress Fracture Toughness Testing and Analysis – Complications and Possible Solutions. A copy of his presentation is included.
- No Item No.     **Special Presentation. (GCC)** R Rice, Battelle, gave a special presentation on Demonstration of Proposed New Statistical Analysis Procedure for Fasteners, associated with Item 99-27, presented to the FTG/FTWG at the 101<sup>st</sup> meeting. A copy of his presentation was included in the Minutes for the 101<sup>st</sup> Coordination meeting.
- No Item No.     **Government Steering Group. (GSG)** S. Thompson, AFRL/MLSC, provided a GSG status report at the General Coordination Committee (GCC) meeting on Thursday morning. A closed meeting of the GSG was held on Monday, October 7<sup>th</sup>, beginning at 2:00pm.
- No Item No.     **Airframer Steering Group. (ASG)** J.T. Amin, Lockheed, provided an ASG status report at the General Coordination Committee (GCC) meeting on Thursday morning. The closed meeting of the ASG was held Monday afternoon, October 7<sup>th</sup>, beginning at 4:30pm.

JT Amin summarized the consensus of the ASG on two current issues.

- *Development of an Industry “Trigger” for the Use of Item 94-26 Production Methods and Their Impact on Design Allowables.* ASG participants agreed that the aircraft companies would have to continue to carry the responsibility for ensuring each supplier’s conformance to the minimum property requirements of their material specifications. As a result, the ASG recommended closure of Item 94-26 with no further action. (However, discussion at the GCC meeting led to keeping the item open for at least for one more meeting.)
- *Verification of Design Minimum Properties for “Legacy Alloys”.* JT reported that the ASG participants wanted to see an organized effort initiated within the Handbook coordination committee to verify the design minimum properties of traditional alloys still used widely in

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current aircraft structures. He cited the following alloys and tempers: 7050-T7451, 7075-T7351, 2124-T851, 2024-T351, 7475-T7451, 7075-T7651, and Ti-6Al-4V. It was agreed at the GCC meeting that item numbers would be assigned on an alloy-specific basis. R. Rice agreed to undertake a review of the historical files for the ASG to identify the most recent dates of data collection efforts on these legacy alloys.

No Item No.     **Industrial Steering Group. (GCC)** R. Rice gave a brief status report at the GCC meeting on current ISG-supported technical activities. He also expressed his thanks to all ISG member companies for their support over the past 5 years.

The 10<sup>th</sup> ISG meeting was held on Monday, October 7<sup>th</sup>. The morning session, which began at 8:30am, was limited to representatives of ISG 2002 member companies. However, the afternoon session, was open to all other Handbook coordination-meeting attendees.

No Item No.     **Guidelines Task Group. (GTG)** R. Rice led the discussion of current Chapter 9 items in the Guidelines Task Group meeting, which took place Tuesday afternoon, October 8<sup>th</sup>.

No Item No.     **Materials Task Group. (MTG)** J. Jackson led the discussion of the new and continued materials items for Chapters 2 through 7 in the Materials Task Group meeting, which was held on Wednesday, October 9<sup>th</sup>.

No Item No.     **Statistics Working Group. (SWG)** H. Tsai, Battelle, led a discussion of new and continued statistics items at the Statistics Working Group meeting, which was held on Tuesday, October 8<sup>th</sup>.

Item 02-21     **Update of Government MIL Specifications. (MTG)** J. Jackson presented this agenda item. She reported that virtually all government MIL specifications of interest to the MIL-HDBK-5 committee have been updated by AMS.

Action: Approved and closed. Revised tables are enclosed.

No Item No.     **Trademark Identification (GCC)** J. Jackson led the discussion on this agenda item. The tentative conclusion was that a table of applicable trademarks should be added at the beginning of the handbook. An agenda item will be presented at the next meeting showing the proposed changes.

Action: Continued.

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**CHAPTER 2. STEEL ALLOYS**

- Item 02-22     **A- and B-Basis Properties for Custom 465 H950 & H1000 Bars, Wires, and Forgings (MTG)** J. Jackson presented this agenda item.

Action: Approved and closed. The revised section is enclosed.

**CHAPTER 3. ALUMINUM ALLOYS**

- Item 00-9     **Including EXCO Ratings in MIL-HDBK-5. (MTG)** R. Rice presented a status report on this item. His recommendation to close the item with no action was accepted.

Action: Closed with no action.

- Item 00-10    **Reference for Weldability of Aluminum in Section 3.1.3.4. (MTG)** J. Jackson reviewed this agenda item. It was not possible to reach a consensus on the revised wording for this section, so the item was continued.

Action: Continued

- Item 00-6     **A and B-Basis Properties for 2297-T87 Plate. (MTG)** J. Jackson presented this agenda item and handout.

Action: See Item 01-09 for action on both items.

- Item 01-09    **Derived Properties for 2297-T87. (MTG)** J. Jackson presented this agenda item and a handout on 2297-T87.

Action: Approved and closed with additional analysis of shear S-L data as shown in the attachment and the addition of a paragraph on cold hole expansion. Compression data and stress strain curves will be added under a new agenda item.

- Item 01-08    **Update Test Methods for Plane-Stress Fracture Toughness Data. (MTG)** R. Rice reported that he had invited R. Brazill, Alcoa, to give a presentation at the GCC meeting on this issue.

Action: Continued.

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Item 01-11      **A- and B-Basis Properties for 7250-T7451 Aluminum Alloy Plate. (MTG)** J. Jackson presented the agenda item. The draft AMS specification is being prepared for ASC. This item was held open due to the transition to Pechiney. Bearing and shear properties were only tested in the LT direction.

Action: Continued. Need L orientation shear and bearing tests and publication of draft AMS specification at ASC.

Item 01-15      **S-Basis Properties for 7055-T76511 Aluminum Extrusions (MTG).** J. Jackson presented the enclosed data proposal. AMS 4336 was published in March 2002. Additional data were received and analyzed.

Action: Approved (for thicknesses up to 0.499 inch) and closed with addition of temper designation in Table 3.7.5.0(a) as shown in the attachment.

No Item No.      **A- and B-Basis Properties for 7055-T76511 Aluminum Extrusions (MTG).** J. Jackson presented a handout, which addressed extrusions from 0.500 to 3.000 inches thick. Revision A of AMS 4336 must be approved before this item is approved.

Action: Continued.

Item 01-16      **A- and B-Basis Tensile Properties for 7249-T76511 Aluminum Alloy Wide Extrusions. (MTG)** J. Jackson presented the enclosed agenda item and handout.

Action: Continued. Need LT orientation for shear and bearing and waiting on approval of draft AMS specification (at ASC).

Item 02-02      **Reduced Beryllium Replacement for D357-T6. (MTG)** J. Jackson presented the enclosed brief data proposal.

Action: Continued. A separate table must be prepared using S-basis properties and a restricted thickness range.

Item 02-03      **Reduced Beryllium Replacement for A357-T6. (MTG)** J. Jackson presented the enclosed brief data proposal.

Action: Continued. A separate table must be prepared using S-basis and a restricted thickness range.

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- Item 02-10      **Design Minimum Properties for 7055-T74511 Extrusions. (MTG)** J. Jackson presented the data proposal on this new item.
- Action: Approved and closed. AMS 4324 published August 2002. The approved section is enclosed.
- Item 02-14      **Design Minimum Properties for 7150-T77511 Extruded Wide Panels (MTG).** J. Jackson presented a status report of the draft AMS specification (D01-AD). This item was approved at the 101<sup>st</sup> MIL-5 meeting pending specification approval.
- Action: Continued. Waiting on approval of draft AMS 4325 at ASC.
- Item 02-16      **A- and B-Basis Properties for 7050-T7651 Aluminum, 1.0 – 1.5 Inch Thick Plate (MTG).** R. Rice presented this agenda item showing the results of a reanalysis of strength data on this alloy using the recently accepted Pearson method. He noted that this work was presented as a handout at the 101<sup>st</sup> MIL-5 meeting, so it could not be approved at that meeting.
- Action: Approved and closed. The revised table is enclosed.

### CHAPTER 4. MAGNESIUM ALLOYS

No items for review.

### CHAPTER 5. TITANIUM ALLOYS

- Item 99-11      **A- and B-Basis Design Mechanical Properties for Ti-6-4 Castings. (MTG)** J. Jackson and R. Rice reviewed the enclosed agenda item and handout.
- Action: Continued. The draft AMS specification is waiting for approval by ASC. The item was approved with the corrections shown in the attachment, however it could not be closed until the draft specification is published. Changes requested are to add frequency information to the fatigue curves shown in the handout, add detail on lab air and relative humidity. The weld information in the handout will not be included in MIL-HDBK-5. The proposed section is included for information only. It has not yet been approved for use.

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Item 02-28      **Shear Modulus Correction of Ti-6-4. (MTG)** J. Jackson reviewed this brief handout on an editorial correction to the shear modulus due to a previous correction in the elastic modulus.

Action: Approved and closed. Revised table included.

**CHAPTER 6. HEAT RESISTANT ALLOYS**

Item 02-29      **Additional Stress-Strain Curves for Haynes 230. (MTG)** J. Jackson reviewed the enclosed agenda item.

Action: Approved and closed with thickness correction to Figures 6.3.9.1.6(b)-(e) (thickness shown as 0.050 should be 0.500). The corrected figures are enclosed.

**CHAPTER 7. MISCELLANEOUS ALLOYS AND HYBRID MATERIALS**

No Item No.      **Special Presentation. (MTG)** A. Hartline gave a special presentation on Nano-Engineered Composite Powders. A copy of his presentation is included.

**CHAPTER 8. STRUCTURAL JOINTS**

No Item No.      **Fastener Task Group. (FTG)** N. Ontko, AFRL, led discussions at the Fastener Task Group meeting, which was held on Wednesday, October 9<sup>th</sup>. The primary focus of discussion was on Items 99-27 and 00-13. FTG recommended changes and additions are covered under the individual agenda items.

No Item No.      **Fastener Industry Working Group. (FIWG)** The Fastener Industry Working Group met jointly with the Fastener Task Group on Wednesday, October 9<sup>th</sup>.

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

Item 94-26      **Production Methods and Their Impact on Design Allowables. (GTG)** R. Rice provided a status report on this long-standing agenda item. A decision was made that the users are responsible for tracking changes in production methods. However, the analysis method may be useful in some situations.

Action: Continued to determine if the statistical analysis methods that have already been developed should be included “in the event of...” someone’s desire/need to use them.

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Item 02-26      **Update and Expansion of Table 9.6.4.7 (Table 9.10.6 in revised Chapter 9). (GTG)** R. Rice presented this agenda item, which resulted from Agenda Item 94-26.

Action: Approved and closed with deletion of first 4 lines (sample sizes of 10, 15, 20 and 25).

Item 98-3      **Procedure for Analyzing Lower Tail Censoring. (SWG)** H. Tsai presented a status report at the SWG. A copy of the viewgraphs she presented are included as an attachment to these minutes.

Action: Continued.

Item 98-7      **Complete Restructuring of Chapter 9 Guidelines to Improve Usability. (GTG)** R. Rice reviewed the enclosed agenda item, which covers the proposed new structure for Chapter 9.

Action: Approve and close with following changes as shown in attachment;

- Page 9-7, 2<sup>nd</sup> paragraph reference 9.1.5 has no reference.
- Correction on Table 9.10.3 (see separate agenda item).
- Correct section on derived properties to make sure it says minimum of 3 heats, section 9.2.4.3, 1<sup>st</sup> paragraph.
- Check to see if older version of Handbook addresses modulus testing at 3 thicknesses. Revise section 9.2.4.4.1 accordingly. If in there, add editorial comment that tests should come from the thinnest, thickest and mid-range product thicknesses.
- Fastener sections also have some corrections as detailed under Item 00-13.

Item 99-27      **Revised Analytical Techniques for Analysis of Fastened Joints. (FIWG)** H.C. Tsai, Battelle, reviewed an agenda item covering the latest enhancements to the proposed new statistical procedure for analyzing fastened joints.

Action: Approved and closed B-basis for yield. Included in Revised Chapter 9, Section 9.7.1.4.

Item 00-13      **Rewrite of Section 9.4 Properties of Joints and Structures. (FTG)** R. Yano presented this agenda item to the FTG and FIWG.

Action: Approved and closed with changes. Corrected sections are enclosed.

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- Item 01-01      **Regression for Skewed Data. (SWG)** H.C. Tsai presented a status report at the SWG. The viewgraphs she presented, which are included with these minutes, include the basic elements of a proposed procedure for statistically analyzing skewed data. They also detail the plans for refining, validating and implementing the new procedure.
- Action: Continued.
- Item 01-02      **Proposal to Change Backoff Limit to Percentage of Standard Deviation in the Sequential Weibull and Sequential Pearson Procedures. (SWG)** R. Rice presented a status report.
- Action: Continued
- Item 01-04      **Reevaluation of Statistical Procedures for Calculations of S-Basis Design Values. (SWG)** R. Rice and H.C. Tsai reviewed this agenda item.
- Action: Continued in order to evaluate the need to refine  $k_{99}$  factors for positively skewed distributions.
- Item 01-05      **Revise Section 9.1.6.8 in Coordination with SAE/AMS. (GTG)** J. Jackson provided a status report on this new item, which will cover the modification of Section 9.1.6.8 of MIL-HDBK-5, "Guideline Requirements for Specification Minimum Design Mechanical Properties". Development of the proposed new procedure will be done under Item 01-04 in close coordination with the SAE/AMS committee. A formal proposal for revision of Section 9.1.6.8 of the Handbook will await approval of the Item 01-04 statistical procedures by the SAE/AMS committee.
- Action: Continue.
- Item 01-06      **Historical Review of MIL-HDBK-5 Round-off Procedures. (GTG)** J. Jackson presented the agenda item. It was proposed that the round-off procedure be revised to follow ASTM E28 specification.
- Action: Approved and closed with addition of full title to referenced ASTM E28 specification.
- No Item No.      **Define Lower Bound Properties for Elongation. (SWG)** R. Rice led the discussion on this item. He proposed that the guidelines with regard to statistical analysis of elongation remain unchanged.
- Action: Closed with no action.

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- No Item No.     **Removal of the Word “Precision” in Reference to Modulus. (GTG)**  
J. Jackson presented this brief agenda item.
- Action: Treat as an editorial correction based on previously approved agenda.
- No Item No.     **Review of Off-Axis Mechanical Property Testing Requirements. (GTG)**  
R. Rice led a brief discussion on this topic.
- Action: Closed with no action.
- No Item No.     **Derived Property Requirements for 45° Orientation. (GTG)**  
J. Jackson presented this brief agenda item.
- Action: Treat as an editorial correction based on previously approved agenda.
- No Item No.     **Clarification of Required Test Direction for Derived Properties. (GTG)**  
J. Jackson presented this brief agenda item.
- Action: Closed with no changes to guidelines.
- Item 02-24       **Addition of References for the Pearson type III Distribution. (SWG)**  
R. Rice presented this brief agenda item.
- Action: Approved and closed. Corrected sections are enclosed.
- Item 02-25       **Corrections to Table 9.6.4.4 (GTG)**  
R. Rice presented this brief agenda item.
- Action: Approved and closed with corrections to the attachment. Corrected section enclosed.
- No Item No.     **Determination of A- and B-Basis Allowables for Cases Where the Calculated T<sub>99</sub> Value is Greater Than the Specification Minimum Value (GTG)**  
S. Fantle, Boeing, presented this agenda item.
- Action: Committee voted, no immediate action, however the item will remain open at S. Fantle’s request.
- No Item No.     **Analysis and Presentation of Fatigue Crack Growth Data (SWG).**  
New item to be discussed at the next meeting by R. Rice. Refer to the special presentation included with the minutes on this topic.
- No Item No.     **Confirmation of Legacy Data for Allowables (FTG)**  
New item to be discussed at the next meeting (see Airframer Steering Group report).