

# Transition of MIL-HDBK-5 USAF → FAA

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*Defense Standardization Program Conference*



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# Introduction



## *Scope*

**MIL-HDBK-5 → Primary Source of Static Design Allowables for Metallic Materials and Structural Elements (Fasteners) that are Used in the Design of Aircraft and Aerospace Structures**

## *Objective*

**Develop Design Properties from data generated and provided by industry and provide in a publishable format.**







# Handbook Evolution



- **1937 - Predecessor Document to MIL-HDBK-5 (ANC-5) First Issued (ANC -- Army, Navy, Commerce)**
- **1956 - Air Force Assumed Responsibility for Maintaining ANC-5**
- **1959 - First Issue of MIL-HDBK-5 Published**
- **1971 - Incorporated detailed guidelines for statistical analysis of data**
- **1997 – Formalized Industry Steering Group (ISG) to complement government-supported coordination activities**
- **2001 – Began transition of government leadership of MIL-HDBK-5 coordination from Air Force to Federal Aviation Administration**



# Handbook Process



- **Government/industry collaborative effort**
- **Network of steering, working and task groups responsible for setting goals, planning, tasking, etc.**
- **All proposed handbook revisions subject to formal review process on Bi-Annual Basis (Spring and Fall) at General Coordination Committee (GCC) meeting**
- **Implementation of revisions requires approval of GCC composed of Industry, Government and unbiased third party secretariat**



# Industry Participation



- **Aerospace industry (suppliers and manufacturers) has been a key player in handbook activities.**
- **Source for information entered in handbook and responsible party for:**
  - Registering new materials developed
  - Developing material specifications
  - Testing materials to generate design allowables
- **Active in handbook process:**
  - Participate in GCC meeting where decisions are made to the entry, deletion, or modification of handbook contents
  - Provide review, feedback, and input to agenda items and meeting minutes from GCC meetings



# What Happened?!?





# Need to Transition



- **Charter: Establish New Direction/transition Strategy for MIL-HDBK-5 Process**
- ***S&T Budget Reduction.***
- ***No Contribution From Army, Navy, NASA.***
- ***Bridge Funding Exhausted.***



# Recommended Approach



- **FAA contracts with Battelle using current MIL-HDBK-5 “process”.**
- **Coordination meetings similar to AF contract.**
- **Document created entitled Metallic Materials Properties Development and Standardization (MMPDS) Handbook.**
  - **Format identical to MIL-HDBK-5 document.**

## Pros

- **Restored level of effort.**
- **Governmental control of data rights.**
- **Document virtually identical to military handbook.**

## Cons

- **Loss of DoD custodianship.**
- **No longer a “military handbook”.**
- **Questions about use of data for design of military aircraft.**
- **Requires transfer of historical documents and archival raw data.**



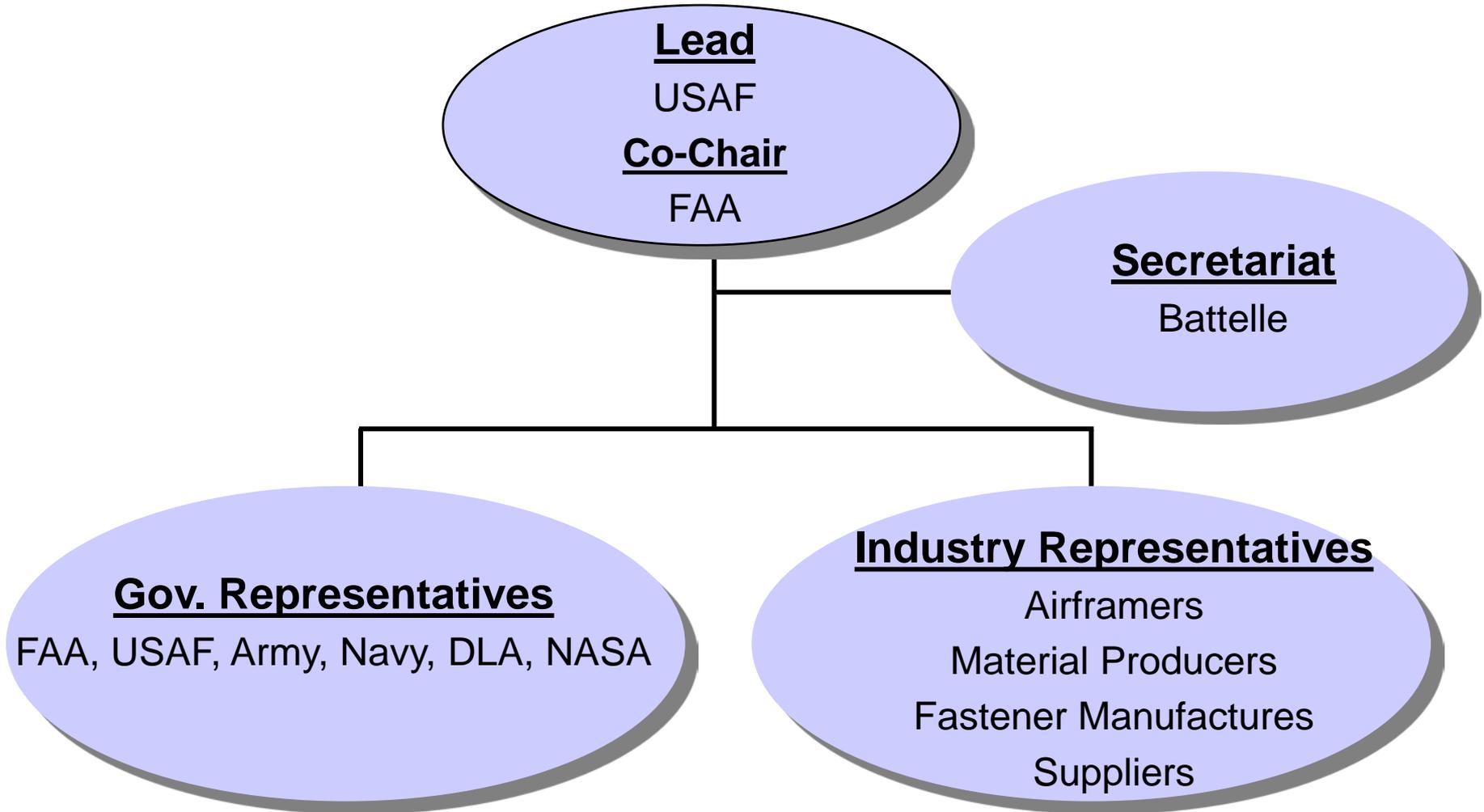
# Implementation



- **Establish AFRL/FAA MOA (May 02)**
  - **4 year agreement with optional 2 year extension.**
  - **Continued AFRL access to all medias and publications.**
  - **Continued Co-Chairmanship of activity.**
  - **Corporate Board Membership with provision for document at no cost.**
- **Ensure FAA access to archival/historical records (15 filing cabinets).**
- **Continued technical engineering support from AFRL.**

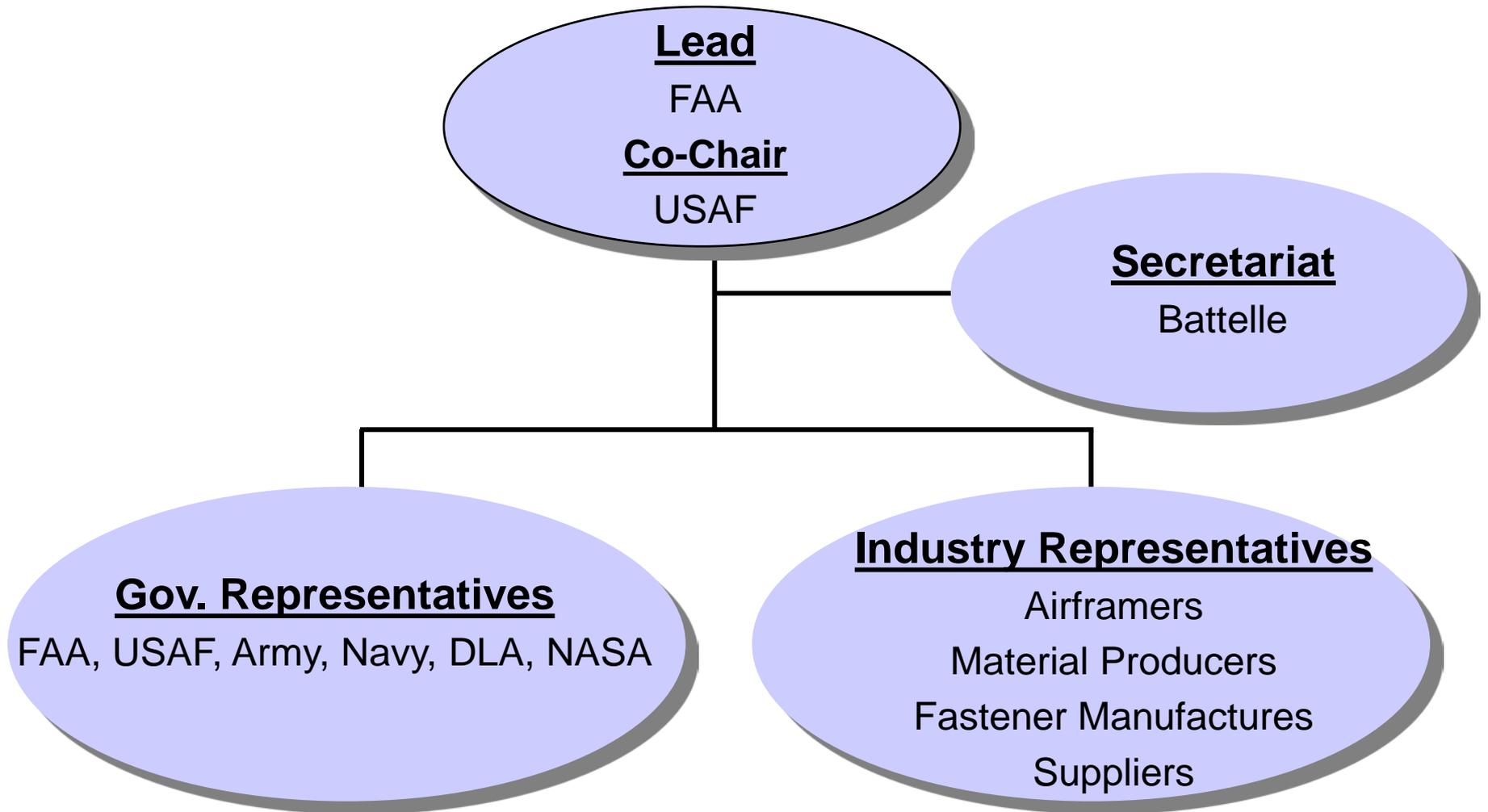


# Organization (Pre-Transition)





# Organization (Post-Transition)





# Transition Status



- **April 2002 – 1st MMPDS, 101st MIL-HDBK-5 Coordination Meeting, Atlantic City, NJ.**
- **September 2002 – FAA Contract with Battelle to continue support of MIL-HDBK-5 process and development of MMPDS.**
- **October 2002 – 2nd MMPDS, 102nd MIL-HDBK-5 Coordination Meeting, Cocoa Beach, FL.**
- **February 2003 – First version of MMPDS/final version of MIL-HDBK-5.**
- **April 2003:**
  - **3rd MMPDS Coordination Meeting, Las Vegas, NV.**
  - **Drafts of MMPDS Management/Commercialization Plans.**
- **May 2004 – MIL-HDBK-5 Cancellation Notice released.**
- **June 2004 – MMPDS Survey on Commercialization sent to users.**
- **October 2004 – Survey results discussed.**



# Management Plan



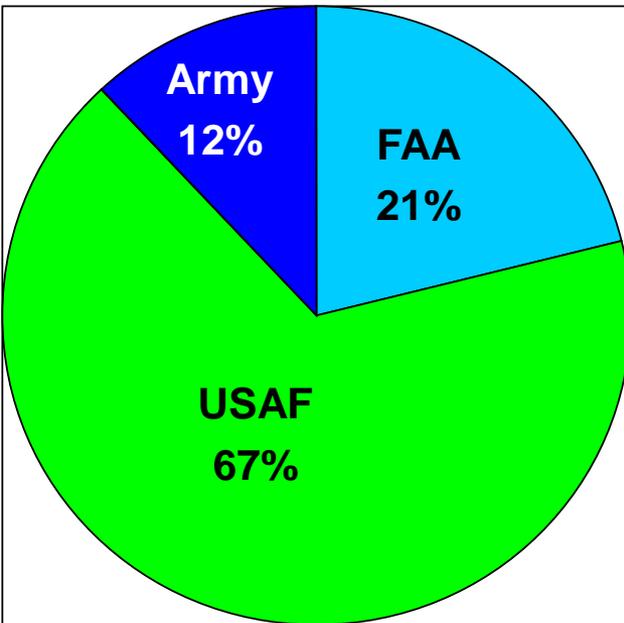
- **Goal: Establish more equitable and sustainable sponsorship for the MMPDS**
  - **Target FAA Share: 33%**
- **Potential Avenues:**
  - **Expand and Strengthen Membership of Governmental Partners**
  - **Draw Increased Support from Industry**
  - **Sell handbook to Non GSG and ISG members**



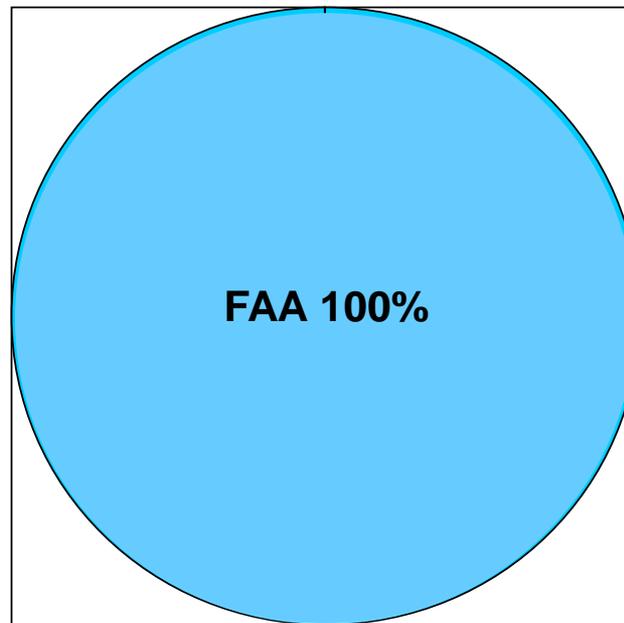
# Targeted Funding Profile



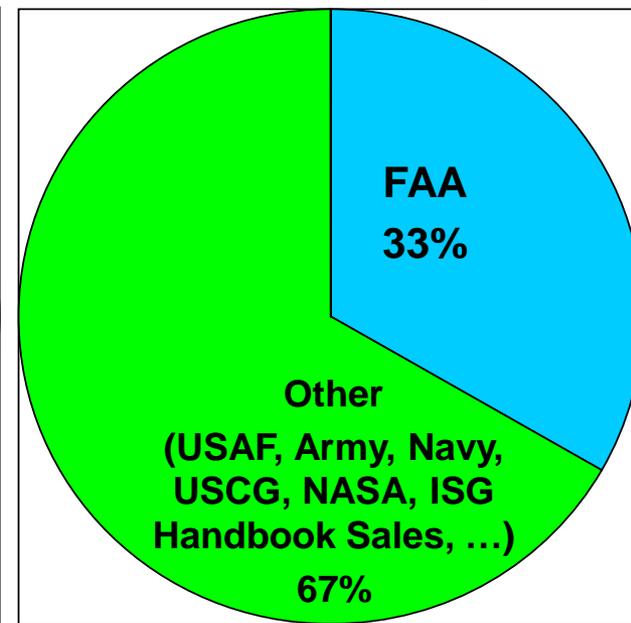
## MIL-HDBK-5



## Transition



## Original MMPDS Target

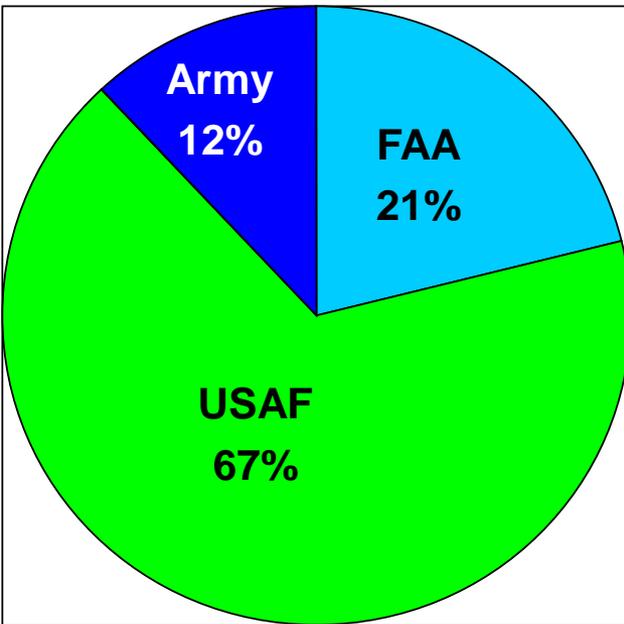




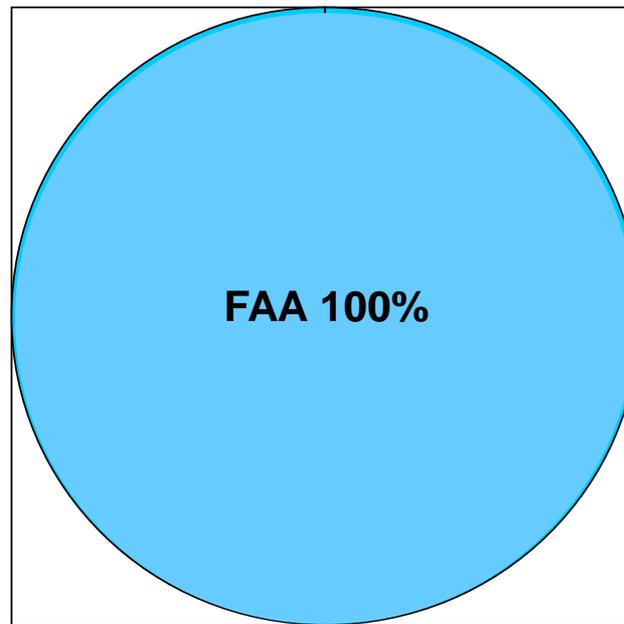
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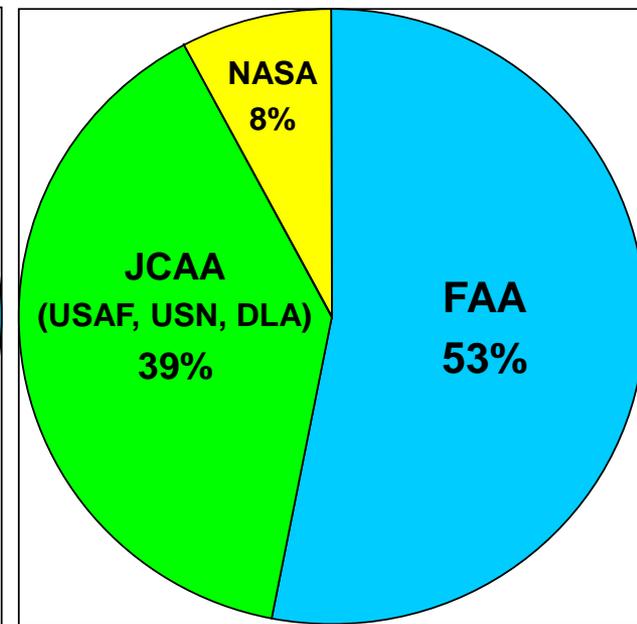
## MIL-HDBK-5



## Transition



## MMPDS Today

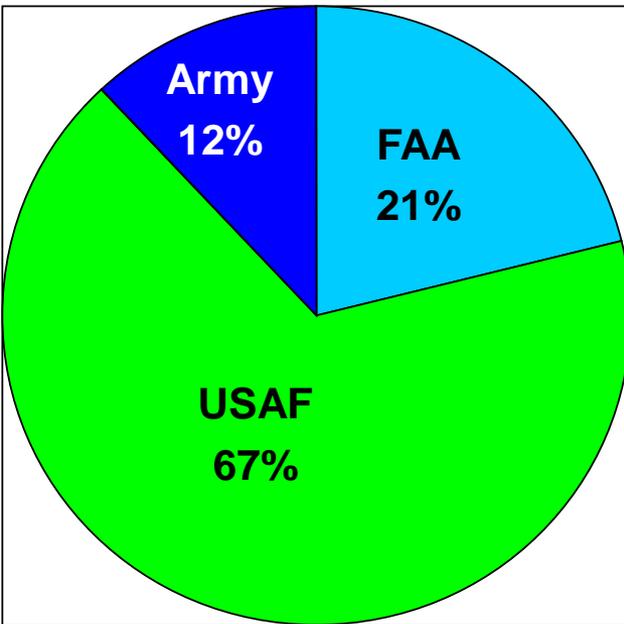




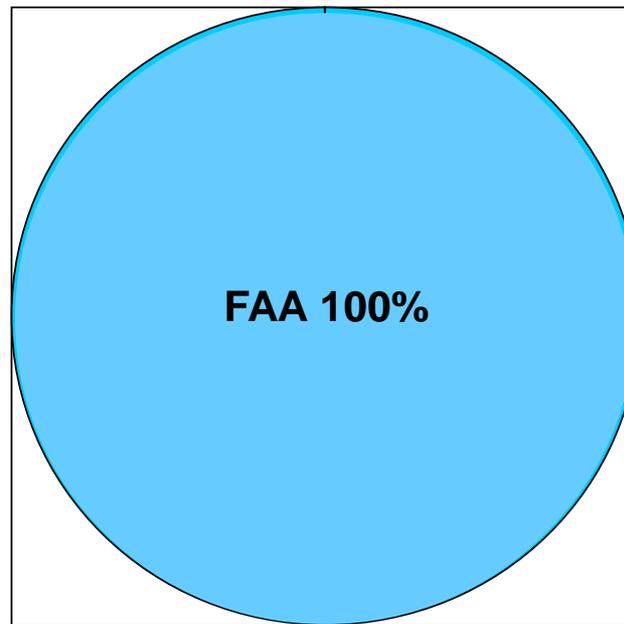
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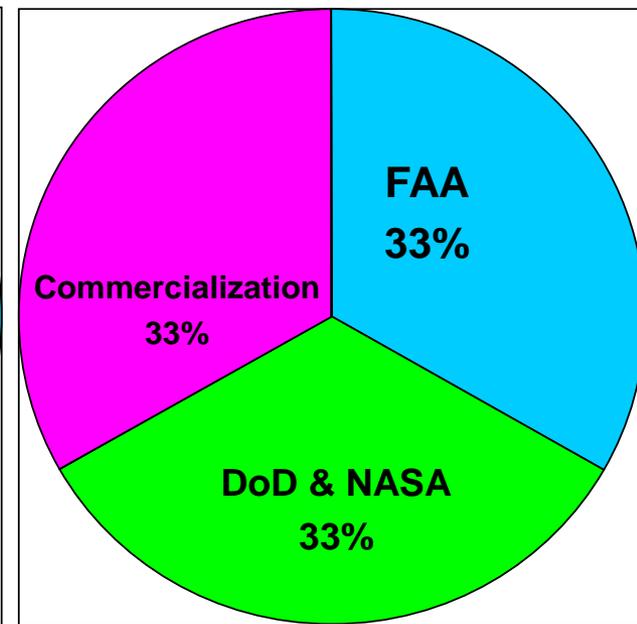
## MIL-HDBK-5



## Transition



## MMPDS Target





# Commercialization Plan



- **Broaden Government/Industry cooperative efforts, thereby pooling resources and sharing benefits and results.**
  - **Government regulatory role shall be maintained.**
- **Develop more positive incentives to broaden active government and industry participation and sustain required funding base.**
  - **Copyright control**
- **Provide supplemental revenue for Handbook coordination efforts.**
  - **Licensing agreements for reproduction and distribution of MMPDS products**
  - **Users must pay for access to currently approved design data**
  - **Net income from sales to be re-invested into coordination activities**



# Summary



- **Handbook is still the premier source for static design allowables for metallic materials and structural elements used in the design of aircraft and aerospace structures.**
- **Maintain a standardized process for establishing statistically based allowables required for aircraft certification and continued airworthiness.**
- **Active government/industry coordination is essential to maintain the integrity of the design allowable and guideline development process.**
- **Encouraging and obtaining broader government and industry support for the long term health of the handbook.**