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Headquarters Air Mobility Command



Enterprise Fleet Management

HQ AMC/A4QA

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UNCLASSIFIED OVERVIEW



-
- Enterprise Fleet Management
 - Historical Case Study; C-130H Fleet
 - Existing C-17 Fleet Management
 - C-17 Enterprise Fleet Management Concept
 - Constraints
 - Way Ahead

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C-17 vs. KC-135



- What if I told you there were C-17s in our fleet that were OLDER than some of our KC-135s?



AFH
12,500

C-17A



AFH
22,740

KC-135R



EFH
21,700
(Top 5%)

C-17A

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Enterprise Fleet Management

- **Enterprise Fleet Management:** A deliberate fleet management approach, using one or more life limiting factors, to maximize health and service life across a fleet of aircraft.
- **Equivalent Flight Hours:**

Aircraft Flight Hours x Severity Factor = EFH

EXAMPLE: 3.8 hr Sortie (low level w/ assault landing practice)

3.8 AFH x SF of 1.2 = 4.56 EFH

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C-130H Historical Case Study



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C-130H Historical Case Study

- As of Feb 2004, existing EFH calculations determined the C-130 Center Wing Box (CWB) material life to be 60K hrs, with expected replacements beginning FY18
- From CY01 through CY04, CWB inspections revealed cracks at fatigue critical locations, exceeding engineering predictions in both quantity and severity
- As a result of CWB ASIP analysis, C-130s with greater than 38K hrs of EFH on the CWB were operationally restricted, and those with greater than 45K hrs were grounded

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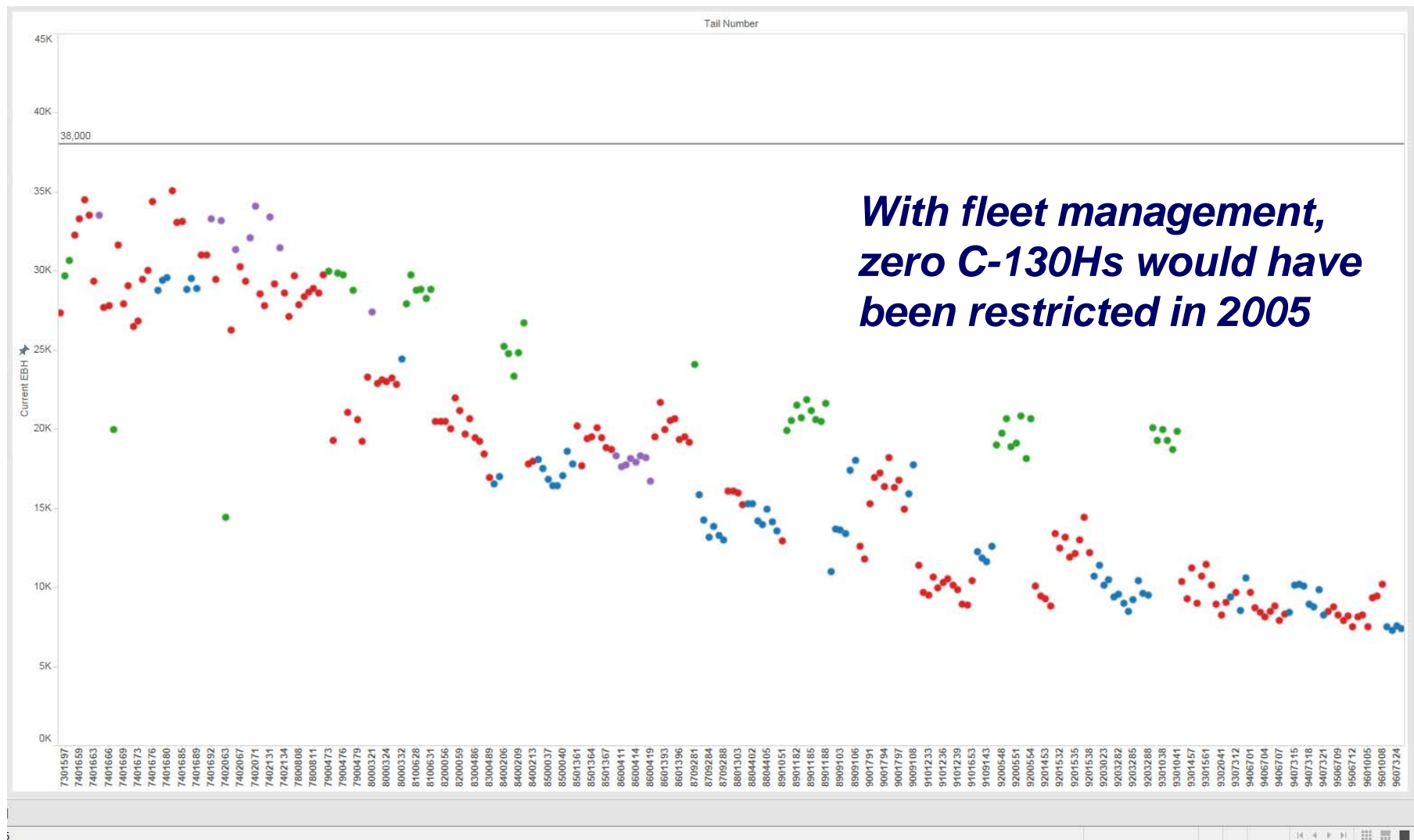
C-130 Historical Case Study

- Using historical EFH, AMC/A9 was able to model the actual aging of the C-130H fleet leading up to 2005
- Applying the Enterprise Fleet Management Concept, A9 redistributed the C-130H fleet across the Active Duty, ANG, and Reserves as needed to level fleet EFH
- The modeling results show that we could have eliminated all restrictions and groundings until 2008, without any planned CWB modifications

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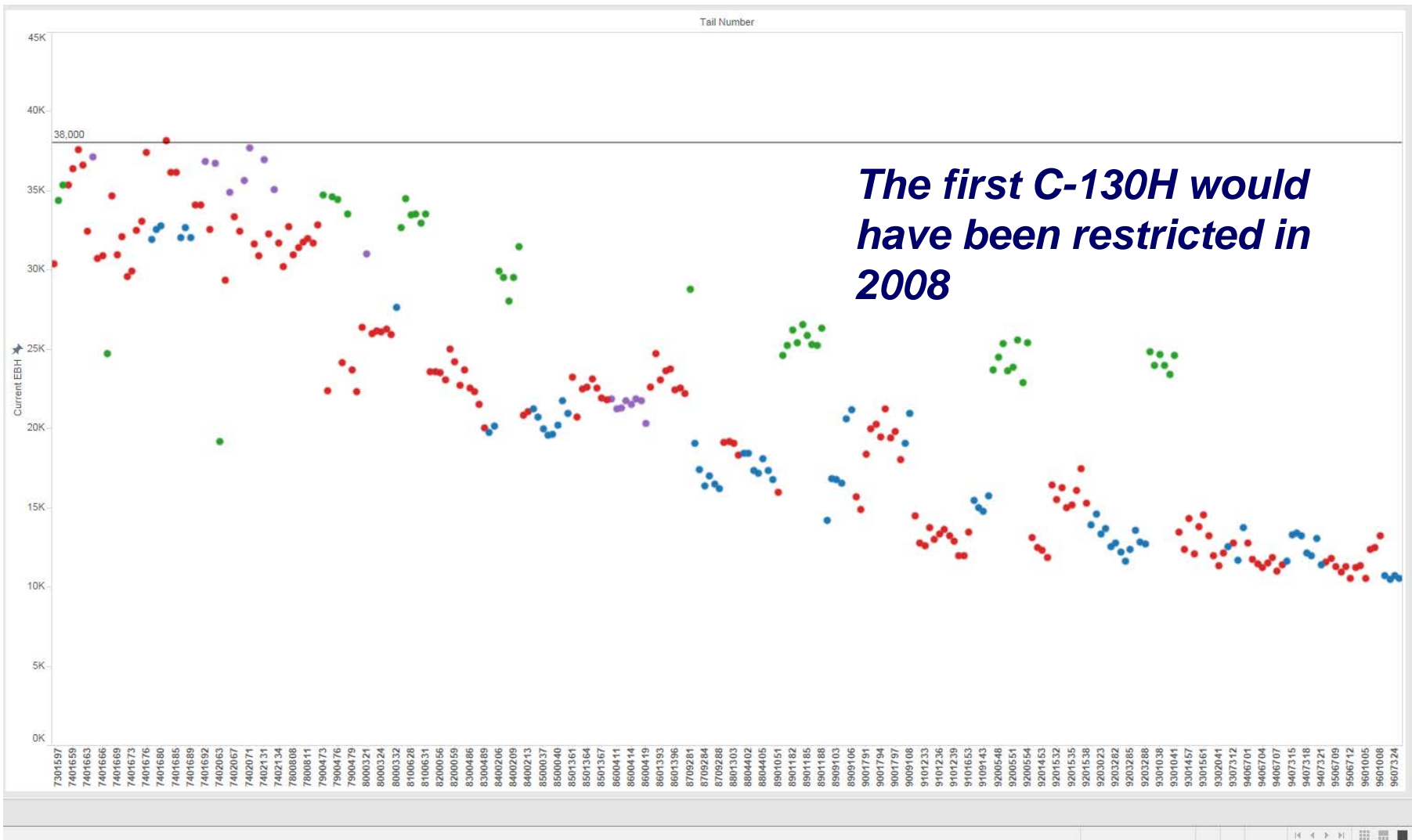
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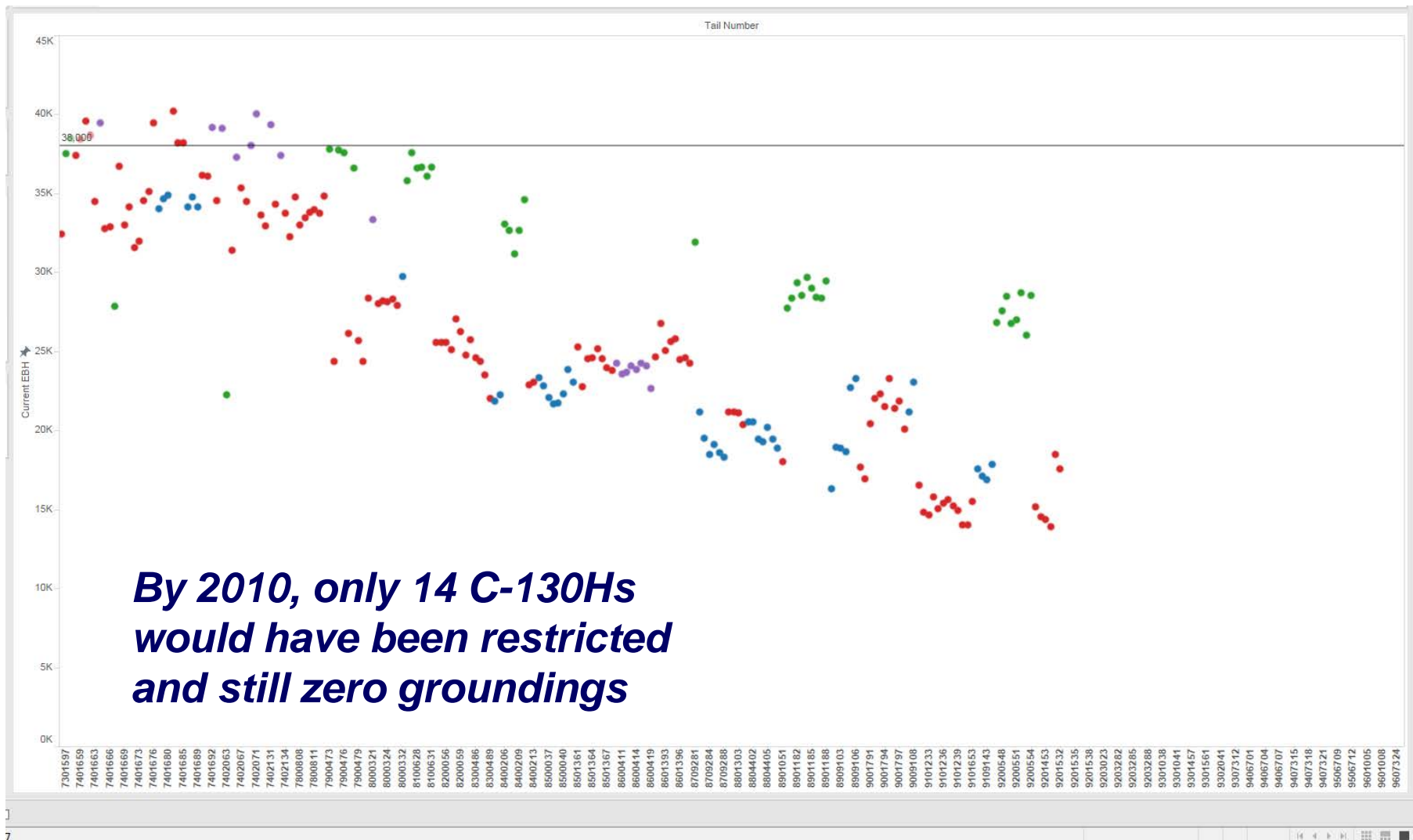
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C-17 Fleet Management



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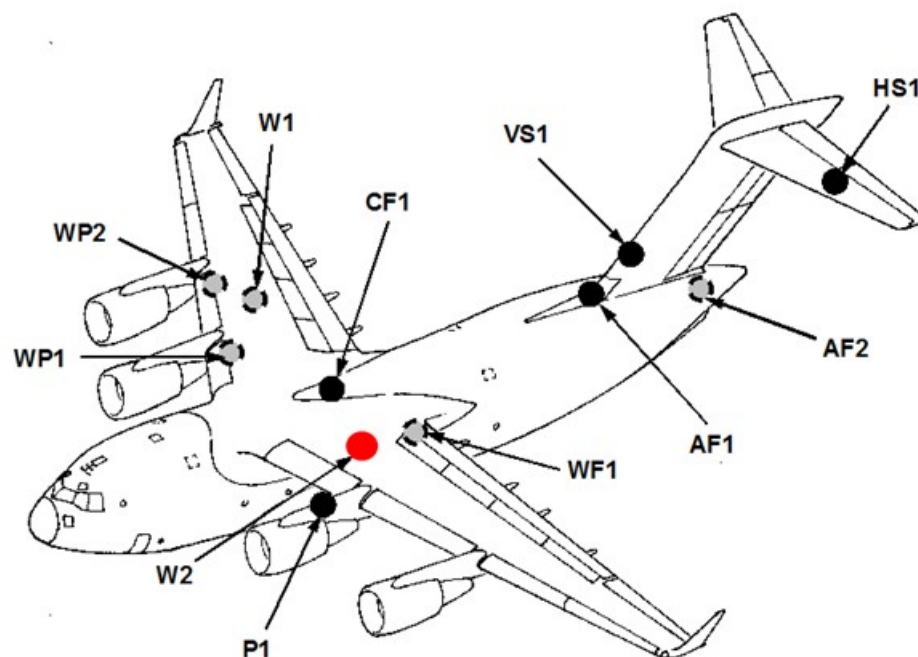


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Current C-17 Fleet Management

- The Airframe Certified Service Life for the C-17 is primarily restricted by the upper wing surface, known as the W2 Control Point, which is limited to 42,750 EFH
- Current fleet management utilizes W2 EFH to rotate AMC C-17s in/out of Altus AFB, which accrues the most EFH of any base due to training flight profiles



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Current C-17 Fleet Management

- Aircraft in the bottom 75% of the fleet, based on EFH, could potentially be rotated in to Altus AFB
- Aircraft in the next 25% of the fleet are restricted from rotating into Altus
- Aircraft that reach the top 5% of the fleet must rotate out of Altus, if assigned there
- Rotation is currently limited to AMC aircraft, reducing the available pool from 222 to 136.

A/C serial	AC_W2
930599	25498.8
930602	23755.3
923293	22331.1
930601	21933.9
970042	21663.3
923294	21600.5
880266	20776.1
900532	20605.8
940065	20566.4
923292	20028.5
900534	19963.8

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Enterprise Fleet Management Concept



Current Service Life estimates of 2040 are a result of owning MAJCOMs, AMC, and AFMC actively managing W2 EFH

However...

**with a few changes, we can extend
C-17 service life to 2050 or 2060!**

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Enterprise Fleet Management Concept



- With current Fleet Management Processes, 13-16 C-17s will reach their service life by the mid 2040s, with the remainder of the fleet following by 2050 and beyond
- Initial focus of the EFM Concept builds on current fleet management practices, utilizing all 222 C-17 aircraft (AD/ANG/AFRC) to achieve maximum service life for the fleet
- Concept would expand EFM framework to rotate aircraft between ALL bases on a forecasted timeline, to create/maintain a standard EFH waterfall across the C-17 fleet

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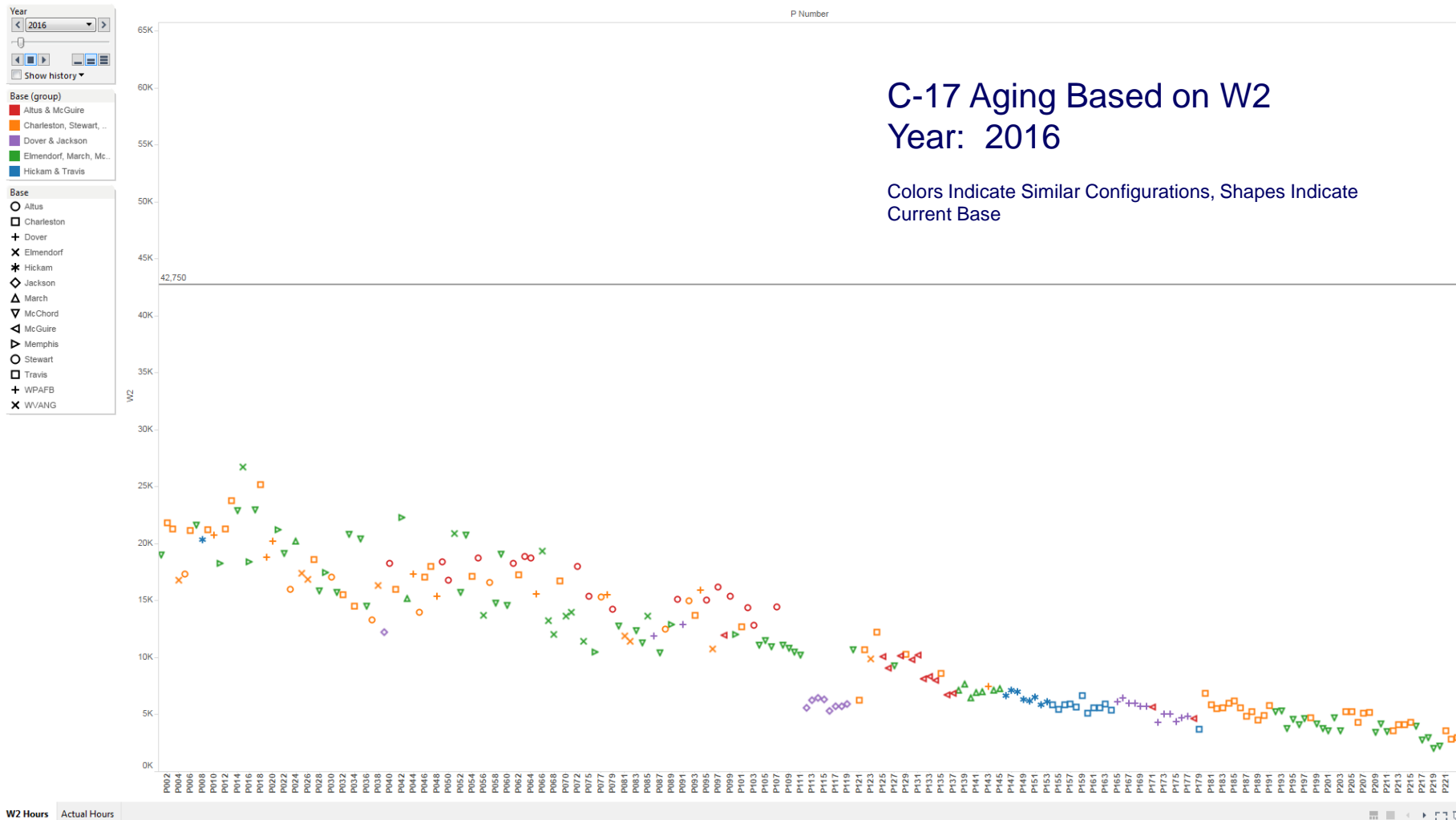
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UPDATED SERVICE LIFE BRIEFING - EFH

Current Status

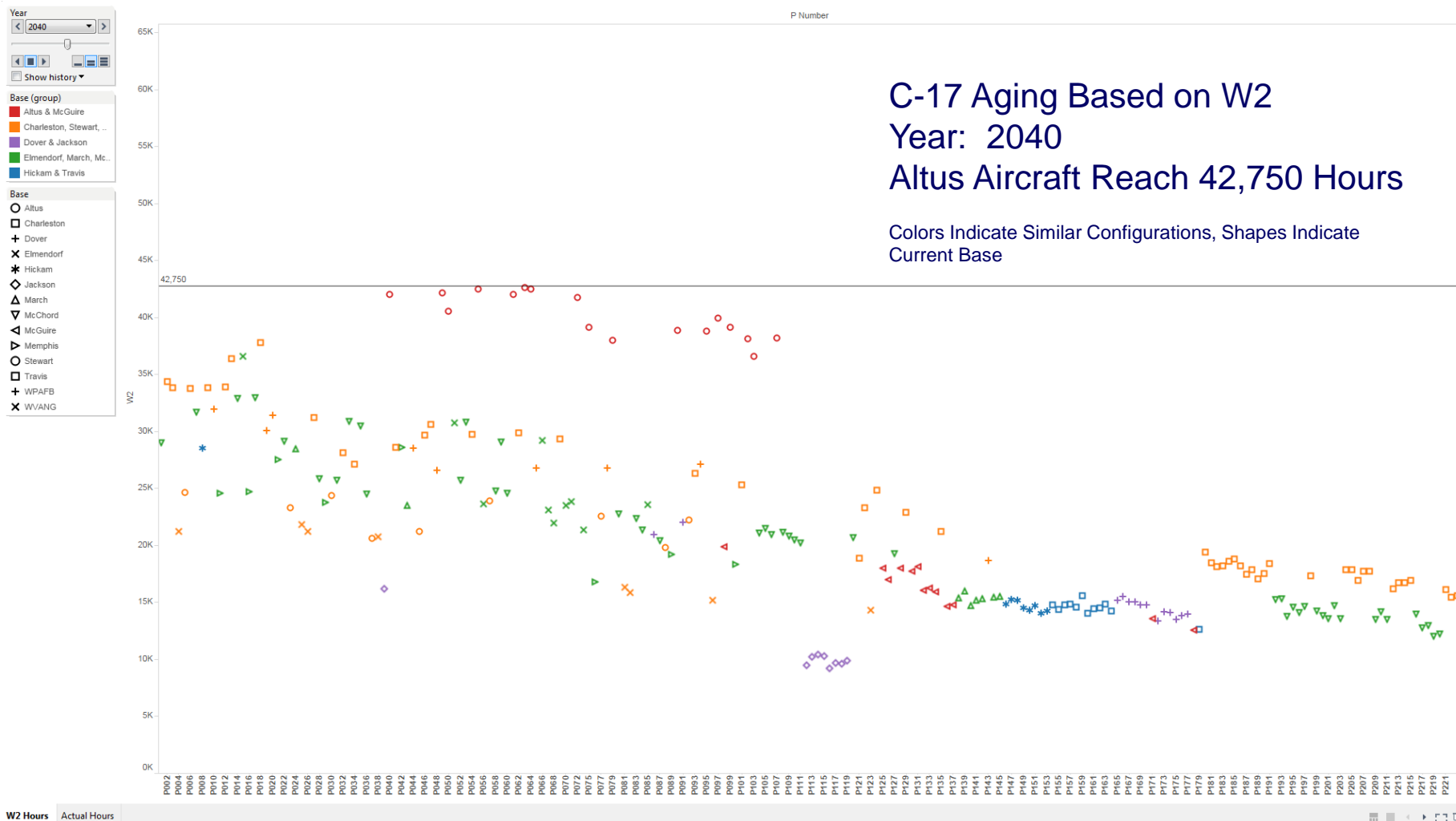


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UNCLASSIFIED UPDATED SERVICE LIFE BRIEFING - EFH Current Status



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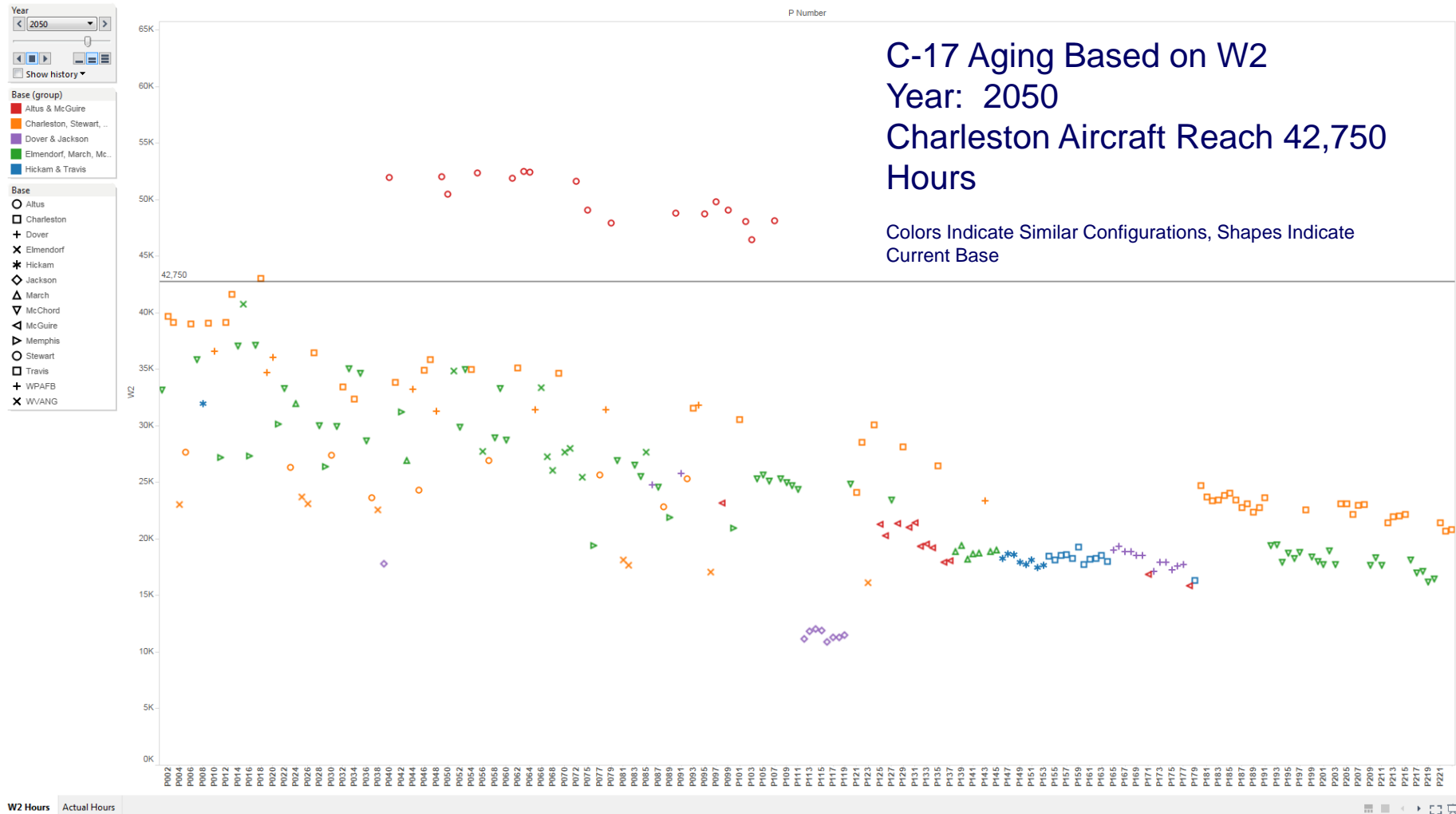
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UPDATED SERVICE LIFE BRIEFING - EFH

Current Status



W2 Hours Actual Hours

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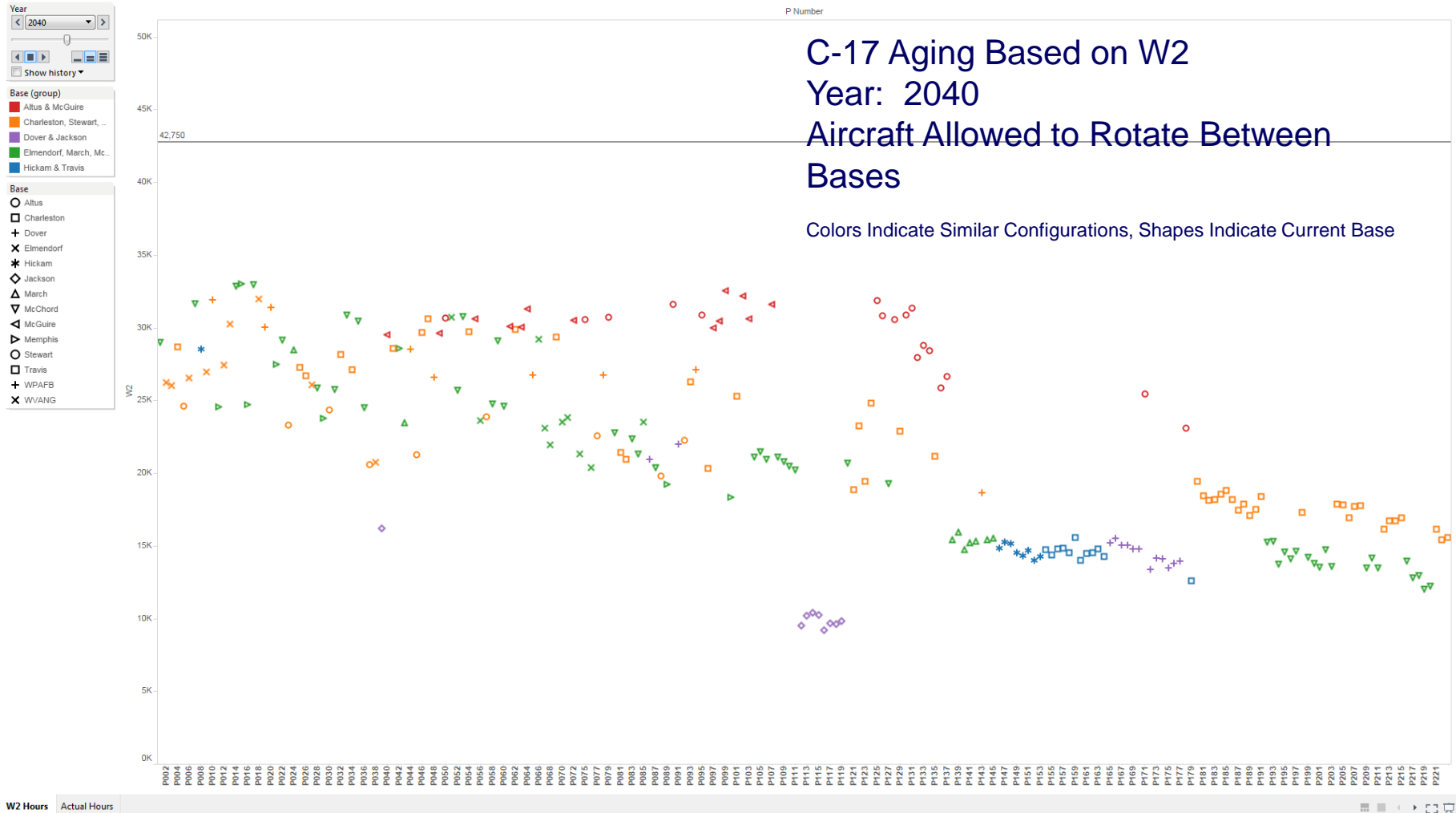
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Base Pairing EFH Management - 2040



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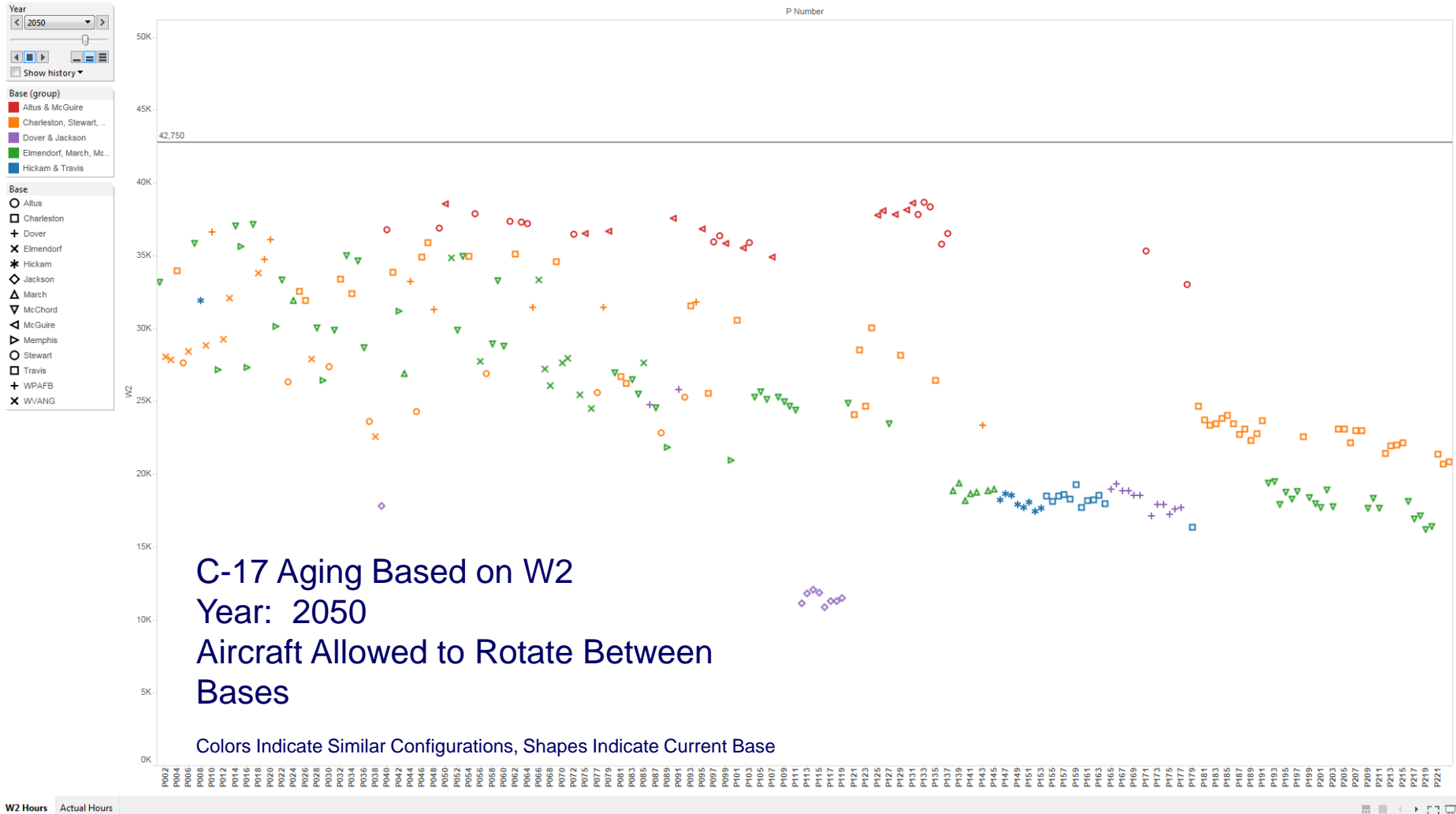
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Base Pairing EFH Management - 2050



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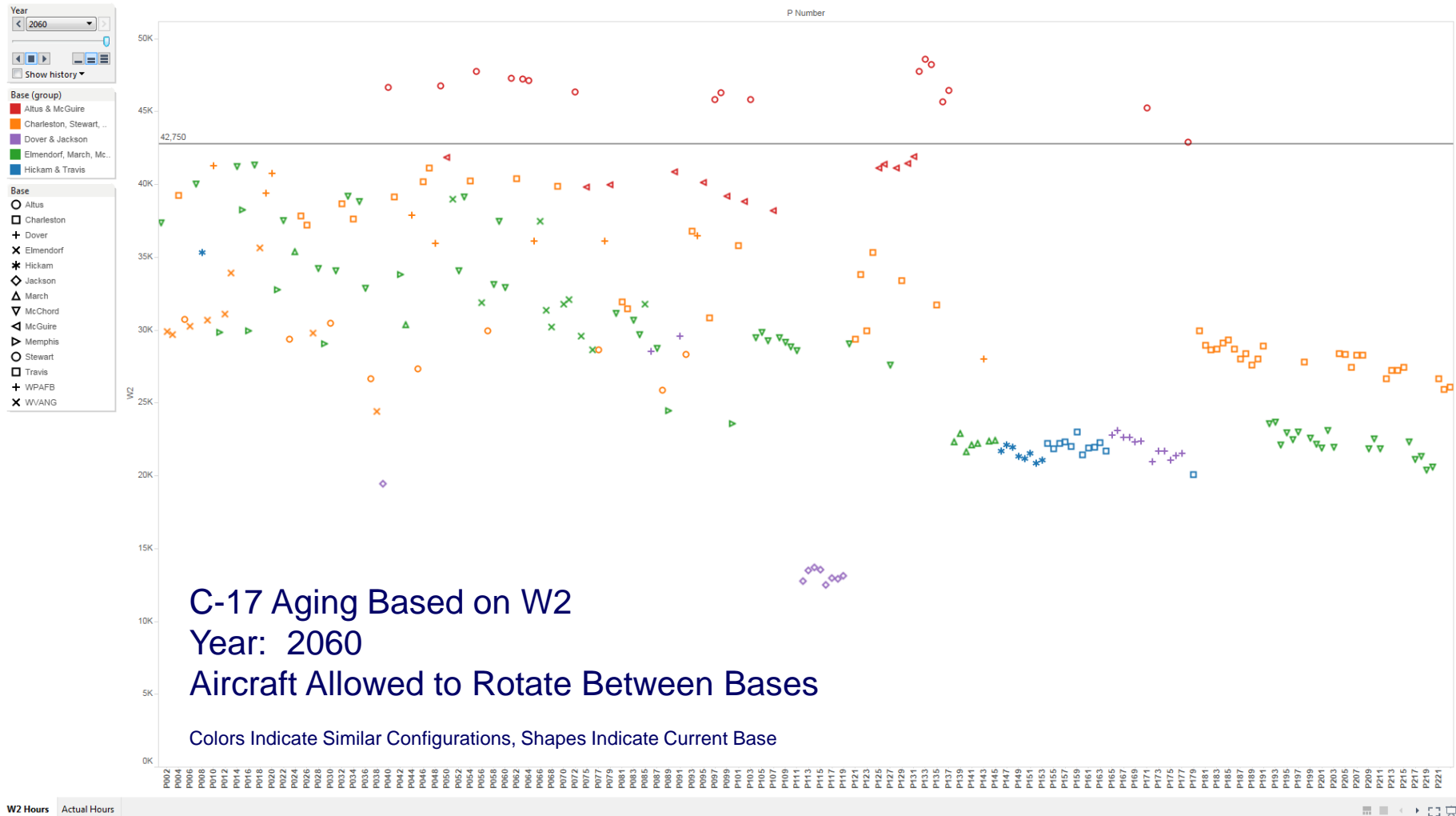
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Base Pairing EFH Management - 2060



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Enterprise Fleet Management Concept



**Why is it so important to maximize the
service life of the C-17 fleet?**

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Future Enterprise Fleet Management Concept



- Due to recapitalization of the tanker fleet, the C-X is not expected to begin delivery until at least the mid to late 2040s
- As a result of C-17 EFH aging, and the programmed retirement of other airlift systems, the potential exists for a gap in our required Strategic Airlift capability
- By incorporating EFM across the C-17 fleet, the Total Force gains an additional 10-20 years of service life, providing recap space for other USAF priorities, and options for the future of the C-X

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Enterprise Fleet Management Constraints

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Constraints



■ Title 10 USC FY16 NDAA Section 1088 Modification:

“Before making any aircraft transfer the SECAF shall ensure a written agreement between the Director of the ANG, AFRC/CC, and CSAF for any aircraft exchanges”

■ Exceptions:

“When there is reciprocal permanent assignment of an aircraft that does not degrade the capability of, or reduce total number, of aircraft.”

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Constraints



-
- What does “does not degrade the capability of” mean?

Standard Aircraft Configuration

- Current C-17 Fleet has three different OBIGGS and Extended Range tank configurations:

ER/OBIGGS II, ER/OBIGGS I, Non-ER OBIGGS I

- Need to standardize the fleet in the near term for greater success of the Enterprise Fleet Management concept

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Constraints

Ownership

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Way Ahead

- Advocate for EFM concept across MAJCOMs
- Standardize configuration of the C-17 Fleet with ER/OBIGGS II
- Codify how we will manage EFH rotations, with the understanding that limiting the rotation to the owning MAJCOM does not address EFH hours

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Way Ahead



BOTTOM LINE:

Utilizing the Enterprise Fleet Management concept, the Total Force can mitigate EFH effects on the C-17 fleet, extend service life, and provide recapitalization options

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QUESTIONS?

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