United States Air Force Pilot Shortage Perspective & Way Forward

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**Current Challenges to the Aviation Community**

**01 Security of Nation’s National Defense**
Our nation’s commercial transportation infrastructure and economic well-being is predicated on national security.

**02 Growing Demand for Qualified Pilots**
Global demand for pilots is increasing exponentially. Boeing estimates commercial demand to reach 635,000 by 2037 (including 127,000 in North America).

**03 Insufficient Training Infrastructure**
The growing and rapid demand for pilots requires training infrastructure and capacities to be innovative and adaptable to meet current aviation needs.

**04 Inspiring Aviation**
Inspiring aviation among youth and underrepresented groups is critical to ensuring that there is an enduring and sustainable pipeline of pilots to supply the current aviation enterprise.

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At the end of FY18 the Air Force was short approximately 2,000 pilots across the Total Force.

Pilot shortages remain most acute in the RegAF in fighter, bomber, and special operations pilots.

Pilot production grew above the programmed target for the first time but is still unable to outpace the loss of experienced pilots.

Retaining rates remained consistent from FY17 after increases were made to all three bonus and pay programs for aviators, arresting a multi-year downward trend.

Aviation Bonus take rates, which correlate with retention, were at 45% (short of the 65% target).

Returning the Air Force to a healthy, sustainable manning level requires addressing production and retention shortfalls simultaneously and congruently.
Historical Total Force
Programmed vs. Actual Pilot Production
Enable sustainable processes (enhanced recruitment, agile production pipelines, and enriching quality of service and life) that support a healthy aviation enterprise providing pre-eminent warfighters to meet national defense needs.

Health
- Ensure shape of rated force sufficiently conforms to validated requirements

Inventory
- Achieve 95% pilot (11X) manning by FY23 and 95% fighter pilot (11F) manning by FY28.

Diversity
- Increase awareness and opportunities for youth/Airmen from underrepresented backgrounds to be successful aviation professionals.

Culture
- Remove quality of life concerns and proactively develop enriching quality of service to differentiate military service.

USAF Way Forward
By leveraging innovative technology the AF is able to reduce the time needed to train an AF pilot from 1 year to 6 months.

In summer of 2018 PTN successfully graduated 13 of its 20 original students.
USAF Pilot Production: Producing Pilots in More Innovative Ways

**Industrial Age Model**
- Linear progression
- Sortie-centric
- Standardized
- Accumulates subjective data for

**Information Age Model**
- Emergent progression
- Task & Aptitude-centric
- Individualized
- Continual decisions based on accumulated objective data
Main Takeaways

- **Effectiveness**
  - End Users (FTUs) will be conducting final evaluation and will relay data accordingly, but initial feedback is that students are well within average performance

- **Training Lessons**
  - COTS VR simulation needs further development, but greatest learning is in use of VR as a training tool.
  - IPs were lynchpin to successful winging of SPs
  - Immersive academics were lauded by students for effectiveness of communicating lesson objectives
  - Student-centric training is valuable but presents significant scheduling challenges

PTN’s current model is not “the answer” to the future of pilot training, but it contains elements of “an answer” that we are working to distill
We’ve determined that:

- Quality of Service and Quality of Life are major drivers to retention
- Maintaining a Successful “Work-Life Balance” is key

The Air Force has undertaken a number of initiatives to remove barriers to continued service.

- Modernizing and creating transparency in the assignment process
- Increased flexibility in career path requirements
- Support in squadrons to assist with ancillary duties
- Bonus and incentive pay

Starting to bend the curve, but more work to be done
The AF continues to work in collaboration with external groups in order to increase awareness and opportunities for youth and Airmen from underrepresented backgrounds.

The CSAF and SecAF believe that increasing diversity among the pilot community is an American strength and a warfighting imperative.
By collectively working together to reduce barriers for youths we will be able to produce more pilots faster and increase the overall capacity of the aviation enterprise.

<table>
<thead>
<tr>
<th>Category</th>
<th>Barriers</th>
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<tbody>
<tr>
<td>Education</td>
<td>Academic rigor and standardized testing</td>
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<tr>
<td>Financial</td>
<td>Expensive and extensive training</td>
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<tr>
<td>Access</td>
<td>Equal access to opportunities and resources</td>
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<tr>
<td>Mentors</td>
<td>Diverse and influential role models</td>
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The AF’s actions involve working with agencies both inside and outside the Air Force in order to reach and develop future aviators.

Key programs include:
- AFJROTC Flight Academy
- Aviation-Character-Education (A.C.E) Solo Flight Program
- Chief Master Sergeant of the Air Force Pilot Scholarship
- Civil Air Patrol Cadet Programs
- AFROTC Flight Training Opportunities
- Pilot Interviews at Women in Aviation Conference
FAA and USAF have formally began collaborating to reach the following goals:

- Grow the national aerospace enterprise
- Reduce barriers, costs, and time of entry for pilots – equal opportunity, regardless of background
- Promote aviation nationwide
- Inspire youth to get involved with aviation and STEM
- Use technology to create more efficient training processes and a safer pilot

Key topics:

- Share current innovations and resources, including Pilot Training Next and artificial intelligence technology with FAA to build a more efficient training system
- Align common interests to facilitate executive and government action
- Collaborate with industry for technological developments
- Shape a new pipeline with various entry and exit points
How Can We Work Together?

- Develop a sustainable and enduring pipeline of pilots not only within the military but also across the civilian sector as well.
- Improve training inefficiencies through technology (i.e., artificial intelligence & mixed reality) in order to produce pilots faster and more safely.
- Increase collaboration among military, industry, and collegiate institutions.
  - Collectively work together to reduce barriers to entry.
  - Provide equal opportunities.
  - Promote aviation nationwide.

We all play a role in shaping the future of the aviation enterprise!
QUESTIONS?