



# Reimagining the MQ-9 Reaper

By

Maj Gen Larry Stutzriem, USAF (Ret.)

Director of Research

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# The MQ-9 Reaper

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## **MQ-9 Reaper provides a unique, high-value capability set**

- Persistent ISR-strike, Low cost, Unmanned

## **Brief history of the MQ-9**

- USD Acquisition and Technology John Deutch viewed RPAs as a “potentially lifesaving technology that would have been operational by now if the armed services weren’t so myopic or the acquisition system such a mire.”
  - November 1993, Deutch designated the development of an RPA as DOD’s very first Advanced Concept Technology Demonstrator (ACTD) project
  - January 1994, Pentagon’s UAV Joint Program Office awarded a contract to General Atomics to adapt the Gnat 750 to meet the military’s reconnaissance and surveillance requirements
- General Jumper envisioned expanding RPA beyond reconnaissance and surveillance
  - June 2000, Big Safari given responsibility for equipping Predators with guided missiles
  - October 2001, first strike by an RPA occurs on the opening day of OEF combat operations
- 1999 General Atomics begins development of the Predator B, later as MQ-9 Reaper
  - February 2002, first Predator B prototypes delivered to the Air Force for initial evaluation
  - Continued innovation from time-sensitive targeting to highly complex tactical operations having strategic effect



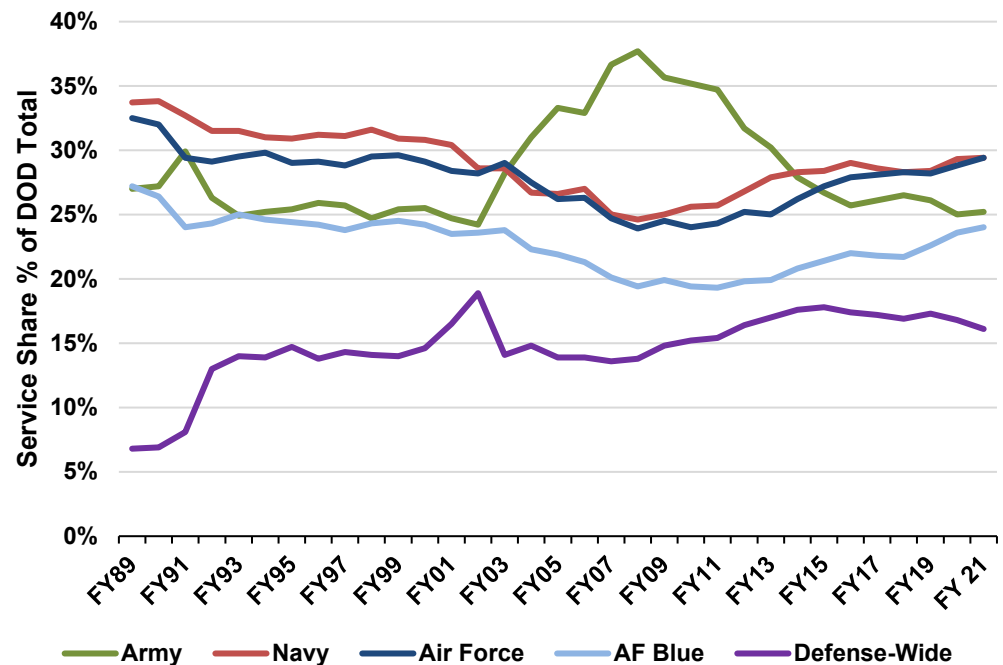
# Air Force Transformation, Resourcing, and Reality

## Air Force requires rapid modernization in response to growing threat of Chinese and Russian aggression

- Weight of deterrence and warfighting requirements shifting to Air Force and Navy

**Since the end of the Cold War, the Air Force has been consistently underfunded when accounting for pass-through funding over which the service has no control**

- Service has remained quiet about need for more funding
- Current modernization approach is largely budget-driven



## Force requirements for current operations show no signs of slowing down

- MQ-9s remain 100% tasked; demand likely to grow as part of over-the horizon posture
- Only platform that can deliver persistent ISR & strike, and at lowest cost-per-flying hour





# Air Force Resourcing Strategy

**The Air Force aims to cut legacy force structure not considered relevant in a highly contested conflict to divert those resources to new capabilities**

- In its sights is the MQ-9 Reaper as the Air Force halts its procurement short of stated requirements and plans to begin its retirement between 2030 and 2035

**Air Force has suggested acquiring a replacement for the MQ-9 capabilities**

- Will be difficult to achieve as the service faces a mountain of must-fund modernization programs

**Based on missions explored in this study and the affordability/ease of adapting the weapon system, MQ-9 is one of the most relevant aircraft in the Air Force inventory**





# Perspective on Common MQ-9 Narratives

## Challenges to survivability are overstated in missions where Reaper uniquely excels

- Reaper lacks the warning and self-protection of other 4<sup>th</sup> generation aircraft
- Some investment is necessary to let Reaper operate in increased threat environments

## From a cost-per-effect perspective, nothing comes close

- Low operating costs, high-endurance, unmanned

## Highly adaptable beyond current uses

- Unmanned aircraft allow developmental risk
- Existing demonstrations and experimentation with new capabilities and functionalities
- The RPA community is by nature highly innovative and used to adapting in combat operations





# Assessing the AF's Reaper Flight Plan

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## Existing capabilities can often be used in powerful new ways—especially in the hands of innovative warfighters

- This principle must be part of the Air Force's modernization calculus and applies to its remotely piloted aircraft enterprise, including its MQ-9s

## The future of the USAF's MQ-9 force should be informed by:

- The cost for MQ-9s to perform missions and achieve desired effects in the battlespace relative to other capabilities, maximizing cost-per-effect
- The potential for MQ-9s and RPAs in general to help fill critical capability and capacity gaps in an expanded array of mission areas
- The value of using MQ-9s to preserve high-end aircraft such as 5<sup>th</sup> generation fighters for what they were designed to do: perform high-end missions
- The time, cost, and risk of developing alternative weapon systems—including a next-generation MQ-9 replacement





# Engine of Innovation

## History of MQ-1 Predator and MQ-9 Reaper is one of continuous innovation

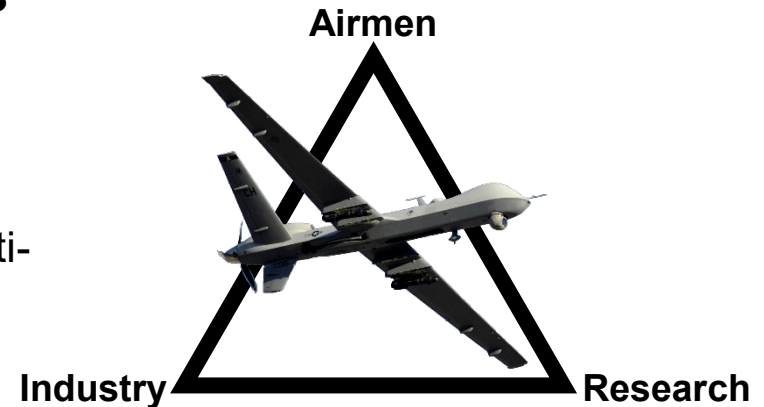
- Rapid improvement cycles conducted at unit level during operations to meet emerging demands
- Includes time-sensitive targeting and dynamic, multi-ship strike operations

## Unique community of airmen

- Includes airmen, civil servants, industry partners, and technologists
- Accelerated operational development of junior officers across many interconnected organizational and warfighting participants

## Only thing holding them back is the speed of layered bureaucracy—must safeguard

- The RPA community of airmen is the on-ramp to increased autonomy and MUM-T concepts and capabilities





# New Uses to Fill Critical Gaps

**A modest level of investment could ensure MQ-9s remain viable, multi-mission platforms over the next two decades as a replacement is developed, acquired, and reaches full operational capability**

**Potential new ways to use the mature MQ-9 enterprise include:**

- Wide area surveillance in regions of strategic competition
- Air and missile defense
- Maritime and littoral operations
- Communications relays
- Arctic domain awareness
- North American air defense against Russian cruise missiles
- Defense support of civil authorities







# Recommendations

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- **DOD should fund and integrate a self-protection capability on the MQ-9 to enable it to operate in contested environments**
- **Congress should direct DOD to conduct a study on new uses for MQ-9 Reapers**
- **The Air Force should expand Air National Guard Ghost Reaper program**
- **USNORTHCOM and NORAD should assess the viability of an airborne network of RPAs to improve detection and engagement of Russian cruise missile attacks**
- **Congress and the Air Force should protect the Air Force RPA community of airmen**
- **The Air Force should work with the combatant commands to increase engagement with partners and allies on the potential for MQ-9s to enable a range of missions that may otherwise not be possible due to budget constraints**



# Conclusion

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**The Department of Defense is unwilling to allocate the Air Force a greater share of defense budget share to make up for two decades of underfunding**

- The Air Force now finds itself cutting into internal capacity by reducing legacy force structure not considered as relevant in a highly contested conflict and diverting those resources to new capabilities
- This is an exceedingly high risk approach, but is one of the few options left available to service leaders
- Successfully navigating it demands careful consideration between what is truly excess and what can still prudently meet important mission requirements.

**Plans to retire the MQ-9 Reaper between 2030 and 2035 should be carefully reconsidered**

- The aircraft meets a broad range of existing and new requirements in a low cost, highly effective fashion.

*The MQ-9 remains one of the most relevant aircraft in the Air Force inventory*



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