

The Future of the Fighter



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April 23, 2008

Why an nation needs fighters



- A fighter is unique because it can:
 - Get anywhere in a 1000 km circle inside an hour
 - Defend itself throughout the mission
 - Provide human eyes on target
 - Place ordnance within 5-10 metres
 - Threaten any target except a submarine
- More than any other system, the fighter is:
 - Versatile
 - Mobile
 - Autonomous
 - Durable
- No other weapon matches those characteristics

What kind of fighter?



- **Survivable**
 - Able to complete its mission in the face of likely threats
 - Able to survive even in adverse situations
- **Affordable**
 - Losing a fighter must not be losing a national asset
 - Smaller nations still want more than 20 jets
 - Enough airplanes to deploy and sustain at the same time
 - Affordable alongside airlift, tankers, AEW
 - Reasonable share of national defense resources
 - Acquisition, operational and sustainment/upgrades
- **Versatile**
 - Adaptable across missions
 - Adaptable through life

Survivability



- More than one approach to survivability
 - Managed signatures + EW (Gripen &c)
 - Least cost throughout life cycle
 - Smallest impact on versatility
 - Standoff weapons for toughest threats
 - Low observables (F-22, JSF)
 - Increased development, acquisition, operating cost
 - Internal weapons a major limitation for a fighter
 - Networking becomes a challenge
 - Ultra low observables (Neuron, X-47B, NGB)
 - Applicable only to subsonic, all-wing shapes
 - Not suited to air-to-air missions
- No solution is ideal for all missions

Versatility



- Fighter as the center of a system
 - Multiple missions and targets
 - Air-to-air is still essential
 - National air defense, air policing
 - Defense of deployed forces
 - Long-range strike
 - Ideal carrier for long-range precision-guided weapon
 - CAS
 - Requires persistence, coverage
 - Expensive jets seldom do CAS

Longevity



- The fighter itself is part of a system
 - Can bring bandwidth and control to the fight
 - Onboard decision-making
 - New FAC-A capabilities
- Nontraditional ISR
 - High-performance sensors: AESA, EO
 - Terabyte-capacity digital recording
 - Management and communications
- Adaptability is longevity
- Longevity is affordability

Conclusions

- The fighter will not be replaced
 - Missiles did not replace it
 - UCAVs will complement, not replace it
- Some factors will drive numbers down
 - Fighters are more capable and versatile
 - They're also invariably expensive
- Other factors will keep numbers up
 - The need for fleet size
 - Long-term operations and deployments
- Most nations will retain 50-plus firstline fighters