

Note from AFA President -- Why Numbers Matter, Part 2

Tuesday, September 2, 2008

AFA Members, Congressional Staffers, Civic Leaders, and DOCA members - what follows below is part two of why the US needs to buy aircraft in sufficient numbers to handle the missions it assigns its armed forces.

As always, I look forward to your comments.

Respectfully,

Mike

Michael M. Dunn, Lt Gen (Ret)
President/CEO

WHY NUMBERS MATTER

Mission - Air Defense

Scenario: Defend Saudi Arabia from an Air Attack from Iraq - circa 1990.

Number of CAPs needed: 3 plus a roving CAP plus a High Value Asset Protection CAP. Total of five. [The Saudis will man two additional CAPs with their aircraft. The Navy will cover an "end-around" CAP in the Arabian Gulf]

Number of aircraft per CAP: 4

Assumptions:

- Sortie duration - 5 hours with three aerial refuelings (AARs) - [you always have to have enough fuel to conduct an aerial engagement. You can't wait to refuel until you get too low on fuel]
- CAPs are located 30 minutes from home station
- Aircraft can only leave CAP when replaced by another aircraft
- Four ship AAR takes 30 minutes plus 15 minutes to rejoin tanker
- Aircraft - across the fleet (both broken and Mission Capable) - average 2.0 sorties per day - [note: this is a tough number to meet ... especially if the mission continues longer than 30 days]
- CAPs have to be manned 24/7
- No aircraft are lost in the operation (another interesting assumption).
- Mission capable rate is 85%

Question: How many aircraft do you need to conduct this mission?

Answer:

- 5 CAPs x 4 aircraft = 20 aircraft

- 2 additional flights of 4 on the tanker all the time = 8 aircraft. Total 28 aircraft. At change-over time, 56 aircraft are airborne - if all are replaced at the same time.
- Time on station for a single 4-ship = 4 hours (30 minutes to and from the CAP). This requires 6 missions per day - or $6 \times 28 = 168$.
- At 2.0 sorties per aircraft per day - in the perfect world - with no spares and no aborts, you need 84 aircraft. However, in the real world, each four-ship would have at least one spare - especially if the mission were critical. Total 105 aircraft.
- However, we still have depot requirements; we learned our lesson in WWII that we cannot safely shut down our initial training operation; we need attrition spares; test aircraft, aircraft in depot, those hard broke, etc. See <http://www.afa.org/PresidentsCorner/Notes/Note-2-29-08.pdf> for a simple explanation. This adds 62 aircraft for a total of 167 aircraft in the entire fleet.

Comments:

- This is a relatively simple mission. Expand the problem to make it air defense of the United States ... and the numbers are much larger
- Add to these requirements, the need for these aircraft to penetrate enemy air defenses and conduct Offensive Counter Air, Strategic Attack, Close Air Support, and Interdiction - and the numbers get very large, very quickly
- DOD wants to buy only 183 F-22s. The Air Force has a requirement for 381 aircraft. It is easy to see ... using this example ... the rationale for larger numbers.
- If the US leaders were to tell the Air Force: Create a no-fly zone around the country of Georgia - near to which are deployed Russian SA-20s - the mission could not be done by non-stealthy aircraft. And ... given the Russian threat, the need for even more CAPs, the shorter times on station, etc, even 183 F-22s would not be enough to conduct this mission.
- Numbers matter - something to think about.