

The Fighter Numbers Flap

Gordon England, the Pentagon's No. 2 official, has claimed that the F-22 is "designed for a specific mission" and 183 of them are "enough to do that mission," so USAF should buy no more. His words do not reflect the way the Air Force sees its requirements.

England's comment was a non sequitur. The Air Force does not build a fighter inventory—whether F-22 or F-35—to any "specific mission." It seeks the number needed to maintain 10 rotational air and space expeditionary forces. That number, insists the Air Force, is not 183 Raptors. It is not 250 Raptors. It is not 400 Raptors. It is exactly 381 Raptors.

Where does the figure 381 come from? Is it justifiable?

In simplest terms, the force-sizing exercise begins with the **squadron**, the basic unit of organization and building block of an AEF. The Air Force has determined that each AEF requires at least one F-22 squadron for air superiority, interdiction in high threat areas, and so forth.

The standard squadron contains 24 **combat-coded fighters**. The F-22's Operational Requirements Document validated that metric. The ORD was signed by the vice chairman of the Joint Chiefs of Staff.

Do the math: 10 squadrons times 24 aircraft equals 240 fighters.

Does that mean that 240 F-22s are enough? No. Note that the requirement is for 240 *combat-coded* F-22s. In order to maintain that many fighters constantly in a combat-ready condition and able to deploy on a wartime mission, the Air Force needs more F-22s for other needs. The question is: How many?

The Air Force has analytic formulas for determining the answer. Here they are:

- **For training**, 25 percent of the combat-coded force, or 60 more fighters.

- **For test purposes**, five percent of the total of combat-coded and training aircraft, or 15 more fighters.

- **For backup inventory**, 10 percent of the combat-coded, training, and test aircraft, or 32 more fighters.

- **For attrition reserve**, 10 percent of everything above, or 34 more fighters.

Those four categories, taken together, generate an additional requirement for 141 F-22s. Add up those fighters and the combat-coded ones and you come to—*voilà*—381 fighters.

The Air Force has stuck to that figure since 2002. The Joint Requirements Oversight Council, comprising the vice chiefs of staff of each service, validated the number in February 2004.

England's view notwithstanding, this number is not derived from some specific mission, specific threat scenario, budget levels, or wishful thinking. It does, however, provide the Air Force with the fifth generation fighter in numbers sufficient to avoid the creation of yet another low-density, high-demand weapon system.

Indeed, the AEF system provides continuous capability for combatant commanders without breaking the force. The difficulties the Army experienced in recent years (and the Air Force in the 1990s) show what happens when a force is not properly structured for long-term deployments.

Categories	USAF	DOD	△
Total F-22s	381	183	-198
Training	60	29	-31
Test	15	7	-8
Backup	32	15	-17
Attrition	35	17	-18
Combat-coded	240	115	-125
Full Squadrons			
Total	10.0	5.0	-5
Per AEF	1.0	0.5	-0.5

Now consider what happens when the Air Force is forced to buy substantially fewer numbers.

The table on this page compares USAF's preferred program and the one DOD has actually approved. With a 183-aircraft inventory, the table shows, the Air Force can generate only 115 combat-coded F-22 fighters—less than half the required number.

That translates into only one-half a squadron of advanced fighters per AEF, much less than is needed.

To compensate, the Air Force has altered the traditional per-squadron aircraft numbers so as to increase the number of squadrons. It now considers the standard F-22 squadron to have 18 airplanes, not 24. Even so, the plan struggles to flesh out seven squadrons, and the smaller units have higher overhead costs with less flexibility and combat power.

Even the one-squadron-per AEF metric is a change. USAF has historically used roughly 1.5 squadrons of F-15s per AEF, but the F-22 is more capable and so, the thinking goes, the Air Force can get by with less in the way of numbers. As matters stand, the 381 F-22s would have to replace roughly 700 F-15s.

When it comes to the F-35 fighter, the situation is less mature and therefore much looser and subject to revision down the road. The Air Force requirement, at present, is for 1,763 F-35s. That number roughly equals today's number of legacy fighters other than the F-15s.

The Air Force would use the F-35 to replace about 1,300 F-16s, 350 A-10s, and 50 F-117s. However, few believe the Air Force will be able to replace those aircraft on a one-for-one basis, as the 1,763 number implies.

The irony is plain. Though the F-35 requirement number is squishy, the Pentagon refuses to allow the Air Force to revise it downward, and, while the Air Force's F-22 number is firm, the Pentagon will not allow the Air Force to pursue it. ■

More information: <http://www.fas.org/sgp/crs/weapons/RL33543.pdf>