



# THE DEFENSE MONITOR

PROJECT ON GOVERNMENT OVERSIGHT

## Personnel Reform and Military Effectiveness

BY DON VANDERGRIF AND DAN GRAZIER

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Warfare is first and foremost a human endeavor. Wars are fought by people using their minds; weapons are only tools to implement people's ideas. It is people, and the ideas they wield, that make the difference between a sharp, decisive victory like Desert Storm and a slow, deadly slog like World War I. Fostering the right ideas requires a culture of *Mission Command*. But in today's military, harmful personnel practices preclude such a culture.

Mission Command defines how a military organization approaches leadership in combat. The U.S. Army, for instance, defines it as "the exercise of authority and direction by the commander using mission orders to enable disciplined initiative within the commander's intent to empower agile and adaptive leaders in the conduct of Unified Land Operations."<sup>1</sup> Mission-type orders simply means that a commander tells subordinate commanders what needs to be done, leaving it up to the subordinate to figure out how to do it. This gives the on-scene commander, who has the best understanding of the battlefield situation, wide latitude to design an operation. It also requires disciplined initiative on the part of adaptive leaders.

The opposite concept is the *Methodical Battle*, which calls for detailed orders with step-by-step instructions. The French developed that system and it was adopted by the United States in World War I. While no longer the official doctrine in the U.S. military, methodical battle practices continue. Units still issue long, detailed orders replete with execution checklists and synchronization matrices. Doing so is an attempt to reduce warfare to a science, when in reality it is an art. Unless the military is led by people who have mastered that art, we are likely to continue to see the tactics the United States

employs further divorced from strategy. Think Iraq and Afghanistan.

Officers persist in using methodical battle practices for several reasons. First, it is simply part of the American military tradition. Second, most officers fear appearing to not be in complete control at all times. Third, and most importantly, most officers are unwilling to trust their subordinates to use their own on-scene judgement and risk anything going wrong.

But to be truly effective, trust of this kind must be ingrained in the corporate culture of the military. A higher commander should rarely, if ever, reproach a subordinate for demonstrating initiative. From their first day in the service, officers should be taught it is better to make a good decision immediately than to wait and make a better decision later, possibly missing a fleeting battlefield opportunity. An unforgivable mistake in Mission Command is inaction and waiting for perfect information.

What is needed is an officer corps filled with people who thrive in an environment in which great responsibility is suddenly thrust upon them. Rather than taking the safe route and waiting for orders, such people eagerly make decisions based on their commander's stated intent. The Germans have a great word, *Verantwortungsfreudigkeit*, or joy in taking responsibility, to describe this essential leadership quality.

Mission Command represents the highest form of the military art. It should be included in all education and training from the beginning of basic training. Even more importantly, it must be integrated into everything the military does, from so-called "garrison" life to the way the services retain and promote personnel. The cultural characteristic underpinning the entire system is trust. Trust must flow freely up and down the chain of command.

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A personnel system capable of developing that level of trust is decentralized in all aspects. Senior leaders will focus only on retaining quality individuals, even at the risk of being understaffed. Currently, anonymous centralized promotion boards select who is to be promoted based on scant information in personnel files. This hardly paints a complete picture of an individual's worth. Only those with intimate knowledge of the individuals are capable of making decisions of that nature. Achieving the level of trust necessary to allow commanders to make such decisions would have enormous benefits on the battlefield as well.

The disastrous experience in Vietnam prompted some within the defense establishment to reevaluate the way U.S. forces should fight. American military leaders recognized that the single-enemy focus of linear state-versus-state warfare would not be relevant in a non-state warfare world.<sup>2</sup> Transformation to a more deployable, adaptive, and agile force began. Information dominance across the tactical and operational levels, enabled by technology, shaped the basic assumptions about how the United States would fight.

Enter *Manoeuvre Warfare*, the doctrine adopted by the U.S. Army and Marine Corps in the 1980s. As defined in the Marine Corps' capstone doctrinal publication, *Manoeuvre Warfare* "is a warfighting philosophy that seeks to shatter the enemy's cohesion through a variety of rapid, focused, and unexpected actions which create a turbulent and rapidly deteriorating situation with which the enemy cannot cope."<sup>3</sup> The adoption of *Manoeuvre Warfare* as the official doctrine signaled an attempt to shift away from what has come to be known as the "American Way of War"—a way that resulted in the kind of attrition

battles characteristic of World War I. American forces have traditionally sought to physically destroy her enemies through sheer industrial might and numbers in head-on clashes, but with *Manoeuvre*, the U.S. would defeat her enemies by rendering their forces ineffective through an indirect approach. An ideal *Manoeuvre* campaign would see the enemy defeated without a battle. Yet the full potential of this doctrine has not been realized because the underlying culture of the military has not changed.

The models for designing, testing, and evaluating new concepts remain tied to mathematical and linear threat models used by General William DePuy, the first commander of U.S. Army Training and Doctrine Command, to justify force development funding in the 1970s. This model requires definitive assumptions about how the military would fight that could be rationalized mathematically on the linear battlefield.<sup>4</sup> These further dictate a training philosophy of precisely mapped out exercises that require little creativity on the part of those responsible for carrying them out. This is the task/condition/standards method of training familiar to all service members for the past 50 years.<sup>5</sup>

Even though the nature of military conflicts was changing, the assumptions about threat models used to create change were not. After 30 years and a decisive victory in Desert Storm, the military could not question those models without calling into question massive defense budgets required to fund a force with the size, composition, and capabilities desired by so many in the defense establishment. The evolving face of war—including non-state groups becoming more powerful, combined with technological advances on which the DoD was spending development funds—led

many to conclude that the military would be able to “do more with less” training and education. Complicating all of this is the delusion that the United States will always be able to prevail with better military technology.

The military’s inability to reconcile the desire to operate in an efficient, businesslike manner with a world in which the objectives cannot be defined quantitatively persists. The DoD had firmly attached itself to a force development model in which doctrine is not “how we will fight” the nation’s wars, but “how we will justify acquiring and managing resources” on a macro-level. Doctrine no longer defines the force in terms of size and equipment, because the extensive bureaucratic systems built in the post-World War II world now holds doctrine captive to process. Doctrine became overly dogmatic, which defeated the entire concept!<sup>6</sup>

Conflicts of the last twenty years—such as our experiences against non-state actors in Somalia, Bosnia, and Kosovo—have rendered much about the military’s traditional approaches to operating and training obsolete. Yet, the military persists in using training methods no longer suited to the current environment. Leaders raised under that philosophy chose not to question it. Tactical problems are viewed as either the failure of subordinates to understand doctrine, failure to develop detailed standard operating procedures, or political failures resulting in the improper use of military forces. They are certainly not seen as being indicative of a need to critically examine Army assumptions and traditions.<sup>7</sup> Further this meant exhibiting professional behavior that had become increasingly less desirable by a military still celebrating the leaders and successes of Desert Storm.<sup>8</sup>

Another event, unrelated to war-fighting, helped entrench organizational conservatism in the military. In the 1980s, internal military debates about how to fight and how to train that had accompanied evolving doctrine were supported indirectly by robust resources.<sup>9</sup> But the dramatic drawdown and resource crises of the 1990s slowed and almost stopped doctrinal innovation. That drawdown shrank the Army by half and the other services to lesser degrees. This had the effect of instilling strong professional conservatism and group-think. The drawdowns also made it easier for the old guard

should always be people, ideas, and hardware, in that order. When defense dollars are limited, decision-makers should first consider spending cuts on weapons programs, not in personnel or training.

Training became increasingly centralized as commanders attempted to husband resources. Junior leaders were not allowed to squander limited resources learning their craft. Instead, most were taught “what right looks like” by their seniors, because there was too much risk in allowing junior officers and NCOs to develop professionally the same way their seniors did. Innovative free-play training



Soldiers prepare to fire on an insurgent position during a firefight in Baghdad’s Adhamiyah neighborhood June 16, 2007.

to purge the ranks of those who questioned their way of doing business.

That the defense establishment is biased towards designing and building expensive weapons systems is an idea generally only challenged by those whose living is made through such means. So, when budget conflicts arise, military personnel and training suffer long before any weapons program is cut. This should not be taken as a blanket call for perpetually high defense budgets, but rather for better prioritization by those involved in making decisions about national security. The priorities

methods were considered inappropriate for conventional forces. Junior leaders emulated the behaviors of their seniors, centralizing and directing the “task/condition/standards” method, and held strict adherence to accepted practices as an essential measure of leader competence.

In the Army and Marine Corps, achieving combat effectiveness through training ceased being the primary measure of leader competency. Careful stewardship of resources, and the satisfactory completion of resourced events, took precedence over the actual effectiveness of train-

ing. Training itself changed from experiential training (proficiency gained through realistic experiences) to event-driven training, following strategies determined by the service's training commands.<sup>10</sup>

Central control of training determined the approved methods and allocated resources and external "trainers" for unit commanders. The Army's Combat Training Centers (CTCs) changed from an environment in which leaders trained their units to fight to a place where outsiders told leaders to follow approved scripted events. The same occurred at the Marine Corps' Air Ground Combat Center in Twentynine Palms, CA. Leaders who survived the draw-down ended up following doctrinal methods precisely and evaluating others by how well they followed the same methods.<sup>11</sup>

The Army Chief of Staff attempted to institute changes to both doctrine and training methods in 2003 not only to help win in Iraq and Afghanistan but also to prepare for future wars. But leaders found they were hamstrung by a generation of subordinate leaders in the institutional Army who survived and thrived by not changing any systems unless they were first given the approved answer. Army leaders—officers and NCOs—became victims of goal displacement. Faced with uncertainty and

ambiguity, they transformed what their cultural experience told them they could do (and could not do) into what they believed they should do. It only became worse when the broader organizational and senior leader culture did the same. Many would simply check a box complete on a list of training events and claim their units had to be combat effective because they had followed all the steps directed by a central authority.<sup>12</sup>

As a result, young leaders and soldiers are not forced to work things out for themselves or to learn to be individually responsible. Not understanding why tasks are performed a certain way, they often fail to adapt properly to changed circumstances. Fortunately, thousands of leaders at the officer, NCO, and retired levels have recognized the downfalls of today's training and education doctrine and are moving from the bottom up to fix it, better preparing tomorrow's military for the changing face of war.<sup>13</sup>

This is why personnel reform is so important. Without changing the way the military retains and promotes people, it will continue to produce the kind of career-minded officers who would never dare to question an order or take a risk, either on the training field or the battlefield. Those officers better able to navigate the bureaucracy and keep their bosses happy will be the ones

who get promoted, while the innovators and mavericks leave in frustration or are forced out of the service.

Army Chief of Staff General Raymond Odierno and Chairman of the Joints Chief of Staff General Martin Dempsey have endorsed a belief in Mission Command and Leader Development as their top priorities. To achieve these goals, their successors General Mark Milley and General Joseph Dunford must also boldly fight the personnel bureaucrats to achieve the necessary regulation reforms and work with Congress to change laws such as 1980 Defense Officer Personnel Management Act to ensure the United States will develop the leaders necessary to win long into the future. ■

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1. U.S. Army, Maneuver Self Study Program, "Mission Command."
  2. William S. Lind, "Understanding 4th Generation War," Anti-war.com.
  3. Marine Corps Doctrinal Publication 1, *Warfighting* (MCDP1), Washington, DC: HQMC, June 20, 1997, p. 73.
  4. John C. Tillson, Merle L. Roberson, and Stanley A. Horowitz, *Alternative Approaches to Organizing, Training and Assessing Army and Marine Corps Units*, Alexandria, VA: Institute for Defense Analysis, November 1992, pg 23.
  5. General Paul F. Gorman, *The Secret of Future Victories*, Fort Leavenworth, KS: Combat Studies Institute, June 18, 1979, pp. 56-57.
  6. Robert A. Doughty, "The Evolution of U.S. Army Tactical Doctrine, 1946-1976," *Leavenworth Papers 1*, Fort Leavenworth, KS: Combat Studies Institute, August 1979.
  7. Richard Gabriel and Paul L. Savage, *Crisis in Command: Mismanagement in the Army*, New York: Hill and Wang, 1979. p. 58.
  8. Barry Posen, *The Sources of Military Doctrine: France, Britain, and Germany Between the World Wars*, Ithaca, NY: Cornell University Press, 1984.
  9. Robert W. Komer, "Strategy and Military Reform," *Defense Reform Debate*, ed. Asa A. Clark IV and others, Baltimore, MD: The Johns Hopkins University Press, 1984, p. 14 (in footnote 1).
  10. James G. Pierce, *Is the Organizational Culture of the U.S. Army Congruent with the Professional Development of its Senior Level Officer Corps?*, Carlisle, PA: U.S. Army War College, 2010, p. iii.
  11. Major Paul H. Herbert, "Deciding What Has to Be Done: General DePuy and the Creation of FM 100-5, Operations," p. 23.
  12. General Peter Schoomaker, "The Future of the United States Army." Remarks given at the American Enterprise Symposium, "The Future of the United States Army," April 11, 2005.
  13. William M. Darwin, "Adaptability Learning Symposium," Asymmetric Warfare Group, Fort Meade, VA: AWG, December 11, 2007, slide 3.

# Protecting Whistleblowers for a More Effective Military

DANIELLE BRIAN, EXECUTIVE DIRECTOR, PROJECT ON GOVERNMENT OVERSIGHT  
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## IT'S NO SECRET THAT PENTAGON SPENDING IS RIFE WITH WASTE,

fraud, and abuse. The Department of Defense is the only federal agency unable to pass a single audit since the government began the practice over 20 years ago. Congress's watchdog, the Government Accountability Office (GAO), has identified over 1,000 recommendations for reforms to save taxpayer dollars that the Department of Defense has yet to implement.

As Congress considers raising the debt ceiling yet again this fall, it's essential for taxpayers to know that this money will be spent responsibly, and that if it isn't, something will be done about it. Oversight depends upon the ability of those on the front lines to blow the whistle on waste and mismanagement without fear of reprisal. However these courageous military whistleblowers are endangered, not by some far-flung enemy, but by their own superiors.

By 2011, the Wartime Contracting Commission estimated that there was \$31 billion to \$60 billion in waste connected to operations in Iraq and Afghanistan.<sup>1</sup> The former Special Inspector General for Iraq Reconstruction largely credits tips from military whistleblowers for uncovering crimes on overseas government contracts. However, most of those whistleblowers were not willing to

be identified in court documents due to fear of retaliation.<sup>2</sup>

Military whistleblowers are vital to managing our enormous investment in the Pentagon. However, these brave Americans face a unique set of challenges when they come forward to report fraud, waste, abuse, and illegality within the armed services. Congress addressed many of the most significant shortfalls for civilian whistleblowers when it passed the Whistleblower Protection Enhancement Act in 2012, but the safeguards for members of the military to exercise their constitutional rights remain hopelessly antiquated. One expert told a Senate committee in June that such provisions remain "the lowest common denominator in the U.S. code for accountability."<sup>3</sup>

Military whistleblowers often face retaliation from their superiors in return for their service to the public. Captain Joshua Wilson and Major Jeremy Gordon told Congress that F-22 pilots experienced oxygen deprivation, disorientation, and other adverse health effects. As a result, the Air Force retrofitted the entire fleet and altered procedures to enhance pilot safety. But the two whistleblowers were removed from flying the F-22, and Wilson's piloting career was brought to a standstill.

According to the GAO, as of last

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year, there were 822 open military whistleblower reprisal complaints.

Perhaps more alarming than the sheer volume of cases, an internal review conducted by the DoD IG found its own staff had mishandled more than half of the military whistleblower reprisal cases they reviewed.<sup>4</sup>

Reprisals, prolonged investigations, and a culture that discourages whistleblowing all conspire to produce a less effective, less safe, and ultimately more expensive military system.

Some say that given the critical life-or-death decisions members of the military must make every day, applying civilian whistleblower laws to them is a poor fit. Actually the opposite is true: nothing is more corrosive to morale and unit cohesion than tolerating reprisals from higher-ups against those whose sense of honor requires them to speak out against wrongdoing.

Reforming how the armed services handle whistleblowers will help to safeguard the billions of dollars and millions of lives invested in military programs by enabling whistleblowers to expose problematic equipment, procedures, and leadership. It is imperative that Congress provide members of the military the protections they deserve. ■

1. Commission on Wartime Contracting, *Transforming Wartime Contracting: Controlling costs, reducing risks*, August 2011, p. 1.

2. Julia Harte, "U.S. military personnel have been convicted of \$50 million worth of crimes in Iraq and Afghanistan," Center for Public Integrity, May 5, 2015.

3. Testimony of Tom Devine, Legal Director, Government Accountabil-

ity Project, before the Senate Homeland Security and Governmental Affairs Committee regarding "Blowing the Whistle on Retaliation: Accounts of Current and Former Federal Agency Whistleblowers," June 11, 2015.

4. Bryan Rahija, "Internal Review Shows Gross Mishandling of Military Whistleblower Reprisal Investigations," POGO Blog, May 7, 2012.

# Congressional Watchdog Confirms Weapon-Testing Benefits

BY MANDY SMITHBERGER, DIRECTOR, CDI STRAUS MILITARY REFORM PROJECT

## OPERATIONAL TESTING EXPOSES WHEN WEAPON SYSTEMS ARE NOT READY FOR COMBAT

and need to be fixed or canceled. Realistic testing to ensure that those fighting our wars are not endangered by unsafe or ineffective weapons has made the Director of Operational Test and Evaluation (DOT&E) a primary target for phony “reform” language, authored by industry to mandate that DOT&E consider impacts on cost or schedule before requiring more realistic testing.<sup>1</sup> But the Government Accountability Office (GAO) released a report confirming what most objective and informed Pentagon watchers already knew: operational testing does not cause significant cost increases or schedule delays in major weapons programs.<sup>2</sup> In fact, it is essential for finding and fixing ineffective weapons programs before they fail in operational deployment.

The GAO’s findings are an unwelcome wake-up call to the defense industry and its allies in Congress, the Pentagon, and captured think tanks. One common misrepresentation put forward by those opposing the testing office is that the Congressional Military Reform Caucus, which wrote, support, and enacted the 1983 bill to create an independent operational testing office was a liberal conspiracy. In truth it was a bipartisan effort, with Republican Members of Congress often play-

ing the most substantial roles. Senators David Pryor (D-AK), Nancy Kassebaum (R-KS), and William Roth (R-DE) led the effort in the Senate to implement the findings of the Nixon Administration’s Fitzhugh commission when they wrote the DOT&E legislation. The legislation was approved as an amendment by a Republican-controlled Senate on a 91-5 vote. Outspoken supporters of the DOT&E legislation included then-Representatives Newt Gingrich (R-GA) and Dick Cheney (R-WY).

The GAO report effectively debunks a number of the operational testing myths, starting with the claim that such testing adds gridlock. Significant disagreements between DOT&E and program offices are rare, with 90 percent of the programs evaluated by DOT&E resulting in no significant disputes with the program office.

The GAO also refutes a common criticism that operational testing is redundant and provides little value.<sup>3</sup> Weapons programs actually benefited from adopting DOT&E recommendations. For example, DOT&E testing on the Marine Corps’ Enhanced Combat Helmet found that “inward deformation of the helmet shell during testing presented a serious risk of injury or death.”<sup>4</sup> The Marine Corps resisted these testing procedures because they prevented the expedited production initially planned.<sup>5</sup> But once the program passed the new testing require-

ments, the Marine Corps “found the Enhanced Combat Helmet preferable to the existing lightweight helmet and proceeded to full-rate production and fielding.”<sup>6</sup>

Further, GAO found the costs of operational testing “represents a relatively small amount of the total program cost.”<sup>7</sup> When testing did contribute to costs, it usually wasn’t the only or even the primary factor. Instead, concurrency—the excessive overlap between testing and production, or failing to “fly before you buy”—created significant cost, schedule, and performance problems.

The main tension between program managers and DOT&E, the GAO found, occurred when DOT&E discovered that contractual performance requirements did not relate to mission success or reflect realistic combat conditions. If the service and industry “reforms” eliminating DOT&E recommendations for improved testing were implemented, weapons programs would mainly test to performance thresholds they know they can pass and have little to do with real-world combat.

Program advocates in industry and the military services fear independent, realistic testing because it exposes when systems they are working on are not performing as advertised. But before we send our soldiers, Marines, airmen, and sailors into combat, we should know that their weapons will work in the chaos and stress they will face. ■

1. Mandy Smithberger, “House Acquisition ‘Reform’ Bill Guts Key Weapons Development Oversight Provisions,” Straus Military Reform Project, April 27, 2015; Austin Wright and Leigh Munsil, “In House bill, arms makers wrote their own rules,” *Politico*, May 12, 2015.

2. Government Accountability Office, *DoD*

*Operational Testing: Oversight Has Resulted in Few Significant Disputes and Limited Program Cost and Schedule Increases*, June 2, 2015. (Hereinafter GAO Report)

3. Sydney J. Freedberg, Jr., “Cut ‘Pure Overhead,’ Navy Sec. Mabus Says: DFAS, DLA, DOT&E,” *Breaking Defense*, June 2, 2015; Dina Rasor, “Panic in the Pentagon: Can’t Pass

Weapons Testing? Army Chief Says to Get Rid of It,” *Truthout*, November 17, 2011.

4. GAO Report, p. 21.

5. GAO Report, p. 21.

6. GAO Report, p. 21.

7. GAO Report, p. 9.

# Leaked F-35 Report Confirms Serious Air Combat Deficiencies

BY DAN GRAZIER AND MANDY SMITHBERGER

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**A NEW LEAKED TEST**, first exposed by *War is Boring*, provides more evidence that the F-35 Joint Strike Fighter's demonstrated performance is inferior to the current fighters it is designed to replace.<sup>1</sup> Specifically, the report finds that, in a series of 17 dogfights, the F-35 was consistently outmatched by an aging F-16.

An F-35A test pilot with extensive dogfighting experience in F-16s and F-15s wrote the report, detailing his cockpit observations during the January 2015 maneuvering combat tests of the F-35 against a 30-year-old F-16 at Edwards Flight Test Center in California. The report highlighted serious concerns about the plane's performance in this key mission.

One of the significant new issues raised by the report was the F-35's difficulty in sustaining energy in close-in maneuvering combat—that is, the energy needed to turn and accelerate. The test pilot found this to be “substantially inferior” to older planes like F-15s, F-16s, and F-18s. In the tests, the F-35's maneuverability

against the F-16 was so limited that it could only point quickly enough to achieve a missile shot by executing one specific maneuver. This move consumed so much energy that if the shot failed the F-35 would “ultimately end up defensive again”—which is to say, at the mercy of any opponent.

The report also homed in on flight control problems in the 20 to 26 degrees angle of attack zone, crucial for hard maneuvering. The pilot described the F-35's computer-controlled flying qualities as “sluggish” for evasive maneuvering and “not intuitive or favorable.” This echoes a recent report from the Director of Operational Test and Evaluation (DOT&E) that described severe flying quality problems in this high angle of attack region—including uncontrollable wing drop and heavy buffeting (shaking) “that degraded the flight control system (two of three flight control channels become disabled), requiring a flight abort.”<sup>2</sup>

Fixing earlier flight control problems identified by DOT&E required

new flight control software modifications that significantly shrank the F-35's maneuvering limits while also slowing control response—leading to exactly the problems uncovered in the recent January dogfight tests.<sup>3</sup> The F-35, like most modern aircraft, uses fly-by-wire technology that depends on software to translate the pilot's control stick inputs into flight surface movements.<sup>4</sup> The January tests demonstrated that the new F-35 software control system changes further limited the flight controls so that the pilot could pull no more than 6.5gs in hard defensive turns, even though the F-35 design and contract specifications call for 9gs.<sup>5</sup>

## The F-16 Should Have Been the Underdog

“The F-35A remained at a distinct energy disadvantage for every engagement” against the test F-16, the Air Force report noted. But by most counts, the F-16 should have lost the dogfight. It was a mid-1980s vintage F-16D two-seater, suffering the drag penalties of the extra weight added by a second seat. Its maneuverability was further degraded by the drag of two 370 gallon underwing drop tanks (each about 3200 pounds with fuel and pylons), while the F-35 was permitted to fly with empty weapon

1. David Axe, “Read For Yourself—The F-35's Damning Dogfighting Report,” *War is Boring*, July 1, 2015; David Axe, “Test Pilot Admits the F-35 Can't Dogfight,” *War Is Boring*, June 29, 2015.  
2. Director of Operational Test and Evaluation, “F-35 Joint Strike Fighter (JSF),” *FY 2014 Annual Report*, January 2015, pp. 47, 49. (Hereinafter DOT&E FY 2014 Annual Report); Mandy Smithberger, “Not Ready for Prime Time,” *Strauss Military Reform Project*, March 12, 2015.

3. DOT&E FY 2014 Annual Report, p. 47.

4. John Bosworth and Dale Enns, “Nonlinear Multivariable Flight Control,” *The Impact of Control Technology*, T. Samad and A.M. Annaswamy (eds.), IEEE Control Systems Society, 2011.

5. Bill Sweetman, “Controversy Flares Over F-35 Air Combat Report,” *Aviation Week & Space Technology*, July 2, 2015.

bays and clean wings—hardly a level playing field.<sup>6</sup> The test pilot noted the F-35 would suffer similar maneuvering disadvantages against the F-18 and F-15. For instance: “The EM [Energy Maneuverability] of the F-35A is substantially inferior to the F-15E with PW-229s [engines] due to a smaller wing, similar weight, and ~15,000 lbs less in afterburner thrust.” In addition to its thrust deficiency, the F-35’s acceleration is hampered by a relatively wide, heavy, high-drag fuselage. Its turn performance suffers from comparatively small wings, which creates the highest wing loading (weight per square foot of wing) of any contemporary fighter. The higher wing loading is significant because it means poorer plane maneuverability.

### Test Report Blowback

F-35 program apologists have come out with articles claiming that the plane was never supposed to dogfight.<sup>7</sup> But previous statements from the program office and prime contractor flatly contradict those claims.<sup>8</sup>

Other excuses offered by the Joint Program Office include:

- The F-35 used in the test did not “have the mission systems software to use the sensors that allow the F-35 to see its enemy long before it knows the F-35 is in the area.”
- The lack of special stealth skins to make the aircraft “invisible to radar.”

- The test vehicle was not equipped with weapons or with the software that allows the F-35 to turn, aim, and fire a weapon at an enemy without having to point the aircraft’s nose at the target.<sup>9</sup>

Long range sensors, though, cannot address maneuverability deficiencies inherent to the aircraft’s design. Touting the primacy of long range combat only serves to bolster the argument that the F-35 was never meant to be as maneuverable as our current inventory of fighters in the first place.

The claim that the F-35 will avoid close-in combat and defeat all comers by using its dazzling sensors to shoot them down beyond visual range fails to hold water for several reasons:

First, in full-scale air battles with near-peer enemies, the sky will almost certainly be full of intermingled friendlies and enemies. The hackability and unreliability of Identification Friend or Foe (IFF) gear has forced combat leaders to impose strict positive visual identification rules to avoid shooting down friendly pilots. Under those rules, pilots must fly within a quarter mile or less of a target aircraft, making maneuvering fights impossible to avoid. Once a pilot is close enough to visually confirm a target, it’s too late to retreat beyond visual range and fire a missile.

Second, close-in maneuvering fights would become necessary if the promised 90 percent kill rate of the

long range missile proves to be one-fifth or one-tenth of that in combat, as happened in Vietnam; if a near-peer enemy outmaneuvers, jams, or spoofs our missiles, as we and the Israelis did to Soviet air defense missiles in the Vietnam and Yom Kippur wars; or if the two to four missiles per F-35 are too few to handle swarms of enemy fighters.<sup>10</sup>

Lastly, the Russians and the Chinese are producing quantities of modern, networked long wavelength search radars that are not deceived by the stealth shaping and stealth skins of our bombers and fighters.<sup>11</sup> Those radars will warn enemy fighters of the F-35’s position, speed, and direction of flight from more than 200 miles away, and enemy fighters will be equipped with—among other weapons—missiles with passive seekers that can identify and home in on our fighters’ radar signals.<sup>12</sup> Since the F-35 is sold as a beyond visual range platform, guiding its missiles to enemy fighters requires a high-powered radar system. After the enemy fires a home-on-radar missile, F-35 pilots will be forced to turn off their radar systems to avoid being shot down. Those passive home-on-radar missiles always detect at ranges well beyond those of our own active radar missiles. Lacking the ability to use radar not only locks the F-35 into close-in fighting, it also means modern European, Russian, and Chinese fighters will detect the F-35 first with passive infrared sensors. Their infrared search-and-track detectors

6. U.S. Air Force, “F-16 Fighting Falcon,” October 8, 2007.

7. Daniel Gouré, “You Say the F-35 Can’t Dogfight? I Say Good,” Lexington Institute, June 30, 2015.

8. Bill Sweetman, “Behind That F-35 Air Combat Report,” *Ares*, July 6, 2015.

9. Lockheed Martin, “Joint Program Office Response to ‘War Is Boring’ Blog,” July 1, 2015.

10. Raytheon, “Norway goes four-for-four with Raytheon’s NASAMS,” July 16, 2014; “Air to air weapons effectiveness,” *Defense Issues*, June 15,

2013; Marshall L. Michel, III, *Clashes: Air Combat Over North Vietnam, 1965-1972*, p. 34, Naval Institute Press: Annapolis, 1997, p. 34; Brendan I. Koerner, “Inside the New Arms Race to Control Bandwidth on the Battlefield,” *Wired*, February 18, 2014.

11. Dave Majumdar, “Chinese and Russian Radars On Track To See Through U.S. Stealth,” *USNI News*, July 29, 2014.

12. Dr. Carlo Kopp, “The Russian Philosophy of Beyond Visual Range Air Combat,” *Air Power Australia*, April 2012; Wendell Minnick, “China Touts Anti-stealth Radar,” *Defense News*, October 4, 2014.

can detect engine heat up to 70 miles away and the F-35 has a particularly hot and visible exhaust plume.<sup>13</sup>

Any aircraft with a designated air-to-air role must be capable of prevailing in a dogfight. A 2008 RAND study analyzing 588 air-to-air kills since the 1950s found that only 4 percent (24 of 588) of all those air combat kills occurred with the attacker firing from beyond visual range.<sup>14</sup> While there may be improvements in the reliability and accuracy of radar guided missiles, they will not change the tactical circumstances of air combat that inherently limit the missile's viability beyond visual range.

As for the claim regarding the absence of special stealth skins on the test F-35, it should go without saying that these skins don't contribute to winning dogfights. Stealth skins or coatings deal only with radar detection.

### A Plane Without a View

The new report also puts a finer point on the F-35's inability to detect rear hemisphere threats. The aircraft's unusually wide fuselage and solid bulkhead directly behind the pilot's head means he cannot see enemies below or behind him if his helmet's complex video display system fails, or has inadequate resolution.<sup>15</sup> The bulky helmet hitting up against the canopy restricts the pilot from turning his head to look to the rear, and



the helmet's protruding front visor makes it difficult for the pilot to look up and behind, both of which are essential in dogfight maneuvering. In this latest report, the test pilot wrote, "in general, it took a lot of physical effort to turn around for the visual."

According to F-35 advocates, the plane's poor aft field of view doesn't matter because the pilot's helmet mounted video displays provides all the rearward visibility needed.<sup>16</sup> This \$600,000 helmet system projects images onto the pilot's visor from six TV cameras all around the aircraft, and additionally projects flight instrument displays, radar/infrared displays, and other target information displays.<sup>17</sup> The resolution of these projected video images on the pilot's visor is significantly poorer than the flat panel screen displays

used on current A-10s and F-15s.<sup>18</sup> Pilots report the helmet video display is hopelessly inadequate for reliably seeing against a hazy sky the tiny, low contrast, extremely dangerous dot of an enemy fighter 1 to 5 miles behind the F-35. One F-35 pilot recently confirmed that a camera could not replicate the ability to judge aspect and distance closure. "I'll use my eyes," he said. "I need to see things with my own eyes."<sup>19</sup>

The problems of making this complex helmet work are severe enough that it is now into its third generation design.<sup>20</sup> It also still displays excessive false targets, is years behind schedule, and is way over cost.<sup>21</sup> Even if the system eventually works, there will still be severe operational penalties. When the helmet fails in flight, F-35 pilots will be unable to fire

13. "Airborne IRST properties and performance," *Defense Issues*, June 16, 2015; Giovanni de Briganti, "F-35 Reality Check Ten Years On—Part 1: 'Fifth-Generation' and Other Myths," *Defense-aerospace.com*, May 9, 2012.

14. John Stillion and Scott Perdue, "Air Combat Past, Present and Future," RAND Project Air Force, August 2008, Slide 22.

15. Winslow Wheeler, "New, Unclassified DOD Document Describes F-35A Performance in Training," Straus Military Reform Project, March 6, 2013.

16. Lockheed Martin, "Unprecedented Situational Awareness."

17. Sean Gallagher, "Magic Helmet' for F-35 ready for delivery," *Ars Technica*, July 24, 2014.

18. Director of Operational Test and Evaluation, "F-35 Joint Strike Fighter," *Annual Report for Fiscal Year 2013*, p. 40; "A-10 Thunderbolt (Wart-hog), United States of America," Airforce-Technology.com.

19. David Cenciotti, "F-35 pilot talking about the 400K USD flight helmet: 'It's cool but I don't really use it that often,'" *The Aviationist*, July 13, 2015. (Hereinafter "F-35 pilot talking about the 400K USD flight helmet: 'It's cool but I don't really use it that often.'")

20. Graham Warwick, "F-35's Gen-3 Helmet Display In Final Test Stages," *Aviation Week & Space Technology*, January 26, 2015.

21. DOT&E FY 2014 Annual Report, p. 50; Christian Davenport, "Meet the most fascinating part of the F-35," *The Washington Post*, April 1, 2015.

22. "F-35 pilot talking about the 400K USD flight helmet: 'It's cool but I don't really use it that often.'"

weapons and defend themselves.<sup>22</sup> And because the plane doesn't have backup instruments, pilots will not be able to land at night or in weather if the helmet malfunctions.<sup>23</sup> Equally serious, when the helmet fails, the pilot is grounded. It's not just a matter of simply borrowing another helmet—each one has to be custom-fitted in a helmet calibration laboratory to have it precisely aligned and fitted to the pilot's head before they can fly again.<sup>24</sup>

### A Plane that Makes It Impossible to Turn Out Winning Pilots

Pilot skill always dominates fighter technical differences in achieving aerial victories. In every first-rate air force, turning out superior fighter pilots has required at least 40 sorties per month of realistic, intense air combat training to hone fight-winning skills.<sup>25</sup> Because of the F-35's unprecedented complexity and the corresponding reliability and maintenance burdens, it simply cannot fly often enough to train pilots who are clearly better than any possible adversary.

According to the most recent DOT&E report, the F-35A has only been able to fly 55 percent of its planned flying hours because main-

tenance crews cannot repair failed aircraft systems any faster.<sup>26</sup> As of July, F-35As at operational squadrons at Nellis and Luke Air Force bases have been able to fly no more than 6.1 and 6.4 sorties per plane per month (9.4 and 10.4 hours per month respectively). The Nellis operational pilots only fly about 4 to 5 sorties per month, and pilots at Luke fly 5 to 7 per month—demoralizing for pilots and dangerously short of the hours necessary to dominate every fight or be safe.

With less than one-fifth the number of sorties per month they need, F-35 pilots called to war will be inadequately trained and under-skilled. They will be forced into the dangerous practice of completing their training during combat, resulting in avoidable losses of scarce \$200-million-dollar aircraft and a tragically unnecessary waste of American lives.

### Conclusion

The technical problems and combat ineffectiveness of the F-35 are a consequence of the concept and basic design of the airframe, avionics, and engine, as well as the acquisition schedule's extreme concurrency. The significance of these deficiencies will continue to be confirmed with more tests. As the program approaches

the most demanding stage of testing and software development, the pace of uncovering serious new technical problems—requiring massively expensive, schedule-slowng fixes—will likely continue to increase.

Pentagon, congressional, and defense industry defenders of the F-35 are fond of reiterating that the program is “too far along” for any major changes at this point in the process.<sup>27</sup> They ignore a straightforward, practical alternative to the reckless acceleration of the annual F-35 buy, an alternative that could also halt the Air Force's rapid shrinking of its fighter force: simply refurbish and upgrade some of the large numbers of F-15s, F-16s, and A-10s that the Air Force is rushing off to the boneyard in the hopes of offsetting a small fraction of the F-35's costs.

The January dogfight tests go a long way to showing that a refurbished F-15C or F-16 C/D is, plane for plane, a better air-to-air fighter than an F-35, to say nothing of their larger payload capacity and longer range.

Equally obvious is that refurbishing any of these legacy aircraft—even ones retrieved out of the boneyard—is far cheaper than buying F-35s.

The test pilot's report should be a clarion call for decision-makers to rationally and conservatively reformulate the program. Simply going along with the “too big to fail” procurement plan means acquiescing to shrinking air forces, growing defense budget shortages, and the likelihood of disastrous failures in combat—failures that will come with a high cost in the lives of American warfighters in the air and on the ground. ■

*With less than one-fifth the number of sorties per month they need, F-35 pilots called to war will be inadequately trained and under-skilled. They will be forced into the dangerous practice of completing their training during combat, resulting in avoidable losses of scarce \$200-million-dollar aircraft and a tragically unnecessary waste of American lives.*

23. Jesus Diaz, “F-35 Helmet Display System To Scare the Bejeezus Out of Enemies,” *Gizmodo*, May 15, 2007.

24. John McHale, “Getting fit for your jet fighter helmet,” *Military Embedded Systems*, September 30, 2014.

25. James Dunnigan, “Fighter Pilots Doomed By Poverty,” *Strategy Page*,

January 16, 2014; “Air superiority fighter proposal 6,” *Defense Issues*, August 2, 2014.

26. DOT&E FY 2014 Annual Report, p. 59.

27. John T. Bennett, “Column: Keep Calm and PowerPoint On,” *Defense News*, November 9, 2014.



# F-35 Will Fly Off Against A-10

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At the heart of the Air Force's plans to retire the A-10 is the question of whether the F-35 can take over the close air support mission. Pilots and Joint Terminal Attack Controllers (JTACs) with combat experience, skeptics in Congress, and independent auditors have all expressed concerns about the significant capability shortfalls that would result from this retirement.<sup>1</sup> Now, heeding CDI's advice, Dr. Michael Gilmore, Director of Operational Test & Evaluation, recently revealed that his office would conduct a series of close air support test flights pitting the F-35 against the A-10.<sup>2</sup>

The immediate response from Air Force Chief of Staff General Mark Welsh was to dismiss the tests as a "silly exercise."<sup>3</sup> At the time, he claimed no one in the Air Force ever said the F-35 would replace the A-10 in the critical role of close air sup-

port.<sup>4</sup> "So the idea that the F-35 is going to walk in the door next year when it becomes IOC [initially operationally capable] and take over for the A-10 is just silly. It's never been our intention and we have never said that," said Welsh.

This latest statement contradicts his previous statements. "We have to look at different ways to do the close air support mission with new airplanes like the F-35," said Welsh in February of this year.<sup>5</sup> In May, other Air Force officials "consistently maintained that other aircraft, including the developing F-35A Joint Strike Fighter, will be able to perform close-air support missions."<sup>6</sup>

It was also the understanding portrayed on the F-35's program office's official website, which notes that the F-35 is designed to replace the A-10,<sup>7</sup> and performing close air support is listed as a condition for declaring its initial operational capability.<sup>8</sup>

Within a matter of days, General Welsh reversed himself and said he supports the tests.<sup>9</sup>

Comparative testing is not new. Gilmore told reporters that his office conducted similar comparison tests between the F-22 and the F-15.<sup>10</sup> Former Director of Operational Test &

Evaluation Tom Christie told reporters that Congress directed the Air Force to fly the A-10 against the A-17 in a similar test.<sup>11</sup>

The commitment for a fly off seems promising and could help stay the retirement of the A-10 until the Air Force demonstrates that it can perform this capability as well or better with another platform. But given the Air Force's bias against this mission, Congress may need to require this test to ensure it happens and to carefully oversee how it is constructed to ensure that it is a realistic fly off.

General Welsh may have thought that this was a "silly exercise," but it's deadly serious to the soldiers and Marines who rely on the A-10 to keep them safe. ■

1. Mandy Smithberger, "GAO Slams Air Force's A-10 Divestment Plan," Straus Military Reform Project, June 26, 2015; Government Accountability Office, "Force Structure: Preliminary Observations on Air Force A-10 Divestment," June 25, 2015.
2. "POGO Letter to Conferees on the FY 2016 National Defense Authorization Act," June 25, 2015; Lara Seligman, "Weapons Testers To Pit F-35 Against A-10," *Defense News*, August 28, 2015. (Hereinafter "Weapons Testers To Pit F-35 Against A-10")
3. Brendan McGarry, "Welsh Dismisses F-35, A-10 CAS Contest as 'Silly Exercise,'" *DoD Buzz*, August 25, 2015.
4. Department of Defense, "Department of Defense Press Briefing by Secretary James and Gen. Welsh on the State of the Air Force in the Pentagon Press Briefing Room," August 24, 2015.
5. Dan Parsons, "USAF chief keeps sights on close air support mission," *Flight Global*, February 15, 2015.
6. Kris Osborn, "Air Force mulls mothballing F-16s if Congress blocks A-10 retirement," *Fox News*, May 1, 2015.
7. The F-35 Lightning II, "F-35 Background," [http://www.jsf.mil/f35/f35\\_background.htm](http://www.jsf.mil/f35/f35_background.htm).
8. Jeremiah Gertler, *F-35 Joint Strike Fighter (JSF) Program*, Congressional Research Service, April 29, 2014, p. 10.
9. Christian Davenport, "The F-35 vs. the A-10 Warthog, head-to-head in close-air support. It's on," *The Washington Post*, August 27, 2015.
10. "Weapons Testers To Pit F-35 Against A-10"
11. Valerie Insinna, "F-35 to Face Off Against A-10 During IOT&E," *Defense Daily*, August 20, 2015.



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