Close Air Support Fly-Off Farce:
F-35 Versus A-10 Fly-Off Tests Designed to Mislead

BY DAN GRAZIER

T he F-35 Joint Strike Fighter finally went up against the battle-proven A-10 close air support attack plane for the long-promised close air support fly-off. The unpublicized tests began on July 5, and wrapped up on July 12, according to a copy of the testing schedule reviewed by the Center for Defense Information at the Project On Government Oversight. But the tests, as designed, were unlikely to reveal anything of real value about the F-35’s ability to support ground troops in realistic combat situations—which the F-35, as the presumptive replacement for the A-10, must be able to demonstrate. The results of the tests have not been revealed publicly yet; they will be included in the full operational test report.

A close air support test should involve large numbers of ground troops in a highly fluid combat simulation in varied terrain, across many days. It should test the pilot’s ability to spot targets from the air in a chaotic and ever-changing situation. It should include a means of testing the program’s ability to fly several sorties a day, because combat doesn’t pause to wait for airplanes to become available.

But the Air Force scheduled just four days’ worth of tests at desert ranges in California and Arizona.
And, according to sources closely associated with the fly-off, not a single event included ground troops, or any kind of fluid combat situation, which means these tests were hardly representative of the missions a close air support aircraft has to perform.

That puts Air Force leadership in a difficult position.

They want their largest and highest-priority weapons buy, the troubled $400 billion F-35 multimission fighter, to quickly replace the A-10 close air support attack plane they’ve been trying to get rid of for over two decades.1 The now-former Pentagon weapons testing director, Dr. J. Michael Gilmore, said in 2016 that a close air support fly-off would be the only way to determine how well the F-35 could perform the close air support role—or whether it could perform that role at all.2 The testing office and the various Service testing agencies had already meticulously planned comparative tests to pit the F-35 against the A-10, the F-16, and the F-18 because the F-35 program is contractually required to show better mission effectiveness than each of the legacy aircraft it is to replace.

Many Air Force leaders strenuously objected to the fly-off, claiming that the F-35 would perform the mission differently so it wouldn’t be fair to compare its performance to the A-10.3 These tests only came about—albeit in an inadequate form—because Congress mandated them nearly three years ago.4 The Senate established strict criteria and specific scenarios for the tests.5 The tests had to demonstrate the F-35’s ability to visually identify friendly forces and the enemy target in both day and night scenarios, loiter over the target for an extended time, and destroy targets without a joint terminal attack controller directing the strike.

The Air Force Solution: Design to Mislead

This testing event should have been designed by the Joint Strike Fighter Operational Test Team, which is charged with designing all tests for the F-35. Instead, the Program Office outsourced the design of the tests to Tactical Air Support Inc., a company with a vested financial interest in the F-35 program.6 Making matters worse, the testing program was designed without ever consulting the Air Force’s resident experts on close air support—A-10 pilots and joint terminal attack ground controllers, according to sources closely involved with the A-10 versus F-35 fly-off who wished to remain anonymous out of concern about retaliation. The Air Force’s 422 Test and Evaluation Squadron at Nevada’s Nellis Air Force Base maintains an A-10 test division,7 but no one from that operational test unit contributed to the design of these tests. Still more egregious, no Army or Marine representatives participated. Since the Services fighting on the ground have a primary interest in effective close air

6 Tactical Air Support Inc. has a contract to provide adversary aircraft to serve as air-combat training opponents for the U.S. Air Force, especially for the F-35 squadrons.
support, excluding them from this process borders on negligence.

**Day One at Yuma**

The first day’s test—July 5, at Yuma—scheduled one F-35 two-ship flight and two A-10 pairs. Each flight was to spend one hour making attack passes at highly visible, bombed-out vehicle hulks and shipping containers simulating buildings (plus one highly visible, remote-controlled moving-vehicle target), all in flat, open terrain near a large simulated airfield target. Each A-10 carried two laser-guided 500-pound bombs, two captive-carry Maverick guided missiles, a pod of marking rockets, and only 400 30 mm cannon rounds out of the 1,174 rounds it usually carries. The F-35s carried a single 500-pound laser-guided bomb and the maximum load of 181 25 mm rounds. For the last 20 minutes of each one-hour target-range session, altitude was restricted to 10,000 feet, an alleged evaluation of each plane’s ability to operate beneath low cloud cover.

A close look at the first day’s test scenarios reveals numerous ways in which they were designed to favor the F-35 over the A-10, including the following:

1. **Both aircraft were given one hour to attack targets, when in fact the A-10 has more than twice the F-35’s endurance over the battlefield, a key capability when friendly troops urgently need support in battles that last many hours, or even days.**

2. **Both aircraft were assigned an equal number of attack sorties—even though the A-10 has demonstrated in combat an ability to generate sorties at a rate three times greater than the maintenance-intensive F-35 has been able to demonstrate under far less demanding peacetime conditions.**

3. **Using only uncamouflaged targets—usually painted dark military green and placed in flat, open, light-colored desert terrain and thus easily seen from 10,000 feet above—completely contradicts the stark realities of actual combat, in which the enemy always has a life-and-death motivation to do whatever it takes to remain unseen as long as possible. Anyone with access to Google Earth can quickly find dozens of these targets in satellite imagery.**

4. **Testing both planes’ critical ability to support troops under low cloud cover by imposing a 10,000-foot ceiling was irresponsibly unrealistic and clearly intended to mask the unmaneuverable and thin-skinned F-35’s inability to operate under the far lower 1,000-foot ceilings so common in Europe, Southeast Asia, Korea, Africa, and South America. The armored A-10 was specifically designed to be able to maneuver and survive the kind of ground fire expected during attacks under 1,000-foot ceilings.**

5. **The weapons load assigned to the F-35—a single 500-pound guided bomb instead of the (still inadequate) two it can carry—unrealistically lightened the F-35 in an attempt to give it a maneuverability advantage during the tests. At the same time, the 30 mm cannon, which is the A-10’s most effective weapon and the one most demanded by troops in close contact with the enemy, was arbitrarily limited to 400 rounds instead of the 1,174 it actually carries in combat. Equally artificially, the testers loaded the A-10 with two unguided 500-pound bombs, weapons it never carries in combat because they are too inaccurate and too dangerous to friendly troops. In Iraq, Afghanistan, and Syria, the A-10 always carries a...**

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full complement of guided bombs instead of unguided ones.

6. The absence of specialized testing equipment to determine the accuracy of anti-aircraft gun-aiming against the evasive maneuvering flight path of the attacking plane made it impossible to gain useful insights about relative hits on the F-35 versus the A-10—and invited the use of highly biased, speculative figures to favor a predetermined outcome. Similarly, for the shoulder-fired small surface-to-air missiles, there was no instrumentation of the precise missile launch or guidance control, no precise tracking of the attacking aircraft’s trajectory, and no existing validated shoulder-fired missile simulation to determine the relative success of the A-10 and F-35 in defeating or surviving shoulder-fired missiles.

By pitting the aircraft only against highly visible targets, the test completely masked the much more restricted view out of the F-35 cockpit as compared to the A-10—along with masking the surprisingly poor video and infrared image resolution of the F-35 helmet’s display compared to the high definition of the A-10’s instrument panel display when it’s coupled to the plane’s sniper and LITENING pods.9 On a broader level, testing only against easy-to-see, static, non-reactive targets artificially confirms the Air Force’s delusional notion that future close air support can be successfully conducted by planes flying at 15,000 feet and 450 knots relying on supposedly accurate, digitally transmitted target coordinates.

Interestingly, the Congressionally approved full operational fly-off test plan, as designed in detail by the previous testing director and the Service testing agencies, avoids every one of these F-35-slanted, highly unrealistic, test-scenario biases.

**Days Two, Three, and Four at China Lake**

The day two schedule called for four F-35Bs to conduct a mission covering two Ospreys extracting a pilot downed in enemy territory for one hour, then four A-10s covering a similar extraction. A similar set of missions under night conditions was flown in the late evening of day three.

On the afternoon of day three, A-10 and F-35 pairs spent an hour and a quarter on the China Lake target range attacking static, visible targets similar to the Yuma targets—but these were even less realistic, as they were just simulated attacks, with no weapons released. The stated reason for moving to China Lake, despite the restrictions on actually firing weapons, was to test the A-10 and F-35 against the range’s “elevated” anti-aircraft defenses, which include simulated medium-range surface-to-air missiles, as well as shoulder-fired short-range missiles and light anti-aircraft guns.

On the afternoon of the final day, a pair of A-10s and a pair of F-35s flew tests to gauge their ability as airborne forward air controllers, directing the strikes of at least three sections of F-18Cs, to simulate the bombing of more uncamouflaged targets, against the same medium- and short-range air defenses. In the late evening, a pair of F-35s and a pair of A-10s conducted night close air support against the same targets and defenses.

These tests at China Lake show many of the same efforts to skew the events in the F-35’s favor as those at Yuma, but heavily amplified by the addition of the medium air defenses, for three main reasons:

1. Without instrumented test aircraft, the aircraft radar tracking at China Lake does not yield aircraft trajectories precise enough to accurately simulate a medium-range missile’s success or failure against the evasive maneuvers and countermeasures of an attacking A-10 or F-35. As in the first day of tests, this invites speculation supporting the favored outcome.

2. The medium-range missile defenses used in this test do not incorporate the Russian and Chinese stealth-defeating search radars now being used to cue their medium-range anti-air missile defenses. That means the F-35’s stealth will be much more effective against China Lake’s simulated medium missiles than against real-world missiles, thus severely skewing the test’s survival assessments in favor of the F-35 over the A-10.

3. The relevance of medium-range missile defenses to close-support scenarios is at best questionable. The significant logistical requirements and lengthy setup times of these air defense systems make them an impediment to maneuvering units heavily engaged in combat and trying to move quickly. Medium-range missiles are far more suitable for protecting rear-area interdiction targets or the static targets seen in trench warfare. Attacking these target systems with close-support planes would be a waste of lives and resources.

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The true challenge in performing close air support and battlefield air interdiction missions starts with locating targets. In real combat, these targets will be crewed by real people with a powerful wish to survive the war. They will be unlikely to simply park their vehicles or themselves in the open desert calmly waiting to be hit by bombs. Instead, they will camouflage their positions, dig in, or hide their vehicles beneath trees, barns, or other cover to make it much more difficult for aircraft to find, identify, and track them. Even when troops on the ground locate targets for the close air support planes, the rules of engagement almost always require pilots to get “eyes-on” before they can drop a weapon, to avoid civilian casualties and friendly fire.

Locating, transmitting, and verifying a valid set of coordinates is not the end of the close-support problem. Targets react, move, hide, and fire back, all in a matter of seconds. Pilots must be in close enough contact with the troops they’re supporting to cancel or switch targets in the middle of a firing pass.

This brings up the most significant failing in these tests: The designers essentially created a laboratory demonstration to show how aircraft can hit non-moving targets in a sterile environment. This hardly represents the conditions soldiers and Marines face when they are locked in close combat with an enemy just yards away. In the worst-case, most urgent close-support scenario—the one in which these aircraft need to be tested—a small group of American soldiers are about to be overrun by a numerically superior enemy force, and reinforcements are too far away to help. Their only hope of survival is for an aircraft to appear overhead, raining deadly fire on the enemy soldiers and forcing them to take cover or retreat. Not one event during these four days of tests came close to addressing or simulating this.

Equally important, that lifesaving support needs to show up, rain or shine. The fighting on the ground doesn’t stop because of a little rain. On the contrary, our enemies, in wars past and present, often choose to attack in bad weather just to offset American airpower advantages. There is no reason to believe they will not do so in future wars. Because of our desert wars, we’ve forgotten that low-hanging clouds and poor visibility are the conditions at least one day out of three in most parts of the globe that aren’t deserts, where we might have to face far bigger fights than we face today. It is a travesty to pretend that a simulated cloud layer at 10,000 feet in clear desert air in any way tests what our troops need from bad-weather support.

Air Force leaders are fond of saying the F-35’s stealth characteristics will allow it to perform close air support in situations with heavy air defenses in a way the A-10 cannot. They like to paint a picture of a close-support aircraft having to drop a bomb on a target surrounded by enemy surface-to-air missiles but strangely devoid of friendly soldiers. Such a scenario is manifestly not close air support—simply because close means close to our troops. Unlike the way this quickie test was staged, close air support, particularly in the kind of high-intensity combat against the peer enemy Air Force leaders are so fond of describing, always involves significant friendly ground forces engaged in a combined-arms campaign. These tests won’t help determine whether or not the F-35 can hit moving targets that are actively trying to evade attack while also being accurate enough to avoid hitting friendly ground forces.

Conclusion
Rather than being designed to tell us whether or not the F-35 can actually provide the kind of close support our ground forces need to survive and prevail, this grossly inadequate test was designed to mislead. Air Force leaders, in lockstep with senior civilian appointees, will undoubtedly march up to Capitol Hill with results in hand, saying that they conducted the tests with great care and the F-35 performed brilliantly, thus justifying bigger buys and getting rid of the A-10 sooner.

Our troops deserve better than a surreptitious test rigged in favor of a weapon that can’t do the job and against the one that can.
The Pentagon’s New Stealth Bookkeeping

Cleaner Financial Books Apparently Require Some Dirtier Numbers

BY MARK THOMPSON

The Defense Department’s finances have been an unauditable black hole for decades. As the military has struggled mightily in recent years to remove the cobwebs and fog from its books, it has run into another problem: where to hide its work on classified programs?

Not to fear: where there’s a will, there’s a waiver.

That’s why the Pentagon (and CIA) have asked the U.S. government’s accounting overlords to let them fudge their costs in the name of national security. Think of it as the latest in fiscal transparency: while the U.S. military struggles to make its accounts finally auditable, it needs new nooks and crannies to mask spending. Only U.S. national-security apparatchiks would plead for future budget secrecy to justify past budget sloppiness.

They received approval for the change from the Federal Accounting Standards Advisory Board, which sets the so-called “generally accepted accounting principles” for federal bean-counters. Government accountants may “modify” spending levels, the accounting agency says, and allow spending “to be excluded from one reporting entity and consolidated into another reporting entity” to keep work on classified programs secret.1

The Pentagon announced last December that it was dispatching 1,200 auditors—that’s about two battle-son’s worth—to conduct the first-ever across-the-board audit of the Department of Defense. Conflicting accounting systems and programs—and wars—spread over decades make it challenging to track military spending.2 But armed with calculators and reinforced by an army of independent public-accounting firms and a nearly $1 billion budget, the Pentagon is due to offer up its most accurate bottom line ever in November.3

The push for better bookkeeping leavened with lying wasn’t unanimous. The Pentagon Inspector General warned the change would represent a “major shift” in federal fiscal management while doing little to “effectively protect classified information.” The change “jeopardizes the financial statements’ usefulness and provides financial managers with an arbitrary method of reporting accounting information,” the IG said in its filing opposing the new math. “We do not agree that incorporating summary-level dollar amounts in the overall statements will necessarily result in the release of classified information.”4

Congressional budget veterans find the proposal unsettling, especially given what they say is the weaker oversight that lawmakers now give to national-security spending. “Lots of CIA spending used to be hidden in the Pentagon budget, and it’s still there—but we can’t find it anymore,” says one Capitol Hill budget hawk who has spent decades

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The Fix Is In: F-35 Program Cutting Corners to “Complete” Development by Altering Paperwork Instead of Fixing Defects

BY DAN GRAZIER
Ness Perry contributed to this investigation

Officials in the F-35 Joint Program Office are making paper reclassifications of potentially life-threatening design flaws to make them appear less serious, likely in an attempt to prevent the $1.5 trillion program from blowing through another schedule deadline and budget cap.

The Center for Defense Information at the Project On Government Oversight obtained a document showing how F-35 officials are recategorizing—rather than fixing—major design flaws to be able to claim they have completed the program’s development phase without having to pay overruns for badly needed fixes. Several of these flaws, like the lack of any means for a pilot to confirm a weapon’s target data...
before firing and the damage to the plane caused by the tailhook on the Air Force’s variant, have potentially serious implications for safety and combat effectiveness.

**Paperwork Fixes**

In a weapon acquisition program, a deficiency is a design flaw that affects the weapon system’s performance or safety. During the test and evaluation process, the testing personnel identify and categorize design deficiencies based on severity, breaking them down into Categories I and II, with degrees of priority within each category. Category I deficiencies “may cause death, severe injury, or severe occupational illness; may cause loss or major damage to a weapon system; critically restricts the combat readiness capabilities of the using organization; or result in a production line stoppage.”

A recent Government Accountability Office (GAO) report found that, as of January 2018, the F-35 program still had 111 of these. Category II deficiencies “could impede or constrain successful mission accomplishment.” The program had 855 of these significant, though less catastrophic, design flaws.

The engineers evaluating the F-35 flight tests and identifying design flaws determine their severity based on the potential impact on safety and mission effectiveness, and recommend a categorization level. The testing agencies, the Services, and the F-35 program office then review these recommendations to arrive at agreed-upon categorization levels, which are then entered into the formal reporting system as deficiency reports. Besides showing just how complex and incomplete the F-35’s development really is 17 years in, the large number of deficiencies reported proves that many people have been conscientiously working toward improving the final engineering design to ensure it is safe and effective. With officials changing the paperwork to make these serious deficiencies appear acceptable, it seems that much of that work is being ignored in the name of political expediency and protecting F-35 funding.

There is reason to be concerned about the manner in which these deficiencies are being recategorized. A copy of the minutes from the F-35 Deficiency Review Board’s June 4, 2018, meeting, obtained by POGO, shows that the Board downgraded 19 serious (Category I) deficiencies to the less-serious Category II, including 10 with no plan in place to correct the known design flaws. In a few of the 19 cases, the Board was following the recommendations of the testing engineers to downgrade flaws. For the rest, however, the minutes show that the Board acted on its own to change deficiency statuses, with no apparent justification or evidence that the flaws were not as serious as initially categorized. In 3 cases, status changes were made “per direction from the F-35 DOE [Director of Engineering].”

It should be noted that the director of engineering, Jay Fiebig, did not attend this meeting. Rather, the deputy director of engineering, Joe Krumenacker, served as chairman.

Without further documentation, it is unclear whether the F-35’s remaining 92 Category I deficiencies are being recategorized in the same manner.

Neither the Department of Defense nor Lockheed Martin responded to requests for comment on this investigation.

The minutes show that one deficiency the Board downgraded on June 4 involves the F-35’s emergency systems. Test teams found that the F-35’s Identification Friend or Foe transponder, which communicates with ground-control radar to confirm the aircraft’s identity, does not automatically send an emergency signal when the pilot ejects. It is supposed to automatically switch to emergency mode and transmit the international emergency transponder Mayday code 7700 that alerts air-traffic controllers of the emergency. Were a pilot to eject without first manually switching the transponder to transmit the emergency signal—and an ejecting pilot will often have little time or presence of mind to do so—hours could pass before anyone knows they have had a problem, let alone that they ejected and crashed. The officials who identified this design problem gave it the highest severity rating, characterizing it as a Category I “High” deficiency.

But the Deficiency Review Board knocked it down to a Category II “High” problem, without indicating a plan to correct it.

This is not how the development process is supposed to work.

Testers have also identified an issue with the arresting hook on the Air Force’s F-35A conventional takeoff variant. The F-35A, like other Air Force aircraft, is equipped with a single-use tailhook for emergency-landing situations when the pilot suspects a braking failure. Testing on the F-35A’s tailhook began

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3 F-35 Lightning II Program Office, “JSFPO Deficiency Review Board (JDRB) Minutes 04 June 2018.” (Hereinafter JDRB Minutes)
4 AF.mil, “Jay W. Fiebig biography.”
in 2016. Testing engineers found that the arresting hook is causing damage to the aircraft due to “up-swing” when it strikes the underside of the aircraft. They originally rated this a Category I “Medium” deficiency. At the June 4 meeting, the deputy director of engineering, this time with the concurrence of the testing sites, downgraded the deficiency to Category II “High,” with instructions to study the maintenance- and replacement-cost data to better define the difference between “major damage” and “non-major damage”—but without actually proposing any fixes to the problem.

One combat-related flaw the Board downgraded has the potential to endanger the lives of troops on the ground. As testing officials have previously reported, the F-35’s current mission systems do not allow pilots to confirm the target coordinates entered into precision-guided bombs. The pilots can see what information they send to the weapon, but not what coordinates have actually been stored in the weapon. The Pentagon’s operational testing director characterized this as a serious concern in his most recent annual report. In close-combat situations, the rules of engagement require the pilot to read back the aimpoint target coordinates to a ground controller to prevent friendly troop and civilian casualties. This most commonly occurs when troops are locked in a difficult fight and urgently request close air support. F-35 test teams rated this a Category I “High” deficiency, but the Board downgraded it to Category II “High,” without any indication of whether plans exist to correct it.

The nature of the design flaws the Board downgraded is not the only matter of concern. Individually, each flaw may not prevent an aircraft from being launched, but the accumulation of flaws greatly increases the probability that the aircraft will be unable to execute the mission. The sheer number of outstanding deficiencies creates a problem of its own for the operating forces as they work to integrate the F-35 into their fleets. As these issues accumulate, it becomes an almost overwhelming challenge for the fleet to maintain an acceptable readiness and availability status. These cumulative F-35 deficiencies add significantly to the maintenance burden the Services are already facing—and is one of many reasons the F-35 program can still only muster a 26 percent fully mission-capable rate.

The list of 27 attendees of this particular Deficiency Review Board meeting partially explains why the process unfolded the way it did on June 4. Eleven members of the F-35 Joint Strike Fighter Board were in attendance. These people have the most incentive to see the program completed quickly. The list also includes 8 members of the Integrated Test Force from Edwards Air Force Base and 3 from the corresponding team at Naval Air Station Patuxent River. Sources closely involved with this process told POGO these 11 Integrated Test Force members effectively work for the F-35 program office. They ultimately answer to the Services, whose senior leaders were eager to quickly end the development process and begin the Initial Operational Test and Evaluation (IOT&E) phase by September 15, 2018, without letting deficiencies slow down the purchase rate of new F-35s in the meantime.

Even though the operational testing of F-35 airframes loaded with deficiencies is a major threat to successful completion of the IOT&E process—the crucial legal hurdle before the program can move to full-rate production—only three members of the F-35 Joint Strike Fighter Operational Test Team attended the Deficiency Review Board meeting. Significantly, the highest-ranking member of this joint test team at the meeting was a major, rather than the higher-ranking officers in charge of the team or in charge of the various Service operational testing agencies.

Similarly, the combat operating forces from the Services were hardly represented while addressing deficiency decisions. Just one operating force representative, a lieutenant colonel from the Air Force’s Air Combat Command, participated. The Navy and Marine Corps operators were not represented at all. In other words, even though the combat-aircraft fleets of all three Services will be comprised mainly of F-35s in the near future, the operating forces’ leaders, who represent the men and women who will have to fly these aircraft in combat, had essentially no say in deciding the priority of any F-35 deficiencies.

The Department of Defense’s acquisition regulations state that all critical deficiencies must be resolved before a program can pro-
ceed beyond low-rate initial production (the early production phase intended to produce test articles and develop the manufacturing process) unless the official with milestone decision authority approves a deviation. In the case of the F-35, Ellen Lord, undersecretary of defense for acquisition and sustainment, has the authority to make the decision to insist on fixing crucial design flaws first or to push the program forward without fixes.

Hundreds of Design Flaws
This snapshot of how the F-35 program office deals—or doesn’t deal—with design deficiencies comes shortly after the Government Accountability Office released its annual assessment of the program, identifying the 966 unresolved design flaws. The report has the puzzlingly contradictory subtitle Development is Nearly Complete, but Deficiencies Found in Testing Need to be Resolved.

“If deficiencies have emerged during development that are still unresolved, then development is manifestly not nearly complete,” Thomas Christie, a director of operational test and evaluation during the George W. Bush Administration, told POGO. F-35 officials have long said that the program would wrap up the development phase before the end of summer 2018. As of the end of October, this has still not happened. It has taken the better part of two decades to get to this point. The GAO report lays out in stark terms just how far off-track the program has gone since its inception at the end of the last century. According to the 2003 F-35 program baseline, the development phase was to have been completed before 2010, with the Services receiving 1,966 aircraft by 2019. The realities of producing an aircraft meant to incorporate a vast array of unproven technologies quickly asserted themselves, and annual F-35 production figures dropped precipitously as costs climbed.

When F-35 officials arbitrarily call an end to the official development phase of the program, they will really just be delaying the inevitably needed development work—and its attendant cost-overruns.

Failing to address the design flaws now threatens the Initial Operational Test and Evaluation process that had been set to begin September 2018. This field-testing phase will be used to determine whether or not the F-35 will be adequately effective in realistic combat scenarios. It will also be used to see whether the entire system, including maintenance and logistics, is supportable and can deliver adequate fleet availability and reliability in the hands of the troops. Evaluators independent of the Services will analyze the results of these operational tests for the Pentagon’s top weapons testing official, the director of operational test and evaluation, who will


then report them directly to the Secretary of Defense and to Congress.

For the F-35 program, the “low-rate” in “low-rate initial production” has become a nebulous term. Lockheed Martin is funded to deliver 90 deficiency-ridden F-35s this year. That figure is hardly “low” when it represents 56 percent of a year’s worth (160 aircraft) of F-35s expected to be delivered in the full-rate production runs currently scheduled to begin in 2023. By federal law, full-rate production cannot begin until the testing director submits a report stating “whether the results of such test and evaluation confirm that the items or components actually tested are effective and suitable for combat.”

F-35 program officials plan to address the myriad remaining design flaws after the current official development phase in their newly invented and ill-defined Follow-on Modernization phase, previously known as Block 4, and now sometimes called Continuous Capability Development and Delivery. Whatever name the new phase goes by, in practice it is nothing more than a continuation of the peremptorily ended development phase that will also add more new and untested technologies to the system—all hidden under the “Continuous Delivery Development and Delivery” framework that deliberately eliminates scheduled milestones for delivery of well-defined, specific capabilities.

Cutting off the official development phase and substituting a new, vaguely scheduled modernization phase is the F-35 program office’s device for not admitting to further cost overruns and schedule slippages. This is particularly duplicitous, especially considering that Congress has already paid for multiple research and development overruns and has repeatedly criticized the program’s many years of stretch-outs. Questions remain as to whether the program will ever have the capacity to complete all the necessary development-phase design fixes—capacity that involves augmenting system-integration labs, mission software labs, test aircraft, test-flight hours, and testing personnel.

Because of all the risky, undeveloped technologies that fail to perform as promised yet have been concurrently incorporated into the F-35’s design, the program never created enough labs, test aircraft, and personnel even at the outset of the current development phase to accomplish all the development work it set for itself. That and the 966 still-unresolved design flaws are the major reasons the program has fallen so many years behind schedule. It is unclear how program officials intend to address the mountain of deficiencies while also developing new, untested capabilities and keeping to their schedule to begin full-rate production in 2023. Their current solution, as the Deficiency Review Board meeting minutes show, is to wave the deficiencies away with paper and pen.

The Follow-on Modernization program easily meets the criteria to qualify as a separate Major Defense Acquisition Program (MDAP), but Pentagon officials have adamantly resisted efforts to classify it as such, likely because they do not want to be constrained by the budget caps, schedule milestones, and detailed reporting requirements that would entail. Department of Defense regulations set the minimum threshold for an MDAP at either $480 million for research, development, and testing, or $2.79 billion for procurement. The most recent, though undoubtedly optimistic, estimates easily clear the bar, putting the cost of completing F-35 development under this scheme at $10.8 billion through 2024.

The average program unit cost for each F-35 has more than doubled, going from $62.2 million at the program’s inception in 2001 to an average $158.4 million in 2018. It is also 12 years behind schedule. Establishing new budget and schedule goals for the program at this point would likely be too big an admission of failure for the Pentagon to endure, as it would create tremendous pressure for lawmakers on Capitol Hill to pull the plug on the entire endeavor.

The fact that it will take a quarter-century to complete the F-35’s design is evidence of the disastrous price we have paid for the Pentagon’s decision to initiate concurrent development and production of yet another weapon system that deliberately incorporates multiple undeveloped, untested technologies. The recent history of the F-111, C-5, B-70, B-1, B-2, and F-22 programs provides several examples of programs with huge schedule slippages, cost overruns, and technological failures.

Frank Kendall, the former Pen-

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16 10 U.S. Code § 2399 - Operational test and evaluation of defense acquisition programs.
20 DoDI 5000.02
tagon acquisition chief, famously described the push to buy F-35s before the development process concludes as “acquisition malpractice.”

Compounding the mistake of concurrency, the Pentagon sold Congress on the F-35 in part with the idea of creating a common aircraft for three Services, alleging it would save money. Despite the well-documented and glaring failure of the tri-Service F-111 program 25 years before, Congress signed off on the very same plan with the F-35 in 2001. As the doubling of the F-35’s acquisition cost clearly demonstrates, the American people are paying heavily for the misleading claim that the three F-35 versions would achieve 70-90 percent part-commonality. In fact they only achieved 20-25 percent.

Even Lieutenant General Christopher Bogdan, the former F-35 program chief, cautioned against using joint programs in the future due to the difficulties and compromises associated with balancing the conflicting requirements of three different Services, each with differing missions. As both the F-111 and F-35 have proven in practice, joint aircraft development programs lead to higher cost and underperforming designs.

While the F-35’s sticker price tends to draw the most attention, its ownership costs are what may ultimately doom the program. The costs to sustain the program have already risen so much that Pentagon leaders are considering cutting the Air Force’s planned F-35 fleet by 590 aircraft—a third—simply to have any hope of balancing the books.

The April 2018 contract awarded to Lockheed Martin just for its piece of sustaining the Services’ existing F-35 fleets illustrates how ownership costs could be so high. Lockheed will be paid $1.4 billion for one year of providing “air system maintenance; pilot and maintainer training; depot activation; sustaining engineering; Automatic Logistics Information System (ALIS) support, data analytics and predictive health management; supply chain logistics and more.”

The contract supports 280 F-35s, at $5 million per aircraft for a single year. When the fleet grows to the current plan’s 2,443 aircraft, the American people can expect to pay Lockheed Martin $12.2 billion a year to keep the aircraft flying.

Because government contracting officials negotiated a poor deal for the American people by not acquiring the intellectual property rights for the F-35 program (or for the F-22, for that matter), Lockheed Martin holds all the cards in future negotiations over upgrades and annual sustainment.

To take one example, the F-35 cannot operate without the Automatic Logistics Information System (ALIS). This complex, extremely troubled computer network combines combat-mission planning, threat analysis, maintenance diagnosis, supply shipments, and scheduling. Lockheed Martin owns and operates the network; without Lockheed, the Services cannot fly the aircraft they supposedly own. Until the government acquires the data rights for the program, there’s no option but to continue paying Lockheed pretty much whatever it demands. Without addressing the matter of intellectual property rights, any government attempt to rein in program costs are bound to amount to very little in the grand scheme of things.

**Conclusion**

Despite any proclamations by the Pentagon that it has finally completed the F-35’s design, the F-35 program’s development phase will not be complete in any meaningful sense this year, or for many years to come. The F-35 Deficiency Review Board document reveals that F-35 Joint Program Office officials are not even attempting to fix serious design flaws, but instead are fixing the paperwork so they can claim to have finished this phase without busting the budget and the schedule yet again. So, without admitting it, they will complete development work and fixes later—that is, within their newly devised, amorphous “modernization” phase, free of the restrictions and accountability imposed by a budget and milestone baseline.

Congress—instead of exercising its oversight authority to prevent the inevitable cost overruns, performance degradations, and safety hazards caused by these bureaucratic machinations—has rewarded the program with unrequested billions of budget add-ons every year for the last three years running.

The men and women who will have to entrust their lives to these planes in combat, and the taxpayers footing the enormous bill, deserve better from their military leaders, their Secretary of Defense, and their Congress.

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This year the Department of Justice publicly released dozens of documents related to its interpretation of a foreign influence law for the first time. These documents, known as advisory opinions, provide clarity on how the Department has previously implemented the Foreign Agents Registration Act (FARA), and show that reform is badly needed.

The Project On Government Oversight has been alarmed by the vague wording of FARA and the lack of Departmental guidance about the law since we released our 2014 report, Loopholes, Filing Failures, and Lax Enforcement: How the Foreign Agents Registration Act Falls Short. Of particular concern were a number of wide-ranging exemptions that seemed to allow for a certain amount of personal interpretation of the law, which would prevent the public from knowing how foreign governments were trying to influence U.S. policy.

As part of our advocacy for FARA reform we encouraged Congress to require the public release of these advisory opinions.

The dozens of opinions, though redacted, provide insight into how the Department applies FARA exemptions in specific cases, as well as what triggers a FARA registration requirement. The latter in particular has been a matter of debate for years, and the lack of clarity has allowed some bad actors to fly under the radar. The opinions give us a peek behind the door of the FARA Enforcement Unit and serve to demonstrate how much more transparency is needed.

What Makes You a Foreign Agent
Perhaps the most valuable for understanding how the law is functioning are the 21 opinions clarifying what actions, relationships, and transactions constitute an “agency relationship” between a U.S. firm or individual and a foreign entity, where the U.S. entity has the authority to act on the foreign entity’s behalf.

There has been growing concern within the civil society community about the sprawling, wordy,
and convoluted FARA language and the possibility that it could be used to require some nonprofit organizations that receive international grants or work internationally to register as foreign agents.

For instance, the FARA definition of “agent of a foreign principal” includes, “any person who acts as an agent, representative, employee, or servant, or any person who acts in any other capacity at the order, request, or under the direction or control, of a foreign principal or of a person any of whose activities are directly or indirectly supervised, directed, controlled, financed, or subsidized in whole or in major part by a foreign principal.”

Because this definition is not tied to anything overly specific, like having a legal contract or the amount of money being exchanged, there’s less wiggle room for those working on behalf of foreign interests to get around the law. The flip side of that is that the definition is so broad it could be used to scoop up all kinds of people and groups Congress may not have intended. Organizations like Greenpeace or the International Republican Institute that may receive some foreign funding while also working to influence U.S. policy could get caught up regardless of whether the work would benefit a foreign power.

The advisory opinions seem to indicate that the Justice Department has not traditionally interpreted the law this way or sought registration from these kinds of groups for these kinds of activities. But that doesn’t mean there’s no reason to be concerned. The FARA Unit itself seems unsure, according to a 2016 report by the Department of Justice Inspector General:

> Another difficulty [the Department] cited relates to the breadth and scope of existing exemptions to the FARA registration requirement and determining whether activities performed by certain groups, such as think tanks, non-governmental organizations, university and college campus groups, foreign media entities, and grassroots organizations that may receive funding and direction from foreign governments fall within or outside those exemptions.

Indeed one redacted opinion from November 2012 seems to address the kinds of activities often performed by DC think tanks. The Justice Department found that the nonprofit organization that was the subject of the opinion would have to register for doing the activities the nonprofit described in its request for an opinion, which included representing a foreign government by convening panels and hosting foreign officials, working with the embassy, and conducting educational workshops on issues related to the foreign country.

> “Based on the representations in your letter, we have determined that the proposed activities constitute political activities and political consultancy under the Act. Accordingly, if the [U.S. organization] engages in the proposed activities, the [U.S. organization] must register under FARA on the behalf of [foreign government],” the Department wrote.

While this one opinion would seem to suggest that in certain circumstances think tank-type work would require registration, it is unclear what kind of agreement or relationship led the Department to determine the organization in question was representing a foreign government. The advisory opinions only reveal small details in specific cases and often don’t present the whole picture. It is vital for Congress to step in and clarify FARA’s registration requirement since the Justice Department is unwilling or unable to do so.

One thing that is reiterated again and again in these opinions is that the registration requirement is triggered when the entity that most benefits from the work is a foreign government or political party. This is a crucial point, one that is not actually included in the law but is instead buried in the Department’s regulations: “In no case where a foreign government or foreign political party is the principal beneficiary will the exemption under 3(h) be recognized.” But “Principal beneficiary” is not defined and it’s unclear how the Department has interpreted that term.

**What Exempts You from Being a Foreign Agent**

The rest of the released opinions relate to the nine FARA exemptions that allow some foreign agents to forgo registering at all. They include some obvious carve-outs for diplomats and foreign government officials performing their duties, individuals promoting nonpolitical trade or commerce, lawyers representing foreign individuals and entities, and those working to further religious,
academic, or scientific pursuits. But when foreign governments own and operate commercial businesses, or lawyers do double duty as lobbyists, the lines can get blurred, especially without clear direction from the Department or Congress.

The Lobbying Disclosure Act Exemption

One of the more controversial exemptions, and one that Congress has already turned its attention toward fixing, is known as the “LDA Exemption.” This allows those who represent foreign companies or individuals to register under the Lobbying Disclosure Act instead of FARA as long as the work is not intended to benefit a foreign government or political party. Eight of the released advisory opinions relate to this exemption.

The intersection between the two laws is a confusing grey area and can be easily exploited or misunderstood. In 2017, it was revealed that Michael Flynn, former National Security Advisor to President Trump, misunderstood the exemption and failed to register his work for the Turkish government because he had been hired by a private Dutch law firm. Due in part to the national spotlight on this exemption, Congress has launched a bipartisan effort in the last year to eliminate the LDA exemption entirely.9

The advisory opinions offer some insight into one of the most obvious issues with this exemption: that foreign companies and governments are not always as distinct from one another as they are in the United States. A redacted April 2013 opinion details an American law firm’s work to facilitate transactions between U.S. financial institutions and a foreign bank.8 The Justice Department ruled that the activities did not qualify for the exemption since the foreign bank was not independent enough from the foreign government to be purely commercial.

More Guidance Is Needed

Releasing the opinions to the public is a vital first step in bringing transparency to FARA. They are helpful in understanding some of the nuances in the law. But they do not shed light on all of the issues or potential grey areas because they relate to very specific instances and don’t lend themselves to a great deal of extrapolation. As Covington & Burling partner Robert Kelner told the National Law Journal, the opinions are “not quite the Rosetta Stone for interpreting DOJ’s position on FARA.”10

That doesn’t mean they don’t provide valuable information—they demonstrate a long precedent for a deeper and more nuanced interpretation than what is gleaned from reading the Act on its face—but they’re not legally binding. Rather, these advisory opinions serve to sign-post how desperately in need of clarity the law really is.

It’s long past time for Congress to bring FARA into the twenty-first century and codify its intent regarding FARA. Otherwise it may be up to the Justice Department to pick and choose what activities and relationships make a foreign agent.

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spelunking military spending. Speaking anonymously, he fears the proposed accounting tweak will give the Pentagon free rein to use its so-called “unsupported adjustments”—known colloquially as “plugged figures”—that have long been used to mask Pentagon spending, dubious and otherwise.

U.S. defense and intelligence agencies have long argued that revealing too much budgetary information can harm national security. They secretly spent more than $50 billion on their “black budget” in 2013, according to a tally provided to The Washington Post.5 But the Pentagon also hides spending on well-publicized programs like its fledgling B-21 bomber.6 The Air Force makes the dubious claim that divulging how much of the sum is going to certain parts of the program—fuselage, engine, radar-eluding “stealth” technologies—could let potential foes beef up their efforts and dull the bomber’s advantage.

“Seventeen years after 9/11 and we still can’t get out from under the ‘it’s for national security, don’t worry about it’ rubber-stamping of too much data and information that shouldn’t, and otherwise wouldn’t, qualify as needing to be classified,” says Mackenzie Eaglen, a defense analyst at the American Enterprise Institute. “The problem with this rubber-stamping is regular folks like us can’t get to the core, or raw, data to better question or shine light on the final decision. We can only pooh-pooh the outcome weakly.”

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9 Letter from U.S. Department of Justice, National Security Division, to an entity whose name was redacted, regarding FARA advisory opinion, April 9, 2013.

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