

## The Army's \$200 Billion Makeover

March to Modernize Proves Ambitious and Controversial

By Alec Klein

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EL PASO -- A \$200 billion plan to remake the largest war machine in history unfolds in one small way on a quiet country road in the Chihuahuan Desert.

Jack Hensley, one of a legion of contractors on the project, is hunkered in a slowly moving SUV, serving as target practice for a baby-faced soldier in a [Humvee](#) aiming a laser about 700 yards away. A moment later, another soldier in the Humvee punches commands into a computer transmitting data across an expanse of sand and mesquite to a site 2 1/2 miles away. On an actual battlefield, this is when a precision attack missile would be launched, killing Hensley almost instantly.

For soldiers in an experimental Army brigade at the sprawling Fort Bliss base, it's the first day of field training on a new weapon called the Non-Line of Sight Launch System, or NLOS-LS, a box of rockets that can automatically change direction in midair and hit a moving target about 24 miles away. The Army says it has never had a weapon like it. "It's not the Spartans with the swords anymore," said Emmett Schail, the brigade commander, peering into the desert-scape.

In the Army's vision, the war of the future is increasingly combat by mouse clicks. It's as networked as the Internet, as mobile as a cellphone, as intuitive as a video game. The Army has a name for this vision: Future Combat Systems, or FCS. The project involves creating a family of 14 weapons, drones, robots, sensors and hybrid-electric combat vehicles connected by a wireless network. It has turned into the most ambitious modernization of the Army since World War II and the most expensive Army weapons program ever, military officials say.

It's also one of the most controversial. Even as some early versions of these weapons make their way onto the battlefields of [Iraq](#) and [Afghanistan](#), members of Congress, government investigators and military observers question whether the [Defense Department](#) has set the stage for one of its biggest and costliest failures. At risk, they say, are billions of taxpayer dollars spent on exotic technology that may never come to fruition, leaving the Army little time and few resources to prepare for new threats.

Future Combat Systems "has some serious problems," said Neil Abercrombie (D-Hawaii), chairman of the House air and land forces subcommittee. "Since its inception, costs have gone up dramatically while promised capability has steadily diminished. . . . And now, with the Army's badly degraded state of readiness from nearly five years of

continuous combat in Iraq, I don't see how the Army can afford to rebuild itself and pay for the FCS program as it stands today."

To hear the military tell it, there's a hint of Buck Rogers in the program, including an unmanned craft that can hover like a flying saucer between buildings and detect danger. The idea of Future Combat Systems is to create a lighter, faster force that can react better to tomorrow's unpredictable foes.

The last time the Army tried anything so far-reaching was more than half a century ago when it introduced mechanized forces, moving soldiers en masse by machine rather than by foot, Army program officials say. "We are pushing the edge of technology," said Lt. Gen. Stephen M. Speakes, a leader of the Army's modernization efforts.

Others say the Army has pushed too far. The [Government Accountability Office](#) and the [Congressional Budget Office](#) have questioned the cost and management of Future Combat Systems. And in the midst of such questions, Army officials confirmed that they are planning to change the project's name. They said it's not because of its troubles but because the future is now.

The Army is playing catch-up, adopting the advances of the Internet and wireless technology for next-generation warfare. "We're slightly lagging, but we're essentially doing the same thing they're doing on the commercial side," said Scott Davis, the Army's Future Combat Systems deputy program manager.

The project originated in part in 1995 when Maj. Gen. Robert H. Scales Jr., now retired, launched a series of war games. As director of the Army After Next project, his job was to divine the nature of war a quarter century hence. So Scales assembled a team of about 700, including members of the Army, Air Force, [Marines](#), the [CIA](#) and civilian scientists, who warred over the next two years in a huge simulation center at the U.S. Army War College in Carlisle, Pa. "The Army had never done it -- they thought I was off my rocker," he said.

The blue team represented the Americans. The red were the Iranians, who in one scenario captured [Riyadh](#) and began executing the royal Saudi family on live television. That drew the blue team into the streets of Riyadh, which, choked with heavy armor, became a bloody mess. Scales, building on earlier military research, realized that the United States needed a lighter, highly mobile force.

He called it the "Aha moment."

Then a fiasco hastened the Army's commitment to modernize. In 1999, the Army was bogged down in muddy logistics as it sought to move Apache helicopters into [Albania](#) so they could be used in the [Kosovo](#) war. They didn't make it before the fight ended, an embarrassment that prompted Army Chief of Staff Eric K. Shinseki to declare that the service needed to get lighter and faster -- quickly.

## A Sprawling Program

Today, the Army program involves more than 550 contractors and subcontractors in 41 states and 220 congressional districts, a wide dispersal of Defense Department funds that generates political goodwill, military observers said. "When a program gets to a certain size, in the billions, it employs so many people in so many districts you can't kill it," said a congressional staffer and former Army officer, who spoke on condition of anonymity because of the sensitivity of the ongoing review of the program. "It's kind of like the Titanic. How do you move it five degrees?"

The big program is being tested in the biggest of places -- Fort Bliss, which is larger than [Rhode Island](#). But in some ways, the base feels like fictional Mayberry, sprinkled with little houses, neat lawns and holiday lights. Here, the Army assembled about 1,000 soldiers, called the Army Evaluation Task Force, or AETF, this summer to test Future Combat Systems, the first time it dedicated a brigade solely to evaluate new weapons and devices, service officials say. About two-thirds were chosen because of their combat experience in Iraq and Afghanistan. The brigade commander was handpicked as well. It isn't just that Schaill looks the part -- a broad-shouldered military man with speckles of gray in his crew cut. He served as deputy commander of a brigade in Iraq using Strykers, giving him experience with lighter, faster combat vehicles.

Schaill also experienced getting shot in Iraq. In January 2005, while he was visiting local police in a castle in the northern city of [Tall Afar](#), a car bomb detonated nearby. When he stepped out to find out what happened, he found himself in a firefight with insurgents. Just as he cocked his right arm to fire his M4 carbine, a bullet ripped through his right wrist and biceps. He came home with about 30 stitches and a bullet fragment in his arm. He also returned with an abiding sense that things would've turned out better had he had the benefit of surveillance from an unmanned aerial vehicle, or UAV. "I would've much preferred to fly a UAV up there," he said.

Soldiers call it the "beer keg" or the "scrubbing bubble" from the old television commercial for the bathroom cleaning product. The UAV, a remote-controlled hovering craft built by [Honeywell](#) that weighs 29 pounds, is one of the more gee-whiz devices to emerge from Future Combat Systems.

The drone, essentially a cylinder on legs, uses a rotary fan to fly like a helicopter and comes with infrared night vision. The military has been using about 50 of an early version of the UAV for less than a year to identify improvised explosive devices, or IEDs, in Iraq, officials said. . The device isn't equipped with a protective shield, so someone could simply knock it down with a rock or bullet. But Rickey E. Smith, a retired colonel who now heads the Washington office of the Army Capabilities Integration Center, or ARCIC, which oversees the experimental brigade, said, "Would you rather have the bad guy shoot at that or at a soldier?"

A similar idea -- to protect the soldier -- is helping to drive the development of a robot called a Small Unmanned Ground Vehicle, or SUGV, 1,200 of an early version which is

being used in Iraq and Afghanistan, officials said. Built by iRobot, it weighs less than 30 pounds, runs on rubber tracks and features a long, flexible neck with a camera and sensors perched on top. Soldiers, reared on video games, persuaded developers to let them use controllers similar to [Microsoft's](#) Xbox to remotely navigate the robots in caves, tunnels and sewers, where they have defused thousands of IEDs. Soldiers have become so enamored of the robot that they've nicknamed it "Johnny," given its resemblance to the robot in the "Short Circuit" movies.

The Army isn't as far along with the software that will connect the drones, robots and weapons in a network. The software development is an "unprecedented undertaking," the largest in Defense Department history, according to a March report by the GAO, Congress's investigative arm. In 2003, when the project began, the Army estimated it would need 33.7 million lines of code; it's now 63.8 million.

But John Morrocco, a spokesman for [Boeing](#), which is developing key parts of the software, said a third of the code has been delivered.

Another problem is that the Army is giving itself only a dozen years from the time of the program's official launch to field a brigade with eight manned combat vehicles linked with six unmanned vehicles, drones, robots and sensors involving about 50 critical technologies, said Paul L. Francis, the GAO's director of acquisition and sourcing management. "We've never done a tank in five years," he said. That alone could take 10 to 15 years, involving about five critical technologies, he said.

According to Defense Department best practices, the Army should not have launched Future Combat Systems until critical technologies were more mature, the GAO said. "We're not saying they're not making progress," Francis said. But he added, "They're getting to the point they should've been in 2003."

Dennis A. Muilenburg, Boeing's program manager on Future Combat Systems, disagreed. "The technologies are maturing right on track," he said.

The Army has miscalculated some basic assumptions, according to congressional investigators. For instance, Future Combat Systems originally called for its new manned ground vehicle to weigh less than 20 tons so one could be transported in a [C-130](#) aircraft, which is small enough to land on a makeshift airfield, making for quicker deployment. But the combat vehicle needs more heavy armor to protect soldiers, and now the design calls for between 27 and 30 tons, which means that it will have to be transported by the larger C-17, developers said. As a result, Future Combat Systems has failed in its goal to be able to deploy an Army unit overseas substantially faster than it can now, according to the Congressional Budget Office, which studied the program on behalf of a congressional subcommittee.

"We disagree" with that assessment, said the Army's Smith, citing a recent internal military analysis in which a Future Combat Systems brigade could deploy from the United States to the [Middle East](#) 24 percent faster than a current heavy brigade.

The GAO also points to potential risks in the Army's close collaboration with its lead contractors, Boeing and [SAIC](#). As the Lead Systems Integrators, or LSI, the two contractors are more involved in influencing the Army program requirements, solutions and testing than usual, the GAO said. The Army opted to give the two contractors so much authority because it didn't have the resources, flexibility or technical expertise to oversee such a far-flung program, the GAO said. But the military "runs the risk of being less able to provide oversight compared with an arms-length relationship," the agency said.

Boeing's Muilenburg disputed that, saying, "The Army is in charge of the program, the Army has oversight of the program, and we work for the Army." He also said that with Boeing and [SAIC](#)'s centralized approach, the Army is saving money because the companies are consolidating management and overhead.

### **A Huge Investment**

Savings notwithstanding, Future Combat Systems is "by far the biggest single investment the Army is planning to make during the next 20 years," the Congressional Budget Office said. The program will take up about half of the Army's procurement budget in 2015 and stay at about that level over the next decade, leaving little money for other weapons and equipment, according to a 2006 study by the office.

"The Army has some huge long-term budget problems," said Steven M. Kosiak, vice president of budget studies at the Center for Strategic & Budgetary Assessments, a defense think tank. The question isn't so much how the government will pay for the conflicts in Iraq and Afghanistan now, he said. That's being covered by supplemental budgets. The issue is how the Army will afford Future Combat Systems at the same time it's grappling with the cost of adding 65,000 troops and covering rising health care and compensation expenses. "Can you really afford to equip and upgrade the rest of the Army?" Kosiak said.

Davis, the Army official, said the program would not take up nearly half of the Army's procurement budget when it begins full production in about eight years. What's more, the Army said that the project represents only a fraction of its overall budget over the next five years.

Estimating how much the entire program will cost remains a complicated question. "Which way do you want it?" Davis asked.

The Army said the overall program will cost \$124 billion. That's \$162 billion when inflation is factored in, it said. It noted that the program has suffered hundreds of millions in budget cuts and that it will save money, employing technology that will reduce the support personnel in a brigade and developing a hybrid-electric combat vehicle, based on a common chassis, that will increase fuel efficiency and lower maintenance costs.

Meanwhile, independent estimates from the office of the Secretary of Defense put the program at between \$203 billion and \$234 billion. The GAO said the cost has increased 79 percent, to \$163.7 billion, from \$91.4 billion, its original estimate in 2003. The Army said costs rose in part because it "increased the size and scope of the program to accelerate the delivery of capabilities to frontline troops."

The GAO expects costs to rise. Congress has set 2009 to decide whether to continue pursuing the ambitious program. But Brig. Gen. James Terry, who oversees doctrine and training for Future Combat Systems at Fort Bliss, said there is no turning back.

"We have to head toward the future," he said, adding, "I think the train left the station a couple of years ago."