

The Unstoppable Abrams

Defense cuts threaten to close America's last tank plant, but local support and allies in Congress keep it alive.

BY DOUG WISSING



Their cannons precisely angled to a distant horizon, awe-inspiring Abrams tanks stand side by side under the lights of the cavernous building. Wide black tracks from the treads of the 65-ton behemoths mark the thick concrete floor. Here and there, workers with checklists confirm arcane manufacturing details. In one corner, a silent turret ominously turns as its cannon lowers, operated by a white-haired quality-assurance inspector verifying that another of America's most lethal and survivable combat vehicles is ready to go to war.

This is America's last tank plant. Located just outside Lima, Ohio, the Joint Systems Manufacturing Center (JSMC) is an exceptional place, defined by size and superlatives: 1.6 million square feet of industrial space in 47 buildings that stand on a triangle of 370 acres. The JSMC has its own steam plant and railroad system, including two locomotives that nudge the gargantuan fighting machines toward their distant battlefields.

The government-owned manufacturing equipment includes some of the most advanced cutting, tooling, welding and testing equipment ever made. The plant is one of the top two titanium users in the country, rivaled only by Callaway Golf. The Lima testing grounds form a veritable gantlet of tank challenges: a two-mile track, deep-water fording pits and treacherously angled test slopes. The workforce includes some of the most skilled industrial craftsmen on the continent, who use their combined centuries of experience to build the world's preeminent tank.

Now, far from the battlefield, the tanks and plant are facing a danger unrelated to warfare.

Citing declining budgets and an oversupply of state-of-the-art Abrams tanks with an average effective age of two and a half years, the Army recommended in early 2012 that the Lima tank plant be shut down for three years. Army officers argued that it would cost about \$600 million to mothball and restart the plant vs. \$3 billion to maintain production. "The Army had to make some tough choices," modernization boss Lt. Gen. Bill Phillips told Congress. "Thanks, but no tanks," a CNN headline read.

But the Lima plant's advocates challenged the Army's budget figures and warned of the dire impact on the hundreds of subcontractors, many tank-specific, that make thousands of Abrams parts. Since then it's been a battle royale between the Army and plant supporters.

The Army took the offensive, implying that the days of tank-on-tank warfare were past. On the topic of sustaining the tank suppliers, Army Deputy Chief of Staff Lt. Gen. Robert Lennox said, "We don't want to be in the position of 1939, when we say we have to go out and protect the saber and saddle industry because our cavalry is going to need it for the future."

Congressional members and regional political leaders counterattacked. Rep. Marcy Kaptur, D-Ohio, a Defense Appropriations Subcommittee member, argued that the proposed 2014-2017 plant closure would actually cost about \$500 million more than sustaining the plant and its 880

suppliers and subcontractors. "The United States has been in continuous tank production since 1941 – more than 70 years – and the Abrams tank will be a vital component of the U.S. Army's combat forces for another four decades," she said.

Sen. Sherrod Brown, D-Ohio, joined the argument, adding, "Ending the Abrams production line would jeopardize our national security, the safety of our men and women in uniform, and the highly skilled workforce in Lima – not to mention that eliminating this program would be more costly to taxpayers than continuing it. That's why I will continue to push to ensure that the Abrams program remains intact in the years to come."

The Lima business community rallied around the economically important plant. Lima native John Heaphy owns the popular Beer Barrel, a vintage brick tavern located near the facility. He's seen the effect of the plant's fortunes up close and personal. "The tank plant, buying local, makes a huge impact on local business," said Heaphy during a break from playing 1970s hits with his band. "This plant, over the last 10 years, has been on a roller-coaster ride."

War and Peace The Lima Army Tank Plant emerged from the smoke and fire of the German blitzkrieg of 1939 and 1940, when thousands of Panzers overran Europe's defenses. The tank-led routs convinced the U.S. Army's general staff that America needed combat vehicles – and fast. Planners of the newly formed Tank and Combat Vehicle Division decreed that U.S. industry needed to build 1 million vehicles, including 14,000 medium tanks, within a year.

In May 1941, the Ohio Steel Foundry broke ground in Lima on a government-owned plant to manufacture centrifugally cast gun tubes. Lima's steel mill, five railroads and proximity to national highways entered into the site decision, as did the region's highly skilled manufacturing workforce. By November 1942, more than 4,000 Lima workers were constructing combat vehicles, including the M5 light tank and the T26 Pershing tank. During the war, more than 5,000 employees – many of them women – produced more than 100,000 vehicles, mostly for the European battlefields.

In a closed-off section of sprawling Building 147, Lima workers labored on a top-secret project: amphibious tanks for D-Day. Called Duplex Drive (DD) tanks, the Sherman tanks' upper parts were equipped with large canvas skirts, designed to float low in the water so that the bobbing armored monsters would look deceptively like rubber boats

as they plowed through the anticipated foot-high swells. The 35-ton tanks had two propellers to churn four knots across the sea, and could drive 25 mph on land. But of the 29 DD tanks launched four kilometers off Omaha Beach on D-Day, only two made it to land. Six-foot-high swells sank the other 27 tanks, which underwater archeologists explored in 1997.

When peace broke out after World War II, Lima's tank production ceased and the facility became a sprawling storage yard where decommissioned tanks were "canned" in enormous dehumidified gas cylinders, dubbed the "tank farm."

The Korean War revived the plant. By 1951, 2,700 employees were manufacturing wiring harnesses and reconditioning combat vehicles, but eight years later, the plant was again deactivated.

It stood silent until August 1976, when the government reactivated the facility under the name of the Lima Army Modification Center (LAMC), where the XM1 tank was built under contract to the Chrysler Corp. The LAMC was a GOCO (government-owned, contractor-operated) facility. A sister plant, the Detroit Arsenal Tank Plant, assisted with assembly of the Lima-made parts. Rather than cast metal, the XM-1's hull and turret were armored steel plate, making the tank lighter and stronger than earlier models.

The Cold War brought giant government contracts to the plant. In February 1980, the first M1 Abrams tank clanked out of the LAMC. Within a few years, 30 M1s were rolling off the assembly lines each month under the aegis of General Dynamics Land Systems, which had bought Chrysler Defense in 1982. President Ronald Reagan's huge defense buildup resulted in a massive influx of federal dollars to the plant. By late 1986, the ramped-up production lines were completing 120 updated M1A1 tanks per month, eventually manufacturing more than 10,000 Abrams tanks.

In early 1990, Dick Cheney, then secretary of defense, abruptly announced plans to close the Lima tank plant. The Berlin Wall had fallen; the Soviet Union had collapsed. The American public demanded a peace dividend financed by cuts in defense spending.

The potential effect on Lima was obvious. The tank plant was the county's largest employer, with 2,600 high-paid industrial workers earning a \$100 million annual payroll. A former seminary student and community organizer, Lima Mayor David Berger clearly understood the potential economic devastation of a plant closure. Speaking to a *BusinessWeek* reporter, Berger paraphrased the



Tank treads are rolled out at the Joint Systems Manufacturing Center in Lima, Ohio, where combat vehicles have been produced almost continuously for 70 years. Photo by Doug Wissing

Bible: "Beating swords into plowshares is not an option." Berger organized the Save the Tank Task Force, which recruited a broad range of local, state and national leaders to lobby for the facility.

Foreign sales have helped keep the plant going. Operation Desert Storm in 1990 and 1991 demonstrated the M1's supremacy, and orders from foreign powers flowed to Lima. By 1992, Kuwait, Saudi Arabia and Egypt bought tanks, eventually totaling 1,200 Abrams tanks. South Korea bought special armor packages for its tanks. Australia signed agreements. Israel contracted with the Lima plant to build the mammoth Namer armored personnel carriers, based on the Merkava tank chassis.

A gargantuan recycling project secured the Lima plant's continuing role in U.S. armaments. General Dynamics Land System and its Washington allies pushed appropriations through Congress for a "tank recapitalization" project, essentially refurbishing and modifying previously manufactured tanks to state-of-the-art battlewagon standards.

“We don’t produce new Abrams anymore,” General Dynamics spokesman Brian Hahn said. Instead, older Abrams tanks stored in California’s Sierra Army Depot are shipped to Anniston Army Depot in Alabama, where they are disassembled and stripped to bare armor. The “Rusties,” as the unpainted tank carcasses are called, then move on to Lima, where workers transform them into 21st century Abrams M-1A2 SEP V2 fighting machines.

“It’s the epitome of recycling,” Hahn says, estimating that the \$5.5 million refurbishing saves taxpayers 50 percent compared to a new tank.

Even with foreign sales and recapitalization, employment at the Lima plant plummeted to 500. At least it was still open. After DoD closed the Detroit Arsenal Tank Plant in 1996, Lima was the country’s sole remaining Abrams fabricator and final systems integrator – America’s last tank plant.

In 2004, the Lima facility was renamed the Joint Systems Manufacturing Center, reflecting the bright hope of the Marine Corps’ Expeditionary Fighting Vehicle (EFV) to be built there. The titanic combat vehicle was both amphibious and ambitious. Designed to disembark from ships 25 miles at sea, the armored EFV could swiftly transport 20 Marines to shore, where the vehicle with its 30mm cannon could penetrate hundreds of miles inland. The Marines invested \$3.1 billion in JSMC equipment and infrastructure, including some of the most sophisticated manufacturing and quality-control equipment on earth.

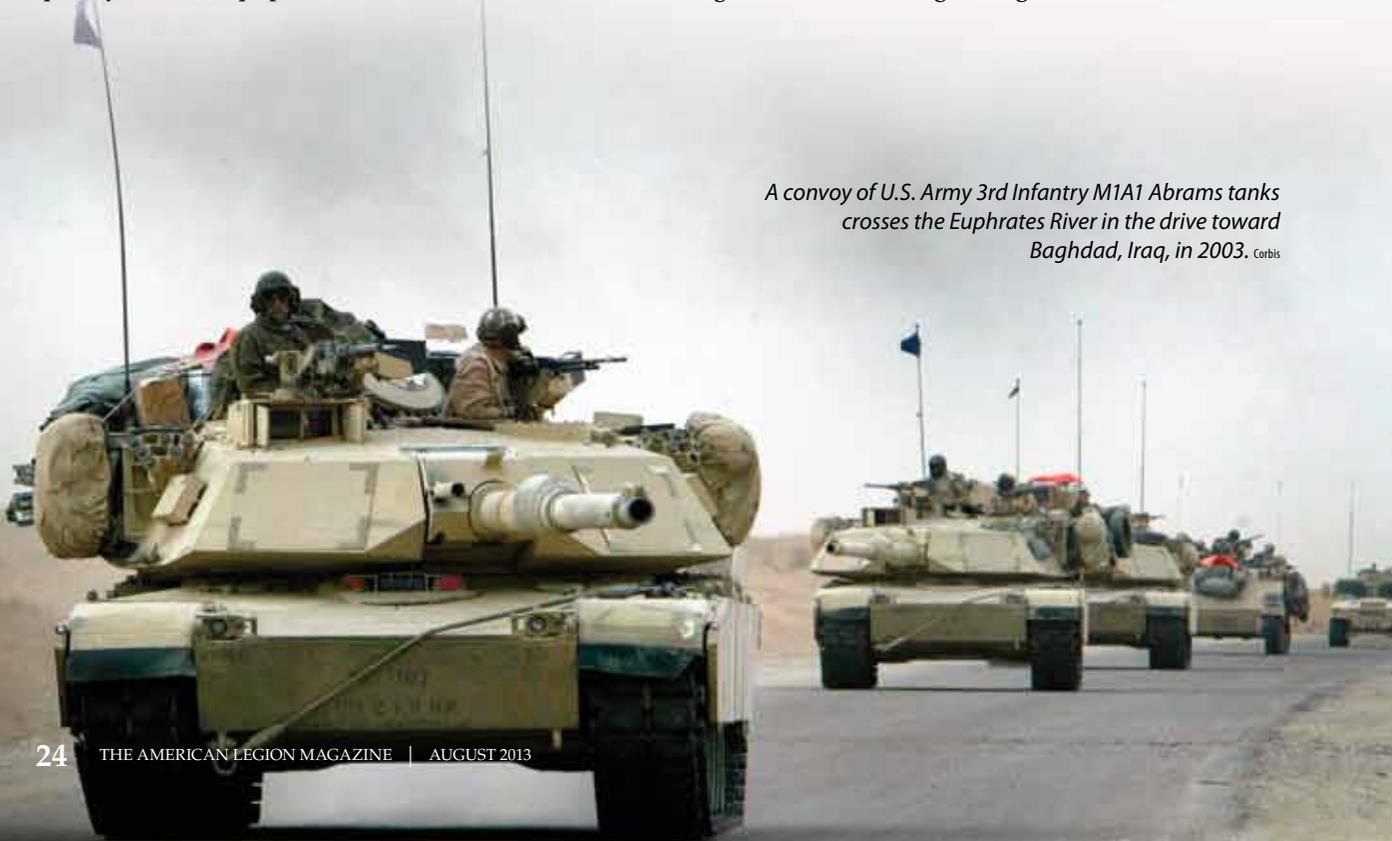
The 2005 BRAC base closure gave further hope to Lima, as the plant was realigned to continue to manufacture armored combat vehicles, including the Army’s high-tech Future Combat Systems (FCS) program, the EFV chassis and the M-1 recapitalization program. The plant landed a contract for the MK-4 naval gun system for littoral protection, and helped develop the IED-defensive Stryker Double V-Hull for the Army’s wheeled fighting vehicle. Lima engineers and production workers used their accumulated experience to fast-track the Stryker program. Within a year, the first transformed Strykers were ready, and by last November more than 450 armored Strykers were saving soldiers’ lives in Afghanistan.

“We’re not just your father’s tank plant anymore,” Hahn said.

But the winds began to shift. The Obama administration announced defense cuts. In 2009, the FCS program was canceled. Faced with declining budgets, the Army began to question the JSMC’s meat-and-potatoes tank-recapitalization program. Then, in January 2011, Lima got a shock. Engineers were testing seven of the amphibious EFVs when Pentagon officials announced they were canceling the program to build 543 of the combat vehicles. “Secretary of Defense (Robert) Gates decided they couldn’t afford them,” Berger said. “The need remains, but they weren’t yet in the production mode, so they pulled the plug.”

After more than two decades as Lima’s mayor, Berger was still leading the fight to save the tank

A convoy of U.S. Army 3rd Infantry M1A1 Abrams tanks crosses the Euphrates River in the drive toward Baghdad, Iraq, in 2003. Corbis



plant and its high-skilled manufacturing jobs. “The community is very interested in the plant’s long-term future,” he said. “We need the tank plant. It’s the only remaining tank facility in the country. The entire supply chain, and even the workforce here, will go off and find something elsewhere.”

Reservoir of Talents So what’s the future for the Lima tank plant? Last December, 693 skilled workers (35 percent of whom are veterans) were laboring in the plant supported by hundreds of specialized subcontractors across the country. Craftsmen in white coveralls and safety glasses pedaled industrial tricycles down the gigantic plant’s “Main Street” past assembly lines of armored combat vehicles. Computer-driven laser, plasma and water jet cutters carved thick sheets of armor steel and titanium into a jigsaw puzzle of tank parts. Sparks from mil-spec certified welders flared through the air. A giant tank-sized X-ray machine examined intricate welds, while a high-tech Wenzel measuring machine’s robotic probe confirmed that each hole on a tank’s surface was machined within 1/1000th of an inch of specs. Enormous paint booths awaited the next tank. Slowly the tanks moved down the transfer line, transformed from disembodied “Rusties” into fearsome cannoned war machines.

But the JSMC’s future is hanging by a thread. “It’s getting enormously more complicated,” said engineer and local United Auto Workers (UAW) President Craig Kiefer about the financial cloud over the plant. “This year Congress voted for it and appropriated the funds. But they’ve got to do this every year. And nothing overturns sequester.”

Kiefer spoke of the foreign business in the plant, the refit order for Saudi tanks and a potential order for 250 more Saudi tanks. “It’s a hopeful situation, but there’s still a lot of angst about getting the work.” He also mentioned the importance of the skilled Lima tank fabricators, who are nearing retirement. “This place has become a reservoir of those talents. In the United States, we’re losing a lot of those skills. They need to train the next generation.”

In August 2012, Congress appropriated \$129 million for Abrams-tank modernization and \$165 million for upgrades in fiscal 2013. With the congressional appropriations and other combat vehicle contracts, the Lima plant could operate for another year.

“There’s a large sense of pride here,” said Keith Deters, director of plant operations, who took time from the factory floor last winter to talk about the



Workers put a turret on a refurbished Abrams tank at JSMC. The Army intends to use upgraded variants of the tank until at least 2050, but its orders have been filled, and the current tank fleet meets specifications. Meanwhile, since 2011, the plant has produced hundreds of the Army’s IED-defensive Stryker DVH, of which more than 450 have been used in Afghanistan. General Dynamics

facility’s accomplishments. “The Abrams is the best-built tank in the world. With the defense cutbacks, we’re reaching out to our allies. The Stryker is very important to us.”

A longtime engineer from Lima who began working at the plant in 1982, Deters talked about the production challenges the plant faces: “We’re dodging bullets, filling gaps, plugging holes. If we hadn’t diversified, a lot of these people wouldn’t be here. To shut the plant down and set it up again, I don’t know how you’d do that.” But despite the uncertainty of Army and congressional support, he was optimistic about the future. “We’ve gone through some tough times – defense cuts, layoffs, BRAC – but this community has stood behind us.”

Doug Wissing has written for The New York Times, Los Angeles Times, National Geographic Traveler, American Life, Forbes Life and Gray’s Sporting Journal.