

Michigan: Arsenal of Democracy for Dangerous Times



An editorial eBRIEF sponsored by

WEST OHIO
T O O L C O .



SITREP

In the year before Japan's attack on Pearl Harbor, President Franklin Roosevelt called upon the world's democratic, industrialized nations to counter totalitarian threats from the Axis powers of Japan, Germany, and Italy. He named this call to arms the "Arsenal of Democracy", and few regions of the world were able to mobilize their industrial might more greatly in that effort than the State of Michigan and its industrial base.

As the center of the nation's automotive industry, Detroit, in particular, stepped up as WWII began and transferred its assembly line skills from building cars to churning out tanks and jeeps. Historians estimate that 30 percent of all war materiel manufactured within the United States for the entirety of the war effort came out of Michigan.

Today, there's another number that's equally impressive. That number is 60 percent, meaning that 60 percent of everything that a soldier shoots or drives is manufactured in Michigan – much of that under the auspices of the Army's Tank-automotive and Armaments Command (TACOM). With responsibility for overseeing five manufacturing arsenals and maintenance depots

across the US, as well as managing the Army's ground equipment supply chain that constitutes 60 percent of the Army's total equipment, TACOM is a major subordinate command of Army Materiel Command and the only active-duty Army installation across Michigan, Ohio and Indiana.

Michigan's manufacturing industry is also a nationwide leader in numerous disciplines such as semiconductor chips, electric vehicle batteries, and clean energy. The state boasts an expanding population of veterans now numbering more than 670,000, and this skilled population is making it possible for Michigan to serve not only the Army but the needs of other military services, including areas like submarine production.

In this Breaking Defense eBRIEF, we examine the roles that Michigan presently plays in the greater US defense industrial base, and also how the state is positioning itself to lead in development of necessary war materiel as threats evolve.

– Barry Rosenberg

Pfc. Jessica Perez, A Battery, 182nd Field Artillery, Michigan National Guard, performs preventive maintenance checks and services on a HIMARS air and missile defense system during training in preparation for the unit's 2022 deployment, Camp Grayling, MI. (U.S. Army Photo by Master Sgt. Helen Miller).



ON THE COVER: Michigan is a central location for National Guard training. Here, Bravo Battery, 120th Field Artillery Regiment, 32nd Infantry Brigade Combat Team, Wisconsin National Guard, conducts a fires mission at Camp Grayling, MI, in 2022. The event took place during Northern Strike 22-1 ("Winter Strike"), a National Guard Bureau-sponsored exercise with participants from several U.S. states and partner forces at Camp Grayling Joint Maneuver Training Center and Alpena Combat Readiness Training Center, MI, which together comprise the National All-Domain Warfighting Center. (U.S. Army National Guard photo by Capt. Joe Legros)

Michigan's defense ecosystem and expertise makes it a special asset for production

In addition to its expertise in bending metal, the State of Michigan owes part of its standing within the US defense industrial base to the skilled Michiganders that design, build, maintain, and modernize many of the Defense Department's most vital systems necessary to maintain deterrence in high-intensity combat.



Maj. Gen. Paul Rogers, adjutant general of the Michigan National Guard, and Michigan Gov. Gretchen Whitmer.

"First and foremost, we have phenomenal academic institutions that produce a greater number of engineers than anywhere else in the country; and per capita, we have the largest concentration of engineers that span the full spectrum of the engineering skill sets," said Maj. Gen. Paul Rogers, adjutant general of the Michigan National Guard. "It's that core capability for engineering design and precision that is key."

"Then there's the manufacturing expertise from the professional trades all the way up to the understanding of how to industrialize manufacturing at scale and how to bring the power of all that capability to bear on a problem. That manufacturing expertise is germane to Michigan and synonymous with Michigan."

The state is also experiencing a strong and growing presence of venture capitalists around capabilities specifically designed to improve manufacturing processes that speed delivery of vital systems. Other military services such as the Navy are also looking to quicken the pace of production and have looked to Michigan to help.

"The US Navy last year announced an initiative to invest in Michigan to continue to grow a specialized workforce, especially in the professional trades, and also tie into the incredible number of companies that are in manufacturing within Michigan to help recover some of the lost schedule within their submarine and ship production programs," said Rogers, who is a member of Gov. Gretchen Whitmer's cabinet and responsible for Michigan's Department of Military and Veterans Affairs.

"There's a genuine earned reputation for manufacturing expertise that's resident here in Michigan, and you do not find that concentration of expertise anywhere else in the country and possibly in most parts of the world."

Earning the moniker: the Arsenal of Democracy

To put that expertise to even better use, the governor created the Office of Defense and Aerospace Innovation (ODAI) in 2024 to support the state's activities and US defense industrial base.

"Michigan is all-in on defense," said Whitmer. "With our Office of Defense and Aerospace Innovation, we are positioning Michigan to build on its long, proud legacy of leadership in these sectors. We will compete with other states and nations to grow our defense and aerospace economy, harnessing our strong base of talent and building on our powerful ecosystem of businesses in this space."

Michigan's defense and aerospace ecosystem encompasses more than 4,000 businesses supporting defense and aerospace, as well as homeland security. Together they're responsible for \$31 billion in economic activity, according to the Detroit Regional Chamber, representing about 116,000 jobs.

The seat of Michigan defense resides in Macomb County, home to TACOM and Selfridge Air National Guard Base. Nearby is the Camp Grayling Joint Maneuver Training Center and the Alpena Combat Readiness Training Center. In 2024, 65 percent of all federal defense dollars in Michigan were spent in Macomb County across 4,808 defense contracts awarded. As of 2025, approximately 37,500 people were employed in Macomb County's defense sector.

Some of the household names that support the nation's defense from Michigan include AM General, BAE Systems, Emergent Biodefense Operations, General Dynamics Land Systems, Kelly Services, L3 Technologies, and Oshkosh Defense.

Fielding one of the more robust national guards in the nation, Michigan's counts five major installations plus armories across the state. This includes: the National All-Domain Warfighting Center (NADWC) in Northern Michigan that includes the Camp Grayling Joint Maneuver Training Center that provides joint, all-domain training facilities; and Selfridge Air National Guard Base, one of the largest in the country that dates back to WWI and traditionally conducts fighter, ground attack, and refueling missions.

In April, the Defense Department chose Selfridge under a strategic basing decision that will bring about 20 F-15EX fighters to Macomb County beginning in FY28. That mission will replace the A-10s being retired and bolster the state's leadership role in national security.



A U.S. Air Force C-17 Globemaster III aircraft taxis at Selfridge Air National Guard Base, MI, June 9, 2025. The aircraft carried Latvian soldiers heading home after an exercise, as part of the National Guard Bureau's, "State Partnership Program," promoting regional stability and interoperability through military-to-military engagements. (U.S. Air National Guard photo by Tech. Sgt. Drew Schumann)

“This is a huge, bipartisan win for Michigan, decades in the making, that will grow our economy and make our country safer,” said Whitmer. “Since day one, I’ve been laser-focused on securing a new fighter mission at Selfridge and supporting the brave service members who step up for our communities every day. I appreciate the President’s partnership on this new fighter mission that will protect jobs and show the world that Michigan is the best place to pioneer the next innovations in national defense. Because of our tireless work with partners on the ground in Macomb County and on both sides of the aisle, the future of Selfridge is bright, lasting, and secure.”

The strategic basing decision for the F-15EXs, an advanced version of the multi-role fighter, follows another important DoD vote of confidence in the State of Michigan when the Air Force chose Selfridge to host a new squadron of 12 KC-46A refueling tankers. According to Michigan officials, the tanker mission alone will bring about 1,000 military personnel to the Selfridge Michigan Air National Guard workforce.

Joining these recent Michigan developments from the Army and Air Force is the Navy, which in 2024 partnered with the state and other organizations on the \$50 million Michigan Maritime Manufacturing (M3) Initiative. Focusing on jobs and skills development in Michigan and across the Great Lakes region beginning with submarine construction, M3 is intended to maximize educational institutions and Michigan’s manufacturing know-how to help build and expand on the maritime industrial base workforce that the Navy needs to maintain deterrence in the Indo-Pacific and elsewhere.

Thousands of workers trained and skilled in areas like maritime welding and machining will be needed to meet the demands of ramping up naval production. M3 aims to construct training pipelines to satisfy that demand, creating curriculums geared toward maritime workforce skills.

“This initiative underpins our Navy’s commitment to strengthen maritime dominance by enhancing strategic training partnerships across federal, state and local entities while leveraging Michigan’s long-standing reputation as a manufacturing powerhouse,” said former Secretary of the Navy Carlos Del Toro.

Added Assistant Secretary of Defense for Industrial Base Policy Laura Taylor-Kale: “We are making investments to nurture and develop the skillsets that are vital to our national security; investments which will enable us to achieve the

strategic priorities laid out in the National Defense Industrial Strategy. By partnering with Michigan’s auto manufacturing industry to grow the SIB (submarine industrial base), we are reimagining what is possible for manufacturing communities not just throughout Michigan, but across the country.”

Michigan is also investing in its industrial base through state grants that focus on critical technologies to address domestic supply chain needs through areas like aerial mobility innovation and uncrewed autonomous systems and electrification – technologies that ODAI is addressing, in particular, especially those with medium to high Technology Readiness Levels (TRL) 4 through 9.



A U.S. Air Force Airman from the 820th Base Defense Group looks through a scope at the Alpena Combat Readiness Training Center in Michigan, Apr. 10, 2025, during exercise Capri Sun. (U.S. Air Force photo by Master Sgt. Chelsea Fitzpatrick)

“Democracy is under threat on a global scale, not seen since the Cold War,” said ODAI Executive Director and retired Marine Corps colonel John Gutierrez. “The Russian invasion of Ukraine and China’s attempt to disrupt freedom of navigation in the Taiwan Straits, along with ongoing conflicts in the Middle East, underscore the challenges confronting the United States and its allied nations. Michigan, renowned as the Arsenal of Democracy and a beacon of industrial prowess, holds immense potential.”

A resilient and responsive defense industrial base

As the world is witnessing in Russia’s war on Ukraine, it’s not the high-end solutions that are making a difference. Rather, it’s the ability of specific supply chains to surge in order to meet the churn of high-intensity battle, especially as it relates to ground systems.

“So many of our systems are exquisite solutions today that are very challenging to manufacture and produce,” said Rogers, who is dual-hatted as chairman of the National Guard Association of the United States (NGAUS). “The expertise of Michigan manufacturing and bringing that to the table to figure out how to make them a little less exquisite and solve some of the affordability problems in the supply chain can make a difference in the military’s ability to produce at scale.

“We have the skillset, we have the intellect, and we have the innovation to retool our manufacturing in Michigan incredibly fast – as we demonstrated during COVID, and we can do that now for national security purposes. Michigan will be a great partner for the Department of Defense in helping to address key supply chain requirements for performance, and continue to serve as part of America’s Arsenal of Democracy.”

VIEWPOINT FROM WEST OHIO TOOL

HOW ONE COMPANY'S ADVANCED TOOLING SUPPORTS THE ARSENAL OF DEMOCRACY IN MICHIGAN



West Ohio Tool CEO Kaci King and some of her team.

The Michigan defense industrial base (DIB) extends beyond just the borders of The Wolverine State to include a vital regional hub for manufacture and support of systems for every warfighting domain. West Ohio Tool is one of those important players contributing to the larger regional DIB and especially Michigan's Arsenal of Democracy supporting the US Defense Department. Breaking Defense discussed the importance of the Michigan DIB and the role played by West Ohio Tool with that company's CEO, Kaci King.

Breaking Defense: While your primary facility is located just outside of Michigan, West Ohio Tool places strategic importance on engaging with and serving the Michigan DIB. What does your commitment to this regional ecosystem entail in practice?

King: We believe people in manufacturing need new, innovative ways or just a better product to have more agility to do what they are doing. We can then make an impact on defense readiness in the bigger picture. Because we are only two hours away from the Ohio/Michigan border, it allows us to easily visit our customers, deliver product to them without delivery fees, and even 'be at the spindle' to help with a problem wherever necessary.

Support is critical for our customers' success, and the fact that a large portion of the Michigan DIB is within our reach gives us even more opportunity to deliver that support in meaningful ways. That's why we maintain active membership in organizations like Women in Defense, NDIA, and the AUSA Arsenal of Democracy Chapter. It excites me a great deal to participate in the Michigan Chapter — and as a proud sponsor of the U.S. Army Ball, hosted by AUSA AOD — as I view it as an opportunity to honor those who serve while strengthening the community that builds for them.

Regarding defense readiness, describe the types of cutting tool solutions West Ohio Tool provides that are critical to the defense sector? How do your products support key defense platforms or manufacturing processes?

We manufacture custom cutting tool solutions, not standard off-the-shelf but something engineered specifically for an application, for example: challenging material, or the need to combine a machining process into fewer tools, or better geometries for longer tool life and less downtime.

One example of innovation that we created for automotive powertrains was to drastically extend drilling tool life in solid aluminum. We took drilling in that application from 25,000 holes to 1,000,000 holes that now lasts a 4-year model change and prevents the line from shutting down 40 times over that period.

From that, we became curious about what other applications or materials we could help with. For example, we have heard some speakers in the defense space mention that ceramics cannot be machined. This is simply not the case. We've proven with this technology that it can be as it's been previously used to drill ceramics to make semiconductors for the last few years. In addition, this same technology is being used for space satellite manufacturing at a major defense manufacturer, as well by aerospace manufacturers. We also manufacture reamers that have critical tolerance for 50 cal military machine guns because standard gun reamers do not hold the tolerances necessary.

Defense readiness is critical. As a supplier, we ship up to 75 percent faster than our industry standard, which allows defense manufacturers to have less cost in inventory, get what they need faster, and keep running production without waiting for tooling deliveries. We believe agility on our end is a key component to the success of manufacturing, and of course the Department of Defense makes up the largest piece of manufacturing.

In addition, it's important that innovation like the drill mentioned above that we have named the EDGEX4 be available across defense manufacturing due to the cost savings and increased production it provides. The number four in that brand signifies that we try to provide solutions that are stronger, last longer, run faster, and more efficient than our competitors.

Looking at the DIB, what specific needs or challenges do you see in the ground vehicle and advanced manufacturing sectors prominent in Michigan that West Ohio Tool can address?

There are a number of specific needs or challenges we see that we are uniquely positioned to provide, such as ceramic applications needing cutting tool solutions for machining/hole making.

I'll mention a few others like longer tool life. Customer survey responses mentioned in the last few years that at minimum even for a carbide form tool, we have extended their tool life a minimum of 3x, and some drastic cases with our EDGEX4 drill up 110x. This allows for more production, less downtime, lower cost per hole, less tooling inventory needed for change out, and less people to change tooling out.

Then there's lower cost per hole. We believe this is where true tool cost lies — not in the acquisition cost of the tool. I mentioned automotive earlier, and we saved that vehicle manufacturer an estimated \$400 million over four years in operational costs, which not only makes the tool free but also resulted in a major refund. The upfront cost of the carbide version of the tool was \$200, but at a cost per hole of \$.007. The EDGEX4 was \$1,300, but provides not only \$0 cost per hole but massive operational costs savings due to less downtime and increased production.

Some cutting tool manufacturers take 16-20+ weeks to deliver the same tool we can deliver in 4-8 weeks. Agility is imperative in manufacturing but can only happen with suppliers who can also be agile to deliver quickly and on time, which is crucial for production. In addition, this also provides cost savings in tooling inventory, as I mentioned.

We have the ability to provide engineered solutions, and innovation whenever possible to solve current manufacturing problems. We are also CMMC Level 2 compliant, which provides peace of mind to our customers, especially in the defense space.

Describe your vision for West Ohio Tool's continued growth and involvement within the regional DIB, especially with the Michigan ecosystem?

Our vision for continued growth drives us every day. We know that supplying the defense industrial base will support that vision. More importantly, we know that the overwhelming majority of everything a soldier shoots or drives is made in Michigan. Those products are made by over 4,000 companies and add a staggering \$30 billion in economic activity. Michigan's defense sector will be a vital part of our growth.

We have been helping people in manufacturing gain the edge for more than three decades in many facets of defense, including vehicles, aerospace, space, ordnance, and semiconductors. We have spent the last few years implementing additional systems, processes, and quality standards necessary to be part of this very special sector.

As Michigan continues to lead and dominate in defense manufacturing, we're not just watching — we're all in. The future is bright, and we're fired up for what's ahead.

WEST OHIO
T O O L C O.



*Breaking Defense thanks West Ohio Tool for supporting this editorial eBRIEF.
Sponsorship does not influence the editorial content of the eBRIEF.*