

# Aerospace



## Industry Profile



*Imagine* **Macomb**

Targeted Industries Initiative  
*Macomb County, Michigan*

*Aerospace*

## Imagine Macomb

Macomb County is a global center for transportation and manufacturing, with an industrial base that offers the benefits of over 100 years of innovation and ingenuity. The Macomb County Department of Planning and Economic Development can help your company establish a foothold in our fast-growing aerospace-supplier community by bringing together the expertise of industry and academia. We help companies access our highly skilled workforce, infrastructure and vast AS9100, AS9120 and NADCAP certified supplier network, allowing them to operate more efficiently and provide quality products and services to the aerospace industry.

## Macomb Strategic Advantage – Imagine Yourself Here

- Between 2000 and 2009, a total of 502 suppliers in Macomb County won 9,305 federal contracts for a total value of \$24 billion. This represents nearly 7 percent of all defense/aerospace contracts awarded during the period
- Our region is ranked second in the nation in R&D spending
- More than 3,000 patents are filed annually in the region
- More than 30,000 county workers are engaged in engineering, research and development
- Macomb County is home to more than 400,000 potential employees with a workforce of nearly 2.7 million throughout the region
- Nearly 500 companies are performing defense and aerospace contract business
- Almost 100,000 college degrees are granted in the region annually
- The region enrolls nearly 12,000 science and engineering graduate students on an annual basis
- The region grants master's and Ph.D.s at a rate almost twice that of the national average
- 41 colleges and universities in the region graduate more than 10,000 degreed engineers and technicians annually
- Nearly 79 percent of engineering graduates find jobs locally

## Local Support Organizations:

- U.S. Army Tank-Automotive Research, Development and Engineering Center (TARDEC)
- TARDEC's National Automotive Center (NAC)
- U.S. Tank-Automotive and Armaments Command (TACOM)
- Selfridge Air National Guard Base
- Michigan Aerospace Manufacturers Association (MAMA)
- Michigan Defense Contract Coordination Center (DC3)
- Michigan Manufacturers Association
- MMTC - Michigan Manufacturing Technology Center
- National Center for Manufacturing Sciences (NCMS)
- National Defense Industrial Association
- National Institute of Industrial Technology (NIIT)
- Procurement Technical Assistance Centers (PTAC)
- Robotics Industry Association (RIA) World Headquarters

## Academic Research

The U.S. Department of Defense and other federal agencies provide millions of dollars in aerospace and defense related research.

The state of Michigan is a world-wide technology leader with more than \$2 billion spent annually on research and development. Because we graduate more than 12,000 degreed engineers and technicians per year, many of those research projects are performed at colleges and universities in the state.

Institutions with related programs include:

### Central Michigan University

- Center for Supply Chain Management

### Eastern Michigan University

- NSF Coatings Research Institute

### Kettering University

- ANNAF (Joint Army, Navy, NASA, Air Force) Standard Methodologies

### Lawrence Technological University

- Aeronautical Engineering Minor & Certificate Programs
- Center for Innovative Materials Research

### Macomb Community College

- Haas Technical Education Center (CNC machining)
- Advanced Manufacturing for Aerospace & Defense programs

### Michigan State University

- Fraunhofer Center for Coatings & Lasers – Aerospace

### Michigan Technological University

- Carbon Technology Center

### Oakland Community College

- Customized Alternative Energy Programs & Certificates

### Oakland University

- Product Development & Manufacturing Center
- International Fastening & Joining Research Institute

### University of Michigan

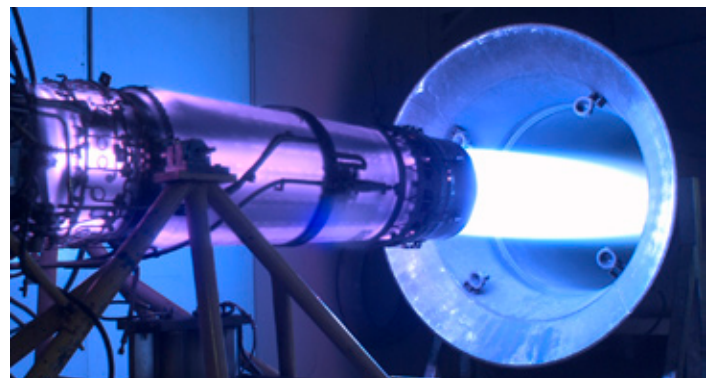
- Aeronautical Engineering Program

### Wayne State University

- Institute for Manufacturing Research – Aerospace
- Smart Sensors & Integrated Micro Systems Lab (SSM)

### Western Michigan University

- Advanced Materials Testing and Evaluation Laboratory



## Macomb-Oakland University Business Incubator

Macomb-OU INC is a regional hub for accelerating economic growth in the targeted industries of aerospace, defense/homeland security and advanced manufacturing. Its purpose is to provide a supportive environment for start-up and emerging companies.



Client companies accepted into the program are offered access to a wide range of business support services; rental space with flexible leases; assistance in the commercialization of new technologies; and assistance in securing traditional and non-traditional forms of financing. Successful graduates of the program emerge as financially viable entities that create jobs while bolstering the local economy.

Founded in 2008 through a partnership by Macomb County, the City of Sterling Heights and Oakland University, Macomb-OU INC is a Michigan SmartZone™ and an active participant of the Business Accelerator Network for Southeast Michigan.

## Automation Alley Defense Center

Automation Alley and Macomb County have joined forces to promote defense and aerospace business opportunities. Automation Alley's Defense Center in Macomb County is a partner resource for financing, supplier information, and consulting in the defense and aerospace sectors.



Automation Alley also provides consultation on the Small Business Innovation Research Program (SBIR). The SBIR is a highly-competitive grant program that encourages small businesses to explore their technological potential and provides the incentive to profit from its commercialization.



## Macomb Community College

Macomb Community College has many educational programs to train individuals as well as leverage and transfer skills of the current workforce to support the aerospace industry. These programs include electronics, mechatronics, robotics, advanced manufacturing/machining, welding, quality, homeland security, project management, business and information technology.



Custom programs specific to aerospace and defense employment are also available in addition to these varied traditional educational pathways. Grant-funded focus areas include an 88-hour program in quality covering metallurgy; blueprint reading; geometric dimensions and tolerancing; coordinate measuring machines, calibration and measurements; and the AS 9100 standard for quality systems. To develop multi-skilled designers, a 360-hour program for experienced designers enhances skills in the software they have experience with and provides baseline understanding and proficiency in two others. CATIA, UG and Pro/E are the designated software applications.

In computer numerically controlled (CNC) machining, Macomb has a 400-hour program for those with some prior manufacturing experience. And, for individuals who already hold general welding certifications, a 120-hour program provides hands-on training specific to the needs of the aerospace and defense industry.



## A Strong and Diverse Business Base Helps Macomb County Aerospace Companies Grow.

The following world-class companies call Macomb County home.

### Advanced Integrated Tooling Solutions

Advanced Integration Technology (AIT), a leading industrial automation and tooling company delivering fully integrated plant floor systems to the aerospace industry, has expanded its manufacturing capabilities with the opening of its new subsidiary, Advanced Integrated Tooling Solutions (AITS) in Chesterfield Township, Michigan.

AITS plans to invest \$13.3 million to manufacture equipment for commercial and military aircraft at the new 312,000 square foot facility. The project is expected to create 1,435 new jobs, including 275 directly by the company. The Macomb County Department of Planning and Economic Development estimates the increased economic activity created by the project will create an additional 1,160 indirect jobs.

Macomb County worked with the Michigan Economic Development Corporation (MEDC) to get approval for a state tax MEGA credit valued at \$3.2 million over eight years to encourage the company to expand in Michigan. AITS looked at competing sites in Ohio, Texas and Pennsylvania before choosing the Chesterfield Township location. Chesterfield Township also helped in the decision process by offering a property tax abatement in support of the project.

AITS will also provide design services at the new facility, as well as high-precision fabrication, machining and assembly to serve emerging high-technology tooling needs in other industries. This AIT venture combined with its existing 65,000 square foot operations in Vancouver, British Columbia, results in a robust manufacturing platform for a variety of aerospace projects. Recent contract wins for AIT tooling and equipment include such programs as Airbus A350, Spirit AeroSystems A350, Bombardier Learjet 85, Bombardier CSeries, Embraer 170/190 and Lockheed Martin F-35 Joint Strike Fighter.

“We are excited to be able to deliver increased capabilities to meet our customers’ demands at the Chesterfield facility. The local machine tool workforce is very talented.” said Edward Chalupa, President of AIT. “From bond molds to assembly jigs and more, AITS will be able to provide the highest quality equipment and tooling to support our substantial new business.”



### BMT Aerospace USA

BMT Aerospace International NV is a division of the BMT Group NV in Belgium and has three manufacturing subsidiaries in Romania, Belgium and the United States. The U.S. facility is located in Fraser, Michigan and was recently transformed into a state-of-the-art manufacturing plant with the help of the Michigan Economic Development Corporation (MEDC) and bonds issued from the Michigan Strategic Fund.

The MEDC helped finance the expansion of the 56,000 square-foot facility through the Private Activity Bond program. The \$6.5 million was used for the acquisition and installation of machinery and equipment and renovation of the facility at 18559 Malyn Road in Fraser.

The new machinery and equipment has allowed BMT Aerospace USA to effectively compete in the global gear and gear box assembly business with aerospace companies and major aerospace suppliers. Since the renovation, the company has seen a significant increase in business from some of the largest names in the industry, including Bell Helicopter, General Electric, Pratt & Whitney, Hispano-Suiza, Rolls-Royce, and Sikorsky Aircraft.

“Before the expansion, we would have never had the opportunity to work with the major players in the aerospace industry. The \$6.5 million from the Michigan Strategic Fund has helped us more than triple our sales over the past three years and has put us in a position to double again over the next three years, potentially adding 30 to 40 new employees to our current workforce of 120.” said BMT Aerospace USA CEO Robert Puckett.

BMT’s Aerospace division services five basic market segments within the aerospace industry encompassing: Turbine Engine & Systems, Mechanical Actuation, Helicopter Drive Systems, Defense and Airframe Assembly Structures. Services include “build to print” gearboxes using existing OEM drawings.

BMT Aerospace International provides global companies solutions to meet the deflationary cost demands and delivery expectations in today’s business environment. The company’s expertise includes transitioning in new business, program management and providing risk reduction plans that assures on-time delivery with impeccable quality at a competitive price level.



## Gentz Industries

Gentz Industries in Warren, Michigan is a leading provider of complex, high-precision turbine engine components. For over 60 years, Gentz has manufactured and serviced products made of exotic alloys for the Aerospace and Power Generation Industries. Key customers include Pratt & Whitney, Rolls-Royce, Mitsubishi Heavy Industries, Hamilton Sunstrand and the U.S. Government.

World demand for high-skilled manufacturing led to the addition of 30,000 sq. ft. of floor space and acquisition of state-of-the-art equipment in 2007 and 2008. The expansion financing was made possible with support from the MEDC, the City of Warren and the Michigan Strategic Fund (a Michigan Economic Development Corporation-approved \$1.08M tax credit, a \$413,000 tax abatement from the city, and \$6.5M in bonds from the M.S.F.). When market orders dropped dramatically in early 2009, Gentz weathered the storm better than most with the cost benefits locked in through the MEDC programs.

Springing forward, renewed core business growth fueled in-house development of new manufacturing processes and innovative component designs for Gentz customers. These R&D efforts are branding Gentz as a global “Technical Center of Excellence” as coined by customers. Collaboration with the University of Michigan Incubator Lab and partnerships with other US and MI based

firms, positions Gentz as a game-changing supplier of advanced technology and materials.

Ray Holm, CEO of Gentz, said: “We tackle the tough stuff; the stuff best suited for a well-resourced area like S.E. Michigan. We have the skill and the regional will essential for all the complexity of a burgeoning aerospace manufacturing industry. Strong work ethics and a business-friendly community are all that’s needed. We export 80 percent of our product and services made with good paying American jobs. Who says ‘Made in the USA’ is dead?”

The Gentz Warren facility is located in one of the most comprehensive manufacturing bases in the world. This advantage allows Gentz to leverage an extensive array of manufacturing specialties plus their 260 employees, to provide clients with one-stop solutions for all their product development, manufacturing or service needs.



## Schwab Industries

Established in 1984, Schwab Industries in Shelby Township, Michigan is a premier supplier of stampings and assemblies for prototype, pre-prototype, aftermarket, service, and production support to the transportation industry. Schwab provides design and tooling for the Automotive, Mass Transit, Train, Aerospace and Aircraft markets. Schwab works directly or in-directly with most of the small to medium-sized commercial, military and private passenger aircraft companies from around the world.

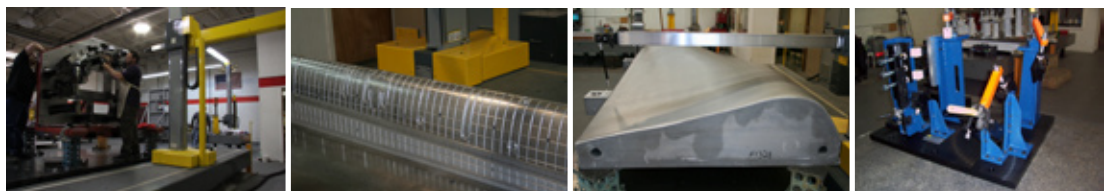
Schwab has taken advantage of the highly-skilled local work force to offer a broad mix of aerospace and aircraft services including; design and build of tooling, design and build of assembly fixtures and gauges, and inspection fixtures and gauges for final product and production.

Schwab's 55,000 sq. ft. of manufacturing facility is divided between three plant operations; Plant One provides milling, laser cutting, and our pressroom operations for prototype, short run production, and aerospace tooling and parts. Plant Two provides tooling build, welding capabilities, vehicle build capabilities, along with a CMM room that houses four very large machines. Plant Three houses our shipping and receiving activities and provides additional space for projects that may require a more secure environment, or simply larger stand alone projects. Schwab also has onsite design

capabilities and is currently utilizing multiple seats of Catia and Uni-Graphics NX.

Over the last seven years, Schwab has seen a dramatic rise in business related to the aerospace and aircraft industries. Those industries now represent 40 percent of Schwab's overall business on a yearly basis. To help continue this growth, the Michigan Economic Development Corporation awarded Schwab a \$25,000 Economic Development Grant to help the company further train their employees on the new AS9100 Quality Management System. Schwab has more than 30 employees concentrating on business tied directly to the aerospace and aircraft industry.

With 85 total employees, Schwab has seen their aerospace client list continue to grow, in addition to their major O.E.M. automotive company revenue at the Shelby Township facility.



## DC3 / Macomb Regional Procurement Technical Assistance Center

The Macomb Regional Procurement Technical Assistance Center is one of 11 regional centers state-wide operating under the MEDC's Defense Contract Coordinating Center. The mission of these agencies is to increase the number of Michigan companies winning federal contracts.

DC3 works proactively to increase the number of prime contracts awarded to Michigan companies by promoting Michigan businesses to buyers and contractors. These efforts have led to the creation of local aerospace supply-chain clusters.

The Macomb Regional PTAC, in its role, leads all Michigan centers in successfully bringing defense contracts to local companies. Their procurement specialists partner with qualifying businesses to familiarize them with the details of government contracting and its processes, and help these businesses to obtain and perform on federal, state and local contracts. The Macomb Regional PTAC can assist your company

throughout the entire pre-award to post-award procurement process, including:

- Registering to become a government contractor
- Identifying bid opportunities
- Simplifying the bidding process
- Expediting payments through electronic invoicing
- Assisting with post-award evaluation of your submitted contract and/or award.



## Macomb County Aerospace Related Companies

Accurate Boring Co.	Endura Coatings	Midwest Mold	Slater Tools
Accurate Welding Inc.	Extreme CAD/CAM Inc.	Milco Manufacturing	Sound Gear & Spline
ACR Industries	FEC Inc.	Millstar	Spartan Carbide Inc.
Action Wood Technologies	Fisher Dynamics Corp.	MNP Corp.	Specialty Steel Treating Inc.
Acument Global Technologies Inc.	Flame Spray Coating Co.	MNP Steel & Wire	Standard Components
Admiral Box Co.	Formsprag Clutch	Models & Tools	Sterling Mfg & Engineering Inc.
Aero Technologies	Fox Manufacturing Co.	Modulated Metals Inc. (MMI)	Sturdy Grinding & Machining
A G Davis Gage & Engineering	Freer Tool & Supply	Nitro EDM & Machining Inc.	Superior Heat Treat LLC
AIM Plastics	Gage Bilt Products	Norbert Industries	Supreme Gear
AITS (Advanced Integrated Tooling Solutions LLC)	General Dynamics	NYLOK Corp.	Swiss Precision Machining Inc.
American Aircraft Parts	Gentz Industries	Painter Design & Engineering	Taper Line Inc.
American Heller Corp.	GFM Corp.	Plasco Corp.	TD Industrial Coverings Inc.
American Industrial Painting	GTS Global Tooling Systems	PPI Aerospace	Thread-Craft Inc.
Armada Rubber Mfg. Co.	Grosse Tool & Machine Co.	Precision Die Cast Inc.	Triumph Gear Systems-Macomb Inc.
Aro Welding Technologies Inc.	Hamdon Industries Inc.	Precision Honing Corp.	Tuscon Industries LLC
Atlantic Research Corp.	Highland Bolt	Precisioncraft Co.	Ultimate Hydroforming Inc.
Atlas Tool Inc.	Hi-Tech Furnace System Inc.	Prototype Cast Manufacturing Inc.	Utica Automation
Automation Service Equipment Inc.	Hydra-Lock Corp.	Quad Industries	Utica Body & Assembly Inc.
Beta Steel	Induction Services Inc.	RCO Engineering Inc.	Utica Enterprises
BMT Aerospace USA Inc.	Invo Spline Inc.	Regal Prototypes Inc.	Utica Laser Systems
Brown Aerospace	IRO-TEK Industries Inc.	SAIC (Science Applications International Corp.)	Utica Standard Products
Chardam Gear Co. Inc.	JPT Joint Production Technology	Saturn Ceramic Coating Co.	Vac-Met Inc.
Creative Coatings Co. Inc.	Keo Cutters Inc.	Scearce Laser	Visioneer Inc.
Dager Systems	Krupp Corp.	Schwab Industries Inc.	Waltonen Engineering Inc.
DCS Corp.	KUKA Systems North America	Schwartz Industries Inc.	Warren Industrial Welding Inc.
DieTech North America	Lunar Industries	Schwartz Precision Gear Co.	Weldaloy Products Co.
Dobday Manufacturing Co. Inc.	Machine Tool Service Inc.	Sequoia Tool	Wolverine Bronze Companies
Dorris Co.	Maidstone Industries Ltd.	Serapid USA Inc.	Yates Industries Inc.
Duggan Manufacturing	Majestic Metal Fabricating Co.	Servin Co.	Zatkoff Seals & Packings, Warren Branch
Dynamic Plastics	Master Pneumatic-Detroit Inc.	SGC Industries	
Eagle Spline Gage Inc.	Matrix Metalcraft	Shared Vision (Schwartz Industries & Panda Precision)	
	Michigan Wire Die		

## Quality of Life – Imagine Macomb

Imagine an amazing place to live, learn, play and thrive. Imagine a county with 27 of the safest communities in the United States. Imagine a county where people make their homes in family friendly suburbs, along the spectacular shoreline of Lake St. Clair, in rural villages and townships and in downtowns. Imagine a county that enjoys some of the highest home ownership rates in the country. Imagine Macomb County, Michigan.

With 836,000 residents and nearly 28,000 businesses, Macomb County offers its residents the opportunity to experience a great quality of life. If you are looking for an outstanding place to raise a family and build a business, there is nowhere finer than Macomb County.

Residents in Macomb County expect and demand quality education. Shaping students to be global leaders in the 21st century is a key goal in the curriculums of the county's public schools and colleges. Macomb Community College, the second largest in the state, was the first in the nation to establish a "University Center" where colleges and universities from

throughout the state offer baccalaureate and masters level courses.

When it comes to enjoying life, the county offers a myriad of recreational opportunities. Outdoor enthusiasts have abundant opportunities to enjoy the four seasons. Our parks include some of the finest maintained by the Huron Clinton Metro Park Authority, and more fishing occurs on Lake St. Clair than anywhere else in the Midwest. Macomb County is nestled on 31 miles of fresh-water shoreline and residents enjoy 180 inland lakes. The county has more than 30 spectacular golf courses and 12,000 acres dedicated to recreational pursuits.

For those who like to spend their leisure time in less strenuous activities, our venues host internationally acclaimed entertainers, our malls feature the nation's most popular retailers and there are loads of places to eat, drink and enjoy the good life. We encourage you to learn more about Macomb County by visiting our Website at [www.MacombBusiness.com](http://www.MacombBusiness.com).



## Airport Facilities in Southeast Michigan

Aerospace companies located in southeast Michigan enjoy access to a wide selection of commercial and military airports to help with the product development and testing.

**Selfridge Air National Guard Base** is one of the busiest reserve forces military installations in the country. The 127th Wing (Air National Guard) is the host organization at the base. Selfridge encompasses almost 700 buildings, one runway at 9,000 feet and over a million square yards of taxiway and paved aircraft parking ramps.

**Detroit Metropolitan Wayne County Airport** serves over 31 million domestic passengers a year, in addition to over 3 million international passengers between the McNamara and North Terminals. There are also two Fixed Base Operators at DTW that provide services for private and corporate aircraft.

**Detroit Willow Run Airport** is Michigan's third busiest airport with over 100,000 flight operations per year. The 2,600 acre facility serves cargo, corporate and general aviation clients and offers five runways and a 24-hour FAA Tower.

**Coleman A. Young International Airport** is a general aviation facility providing services for private and corporate aircraft. It has two runways at 5,090 and 4,025 feet.

**Flint Bishop International Airport** features three main runways at 7,848, 7,199 and 4,291 feet, in addition to services for private and corporate aircraft.

**Oakland County International Airport** is the second busiest airport in Michigan and features a 6,500 foot main runway.

**Romeo Airport** is a general aviation facility with multiple runways, including the longest at 4,795 feet.





Macomb County is strategically located within 500 miles of half the population of the U.S. and Canada.

## We Are Here To Help: The Macomb Business Advantage

The Macomb County Department of Planning and Economic Development offers services that meet the ever-changing needs of our businesses. In today's pursuit of economic development, the reality of a global economy has states, regions, and communities focusing intently on their competitive advantage.

Our competitive advantage is to align our most productive services, as well as those of our vast partner network, to support business expansion and attraction activities specific to the Aerospace industry.

### We achieve this by:

- Providing direct, personalized services to our existing Aerospace companies – both small and large - for the purpose of increasing their competitiveness and profitability
- Fostering new partnerships and cutting-edge programs to address the changing needs of the industry
- Attracting new and diverse businesses that will benefit from our integrated supplier network, engineering, R&D and manufacturing capabilities, thus further enhancing the county's competitive advantages
- Assistance in finding suitable properties – based on client specifications – for purchase or lease
- Consultation regarding a variety of development and tax incentives that make Macomb the most cost effective choice
- Links to pertinent (and often cost-free) workforce screening and training programs
- Market entry support to help determine what type of North American presence is right for each business
- Business and marketing plan development for start-up and established businesses
- Guidance for quickly moving through state and local permitting and approval processes

## Access to Capital

The Macomb County Department of Planning and Economic Development can assist your company in finding potential sources of capital and financing.

**Michigan Venture Capital Association** – Established by venture capital and private equity investors in the state, the Michigan Venture Capital Association (MVCA) is the state's premier public policy advocate for the private equity/venture capital industry. MVCA works to promote entrepreneurship and private equity investment.

**Venture Capital** – Through the 21st Century Jobs Fund, Michigan is investing \$2 billion to speed up technology transfer in emerging business sectors that promise job growth: alternative energy, the life sciences, homeland security/defense and automotive/advanced manufacturing. The Venture Michigan Fund increases availability of capital for seed and early stage companies, while the 21st Century Investment Fund invests in qualified private equity, venture capital and mezzanine firms.

**Angel Networks** – Aimed at helping companies with early stage seed financing, Michigan is fortunate to have three active Angel Networks: The Great Lakes Angels, The Grand Angels and The Ann Arbor Angels.

**Traditional and Non-Traditional Financing** – Macomb County can help companies secure SBA 504 and 7A Loans, as well as Tax-Exempt Revenue Bond financing through the Macomb County Economic Development Corporation. The Automation Alley Technology Center, can also assist with accessing non-traditional and unique sources of financing and capital.

**State Incentives / Tax Credits** – Michigan has a wide variety of incentives and tax credits for qualified companies. The department provides expert assistance to eligible businesses seeking to obtain property tax abatements from local communities. Staff also offers consultation to those businesses qualifying for the state's premium incentives.



Contact us today for more information on the Aerospace Industry in Macomb County, Michigan.

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