ES2 Manufacturing Capabilities

CACI

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Introduction

CACI has built up a robust manufacturing capacity with unique capabilities ranging from low-rate precision prototyping to rapid prototyping and small batch manufacturing at several of the company's sites. We provide specialized and unique manufacturing support to both our U.S. Government and commercial customers at these locations.

Our Albuquerque, New Mexico site can produce precision-machined parts using aluminum and steel, and is equipped with a host of cutting-edge metalworks machinery, as well as an intensive welding capability. CACI's Lexington Park, Maryland site also has dedicated staff available to support small batch manufacturing and rapid prototyping with ferrous and non-ferrous metals. Our Columbia, Maryland site specializes in high-precision design and fabrication of complex prototypes using a variety of materials and machining techniques. All of our sites and facilities operate CACI-owned machinery and can support any customer's manufacturing requirements.

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Logistics Support Facility
Albuquerque, New Mexico

Site Buildings and Facilities Profile: 50,000 square feet of government-owned contractor-operated (GOCO) facilities, on 4.5 acres with onsite security personnel. Onsite capabilities include electrical and mechanical fabrication, integration, and test space. An on-site CACI warehouse features 44,000 square feet for material kitting, staging, and storage needs. Both facilities are alarmed and monitored 24/7.

Features: On-site secret clearance capabilities with our secure compartmented information facility (SCIF), along with receipt, storage, and shipment of cryptological/communications security (COMSEC) materials.

Certifications: ISO 9001:2015-certified.

Personnel Profile: Our facility is staffed with approximately **162 personnel,** all of whom hold U.S. Government security clearances at a variety of levels. Our personnel include communication, computer engineering, network engineering, mechanical engineering, electrical engineering, systems engineering, and computer-aided design and drafting (CADD) engineers. Our on-staff expertise also includes integration/electronics personnel, fabrication and HVAC technicians, information assurance technicians, and cyber manufacturing specialists. Other staff include test and evaluation specialists, as well as product assurance and quality assurance, data management, training, property management, item management, logistics and warehousing, technical publications, and program control personnel.

Customers: Our customers have included the U.S. Air Force, the Department of Homeland Security, the Federal Emergency Management Agency, and Sandia National Laboratories.

Our Location:

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Albuquerque, NM 87107

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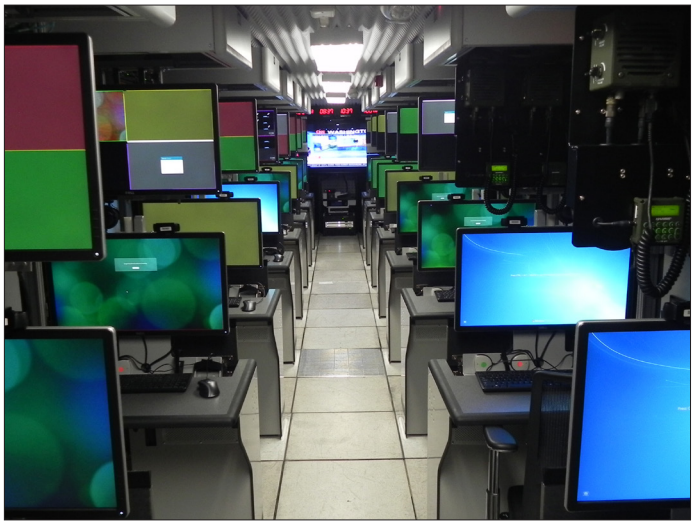
What We Do

System Development: We manufacture large and small shelter, transportable, and mobile systems, power systems, and environmental control systems (including chemical, biological, radiological, and nuclear capabilities – CBRN). We also develop surveillance/security, radio, and communications systems.



Mechanical, Electrical, Applied, System, and Network Engineering: We design, develop, and prototype systems, and perform systems integration, customization, and modification of components for critical customer capabilities. We perform applied systems engineering, cold chamber testing, as well as sand and dust environmental testing.

Operations and Field Support: Onsite and on-call cleared personnel are available to support customer requirements, including exercise and deployment support, and scheduled site support.

Quality Control and Life Cycle Support: We provide expertise in configuration management, data management, quality assurance, information assurance, supply, provisioning, spares management, logistics support, and sustainment for all our capabilities.

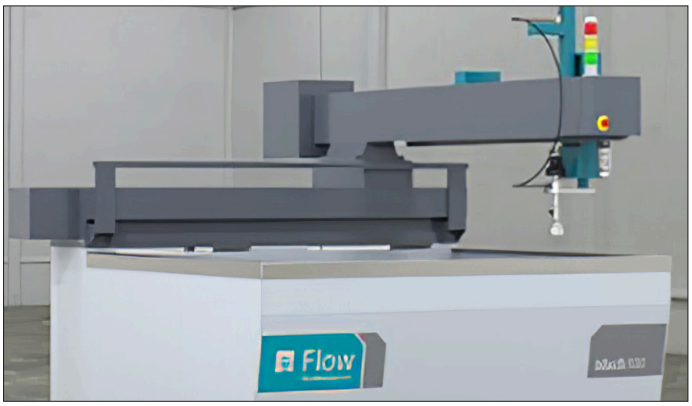
Fabrication and Integration of Commercial and Military Technologies and Components: We fabricate and integrate shelters, fixed operations/command centers, antenna packaging, and rack and transit cases.

HEMP Protection and Testing: We harden and protect shelters, vehicles, doors, and cabinets from high-altitude electromagnetic pulse (HEMP) threats.

Technical Data Packages: CDRLs, COTS, training, documents, manuals, and drawings.

Our Fabrication and Manufacturing Capabilities

We build to drawings for custom, one-off, and prototype designs. Our work includes HEMP design and construction management, and integration of COTS equipment into custom trailers. We fabricate and integrate brackets, input/output (I/O) panels, wave packs, mounts, frames, and other components for solutions and capabilities. We have a host of machine tools and specialized equipment at our disposal for bending, cutting, welding, and brazing various metals. Our specialized facility equipment includes:



Our **Flow Mach 100 water jet** is capable of cutting a variety of materials, and uses a water and abrasion pure water jet head for hair-thin cuts on soft materials and a standard head for virtually any hard material. It has rapid traverse of up to 400 inches a minute, and linear straightness accuracy of +/- 0.005 inches/3 feet. The water jet is mounted on a 13' 1" x 6' 6" table.

Our **horizontal machining center**, computer numerical control (CNC) 4F-4SS, is capable of milling, drilling, tapping, and boring tasks, and liquid cooled with a 30+1 tool capacity. Table size is 52" in length by 18" in width, 40-taper, 12,000 RPM, with a maximum cut speed of 21.2 meters/minute.

Our **Bridgeport Series II milling machine** holds material stationary while cutting tools rotate and allows creation of complex geometrics. The machine is 10" in width by 58" in length, has four horsepower, and tops out at 4,500 RPM with infinite variability.

Our **dry blast cabinet** prepares and strips surfaces of rust and coatings, and is capable of holding up to 200 lbs. The cabinet has a work area of 46" width by 28" depth by 28" height, and a 12" x 33" x 3/16" glass window. Equipped with a HEPA vacuum to remove dust and particles while blasting.

Our **Reliant powder coat oven** is 4' wide by 6' high, and 4' deep, is electrically powered, and features a single-swing door as well as necessary support equipment. Our Reliant powder coat application booth measures 4' wide by 6' high and 4' deep and features a SpectraCoat spray gun for application.

Our **Marvel Series Mark II vertical tilt frame band saw** cuts metal and various materials with a clean, finished edge at any conceivable straight or miter cut (45 degrees right or left). Its rectangular capacity is 18" by 22", and its round capacity is 18".

Our **Clausing/Colchester 600 Group 18" Geared Lathe** rotates pieces of metal or other materials for shaping at variable speeds. This specialized lathe features a 40" center distance.

Our **Cincinnati 2510 shear** is capable of cutting up to a 10-foot x 3/8-inch-thick segment of mild steel. It has a 50 stroke/minute speed and is electrically powered.

Our two-speed **Baileigh BP-7098 CNC hydraulic hand press** can bend 8-foot lengths of mild steel, and is accurate to +/- 0.01 mm. This press can deliver 70 tons of pressure over a steel piece up to 98 inches in length.

Our weld shop is staffed by certified welders who use our proprietary welding techniques to ensure Department of Defense MIL-STD 188-125-2 compliance with all our products and capabilities.

Our facility is equipped with three spacious work bays with overhead cranes, capable of accommodating five 53'-long trailers. Our cranes have 10 ton/20-foot lift capacity.

Integrated Products and Services
Lexington Park, Maryland

Site Buildings and Facilities Profile: The Special Projects Division site is a contractor-owned contractor-operated (COCO) facility with 40,000 square feet of indoor electrical/mechanical fabrication, integration, testing, and storage space. An additional 3,500 square feet of covered outdoor work and storage space is also available onsite.

Features: Our Lexington Park site is currently maintained at the Secret (S) clearance level and maintains Top Secret (TS)-level spaces for receipt, storage, and shipment of cryptological/COMSEC materials.

Certifications: ISO 9001 and AS9100D-certified.

Personnel Profile: We currently have **121 personnel** on staff at the Special Projects Division, many of whom hold U.S. Government security clearances at a variety of levels. Our employees are IPC-A-610/620-certified experts within their specific individual industry, and our on-staff experts and technical specialists range from manufacturing personnel to secure IT and communications systems specialists.

Customers: We have over 30 years of experience supporting the Department of Defense (DoD), the U.S. Navy, and other government agencies located at Naval Air Station Patuxent River, Maryland and Webster Outlying Field, Maryland. We are proud to be recognized as a leader in secure and networked communications and related systems that support fixed, mobile, and on-the-move applications.

Our Location:

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What We Do

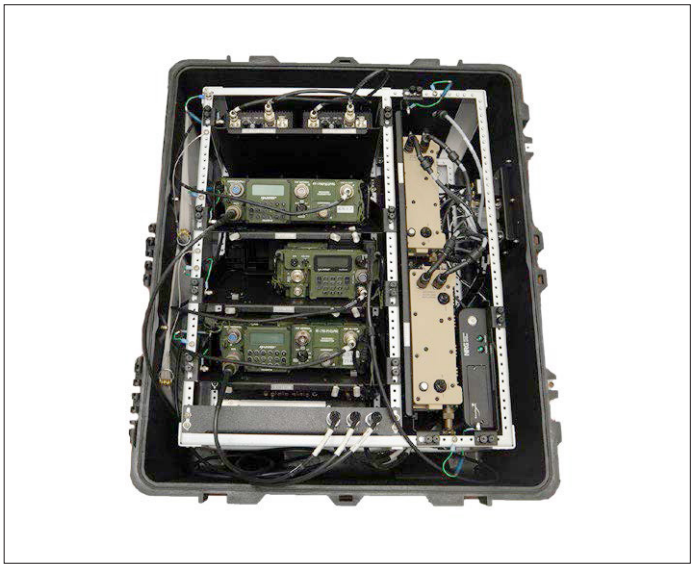
Systems Development: We develop, manufacture, and supply fully integrated systems, as well as components and kits. Our products and capabilities include vehicles, mobile shelters, mission systems, communication systems, force protection systems, antennas, masts, cabling, accessories, and operator workstations.

Prototype Design and Development: Our mechanical and electrical engineering personnel are experienced at designing and developing prototype systems.

Tech Data: We assemble comprehensive technical data packages for our systems and components.

Specialized Manufacturing and Fabrication: We have a host of on-site manufacturing capabilities, including electrical/mechanical fabrication, integration, and systems assembly.

Commercial and Military Technology Integration: Experienced integrators of commercial and military technologies and components, including installation and testing.



Etching, Painting, and Finishing: Specialized expertise and equipment for laser etching, painting, coatings, and finishes for systems and components.

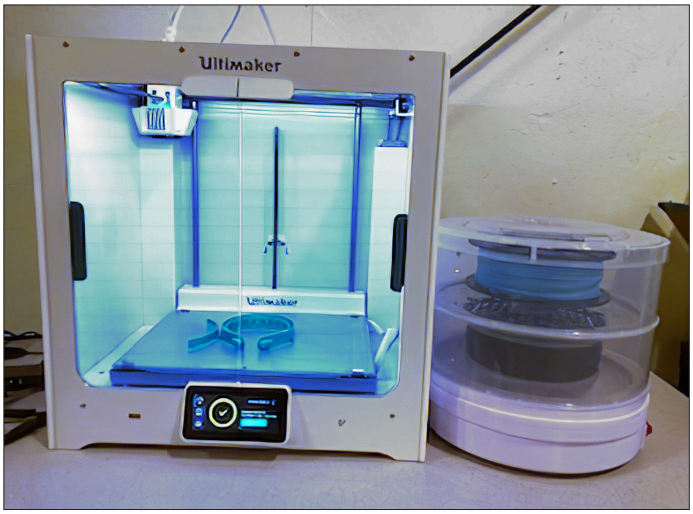
Logistics and Sustainment: We have on-site facilities and expertise for kitting, logistics, and sustainment support for our products.

Our Fabrication and Manufacturing Capabilities

We have a host of specialized tooling and equipment we use for our unique reverse engineering, precision machining and fabrication, precision quality control, automated machining and fabrication, and additive manufacturing work. These capabilities include:

Our **Faro 8-Axis Quantum S FaroArm Scanner** can produce 3D SolidWorks/GibbsCAM-compatible models, suitable for manufacture with a CNC automatic milling machine, 3D scanner, and press brake.

- Coordinate measuring machine accuracy: ±25µm (±0.001 in)
- Quickly measures geometric features in 3D
- Confirms linear and angular dimensions for quality assurance
- Portable measurement arm for inspections, tool certifications, CAD-to-part analysis, and reverse engineering
- Review and save results locally, to SD cards, or USB drives

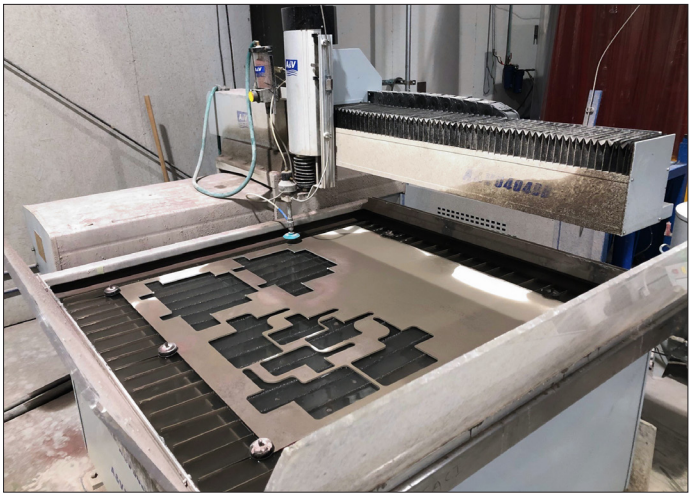


Our **Ultimaker S5 3D Printer** produces precision objects from digital models developed via engineering design or scanned on a FaroArm scanner, using PLA, ABS, CPE filament and nylon materials. The printer's build volume capability is 13" x 9.4" x 11.8" and has 20-micron layer resolution.

Our **Amada HD 1303NT CNC Hydraulic Press Brake** produces 143 tons of pressure for bending sheet steel and aluminum of varied thickness. Its 2D graphic programming ensures repeatable precision bending with accuracy of ±.0004" and a 122" maximum bend length.

This **milling center** is 57.8" in length by 14.5' in width, and its 3D graphic GibbsCAM programming ensures automatic precision. Accuracy is ±.0004" positioning, and ±.0002" repeatable.

Our **FV2 3 Axis milling centers** are 36" in length by 14" in width, and also feature 3D graphic GibbsCAM programming. Accuracy is ±.0002" positioning and ±.0004" repeatable.



Our **water jet cutter** cuts a wide variety of sheet materials using a high-pressure water jet and abrasive material. Cutter table size: 60" x 60".

Our **laser cutter/etcher** cuts, etches, and marks a variety of sheet materials using a focused laser.

Prototype Design and Fabrication Facility Columbia, Maryland

Site Buildings and Facilities Profile: The Prototype Design and Fabrication Facility comprises 12,000 square feet, including 9,500 square feet of shop space and 2,500 square feet of engineering office space.

Features: We specialize in the design, systems integration, and fabrication of high-precision prototypes. Our model and full-scale prototypes are well-suited for both proof of concept and final design tests. Our prototypes may include advanced instrumentation, sensors, and integrated system components, and can be fabricated from a wide variety of materials, including metals, plastics, composites, and wood. In addition, we also offer low and limited quantity manufacturing of components for production systems.

Certifications: ISO 9001 compliant.

Personnel Profile: The Prototype Design and Manufacturing Facility is staffed by **approximately 10** personnel, which includes our engineers, designers, machinists, and one administrative professional. The facility's staff has designed and fabricated numerous prototypes and support hardware, including complex, fully-instrumented captive and free-running surface craft and submarine models for more than four decades.

Customers: We have over 40 years of experience supporting the DoD and U.S. Navy organizations, including research and development laboratories.

Our Location:

Our facility is located in Columbia, Maryland. For customers seeking more information on our location or who want to schedule a site visit, contact our facility manager.

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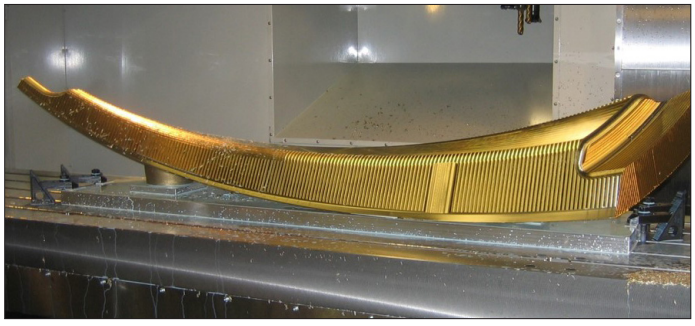
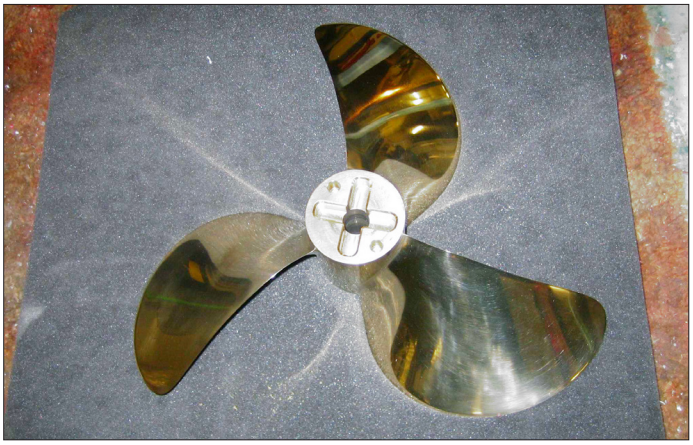
What We Do

High-Precision Concept-To-Fielding Prototype Fabrication: Our prototype manufacturing facility has extensive custom manufacturing expertise, incorporating 3D surface fabrication and electro-mechanical sub-system assemblies. We refine designs for cost effectiveness and increased manufacturability, and optimize designs.

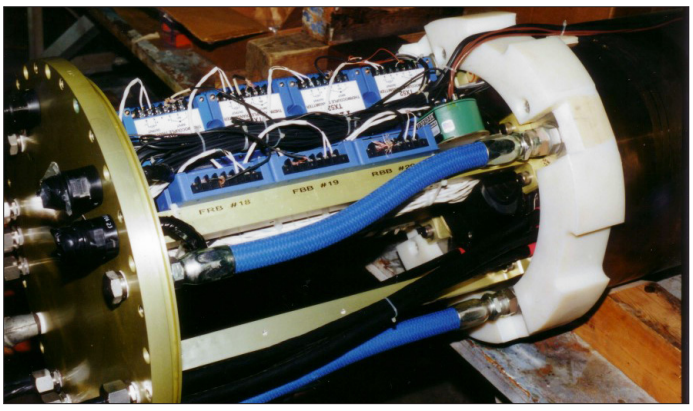
3D Surface Design and Fabrication: Our staff is experienced in non-uniform rational B-spline (NURBS) surface and parametric solids modeling of complex geometry for components such as propellers, submarine hulls, and surface ship hulls. Our precision CNC program 3D CAD models are manufactured to within a .003" to .005" tolerance, and we have experience with difficult to machine alloys such as copper, stainless steel, nickel-based alloys, and titanium.



Conventional Metal and Plastics Fabrication: We fabricate stainless steel, aluminum, nickel aluminum bronze, Inconel, and Monel for specific applications in marine and maritime environments. We machine plastics such as PVC, polypropylene, polyethylene, polyurethane and epoxy-based tooling board. We also machine syntactic foams, Styrofoam, thermoset, and thermoform plastics.



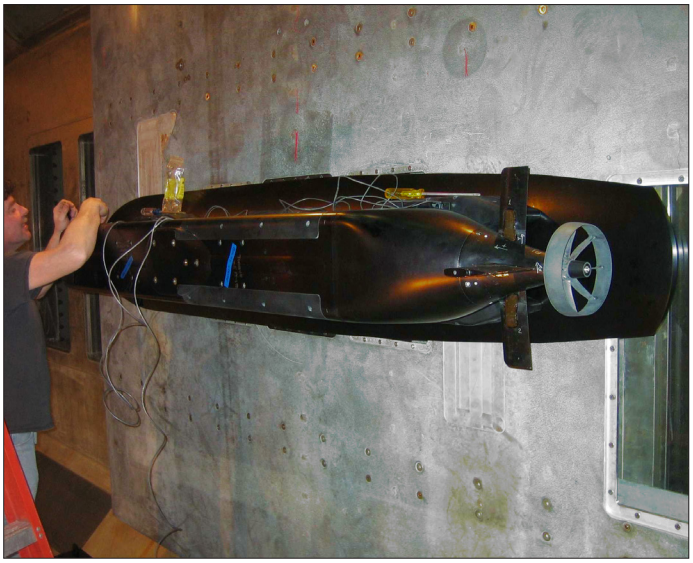
Electromechanical and Hydraulics Systems: We have specialized experience with servo motors, stepper motors, ball screw linkages, and positioning systems. We have worked with linear variable differential transformer (LVDT) position sensors, absolute encoders, and incremental encoders, and are familiar with worm gear, epicyclic, reduction, sliding, and constant mesh gearboxes. We work with hydraulic and pneumatic motors, cylinders, and cylinder components in our products.



Composite Material Fabrication: We are adept at working with a range of composite materials, such as epoxy resin matrix with fiber reinforcement, E-glass and S2 fiber fabrics, carbon fiber, Kevlar, and other hybrid fabrics. Our staff builds composites via hand lay-up over molds or with composite mold plugs. We have vacuum bagging capability and can design and construct sandwich panels using vinyl foam and end-grain balsa core materials.

Wood Fabrication: We fabricate and refine complex wood shapes at our facility, using traditional shipwright carpentry as well as advanced techniques. Our staff is skilled at marine woodworking methods and techniques such as steam bending, cold molding, and strip planking.

Field Setup and Assembly: After fabrication, our skilled staff assist with setup and assembly of our products and solutions. We assist with millwright work, including machinery setup and alignment, as well as model test installation and rigging. We also provide limited on-site construction, depending on customer requirements.



Surface Ship and Submarine Fabrication: We produce fully actuated surface ship and submarine models for the Naval Surface Warfare Center Carderock Divsion (NSWCCD) and other DoD laboratories. We have also produced custom manufactured performance components for racing yachts that have competed in the America's Cup.

Test Equipment and Fixture Fabrication: We have extensive experience in test equipment fabrication, scale model testing, and performance evaluation. We specialize in marine and aerospace systems, and have manufactured test and handling equipment for NSWCCD and the NSWCCD's Large Cavitation Channel facility.

Our Fabrication and Manufacturing Capabilities

We have an extensive array of machines and tools we use to produce customized products and specialized capabilities for our customers, from CAD design to automated CNC machining. These include:

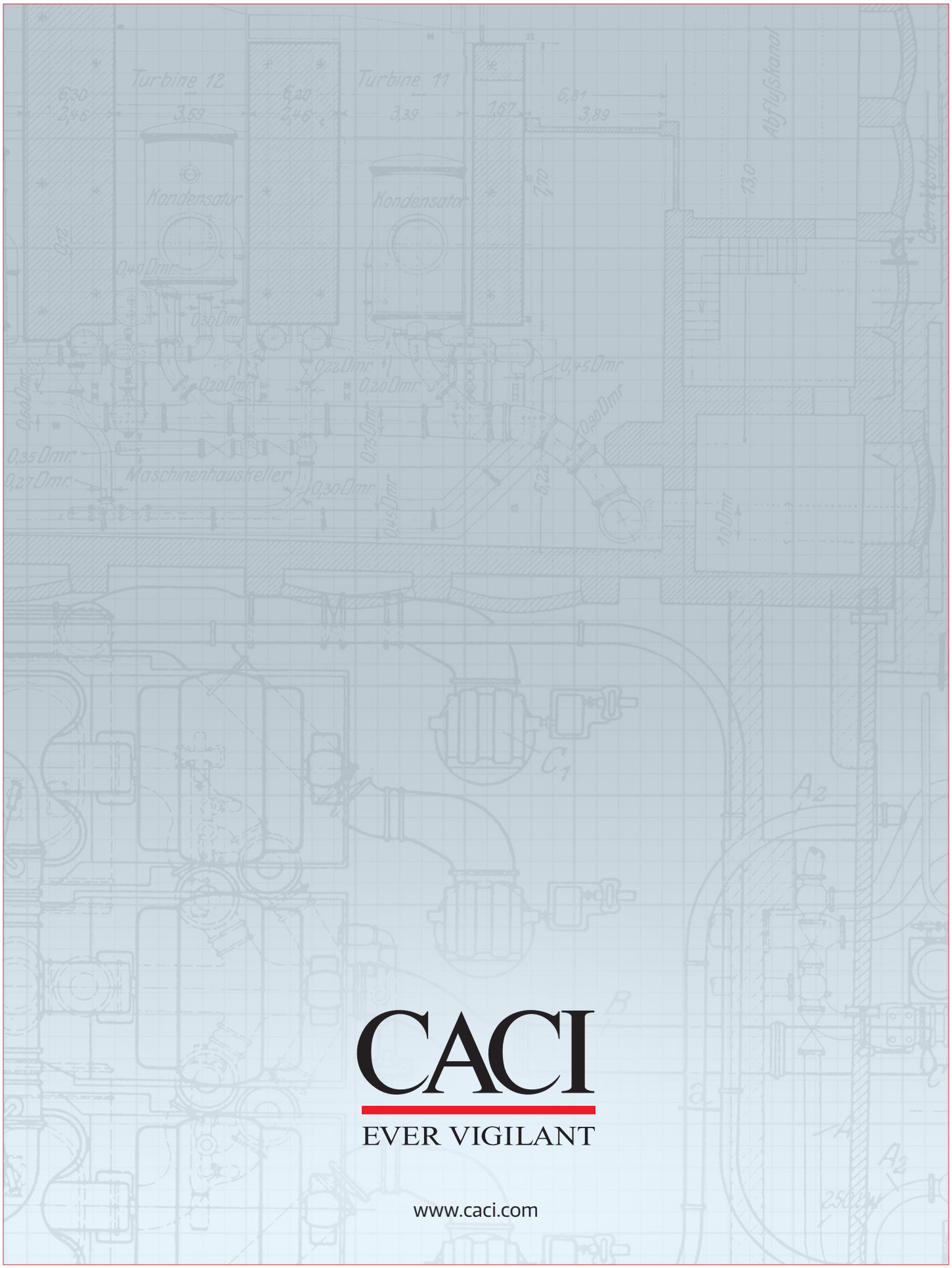
Machining: Two 5-Axis HAAS CNC vertical machining centers, two 4-Axis HAAS vertical CNC machining centers, Flow waterjet cutter, three lathes to 24" swing, five manual vertical mills, a 40" band saw, and a 10" cut off saw.

Woodworking: One 12" table saw, 20" planer, 12" jointer, and drill press.

Welding: We utilize metal inert gas (MIG) welding, tungsten inert gas (TIG) welding, electric arc, and oxygen-acetylene welding capabilities.

Inspection: Fully automated CORDAX coordinate measuring machine and miscellaneous conventional handheld inspection tools.

Design: We have a host of CAD software programs at our disposal, including two seats of Unigraphics NX release 1953 5-Axis CAD/CAM software, two seats of CAMAX CAMAND 3-Axis CAM software, four seats of AUTOCAD Product Design Suite Ultimate 2021, and four seats of AutoCAD Inventor 2021. We also have translators for all major graphics formats.



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