

TOGETHER WE ARE STRONGER

Four world class metal suppliers, offering unique capabilities and services.



STRENGTH IN NUMBERS

Aero Metals Alliance (AMA) includes some of the world's leading metal suppliers: Gould Alloys, Progressive Alloy Steels Unlimited, Service Centres Aero and Sunshine Metals.

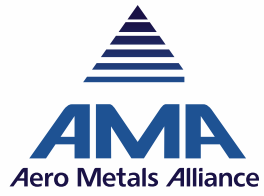
Together, we deliver a complete range of aerospace and high performance metal products to the world's leading aerospace and industrial companies.

**'The whole is greater than the
sum of its parts'**

The aerospace industry is global and, as such, needs a global capability from its supply chain. But a capability that also recognises the value of local service and support. Through the experience and expertise of AMA's constituent businesses and the geographic spread that they represent via our 13 sites located throughout the Americas, Europe and Asia Pacific, the industry's leading OEMs and sub-contractors source materials, processing capabilities and supply chain management services.

The widely used phrase 'the whole is greater than the sum of its parts' is nowhere more evident than in AMA, an organisation formed specifically to provide a dedicated offering to the aerospace industry from four of the world's leading suppliers of metals.





OUR BUSINESSES

Each of the AMA businesses are leading names in metals supply:

Gould Alloys, Progressive Alloy Steels Unlimited (PASU), Service Centres Aero (SCA) and Sunshine Metals have established their own reputations for industry expertise in the markets in which they operate. When our experience and knowledge is brought together through AMA, the resulting benefits to our aerospace manufacturing customers are considerable.



COLLABORATIVE KNOWLEDGE BASE

The ability for the different businesses within AMA to draw on the expertise of each other is hugely beneficial to the Alliance's customers.

In addition to a wide ranging understanding of the metals business, AMA is proud to have specialists in a number of areas amongst our employees; including materials scientists who offer technical advice and in-depth knowledge on the classifications of the different metals, and provide invaluable input regarding a material or treatment that could better suit a given application.

This knowledge also extends into the requirements of specific markets and customers, for example the different British, American and German specifications, along with customer specific grades such as MSRR (Rolls Royce) and ABS/AIMS (Airbus/GKN), plus many others. A collaborative approach helps us to overcome any regional and customer specific challenges, with AMA effectively extending the product portfolio that each business can offer to its customers, particularly the contract customers.

We also pride ourselves on being a knowledge resource for how metals contribute to aerospace engineering. If a customer has a question, even if it doesn't pertain to a given business but perhaps relates to aerospace or a complementary product, the collaborative network usually ensures that an answer is available. AMA provides a structure through which our businesses remain independent, but liaise and cooperate on a regular basis.



CHRIS NORCH
PRESIDENT,
AMA

“A priority for AMA is always to be responsive to any changes in the aerospace industry and to ensure that our offering remains relevant. That goes for the metals that we supply, as well as our processing capabilities and our services. We have never looked to supply a simple ‘out-of-the-box’ solution but rather one in which we listen to customers’ specific requirements to develop bespoke solutions accordingly. This will not change.”



MARK BROWN
VICE PRESIDENT,
BUSINESS DEVELOPMENT,
AMA

“At AMA we’re not talking just about added-value machining but also added-value services and integrated supply chain solutions. An example of which could be managing customers’ supply chains and their long tail of smaller suppliers, resulting in a grocery store concept in our strategically located warehousing facilities. This reduces the customers’ footprint and costs associated with non-core activities such as stockholding, allowing them to generate additional revenue from their core business activities.”



GAGE PIANCONE
VICE PRESIDENT,
SUNSHINE METALS
(KANSAS)

“At Wichita we’re handling multiple programmes right now with five CNCs and a sixth one slated to go, already approved, so we’re doing quite a bit of first operation machining, both roughing and prepping. Going forward, I would say that machining is going to be the biggest part of the business over the next five to ten years.”



BOOIE OLSON
GENERAL MANAGER,
PASU
(SOUTH CAROLINA)

On supplying a product called Cronidur 30, he commented...
“It’s a trademark alloy of a mill out in Germany. They’re the only one in the world that owns the patent of the alloy and we have the North American distribution rights. We also stock another alloy called 13-8 Supertough. We’re the right-to-buy supplier for Lockheed Martin for the F35 program on that alloy, so we support Lockheed Martin on a global basis on that product



JOHN OLSON
GENERAL MANAGER,
PASU
(LAS VEGAS)

Value add is a primary focus...
“We are a speciality metals distribution service centre, primarily focused on stainless steel, aircraft alloys (re-melted alloys - either vacuum melted or speciality melted). We don’t really deal in any commodity products at all. We do all kinds of different processing in-house, including cutting and we do a great amount of value-added, where we might do some things in-house, then send it out for some processes and maybe bring it back in to do some further work.”



**SEBASTIEN
BERTHOUD**

**MANAGING
DIRECTOR,
SCA
(GERMANY)**

“At SCA, our portfolio comprises both commodity products and value-added services. In Germany, our expertise lies in the production of pre-machined parts utilising state-of-the-art 3-axis CNC centres and a distinctive band-saw method for frame fabrication. Each month, we supply over 3,000 parts to numerous customers across Europe.”



**JANE
BRADSHAW**

**COMMERCIAL
DIRECTOR,
GOULD ALLOYS**

“Aerospace manufacturers are searching for the ultimate peace of mind in materials supply. Material stockholding, first stage machining and supply contracts, designed around our customers’ needs, enable Gould to offer the complete package. We can hold stock of our customers’ material, processed to the correct stage, in bespoke areas of our warehouse, ensuring confidence in material availability and supply, even on a just-in-time or DLF basis. This enables customers to free up storage space to concentrate and develop core activities to grow their own business”



**FREDERIC
FORTANIER**

**SERVICE CENTRE
MANAGER,
SCA
(FRANCE)**

“We have consolidated our two established facilities located in northern France, focusing on ‘direct line feed’ services. Our dedicated team operates at our clients’ premises, supplying a diverse array of products to their equipment on a daily basis. In Nantes, we operate two separate sites: one dedicated to aluminium plates and sheets, and the other specialising in hard alloy and extruded products, where extensive processing takes place.”



**ARNAUD
TRONCHE**

**GENERAL MANAGER,
AMA
(UK)**

Near net shape processing is a significant area of development in the aerospace industry...

“On the big plates, if you have one tonne of raw material, perhaps only 100 kilos will fly. So, to remain competitive, you need to reduce this buy-to-fly ratio and near net shape processing is the way to do it. By utilising our machining capability, customers can focus on value-added spindle activities, leaving the pre-critical work to us, thus reducing inventory, and freeing up operatives and plant for final machining.”

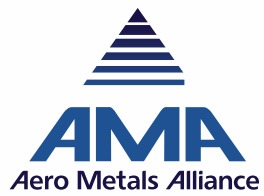


EXTENDED PROCESSING CAPABILITIES

Our extensive range of products offered through AMA is also reflected in the range of services provided.

Each company has its own processing capabilities, which vary from business to business.

In essence, the collective capability of AMA encompasses the latest technology to meet the needs of any specific metal processing requirement, including: cutting, shape cutting, milling, surfacing, sawing, drilling, guillotining, waterjet cutting, USI testing, heat-treating or re tempering, forgings and machining to near net shape.



GLOBAL REACH



One of the major benefits that AMA offers through our businesses is the capacity to operate on a global basis.

Each service centre has specific expertise and knowledge of its given market. Operations in the United Kingdom, United States, Europe and Asia collectively represent an impressive breadth of experience, with AMA supplying all the major OEMs and sub-contractors in the aerospace industry, along with aircraft and engine manufacturers from Airbus and Boeing to Lockheed Martin and Rolls Royce.

AMA locations are carefully selected to optimise logistics. A good example is the 8,000 square foot

warehouse strategically located near Chennai, with easy access to the busy Chennai port complex, the third largest in India and the biggest port in the Bay of Bengal.

We continue to invest in AMA's infrastructure and service offering, constantly looking for opportunities to extend its warehousing, processing and customer interaction.

UNITED STATES	EUROPE	ASIA	UNITED KINGDOM
Davisville, West Virginia	Nantes, France	Dalian City, China	Chesterfield, Derbyshire
Corona, California	Noyelles, France	Chennai, India	
Wichita, Kansas	Remshalden, Germany		
Hartsville, South Carolina	Sosnowiec, Poland		
Las Vegas, Nevada			
Willimantic, Connecticut			





CUSTOMER FOCUSED

AMA provides an easier route through which OEMs and sub-contractors in aerospace manufacturing can source their metals, their processing requirements and services.

We offer a single point of contact, effectively a one-stop-shop, to access the best global capability in dedicated aeronautical metal supply.

AMA operates a highly trained team of responsive customer relationship and sales managers to provide the first point of contact for enquiries. Importantly, these managers take full ownership of the enquiry, following it through to ensure full customer satisfaction.

The businesses within AMA also share best practice, fostering an approach which places customer relationship management at the heart of their own operations. This includes committing to lead times and, importantly, delivering on them.



NEAR NET SHAPE APPROACH

The focus on buy-to-fly ratios highlights the contributing role that near net shape processing can offer.

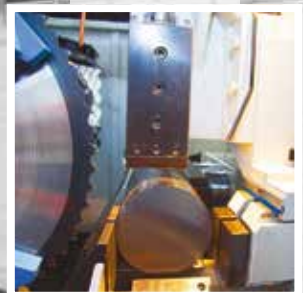
This has undoubtedly been a driver in increasing this service offering from AMA. As a major contributor in the aircraft manufacturing supply chain, this is a key area of development for us and our companies.

Customers are increasingly looking to optimise their production processes. This is primarily driven by the need to maximise their own spindle time for core business activities, with AMA therefore undertaking some of the machining processes. These can take many forms, from simple cutting to more intricate processing in which near net shape pieces are supplied.

In addition to freeing up time for customers and OEMs to focus on more profitable final processing, near net shape processes can improve product quality, reduce variability and enhance component design functionality.

As the industry continues to search for ways to lower buy-to-fly ratios and reduce the amount of waste, near net shape processing will have a greater role to play.





OUR BUSINESSES

GOULD ALLOYS

A leader in the stockholding and distribution of high integrity ferrous and nonferrous metals. Gould Alloy's expansion and investment is ongoing in both equipment and facilities, including modern purpose-built premises and the recent addition of a second site.

The production of near net shape components is a particular focus for the company, with wide ranging stocks and extensive capabilities in processing.

The range in both aerospace and commercial specifications/alloys includes:

- Alloy Steels
- Stainless Steel
- Aluminium
- Nickel Alloys
- Titanium
- Phosphor Bronze

In terms of processing capabilities, the company provides:

- Cutting to weight or length
- Processing which includes radiused, chamfered, turned and bored/hollowed
- Sawing facilities for both bar and plate
- Waterjet cutting
- Machine Shop (including CNC lathes, milling machines, turning centres)



OUR BUSINESSES

PROGRESSIVE ALLOY STEELS UNLIMITED

Established in 1999 Progressive Alloy Steels Unlimited (PASU) offers a full line of aerospace quality stainless and re-melted alloy products complemented by custom supply chain solutions to the aerospace, defence, oil and gas industries.

In addition to stocking common grades, shapes and sizes, PASU has a full inventory of non-standard sizes. Its multiple value-added processing capabilities provide the ability to supply near-net products resulting in reduced machining time. From two stocking locations (Hartsville, South Carolina and Las Vegas, Nevada) the company efficiently supports the North American market, with close proximity to international airports and major shipping ports on the East and West Coast of the USA - providing exceptional service to the global market.

PASU's AS9100D Certified quality system is complemented with many major OEM Approvals,

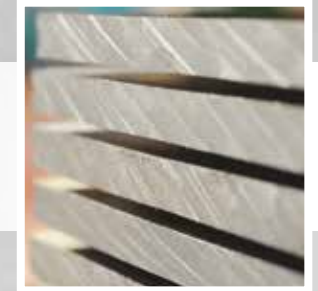
including Pratt & Whitney LCS.

Specialty products include round bar, flat bar, plate & forgings in the following alloys:

- 17-4PH & 15-5PH
- 13-8MO
- 13-8 Supertough®
- 4340M (300M), 4330M, 4340 VAR
- Cronidur 30®
- Custom 455® & Custom 465®
- 440c & 440c VAR

Value added processing capabilities include:

- Production cutting up to 22" diameter
- Plate processing up to 24" x 72" x 170"
- Waterjet cutting & near-net shape processing
- Grinding, trepanning & gun drilling
- Heat treating, destructive & non-destructive testing





OUR BUSINESSES

SERVICE CENTRES AERO

Service Centres Aero (SCA) is a business that has operations in both Germany and France from where it services customers in Europe and beyond.

With many decades of experience (since 1972 at SCAD and 1986 at SCAF), SCA is a specialist supplier of semifinished aluminium, titanium and light metal alloy products to the aeronautical and space industries.

The company prides itself on its ability to react to meet the changing needs of the market, with its wide range of alloys and equipment backed by many years of logistical experience. It supplies the whole supply chain from the smallest aerospace machining shops to the world's leading OEMs, offering material stock management, logistics (direct line feed within a 24-hour delivery service) and processing (including cut to size and near net shaping).

A full range of sheets, plates, profiles and bars is available in both aluminium, titanium stainless or in a number of different alloys.

SCA's extensive pre-machining and finishing capabilities (straight and shape cutting, milling, drilling and surfacing) are provided from the following equipment:

- 10 plate saws (offering a capacity of up to 220mm thickness)
- 3 CNC machines for parts of up to 5m length

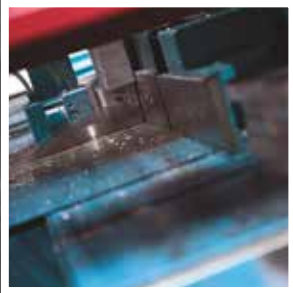
- 1 CNC controlled contour saw (near net shaped parts)
- 3 bar saws (maximum diameter of 400mm)
- 6 plate and bar saws for hard alloys
- 2 shear guillotines for sheets (all alloys)
- 1 Faro measurement arm (with tolerances of 0.02mm)
- Programming: 1 CAD SolidWorks, 1 CAM SolidCAM

All SCA parts meet the quality requirements of the aerospace industry, with the German site certified to EN 9100, ISO 45001, ISO 14001 and the French sites to EN 9100 and EN 9120.



OUR BUSINESSES

SUNSHINE METALS



The company is a world-class supplier of speciality metals and custom supply chain services for aerospace and defence applications.

The standard range includes 2000, 5000, 6000 and 7000 series of aluminium plate, rod, bar and forged block. From its new facility in California and its strategically placed service centres in Kansas and West Virginia, Sunshine Metals is a leader in the optimisation of raw materials, with an offering which includes:

- Vendor managed inventory programmes
- Near net shapes
- Profiles
- Semi-finished products and kitting
- Reduced run and set-up time
- Increased throughput
- Scrap/revert utilisation
- Reduced time from raw material to finished part

Value-added services are provided through some 26 machines:

- Multi-axis machining
- 3-axis and 5-axis machining (from .25" to 25" thick, max width of 180" and 480" length)
- Nesting
- Drilling/tapping
- Milling
- Surfacing
- Dovetailing and prepping sawing
- Standard, precision, vertical and horizontal
- Plate saw cutting (max of 14" thick)
- Band saw cutting (max of 21" thick)
- Straight, circle and shape-cutting capabilities

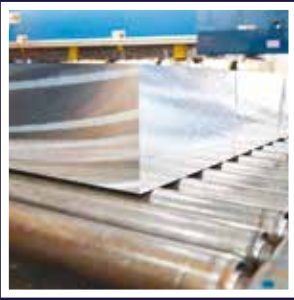
In terms of quality control, Sunshine Metals offers CMM inspection, USI testing, heat-treating or retempering, electrical conductivity and hardness testing.

A TRUSTED PART OF THE SUPPLY CHAIN

AMA is recognised by the national and international aerospace and defence industry supply chain for our commitment to quality and industry expertise.

We work with a wide portfolio of tier-one customers to supply some of the biggest OEMs in the business, including but not limited to:





TOGETHER WE ARE
STRONGER

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This is a non-trading address.