

OUR HISTORY

Defence



AIRBUS DEFENCE THE EARLY DAYS





The origins of European cooperation in the field of aeronautical defence, and hence the premises of Airbus Defence, can be traced back to the licenced production agreements for fighter aircraft, which began just a few years after the end of the war, in the late 1940s.

At that time, the United Kingdom was the allied leader in jet propulsion, and in 1946 its first jet fighter, the De Havilland **DH100 Vampire**, entered into service. Within a total production of more than 4300 Vampires, 1244 were assembled at the future Airbus Commercial site Broughton, UK, between 1949 and 1963, and 434 under licence at the future Airbus Helicopters site in Marignane, France, between 1950 and 1954.

A few years later, in 1952, the French company Air-Fouga (later absorbed by Sud Aviation in 1967) launched its **CM170 Magister** jet trainer: 576 units were assembled between 1956 and 1969 at the future Airbus Commercial site in Blagnac, France. Fouga's small jet trainer was also chosen by West Germany, and between 1958 and 1961, 194 were built under licence by Messerschmitt in Riem, setting up a milestone in the integration of the Franco-German aeronautical industry.



An even greater milestone would be the licensing of the **Nord Aviation Nord 2501 Noratlas**, negotiated at the same time as the CM170 Magister. This French twin-boom military transport aircraft, of which 264 units were assembled between 1952 and 1961 in Bourges (now an MBDA site), was also chosen by West Germany, with 161 units produced under licence by Flugzeugbau Nord (WFB, HFB and Siebelwerke) between 1958 and 1964, including final assembly at the future Airbus Commercial site in Finkenwerder near Hamburg.



The Nord 2501 licence was the forerunner of the Transporter Alliance consortium, which would bring together, in 1963, the same French and German industrial partners (Nord Aviation, WFB and HFB) to develop a jointly designed and produced military transport aircraft to succeed the Noratlas: the **C160 Transall**. From 1967 to 1976, 50 were produced by Nord Aviation in Bourges (plus a second batch of 35 in the early 1980s at the Airbus Commercial site Toulouse Saint-Martin) and 119 were assembled in Finkenwerder. Not only was this aircraft the direct ancestor of the Airbus A400M, but its production system defined the pattern of what would become the Airbus Commercial footprint: a jigsaw puzzle of parts and subassemblies produced at dedicated European sites and then assembled on final assembly lines in France and Germany.



PUTTING "TEETH" IN EUROPE'S FRONT-LINE COMBAT AIRCRAFT



TYPHOONS FOR EUROPE AND EXPORT

TEAMING FOR THE FUTURE COMBAT AIR SYSTEM

Europe became a player in jet-age combat aircraft during the 1970s, when Airbus predecessor Messerschmitt-Bölkow-Blohm (MBB) joined with companies in the UK and Italy to develop the **Panavia Tornado** – a twin-engine, variable-sweep-wing multirole fighter.

Ultimately producing 992 aircraft, the tri-national Panavia Consortium oversaw this programme, with MBB assigned a 42.5% share of the workload and manufacturing the Tornado's centre fuselage at its Manching facility (in then-West Germany). The front fuselage and tail assembly were built by the British partner (also with a 42.5% share, and the wings in Italy (with a 15% work share).

First flight of the Tornado took place in August 1974 from Manching, and the aircraft was introduced into service beginning in the 1979-1980 timeframe. It was designed to replace several different aircraft types in the adopting air forces of Germany, UK and Italy; Saudi Arabia subsequently became the sole Tornado export operator.



Intended initially for the low-level strike mission, Tornado was designed with the variable-sweep wing to operate effectively at both high and low speeds. During the aircraft's production run (which ended in 1998), the Tornado was produced in three variants: as an interdictor/strike fighter-bomber; an electronic combat/reconnaissance platform for the suppression of enemy air defences; and as an air defence variant for interceptor missions. Combat duties performed by Tornados included operations by UK Royal Air Force, Italian Air Force, and Royal Saudi Air Force during the 1991 Gulf War (flying low-altitude penetrating strike missions).

The aircraft also were flown in Yugoslavia during the Bosnian and Kosovo wars, in the Iraq War, the Libyan civil war, as well as performing duties in Afghanistan, Yemen, and Syria. The Tornado was capable of delivering a full range of air-to-ground weapons in the NATO inventory, along with air-to-air missiles. Certain Tornados deployed by the UK were configured to carry the British WE.177 nuclear bomb, while German and Italian Tornados were adapted to deploy with U.S.-made B61 nuclear bombs.

TYPHOONS FOR EUROPE AND EXPORT

The **Eurofighter Typhoon** combat aircraft is the result of Europe's largest defence collaboration programme – surpassed the combined 500,000 - flight hour milestone in 2018. This twin-engine aircraft is based on the collaboration of four European nations and their aerospace/defence industries: Germany, Spain, the UK and Italy.

Airbus has the largest ownership in the industrial grouping (46%), handling its production activities at the company's facilities in Germany and Spain.

As an advanced multi-role combat aircraft, the number of Typhoons totalled nearly 500 in service by early 2019 with the air forces of the UK, Germany, Italy, Spain, Austria, Saudi Arabia and Oman; the potential is for this figure to grow in the coming decades.

The Typhoon traces its roots to 1994, when the Chiefs of Air Staff of Germany, Spain, UK and Italy all agreed on their advanced aircraft requirements, with the versions performing their first test flights the same year. Between 2003 and 2005, the Typhoon was introduced into service across the four core nation's air forces.

Saudi Arabia became a customer in 2005 and received its first aircraft in 2008. The Austrian Air Force took delivery of the country's initial Typhoon in 2007, while a contract was placed in December 2012 for the supply of 12 aircraft to the Sultanate of Oman.

The Typhoon's weapons carrying capability has been regularly enhanced through steps that included integration of the advanced medium range air-to-air missile (AMRAAM), the Storm Shadow low-observable air-launched cruise missile, advanced helmet-mounted symbology system (HMSS), Enhanced Paveway II bombs and Captor-E (E-Scan) radar.

With high reliability demonstrated in various theatres of operation, the Typhoon has been combat proven during operations in Libya, Iraq and Syria.

Looking ahead, the Typhoon will play a key role in the evolving battlespace, and is expected to be a central pillar in the future European combat air system. By developing and integrating key technologies, the Eurofighter combat aircraft will remain ready to defend against threats for decades to come.



PUTTING "TEETH" IN EUROPE'S FRONT-LINE COMBAT AIRCRAFT: Teaming for the Future Combat Air System

TEAMING FOR THE FUTURE COMBAT AIR SYSTEM



In 2018, Airbus joined with France's Dassault Aviation in a landmark agreement to develop and produce Europe's Future Combat Air System (FCAS), which is slated to complement – and eventually replace – the current generation Eurofighter Typhoon and French-built Rafale fighter aircraft between 2035 and 2040.

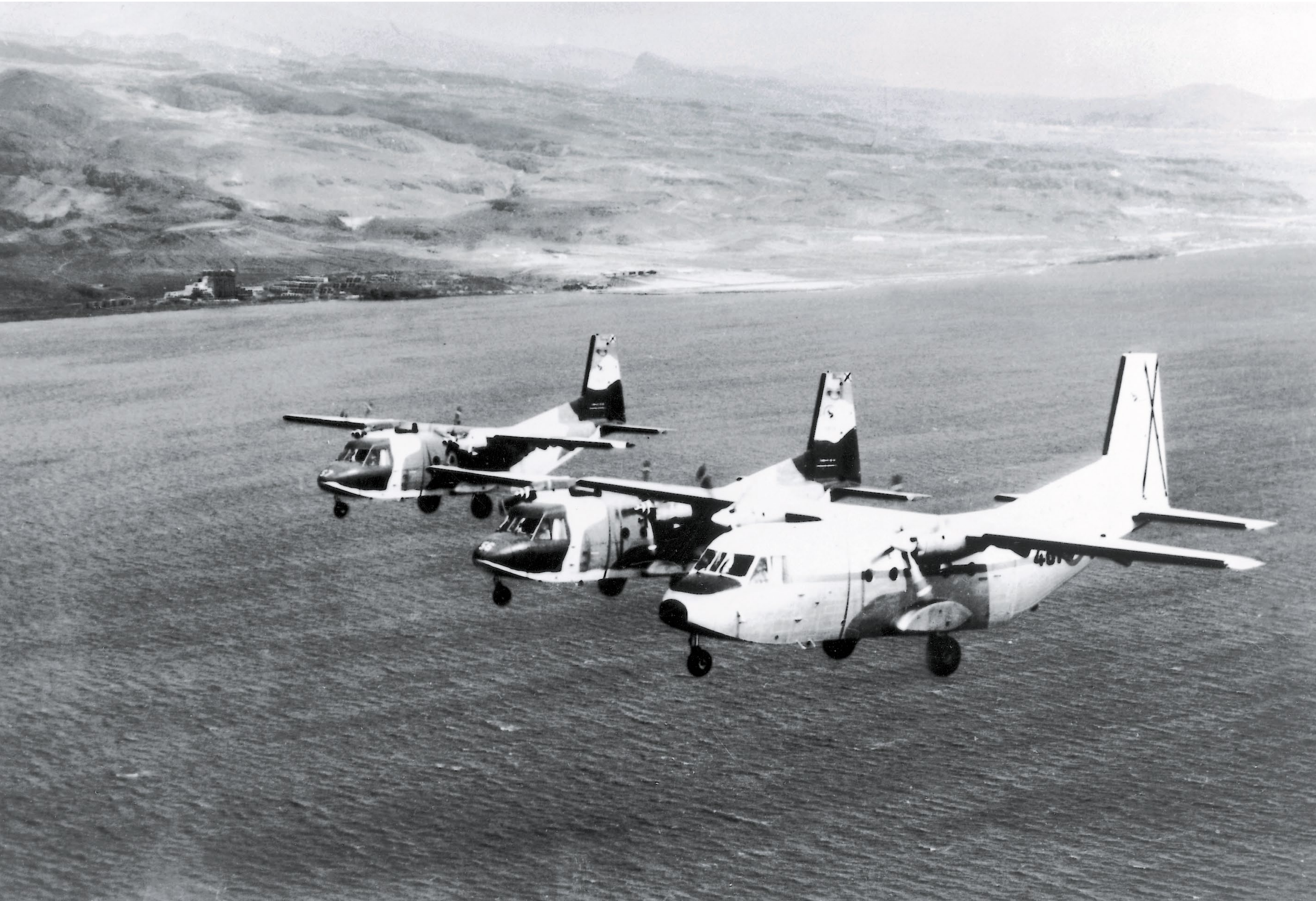
Hailed as a landmark industrial agreement for Europe, the FCAS is envisioned as a "system of systems" – composed of elements connected and operating together that include a next-generation fighter aircraft, medium-altitude long-endurance unmanned aerial vehicles, future cruise missiles and drones flying in swarms, along with military services' existing fleets of combat aircraft.

The FCAS programme will build on the current cooperation of Airbus and Dassault for the European Medium-Altitude Long-Endurance Remotely Piloted Aircraft (MALE RPAS), which also involves the participation of Italy's Leonardo. FCAS could be widened to the involvement of other key European players.

AIRLIFTERS OF ALL SIZES



A400M: ONE AIRCRAFT, THREE MISSIONS



Since the 1970s, Airbus has been the supplier of choice for light- and medium-weight airlifters that are in worldwide service with military forces, regional airlines, civilian contractors and other operators.

The product line began with the **C-212 Aviocar**, developed by Airbus predecessor CASA. After a first flight in 1971, this twin turboprop-powered aircraft was built in a production run of 40+ years, during which more than 470 were assembled in Spain by CASA and under license in Indonesia by the country's IPTN/Nurtanio aerospace company.

With a maximum take-off weight of 6,500-8,100 kg. and rear ramp-equipped, the unpressurised C212 has been used in the airliner, charter and short-haul cargo roles, for search and rescue missions, in the deployment of skydivers and smokejumpers, and military applications that vary from electronic countermeasure platforms to service with the United States Army's Special Operations Command.

The durability was underscored by the C212's deployment by Australian airline Skytraders to support Australia's science and research efforts in Antarctica and the Southern Ocean.

Stepping up in size, CASA and IPTN began a joint development of the larger **CN235** in January 1980, leading to a first flight in November 1983. With active production continuing today at the Airbus industrial facility near Seville, Spain, more than 280 of these pressurised twin turboprop-powered, rear-ramp equipped aircraft have been ordered by military operators, civilian carriers and transport companies, as well as for government and paramilitary operators.

The versatility of this aircraft – which has a maximum take-off weight in the 16,000-kg. category – is demonstrated by the CN235's diverse applications, covering the spectrum from airline flights, patrol and anti-drug trafficking to cargo, VIP duties and special missions.

The CN235 has even been configured as a gunship with a side-mounted 30mm cannon and integrated weapons pylons for missiles and rockets, while the U.S. Coast Guard acquired CN235s as its medium-range surveillance aircraft in the service's Integrated Deepwater System Program – with equipment including a roll-on, roll-off electronics suite accommodated through the rear ramp.



Topping off Airbus' product range in the light- and medium-weight airlifter sector is a stretched CN235 fuselage version, designated the **C295**, which first flew in 1998. The C295 is equipped with more powerful turboprop engines, and has a maximum take-off weight of approximately 51,145 lbs. Built on the same final assembly line as the CN235, it is a robust and highly versatile platform with an extensive list of configuration possibilities: for intelligence surveillance and reconnaissance (ISR); as a water bomber with a roll-on/roll-off system carrying up to 7,000 litres of water/retardant; in maritime patrol and anti-submarine warfare duties; as an airborne early warning variant with a top-mounted 360-deg. radar dome; along with gunship and aerial tanker versions.



The C295W version is equipped with winglets, giving it the capability to transport more payload over longer distances, with fuel savings of approximately 4% and increased safety margins for hot-and-high conditions, as well as in mountainous regions.

C295s have been acquired by more than 15 countries as its production continues, with major customers including the Spanish, Mexican, Polish and Egyptian air forces. The aircraft also was selected by Canada as a new-generation platform for the Royal Canadian Air Force's fixed-wing search and rescue duties.

A400M: ONE AIRCRAFT, THREE MISSIONS

In developing the A400M for tactical and strategic missions – along with force-projection through aerial refuelling – Airbus set the bar high in terms of technical and programme complexity.

Launched in May 2003, with the first flight performed in December 2009, the four-engine A400M responded to the combined needs of seven European nations: Belgium, France, Germany, Luxembourg, Spain, Turkey and the UK; with Malaysia joining in 2005. It features new engines and composite airframe technology.

The A400M's tactical ability enables the delivery of personnel and goods directly to landings at front-line air bases, on grass and sand strips, and the air drop delivery of paratroopers or pallets. For strategic airlift, it can deliver outsized and heavy vehicles, helicopters, relief equipment and other large payloads with better range, speed and lift performance than previous-generation tactical airlifters. Rounding out its capabilities, the A400M has a tactical air-to-air refuelling capability, able to "top off" probe-equipped receiver aircraft via two underwing hose and drogue refuelling pods as well as a higher-flow centre-line hose and drum unit.





AIRLIFTERS OF ALL SIZES: A400M: One aircraft, three missions

Multiple challenges were encountered during the A400M's development. Among them were gearbox issues with the Europrop TP400 engines – the largest turboprop powerplants developed for operational use in the West – which limited the aircraft's operational capabilities, and were treated first with a temporary fix, followed by a permanent solution. Shortfalls in mission performance also were addressed with retrofits and upgrades.

Airbus delivered the first production aircraft in August 2013 to the French Air Force and the A400M entered service the following year. In its ongoing operations, the A400M is living up to its "Atlas" nickname, performing heavy-lift duties during missions ranging from supporting troops in counter-terrorism deployments to the delivery of humanitarian goods and airlifting relief supplies into disaster areas.

A favourite of pilots based on the airlifter's precise handling thanks to Airbus' proven fly-by-wire system, the A400M has seen operational use with the French and Turkish Air Forces in Afghanistan, the Central African Republic, African' Sahel Region, Mali and in the Middle East to support air operations over Iraq and Syria. The UK Royal Air Force's A400Ms were used for aid deliveries after the Caribbean region's hurricanes in 2017, and also were deployed in Operation Shader – the UK's military intervention in Iraq and Syria, as well as to the Middle East in the backing of UK forces around the Arabian Gulf.





MULTIROLE TANKER

THE BENCHMARK NEW-GENERATION TANKER/TRANSPORT

THE BENCHMARK NEW-GENERATION TANKER/TRANSPORT

In the highly-competitive military marketplace, Airbus' A330 MRTT (Multi Role Tanker Transport) has distinguished itself as the benchmark in its category – winning the majority of competitions in Europe, Asia and the Arabian Peninsula.

Airbus has based the A330 MRTT on its successful A330-200 jetliner. Following the assembly on the commercial production line in Toulouse, France, aircraft are flown to the company's Getafe, Spain conversion centre, where the refuelling systems and military avionics are installed.

Serving three missions with one capable platform, the A330 MRTT can carry up to 111 tonnes of fuel in the aerial refuelling mission – the highest capacity of any tanker aircraft. A key feature is the centre-line Aerial Refuelling Boom System (ARBS), which is fly-by-wire controlled and delivers a fast fuel flow rate – the most capable new-generation, flight-proven boom available. The aircraft also can be equipped with pods under each wing for hose and drogue refuelling, as well as an under-fuselage hose and drogue unit.



MULTIROLE TANKER: The benchmark new-generation tanker/transport



Requiring no reconfiguration, the A330 MRTT also serves as an efficient transport aircraft, carrying passengers on the main deck and cargo in the lower lobe. Seating capacity is up to 300 passengers on the main deck, which also can be arranged in a medical evacuation configuration that accommodates 40 stretchers and 20 seats for medical staff, along with 100 passengers. The lower lobe – which accommodates up to 37 tonnes of cargo, can be loaded with 27 LD3 containers or eight military pallets.

With these attributes, orders have been booked for a total of more than 60 A330 MRTTs by the following customers: Australia, France, Saudi Arabia, Singapore, South Korea, the UK, the United Arab Emirates, as well as the North Atlantic Treaty Organisation's Multi-role Tanker Transport programme (which brings together Germany, the Netherlands, Belgium, Norway, Luxembourg).

Airbus predecessor company EADS won a hard-fought competition in 2008 for U.S. Air Force's new-generation refuelling aircraft, only to have the A330 MRTT's selection overturned when the incumbent U.S. supplier protested. Another competitive round was organised, with the contract subsequently awarded to the U.S. competitor in 2011. Airbus continues to believe in the A330 MRTT's value for the U.S., and in November 2018 it announced a partnership with Lockheed Martin to offer A330 MRTT-based services in ways that support the country's aerial-refuelling needs, such as a fee-for-service structure.



