

JOHN W. R. TAYLOR  
and GORDON SWANBOROUGH

**Military  
Aircraft  
of the  
World**

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## Addenda

**BAC/Breguet Jaguar:** The first operational Jaguar squadron will be in the 7<sup>e</sup> Escadre de Chasse of the French Air Force, and is scheduled to form at the end of 1972 (see page 14).

**Britten-Norman Defender:** Announced in May 1971, this version of the Islander, for coastal patrol and internal security duties, can carry stores of up to 700 lb. on each of two inboard underwing pylons and 250 lb. on each of two outboard pylons. It can be equipped with forward-looking radar and a variety of gun installations in the fuselage (see page 170).

**FTMA Milirole:** This is an armed STOL version of the Cessna 337/O-2, first flown by Reims Aviation of France in 1971 (see page 172).

**Hawker Siddeley AV-8A:** The first U.S.

Marine Corps squadron to equip with this version of the Harrier is VMA-513 (see page 73).

**Ilyushin Il-38:** The anti-submarine derivative of the Il-18, known to NATO as "May", is now known to be designated Il-38 and to be entering service in considerable numbers (see page 79).

**Mil Mi-6:** A few aircraft, including that illustrated, have a gun mounted in the nose (see page 103).

**Piper Enforcer:** First flown on April 29, 1971, this is a new version of the F-51 Mustang powered by a 2,535 h.p. Lycoming T55 turbo-prop. It will be available for production by mid-1972 (see page 29).

**Sikorsky CH-53E:** This three-engined version of the Sea Stallion is being developed under a U.S. Navy contract (see page 125).

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# Introduction

Except during two World Wars, the pace of military aviation progress has never moved so rapidly as it is doing today. There was a time back in the 'fifties when it seemed likely that guided missiles would replace piloted fighters and bombers for many duties. Even now the once-mighty RAF strategic bomber force has disappeared in favour of four Polaris missile-carrying submarines, while the fixed-wing squadrons of the British Fleet Air Arm are living on borrowed time, despite a reprieve for one of the aircraft carriers from which they operate. Yet, on the other side of the Atlantic, America has under development a swing-wing four-jet supersonic strategic bomber, as well as new generations of fighter aircraft for both the USAF and US Navy.

The Soviet Union, too, has new combat aircraft of tremendous power and performance in service. By adapting the Tu-114 transport into an airborne warning and control system aircraft (known to NATO as "Moss"), to direct its interceptor fighters against incoming raiders, it is even a step ahead of the USAF, which is only now beginning to evolve a similar, eight-engined version of the Boeing 707-320 carrying a huge "saucer" radome on its back. There are rumours, too, of a new swept-wing supersonic bomber from Tupolev, in the class of the North American Rockwell B-1A.

Clearly, therefore, the military aeroplane remains as vital as ever in what is sometimes called "the missile age", and about 300 different types are covered in this book. They include not only all types of combat aircraft in service with the world's air forces, but also the trainers, transport aircraft and other second-line equipment. No other book on the market covers *all* significant military aeroplanes in such a comprehensive, highly detailed but compact form, at the sort of price readers can afford to pay.

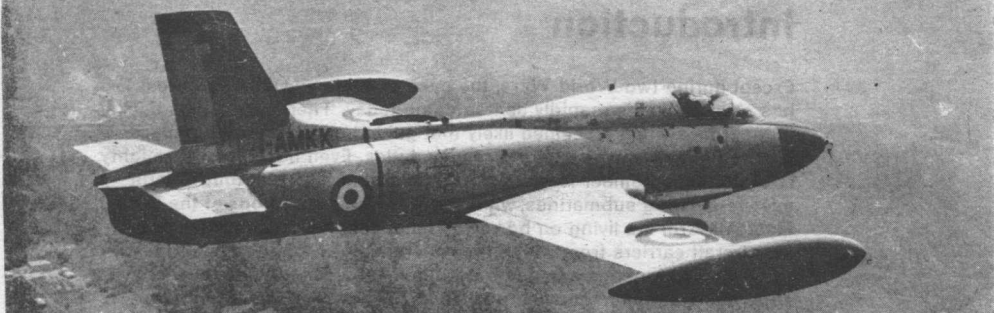
First-line fighters, bombers, maritime reconnaissance and photographic reconnaissance aircraft, tactical support helicopters, and strategic and tactical transports are treated as "major" types, with a silhouette as well as a photograph. Second-line combat aircraft, obsolescent types, light transports, communications aircraft and trainers are given almost the same coverage, except that no silhouette is included.

It is a pleasure, as always, to record that our silhouettes were drawn by Dennis Punnett, whose skill at this exacting art is unrivalled.

We should also like to thank the public relations staffs of aircraft manufacturers, information branches of air forces, the Soviet Tass news agency, and many others who provided photographs and data. Without their enthusiastic help, *Military Aircraft of the World* could never have achieved its present standards of completeness and accuracy.

# FIRST-LINE AIRCRAFT

Fighters, bombers, tactical and strategic transports and anti-submarine aircraft.



## Aermacchi M.B.326

*Italy*

**Two-seat basic trainer and light attack aircraft, in production and service.**

**Data and photograph: M.B.326K**

**Powered by:** One 4,000 lb.s.t. Rolls-Royce Bristol Viper 632-43 turbojet.

**Span:** 35 ft. 7 in.

**Length:** 34 ft. 11 in.

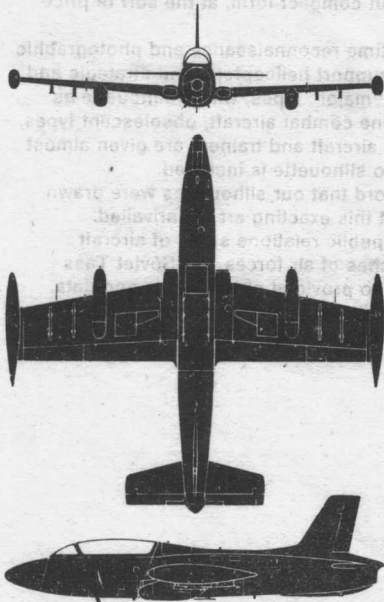
**Gross weight:** 12,000 lb.

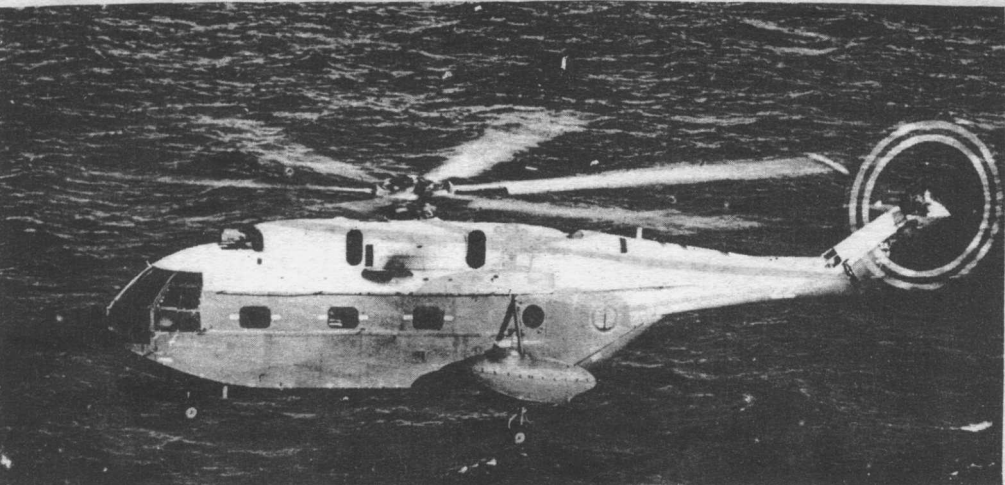
**Max. speed:** 575 m.p.h. (Mach 0.82).

**Armament:** Two 30 mm. ADEN or DEFA cannon in front fuselage. Four underwing pylons for up to 1,000 lb. each, and two outer pylons for 750 lb. each.

### Development and Service:

The first of two prototypes of this widely-used tandem two-seat basic trainer flew on December 10, 1957 and was powered by a 1,750 lb.s.t. Rolls-Royce Bristol Viper 8 turbojet. Production models had the 2,500 lb.s.t. Viper 11 and the first of 100 for the Italian Air Force flew on October 5, 1960. Delivery of this batch was completed in 1966 but a further small batch has been ordered subsequently. Eight M.B.326B and seven M.B.326F, delivered to the Tunisian and Ghana Air Forces respectively, are similar but have six underwing strong points for such stores as machine-gun pods, 260-lb. bombs, rockets, camera pods or fuel tanks. In the spring of 1967, Aermacchi flew the prototype M.B.326G, an armed version with a 3,410 lb.s.t. Viper 540 engine. Production versions are known as the M.B.326GB and orders include 17 for the Congolese Air Force, six for the Argentine Navy and 112 for the Brazilian Air Force (the majority of which will be made under licence by Embraer in Brazil). The M.B.326H is the version for the Royal Australian Air Force and Navy, with Viper 11 engine; 12 were supplied by Aermacchi, with the balance of orders totalling 87 for the R.A.A.F. and 10 for the R.A.N. built by CAC in Australia. In South Africa, Atlas Aircraft Corporation builds the M.B.326M Impala, similar to the M.B.326G with armed capability. On August 22, 1970, the single-seat M.B.326K made its first flight; this prototype had a Viper 540, but the second prototype has the characteristics given above and production models would be similar.





## Aérospatiale SA 321 Super Frelon *France*

### Photograph: SA 321G

**Heavy assault and anti-submarine helicopter, in production and service.**

**Powered by:** Three 1,550 s.h.p. Turboméca Turmo III C6 shaft-turbines.

**Rotor diameter:** 62 ft. 0 in.

**Fuselage length:** 65 ft. 10½ in.

**Empty weight:** (Naval version) 14,640 lb.

**Gross weight:** 27,557 lb.

**Max. speed:** 149 m.p.h. at sea level.

**Max. range:** 671 miles, with one engine stopped.

**Accommodation:** Crew of two, 30 troops, 15 litters or equivalent freight.

**Armament:** Anti-submarine attack weapons in naval version, including up to four homing torpedoes, in pairs on each side of the cabin.

### Development and Service:

Largest helicopter yet built in France, the Super Frelon (Hornet) was developed from the lower-powered Frelon, of which two prototypes were flown. A technical collaboration agreement with Sikorsky led to the introduction of some typical Sikorsky design features, including a boat-type hull to permit amphibious operations, with stabilising floats on the main undercarriage legs. The rotor systems are also of Sikorsky design.

The first of two prototypes of the Super Frelon flew on December 7, 1962, with 1,320 h.p. Turmo engines, and subsequently set a helicopter speed record of 217.77 m.p.h. over a 15/25-km. course which stood until 1971. The second prototype was representative of the naval anti-submarine version, with crew of four, sonar, search radar in the stabilising floats and provision for other special equipment and weapons. Four pre-production Super Frelons followed the prototypes, with 1,500 h.p. engines; the first of these flew on January 31, 1964 and the last on January 9, 1965. Orders to date include 18 SA 321G anti-submarine versions for the French Navy, 16 transports for the South African Air Force and 12 transports for the Israel Defence Force.

In French naval operations, one Super Frelon carrying detection and tracking equipment is usually accompanied by two or three others armed with attack weapons. The first unit was commissioned in May, 1970.





## Aérospatiale/Westland SA 330 Puma *France/Great Britain*

**Assault helicopter, in production and service.**

**Powered by:** Two 1,320 s.h.p. Turboméca Turmo III C4 shaft-turbines.

**Rotor diameter:** 49 ft. 2½ in.

**Fuselage length:** 46 ft. 1¼ in.

**Empty weight:** 7,561 lb.

**Gross weight:** 14,110 lb.

**Max. speed:** 174 m.p.h. at sea level.

**Max. range:** 390 miles with standard fuel.

**Accommodation:** Crew of 2 plus 16-20 troops, six litters and four seated patients, or freight.

**Armament:** None.

### **Development and Service:**

Aérospatiale (then Sud-Aviation) developed the SA 330 to meet a French Army requirement for a "hélicoptère de manoeuvre"—an aircraft of medium size able to operate in all weathers and climates in the tactical assault and transport roles. The SA 330 was the first entirely new helicopter to bear an "SA" designation, its predecessors having been either "SE" or "SO" types to indicate their connection with the original Sud-Est and Sud-Ouest state factories. Development of the SA 330 was authorised in June 1963 with a contract for two prototypes and six pre-production aircraft. The first of these flew on April 15, 1965. The SA 330 is one of three helicopters in a joint Anglo-French programme agreed early in 1968. Aircraft for the R.A.F. are being assembled by Westland, at Hayes, using British and French components. The eighth French SA 330 was imported to Britain in 1968 to serve as a pattern aircraft (serial No. XW241). The French army plans to acquire 88 SA 330s and the R.A.F. 40; another 38 have been ordered by Algeria, the Ivory Coast, Portugal, Mexico and South Africa. Deliveries began in 1969 and the first French army unit became operational in June 1970. The first British-built Puma H.C. Mk.1 flew for the first time in December 1970.







## Aérospatiale SA 316 Alouette III

France

**General-purpose, armed reconnaissance and anti-tank helicopter, in production and service.**

**Powered by:** One 870 s.h.p. (derated to 550 s.h.p.) Turboméca Artouste IIB shaft-turbine engine.

**Rotor diameter:** 36 ft. 12 in.

**Length:** 32 ft 10½ in.

**Empty weight:** 2,447 lb.

**Gross weight:** 4,850 lb.

**Max. speed:** 131 m.p.h. at sea level.

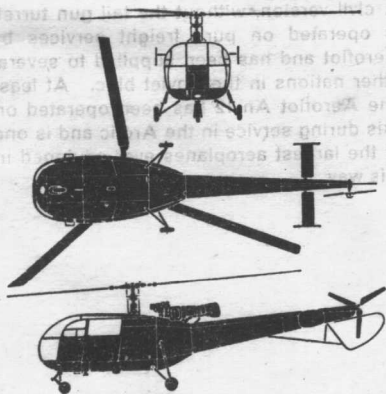
**Max. range:** 335 miles.

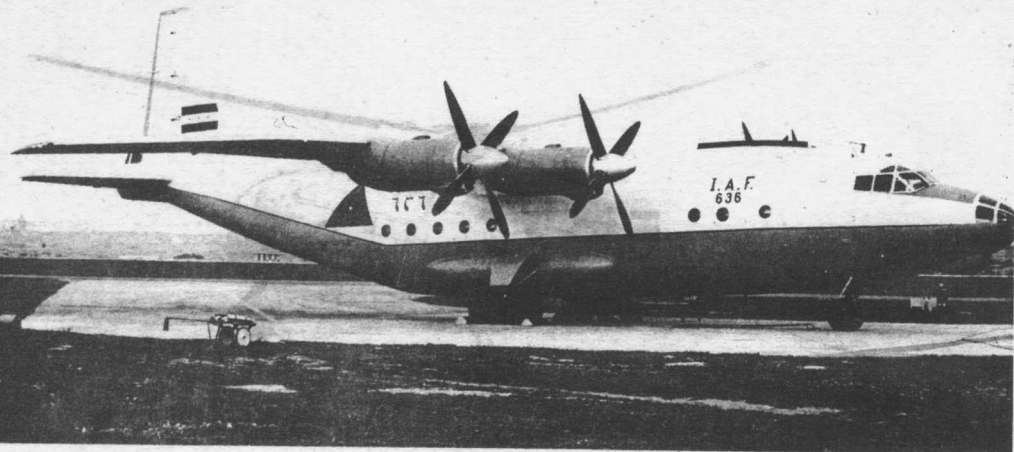
**Accommodation:** Pilot and up to six passengers, two litters and two other patients, or equivalent freight.

**Armament (optional):** Various installations of machine-guns, 20 mm. guns, AS.11 or AS.12 missiles and rockets.

### Development and Service:

The Alouette III, a larger and more powerful development of the Alouette II (see page 157), is available for military use as a tactical troop transport or assault helicopter, and can carry a variety of armament. The basic version is powered by an Artouste engine, as described above. It first flew on February 28, 1959, and serves as the SA 316A, the SA 316B with strengthened transmission and increased weights, and the SA 316C for delivery from 1971 with Artouste IIID engine. By mid-1970 orders totalled 823, of which 643 had been delivered, including 124 for French military and civil operators and others for 89 operators in 57 countries. Eighty are being built by HAL for the Indian Air Force and Navy, and 60 in Switzerland. A variant is the SA 319A which is in production for the French Services with a 600 s.h.p. Astazou XIV engine. This is being followed in 1971 by the SA 319B with an Astazou XVI. Gross weight of the SA 319A is 4,960 lb., max. speed 137 m.p.h., and max. range 375 miles.





## Antonov An-12 (NATO code-name: Cub)

*U.S.S.R.*

Medium/long-range transport, in production and service.

**Powered by:** Four 4,000 e.h.p. Ivchenko AI-20K turboprops.

**Span:** 124 ft. 8 in.

**Length:** 108 ft. 3 in.

**Gross weight:** 134,480 lb.

**Max. cruising speed:** 373 m.p.h.

**Range:** 2,110 miles at 342 m.p.h. with 22,050 lb. payload.

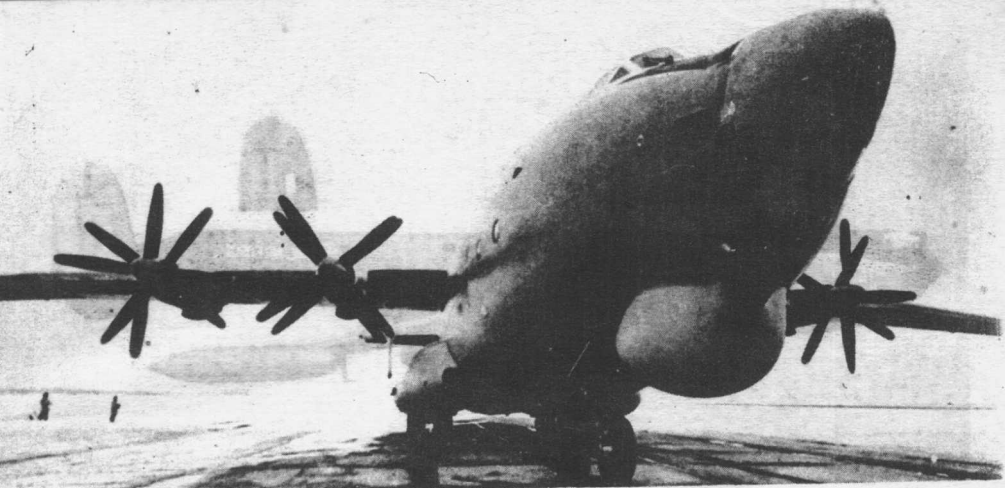
**Accommodation:** Crew of five and troops, vehicles or freight.

**Armament:** 20 mm. cannon in tail turret.

### Development and Service:

Developed from the An-10 commercial airliner, this turboprop transport is standard equipment in the Soviet Air Force for paratroop-dropping, air supply and heavy transport duties. Its undercarriage has four-wheel bogie main units, retracting into fairings on each side of the cabin, and is fitted with low-pressure tyres, enabling the An-12 to operate from unprepared airfields. Take-off and landing runs are under 950 yards. A loading ramp for vehicles and freight forms the undersurface of the up-swept rear fuselage and can be opened in flight for air-dropping of troops and supplies. Size of the main cabin is 44 ft. 3½ in. long, by 9 ft. 10 in. wide and 7 ft 10½ in. high. Foreign air forces which have been supplied with An-12's include those of Algeria, Egypt, India, Indonesia, Iraq and Poland. A civil version, without the tail gun turret, is operated on pure freight services by Aeroflot and has been supplied to several other nations in the Soviet bloc. At least one Aeroflot An-12 has been operated on skis during service in the Arctic and is one of the largest aeroplanes ever equipped in this way.





## Antonov An-22 (NATO code-name: Cock)

U.S.S.R.

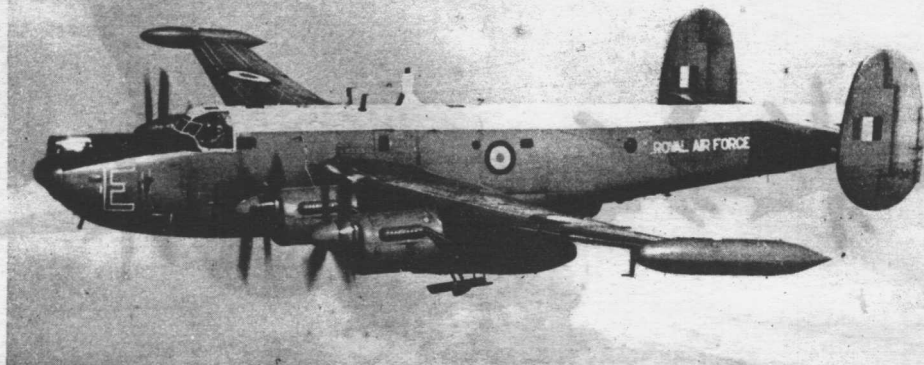
Long-range heavy strategic transport, in production and service.

**Powered by:** Four 15,000 s.h.p. Kuznetsov NK-12MA turboprops.  
**Span:** 211 ft. 4 in.  
**Length:** 189 ft. 7 in.  
**Max. payload:** 176,350 lb.  
**Gross weight:** 551,160 lb.  
**Max. speed:** 460 m.p.h.  
**Range:** 6,800 miles (max. fuel and 99,200 lb. payload), 3,100 miles (max. payload).  
**Accommodation:** Crew of five or six; 28-29 passengers plus freight.

### Development and Service:

First flown on February 27, 1965, the Antonov An-22 was the World's largest transport aircraft until the appearance of the Lockheed C-5A (see page 83). A natural progression from the An-10/12 series, the An-22 was in service with Aeroflot and the Soviet Air Force by mid-1967, at which time two prototypes in civil markings were operating an experimental freight service and three others in military markings took part in the July display at Domodedovo. The latter disgorged, after landing, batteries of Frog-3 and Ganef missiles on tracked launchers. The An-22 has a normal payload of 176,350 lb. but in a series of record flights in October 1967, a max. load of 221,443 lb. was lifted. A feature of the An-22 design is that four gantries are installed on overhead rails running the entire length of the cabin to facilitate freight handling through the rear door and ramp. By 1969, An-22s were in service with several Soviet Air Force units, and in 1970 one was lost in the Atlantic during relief flights after the Peruvian earthquake.





## Avro Shackleton

**Long - range maritime - reconnaissance and A.S.R. aircraft, in service.**

**Data, photograph and silhouette:**

**Shackleton M.R.Mk.3, Phase 3.**

**Powered by:** Four 2,455 h.p. Rolls-Royce Griffon 57A piston-engines, and two 2,500 lb.s.t. Rolls-Royce Bristol Viper 203 auxiliary turbojets.

**Crew:** 10.

**Span:** 119 ft. 10 in.

**Length:** 92 ft. 6 in.

**Gross weight:** 100,000 lb.

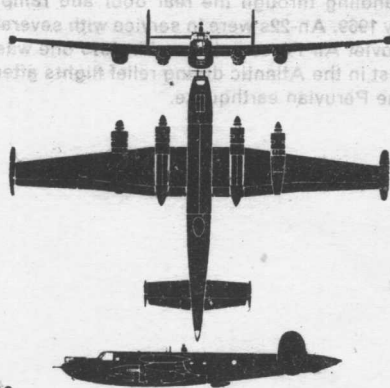
**Max. cruising speed:** 253 m.p.h.

**Typical range:** 3,660 miles at 200 m.p.h. at 1,500 ft.

**Armament:** Two 20 mm. cannon in nose; bombs, mines, depth charges, torpedoes, etc. in bomb bay.

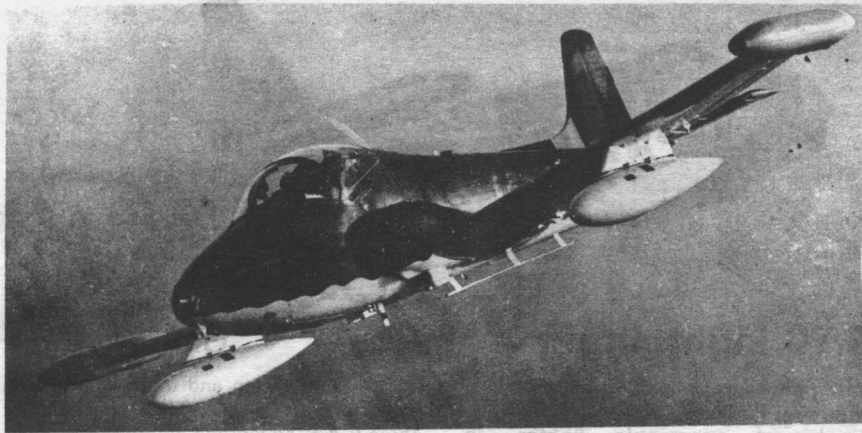
### Development and Service:

The Shackleton M.R. (originally G.R.) Mk.1 was developed as the Avro Type 696, a variant of the Lincoln bomber, for maritime reconnaissance duties. The first Shackleton M.R.Mk.1 (77 built) entered service with



## Great Britain

No. 120 Squadron of R.A.F. Coastal Command late in 1951. The Mk.1 aircraft could be distinguished from later versions by their shorter, more rounded nose with fixed under-nose radome, and blunt rear fuselage. The M.R.Mk.2 (prototype WB833) was developed in 1952 with a longer, more streamlined nose, pointed tail-cone and retractable ventral radar. With equipment brought up to Mk.3 standard, the Mk.2C continues in service with Strike Command, but is being replaced by the Nimrod. The Shackleton M.R.Mk.3 has wingtip tanks, nose-wheel undercarriage in place of the former tail-wheel type and other refinements. The first production model (WR970) flew on September 2, 1955 and production deliveries began early in 1958. A total of 69 Mk.2 and 42 Mk.3 aircraft were built. To increase the capabilities of the Mk.3 Shackletons they have undergone extensive modification to Phase 3 standard, including structural strengthening, increase in fuel capacity and the addition of two Rolls-Royce Bristol Viper auxiliary turbojets, mounted in the rear of the outboard engine nacelles, to improve take-off performance. In 1970, seven squadrons of R.A.F. Strike Command operated Shackletons and another was stationed overseas. Also in service, with the Maritime Operational Training Unit, is the T.Mk.4 navigation trainer, converted from the Mk.1. During 1970, a Shackleton was being modified as a test-bed for an airborne early-warning system for the R.A.F. A squadron of Mk.3 Shackletons serves with the South African Air Force.



## BAC 167 Strikemaster (and Jet Provost)

*Great Britain*

**Data, photograph and silhouette: Strikemaster.**

**Two - seat counter - insurgency strike aircraft and trainer, in production and service.**

**Powered by:** One 3,410 lb.s.t. Rolls-Royce Bristol Viper 535 turbojet.

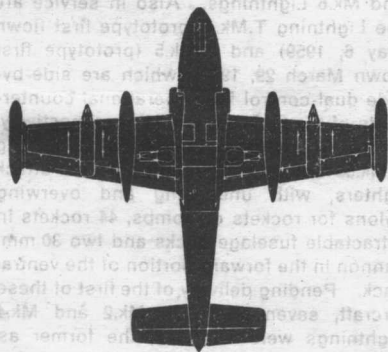
**Span:** 36 ft. 11 in.

**Length:** 34 ft. 0 in.

**Gross weight:** 11,500 lb.

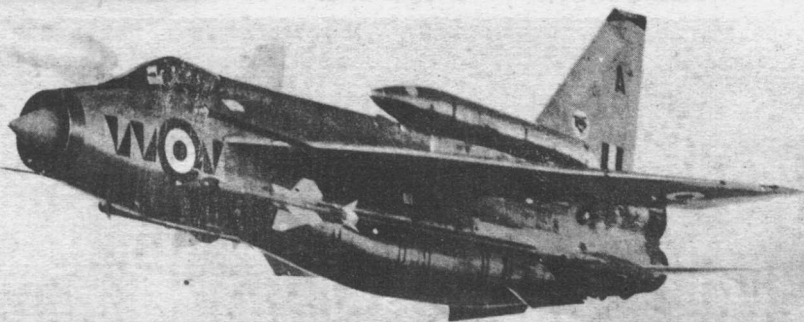
**Max. range:** 1,382 miles.

**Max. speed:** 472 m.p.h. at 20,000 ft.



### Development and Service:

The BAC 167 Strikemaster was developed from the basic armed Jet Provost to meet the needs of small air forces for a relatively cheap armed counter-insurgency aircraft and trainer. It differs from the current Jet Provost T.Mk.5 trainer primarily in having an uprated engine, permanently-attached tip tanks and increased armament capability. Common to both the Strikemaster and the Jet Provost 5 is a pressurized cockpit. The first Strikemaster flew on October 26, 1967, and over 90 have been ordered, for the Saudi Arabian Air Force (Mk.80), the South Yemen People's Republic (Mk.81), the Sultan of Muscat and Oman's Air Force (Mk.82), the Kuwait Air Force (Mk.83), the Singapore Air Defence Command (Mk.84), the Kenya Air Force (Mk.87) and the Royal New Zealand Air Force. Currently in production are 110 Jet Provost T.Mk.5s for the R.A.F., with 2,500 lb. s.t. Viper 202 engine, pressure cabin and optional wing-tip tanks. They replace the Jet Provost T.Mk.4, which was unpressurized, and the T.Mk.3 which had a 1,750 lb. s.t. Viper 102 engine. The Mk.1 and 2 were development aircraft. Export models of the Jet Provost, with provision for two 0.303 in. machine-guns in the air intakes and limited underwing stores capability, were the T.Mk.51 (Viper 102) for Ceylon, the Sudan and Kuwait and T.Mk.52 (Viper 202) for Venezuela, Sudan, Iraq and the South Yemen. An armed version of the Jet Provost T.Mk.5 has been sold to the Sudan to supplement its Mk.51s and 52s, and is designated Jet Provost 55 (BAC 145).



## BAC Lightning

*Great Britain*

**Data, photograph and silhouette:**

**Lightning F.Mk.6.**

**Single-seat supersonic fighter, in service.**

**Powered by:** Two 16,360 lb.s.t. Rolls-Royce Avon 301 turbojets with reheat.

**Span:** 34 ft. 10 in.

**Length:** 55 ft. 3 in.

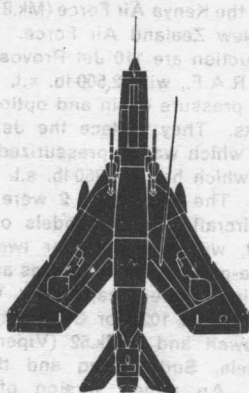
**Max. speed:** over 1,320 m.p.h. (Mach 2).

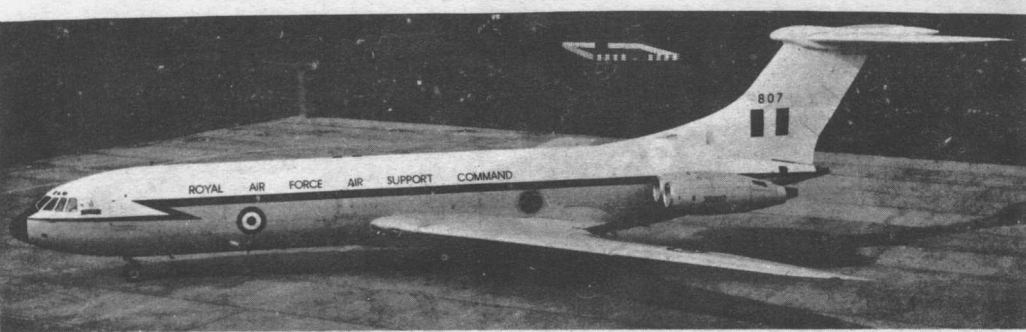
**Armament:** Two Red Top or Firebreak air-to-air missiles, or two packs of 24 air-to-air rockets plus, optionally, two 30 mm. Aden guns in ventral pack. In ground attack role (Mk.53), two 30 mm. guns and 44 x 2-in. rockets are carried, plus provisions for 144 x 2-in rockets in Matra pods or six 1,000 lb. bombs on underwing and overwing pylons.

### Development and Service:

The Lightning F.Mk.1, evolved from the P.1A research aircraft, first flew on April 4,

1957. This version and the F.Mk.1A, with provision for flight refuelling, equipped three R.A.F. squadrons but only a few now remain in service as high-speed targets for squadrons flying later Marks. The F.Mk.2, first flown on July 11, 1961, introduced many improvements and could carry Red Top as well as Firebreak. This version remains operational, 30 examples having been modified to F.Mk.2A with some features of the F.Mk.6 for service in Germany. First flown on June 16, 1962, the F.Mk.3 has Series 300 Avons, a larger square-tip tail fin and much improved equipment, although the two 30 mm. Aden cannon fitted to earlier Marks are deleted. From it was evolved the fully-developed F.Mk.6 (prototype flown on April 17, 1964), in which the outer portion of the wing leading-edge has slightly less sweep and incorporates conical camber, and the capacity of the ventral fuel tank has been more than doubled. This version can carry two overwing fuel tanks for long-range ferrying. About six R.A.F. squadrons, at home and overseas, fly Mk.3 and Mk.6 Lightnings. Also in service are the Lightning T.Mk.4 (prototype first flown May 6, 1959) and T.Mk.5 (prototype first flown March 29, 1962), which are side-by-side dual-control fully-operational counterparts of the F.Mk.1 and F.Mk.3 respectively. Saudi Arabia has received 34 Lightning F.Mk.53 multi-role interceptor/ground-attack fighters, with underwing and overwing pylons for rockets or bombs, 44 rockets in retractable fuselage packs and two 30 mm. cannon in the forward portion of the ventral pack. Pending delivery of the first of these aircraft, seven ex-R.A.F. Mk.2 and Mk.4 Lightnings were supplied, the former as F.Mk.52s. Kuwait has taken delivery of a smaller number of Lightning fighters and both countries have also received small numbers of the T.Mk.55 export version of the T.Mk.5. Production of the Lightning ended early in 1970.





## BAC VC10

**Long-range troop and freight transport, in service.**

**Powered by:** Four 21,800 lb.s.t. Rolls-Royce Conway R.Co.43 turbojets.

**Span:** 146 ft. 2 in.

**Length (without refuelling probe):** 133 ft. 8 in.

**Gross weight:** 322,000 lb.

**Max. cruising speed:** 581 m.p.h.

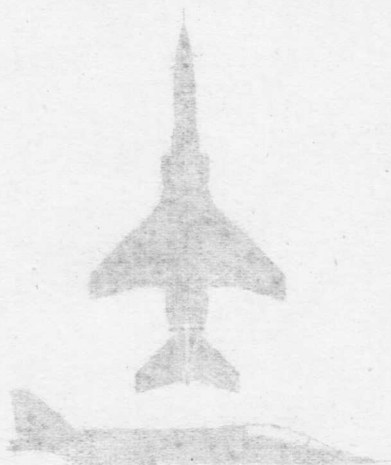
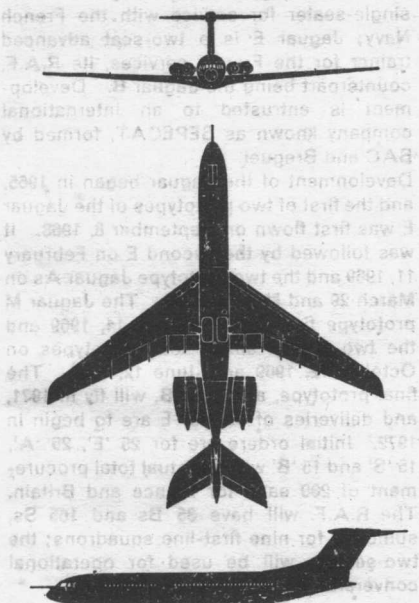
**Typical range:** 3,900 miles with 57,400 lb. payload at 425 m.p.h. at 30,000 ft.

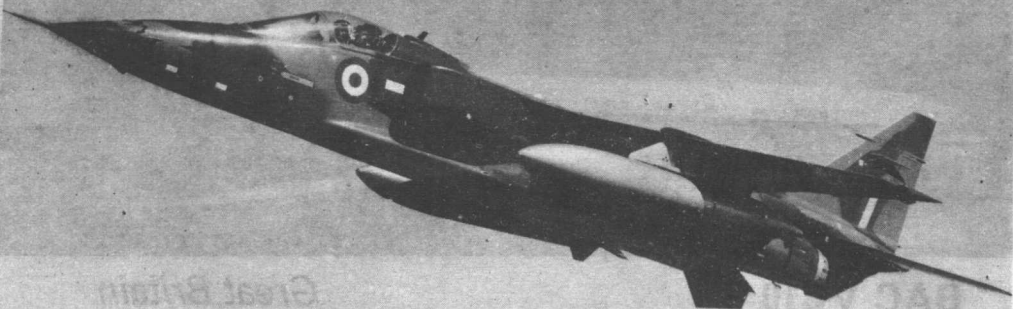
**Accommodation:** 150 passengers in rearward-facing seats, or freight.

## Great Britain

### Development and Service:

Fourteen VC10 C.Mk.1 (Model 1106) jet transports were delivered to No. 10 Squadron of R.A.F. Air Support Command. Although similar in overall dimensions to the B.O.A.C. version, the Model 1106 has the more powerful Conway 43 engines and fin fuel tank of the Super VC10. Other changes include the installation of a large cargo door at the front of the cabin on the port side, an optional nose-probe for flight refuelling and a Bristol Siddeley Artouste auxiliary power unit in the tail-cone for engine starting and electric power on the ground. The primary duty of the R.A.F.'s VC10s is to carry troops or personnel at high speed to any part of the world, while their equipment and supplies are carried out in Short Belfast transports. The first R.A.F. VC10 C.Mk.1 made its first flight on November 26, 1965. Deliveries began on July 7, 1966, and were completed in 1968. The aircraft are named individually after holders of the Victoria Cross. During 1969, one of the R.A.F. VC10s was loaned to Rolls-Royce Ltd. for conversion to a test-bed for the RB.211 engine.





## BAC/Breguet (Sepecat) Jaguar

**Silhouette: Jaguar E. Data and photograph: Jaguar S.**

**Single-seat light tactical support aircraft, under development.**

**Powered by:** Two 7,100 lb.s.t. (with afterburning) Rolls-Royce/Turboméca Adour 101 turbofans.

**Span:** 27 ft. 10½ in.

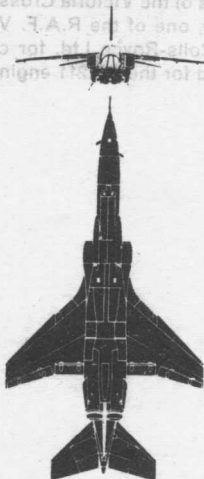
**Length:** 50 ft. 11 in.

**Max. gross weight:** 32,500 lb.

**Max. speed:** 1,056 m.p.h. (Mach 1.6) at 36,000 ft.

**Max. range:** 2,270 miles with external tanks.

**Armament:** Two 30 mm. DEFA or Aden guns in lower fuselage. One attachment under fuselage and four under wings for up to 10,000 lb of AS.30 or Martel missiles, 1,150-lb bombs, napalm tanks, rocket pods, etc. Provision for air-to-air missiles at wing-tips.



## Great Britain/France

### Development and Service:

Evolved from Breguet's Br 121 project, the Jaguar is a lightweight dual-role aircraft that is being built in five main versions: Jaguar A is a single-seat tactical support aircraft for the French Air Force; its R.A.F. counterpart is the Jaguar S and Jaguar M is a single-seater for service with the French Navy; Jaguar E is a two-seat advanced trainer for the French services, its R.A.F. counterpart being the Jaguar B. Development is entrusted to an international company known as SEPECAT, formed by BAC and Breguet.

Development of the Jaguar began in 1965, and the first of two prototypes of the Jaguar E was first flown on September 8, 1968. It was followed by the second E on February 11, 1969 and the two prototype Jaguar As on March 29 and May 27, 1969. The Jaguar M prototype flew on November 14, 1969 and the two British single-seat prototypes on October 12, 1969 and June 12, 1970. The final prototype, a Jaguar B, will fly in 1971, and deliveries of Jaguar E are to begin in 1972. Initial orders are for 25 'E', 25 'A', 15 'S' and 15 'B' with eventual total procurement of 200 each for France and Britain. The R.A.F. will have 35 Bs and 165 Ss, sufficient for nine first-line squadrons; the two-seaters will be used for operational conversion and continuation training.





# Bell AH-1 HueyCobra/SeaCobra U.S.A.

**Armed helicopter, in production and service.**

**Data, AH-1J. Photograph and silhouette, AH-1G.**

**Powered by:** One 1,800 s.h.p. Pratt & Whitney T400-CP-400 coupled turboshaft.

**Rotor diameter:** 44 ft. 0 in.

**Fuselage length:** 44 ft. 7 in.

**Gross weight:** 10,000 lb.

**Max. speed:** 207 m.p.h.

**Max. range:** 359 miles.

**Armament:** Turret-mounted XM-197 three-barrel 20-mm. cannon in nose, plus four external attachment points for Minigun pods or rockets, etc.

## Development and Service:

Bell developed the HueyCobra from the UH-1 "Hueycopcopter" initially as a private venture against U.S. Army requirements for an interim armed helicopter, pending production of the Lockheed AH-56A Cheyenne. The requirement was specifically for operations in Vietnam, experience there having shown the value of armed helicopters in suppressing ground fire during airborne assault and casevac operations by unarmed helicopters. The prototype Bell 209 HueyCobra flew on September 7, 1965 and retained the UH-1 engine/rotor system with a new low-profile fuselage seating a gunner and pilot in tandem. After Army evaluation, two pre-production aircraft and an initial production batch were ordered in April 1966, with the designation AH-1G. Operational service in Vietnam began in mid-1967 and a total of 1,008 have been ordered to date. Early Army AH-1Gs had a TAT-102A nose turret with a six-barrel 7.62-mm. Minigun. Later aircraft have the XM-28 armament system with two Miniguns or two XM-129 40-mm. grenade launchers, or one of each. In May 1968, the U.S. Marine Corps ordered an initial batch of 49 AH-1J SeaCobras (data above), with a Twin Pac engine and revised armament. Pending delivery of these, the Marines were allocated 38 AH-1Gs. First export order for HueyCobras came from the R.A.A.F., which bought 11 in early 1971.

