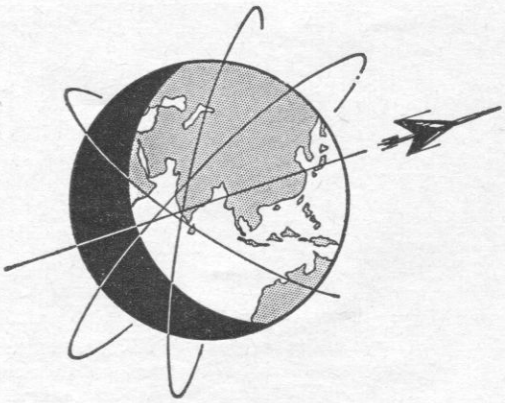


World Air News

D.H. Canada have started production of a new short-field, short-haul utility aircraft, the Twin Otter, shown here in model form. Powered by two 550-s.h.p. Canadian P. & W. PT6As, it will carry up to fourteen passengers over 100- to 600-mile stages at 160 knots

One-Eleven's first year

ONE YEAR AGO, on 20th August 1963, the first BAC One-Eleven (G-ASHG) made its first flight. Since then seven more have flown, and additional aircraft are coming off the line at Hurn at the rate of two a a month. A new final assembly hangar now in use at Hurn will double this rate of production in 1965, and steps have been taken to provide tooling for a production rate of six aircraft a month by 1966. The aircraft completed and flown in the first twelve months are:

G-ASHG	BAC-owned, 20th August 1963
G-ASJA	First B.U.A., 19th December 1963
G-ASJB	Second B.U.A., 14th February 1964
G-ASJC	Third B.U.A., 1st April 1964
G-ASJE	Fifth B.U.A., 5th May 1964
N1541	First Braniff, 9th June 1964
G-ASJD	Fourth B.U.A., 6th July 1964
G-ASJF	Sixth B.U.A., 28th July 1964

Sub-assembly of aircraft up to the thirty-seventh One-Eleven has now begun. Six aeroplanes are now engaged in the certification programme, based at BAC's Flight Test Centre at Wisley; these comprise five B.U.A. aircraft and the first for Braniff. Up to mid-August, test flying with these six aircraft totalled 620 hours. Performance testing to date includes airfield performance trials in the U.K. and at Madrid, where higher temperatures are obtained. To complete airfield performance trials, an aircraft will go to Johannesburg later this year.

Low-speed handling trials were resumed during August, using the first One-Eleven to incorporate a fully-powered elevator. This replaces the original elevator design with servo-tab control and improves the aircraft's ability to recover from a deep stall. A new wing leading-edge has also been introduced, with the object of increasing the stability (*i.e.*, nose-down pitching moment) of the One-Eleven at the stall.

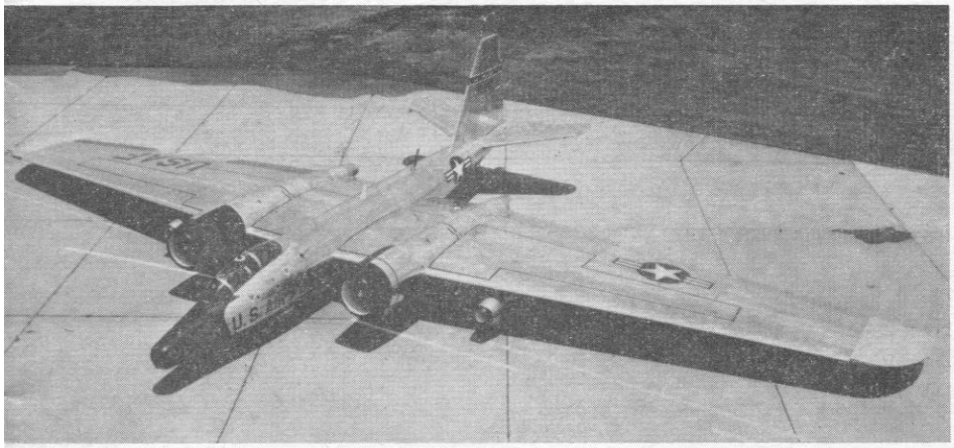
Static testing of a complete One-Eleven airframe (divided, for convenience of the test, into two portions) has now covered all fourteen design loading cases, up to 85 per cent of ultimate. Fail-safe cases have subsequently been satisfactorily demonstrated by loading the specimens after they had been deliberately weakened. During July, the main fuselage/wing specimen was subjected to static loading to destruction in the ultimate gust case. Failure of the wing occurred at 117 per cent of ultimate load.

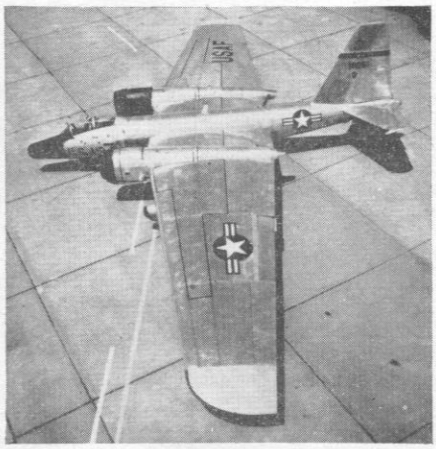
As a result of continuous design development aided by the results of the structural test programme and by powerplant improvement, it became possible earlier in the year to announce higher operating weights and payloads for One-Elevens ordered for delivery in 1966 or later. The 300-Series has benefited to the extent that it can now carry a payload of 19,200 lb. for 1,200 miles. The increase in zero fuel weight to 69,000 lb. for the 300- and 400-Series One-Elevens means that the payload in these versions is now only space-limited, even with full tanks.

Subsequently increased design weights for the 200-Series are now being incorporated in the Standard Specification for those aircraft as a result of the increased wing ultimate strength tests.

ABOVE: *The first two Sud Alouette IIIs of a batch of twenty-seven ordered for the Dutch A.F. arrived at Soesterberg on 31st July*

BELOW: *Fitted with wings, and with jet-thrust augmentation, the Kaman UH-2 will be used for research at speeds of over 250 m.p.h.*





General Dynamics/Ft. Worth are rebuilding Martin B-57s (Canberras) as RB-57F high-altitude weather reconnaissance aircraft for the U.S.A.F. Wingspan is now 122 ft., compared with the B-57's 64 ft. The tail unit has been revised and power increased by fitting two 18,000-lb.s.t. P. & W. TF-33-P11 turbofans and two 3,300-lb. podded J-60-P9s

Winged Kaman

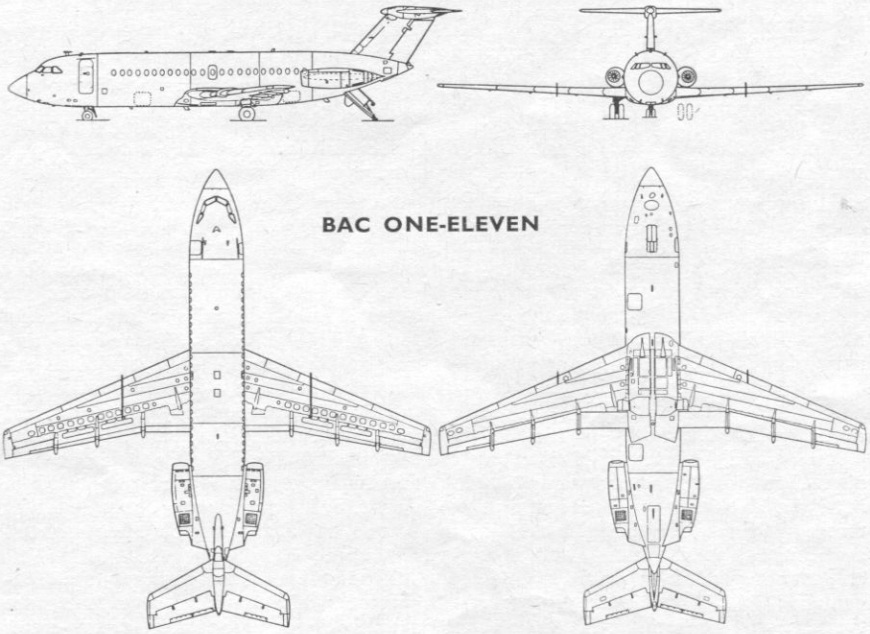
Kaman Aircraft have received a contract from the U.S. Army Transportation Research Command (TRECOM) to add wings to the jet-augmented UH-2 research helicopter, to extend the machine's high-speed test programme. Additional horizontal thrust is provided by a General Electric J85 jet engine. The compound UH-2, having the characteristics of both a helicopter and a fixed-wing aircraft, is expected to produce data for the design of fast, manoeuvrable, vertical take-off aircraft for the Army's future needs. Prime objective is obtaining data on performance, stability and stresses of rotors at high speeds. The UH-2 with jet augmentation has already flown at 216 m.p.h.; with wings, it is expected to do over 250 m.p.h.

XV-5A's first hover

The Ryan-General Electric XV-5A lift-fan V/STOL research aircraft being developed for the U.S. Army made its first hovering flight on 16th July, at Edwards A.F.B., Calif.; the aircraft made its first conventional flight on 25th May. For hovering flight, the XV-5A uses the basic thrust of its two G.E. J85 jet engines channelled through a ducting system to the aircraft's two wing fans and a nose fan. By drawing air through the wing, the fans augment engine thrust by nearly 300 per cent for vertical take-off, hovering and landing. Further details appeared in our February 1962 issue, page 42.

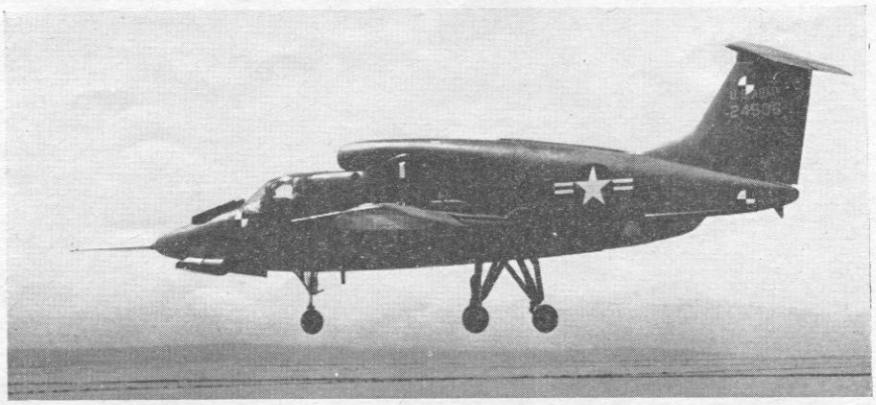
Cessna 172s for U.S.A.F.

The Cessna Aircraft Company have received a contract for 170 Model 172s for the U.S.A.F., who will use them as trainers under the designation T-41A. The order will be completed by July 1965. The T-41As will be used, under a new Air Training Command programme, to provide basic flight instruction for pilots prior to their entry into jet training phases. After completing approximately 30 hours on the T-41A, Air Force student pilots will continue their training on the Cessna T-37B; more than 800 T-37s have been delivered



ABOVE: *Revised drawings of the BAC One-Eleven. G-ASJA has been fitted with the new pointed nose radome; 'JC and 'JD have the extended leading-edge, power elevator, and wing fences moved inwards*

BELOW: *The Ryan-General Electric XV-5A making its first hover on 16th July; its first conventional flight was on 25th May*



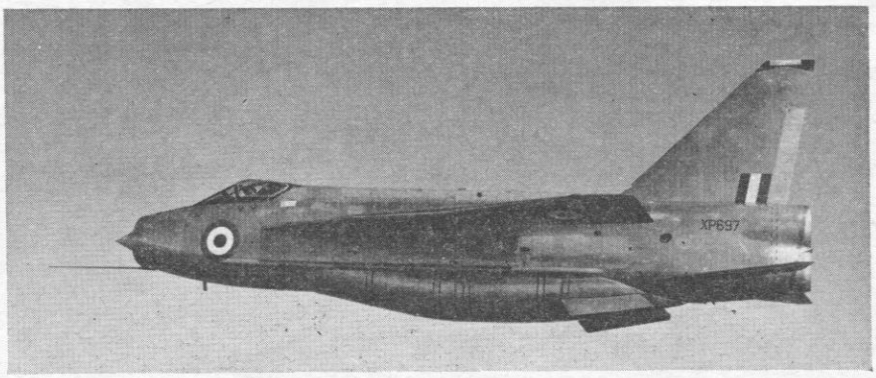
to U.S. forces and to eight other countries. Instruction and operation of the T-41A will be conducted by civilian contractors located near the eight A.T.C. training bases to which the aircraft are being assigned: Moody A.F.B., Valdosta, Ga.; Craig A.F.B., Selma, Ala.; Vance A.F.B., Enid, Okla.; Reese A.F.B., Lubbock, Texas; Webb A.F.B., Big Spring, Texas; Laughlin A.F.B., Del Rio, Texas; Laredo A.F.B., Laredo, Texas; and Williams A.F.B., Chandler, Ariz.

Cessna introduced the Model 172 in late 1955 and by June 1964 production of this type had reached 8,799. The 172 holds the world's endurance record. In 1959 a 172 remained in the air for 64 days, 22 hours and 19 minutes; refuelling was accomplished by passing petrol from a speeding truck on the runway to the aircraft flying only 10 ft. off the ground.

Vertical floats

Tests in rough water of a new vertical float system, originated by E. H. Handler of the U.S. Bureau of Naval Weapons and developed by General Dynamics/Convair and the U.S. Navy, have shown that a seaplane can now be made to float on the open ocean with sufficient stability to provide a working platform for anti-submarine warfare. Convair began development of the floats under a Navy contract in 1962. Final tests were recently conducted in heavy seas off the San Diego coast, using a U.S. Navy Martin PBM-5 Mariner flying-boat fitted with four of the Convair-designed floats—one under each wing (4 ft. in diameter and 40 ft. long) and two under the hull (5 ft. in diameter and 26 ft. long).

During an eight-hour test, the plane rode virtually motionless above waves up to 10 ft. in height. The crew monitored instruments that recorded data on pitch and roll motions, accelerations, wind velocity, and stresses on the float structure. A second PBM—not equipped with Convair floats—was stationed nearby for comparison; as the plane rocked in 8- to 10-ft. waves, men on board were soon unable to perform routine tasks because of severe motions and seasickness. Meanwhile, the crew of the float-equipped plane carried out their duties efficiently and with no discomfort. For test purposes, the floats were permanently fixed in position on the flying-boat, but Convair have proposed an operational version to the Navy in which the floats would be retractable.



Lightning F.3 XP697 displays its new, enlarged ventral fuel tank. Another photo of this aircraft, showing wing "mods", appears on page 306

South African rotors

Development of rotary-winged aircraft is now proceeding apace in South Africa, with three establishments involved. The Rotorcraft Co. at Worcester, Cape Province, are now turning out production models of their Minicopter as fast as they can, current demand being far over one hundred, and the firm is setting up a new factory in Cape Town. Similar in appearance to the Bensen B-8, but with an enclosed cabin and a more powerful engine, the Minicopter is currently being evaluated by the S.A.A.F.; the Army, Police and traffic authorities are also interested. The first Minicopter to be exported is now in Australia, where it may be built under licence, and twenty-five have been ordered by Angola.

A new Cape Town company, the Helicopter Manufacturing Co., sprang a surprise recently when they flew a two-seater named the Springbok. Powered by a 150-h.p. Lycoming, its performance is said to be comparable with that of the Hughes 300. Dimensions are 26 ft. 6 in. rotor dia., 23 ft. length, 7 ft. 6 in. height, and 4 ft. 2 in. width.

Finally, the Government's Council for Scientific and Industrial Research (C.S.I.R.) is developing a two-seat autogyro to meet South African conditions and for use in military, civil and crop-spraying roles. Thrust is provided by a ducted propeller at the rear and the machine is expected to take off with maximum load in 150 ft., fly at 20 m.p.h. without stalling, and land at 10 m.p.h.

Four Iroquois helicopters of No. 5 Squadron, R.A.A.F., have been detached from their home base at Fairbairn, A.C.T., to Butterworth, following a request for military aid from the Malaysian Government. They were shipped to Malaysia by the transport carrier H.M.A.S. Sydney and will operate on the Thai-Malaysia border

Convertible Boeing 727

A convertible cargo-passenger version of the Boeing 727, designated 727C, is now in production. Fitted with a large cargo door forward, measuring 91 in. by 134 in., the 727C can carry up to 36,750 lb. of cargo, or fifty-two passengers and 24,000 lb. of cargo, or ninety-four passengers. An order has already been received from Northwest Orient Airlines for three 727Cs, with deliveries starting in April 1966; Northwest are also ordering two more Boeing 707-320Cs. A total of 222 Boeing 727s has now been sold and the number of Boeing jet airliners of all variants ordered now stands at 658.

F-104s revert to cannon

Lockheed F-104 Starfighters of two U.S.A.F. Air Defense Command squadrons, the 319th and 331st, are having their 20-mm. Vulcan cannon installed again. The F-104s are to be used against possible Cuban intruders, and as this involves close-proximity inspection, the older cannon armament is considered more suitable than the Sidewinder air-to-air missiles (which might not react quickly enough) with which the F-104s are normally equipped.

K.L.M.'s 100th Douglas

The first of K.L.M.'s two DC-8F Jet Freighters, PH-DCS "Alfred Nobel", put into service on 1st September, is the 100th Douglas aircraft to be delivered to the Dutch airline. The second DC-8F is PH-DCT "Pierre de Coubertin".

In fact, K.L.M. have bought every Douglas marque to be offered for com-

mercial use, starting from 22nd August 1934 when they received their first DC-2. K.L.M. flew eighteen DC-2s, from 1934 to 1937 on the European network; they also operated on the Java service in 1935–37. Twenty-four DC-3s followed, in 1936–39, and after World War II K.L.M. took delivery of the first of six DC-4s. K.L.M. also operated four DC-5s, eight DC-6s and nine DC-6A/Bs. Douglas delivered fifteen DC-7Cs, in 1957–58, and some of these are still used on charter flights while others have been altered to DC-7Fs.

The DC-8, pride of K.L.M.'s fleet today, came on the scene in 1960 and with the two new freighters, K.L.M's DC-8 fleet has risen to sixteen.

R.A.F. in British Guiana

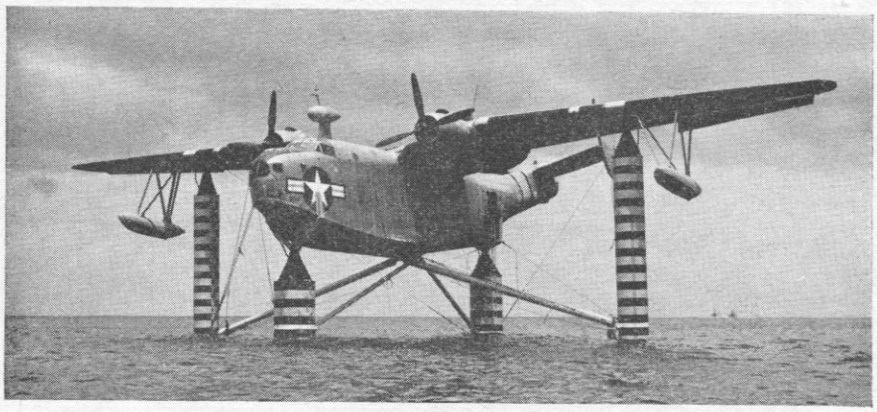
On 1st September three R.A.F. Whirlwind Mk. 10s took over internal security duties in British Guiana from an R.N. Wessex detachment, which is returning to normal fleet duties. The R.A.F. detachment —No. 1310 Transport Flight of Transport Command—is based at Atkinson Field, near Georgetown, and is under the operational control of the Garrison Commander, British Forces, British Guiana.

Royal Navy Phantoms

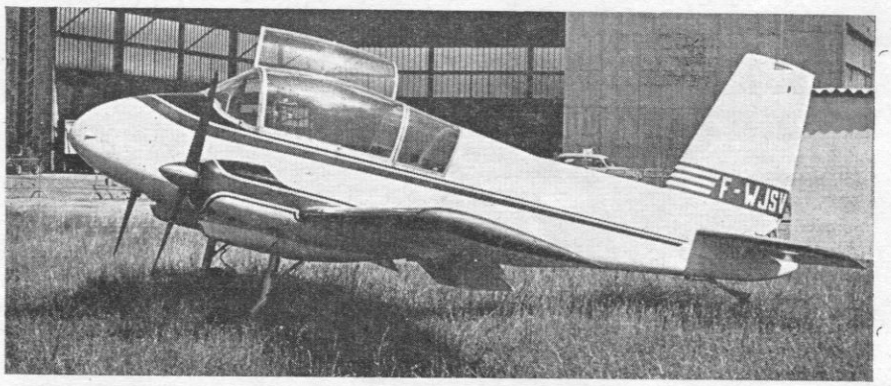
Mr. Julian Amery, Minister of Aviation, has confirmed in the Commons that an order has been placed for the re-engining of two McDonnell Phantom IIs with Rolls-Royce Speys, to enable detailed evaluation of the aircraft to be carried out for the Fleet Air Arm. It is understood that the R.N. Phantom order may now be for as many as 130 aircraft.

Belgian A.F. additions

Twelve Lockheed TF-104G Starfighter two-seat trainers have been ordered for the Belgian Air Force; the first three are to be delivered this year. Nos. 349 and 350 Squadrons of No. 1 Wing are fully operational on F-104Gs (see August issue), and other aircraft are now being delivered to No. 10 Wing.



A U.S. Navy PBM-5 Mariner fitted with vertical floats designed by General Dynamics/Convair to provide a stable ASW platform in rough sea



Designed by Sud test-pilot Jean Dabos, the Dabos JD-24P d'Artagnan prototype is powered by two 105-h.p. Potez 4Es and seats four. Cruising speed is 146 m.p.h. and range, with reserves, 620 miles

DC-8F "Alfred Nobel", the 100th Douglas PH-DCS delivered to K.L.M.

NEWS IN BRIEF

Four U.S.A.F. Lockheed C-130E Hercules transports of the 776th T.C. Squadron, Pope A.F.B., have been put at the disposal of President Tshombe and are now at Leopoldville in the Congo.

A film with flying sequences of the Shuttleworth Trust's Bristol F.2b Fighter D8096 is to be made at Graveley airfield; ground staff will wear W.W.I uniforms.

Hawker Siddeley are buying redundant Belgian A.F. Hunters for overhaul, modification, and resale to other customers; Portugal may be one (see July issue, page 216).

The Queen's Flight, based at R.A.F. Benson, has received its second Hawker Siddeley Andover CC.2. Four more CC.2s, for V.I.P. duties, are to be delivered to the R.A.F.

The Army Air Corps has formed a new wing, No. 2 Wing, at Middle Wallop. It will control all A.A.C. units in the U.K., Mediterranean, and No. 24 Recce. Flight in British Guiana.

Two Canberra PR.7s of No. 58 Squadron, R.A.F. Wyton, are making a photographic survey of British Guiana, flying from Piarco Airport, Trinidad.

Scandinavian Airlines System, S.A.S., have ordered four more Caravelle IIIs, bringing their fleet up to eighteen. Caravelle sales now total 185.

Northrop-Norair have projected a VTOL strike-reconnaissance aircraft based on their F-5 fighter but with additional lift engines.

South African registered aircraft topped 1,000 for the first time in July. Current figures are: single-engined, 773; twin-engined, 99; multi-engined, 28; ultra-lights, 26; helicopters, 25; gliders 55—total, 1,006.

No. 228 Squadron, R.A.F. Coastal Command's northern air-sea rescue unit, with Whirlwind HAR.10s, has been renumbered No. 202 Squadron (see September issue, page 291).

Canada's National Aviation Museum has acquired a Bellanca Pacemaker seaplane and a Spitfire Mk.IX.

The Fokker F.28 Fellowship jet airliner is to be marketed in the Western Hemisphere by the Republic Aviation Corpn.