

An AN-2 skiplane seen at Mirny, Antarctica, loading supplies from the Russian polar expedition's flagship "Ob."



First Details of a
Sturdy Russian Worker

ANTONOV AN-2

THE considerable demand for simple, rugged aircraft—of the type exemplified by the D.H.C.-2 Beaver—to operate under extremely variable conditions with an assortment of payloads, is reflected in the design of a Russian biplane—the AN-2.

Its designer, O. Antonov, made his name in the U.S.S.R. during the early 1930s with his sailplane and cargo-gliders, and his A-9 and A-10 single- and two-seat high performance sailplanes are at present widely used by Russian gliding clubs.

The first powered aircraft designed by Antonov was the SCH-1 which appeared at the beginning of 1950 and was intended mainly for agricultural work. (SCH-1 in fact, stands for Sjelsko-Chozjajstwjenny-1, a rough translation of which is "for agricultural and domestic purposes.") His second aircraft design, AN-2, followed shortly afterwards and proved to be an outstanding success for which he was awarded a Stalin Prize of 100,000 roubles.

The AN-2 biplane is suitable for operations in under-developed areas, where only improvised airstrips, or even unprepared ground, such as clearings in woods or country roads, are available. Testing has been carried out in arctic and tropical conditions. Now in large-scale production, the aircraft is replacing Po-2s which are being retired after nearly 30 years of continuous service. Several versions of the AN-2 are in use by Aeroflot for communications, transporting cargo, photographic air survey and agricultural purposes. Extensive military use of the aircraft is made for paratroop training, as well as, to a lesser extent, liaison and V.I.P. transport work. There are also rescue and ambulance variants.

Its crew consists of a pilot and navigator and accommodation is provided for 8-12 passengers or, in military guise, for 12-14 paratroopers.

Of all-metal construction, both wings and tailplane are of rectangular planform with rounded tips. The upper wings are fitted with slots, and both wings have dihedral. The fuselage is of stressed skin construction of basically circular section, tapering to an oval section forward of the integral fin. The tailplane is mounted above the slipstream and is supported from the fuselage

by two struts. Access to the cargo stowage space between the mainplanes is via wide cargo doors on the port side, and the cabin is provided with eight porthole-style windows with an additional window in one door. The crew compartment is placed well forward of the wings to give good visibility at high angles of attack on the landing approach. A non-retractable undercarriage (skis or floats can be interchanged if required) gives a large ground clearance, and soft shock absorbers enable safe three-point landings, with open slots, to be made. A fixed tailwheel is fitted.

Alternative powerplants are the seven cylinder air-cooled single-row radial ASz-21 producing 750 b.h.p. at 2,300 r.p.m. for take-off (max continuous cruising rating 690 b.h.p.), or the ASz-62 JR 1000 b.h.p. engine, both of which were designed by Shvetsov. Both units drive a peculiar crescent-shaped four-bladed variable-pitch airscrew.

The AN-2 is equipped for all weather and night flying—the cockpit and cabin are lit and heated, flares are carried, and for night landings two "searchlights" are built into the leading edge of the lower mainplane. Fully duplicated controls are also provided. An aerial may be seen to stretch between two short masts, one immediately aft of the cockpit, the other in front of the fin.

Various special equipment is carried depending on the duties on which the aircraft is engaged—for geodetic survey either two A.F.A.-33/50 or an A.F.A.-33/75 and an A.F.A.-18/21 camera fitted with two semi-automatic range-finders are mounted in the fuselage. The power supply is provided from the standard D.C. system through a rotary converter. For geophysical prospecting the plane carries Geiger-Müller counters and magnetic field strength meters with associated electronic locating equipment. Other equipment consists of a radio-sonde, altimeter, two compasses—a master compass A4 and course indicator K1-11—and an ambient air thermometer.

The agricultural version is equipped with 200 Imp. gal capacity tanks for spraying liquid fertilizers; an M-600 pump driven off the D.C. supply, and a spraying manifold with nozzles. It is also frequently fitted with a small portable band-conveyor which cuts down the loading time of mineral fertilizers from ten minutes to less than three. For the passenger and liaison version the seats are easily detachable, thus increasing the utilization of space when carrying mixed cargoes. A special self-propelled crane has been designed for this version in order to speed up the cargo loading time to three or four minutes instead of about 20-30.

The AN-2 has established a record for group parachute jumping, when a group of six jumped from 24,547ft, and set up an "international maximum ceiling record" of 36,893ft.

Antonov's latest design is a twin-turboprop high-wing transport, seen at the Tushino display on June 26.

Dimensions: Span, 46ft 9in; length, 37ft 1in; height, 15ft 5in.

Alternative Version: Span, 54ft 1in; length, 35ft 5in.

Weight Loaded: About 8,818 lb (alternative versions, 11,023 lb); useful load, 3,086 lb.

Performance: Max speed, 153.3 m.p.h.; max speed at 6,889ft, 136.7 m.p.h.; cruising speed, 90.7-111.8 m.p.h.; min. speed, under 43 m.p.h.; fuel for six hours of flight is carried; range, 671-745 miles.

