Business and Touring Aircraft . . .

model is the 47J Ranger, which is the first four-seat utility helicopter to go on to the American market. The pilot is seated centrally in front of a bench seat for three, and the latter can be removed to permit the installation of stretchers. Alternatively, the passenger seat can be folded back to leave a clear space for up to 650 lb of freight and an electrically powered hoist can be fitted on the port side for loading or rescue work.

Earlier Bell helicopters were Franklin-powered, but the 47J has a Lycoming flat-six engine de-rated from 250 to 220 h.p. Other features introduced with this model are an all-metal rotor of 37ft 2in diameter, and numerous executive or special-purpose accessories (including a "plush" interior, new pontoon floats and a long-range fuel system). The 47J went into production at the end of 1956 and the first batch of 15 was delivered the following month. The rate of production has increased steadily throughout the current year.

The basic model 47G, which is licence-produced in Italy by the Agusta company and by the Kawasaki company in Japan, has a bench seat for three and is powered by a 200 h.p. vertically-mounted Franklin. With a useful load of 915 lb, the basic G model sells for $41,500 and is therefore the cheapest mass-produced helicopter on the market. A development of this aircraft which went into production last year is the 47G-2, powered with the Lycoming VO-435 (the same engine as the Ranger) de-rated to 200 h.p. Although the useful load has been reduced slightly to 886 lb the flight performance is very considerably improved and the ceiling, at 15,700ft, is almost double that of the original G. The price is $44,500. For $5,000 more one can purchase the 47H-1, named Bellairus, which is a *de luxe* version—somewhat similar in appearance to the larger 47J—powered by the smaller Franklin engine.

Overall Bell production of commercial helicopters is greater than that of any other manufacturer in the world. A total of 84 commercial Bells were delivered in 1955, over 120 in 1956 (including 75 47G-2s) and the current year's production will be still greater.

Bell Helicopter Corporation, Ft. Worth, Texas.

Camair

480 Originally developed to meet the parent company's own business needs, the Camair 480 has proved so successful that a considerable number have been sold to outside buyers. Similar in configuration to the Twin Navion (and based largely on that aircraft) the 480 is a four-seater powered by two Continental flat-six engines. A distinguishing feature is the use of circular-section wing-tip tanks which add a total of 58 Imp. gal to the internal capacity of 32.5 gal.

Camair Division of Cameron Iron Works, Inc., Galveston, Texas.

Cessna

620 Larger than any other Cessna product, the four-engined Model 620 is truly an airliner in miniature, embodying virtually all the refinements found in the largest long-range transports. Since 1954 a self-contained team of some hundred engineers has been engaged in its development; the prototype flew fourteen months ago and production deliveries are scheduled to begin in the first quarter of 1958.

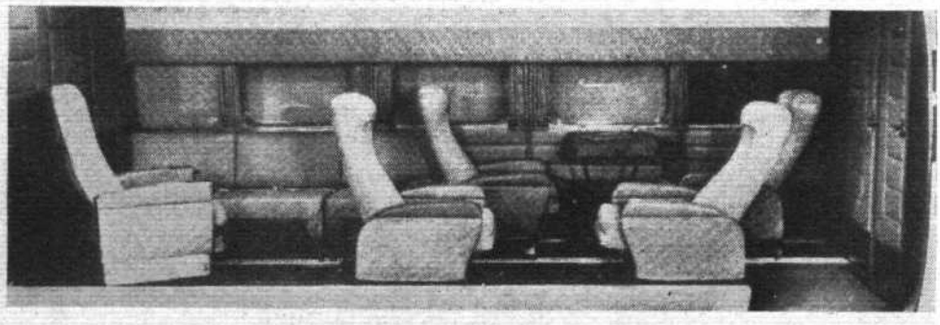
Cessna 180 floatplane (Continental O-470K)

Seat tracks stressed to 10 g run the length of the cabin, which is 13ft 3in long and has a constant section 68in wide and 72in high. Behind the rear baggage compartment is an AiResearch gas-turbine set for cabin-conditioning and pressurization (it also provides electrical power on the ground); at 18,000ft the cabin interior can be maintained at 8,000ft equivalent. The rear baggage bay has a capacity of 500 lb, and a toilet is fitted on the left-hand side of the fuselage adjacent to the main entrance aft of the wing. The latter door is equipped with air-stairs and has multiple latches so designed that the door cannot be opened when the cabin is pressurized. The standard interior has five sleeper-type seats and a folding table; another typical layout specifies eleven passengers, and in all versions provision is made for a crew of two in the airliner-type flight deck.

The four Continental flat-six engines are installed in special low-drag cowlings with dual exhaust-augmenters. Nacelle skins and firewalls are of titanium and the propellers are three-blade feathering units of 93in diameter. A total of 445 Imp. gal of fuel is contained in a four-tank system between the wing spars, extending from the inner engines to the streamlined tanks on the wing tips.

The main units of the tricycle undercarriage retract inwards hydraulically; the main wheels have 32 × 8.8 tyres inflated to 70 lb/sq in and Goodyear single-disc brakes. Slotted flaps are fitted to the one-piece wing and the whole structure is stressed for gust loads exceeding 40ft/sec (Cessna claim that the aircraft can be "flown through frontal activity using normal transport practice"). Electronic equipment is contained in a compartment behind the flight deck; provision can be made for all standard airline radio and navigational equipment, as well as for weather radar and for autopilot servos on all three axes. A 50 amp, 24 V generator is mounted on each of the four engines and on the auxiliary gas-turbine in the fuselage.

Flight testing is now almost complete. The aircraft has flown to above 24,000ft, encountered temperatures of −30 deg F and moderate icing conditions. With three engines at METO power and one outboard engine cut, rudder trim can counteract yaw down to 118 knots with the pilot's feet on the floor; in the landing configuration no pilot effort is necessary to avoid yaw or rolling tendencies before the pitching moment occurs at 78 knots I.A.S. A production line is to be established within 90 days and the first delivery (no orders have



Cessna Model 620 (four Continental GSO-526-A); above, schematic view of Model 620 interior.