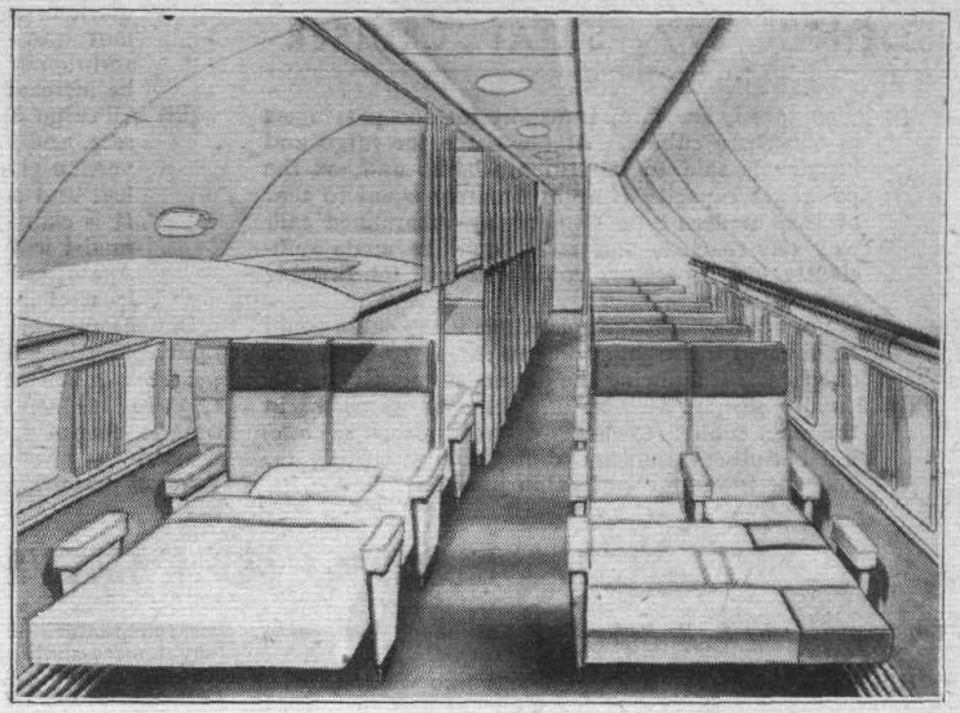
BOEING 377 STRATOCRUISER

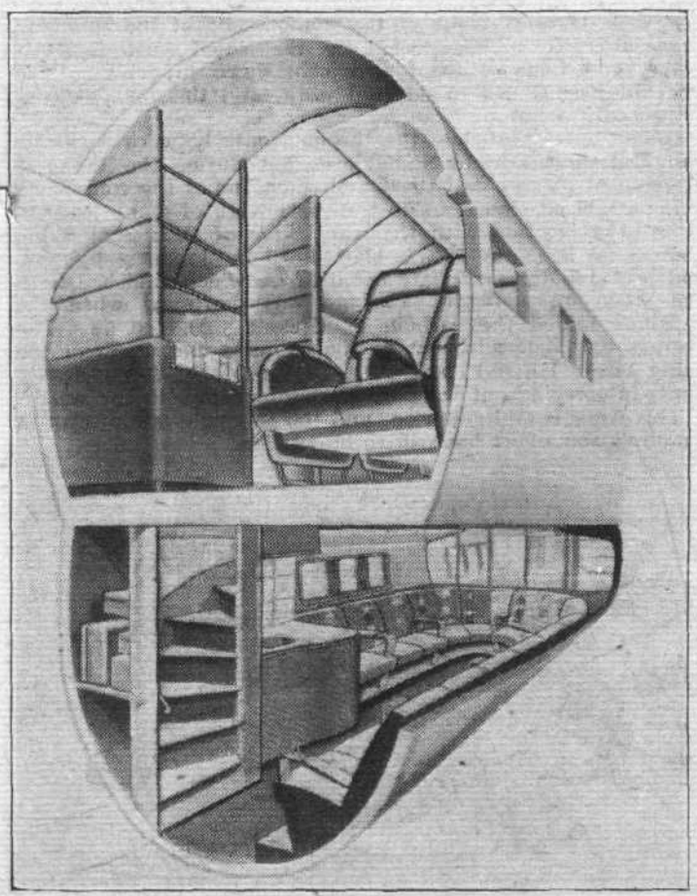
must repeat: in the face of the sort of competition of which the new Stratocruiser gives evidence, we cannot afford to rest on our laurels. There is no such thing as loyalty in commercial warfare—a bitter lesson which, seemingly, many people have yet to learn.

The new Boeing machine is a direct development of the Superfortress, having the same wings, tail unit, and landing gear, but, following the Avro precedent, has an entirely different fuselage which is 12ft. longer and of more than double the volume of the B-29's. Many outstanding claims are made for the aircraft, and presumably, justification for the operative figures advanced has been given by actual test—it is to be hoped that such is the case, as a great deal can be evolved by judicious use of a slide-rule and a little wishful thinking.

Nevertheless, the direct operating cost is quoted as being 1 cent (0.557d.) per passenger/mile for ranges of the 3,000-mile order. This passenger/mile cost is an almost ridiculously low figure, and we must assume that by the phrase "direct operating cost" Boeings mean the bare running cost without regard for the cost of maintenance, crew salaries, nor any of the other multifarious charges consonant with the operation of commercial aircraft. However, no matter whether the figure *is* but the bare running cost, it is still a very low one and, furthermore, one that would appear difficult to match, let alone beat.



The upper berths in the main cabin are, during the day, apparently stowed behind arcuate segments of the ceiling. At left can be seen how lower berths are made up on the specially arranged seats.



A spiral staircase joins the cocktail bar—observation lounge with the main cabin on the upper deck. Overall fuselage depth is 15ft. 9½in.

On top of this, the Stratocruiser is claimed to have a normal cruising speed of 340 m.p.h. with a maximum of 400 m.p.h., and an operating range (with "abundant" fuel reserves) of 3,500 miles. This would allow non-stop flight between New York and London or New York and Los Angeles without difficulty, and at a speed faster than the economical cruising speed of a Mosquito!

The performance is made possible, according to the makers, by virtue of the Boeing 177 low-drag wing and other aerodynamic advancements already proven on the Superfortress. Engines are said to be of 2,800 rated horsepower with 3,500 h.p. for take-off, and although mention is not made of their make, one may hazard a guess that on the Boeing precedent of the Fortress, Clipper, Stratoliner and Superfortress, they will be the new 18-cylinder units recently announced by Wright. Flight on three engines only is claimed to be possible at 20,000ft.

Pressurised, Two-deck Fuselage

As the machine is intended for operation at altitudes up to 30,000ft., the fuselage, except for the lower rear cargo compartment, is pressurised to a value equivalent to atmospheric pressure (but not temperature) at 8,000ft. For descent, regardless of the aircraft's rate of descent, the cabins' pressure is increased at a slow, measured rate in order to maintain passenger comfort.

Precedent for the two-deck fuselage arrangement is given in the Curtiss-Wright 20 model, but Boeings have gone rather further—as, of course, the size of their aircraft allows them—and utilise both decks for passenger accommodation, the floor which spans the inter-section of two eccentric circles which make the fuselage cross-section providing a strong lateral tie against internal pressure. Pressure difference between 8,000 and 30,000ft. is no less than 6½ lb./sq. in., which, when acting over the entire area of the fuselage surface, gives a total of a good many tons, and there is no doubt that the tie provided by the floor of the upper deck is a very valuable stressing quantity. The lower section has a diameter the same as that of the B-29, whilst the upper section is somewhat larger with a diameter of 11ft.

Boeings claim that the two-deck layout, by allowing three cabins, permits unusual flexibility in arranging the aircraft to meet various operational conditions. Three alternatives are listed:—