

American Newsletter

and free-lance operators carried (exclusive of mail) over 14,500,000 ton-miles of freight, which is some 174,000,000 t.m. per annum. All this has been done despite the fact that this type of operation is in its infancy. No special aircraft are available. The best methods of cargo-handling are still to be worked out. The customers still have to be educated to send their products by air. Even the operators themselves, without properly trained personnel, proper ramps, suitable off-loading points and trucking tie-ins, are working through an experimental period which has already sent some of the smaller companies into bankruptcy. There have been accidents to both aircraft and to cargoes; perishable goods have gone bad (but not as often as you might think) and some of the all-weather equipment of the smaller non-scheduled lines has been anything but adequate. Yet the figures go on rising, and even if there are more flying accidents this winter, it will hardly affect the shippers of air freight, for the past winter shows that they are unaffected by such accidents. Developments up to the moment, therefore, indicate that what we need are aircraft specifically designed for the job, much better handling facilities, much better trained personnel and, through more experience, a better "cargo know-how." These will enable costs to be lowered with consequent increase in freight traffic. And if this can be done in an area of good ground facilities, think what can be done where surface transportation is bad!

So far as aircraft design is concerned, there seem to be only three new machines, either flying or in design, which have the purely commercial freight operator in mind. The Bristol Wayfarer, the Northrop Pioneer and the, as yet unbuilt, Curtiss CW-32. For comparison the published figures for these two latter aircraft are as follows:—

<i>Northrop Pioneer (Flying)</i>	<i>Curtiss CW-32 (Design only)</i>
A.U.W.—27,500 lb	106,450 lb
Weight capacity—7,500 lb	34,200 lb
Cubic capacity—1,640 cu ft	4,800 cu ft
Operating range—300 miles	1,300 miles
Block speed—150 m.p.h.	248 m.p.h.

Whether the Pioneer will go into production and whether the CW-32 will ever be built is something that remains to be seen. Both companies say they will not proceed until they get orders—a wise decision if the immediate bank balance is consulted—but I doubt its wisdom in the long run. As I am not a financier I naturally subscribe to the school of thought which believes that if an aircraft is built and it is good, then it will sell. But you can't sell a new type—particularly a new type for a semi-tried operation—off the drawing board. (And that is where they have fallen down over here on the feeder-line aircraft. They wouldn't

build without orders, therefore there were no orders, therefore there are no feeder-line transports. But the demand quite obviously exists!)

The basic design of an all-cargo aircraft is also something which has to be carefully considered. Admittedly at this stage of the game we only know half the story, and there will be a lot of mistakes made, but from what we do know the following requirements seem to be necessary:—

The ideal thing would be to have a completely removable box fuselage, after the nature of that produced by Miles. One cargo operator went so far as to tell me that he didn't think freight carrying by air would really pay until that type of body—fuselage if you like—was available. In any case, ease of loading and unloading is of paramount importance, and this includes size and position of the door, its height above the ground, the height of the compartment, the method of segregating the load for the various stops *en route*, and the method of tying it down. Up to the moment, rope nets with steel tie-down rings seem to be the most satisfactory for securing the packages. Obviously an aircraft with a wide c.g. range is necessary, but the weight and balance requirements will always be a major problem. The floor should be strong, suitable for at least 200 lb per square foot, and smooth enough to be able to slide heavy goods about. Other points that would have to be taken care of in design would be ventilation, heating, pressurization, and refrigeration, although some experience in refrigeration here indicates that the pre-freezing of many of the foodstuffs, and the cold at high altitude, does eliminate the necessity for the latter requirement. (But what happens in the summer if the aircraft is grounded at, say, Phoenix, Arizona, for maintenance trouble when it has perishable goods on board, I tremble to think!)

As to the specification for aircraft performance I doubt if there is yet sufficient information to say exactly what is needed. But for certain types of overseas operation, a rapid take-off and slow landing speed will be necessary at the expense of high speed, and also a very rugged construction; an ideal that both the Wayfarer and Pioneer have tried for. For long-range domestic, trans-ocean and similar operations I would think that, as for the passenger transport, high utilization (and this must be obtained by rapid loading and unloading as well as high speed) would be the answer. I feel sure that a manufacturer who makes a suitable aircraft, and an operator who runs it, will not only make money but will do a considerable service to the country and the world. Moreover, the cargo class of aircraft may be the last and lingering hope for the retention of the reciprocating engine, and we may yet see the aircraft equivalent of Kipling's tramp-steamer wallowing along at 25,000 feet at a mere 300 m.p.h. while turbo-jet liners whistle past it!

THE STRATOJET FLIES

THE first large high-speed military aircraft to have a swept-back wing and tail surfaces, the Boeing XB-47, or Stratojet, to give it the manufacturer's registered name, made its first flight from Boeing Field, Seattle, on December 17th. Piloted

by Robert Robbins, this six-jet bomber remained airborne for 52 minutes, during which time preliminary checks were made of "control approaches to stalling speed, unsymmetrical power conditions, operation of mechanical equipment, and general flight characteristics." All were declared to be satisfactory.

After take-off, and a preliminary control check, Robbins, and his co-pilot Scott Osler, climbed to 15,000ft over the Cascade Mountains, heading east, throttled the General Electric turbo jets and continued to climb to 16,000 feet. Having made further checks they made four "practice landings" at various speeds while over Eastern Washington, and came in to Moses Lake airfield, where continued tests will be conducted.

The XB-47 was designed to carry over ten tons of bombs and has a designed gross weight of 125,000 lb.



Though in normal flight condition the XB-47 is extremely clean, it appears unusually dirty with "everything down"