THE CURTISS "CARRIER PIGEON"

A New Machine Built Specially for Overnight Air Mail Service

Although the U.S. Transcontinental Air Mail Service, especially with the night flying section, has proved to be extraordinarily successful, not only as regards the operation of the service itself, but also on account of the increasing patronage by the public of this very much speedier method of delivering mails, the Post Office Department now finds the need for larger, more efficient and safer machines than those at present in use — converted war-type D.H. biplanes. The latter, it must be admitted, have nevertheless given excellent results during the four or five years the U.S. Air Mail Service has been in operation, in spite of the fact that the design of these machines is over eight years old.

With this demand in view, therefore, the Curtiss Aeroplane and Motor Co., of Garden City, N.Y., has designed and produced what is claimed to be the first machine in America specially adapted for air mail work. This machine, which is called the "Carrier Pigeon," will carry half a ton of mail at a decreased cost and an increased speed, twice the load carried by the present machines. Having a cruising speed of over 100 m.p.h., it will make the trip between New York and Chicago with but one intermediate stop.

The "Carrier Pigeon" is a two-bay tractor fuselage biplane having an exceptionally deep body. Its high speed is about 120 m.p.h., and it will climb at the rate of more than 1,000 ft. per minute, its service ceiling being over 18,000 ft., thus enabling it to surmount with ease high mountain ranges. At the same time, it will land at less than 50 m.p.h. Carrying 117 gals. of fuel, it is capable of flying 800 miles non-stop. Fully loaded, it weighs 24 tons, of which a little less than a ton may be termed useful load—consisting of 1,000 lbs. of mail, 700 lbs. of fuel, with an allowance of well over 200 lbs. for pilot, parachute and other gear.

A considerable amount of thought and study has been spent in the production of this machine, including conferences with mail service officials and pilots, wind tunnel tests, weight calculations, detailed stress analysis, static lists and work on final choice of detail design. In the design of the "Carrier Pigeon," three important qualities were kept in mind—strength, serviceability, and ease of maintenance, all but also every detail fitting and bolt. This is also true, of course, of all other parts of the structure. "Sidewalk" panels of ample size have been provided on the wings for use in working on the machine and in handling the mail. All movable parts, such as aileron hinges, control joint connections, etc., are provided with bronze pins of ample size to guard against rusting or excessive wear. All interplane and tail struts are made adjustable to assist in the proper line-up of the ship.

The tail surfaces have the same general shape and are similar in construction to the wings. All control surfaces are of such a size as to insure adequate control at all speeds. The factors of safety in the tail, owing to the deep tail surface, are unusually high, being in some cases over three times the ultimate required. The rudder, elevators and ailerons are identical, being interchangeable one with the other, reducing the number of spares to a minimum. The right and the left stabiliser are interchangeable, as are the ribs in both the in and


of which, it would seem, have been realised in the finished product.

The wings of the "Carrier Pigeon" are of wood and steel construction fabric covered. The upper and the lower wings are so designed that they are interchangeable, no centre wing section being required. The wing spars are of solid routed spruce, with no glued joins to deteriorate. The ribs are of Warren true design giving a tested strength well over the maximum required in the machine. The factors of safety of the wing structure average 25 per cent. over that required in the design. Not only have the main structural members of the wings been carefully analysed for strength, of welded steel tubing, using a Warren truss construction dispensing with the usual wires, which require periodic adjustment. The mail compartment has been located on the centre of gravity of the aeroplane insuring proper balance at any mail load from 50 lb. to 1,000 lb. The mail compartment is accessible from the side as well as from the top by means of hinged doors of such size as to admit very bulky packages. Loading and unloading of mail has been facilitated to a high degree. In addition to the water-tight mail compartment a private luggage compartment has been provided for the pilot's personal use. It is readily accessible from the ground.