FLIGHT
THE AIRCRAFT ENGINEER & AIRSHIPS

THE LOENING CABIN AMPHIBIAN

IN our issue for December 22, 1927, we published a detailed description, with illustrations and general arrangement drawings, of the Loening OL-8 amphibian, a successful U.S. Service machine of somewhat original design produced by Grover Loening—one of the pioneer designers of America. This week we are able to give some particulars of an interesting development of this machine for commercial purposes—we believe the first serious effort by the Loening Aeronautical Corp. of New York at a non-service type.

The Loening Cabin Amphibian, with 425 h.p. Pratt and Whitney "Wasp" engine, is developed directly from the standard service OL-8 type referred to above, the only material change being the modification for the cabin at the rear of the wings, seating four to six passengers and including a small lavatory. This cabin is fitted up with swivel armchairs, electric lights, Triplex windows, baggage compartments, magazine and buffet racks, and smoking equipment, in a character equal to that obtaining in the finest motor car or motor boat.

One of the most interesting features of the cabin arrangement is that, owing to the widening out back of the pilot's cockpit, there is obtained a direct forward visibility for the passengers despite the fact that the 'plane is of the normal tractor biplane type. This cabin is over 6 ft. long by 4 ft. wide, and has a 60-in. head room, thus affording ample space in which to walk about. It is beautifully upholstered in natural saddle leather trimming, with buff cloth and buff carpet, suggesting the interior of a high-class club car wit extreme simplicity and refinement, and yet with no wilfu waste in weight or sacrifice of easy access for serviceabilit

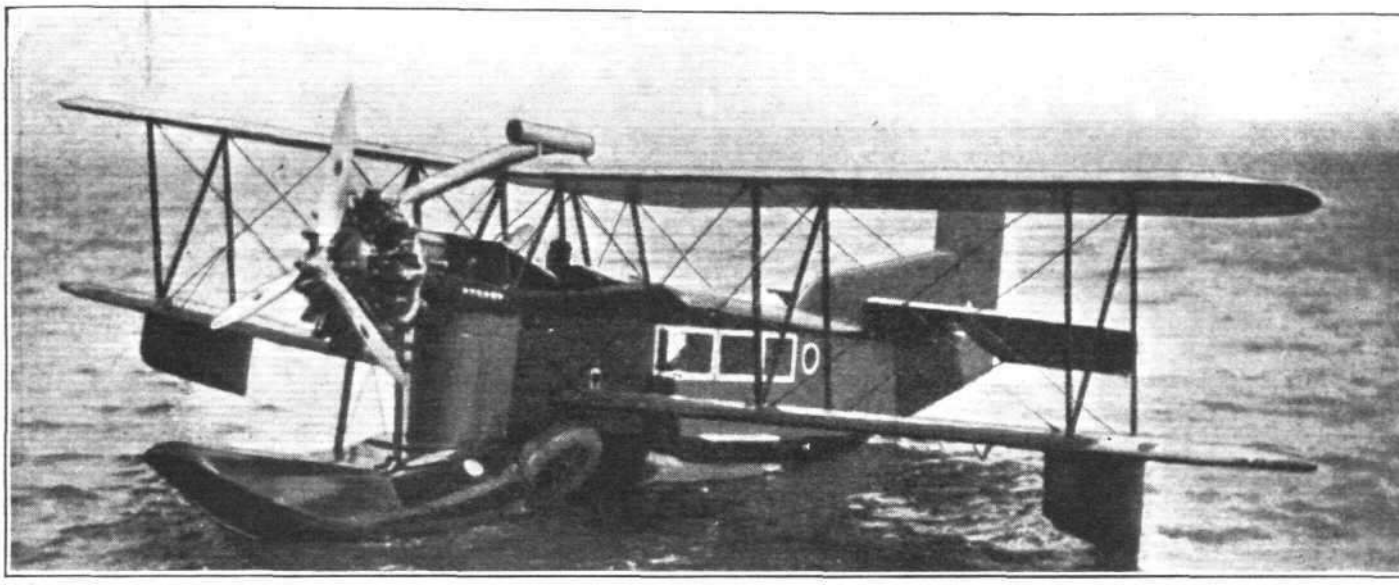
The Pratt and Whitney "Wasp" engine, mounted at th nose with exactly the same installation as the OL-8, drives 9-ft. three-bladed standard steel airscrew, and is installe with all of the latest equipment, such as automatic fire extin guisher, oil strainer, electric inertia starter, and generato

The silencer employed on this machine is another item equipment of great importance. A very large size manifol giving ample expansion space for the gases, collects th exhaust and carries it over the top wing, where it is delivere to the Venturi type muffler, which has been specially develope by the Loening engineers. It consists of a large sing expansion and whirling chamber instead of the smaller on on each side, which have been experimented with heretofor

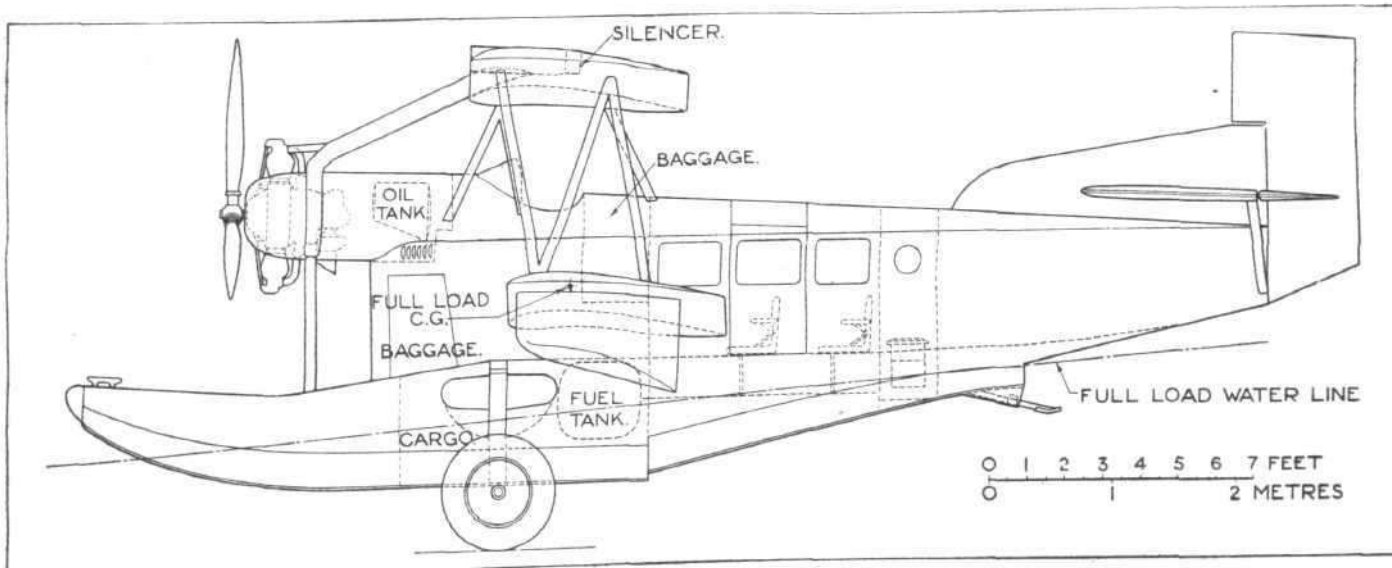
The pilot's cockpit, located immediately behind the engi and in front of the lower wings, provides particularly goo visibility for landing and operating on the water, and situated in a handy way for all servicing operations, such fuelling-up, anchoring, mooring, etc.

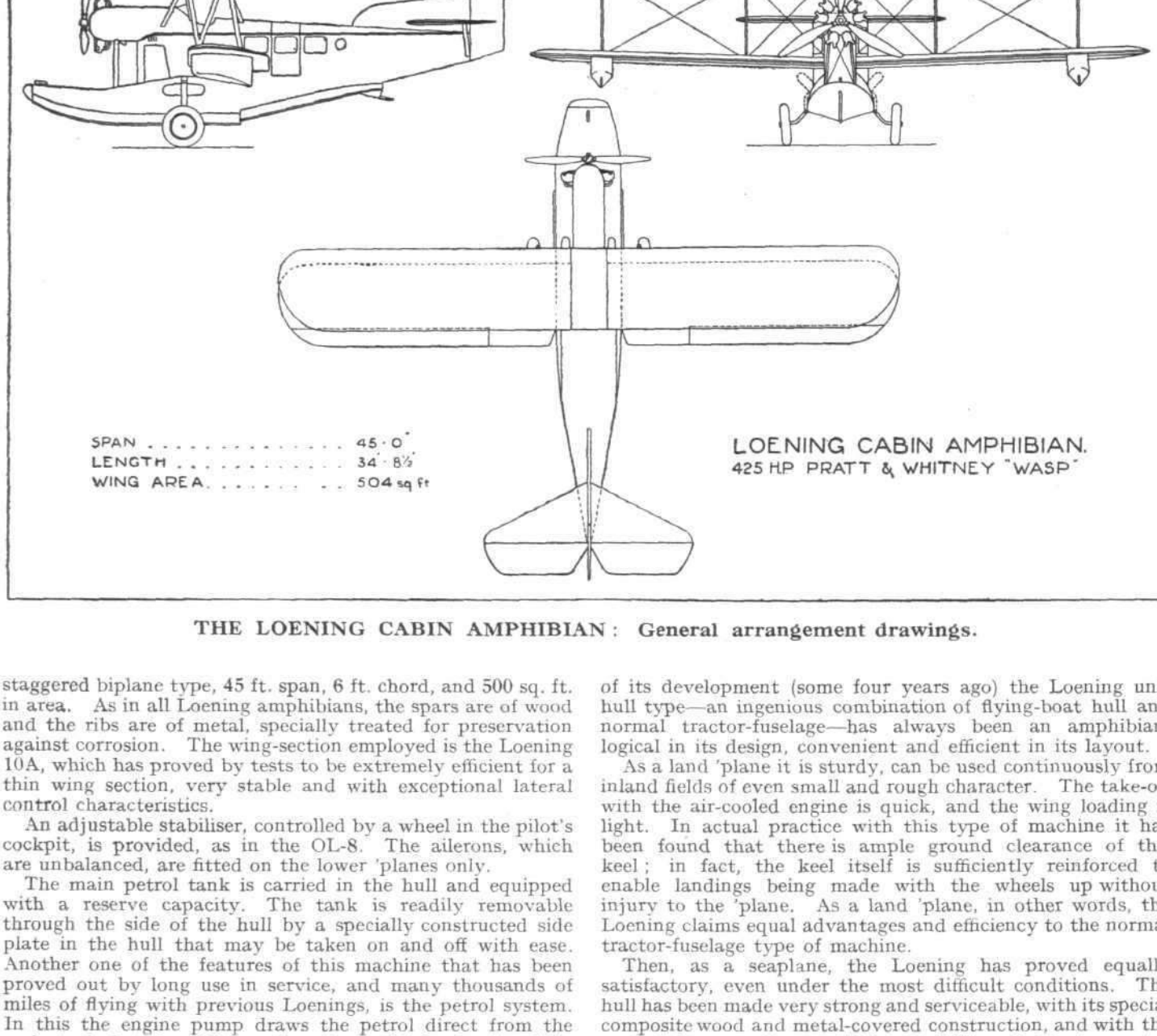
Just behind the pilot's seat is a window which may opened and thus permit of direct communication with t cabin during flight, although the pilot's compartment following what is now accepted as the best practice—is ma entirely independent of the cabin.

The wing structure of this cabin machine is of norm



THE LOENING CABIN AMPHIBIAN: Three-quarter front view of the machine on the water. It is th commercial development of the Loening OL-8.





THE LOENING CABIN AMPHIBIAN: General arrangement drawings.

staggered biplane type, 45 ft. span, 6 ft. chord, and 500 sq. ft. in area. As in all Loening amphibians, the spars are of wood and the ribs are of metal, specially treated for preservation against corrosion. The wing-section employed is the Loening 10A, which has proved by tests to be extremely efficient for a thin wing section, very stable and with exceptional lateral control characteristics.

An adjustable stabiliser, controlled by a wheel in the pilot's cockpit, is provided, as in the OL-8. The ailerons, which are unbalanced, are fitted on the lower 'planes only.

The main petrol tank is carried in the hull and equipped with a reserve capacity. The tank is readily removable through the side of the hull by a specially constructed side plate in the hull that may be taken on and off with ease. Another one of the features of this machine that has been proved out by long use in service, and many thousands of miles of flying with previous Loenings, is the petrol system. In this the engine pump draws the petrol direct from the main tank, but, in addition, there is provided a hand wobble pump readily operated by the pilot which can be used in case of emergency. No gravity tank is used, and no complications introduced into the system, as it has been found that this dual petrol pump system is by far the most reliable, the easiest to maintain, and the most foolproof. A hydrostatic petrol gauge is provided on the dashboard.

The landing gear is equipped with large 36-in. wheels, and 8-in. tyres, which, for a 'plane of this light weight, gives ample excess oversize for operation in the muddiest of fields. Wheel brakes may be mounted, if desired, although the action of the resistance of the hull itself in landing has been found to slow up the run of the machine so as to permit landings to be made in very small fields. The operation of this landing gear and its design is exactly the same as has been developed—with considerable success—in the OL-8 and other models.

Similarly, the tail skid is a simple, sturdy construction that has gone through extensive service development, and consists of a heavy steel tube pivoted at the front, with rubber disc shock absorber unit at the centre and housed in a reinforced shell, which, itself, can take the entire tail load at the rear. It may be pointed out that the tail skid forms one of the most difficult problems in an amphibian, but this has been very satisfactorily solved and tested out in the new Loening amphibians.

As regards other constructional details of the Loening Cabin Amphibian, we would refer our readers to our descrip-

of its development (some four years ago) the Loening un hull type—an ingenious combination of flying-boat hull an normal tractor-fuselage—has always been an amphibia logical in its design, convenient and efficient in its layout.

As a land 'plane it is sturdy, can be used continuously fro inland fields of even small and rough character. The take-o with the air-cooled engine is quick, and the wing loading light. In actual practice with this type of machine it ha been found that there is ample ground clearance of th keel; in fact, the keel itself is sufficiently reinforced t enable landings being made with the wheels up withou injury to the 'plane. As a land 'plane, in other words, th Loening claims equal advantages and efficiency to the norma tractor-fuselage type of machine.

Then, as a seaplane, the Loening has proved equall satisfactory, even under the most difficult conditions. Th hull has been made very strong and serviceable, with its speci composite wood and metal-covered construction, and with th watertight nose there is little possibility of shipping wate in breaking seas, as in the pusher-type flying-boat. Th airscrew in front rises well clear of the water when unde way, and is far ahead of the spray, as well as being protecte by the hull beneath it.

This tractor arrangement has been found to be, in actua practice, a desirable one in every way, comparing ver favourably with pusher-type flying-boats. Mooring th Loening prevents little difficulty; upon coming to mooring the forward position of the pilot enables him t pick up a line, either from his seat or from the lower win and with the airscrew still running this line is recessed to side chock. As soon as the engine is stopped this line ca if desired, be transferred to the bow. With the line at th side chocks the pilot is able to start his engine and warm up before casting off, and can cast off the line or raise h anchor without difficulty with the engine running.

Passengers can be taken aboard at the bow—with th airscrew at rest—and have access to the cabin with steps tha are provided, in quite as easy a manner as any other type machine.

As regards airworthiness, the Loening amphibian is stab in rough air, handy and normal on all controls, and eas to land and taxi. Its performance is 120 m.p.h. high spee 14,000 ft. ceiling, and 50 m.p.h. landing speed, with a complet fuel load of 140 gals. of petrol and 12 gals. of oil, pilot an marine equipment and 1,200 lbs. of pay load. This is cons derably higher than is generally carried on "Wasp" engine