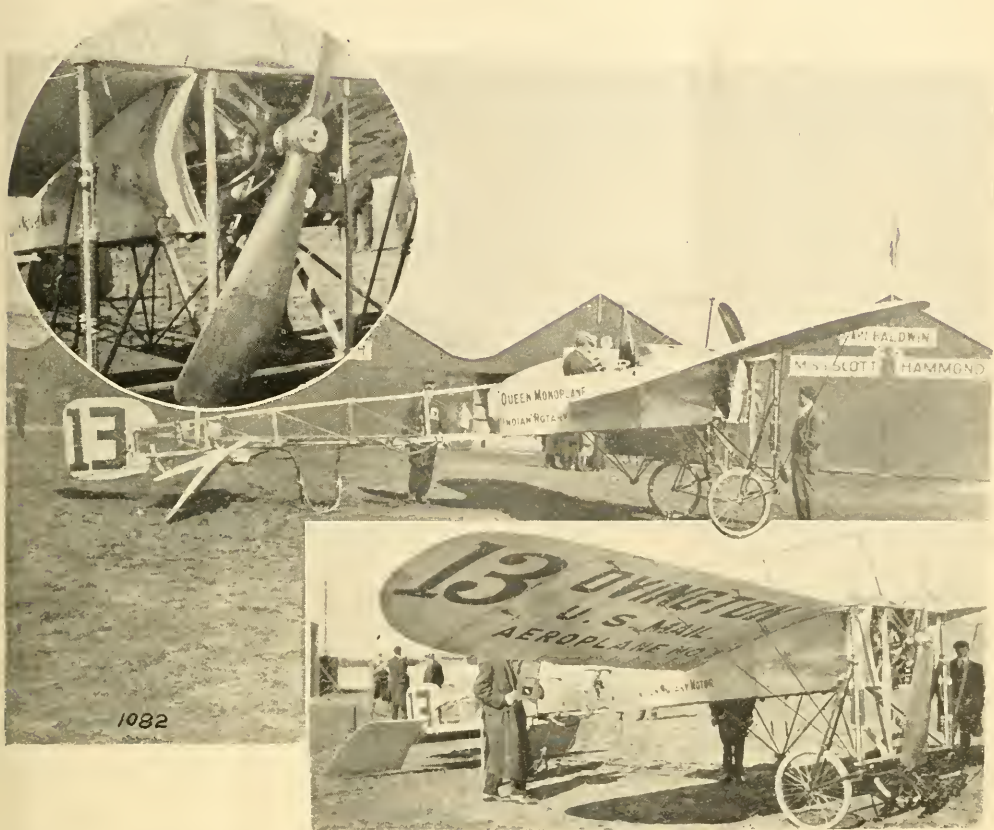


THE QUEEN MONOPLANE



The Ovington-Queen 'Plane

SOME modifications and improvements have been made upon the Queen monoplanes which have been put in readiness for Earle L. Ovington's coast-to-coast flight, which he announces he will definitely attempt. These changes are only in the size and arrangement of gasoline and oil tanks, the use of a door in the aluminum sheeting at the forward end of the fuselage for ready access to the motor, substitution of bronze for aluminum castings in the running gear, reinforcements in the framing, and spacers on the wheel forks.

The new Indian rotary motor is employed in each of the three machines which comprise Ovington's "stable." The standard Queen machines have heretofore been fitted with Anzani and Gnome engines.

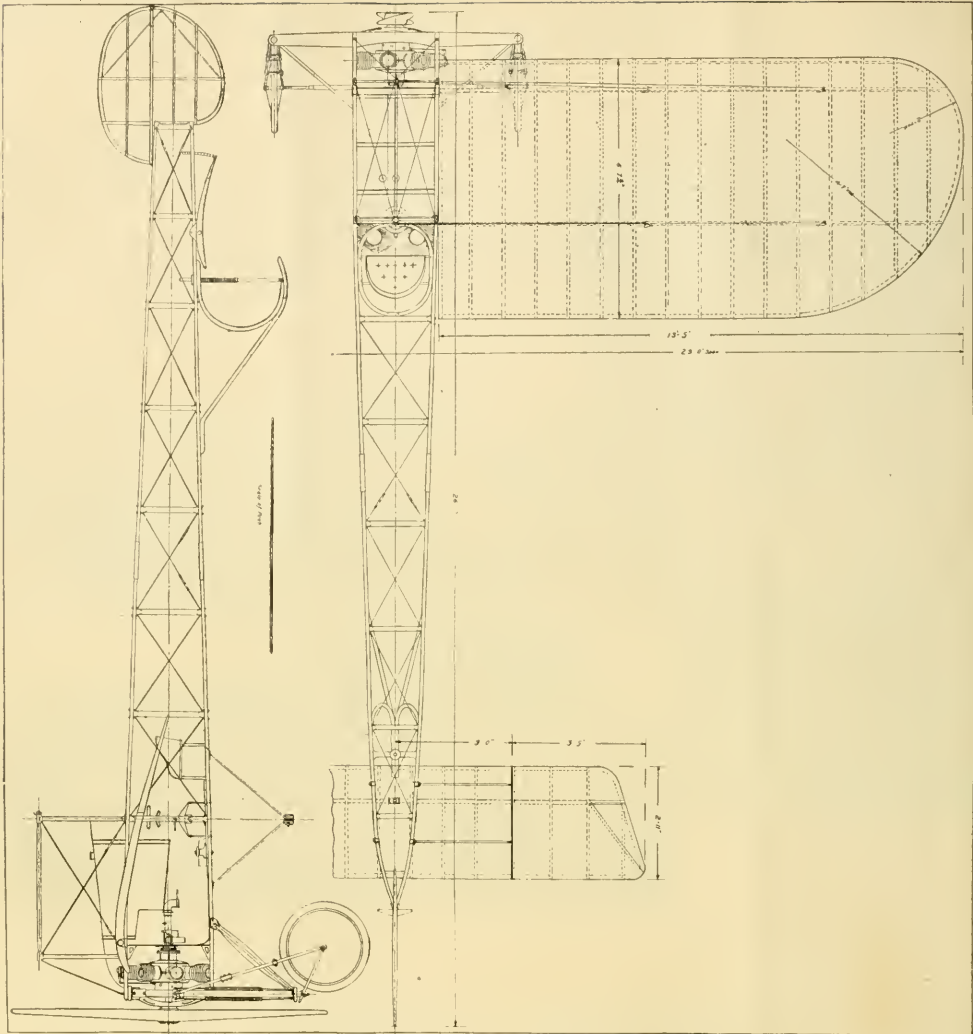
While the Queen machines have the general dimensions about the same as Bleriot monoplanes, and to the casual observer appear the same, there are many differences which can be considered as improvements. Eighty-five men are being employed by this company in the factory and on the field. Arthur Stone and Ignace Semeniouk are flying the machines as instructors and in exhibitions and meets. The plant at the old amusement park of Fort George, New York City, is fully equipped with machine and woodworking tools and apparatus of modern type, bought especially for the work in hand. The buildings which are of extremely large size were peculiarly adapted to the company's needs.

The main assembling building, for instance, was formerly used as a skating rink. Considerable outside work has been taken in. J. A. D. McCurdy had his six biplanes built there and others have had their repairing done at the place.

The Crane concern, builders of the Dixie engines, are now at work getting out a special engine to be installed in future Queens to take the place of those of foreign manufacture.

A new type biplane has just been put out and has been at the Long Island fields for some days awaiting trial, a long design made by James V. Martin. The main cell is of Farman type, with a 100 horsepower, 14 cylinder engine mounted in front of the main cell. Instead of outriggers to the tail of the usual type a "fuselage" or body of a monoplane extends back to the tail, which comprises a fixed surface, rudder and a pair of elevators. The aviator sits in this body just under the rear edge of the upper plane of the main cell.

Following is a description of the Queen monoplane, with the slight alterations made for Ovington's contemplated trip. Ovington has already become familiar with the Queen machine, using it, with the Indian motor, in his mail carrying at the Nassau meet. Here he gave the new American motor the hardest kind of work which his experience has taught him an engine is ever called upon to do, with the most satisfactory results.



Scale Drawing Queen Monoplane.

Supporting Planks. The wings are of extra strong construction, the ribs being spaced closer together than common in Bleriot's. There is a truss bracing of wire between the ribs to stiffen the wing. Aluminum sheeting is not used for an entering edge, a half-round wood strip being employed instead. The Goodyear cloth goes on both sides and is held taut by strips of rattan along the ribs. There are two extra stays to the underside of each wing, one extra cable for warping and one extra metal strip. The ends of the front main lateral spars butt against a steel tube and held rigid by two wide straps, brazed to the steel tube, which bolt on each side of the spar. These short tubes then slip in the tube of larger diameter which runs across the end of the fuselage. The angle of incidence can be altered by raising the rear of the wings, by means of an adjustable socket in which the rear main lateral spar fits. The curve is $3\frac{1}{4}$ inches deep, 2 feet from the front edge. The wings are $2\frac{1}{4}$ inches thick at the greatest thickness. The angle of incidence is 6 degrees.

In the rear is a fixed surface, practically the same as that of the Bleriot, 2 inches thick.

Fuselage. This is of ash and elm throughout, of usual Bleriot type, with similar manner of connecting struts to spars.

Running Gear. Considerable changes in details have been made here from its Bleriot prototype. The "sill," or lower horizontal member of the chassis framing, has been made heavier. Rubber band shock absorbers have been replaced by steel coil springs. A brace has been introduced, running from each end of the sill diagonally to the fuselage. A novel skid is used to support the tail.

Controls. The elevator is similar to that of a Bleriot. There are two vertical levers operating the elevator instead of one, mounted on the axis of same. Roebling Wire cables run from each of these to the steering column, so that in addition to having a double chance on the wires there is doubled safety in the two levers. The stability is controlled by warping cables in the usual

manner. Instead of a bell-shaped metal affair from which the control cables go down to the cross-piece, brackets are used for warping and for elevating. The rudder is operated by the usual foot-yoke, this is reinforced by steel plates on both sides. It also is guided on a track. The warping cables are doubled for safety.

Power Plant. This consists of a 7 cylinder rotary Indian motor, rated at 50 horsepower. As with the well-known French rotary engine of similar appearance the gasoline is taken in through the hollow crankshaft. To avoid the chance of setting fire to the gasoline which, as in the Gnome, drips continually from the carburettor when the gas is turned on and the engine is not running, the floor of the fuselage in this part of the machine is made gasoline tight. Directly under the carburettor the floor is belled down, with a hole in the depression. Under this hole is an apron which shoots any surplus gasoline on the ground. The cause of this dripping of gasoline is the non-use of a float in the carburettor. The aluminum sheeting on the side of the fuselage at the forward end has a door, which can quickly be opened to make any adjustments to the carburettor, piping, etc., from the ground, without climbing into the machine and squeezing in under the hood or windshield. A Bosch magneto furnishes ignition. The Indian motor has F & S ball bearings, the same make as used in the Gnome, but has three additional. There are but three engines made today with ball bearing connecting rods: Indian, Gnome and the Merkel motor-cycle engine, all of which use these bearings. The propeller used is a Gibson, 8'-3" diameter.

A Hopkins electric revolution counter shows on a dial at all times the speed of the engine.

Gas and air levers are on steering column, magneto spark is fixed, a cut-out is provided, also.

Weight. The weight including 240 lbs. of gas and oil, is 740 lbs. without aviator. Five gallons of oil and gas combined are used an hour and a speed of 60 miles an hour is obtained.

Thirteen gallons of castor oil is carried, and 27 gallons of gas, which is gravity fed. The aspect ratio is 4.5 approximately.

The Queen monoplanes sell for \$2,900 with Anzani 3-cylinder motor, and \$5,500 with the Gnome engine. The Ovington-Queen, with Indian, may be had for \$4,500.

At the last moment when Ovington expected to start for the Pacific Coast, it was found necessary to lighten the machine and to put on the skid from his own Eleriot in place of the standard Queen skid. The front half of the fuselage is of hickory while the rear half is ash. Some of the struts are maple. The large fuel and oil tanks shown in the scale drawing have had to be replaced, also. With a Chauviere propeller of 2.5 meters diam. by 1.6 m. pitch, a test was made at the Indian factory at 1150 revolutions and the standing thrust obtained was 352 lbs. In the air the engine turns another hundred revolutions. Forty-five actual horsepower, brake, was shown. The cylinders are a shade larger than those of the Gnome, being $4\frac{3}{8}$ bore by $4\frac{1}{8}$ inch stroke.

The dashboard carries a barograph, revolution counter and automobile clock while at the right hand side on the fuselage is an inclinometer to show the angle of ascent or descent, near the oil sights. A stout leather strap to go around the aviator is fastened to the seat.

QUEEN-MARTIN BIPLANE.

"The Queen Company's hundred horsepower Martin biplane" is the official title of the newest plane to make its appearance at the Nassau field. It has been built by the Queen Aeroplane Co., to designs of James V. Martin, formerly manager of the Harvard Aeronautical Society and instructor in a British flying school.

The first week in October it had its first try-outs, with entire success, piloted by Mr. Martin. A novelty has been introduced in the stabilizing. The ailerons, which are hinged to the rear beam of the upper plane act in opposite directions according to the system inaugurated by Curtiss, are hooked up with the elevator flaps which operate in conjunction, though not to the same degree. These flaps have but a sixth of the range of the ailerons proper. At the same time, also, they act as true elevators by forward or backward motion of the gate control of Burgess type. The aileron cables which run to the control have a certain amount of slack to permit the ailerons to take a stream-line position when not operated to avoid unequal resistance.

Looking at the picture, the operating cable runs from the top of the gate control to a pulley between the two outer rear struts up



Queen Martin Biplane.