RIPPLES

by "SKEG"

ALTHOUGH the big Soriano racing engine, which holds the world's record, has been in existence for three years, and was first described in these pages as long ago as October, 1930, very few outboard enthusiasts in this country have yet had an opportunity to examine it in detail. Some few of us have had the good fortune to see these engines in action on Lake Garda, the Seine, or elsewhere, and have heard their high-pitched whine as they sent their all-metal hulls pitching and jumping over the ruffled waters in those real he-man, unlimited races—great sport! Now that Lord Forbes has got one over here it is more than likely that we shall, all of us, be treated to some spectacular speeding at Poole this summer.

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I fancy that this particular unit, which at the moment is being carefully rebuilt at Brooklands, will be used here only for an attempt on the world's X Class record. Being supercharged it is barred from all dinghy races, so I expect Lord Forbes will concentrate on the foreign meetings, such as Herblay and Venice. He was to have gone to America to race in the big Florida meeting next March, but his studies at Cambridge will prevent his getting away in time.

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A Work of Art

It was during one of my periodical visits to the famous concrete saucer, where the speed kings continually "dice with death," as Tommy Wisdom would say, that I suggested that readers might like to see a good drawing of this interesting unit. Lord Forbes, who has got "Chick" Fowler as his tuner, readily agreed, and the result of our artist's labours is reproduced opposite. And when it is realised that this drawing was made from "bits" in various stages of assembly, I think it will be agreed that the result is good.

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Being in the non-standard class, this engine is undergoing some pretty drastic modifications at the deft hands of Chick. That lad has not been a racing car tuner and mechanic with Earl Howe, Sir Malcolm Campbell, and others for nothing. I have served in more than one team with him, and consider him to be the smartest little mechanic in the racing game. But, like all true artists, he is inclined to be temperamental.

DATES FOR YOUR DIARY

June 9th.—"The Yachting World" International Challenge Trophy Race, 100 nautical miles, Poole. Dinghies, all classes (R.M.Y.C.).
,, 15th and 16th.—British International Meeting.
,, 30th.—Howe Trophy (24 miles) Dinghies, all classes, Fareham (London M.B.C.).

July 4th, 5th and 7th.—Crusader Trophy, R.M.Y.C. Cadet Class, Poole.
,, 7th.—"The Motor Boat Trophy." Dinghies, all classes, Race (20 miles), Poole (R.M.Y.C.).
,, 21st.—Roy Fedden Trophy Race (40 miles), Bristol. Dinghies, all classes (Bristol Y.C.).
,, 27th-28th.—Second Class International Meeting, Rochester.
,, 28th.—Dinghy Race (25 miles), all classes, Portsmouth Harbour (Portsmouth and Southsea M.B.C.).

Aug. 14th and 16th.—Miss Empire Cup, R.M.Y.C. Cadet Class, Poole.
,, 23rd and 25th.—Brecknock Trophy, R.M.Y.C. Cadet Class, Poole.
,, 25th.—Duchess of York's Trophy. Dinghies, all classes (20 miles), Poole (R.M.Y.C.).

Sept. 15th.—Marquis d'Ivanrey Trophy (24 miles), Dinghies, all classes, Fareham (London M.B.C.).
,, 18th, 20th and 22nd.—Duke of York's Trophy, R.M.Y.C. Cadet Class, Poole.
,, 22nd.—"The Star Trophy." Dinghies, all classes, Race (20 miles), Poole (R.M.Y.C.).

EXCLUSIVE DETAILS *of a* FAMOUS OUTBOARD ENGINE *and* SOME COMMENTS THEREON

But to come back to the Soriano, which is the pet hobby of the Marquis d'Ivanrey, those readers interested in design will possibly like to have some of the technical details. Here they are, anyway. The unit has six cylinders, with a bore and stroke of 55.5 mm. × 68 mm. (987 c.c.), the stated power with a Roots-type blower being 85 b.h.p. at 5,000 r.p.m., and some 95 b.h.p. at six "thou." The four-stroke principle is, of course, adopted, single overhead camshafts with two valves per cylinder being employed.

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Choice of Metals

The production of the crank case and cylinders in one piece is a pretty example of the founders' art. As in the case of the pistons, an aluminium alloy is employed for lightness. Steel liners are used. The connecting-rods are of chrome nickel steel machined all over, while nitrate steel is chosen for the crankshaft. To some, such details as these must make rather heavy reading—rather like eating a solid chunk of cold suet pudding, perhaps; actually, they are very interesting.

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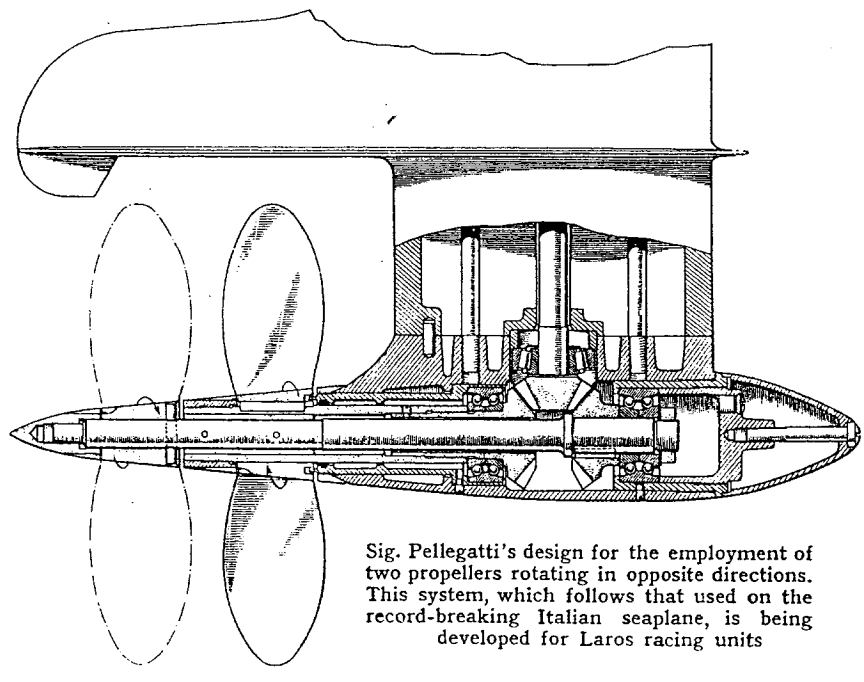
So to continue. In the original Soriano engine the blower has electron blades turning at 1.15 times the speed



Sig. Pellegatti's design for the employment of two propellers rotating in opposite directions. This system, which follows that used on the record-breaking Italian seaplane, is being developed for Laros racing units

of the crankshaft, but I fancy that this supercharger may be supplanted by one which has seen service in a 1½-litre Delage racing car. It is likely, too, that a magneto will take the place of the present coil ignition system. Yes, if any of you manage to get into that little shop by the Aero Club, you will see quite a lot of redesigning being undertaken! On the other hand you may not. It all depends on the temperamental "Chick"!

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Forced-feed lubrication is, of course, used, the main oil tank being the large, tapering bulge seen cut open just below the power head. Carburation is by Mr. Solex, cooling by H_2O—and, I was going to say, wigs by Clarkson.

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A "Prop" Problem

I find I have not yet mentioned one of the most interesting things about this Soriano engine, that being the employment of tandem propellers. In this case the streamlined underwater casing is very long—incidentally, beastly sharp at the ends. The theory of running two "props" in opposite directions is quite beyond me, so I shall have to try to get Mr. Cooper or Mr. Fowler (in alphabetical order on purpose) to expound on the subject one day. Many people argue that a single wheel should be in front of the gear box, *à la* Caille-Redhead, but you can argue the hind leg off a dog about it.

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By the courtesy of Sig. Pellegatti I am also able to give you an illustration of his design for the twin-prop Laros. Here, as in the case of the seaplane which, at the moment, holds the air record, the two are arranged close together, opposite rotation being obtained by mounting the front propeller on a sleeve, while that at the rear is fixed to the shaft in the ordinary way. Sig. Pellegatti first drew the idea on the tablecloth at tea one day during the 1931 Olympia Show, and he has gone ahead with it since, though the production of service motors has rather held up racing development. Perhaps this year we shall see something!

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Four- versus Two-strokes

Apropos the Soriano, I cannot for the life of me make out why it is that really phenomenal speeds have not been attained. We all know that the four-stroke is supposed to be infinitely "peppier" than its "two-times" brother, yet here we have a six-cylinder *supercharged* job—you might almost say the very last word in engines with the sky the limit as regards price—unable, as yet, to clock an official sixty, while America claims to have exceeded sixty-one with a straightforward 4/60 two-stroke, *unblown*, of the same capacity.

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I have also seen a team of these engines roundly beaten by an F 55 Laros in a 100 km. race at Garda—average speed in really choppy water over 44 m.p.h. Admittedly in this case the Sorianos were pushing heavy metal hulls as against the light wooden Mariella to which the Italian engine was clamped. But that would not altogether account for it, for the present Soriano official record of 59.4 m.p.h. was made with a Mariella hydroplane. Can anyone supply the answer? And does the tandem prop idea really do the job?

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A Show Down

It will be very interesting to see what speeds are attained with those new big Class X Americans which will race in Florida, also how they perform against the two Soriano teams which, I understand, are going out to represent France and Spain. The challengers will send their very best men, but they will have to meet tough opposition. I shall also be intrigued to see if Lord Forbes and the temperamental "Chick" can out-Soriano Soriano himself by way of getting the knots.

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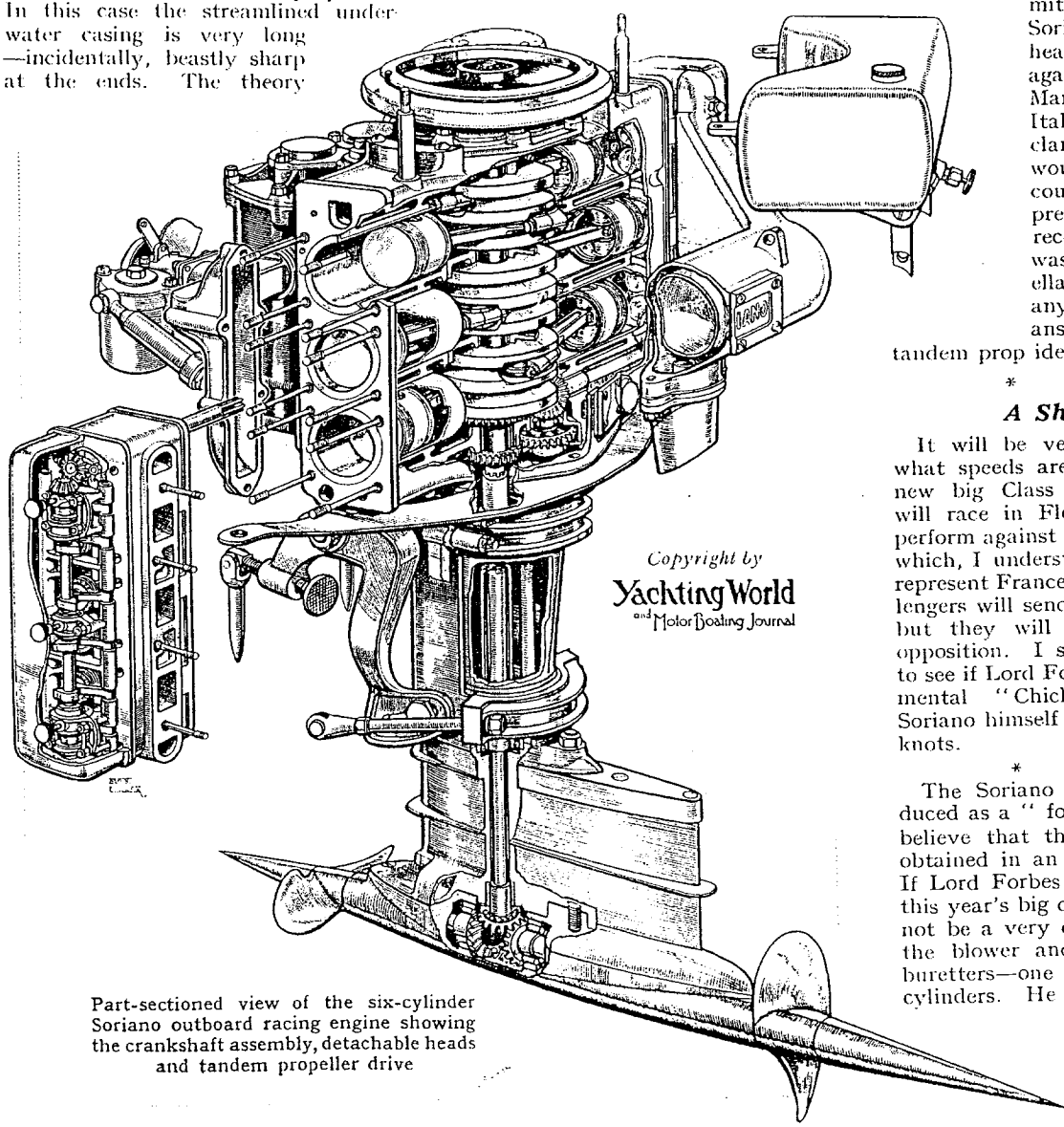
The Soriano engine was first produced as a "four" of 658 c.c., and I believe that this model can still be obtained in an unsupercharged form. If Lord Forbes wished to compete in this year's big dinghy events it should not be a very difficult job to remove the blower and substitute two carburetters—one for each bank of three cylinders. He has already done a lot by way of modification, and such an alternative would give him greater sport.



Part-sectioned view of the six-cylinder Soriano outboard racing engine showing the crankshaft assembly, detachable heads and tandem propeller drive