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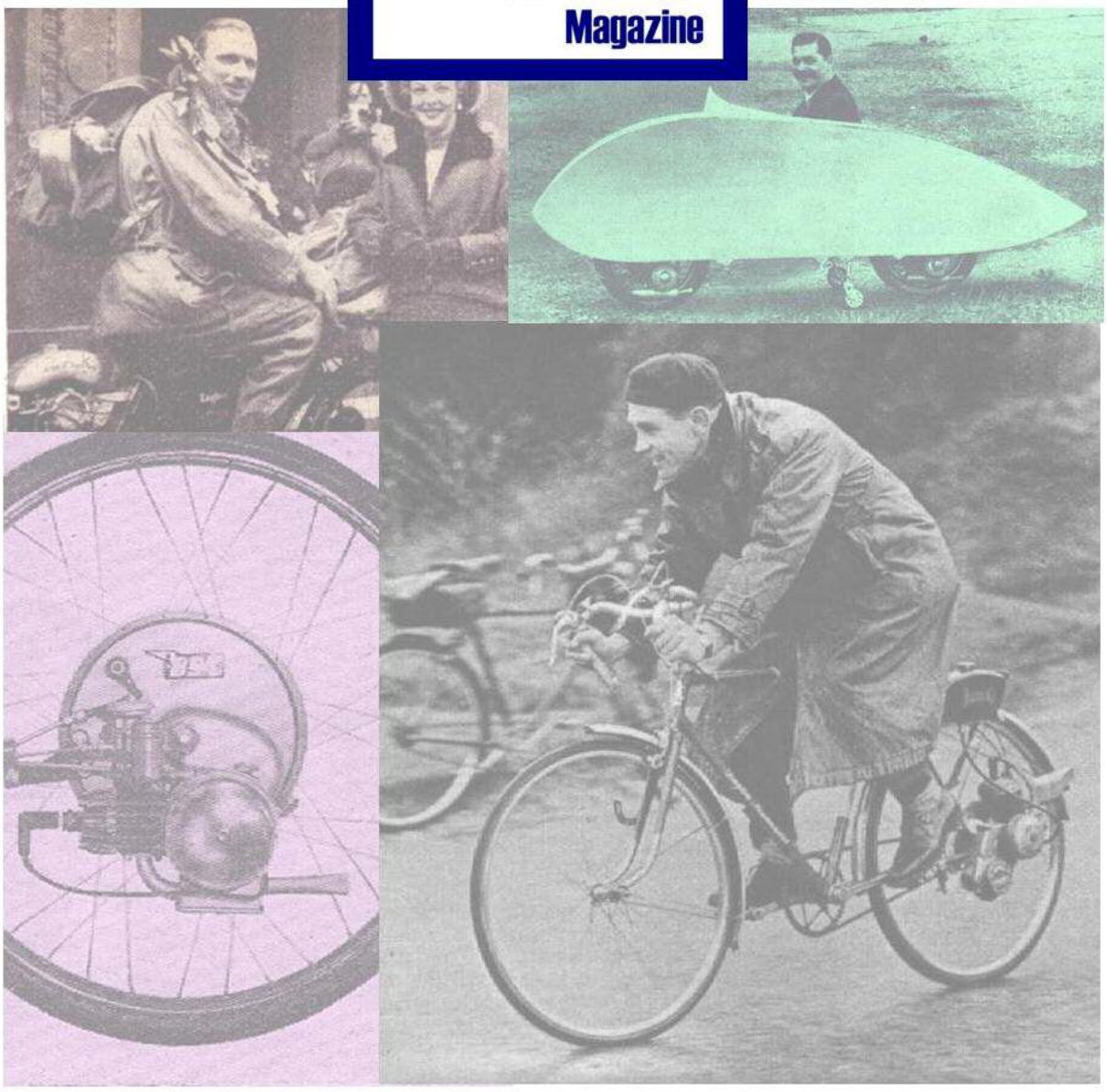

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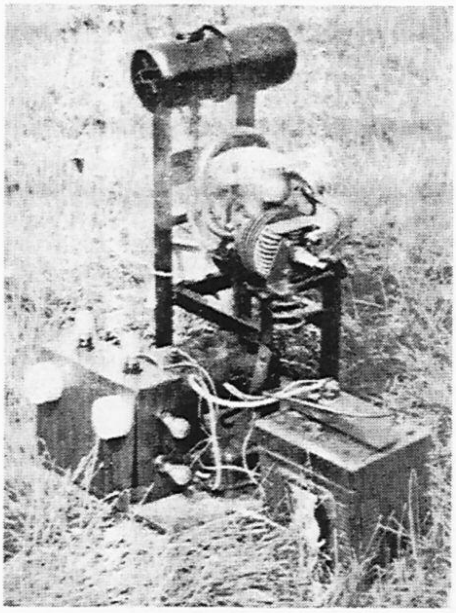
Teagle Engines

Philip Burbury tells how he became interested in the multi-purpose Teagle range of engines.



Philip Burbury's ½hp Teagle driving a Ducellier dynamo.

It was thanks to a certain Fordson Super Major tractor that I found Teagle engine serial number G12567, a 2 stroke of ½hp with a capacity of 50cc. The tractor had come into the college workshop to have the hydraulics cleaned out, due to water contamination, and to have the rear electrics re-wired.

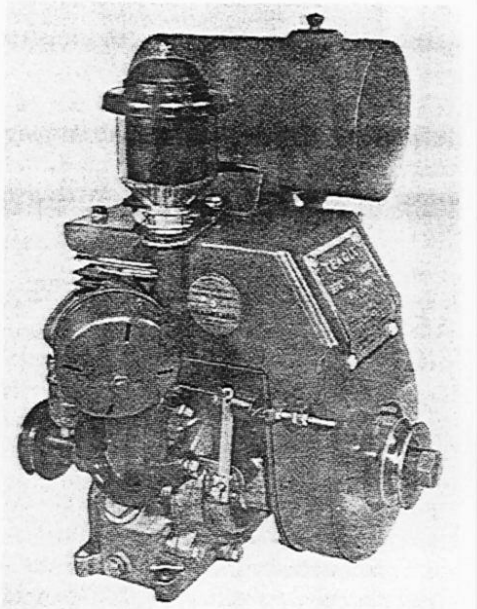
I was pottering down a lane in a nearby village when I saw the tractor again. I stopped to have a look and was soon talking with the owner, a certain lady doctor. She asked if I would look at a couple of mowers, a Victa (which now goes like a bomb!) and a Teagle Autoscythe – a kind of single wheel Allenscythe with a tiny engine on the top. The latter was in a bad way and almost beyond economical repair as it required new blades, ledger plates and knife keeps, also the engine was totally seized. I reluctantly informed the doctor of this situation to which she replied... 'well scrap them', so I asked for the engine which was then given to me.

After some heavy persuasion I managed to remove the piston from the cylinder. The bore was in fair condition with only minor scoring but the rings were beyond hope, as was the needle roller big end and small end bush. I toured around Oxford trying to find these parts but with no avail until finally a firm suggested they should contact Teagle Limited direct, which they did. I was intrigued as to the origins of the Teagle engine, after all it wasn't a 'proper make' like JAP or Villiers.

I have become very keen on this make and would dearly like to acquire a 4 stroke Teagle, a model which I have not even seen yet.

Due to the difficulty of transporting something like an autoscythe, I have used the engine to power a home-made lighting set for rallying purposes. It drives a Ducellier dynamo and a Paris Rhone regulator box. This set was rallied at Murton last year and after a bout of typical two-stroke bad tempered running, mainly due to the owner experimenting with various carburettor settings, it ran very well and caused some interest. Recently I have found another three of these engines, along with a hand-held 'strimmer' variant, all of which I am trying to acquire! I would like to thank Messrs Teagle Ltd. for their help and permission to use illustrations etc.

The Teagle powered autoscythe proved too cumbersome for rallying.



The Teagle series B2 126cc 4-stroke engine.

Next we hear from Kenneth Crago former engine designer (now retired) to W.T. Teagle Ltd.

Although now retired for quite a while, I was designer at W.T. Teagle (Machinery) Limited, Blackwater, Truro, Cornwall, at the time when we used to make petrol engines, approximately 20 to 32 years ago. Previously I was on the design staff of D. Napier & Son, Acton, London, on aero engine design.

The firm of Teagles was started by Mr W.T. Teagle who was originally a farmer. It progressed from very humble surroundings to now three factories embodying some of the most modern machine tools and equipment.

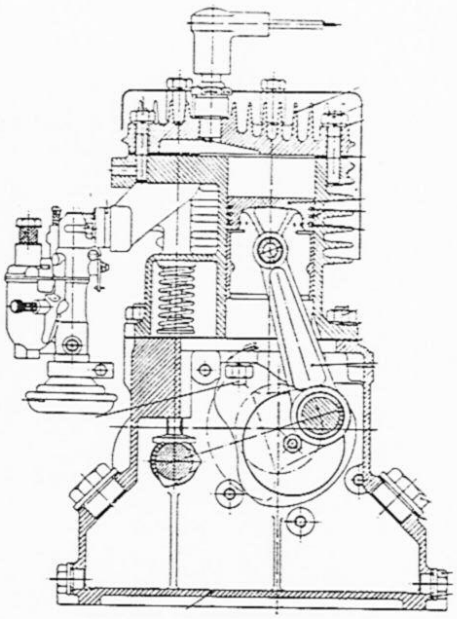
We produced two basic engines, a 2-stroke of 50cc and a 4-stroke of 126cc, both being produced due to necessity, which is the usual reason. The 50cc was designed as part of a manually carried and operated hedge cutter. The unusual feature of having the belt pulley central was for a variety of reasons, it provided the correct balance of the engine in the machine, it enabled an on/off clutch by tightening the belt and it enabled the use of an over-hung crankshaft. It also widely spaced the crankshaft bearings, a desirable factor. The over-hung crankshaft enabled the use of a case-hardened crankpin, a needle roller big end

The trade mark, 'T' EAGLE.

and a lower standard of lubrication – a necessary feature where farmers are concerned! The crankshaft was made in three parts, the mainshaft, web (a home-produced stamping) and a high nickel case hardened pin. This shaft was welded with the pin under water thus retaining its hardness.

The crankcase/cylinder, cylinder head, end cover and cowling were pressure diecast in high silicon aluminium alloy by an outside firm to our design. The manufacture of this engine was tooled up in a responsible way. For example the cylinder/crankcase unit was mounted in a machine, all machining, boring, drilling, facing etc. being carried out completely automatically and simultaneously by an unskilled operator loading and unloading the castings. They went in as a casting and came out ready to build into an engine, all in about 30 seconds. This machine was designed and partially built by us. Many thousands of engines were made, in fact the normal daily output was just over 100 engines. Although originally designed for a hedge cutter, this engine went into a motor-scythe, lawnmower, motor cultivator and a power pack on a bicycle. They were exported to most countries. This engine, like the 4-stroke, was built up to a high standard rather than down to a price.

The 4-stroke engine came about for two reasons. The application for which it was required needed an opposite hand rotation, and an engine that would work in extremely dusty conditions as well as operate all day at full throttle. The drive is half engine speed off the camshaft or full engine speed off the crankshaft, the rope starter pulley going on either position. It uses an overhung crankshaft, needle or ball bearings only, gear oil pump and flyball governor. The unique type of governor is extremely sensitive



Section of the B2 4-stroke engine.

and virtually wear free. The crankshaft and cylinder are offset to avoid piston wear due to bad conrod angle on the power stroke. When treated properly these engines have an excellent life, many being still in use.

As engine production finished approximately 25 years ago no spares are available from the manufacturer. □

Fitting New Bearings to a 1932 Petter 'M' Type

by Harry S. Davey

It all began with the purchase of a 5 hp Petter 'M' type with 'Appletop' water hopper. I had not actually seen the engine but was assured that it was in running order except that it required new bearings. Not having the time to collect the engine myself I arranged for a friend with a transport business to make the collection for me. As I had never attempted to delve into the innards of a Petter 'M' before, I decided to do a little homework and acquired David Edgington's manual on the Petter and wall chart, also a copy of a Petter Salesman's Manual was conveniently borrowed. Here then is how I tackled the job of replacing the main bearings.

I thought it best to start with the pulley side of the engine first, as the other side was more complicated with the calibrator and magneto – both which would have to be removed.

First of all I used plenty of penetrating fluid (diesel was found to be as good as anything) to loosen the rusty flywheel. While this was soaking I made a drift from a ¼" flat steel 6" long x 1" wide, and tapered a wedge end to drive between the flywheel and the retaining key. After about ¼ hour of careful tapping each side of the key it began to move. The flywheel came off very easily by rotating it on the shaft and pulling at the same time.

The grease retainer is held on with 4 studs (note the grease nipple faces the front of the engine). With the grease retainer removed and any old grease cleaned out, a seal will be found located in the front of the casting. A penknife will remove the seal quite easily. I discarded my seal as I managed to find a good substitute. The two uppermost studs that hold the grease retainer have to be removed, I used two nuts locked against each other and unscrewed the innermost one, this method enables a stud to be withdrawn. By withdrawing these studs makes the removal of the bearing retainers and lock nut easier.

The removal of the bearing looked as if it would present a problem especially as I did not have a spanner large enough. A carver type clamp proved to be the answer. Firstly, between the two nuts is a locking washer which has two tabs bent down over two flats of the nuts. The nuts are right hand thread. I used the clamp as a spanner closing over two of the flats of the nut. Providing you do not crack the tab washer when flattening it, remember to retain it for use during re-assembly. Remove the 6 nuts holding the bearing casing, and insert two ¼" Whitworth bolts into the two holes that