

24-9-95 No 2361 ✓
 29-4-95 - 2487
 29-2-95 - 8056
 13-8-94 - 2002 ✓
 8-3-94 - 653 ✓
 8-3-94 - 652 ✓
 1-3-87 - 151 ✓
 7-12-94 - 3130 ✓

Oil engine supplied
 to Penryn

No 2900 - 1 W & 1/2 Nov 1895

INDEXED
 T. 18/11

No. 2900 W of 14 Nov 1895

PROCEEDINGS OF THE MADRAS GOVERNMENT.

READ the following

From the Supt. of Works, No. I Periyar Dn. No. 135 C.E., d/5th November 1895

The report will be forwarded to the Director General of Stores India office.

The Supt. of Works, P. Project.

(H.E. No. 2901 W., d/14 November 1895)

To

The Director General of Stores,
India office, London.

Sir,

With reference to your letters Nos. S. 2184 dated 8th March and 22nd August 1894, I am directed to forward copy of a report by the Superintendent of Works Periyar Project on the oil engines supplied in compliance with this office indent No. 653 W., dated 8th March 1894.

2. A drawing of the launch in which one of the engines has been working is enclosed.

I have &c.

DESPATCHED

14 NOV. 95

W.

CHS

12.11

also difficult to

W. CURRENT No. 87

Recd. 11.11.95

Know.

*The Supt of works
No I Periyar or*

For

*The Chief Engineer
P.W.D.*

No 135 C.E.

Dated 5 November 95

Enclos 1

Oil Engine.

*Reports on the work-
ing of the -*

*Despatch with
report &
drawing of
launch.*

now under report, however, refused to
start ^{one} morning, after exactly one
month's daily use, and on examination
both cylinders were found thickly
coated with carbonaceous deposit which
had apparently had the effect of
cementing the piston rings to the
piston, preventing the former from
expanding against the walls of the
cylinder, with the consequence that
the gas leaked past the piston. The
oil used was the ordinary Russian
Kerosine (125°) and the result would
seem to indicate that the vaporization
by Messrs Vosper & Co's method is defective.

1) A drawing of the launch in which
the engine has been working is enclosed.
The boat is built on fine lines, is
used for passenger traffic only,
and travels at almost exactly
7 miles an hour.

14 The working cost of the engine
regarding

is as follows:-

14 pints of oil per hour at 1 anna

per pint for 8 hours — Rs 7-0-0

1 driver at Rs 1-4-0 per day — 4-4-0

1 steersman at Rs 1- per day — 1-4-0

9-4-0

This is rather more than the working cost of a 35 HP steam launch: it must be noted however that at Periyar fuel is cheap and kerosine oil dear, and it is probable that near any large centre the cost of the oil engine would be considerably lower than that of a steam engine of even its own power.

On the whole, and considering that kerosine is daily getting cheaper and other fuel dearer throughout India, I am of opinion that oil engines have a most promising future in this country. I consider that for ordinary purposes even now (speaking of small power engines only) their advantages outweigh their disadvantages, and

as

as these latter come to be remedied as most of them no doubt will be, one by one, this will be still more the case.

I have the honor to be,

Your most obedient servant,

S. D. Vears

Sup^t of Works

No. 1 Periyar Division

13/12/12

Oil engine

been

in

it

protectu

engines

Know.

The Supt of works
Mr I Periyar or

To

The Chief Engineer
P. W. D.

W 135 C 6

Dated 5th November/95

Enclor 1

Oil Engine.

Reports on the work.

- ing of the -

Recd: 11.11.95

Recd: 11.11.95

also difficult for the oil and hot-air
values require the nicest possible
adjustment. A special h.i.e.

to the consignees — persons comparatively
familiar with the engine — to discover
and to rectify.

Considering the inferior work-
manship, and indeed even were the
workmanship of the best, the price of
this engine is out of all proportion
to the value of actual work and
materials contained in it. I presume
however that the patent laws are
responsible for this.

On the instructions, sent with
the engine no mention is made
of protection from wind: it has
been left to us to discover that a
very moderate breeze at once
stops the engine. I consider that a
protective casing should have been
provided with the engine.

I am not aware how Messrs. Vosper
of vaporizing

also difficult for the oil and hot-air
to be kept from the engine.

therefore probably a defect common to
all small-power oil-engines; but
do not consider that it would be
difficult to devise a means for making
the preliminary turning of the fly-wheel
an operation both easier, safer, and
more effective than it is at present.
Third there is the obvious danger
of fire, which must necessarily be
greater with oil fuel than with coal
or wood, and is unavoidable. With proper
precautions this need not be set down
as a very serious drawback to these
engines in England, but it cannot
be overlooked in this country where
crews as ignorant as they are care-
less are often of necessity employed.
The foregoing defects may or may not
be peculiar to this particular engine.

8 I now proceed to the next point
which is admitted

in some minute quantities, and is
therefore

restarted almost immediately after it has been stopped (or has stopped of its own accord). This operation generally leads to a bad burn on the hand or forearm of the driver, which might be prevented were some non-conducting protection provided for the exhaust-valve thumb-screws and the surrounding pipes. The workmanship of the engine is quite disgraceful. When received, the oil tank leaked in several places and the supply and gauge cocks had to be taken off and resoldered. The oil tank which supplies the lamp leaked badly at almost every connection and had to be resoldered throughout. The air pump refused to work till removed and the valve readjusted. The asbestos joints throughout had to excessive

also difficult for the oil and hot-air valves require the nicest possible

it fit properly. The piston rings of the forward engine allowed gas to escape into the tank below and out through the bearings. Engine No. 17 arrived with 5 helical teeth broken. This was not done on the way out for the broken pieces were not inside, neither was it possible for them to have fallen out. The brasses throughout were fitted straight from the crucible without any pretence at finish. The pair of spur-wheels (of which one is on the main shaft and the other through a set of vibrating levers, regulates the exhaust and feed valves and which therefore have to be carefully set in one fixed relative position) were set in the wrong position on engine No. 17 when it arrived. This being a permanent adjustment, and is therefore

left to the consignees — persons comparatively unfamiliar with the engine — to discover and to rectify.

Considering the inferior workmanship, and indeed even were the workmanship of the best, the price of the engine is out of all proportion to the value of actual work and materials contained in it. I presume however that the patent laws are responsible for this.

On the instructions, sent with the engine no mention is made of protection from wind: it has been left to us to discover that a very moderate breeze at once stops the engine. I consider that a protective casing should have been provided with the engine.

I am not aware how Messrs. Vosper
of vaporizing

also difficult for the oil and hot-air valves require the nicest possible adjustment. A special pipe from the oil tank to the vaporizer was provided with this engine the stated object of which was to facilitate the starting. It had the contrary effect however and as long as it was used it was always a most tiresome matter to get both pistons to work. It occurred to the Workshop Superintendent to plug this pipe up, recently, since which time there has been an immense improvement and the engine generally gets fairly away in a few seconds from the time of the first explosion.

How far these difficulties in starting are peculiar to this engine, and how far common to all I have not sufficient experience of these engines to determine. The adjustment of the valves must be a delicate matter when the oil is admitted in such minute quantities, and is therefore

No. 135.08

Office of Supt. of Works
No. I Periyar Division
Periyar 5th November 1895

From

S. D. Pears Esquire,

Superintendent of Works

No. I Periyar Division

La

Periyar

Enclosure - One

The Chief Engineer

Public Works Department

Madras

Sir,

In obedience to G. O. No. 2361 of 24th

ultimo and previous orders on the same

subject - I have the honor to report

that one of the two oil engines has

now been given a fair though not

even yet altogether a sufficient trial,

and that my experience and opinion

of it are briefly as follows:-

2 In common with all oil engines

it has several obvious and important

advantages. The chief of these is its

compactness which gives a very large

addition to the storage room of

the launch it drives. The other principal

advantages

advantages are that it consumes no fuel when not actually in use and is therefore (unlike the steam engine) as cheap when intermittently as when continuously employed, and that it is capable of being started at very short notice.

In cleanliness also and in portability — the latter an important requirement in this country — it has the advantage of a steam-engine.

The disadvantages of this engine are several, and they detract very considerably from the advantages. They are less obvious than the advantages and many of them are undoubtedly remediable. First, it is exceedingly noisy. With the exhaust undiverted it is intolerably so, and even with the exhaust turned overboard or through a roof, the clatter of the working parts is very unpleasant. Second, the method of starting is clumsy, tiresome and dangerous. In this particular engine it has

been found impossible to fit a temporary handle to the fly wheel, as directed in the instructions sent with the engine; it was found that any loose handle tried generally either came out before the first explosion took place, or else failed to come out on the first explosion. A fixed handle had therefore to be resorted to which permanently revolves with the fly wheel. This obviates false starts, but a slip of the foot or the slightest want of care on the part of the man who starts the wheel renders him liable to a blow from the revolving handle, which is pretty sure to be a severe one and might well be very dangerous and even fatal. Several men have been hurt in this way both by the so-called "loose" handle and also by the fixed one.

5 In other respects the starting is also

also difficult for the oil and hot-air
values require the nicest possible
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oil tank to the vaporizer was provided
with this engine the stated object of which
was to facilitate the starting. It had
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Superintendent to plug this pipe up
recently, since which time there has
been an immense improvement and
the engine generally gets fairly away in
a few seconds from the time of the first
explosion.

How far these difficulties in starting
are peculiar to this engine, and how
far common to all I have not sufficient
experience of these engines to determine.
The adjustment of the valves must
be a delicate matter when the oil is admitted
in such minute quantities, and is
therefore

28. 10. 95 No 3150 C
28. 8. 95 2144 W
8. 8. 95 2465 C
28. 8. 92 2361 W

P. E. CURRENT No. 8165

Recd. 23.10.95

From

The Supt. Engineer
VI circle.

No. 3150 C/28 October
1895

To

The Chief Engineer
P.W.D.

To
C
You favour
of memo.

No 1094 TC

Dated 17 October 1895
Despd - 21/-

To
N
No 3890 C d 7. 11. 95

Submits for sanction
of Govt statement giving
data for calculation of
rents of buildings in the
Trichinopoly D -

There is no means in this office
of ascertaining the correct value of the rent
of the building as entered in the statement
if the Executive Engineer's valuation is
approved by Government, the rent of the
premises as arrived at by the statement
may be sanctioned.

DESPATCHED
14 NOV. 95

F. W. E. C.

No. 2902 W/14 Nov 1895

The statement is ap-
proved.

approved

Singh

S. E. VI Circle.
Examiner P. W. Accounts.

