T							
and the	M	TELEGRAPHS & TELEPHONES. UTI/POW/1#19					
A C	C.S.	Electrical Services. 1931.					
	1	No. 218 31.					
	Director Of P.	SUBJECT.					
	1931.	FURTHER EXTENSION OF ELECTRIC LIGHTING					
	Previous Paper.	SCHENE IN THE TOWN OF STANLEY IN					
	182 30.						
	MINUTES.						
25	1-2. Mirute from Hon. Director of Public Works. 7.1 July, 1931.						
		Red. i Chaye					
Į		For your consideration, filege					
		It would be convenient - Wh					
		proticity al finicity - if so med					
		of this work as possible and he					
		dine this year where he wereast					
- Allerton	Subsequent Paper.	Entricate for the confial scheme of					
No.		£ 4,200.					
		2 ! a arment count					

At he matter of egine - how

has to be considered.



8. 7. 31.

for solve 15 lights will be required for this service. While every endeavour will be made to instal these leghts without incurring further expenditure I would point out that I have already received applications amounting to bo lights, since my return, and for which provision was not made in the original estimate. It is submitted for your consideration that provision should be made in next years estimates for the further extension of the

thether highling system. The engine will be fully loaded and we are bound to receive more applications. Apart from the question of further applicants we ought in any case to obtain a new engine , alternation to quard against breakdown.

Hagon 9/7/31

Plect. i' Chaye

An 1 to undontral,

In will be able to withall the

pluse, that you do articipate the

C.S.O. No. 218/31. Q. Sheet No..... lipto, or some of them, heder the existing I cheme this year ? 2. At that do you which the cost of he allitical lyrie al allemeter ? Inlus 10. 7.31. How bolke instal these lights his year. 2. Estimated cost of inquie , reternator 240. Z s T 635-0-0 Engine & Schernator 60-0-0. Swite board 20-0 0 spare parts 2715-0 "It which must be added cost of extra woring material preightage etc. 3. Dans preparing estimates for +Hornon 10/131

Inside Minute Paper.

9.2. Schilled for information -Re perschare of a second syrie will be brought up i anjudin with he preparation of the Erlichs for 1932. me

10.7.31

Hr. D. P.O. hoted blog for Rectrica - 2 - dage FHB. 15/7/31.

please see the

Seere 18 31.

schin wordigs .

Indur.

13.7.3. P.A.1151-

3.

Minute from Electrician - in Blearge 22/8/31.

C.S.O. No. 218 21

Inside Minute Paper. Ofecial Warrant 37 31. 2. 200 sent to Treasury 25 8 31 Electrician - in - bharge. Jo Note Miller 25:8:31 Hon col See total please. Flapon 26/8/31 8.17. 20/1/51. Minute from Electrician in Sharge M. y.S. Schthel for alford. 2. Re Cost of mitallahas as well as of manifesance is chayed against theat the Hou C. S. then 2, and if repeated apperred Jog 9-2.32 on the former clout there ill be to objection to an lycero being is current is a himked amount? This 9.2.32

Electricia à Chays. A. Treasurs. Mrc H 9.2.32 Please work authorits.



9.2.32.

Her Col See Noted. Filipen 10/2/32.

P.A 37 Minute from Electrician . m. Sharge 3/3/32 5

Pet. i laye

Hon bol ske Selen. FABge De 29/3/32.

Please see : Mark in.

Julie 3

27. 3. 32.

P.A. 13/32

As. Letter of 13/4/32.

6.

C.S.O. No. 218 31. Sheet No. Inside Minute Paper. Rect. 2 Charp. Plese see al Will-draw catalogue. Julky. 24, 5.32 An Col See Sele. Catalogue withdrawen. TAByna 25/5/32 5. 5/5. despatch, NO. 39 0/14/3/32. 1. Plet - i laye Allayou 26'5 32. In Treas. Hen Theas. " + Junigor Load Gulit. " Please with : This refus of crone, to the excess i curred ones the amount pouldel i Schiets, 1831. Inthe 26.5.32

P.M.6132

8.

Einere from Electrician un Charge of 4/4/32

Elect in Claye

A.C.S. West Skh of hum . lag brianner. June 1932

Mene see



11. 7. 32. Hon Col See, Seen. Thankyon. FABryan 11/7/32.

P.P. 132.

actter from CAS. of 30/5/32.

9

Heit i Change TAByra 19/7/32 The Toessen P.R. 19/7/32

Loud Andetar. Please des will Marine 199, 24 June 10 mil 199, 24 June 10 mil 199, 20 175-173, 167-164 et 145, 140 C N.P. 152/30 attacket.

C.S.O. No. 218/31 Inside Minute Paper. Sheet No. ACS. With the sum of 14. 10 - 8 will be checked to her. Mesi ne Imporence Marg. 7.32. P.A. Jung 21. 7. 32 2ed 10 Minute for Elect. i Chapp 25" at. 1832 4.2. S. G. Schthal for y.2; siphetys. This exces is as foresen i by minch of 9.2.32. Luci. Ins

25.10.32

Electrician in that Lo uste and withdraw copy JSW. M. 18/32. 0. Jones 28/10/32. Hon Col See, Noted Tillipon 29/10/32

Myn? 31. 10. 32.

 $(\!\!\!\!\!)$

minute from Mr Sw. Butches ~/9/33

Yle Inbuitted. ! ho objection provided funds are available. a. 1/1/9/85 Hon Ind. Sec.

approved provided finds hen. 18.9.03.

Officed michorge. Electrical Dept.

10 note.

C. Jore Mal

C.S.O. No. 218/31

6 Inside Minute Paper. Sheet No..... Son bal See Noted please Butcher 19/8/53 1. 19/3 3 (12 13) Minule han Mi & Butcher \$19/33 M/6 Submitter Alere vande appear to be no objection providing the woring of the promises mucho with the requirements of the al. Joses. 25/9/32. Hon. for. lee. the conditions approved in Mentioned. mcH 25. 9. 33 Electricae Depl. 10 note. a. lo co.

How bol See. Noted please gustitele 26/9/33

P.A. p. 50 Minute from Que Electrical Dept: of 34/10/33. 14-15

Me. E. Submitted for approval.

c Jozes. Jozes. 3/11/33 Hon lol. Ja. Please veter to Hon. Derector of Public Works. If the Roberts Las to objection work may proceed. hct. Lt. XI. J.J

Hon & P.W. Referred to your accordingly. C- 10405. 4/11/33

Alon Col dec.

I have inspected the range,

and given Mr Buckher inshuctions

P.

to proceed with the work. Collects s/11/33.

C.S.O. No. 218/31

Inside Minute Paper.

(b) Minute from 0.96 Electrical Wept 7/34 O. I. C. Electrical Depr. I understand that The principle pours unice of the Electric light supply is the farderer enquie. What would be the position in the event of a break - down ? Is the other pour mine sufficient to maintain the lighting. Please Submice your recommendations bearing in mind that we must always be in a position to men a possibie break - down. the musit be in a position to manitam the electric light. hc+ ayes. 21. v. 14. Hon bal Sec_ The power units of the present electric supply are as follows. O 10 K. W alternator coupled to Petter Engine 3 20 K.C. " " Gjærdener Ergine (3) 30 KW " · (· · · · 4

Continue

She fist wit is not for enough to suffly Town lighting at any time but can be used at all times to supply Street lighting unt NOZ can be used as a single unit when the load is under 100 amperes und NO3 is used when the load is aver 100 ampleces to 150 ample when the load is above 150 anfeves both NO2+3 have to be run in familiel, Should the No3 unit breakdown during heavy load period we should have a very hand job to maintain a full service and lighting would have to be kept down to a micrian. I therefore have the honour hi recommend that estimates for larger former unto should be abtained immediately muche from moly worker suppy (17-18) Letter to CAA. 25/34 (19-20) 0. 1. C. Electrical Dept. Plense ser reds 19-20 Mit a, c. 25. 5. 14. Aton bal See Reds 198 20 noted please affice in Charge Eles Jeft

C.S.O. No. 718/31

Inside Minute Paper.

Sheet No. 6 1. lowcohondenen regarding Element power fenerators Submitted. The Continued esclusion of electric hypic in Stanley will in the hear future require the provision of mercasiv ferenating power. mc+ ag cs. 7.6. 54. The C.S. yes : please treep This watter is mind is connection in the preparation of Estimates for 1935. Jus 6.6.34 P. a. M. Z 41 Detter pan hurst Detter 4/9/34 0. 1. 2. Electrical Depr. In report please. In CH ay CS. 5.9.14

Hon. Col. Sec.

I regret very much that this complaint has been made but I do not thim. Mr Dettleff has any real room for such complaint except that I did say that I hoped to be able to wire his other premises very shortly after I gave him the estimates but a great deal of extra work has come in between and also owing to shortage of money I had to do away with extra outside labour which means that at times all members of the staff have to stop any inside work to assist in erecting poles and overhead lines as Osborne cannot manage this work on his own.

The only premises I think Mr Dettleff can refer to as being wired early are new houses and these are naturally done as soon as possible after the shell of the building is completed. Furthermore I unfortunately underestimated my requirements of stores and consequently had to send a further telegram for material to catch this sailing of the Lafonia. Should this material be onboard I hope to do Mr Dettleff premises and others as soon as possible after the arrival of the Lafonia.

GwButcher 0.1. e. Eler) 48. 10/9/34

Petitien to M: Honry Detitieff of 13. 9. 34. 23 - 23. O. I. C. Electrical Dept. To note MCH ag cl. Hon bol See poted please quis. Jon bol See poted flease quis.

Letter from CJAA 3/8/34 1/8/34

14/9/34 24-40

C.S.O. No. 215/31.

Inside Minute Paper.

Sheet No.....? O. I. C. Electrical Dept. For your early consideration and recommendations flease. This matter win require to be considered very carefully having In sumie light. after having considered the Estimates for may be able to modify for columnate of \$3500. MCH and Non bal see I have been over all. -flans & estimates before your any further I would respectfully submit that the plans etc should be forwarded to Ston Derector of Public works for O bost of installing 6% 3 Gardene Engine Coufled & 60 KW alkonator as slown on Trawing NO 9641 (2) Cost of Enstally Tetter coupled ti 14 KW alternator as stown on JX3 101469 Gub. 0.1. 2 22/9/34

Hon. Director Pak. W.Ks. Will you thindly in consultation with O. I.C. Electrical Dept., qu'e an Istimate of cost of unstalling the plant mentioned in (1) and (2) of his minite overleaf. McH agel. 24. g. 14. fon bol see. Submitted attached estimate on installing the two plants 43.44 as requested. G. Roberts. 27-9-34. D. I. C. Electrical Dept. Information you require thet my C. herewith. 27.9.14. Ven bol Sec Revised estimate forwaded See. 158324. please gubs O. (. C. E.). 10/10/34

1. 1. 34.

C.S.O. No. 215/31

Inside Minute Paper.

M. Papers dealing with Electric hypiting submitted for information. McH 13. 2. 15. Att 14/2 12/35 45 Minte from Chief Clectura 1/35 The Electrician 7 It is not understand why this work is found to be So persong. Inch at this period of the year the house plant is not used to the Jame esdent as mi the wonthe months. Work entailing the usin of a Special Warrant Cannot be undertaken watrow the spining sametron of the Governor. If possible the work should be positioned until heser year. If it is imperation that the work showed be done

to once then a fun detailed vehar must her Sabmitted for 186's lan sideration. McH e! 19. XI. 15. Am bar be I have submitted a furile Red 46 much dealy with this watter ____ flease 9-WB C.3. 21-11-35 Internet I have also seen C. E. about this matter. He the considers is a matter of myang that the eschant Should be dealt. with immediately. The estimated Cost is £48 the hand hands headable to meet the freater have of that Sum but he antrapates that a S.W. with he requires for h. Small Amount. Win the approve ! mcH 21. X1. JSyes: The work she to dane unmedialely ttttt 21/21/55-C.E. Jo note approval. MCH ZI. XI. 35 An bol See affroral notid flease guile 2. 23-16-35

C.S.O. No. 7.15/31

Inside Minute Paper.

all a

Sheet No. p. R. Michi (44) abinuts from Ch. Electrician of 25/6/26 Y.E. Jubmitted. Bees 16/36 P.A. MM 29/6 29/6/86



Electric_Light_in_Public_Works_Buildings.

I beg to submit that provision be made in the I932 Estimates for the installation of electric light in the following Public Works buildings:-(a) <u>Carpenters Shop.</u> - Electric light is necessary in this building especially during the mid - winter days when it is practically impossible to work at the bench after 3.30 - 4.0.p.m. There are no lights of any description in this workshop - oil lamps being barred - and it n be necessary at any time to work overtime in the shop. If possible i would be preferable if electric light could be installed this year

(b)

Public Works Store. - This is necessai, especially in the lower store which is dark at any period of the day. It is also submitted that consideration, be given to the instellation of a telephone in the two fore.

(d) Garage for Motor Lorries.

2. I would also suggest that an outside lamp be fitted in the Dockyard, say off the North East corner of the building of the Public Works Store. This would light up the Dockyard, and also be of great assistance to sailors when ashore of an evening from H.M. Ships when in port.

Blokute

for Director of Public Works.

MINUTE. No. (It is requested August 22nd 1931 that, in any reference to this minute the above Number and the date may be quoted). ToFrom Electrician in Charge THE COLONIAL SECRETARY. Stanley, Falkland Islands. I have the honour to submit for your consideration a special Warrant in the sum of fifty poundo. This expenditure is required to carer extra maintenance losts consequent on the extension of the Electric lighting system y.E. Schitted the sapeture of oppound. filth I a vetified that the orcers is J. Marca unavoidable being due to the L'island service nons

*	MIN	UTE.
	8" FEB 1939	February 8th 19 32.
	To ISLAND ISLANDS	From
	THE COLONIAL SECRETARY,	Electrician-in-Charge
	Stanley, Falkland Islands.)

I intend, with your permission, to connect a few more houses to our Electric lighting system and I propose to employ Mr H.E.Slade for a few weeks.

The expenditure incurred in connecting these houses to Electriclighting system will be met from 2.Electric lighting.

I presume that, having regard to the increased revenue accruing from this work, there will be no objection to my taking out a Special Warrant towards the end of the year should it become necessary. I hope however, that it will not be necessary.



I beg to report that a general overhaul of the Gardner electric lighting engine took place during this morning between the nours of 12 midnight and 7-30 a.m.

This time was chosen for the following reason :- it was not certain how long the operation would take and it was absolutely essential that the engine should be in full running order for the next evening's run.

In order to sup ly ample light for this work it was necessary to run the Fetter engine and a section of the town was switched on in order to keep a steady load on the engine.

I am pleased to state that the overhaul was satisfactorily performed and that the engine is again working splendidly.

It is my duty to dention however, that during the overhaul it was found that the engine is taking in a considerable quantity of fill sand which is coming away from the concrete floor, and unle eradicated considerable wear and tear will take place on | bearings etc.I propose therefore to approach the Hon D Works with a view to having a thin layer of cement Which I think should entirely eliminate this fault

Electrician-in-Charge.

How . C. S. I intended to ask for an enplanation of the matter. The report of the Dayou is the answer 1.3.32

4.2.

PALKLAND ISLANDO.

Downing Lorest,

14 March, 1932.



Slr,

Reds. 177-178 m.R. 182/30

I have the bonder to acknowledge the receipt of your despatch to. 2 of the 2nd of January, and to convey to you my approval of the excess expenditure in the sam of 2550.18s.0d. incurred in connection with the supply and crection of the power house constructed under the scheme for the extension of the electric lighting system in the town of Stanley.

> I have the honour to be, Sir, Your lost obedient humble servant,

> > (Sed.) P. CUNLIFFE-LISTAR,

.....

COVERSOR

SIR JAMES O'SRADY, K.C. G. .

. e.e.

· ...

BO ..

1021 2

and i T

9.2. Substal. I will Ment 17: 18 you for this full explanation which is perfectly relifedry. 1932. July 7t 1/2 7.7.32.

THE COLONIAL SECRETARY,

Stanley, Falkland Islands.

Electrician-in-Charge.

Stoppage of Electric lighting Plant.

I beg to report that last night a fault developed on the Electric lighting plant which caused a stoppage at approximately 7-30 p.m.

The stoppage was due to an alternator bearing running hot and expanding to such an extent that the alternator ceased to rotate.

On discovering the fault I immediately gave orders for the Petter engine to be started. An attempt was then made to supply the Town with light on a lower voltage but unfortunately the load was to heavy. I then decided to switch the west end of the town on to the Pe engine and this section was lighted at about 8 p.m.

The alternator on the Gardner engine was then dismantled and bearing examined. It was found that the oil grooves on the bearing wer choked by what appeared to be small iron filings. These filings prevoil getting to the bearing which became very hot and expanded, thus stopping the rotation of the alternator.

All my staff worked with a will and I am pleased to say the few minutes after 10 p.m. the fault was rectified and the plant morking order again.

I do not anticipate a recurrence of this fault and as you aware another plant is on order which should arrive in August a fault develop on one plant it will then be possible to switch the other with the loss of a few minutes only.

Electrician-in-Charge.

MIN	UTE.
	<u> </u>
0	From
THE COLONIAL SECRETARY,	Electrician-in-Charge.
Stanley, Falkland Islands.	

I have the honour to submit for your consideration a Special Warrant in the sum of 250, in order to provide for Electric lighting maintenance charges up to the 31st December 1932.

This Special Warrant is made necessary by the fact that a number of items of expenditure were not provided for in the estimates, namely; Purchase of Meters, Furchase of Street lamp Standards, and further electric lighting installations.

1Ahrpon.

To

HC. S. almotted ; Jown Sph .: 32

MINUTE.

September 14th 1933.

(11

To

From Officer-in-Charge

THE COLONIAL SECRETARY,

Stanley, Falkland Islands.

Electrical Department.

I have today carried out an inspection of the electrical pole route from Mr A. Newing's to the end of Fitzroy Road. The main transmission wire and the street lighting wire are both in very good order with the exception of a number of bindings at intermediate poles which will be renewed at once. The poles themselves are very weather beaten, I therefore, propose to employ H. Biggs to paint the poles at the ordinary hourly rate (1/2 per hour) G. Osborne will assist in this work when not otherwise employed.

Is there any objection to this work being taken in hand please?

G. D. Butches

"Kelper Store" 25th.. Sept. 33.

12

To The

Electrician in Charge Stanley,

Sir ,

On behalf of Mr. A.G. Summers who is taking over this from me, I beg to request that the electric main might be connected at your earliest convenience.

Yours faithfully

Telephone message from m. h. Mardy please add montages House

MINUTE.

No. VIt is requested at, in any reference to this minute the above Number and the date may be quoted).

TYN To

THE COLONIAL SECRETARY,

Stanley, Falkland Islands.

September 2	5th 1933.
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xto Trom

Officer-in-Charge

Electrical Department.

Herewith enclose application from Mr L. Hardy on behalf of Mr A.G. Summers who is taking over Helperstore and Montague House.

These premises are already wired for electric lighting but was not installed by this department.

In Stanley Electric Lighting notice of 10th February 1932 paragraph 2. states, all installations will be effected and approved by the Electrician-in-Charge.

This department has however taken over premises already wired i.e. Falkland Islands Co's Warehouse.

As this is rather an unusual case and is not likely to be repeated is there any objection to these premises being changed to the Government system providing the wiring meets with our requirements such as:-

- (1) Good insulation to earth.
- (2) Bonded to earth throughout.
- (3) Circuits split so as not to have more than 10 lightsper circuit. (600 watts per circuit)

It is quite likely that some wires in these premises would have to be altered and otherwise covered with casing for protection in which case the person transferring to the Government system would have to pay for any material or work done in connection with this change over. This does not apply to the supply cable to the meter and main switch as that belongs to Government.

G. W. Butches

27th October 1933

The	Electrician-in-Charge	

The Adjutant

Stanley

F.I.D.F.

Stanley.

Mr.Butcher,

I have found it necessary in view of the intrests of safety and for the convenience of the members of the Force to extend the Targets on the Miniature Rifle Range at the Drill Hall.

From

2. Previously the 3 Targets used were confined in a space of 6 feet, and were roughly 3 feet above the line of sight from the prone position at the firing point. This has now been extended to 12 feet and the targets are now I foot 8 inches above the line of sight.

3. The targets are now in three groups of two target 4 feet being allowed for each group. When the Electric light was installed Mr Byron wired up the Miniature Range with one cluster of 4 lamps which was pluged in the wall, for which we were charged IO/- per lamp or £2, per cluster annually.

4. It will now be necessary to have three clusters of 4 lamps each with three plugs, one plug for each set of targets. As we are now on the Meter system may this be done as an alteration.

5. As the work is now well advanced I shall be glad if you will call on me when I will discuss the best way ,or the way in which I would like the wiring done.

I am, yours

Lieut & Adjutant. F.I.Defence Force.

TO

MINUTE.

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(It is	requested
u, in	any refer-
e to t	his minute.
abo	ve Number
the	date may
anote	ad)

Officer-in-Charge

Electrical Department.

From	

То

THE COLONIAL SECRETARY,

Stanley, Falkland Islands.

May 21st

19 34.

I have the honour to report that on Friday the 19th of May 1934 a power test was carried out, we were found to be carrying 182 amps or 40.04 kilowatts. We must at least allow for another 70 amps which would bring us up to 250 amps or 55 kilowatts which at present we could not handle and before we get as high as 55 kilowatts we would still have to run both Gardner sets in parallel during the winter which means that we have no stand by set in the case of breakdown , etc and therefore propose to write to both Messrs Gardner's and Petter's for estimates of engines directly coupled to, firstly, a 60 k.w. alternator and secondly directly coupled to a 80 k.w. alternator. I mention Messrs Petters because the type of engine and alternator does the required work at abour 300 revolutions against the very high speed of the Gardner which is 1000 revolutions and there is naturally less wear from friction on all parts of the machinery. The only complaint we have against the Better already installed is the flicker in the lights. I am writing to Messrs Petters about the matter.

I have to add that during heavy loads the 10 k.w. Petter will be used for the purpose of street lighting.

gui Butale

MINUT	E.
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(It is requested that, in any referto this minute. above Number above Number above date may be quoted).

From

Officer -	in-Charge.
Electrical	Department.

May 24th

19 34.

To

THE COLONIAL SECRETARY,

Stanley, Falkland Islands.

In accordance with your instructions I have drawn up power units that will probably be required in the near future. Reference minute No 218/31.

Estimates are required as follows :-

From Messrs Petters, Ltd. Yoevil, England.

(1) Electric generating set to deal with 60 kilowatt 220 volts single phase alternator 50 cycles driven by direct coupled Atomic Diesel engine.
(2) as above but for 80 kilowatt.

(3) as above but for 100 kilowatt.

Estimates should include switchboard complete with oil switch, reverse power relay, etc. Fuel tanks, cooling tanks and piping, etc. Extra panel should be estimated for to carry D P switches for four feeder circuits two each of 100 amperes and two each of 50 amperes. Also request that a seperate estimate should be shown for the extra panel with switches only and then with an ammeter in each feeder circuit.

From Norris, Henty & Gardners, Ltd. Patricroft, Manchester. (1) Electric generating set to deal with 60 kilowatt 220 volts single phase alternator 50 cycles driven by direct coupled Gardner High Speed oil engine.

(2) as above but for 80 kilowatt.

(3) as above but for 100 kilowatt.

Estimates should include switchboard complete with oil switch, reverse power relay, etc. Fuel tanks, cooling tanks and piping, etc. Extra panel should be estimated for to carry D P switches for four feeder circuits two each of 100 amperes and two each of 50 amperes.

<u>MI</u>	NUTE.	1		
•	1			
То	From		•	
THE COLONIAL SECRETARY,				
Stanley, Falkland Islands.				

Also request that a seperate estimate should be shown for the extra panel with switches only and then with an ammeter in each feeder circuit. GWBMT 218/31.

25th May,

34.

Gentlemen,

I am directed by the Acting Governor to request that you will be so good as to obtain from Messrs Petters, Ltd., Yeovil, and Messrs Morris, Henty and Gardner's Ltd., Patricroft, Manchester, estimates of the cost of the electric generating sets specified in the attached memorandum.

I an,

Gentlemen,

Your obedient servent,

Acting Colonial ?

W en

the Crown Agents for the Colonies, 4, Millbank, Westminster, LONDON. S.W.1. ENCLOSURE TO COLONIAL SECRETARY'S LETTER, NO.218/31 OF 25TH MAY, 1934.

MEMORANDUM.

Estimates are required for electric generating sets from :-

- (a) Messrs Petters Ltd, Yeovil.
- (b) Messrs Norris, Henty, & Gardners Ltd, Patricroft, Manchester.
- (a) Messrs Petters.
 - (1) Electric generating set to deal with 60 kilowatt 220 volts single phase alternator 50 cycles driven by direct coupled Atomic Diesel Engine.
 - (2) As above but for 80 kilowatt.
 - (5) As above but for 100 kilowatt.

Estimates should include switchboard complete with oil switch, reverse power relay, etc. Fuel tanks, cooling tanks and piping. etc. Extra panel should be estimated for to carry D.P. switches for four feeder circuits two each of 100 emperes and two each for 50 amperes. That a separate estimate should be shown for the extra panel with switches only, and then with an ammeter in each feeder circuit.

- (b) Messrs Norris, Henty & Gardners, Ltd.,
 - (1) Electric generating set to deal with 60 kilowatt 220 volts single phase alternator 50 cycles driven by direct coupled Gardner High Speed oil engine.
 - (2) As above but for 30 kilowatt.
 - (3) As above but for 100 kilowatt.

Estimates should include switchboard complete with oil switch, reverse power relay, etc. Fuel tanks, cooling tanks and piping etc. Extra panel should be estimated for to carry D.P. switches for four feeder circuits two each of 100 amperes and two each of 50 amperes. That a separate estimate should be shown for the extra panel with switches only, and then with an ammeter in each feeder circuit.



ALL COMMUNICATIONS TO BE ADDRESSED TO THE CROWN AGENTS FOR THE COLONIES. THE FOLLOWING REFERENCE AND THE DATE OF THIS LETTER BEING QUOTED.

W/Falkland Is. 3927.

TELEGRAMS: CROWN, LONDON." TELEPHONE: VICTORIA 7730. 4. MILLBANK, LONDON, S.W.1.

3rd August, 1934.

Sir,

I have the honour to refer to your letter No.218/31 dated 25th May,1934 requesting estimates from Messrs.Petters Limited and Messrs.Norris, Henty and Gardners Limited of the cost of electric generating sets as specified in the memorandum attached to your letter.

2. We enclose relative specifications from the firms named together with quotations for the sets offered, and it will be noted that Messrs.Norris, Henty and Gardners are unable to submit a quotation for the 100 KW set as their range of engines does not include this capacity. The firm, therefore, confine themselves to 60 and 80 KW sets complete with switchboards, panels etc.

3. Messrs.Petters offer the complete range of 60, 80 and 100 KW and furnish full specifications and drawings illustrating their offer. It will be noted that neither of the firms include for paralleling apparatus as it is assumed that the sets will not run in parallel. Should, however, the necessary gear for paralleling the sets either amongst themselves or with other sets, be required, further particular regarding this can be forwarded.

4. The engines for the 60 and 80 KW sets offered by Messrs.Petters Limited are of a somewhat higher horse power / than

The Colonial Secretary, Falkland Islands. than is necessary for this capacity alternator and an extra is, therefore, given for installing a 70 and 94 KW alternator respectively if required.

5. The specifications put forward deal with the requirements of your memorandum and we would suggest that, in the event of either of the sets being ordered, full particulars regarding the proposed situation including information as to whether the set will be run in parallel and also any modifications required should be sent with the indent authorising the supply.

I have the honour to be, Sir,

Your obedient Servant,

10 Alemonis

for Crown Agents.

ORK B. HENTY & GARDNERS LTP

(Proprietors & L GARDNER & SONS LTD)

TELEPHONE: ECCLES 2201 (4 LINES.)

"THEOREM, PATRICROFT."

CODES USED A.B.C. 5TH & 6TH EDITIONS. ENGINEERING, BENTLEYS AND WESTERN UNION.



OIL ENGINES GAS ENGINES SPIRIT ENGINES

MARINE INSTALLATIONS

st.

HEAD OFFICE AND REGISTERED OFFICE BARTON HALL ENGINE WORKS. PATRICROFT.



LANCS



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TTEE

July 30th, 1934

YOUR REF

OUR REF

W/Falkland Is. EWLG/CWI/NK -3927 QUOTATION

The Chief Engineer, The Crown Agents for the Colonies, LONDON.S.W.l.

60 K.W. set

- UNE No. 6L3 'GARDNER COLD STARTING COMPRESSION IGNITION OIL ENGINE developing 96 BHP @ 750 rpn. Fitted with compressed air starting including air receiver with fittings, complete with standard fuel tank, exhaust silencer, sensitive centrifugal governor, heavy flywheel, forced lubritation, fuel, lubricating oil and water strainers, and generally as per our standard design.
- ONE 'LAURENCE SCOTT & ELECTROMOTOR'S "STEEL FRAME" SALIENT POLE ALTERNATOR, 60 KW single phase 50 cycles, two end shield bearings, .8 power factor, in accordance with your specification No.93, temperature rise not exceeding 30°C after 6 hours full load run.
- ONE Cast iron bedplate designed to take above engine and alternator including mounting and testing the combined set at our Works.
- ONE Standard arrangement of pipes and fittings for the exhaust, water, fuel, and air services as for an average installation.
- ONE Set of foundation bolts.
- PRICE of above set packed for shipment and delivered F.O.B. Liverpool£ 1186 0

(One thousand one hundred and eighty six pounds)

80 K.W. set

ONE - No. 8L3 'GARDNER' EIGHT CYLINDER COLD STARTING COMPRESSION IGNITION OIL ENGINE developing 128 BHP @ 750 rpm. Complete as for the 6L3 engine. Direct coupled to 80 KW alternator as for the 60 KW set and complete with bedplate, pipes and fittings and foundation bolts.

'One thousand five hundred and four pounds).

SHEE 10 2

2000 1/ BS

NORRIS, HENTY & GARDNERS LTD PATRICROFT.

July 30th. 1934

The Chief Engineer, The Crown Agents for the Colonies, LONDON .S.W.1.

Water tanks

60 KW set Six tanks each 36"dia x 90" high <u>£ 37.10.0</u>.nett

80 KW set

Seventanks each 36"dia x 96"high £ 48. 0.0. nett

Switchboards

Switzhboard for controlling the outputs from alternators of the capacities given below, 220 volts, single phase, 50 cycles.

In each case we would offer a 2-panel board, each panel consisting of best quality electrical slate 12" thick enamelled and bevelled, fixed to angle iron uprights with wall stays, the equipment comprising:-

Panel No.1 Alternator.

- 1 6" E.H. & Co., moving iron spring controlled main ammeter
- 1 6" scale ditto for the exciter
- 1 6" scale moving iron spring controlled voltmeter 0/300 volts 2 - Voltmeter fuses
- 1 Set of synchronising receptacles for future use
- 2 Single pole hook operated knife pattern isolating links

Exciter regulator

- 1 double pole hand operated oil circuit breaker, complete with free handle and overload protection.
- 1 reverse power relay
- 1 set of two busbars

Copper interconnections, instrument wiring, sweating sockets for single core V.I.R. cables and labels.

Panel No.2 Feeders

This panel would accommodate four feeder circuits, two - 100 amperes capacity, two - 50 amperes capacity, each controlled by:-

- 1 double pole single throw Waverley type "A" quick break knife switch.
- 2 single pole cool handle replacement type fuses
 1 set of copper interconnections, sweeting sockets for single core V.I.R. cable and labels.

PRICES excluding oil would be

£ 115. 0.0. £ 121. 0.0. Alternator - 60 KW Alternator - 80 KW

XTRAS First filling of B.E.S.A. Class "B" oil with shipping drum:-

60	KW	£	1.	0.	0.	
80	KW	£	1.	10.	0.	

Providing each of the four feeder circuits with a 6" scale moving iron spring controlled ammeter ... 2 11. 10. 0. per board

NORRIS. HENTY & GARDNERS LTD PATRICROFT.

July 30th, 1934

The Chief Engineer, The Crown Agents for the Crownies, LONDON.S.W.1.

BS

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3

Should the two panel switzhboard consist of best quality ebony sindanyo ³/₄" thick£ 5.. 10. 0. per board.

One expanded metal meshwork endgate and screen of similar material£ 9. 10.0. per board.

In connection with our offer we would ask you to note the following:-

- (1) The main prices submitted allow for contract drawings and also a set of spanners with rack.
- (2) In view of the fact that the feeders are each controlled by open type knife switches and fuses as per illustrations in pamphlets Nos.MS6 and F.2 we have assumed that isolators on the rear of the board will not be necessary.
- (3) We regret we are not in possession of the Crown Agents Specification No.27, but no doubt the arrangement of switchboard put forward will meet the requirements.
- (4) The figures submitted allow for packing for shipment and delivery F.O.B, English Port in accordance with Crown Agents specification No.37

170

<u>DELIVERY</u> 11/12 working weeks from receipt of order and full instructions enabling us to proceed.

FOR NORRIS, HENTY & GARDNERS LTD.,

Acting Secretary.

aner

TENDER

FROM ... PETTERS LIMITED Engineers YEOVIL - ENGLAND ON ADMIRALTY, WAR OFFICE, CROWN AGENTS, POST OFFICE & VARIOUS FOREIGN GOVERNMENT LISTS Offices & Showrooms: 75 B. QUEEN VICTORIA STREET, LONDON, E.C.4

D

S. YEOVIL

EDITION

NION

6" I TLE TELEPHONE Nº YEOVIL I4I (5 UNES) ONDON CENTRAL 3586 (3 UNES) GLASGOW CENTRAL 1800. DUBLIN 43441 Offices

38

ATERLOO CHANBERS 9, WATERLOO S GLASGOW, C. 2 30A, LOWER OCONNELL ST. DUBLIN

EGRAMS PETTERS YEOVIL EPHONE Nº 141 15 LINES P.A.B.X.J

Westland Works.

YEOVIL.

NUFACTURERS OF ETTER INDUSTRIAL AND RINE OIL ENGINES IC GENERATING SETS, STLAND AIRCRAFT. N TELEPHONING TO THIS METHEMT PLEASE ASK FOR EOVIL 141

HP/KWT/HTX . 2477.

21st July 1934.

IMIT

The Chief Engineer, Crown Agents for the Colonies, 4, Millbank, Westminster. S.W.1.

Ref. W/Falkland Is. 3926.

Dear Sir,

DERLON NO. 2000 2. OCTUDET 134

Further to our letter dated the 3rd inst., we regret we have not previously supmitted our offer against your requirements called for in your enquiry under the above reference. This has been due to the fact that we have been awaiting some outside information with regard to the Electrical portion of the contract. We trust, however, that the delay has not gaused you any serious inconvenience. As the required information is now at hand, we have pleasure in sending you herewith our preliminary specification and tender which we hope you will find in line with your requirements.

We have quoted for Generating Sets having capacities of 60 Kw. 80 KW. and 100 KW. The former two alternators will not absorb the full load output of the respective engines. However, in our tender we have given you an extra price in the event of our supplying machines to give the additional KW. output as you may wish to consider such an arrangement. It has been assumed that the sets will not be required to operate in parallel and in one and the same engine room and therefore we have quoted you accordingly. In the event of the Three Sets being required to operate together, perhaps you would kindly advise us when we will modify our offer so that one set of Air Starting Equipment and also one Cooling Tower might be incorporated. Furthermore it would be mecessary to modify the Switchboards and include synchronising gear for parallel operation, if this is required.

The engines put forward are our well known Atomic Diesels rated strictly in accordance with B.S.I. requirements. We presume there will be no abnormal conditions at site with regard to altitude and/or temperature. You have not specified any particular make of electrical equipment, but on this pccasion we have included Alternators and Switchgear of Messrs General Electric CO's manufacture. If you wish to consider other makes we shall be glad to quote you on receipt of your instructions. We believe you will find our offer herewith generally in line with your requirements. For your guidance with regard to overall dimensions we are enclosing blue prints referring to each particular engine. Any further particulars will be gladly furnished on receipt of a letter from you.

We are, dear Sir, Yours faithfully, per pro PETTERS FTD.

ON ADMIRALTY, WAR OFFICE, CROWN AGENTS, POST OFFICE & VARIOUS FOREIGN GOVERNMENT LISTS. Offices & Showrooms: 75 B, QUEEN VICTORIA STREET, LONDON, E.C.4.

APHIC ADDRESSES TERS. YEOVIL BLE.CENT, LONDON LIM, GLASGOW

COOTS 3" & 6" EDITION BENTLEY. STERN UNION INIVERSAL. ETTER CODE.

NANUFACTURERS OF PETTER INDUSTRIAL AND IARINE OIL ENGINES IRIC GENERATING SETS, IESTLAND AIRCRAFT. VEN TELEPHONING TO THIS IMARTHENE PLEASE ASK FOR YEOVIL 141

EXTENSION NO 267.

The Chief Engineer. Crown Agents for the Colonies. TENDER. Date 20th July 1934.

Our Ref. No. HTX ... 2477.

YEOVIL 141 (5 UNI ON CENTRAL 3586 ASGOW CENTRAL DUBLIN 43441

Offices GLASGOW, C 2

DUBLIN.

ELEGRAMS PETTERS YEOVIL ELEPHONE Nº (41 (5 LINES PABX)

WESTLAND WORKS.

YEOVIL.

PETTER ATOMIC DIESEL COLD STARTING OIL ENGINE with Accessories and Spare Parts as detailed in enclosed Publication No. with exceptions and modifications as detailed in the following pages.

Item	B∙	C.	
No. of Engines offered ONE	ONE	ONE	
Code WordAMIUMPAREL	AMRARPAREL	AMUDAFAREL	
Max. B.H.P. for one hour 118.8	158.4	168.3	
Normal B.H.P. (see note below) 108	144	153	
Speed, R.P.M 500	500	375	
No. of Cylinders THREE	FOUR	THREE	
Flywheel	ALTERNATO	R	
Cyclic Variation-with resistance constant	1/250		
Driving Pulley	NOT INCLU	DED	
Air Starting EquipmentINCLUDED, SEE	TENDER HER	EA FTER	
Water Cooling Tanks. Number and Size4-2834	5-3688	6-4416 galls	3
Erection	NOT INCLU	DED	
Fuel Consumption, Subject to a tolerance of $2\frac{1}{2}$ %.			
Lbs. per B.H.P. per hour. Full Load	•42	141	
········	•44	•43	
	•46	•45	

NOTE.—The BRAKE HORSE POWER and consumptions specified are obtained when working on B.S. Fuel Oils Nos. 1 and 2, of not less than 18,000 British Thermal Units net per lb., and under the following site conditions :—

Barometric Pressure, 30 ins. of mercury. Atmospheric Temperature 62° Fah. (16.7°C)

Anticipated Despatch Date. Subject to being unsold. A. approximately 8/9. B. 5/6. C. 8/9 working weeks dating from receipt of order and full information enabling us to proceed uninterruptedly with manufacture.

Delivery. Port.

6.

Terms of Payment. STRICTLY NETT for prompt payment on shipment.

Lectrical Equipment, approximately 10/12 working weeks.

1

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PETTERS LTD., YEOVIL. The Chief Engineer.

20th July 1934.

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SPECIFICATION AND TENDER.

-2-

ITEM A.

ENGINE.

ONE... 108 BHP. THREE CYLINDER, PETTER ATOMIC DIESEL, COLD STARTING, VERTICAL, TWO STROKE CYCLE, HEAVY OIL ENGINE, running at a speed of 500 r.p.m. Capable of developing 10% overload for periods of one hour in accordance with B.S.I. ratings. The engine will be of standard handing and rotation and as detailed on page 1. of this tender and hereafter.

METHOD OF DRIVE.

The arrangement will be such that the half coupling of the undermentioned alternator will be bolted direct to the engine flywheel.

EXHAUST.

An exhaust manifold will be bolted direct to the engine cylinders. We include approximately loft of piping together with one bend leading from this manifold to an exhaust pit outside the engine room. In addition we will include a relief door and manhole cover for the exhaust pit together with a length of atmosphere piping about 15ft, leading from the exhaust pit to atmosphere. We do not include any constructional work with regard to the pit.

AIR STARTING EQUIPMENT?

In order to supply compressed air at a pressure up to 350 lbs. per sq. inch for starting purposes, we include:-

- ONE.. Reciprocating type Air Compressor, arranged for belt driving from the main engine and fitted with handle for initial and emergency use.
- TWO.. Solid drawn steel Air Receivers having a total capacity of approximately 3.92 cu.ft. together with the necessary pressure gauges, stop valves and relief valve.
- ONE... Complete set of copper interconnecting piping for a compact arrangement.

TACHOMETER.

Weinclude the supply of a Tachometer together with suitable drive the synchronous speed being indicated in red on the dial.

WATER COOLING EQUIPMENT.

The engine will be supplied complete with water pump driven from the engine crankshaft for circulating the cooling water round the cylinder gackets. We would also supply:-

OME... Complete set of galvanised steel tanks having a total capacity of approximately 2834 gallons, complete with interconnections and about 25ft of water piping for a compact arrangement. These tanks are suitable for a normal daily run of eight hours in a temperate climate. PETTERS LTD., YEOVI

The Chief Engineer.

35

ALTERNATOR.

ONE.. Open Single Phase Alternator having one pedestal bearing, shaft extension with half coupling and direct coupled exciter. Supplied also would be one large exciter regulator, and equipment would be complete with three soleplates and foundation bolts. The machine would be rated to give an output of 60 KW. 220 volts. 50 cycles at .Spower factor when driven at a speed of 500 r.p.m. The above machine would have a temperature rise according to Crwon Agents specification i.e. 30 degs. Cent. after six hours full load run. The machine will be generally in accordance with B.S.I. 168/1926.

... -3-

SWITCHBOARD.

For controlling the above Single Phase Alternator, we would supply a Switchboard as follows; -

ONE.. Black enamelled slate panel with bevelled edges and mounted on suitable angle iron dramework arranged for wall and floor fixing. The panel would be equipped with:-

- 1 Set of busbars with supports and barriers.
- 2 400 amp. single pole isolaters.
- 1 400 amp. single pole, free handle pattern oil circuit breaker, with one overload and shunt trip with auxiliary switch, together with mechanical "on" and "off" indicator.
- 1 Time limit fuse.
- 1 Current transformer. 400/5.
- 1 6" M.I. ammeter. 1 Set of synchronising sockets.
- 1 Single pole reverse power relay.
- 1 Regulator hand-wheel with chain drive.
- Space for back of board regulator. 1 Single pole field switch with N.I.R. 2 Instrument fuses.

ACCESSORIES.

The engine will be supplied complete with all usual accessories including daily service fuel oil tank and piping to the engine for a compact arrangement, barring gear, foundation bolts and plates together with a complete set of spanners and special tools.

SPARES.

We include the supply of standard spares as usually supplied with this size of engine. These spares would comprise.

4 Piston rings 1 Fuel pump Spring. 1 Set of air plates. 1 Set of Springs for fuel atomiser and fuel pump valves. 1 Atomiser complete. 1 Spill valve push piece spring. 1 governor springs. 1 Fuel pump roller pin spring. 1 Spill valve spring. 1 Atomiser key. 1 Fuel pump valve seat key. 2 Ligting bolts. 3 fuel pump diaphragms. 1 Set of Joints.

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PETTERS LTD., YEOVIL. The Chief Engineer.

20th July 1934.

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SPARES (Cont.)

In addition to the above, we would also include the following:-

-4-

- 1 Bottom half end main bearing.
- 1 Bottom half intermediate main bearing.
- 1 Large end bearing. 1 Small end bearing. Piston Rings for One Piston. Piston Pin.
- 1 Complete set of Joints.
- 1 Complete set of Springs.
- 1 Atomiser.
- 1 Complete set of Air plates for one grid. 1 Set of crankwasher springs.
- Suction and delivery valves for Air Compressor.
- 1 Set of ball valves for fuel pump
- 1 Set of Air Compressor Rings.

TESTS & DRAWINGS.

We include the necessary tests and special drawings to meet your requirements.

(Ten hundred and seventy five Pounds nett)

(Thirty Pounds nett)

ITEM B.

ENGINE.

ONE.. 144 BHP. FOUR CYLINDER, PETTER ATOMIC DIESEL, COLD STARTING, VERTICAL, TWO STROKE CYCLE, HEAVY OIL ENGINE, running at a speed of 500 r.p.m. and otherwise as specified in Item A.

METHOD OF DRIVE, EXHAUST, AIR STARTING EQUIPMENT & TACHOMETER.

Similarly as specified in Item A.

WATER COOLING EQUIPMENT.

Similarly as specified in Item A. only the total capacity of the tanks will be 3688 gallons.

ALTERNATOR.

ONE.. SO KW. alternator, similarly as specified in Item A.

SWITCHBOARD.

Similarly as specified in Item A. only fitted with instruments of 600 amp. capacity and current transformers, ratio 500/5. (500/5)

1

PETTERS LTD., YEOVIL.

The Chief Engineer.

ACCESSORIES & SPARES.

Similarly as specified in Item A.

TESTS & DRAWINGS.

Similarly as specified in Item A.

PRICE.£1295. 0. 0. net

(Twelve hundred and ninety five Pounds nett)

- 5-

20th July 1934.

33

(Thirty seven Pounds nett)

ITEM C.

ENGINE.

ONE..153 BHP. THREE CYLINDER, PETTER ATOMIC DIESEL, COLD STARTING, VERTICAL, TWO STROKE CYCLE, HEAVY OIL ENGINE, running at a speed of 375 r.p.m. and otherwise as specified in Item A.

METHOD OF DRIVE, & EXHAUST.

Similarly as specified in Item A.

AIR STARTING EQUIPMENT.

In order to supply compressed air at a pressure upto 350 lbs. per sq. inch for starting purposes, we include:-

- ONE.. Reciprocating type Air Compressor arranged for belt driving from:-
- ONE.. 1¹/₂ BHP. Petter Universal Petrol/Paraffin Hopper Cooled engine supplied complete with driving pulley and belt.
- ONE.. Riveted steel air receiver having a total capacity of approximately 10 cu.ft. together with the necessary pressure gauge, stop valve and relief valve.
- ONE.. Complete set of interconnecting piping between the compressor receiver and engine for a compact arrangement.

TACOMETER.

Similarly as specified in Item A.

WATER COOLING EQUIPMENT.

Similarly as specified in Item A. only in this wase the total capacity of the tanks will be 4416 gallons.

.....

ALTERNATOR.

ONE..100 KW. Alternator running at 375 r.p.m. and otherwise as specified in Item A. PETTERS LTD., YEOVIL

The Chief Engineer.

SWITCHBOARD.

similarly as specified in Item A. only equipped with suitable instruments.

-6-

ACCESSORIES & SPARES.

Similarly as specified in Item A.

SPECIAL TESTS & DRAWINGS.

Similarly as specified in Item A.

(Fifteen hundred and forty Pounds nett)

Extra for packing for overseas shipment and delivery f.o.b. English Port.....£53. 0. 0. nett.

20th July 1934.

32

(Fifty three Pounds nett)

FEEDER PANEL.

This would comprise an enamelled slate panel suitable for lining up with the Switchboards, and fitted with:-

1 Set of busbars. 2 100 amp. double pole quick break knife switches. 11 11 11 11 . 11 2 60 amp. china fuses. 11 # 4 100 amp. 60 amp. 11 11 4

Necessary angle iron framework, back of board connections, labels, sweaters, and foundation bolts are also included.

PRICE. Including delivery f.o.b. English Port... £24. O. O. nett.

(Twenty Four Pounds nett)

AMMETERS.

In the event of Four Ammeters being required we would be pleased to supply instruments of the moving iron type for the Four Feeder Circuits as specified above.

PRICE. Including delivery f.o.b. English Port....fll. O. O. nett.

(Eleven Pounds nett)

In the event of your considering Alternators in Items A. and B. to absorb the full output of the engines under normal conditions, we would supply the following:-

For Item A.

ONE.. 70 KW. Alternator, in lieu of the 60 KW. as specified.

6.

(Righteen The Pounds nett)

PETTERS LTD., YEOVIL. The chief Engineer.

20th July 1934.

(3)

Item B.

ONE. 94 KW. Machine, in lieu of the 80 KW. alternator.

1 1

-7-

EXTRA PRICE. 0. 0. nett.

(Thirty three Pounds nett)

Item C.

The 100 KW. machine specified under this item will absorb the full load of the engine.

TERMS OF PAYMENT.

As given on page 1. of this tander.

ENCLOSURES.

Publ.	2252.
-	22054/2.
-	22055/2.
Drg.	101769
	101770.
1	101773.

per pro PETTERS LTD. 0 SALES MANAGER. í D

6.

The Chied Engineer.

Item A.

2

20

APPROXIMATE SHIPPING SPECIFICATIONS.

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-8-

Engine, as per publication Exhaust Pit Equipment. 2054/2. 20 cu.ft. 8 ctts. cooling Tanks. Ħ 220 15 11 Alternator. Stator. 52 11 29 11 Rotor & bearing. 11 42 27 11 Soleplates & Foundation bolts. 11 tt 7.2 11 Switchboard. 35 Ħ One case. 9 11 One case. 20 11 2 11 Spares. 11 30 34 11 430 1.2 Item B. Engine as per publication. 2054/2. 25 tt 9 11 Exhaust Pit Equipment. 11 19 11 200 Cooling Tanks. 11 36.4 11 62 Alternator. Stator. 11 35.5 11 Rotor & bearing. 52 Soleplates & Ħ 11 11 8.4 Foundation bolts. SWITCHBOARD & SPARES. As in Item A. Item C. Engine, as per publication 2055/2. Exhaust Pit equipment. 12 10 tt 30 11 13 11 190 Cooling Tanks. (Two nests, each) 11 78.5 - 11 47.5 stator. Alternator. 45.5 Ħ 80 11 Eotor & bearing. Soleplates & 11 11 9.6 16 Foundation bolts. As in Item A. Switchboard & Spares. 11 Ħ 9 40 One case. Feeder Panel. 70 KW. Alternator. similarly as specified in Item A. 94 KW. alternator. 37 11 11 63 stator. 35.5 1 Rotor & bearing. Spleplates & 11 52 8.4 " Ħ 11 Foundation bolts.

Petter Atomic Diesel Engines (Stationary Type) Approximate Shipping Specifications 56 B.H.P. SINGLE CYLINDER 410 R.P.M. C.V. 1/80. CODE WORD : AILOR. DIMENSIONS. CONTENTS OF PACKAGES. WEIGHT (CWTS.) CUBIC FEET Inches GROSS. NETT. Engine in case ... $\begin{array}{ccc} 64 & \times & 61 & \times \\ 1625 & 1549 \end{array}$ 82 2082 185 51 2591 40 2032 Flywheel (Loose) ... 54 × 54 × 1372 1372 10 16.9 211 1095 21± 1095 ... 254 Parts in box 59 × 1499 ... 41 × 1041 40 1016 56 134 105 540 666 Exhaust Bend (in crate) ... 28 711 32 13 × × 2523 127 31 178 813 635 134 × 336 Exhaust Pipe (Loose) 7 69 13 × 13 1급 76 1753 336 51 1296 Exhaust Pipe (Loose) 131 × 336 13} 336 11 64 5.21] 64 ... × Exhaust Bend (Loose) 39 991 17 432 13¦ 336 5.1 $\frac{1}{2}$ 76 х × 1<u>!</u> 76 Air Receiver (Loose) 4.5 54 1372 12 305 12 ... × × 11 1± 76 305 1.87 Air Receiver (Loose) 51 1295 \times 8 203 × 8 203 1 46 7 × 46 49 1245 Pulley in crate ... 5 254 23.6 3 178 17 49 × \times 1245 432 31 788 16 408 12 305 31 165 3<u></u> 165 3.5 Pedestal (Loose) ... × × 321.67 104 88 Totals for Standard Engine 4480 5300 Code Word, AILORELFLY. For Electric Flywheel c.v. 1/125 $54 \times 54 \times 12$ 1372 1372 305 33 20.3 33 Flywheel (Loose) 168 168 1151 5870 991 325.07 **Totals for Standard Engine** 5060

29

112 B.H.P. TWIN CYLINDER 410 R.P.M. c.v. 1/125 CODE WORD : AMONO.

			DIMENSIONS.	0	WEIGHT	(CWTS.)
CONTENTS OF PACKA	GES.	1	Inches.	CUBIC FEET.	GROSS	NETT
ngine in case			$93 \times 57 \times 83$ 2362 1448 2108	255	87 4420	73 3709
lywheel (Loose)			$54 \times 54 \times 9$ 1372 1372 229	15.2	151 788	154 788
Parts in box			$59 \times 41 \times 40$ 1499 1041 1016	56	143 730	11§ 592
Exhaust Manifold (in crate)			$57 \times 28 \times 25$ 1448 711 635	23.2	7 356	51 267
Exhaust Pipe (Loose)			$78 \times 13\frac{1}{4} \times 13\frac{1}{4}$ 1981 336 336	8	13 89	13.
Exhaust Pipe (Loose)			$51 \times 13\frac{1}{4} \times 13\frac{1}{4}$ 1296 336 336	5.2	11 64	1 <u>1</u> 64
Exhaust Bend (Loose)			$39 \times 17 \times 131$ 991 432 336	5.1	1 <u>1</u> 76	11
Air Receiver (Loose)			$54 \times 12 \times 12$ 1372 305 305	4.5	11 76	1 <u>+</u> 76
Air Receiver (Loose)			$51 \times 8 \times 8$ 1295 203 203	1.87	46 46	78 46
Fuel Tank in case			$ \begin{array}{c} 68 \times 24 \times 26 \\ 1727 & 610 & 661 \end{array} $	24.6	3 1 165	2 102
Pulley in crate			$49 \times 49 \times 23$ 1245 1245 584	32	63 343	41 229
Pedestal (Loose)			$\begin{array}{cccccccccccccccccccccccccccccccccccc$	3.5	34 165	3 165
Totals for Standard Engine				434.17	144 7320	122 6200
For Alternator Flywheel	c.v. 1/2	52.	Code Word, AMONOPAREL			
Flywheel (Loose)			$\begin{array}{cccccccccccccccccccccccccccccccccccc$	21.4	29½ 1500	294 1500
Totals for Standard Engine				440.37	158 8040	136

See NOTES on reverse side.

Approximate Shipping Specifications-Continued. 168 B.H.P. THREE CYLINDER 410 R.P.M.

CONTENTS OF T					1	DIMENS	IONS		CUBIC	WEIG	IT (CWTS.)
The second secon	ICKAGE	•.		1		Inches	5.		PEGI.	GROSS.	NETT
Engine Bed in case				123	X	59	×	48	202	651 7328	56
Cylinder and Piston in case		***		13	X	31	×	66 1680	51	20	2845
Cylinder and Piston in case				43	X	31	x	66	51	20	813
Cylinder and Piston in case,		***		+3	X	31	x	66	- 51	20	813
Flywheel (Loose)		•••		54	×	54	х	9	15.2	154	813
Farts in box		***		69 1752	x	41	x	40	66	191	788
Exhaust Manifold (in crate)				82 2083	x	28		25	34	10	763
Exhaust Pipe (1,00sc)		***	***	75	x	144	x	141	- 9.2	2	382
Exhaust Pipe (Loose)	•••		***	48 1219	x	143	×	144	5.9	102	103
Air Ressing (Loose)	**			45 1143	x	19	x	14]	7.2	2	64 2
Eucl Truste 2		***		781	×	19	×	19	16.4	7	102
Pulley in case				68 1727	x	24	x	26	24.6	33	356
Pedecial (1	•••			49	x	49	x	23	32		102
lotals for Store 1			***	31 788	×	16	×	12	3.5	343	229 31
totals for standard Engine	***	•••	***		_			505	569	165	165
For Alternator Flywheel c.v.	1/260.	Cod	e Word,	AMUDA	PAI	REL				9950	8340
iywneel (Loose)		***	*** 1	60	x	60	× -	81	17.7	26	
otals for Standard Engine		***		1524		1524		216	571.5	132	26 132
			1				_		571.5	10500	1743

224 B.H.P. FOUR CYLINDER

410 R.P.M.

0

P



Approximate Shipping Specifications SINGLE CYLINDER 56 B.H.P. C.V. 1/80. CODE WORD : AILOR. DIMENSIONS. CUBIC CONTENTS OF PACKAGES. FEET. Inches. 185 Engine in case 16.9 $54 \times 54 \times 10$ 1372 1372 254 Flywheel (Loose) 56 Parts in box $59 \times 41 \times 40$ 1499 1041 1016 13 Exhaust Bend (in crate) 7 Exhaust Pipe (Loose) 5.2 Exhaust Pipe (Loose) ... $... 51 \times 131 \times 131$ 1296 336 336 5.1 Exhaust Bend (Loose) 4.5 $54 \times 12 \times 12$ 1372 305 305 Air Receiver (Loose) 1.87 Air Receiver (Loose) 23.6 Pulley in crate 3.5 Pedestal (Loose) 321.67 Totals for Standard Engine For Electric Flywheel c.v. 1/125 Code Word, AILORELFLY. 20.3 $54 \times 54 \times 12$ 1372 1372 305 Flywheel (Loose) 325. Totals for Standard Engine ...

(Stationary Type)

112 B.H.P. TWIN CYLINDER

		U	.v. 17	25 0						WEIGHT	(CWTS.)
				D	IMI	ENSION	s.		CUBIC	GROSS.	NETT.
CONTENTS OF P	ACKAG	ES.		02	11	57	×	\$3	255	\$7 4420	73 3709
igine in case				2362	~	1448	×	2108 9	15.2	151	15 <u>1</u> 788
lywheel (Loose)				54 1372	×	1372	~	229	56	143	11 ⁵ 592
arts in box				59 1499	×	1041	~	1016	23.2	7	5 <u>1</u> 267
xhaust Manifold (in c	rate)			57 1448	×	28 711	×	635		356	11
xhaust Pipe (Loose)				78 1981	×	13 <u>1</u> 336	×	336	52		11
Exhaust Pipe (Loose)				51 1296	×	13 <u>1</u> 336	×	336	51	<u> </u>	11/2
Exhaust Bend (Loose)				39 991	×	17 432	×	336	4.5	76	11
Air Receiver (Loose)				54 1372	×	12 305	×	305	4.0	76	70
Air Receiver (Loose)				51 1295	×	8 203	×	8 203	1.07	46	2
Fuel Tank in case				68 1727	×	24 610	×	26 661	24.0	<u>165</u> 63	$-\frac{102}{4\frac{1}{2}}$
D ller in crate				49	×	49 1245	×	23 584	32	343	- 229
Pulley III clace				31	×	16	×	12 305	3.5	165	165
Pedestal (Loose)	ngine			100	-				434.17	7320	6200
Totals for Standard E	ugine				-		0.1	OPARE	T.		
For Alternator Fly	wheel	c.v. 1/2	252.	Code W	or	d, AM × 60)	× 101	21.4	291 1500	29 <u>1</u> 1500
Flywheel (Loose)				152	4	152	4	200	440.37	158 8040	136
Totals for Standard I	Engine			1			-	arce side.			

Petter Atomic Diesel Engines

410 R.P.M.

1	WEIGHT (Cwrs.)
-	GROSS.	NETT.
-	51 2591	40 2032
	211 1095	21 1 1095
	131 666	10 ⁵ 540
-	31 178	21 127
	1 <u>1</u> 76	1 <u>k</u> 76
-	11 64	11 64
	11 76	1 <u>h</u> 76
	1 <u>1</u> 76	1 <u>1</u> 76
	1 46	1 46
-	5 254	31/ 178
-	31 165	31 165
7	104 5300	88 4480
3	33 168	33 168
07	115 <u>}</u> 5870	993 5060

410 R.P.M.

Approximate Shipping Specifications-Continued. 168 B.H.P. THREE CYLINDER 410 R.P.M.

						D	IMENSI	ons.		Cume	WEIGHT	r (Cwts.)
CONTENTS	of Pa	CRAGES					Inches			FEET.	GROSS.	NETT.
Engine Bcd in case					123	- <u>x</u>	59	×	48	202	651 3328	56 2845
Cylinder and Piston in c	asc				<u>3124</u> 13	×	31	x	66	51	20 1016	16 813
Cylinder and Piston in c	ase		***		43	x	31	×	66	51	20 1016	16 813
Cylinder and Piston in c	ise				43	x	31	×	66	51	20 1016	16 813
Flywheel (Loose)					54	x	54	×	9	15.2	15 <u>4</u> 788	15 <u>1</u> 788
Parts in box				•••	69	×	41	*	40	66	191 991	15 763
Exhaust Manifold (in cra	tc)		•••		82 2083	×	28	×	25	34	10 508	71 382
Exhaust Pipe (Loose)		***	•••		73	x	141	×	141	9.2	102 102	102
Exhaust Pipe (Loose)					48	×	141	×	141	5.9	11 64	11 64
Exhaust Bend (Loose)			•••	***	45	×	19	•	144	7.2	102	2 102
Air Receiver (1,00sc)	•••		***	***	781	×	19	x	19	16.4	7 356	7 356
Fuel Tank in case		***	***		68 1727	×	24	×	26 661	24.6	3 <u>1</u> 165	2 102
Pulley in crate		***		***	49 1245	×	49 1245	×	23 584	32	61 343	4½ 229
Pedestal (Loose)	•••	•••		•••	31 788	×	16 407	x	12 305	3.5	31 165	34 165
fotals for Standard Engin	e	***	***							569	196 9 9 50	164 8340
For Alternator Flywhee	el c.v.	1/260.	Co	de Wor	I, AMUD	APA	REL.					
Tywheel (Loose)					60 1524	N	60 1524	×	\$1 216	17.7	26 132	26 132
lotals for Standard Engine	e	***	•••					-		571.5	2064	1743

224 B.H.P. FOUR CYLINDER 410 R.P.M. C V 1/106

22

C

Publication No. 2054/2, October, 1933.

CONTENTS OF P	ACKAGE	s.			Di	MENSI	ons.		CUBIC	WEIGHT	(CWTS).
Engine Ded (Inches			FEET.	GROSS.	NETT
Engine Bed in case	• •••			127 3225	x	59 1498	x	48 1220	209	781	681
Cynuder and Piston in case.			•••	43 1092	×	31 788	8	66 1680	51	20	16
Cylinder and Piston in case				43 1092	×	31 788	x	66 1680	51	20	16
Cylinder and Piston in case,.				43 1092	×	31 788	×	66	51	20	813
Cylinder and Piston in case	***			43 1092	×	31	х	66		20	813
Flywheel (Loose)		•••	•••	54	x	54	×	9	15.2	1016	813
Parts in box				66	×	41	x		69	788	788
Exhaust Manifold (in crate)				107	x	28	×	25	13.1	1005	775
Exhaust Pipe (Loose)		•••		2718	×	711	×	635	10.1	660	10 508
Exnaust Pipe (Loose)				2057	×	407		407	12	127	21 127
Exhaust Bend (Loose)				1219	-	407	~	407	7.1	11 89	13
Fuel Conk in crote				1168	×	508	x	407	8.5	21	21
A fa fa series (Ta ser)				1727	×	24 610	×	26 661	24.6	34	2
All Receiver (1.005c)				781 1994	×	19 483	x	19 483	16.4	7	102
Pulley in crate	***			49 1245	×	49	×	23 584	32	- 356	356
Pedestal (Loose)				31 788	×	16	×	12	3.5	343	229
Totals for Standard Engine						407	-	305	614.7	140	140
For Alternator Flywheel c.v.	. 1/251.	Con	le Wor	AQUINP	AP	ET.				11860	196 9950
Flywheel (Loose)				60		60					
Totals for Standard Engine				1524	×	1524	×	9 229	18.7	193	197
									648.2	2371	2004

(Extra when supplied)

11 B.H.P. Pette	er Universal E	ngine for Bel	t Driving Stand	ard Air Comp	ressor
Lugine in Case		26 × 26 661 661	× 30 11.8 762	31	24
11 B.H.P. Petter	Universal En	gine Direct (Coupled to Com	pressor on Bas	eplate.
Plant in case		36 × 26 915 661	× 34 18.5 865	5 254	31
coupling to ele	ctric generators and ot	s given above are su ther machinery.	bject to alteration when	these Engines are for d	lrect
PETTEDS				T D	
	LONDON : 75	b Queen Vic	ILUVI. toria Street, E.	L, ENG	LAND
LASGOW : 19 Water	loo Street, C.2		DUBLIN: 30	a Lower O'Cor	nell Street.

Petter Atomic Diesel Engines (Stationary Type) Approximate Shipping Specifications 36 B.H.P. SINGLE CYLINDER C.V. 1/80. CODEWORD : ADEBO.

CONTENTS OF PAC	K Y C E	c		DIMENSIONS.	CUBIC	WEIGHT (CV	VTS.)
CONTENIS OF TAC.	KAGE-	э.	-	Inches.	FEET.	GROSS.	NETT.
Engine in case	•			$\begin{array}{cccccccccccccccccccccccccccccccccccc$	93	27 <u>}</u> 1390	22 1118
Plywheel (Industrial, loose	e)			$\begin{array}{cccccccccccccccccccccccccccccccccccc$	9.4	11 560	11 560
Parts in case				$\begin{array}{cccccccccccccccccccccccccccccccccccc$	47.5	12 610	91 470
Exhaust Bend (in crate) .			•••	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	7.9	2 102	l 51
Exhaust Pipe (Loose)				$\begin{array}{cccccccccccccccccccccccccccccccccccc$	5.2	1 1 64	1 1 64
Exhaust Pipe (Loose)				$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	3.4	1 51	1 51
Exhaust Bend (Loose)	•••			$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	2.9	1 51	1 51
Air Receiver (Loose)				$54 \times 12 \times 12$ 1372 305 305	4.5	1± 64	1 <u>†</u> 64
Pulley in crate				$34 \times 34 \times 16 \\ 864 864 406$	10.7	3 153	2 102
Pedestal (Loose)				$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	4.1	2] 114	-2] 114
Totals for Standard Engi	ne				188.6	62 3160	52 2644
The Electric Elevenheel C	w 11	128.	Code	Word, ADEBOELFLY.			
For Electric Flywheel C Flywheel (Loose)				$45 \times 45 \times 10$ 1143 1143 254	11.7	16.4 834	16.4 834
Totals					190.9	67 <u>}</u> 3430	57 <u>1</u> 2920

TWIN CYLINDER 72 B.H.P.

C.V. 1/128. CODEWORD : AMABE.

			1	DIMENSIONS.	CUBIC	WEIGHT (CWTS.)
CONTENTS OF PA	CKAGE	s.		Inches.	FEET.	GROSS.	NETT.
ngine in case				$\begin{array}{cccccccccccccccccccccccccccccccccccc$	145	50 2540	40 2032
lywheel (Loose)				$44 \times 44 \times 6$ 1118 1118 152	6.7	9 458	9 458
arts in box				$59 \times 40 \times 38$ 1499 1016 966	52	131 668	113 578
Exhaust Manifold (in cr	ate)			$\begin{array}{cccccccccccccccccccccccccccccccccccc$	13.5	3 1 166	2] 115
Exhaust Pipe (Loose)				$74 \times 12 \times 12$ 1880 305 305	6.2	1½ 76	1 <u>1</u> 76
Exhaust Pipe (Loose)				$\begin{array}{cccccccccccccccccccccccccccccccccccc$	3.8	1 51	1 51
Exhaust Bend (Loose)				$39 \times 16 \times 12$ 991 406 305	4.4	1‡ 64	1 <u>+</u> 64
Air Receiver (Loose)				$54 \times 12 \times 12$ 1372 305 305	4.5	1 1 76	1 76
Air Receiver (Loose)				$51 \times 8 \times 8$ 1295 203 203	1.87		
Dullar in crate				$40 \times 40 \times 19$ 4016 1016 483	17.6	3 <u>}</u> 165	2 102
Philey in Close)				$\frac{1010}{29} \times \frac{22}{560} \times \frac{11}{280}$	4.1	2 1 114	2 1 114
Pedestai (10052)	igine			737 300 200	259.67	87 4420	73 3710
Totals for Ban				AMAREPAREL			
For Alternator Flywh	eel c.v	. 1/262	e. Co	$\frac{45 \times 45 \times 10}{45 \times 10}$	11.7	16.5 840	16.5 840
Flywheel (Loose)				1143 1143 254	264.67	941 4800	801 4100

500 R.P.M.

500 R.P.M.

Approximate Shipping Specifications-Continued. 108 B.H.P. THREE CYLINDER 500 R.P.M.

		0.7.	DIMENSIO	NNS		CUBIC	WEIGHT	(CWIS.)
CONTENTS OF PACK.	AGES.		Inches			FEET.	GROSS.	NETT.
Engine in case			100×47 2540 1194	×	67 1702	182.3	64 <u>1</u> 3270	52 2642
Flywheel (Loose)			44×44 1118 1118	×	6 152	6.7	9 458	9 458
Parts in case			63×40 1600 1016	×	39 991	56.9	153 780	123 655
Exhaust Manifold (in crate)			663×23 1689 584	×	22 559	19.5	41 229	3 153
Exhaust Pipe (Loose)			78×131 1981 336	x	13 1 336	7.9	2 102	2 102
Exhaust Pipe (Loose)			45×131 1143 336	×	13 <u>1</u> 336	4.6	l 51	1 51
Exhaust Bend (Loose)			39×17 991 432	×	13] 336	5.1	11 76	1 <u>1</u> 76
Air Receiver (Loose)			54×12 1372 305	×	12 305	4.5	1½ 76	11 76
Air Receiver (Loose)			51×8 1295 203	×	8 203	1.87	. 46	
Pulley in crate			40×40 1016 1016	×	23 584	21.4	41 229	3 152
Pedestal (Loose)			29 × 22 737 559	×	11 280	4.1	21 127	2] 114
Fotals for Standard Engine				-		314.87	107 5440	89 4530
For Alternator Flywheel c.v	. 1/256.	Co	de Word, AMIU	MP	AREL.			
Plywheel (Loose)	•••		45×45 1143 1143	×	7 <u>1</u> 191	8.8	13.4 682	13.4 682
lotals						316.97	1111 5675	931 4750

144 B.H.P. FOUR CYLINDER 500 R.P.M.

CONTENTS OF	PACK	AGES.		D	IMENSI	ONS		CUBIC	WEIGHT	(Cwrs.)
					Inche	S.		FEET.	GROSS.	NETT.
Engine in case				124 3150	< 48 1220	, ×	66 1676	227	83 4220	66 <i>3353</i>
Flywheel (Industrial,	Loose)			44 > 1118	< 44 1118	×	6 152	6.7	9 458	9 458
Parts in box				59 > 1498	< 41 1041	×	43 1092	60	20 § 1050	163 856
Exhaust Manifold (in	crate)			851 × 2178	23 584	×	22 559	25.6	6 305	4 204
Exhaust Pipe (Loose)				80 × 2032	13 <u>1</u> 336	×	13 1 336	8.2	2	2
Exhaust Pipe (Loose)				66 × 1676	13 <u></u> 336	X	131 336	6.7	11	11
Exhaust Bend (Loose)			39 × 991	17 432	×	13 1 336	5.1	11	11
Air Receiver (Loose)				54 × 1372	12 305	x	12 305	4.5	11	11
Air Receiver (Loose)				51 × 1295	8 203	x	8 203	1.87	78	70 3 16
Fuel Tank in crate				68 × 1727	23 585	×	26 661	23.5	31 178	21
Pulley in crate				40 × 1016	40 1016	×	29 737	26.8	43	31
Pedestal (Loose)				31 × 788	12 305	X	16 408	3.5	3	3
Fotals for Standard En	gine					_		399.47	137 6960	112
For Alternator Flywhe	el c.v.	1/258	Co	de Word,	AMR	ARJ	PAREL.			
⁷ lywheel (Loose)				45 × 1143	45 1143	×	8 203	9.4	10.9	10.9
lotals						-		402.17	139 7070	114 5800

12 B.H.P. Petter Universal Engine Direct Coupled to Compressor on Baseplate. Plant in case 18.5 5 254 37 191

Nores.—When Engines are supplied direct coupled to generators on combined cast iron baseplates the Engines will be packed as stated above, the baseplates and Generators forming separate packages. The dimensions and weights of the flywheels given above are subject to alteration when these Engines are for direct coupling to electric generators and other machinery. The figures in italics denote metric equivalents.

PETTERS LIMITED, YEOVIL, ENGLAND LONDON: 75b Queen Victoria Street, E.C.4. GLASGOW: 19 Waterloo Street, C.2. DUBLIN: 30a Lower O'Connell Street-

Petter Atomic Diesel Engines

(Stationary Type)

Approximate Shipping Specifications

36 B.H.P. SINGLE CYLINDER

CONTENTS OF PACKAGES.					DIN	LENSIO	NS.	_	CUBIC	WEIGHT (CWTS.)	
				Inches.					FEET.	GROSS.	NETT
Engine in case				51 1296	×	47 1193	×	67 1702	93	271 1390	22
Flywheel (Industrial, loc	ose)			45 1143	х	45 1143	×	8 203	9.4	11 560	11
Parts in case	•••			60 1525	×	38 966	×	36 915	47.5	12 610	91 470
Exhaust Bend (in crate))			27 686	х	23 584	x	22 559	7.9	2 102	1
Exhaust Pipe (Loose)				74 1880	×	11 280	×	11 280	5.2	1 <u>1</u> 64	11 64
Exhaust Pipe (Loose)				48 1219	×	11 280	×	11 280	3.4	1 51	1 51
Exhaust Bend (Loose)				33 838	Х	14 356	×	11 280	2.9	1 51	1 51
Air Receiver (Loose)				54 1372	×	12 305	×	12 305	4.5	11 64	11 64
Pulley in crate				34 864	x	34 864	×	16 406	10.7	3 153	2 102
Pedestal (Loose)	•••			29 737	×	22 560	×	11 280	4.1	2 1 114	2] 114
Totals for Standard Eng	ine								188.6	62 3160	52 2644
For Electric Flywheel	c.v. 1	128.	Code	Word,	AT	EBOI	ELF	LY.			
Plywheel (Loose)				45 1143	, ×	45 1143	3 ×	10 254	11.7	16.4 834	16.4 834
Totals									190.9	67 h 3430	571

TWIN CYLINDER 500 R.P.M. 72 B.H.P.

C.V. 1/128. CODEWORD : AMABE.

			DI	MENSIO	ONS		CUBIC	WEIGHT	(Cwts.)
CONTENTS OF PACKA	GES.			Inches			FEET.	GROSS.	NETT.
Engine in case		 78 1981	×	48 1220	×	67 1702	145	50 2540	40 2032
Flywheel (Loose)		 44 1118	×	44 1118	×	6 152	6.7	9 458	9 458
Parts in box		 59 1499	х	40 1016	×	38 966	52	13 t 668	113 578
Exhaust Manifold (in crate)		 461 1174	×	23 584	×	22 559	13.5	3] 166	2] 115
Exhaust Pipe (Loose)		 74 1880	×	12 305	×	12 305	6.2	1± 76	11 76
Exhaust Pipe (Loose)		 45 1143	x	12 305	×	12 305	3.8	1 51	1 51
Exhaust Bend (Loose)		 39 991	×	16 406	×	12 305	4.4	1± 64	1} 64
Air Receiver (Loose)	•••	 54 1372	×	12 305	×	12 305	4.5	11 76	11 76
Air Receiver (Loose)		 51 1295	×	8 203	x	8 203	1.87	46	46
Pulley in crate		 40 1016	×	40 1016	х	19 483	17.6	31 165	2 102
Pedestal (Loose)		 29 737	×	22 560	×	11 280	4.1	21 114	21 114
Totals for Standard Engine		 					259.67	87 4420	73 3710
	110(0	 • Word		MAB	EP/	AREL.			
For Alternator Flywheel c.v	. 1/202.	 45	×	45	×	10	11.7	16.5 840	16.5 840
Totals		 1143		1143	-	234	264.67	941 4800	803 4100

Publication No. 2054/2. October, 1933.

1

500 R.P.M.

		1	I) DIM	ENSIO	NS.		CUBIC	WEIGHT	(CWTS.)
CONTENTS OF PACE	CONTENTS OF PACKAGES.			ſ	nches.			FEET.	GROSS.	NETT.
Engine in case			100	×	47 1194	×	67 1702	182.3	64 <u>1</u> 3270	52 2642
Flywheel (Loose)			44 1118	×	44 1118	×	6 152	6.7	9 458	9 458
Parts in case			63 1600	×	40 1016	×	39 991	56.9	15] 780	123 655
Exhaust Manifold (in crate			661 1689	×	23 584	×	22 559	19.5	41 229	3 153
Exhaust Pipe (Loose)			78 1981	×	13 <u>1</u> 336	×	13 1 336	7.9	2 102	2 102
Exhaust Pipe (Loose)			45 1143	×	13 13 13 13 13	×	13 1 336	4.6	1 51	1 51
Exhaust Bend (Loose)			39 991	×	17 432	×	131 336	5.1	1 <u>1</u> 76	11
Air Receiver (Loose)	• •••		54 1372	×	12 305	×	12 305	4.5	1 <u>1</u> 76	1
Air Receiver (Loose)			51 1295	×	8 203	×	8 203	1.87		- 40
Pulley in crate	• •••		40 1016	×	40 1016	×	23 584	21.4	41 229	3
Pedestal (Loose)	• •••		29 737	×	22 559	×	11 280	4.1	2 <u>1</u> 127	2:
Totals for Standard Engine				-				314.87	107 5440	89 453
For Alternator Flywheel	c.v. 1/256	5 C	ode Wo	ord,	AMI	UΜ	PAREL.			
Flywheel (Loose)			45 1143	×	45 1143	×	71 191	8.8	13.4 682	13 68
Totals		+++	-					316.97	111 <u>1</u> 5675	93 475

W?

Approximate Shipping Specifications—Continued. 108 B.H.P. THREE CYLINDER 500 R.P.M.

144 B.H.P. FOUR CYLINDER 500 R.P.M. C.V. 1/193. CODEWORD : AMRAR.

CONTENTS OF PACEA	CES	- 1	Ι	DIN	IENSIO	NS.		CUBIC	WEIGHT	(CWTS.)
CONTENTS OF TACKA	GES.			I	nches.			FEET.	GROSS.	NETT.
Engine in case	• • •		124 3150	×	48 1220	×	66 1676	227	83 4220	66 3353
Flywheel (Industrial, Loose)		•••	44 1118	×	44 1118	×	6 152	6.7	9 458	9 458
Parts in box	•••		59 1498	×	41 1041	×	43 1092	60	205 1050	16 <u>7</u> 856
Exhaust Manifold (in crate)			85 <u>3</u> 2178	×	23 584	×	22 559	25.6	6 305	4 204
Exhaust Pipe (Loose)		•••	80 2032	×	131 336	×	134 336	8.2	2 102	2 102
Exhaust Pipe (Loose)	•••	••••	66 1676	×	13 <u>}</u> 336	×	13 <u>}</u> 336	6.7	11 64	1 <u>1</u> 64
Exhaust Bend (Loose)		•••	39 991	×	17 432	×	13 <u>4</u> 336	5.1	1 <u>1</u> 76	1 <u>1</u> 76
Air Receiver (Loose)			54 1372	×	12 305	×	12 305	4.5	11 76	1 <u>1</u> 76
Air Receiver (Loose)			51 1295	×	8 203	×	8 203	1.87	78 46	46
Fuel Tank in crate		***	68 1727	×	23 585	×	26 661	23.5	31 178	2 <u>}</u> 114
Pulley in crate			40 1016	×	40 1016	×	29 737	26.8	41 241	3 3 191
Pedestal (Loose)	•••		31 788	×	12 305	×	16 408	3.5	3 152	3 152
Totals for Standard Engine		***						399.47	137 6960	112 5700
For Alternator Flywheel c.v	. 1/258	C	ode Wo	rd,	AMR	AR	PAREL.			
Flywheel (Loose)	•••		45 1143	×	45 1143	×	8 203	9.4	10.9	10.9
Totals				-				402.17	139	114

(Extra when supplied)

ngine in Ca	se		•• •••		26 661	×	26 661	×	30 762	11.8	3 <u>1</u> 165	2] 114
1월 B. F	I.P. P	etter	Univer	sal En	gine	Dir	ect	Co	upled	to Compres	sor on Base	plate.
lant in case		• •	• •••		36 915	×	26 661	×	34 865	18.5	5	3 1 191

The figures in italics denote metric equivalents.

PETTERS LIMITED, YEOVIL, ENGLAND LONDON: 75b Queen Victoria Street, E.C.4. GLASGOW: 19 Waterloo Street, C.2. DUBLIN: 30a Lower O'Connell Street-



L COMMUNICATIONS TO BE ADDRESSED TO THE CROWN AGENTS FOR THE COLONIES, THE FOLLOWING REFERENCE AND THE DATE OF THIS LETTER BEING QUOTED.

W/Falkland Is. 3927. TELEGRAMS: CROWN, LONDON." TELEPHONE: VICTORIA 7730.

&. MILLBANK, LONDON, S.W.1.

17th August, 1934.

Sir,

Kell not

Further to our letter of the 3rd August 1934 furnishing estimates from Messrs. Petters Ltd., and Messrs. Norris, Henty & Gardners Ltd., for electric generating sets, I have the honour to enclose drawings giving details of the engines and alternators as offered by Messrs. Norris, Henty & Gardners Ltd. These drawings were not received in time for despatch under cover of our previous letter.

I have the honour to be,

Sir.

Your obedient servant,

handes

for Crown Agents.

The Colonial Secretary, Falkland Islands.

44

<u>M.P. 218/31</u>. EXTENSION TO ELECTRIC LIGHT SYSTEM.

(A). ESTIMATE FOR INSTALLING 6 L3 GARDNER ENGINE COUPLED TO 60 KW. ALTERNATOR, AS SHOWN ON DRAWING NO. 9671.

			ž.	s.	d
	I.	Cut IO holes for holding down bolts in the existing bed.	32.	IC.	0
	2.	Raise the existing base 6".	6.	0.	0
	3.	Grouting in base plate and holding down bolts.	4.	IO.	0
	4.	Moving Petter plant to new site in tank house.	5.	0.	0
	5.	Removing switch board to tank house and fitting new one in the Power House.	8.	0.	0
	6.	Removing 3 panels from the North side of power house building for transferring Petter plant, replacing and fitting sliding doors.	6.	ΙΟ.	0
	7.	Remove existing cooling tanks and place round North, East and West walls.	-14.	0.	0
	8.	Alter nosition of the West entrance door in consequence of the above.	4.	10.	0
	9.	Lengthen exhaust pipes and fit same on the outside of the building, consequent on moving tanks and fitting existing Petter plant in tank house.	17.	20.2	0
9	Đ.	Renew connections to tanks owing to the altered positions.	I.	IO.	0
9	Ħ.	Renew existing $\frac{1}{2}$ " supply pipe with $\frac{3}{4}$ ".	4.	IO.	0
	12.	New concrete base in tank house for Petter plant, and raise floor $I^{\frac{1}{2}}$.	28.	0.	0.
			2129.	10-	0
		IO% Contingencies.	Ŧ2.	18.	0
		1	÷141.	18.	0
		T86- 0-0			

SAY N. 8140. -0--0.

G. Roberte Director Public Works. 27/9/34.

M.P. 218/31. EXTENSION TO ELECTRIC LIGHT SYSTEM.

ESTIMATE FOR INSTALLING PETTER ENGINE COUPLED TO 74 KW. ALTERNATOR, AS SHOWN ON DRAWING JX3. 107769. (B).

I.	Grouting in base plate and holding down bolts.	£ 4.	s IO.	d O
2.	Moving Petter plant to new site in tank house.	5.	0.	0
3.	Removing switch board to tank house and fitting new one in the power house.	8.	0.	0
4.	Removing 3 panels from the North side of Power house building for transferring Petter plant, replacing and fitting sliding doors.	6.	10.	0
5.	Remove existing cooling tanks and place around North, East and West walls	s. 14.	0.	0
6.	Alter position of the West entrance door in consequence of the above.	I.	IO.	0
7.	Lengthen exhaust pipes and fit same on the outside of the building, consequent on moving tanks and fitting existing Petter plant in tank house.	; 17.	0.	0
8.	Renew connections to tanks owing to the altered positions.	I.	IO.	0
9.	Renew existing $\frac{1}{2}$ " supply pipe with $\frac{3}{4}$ "	4.	IO.	0
10.	New concrete base in tank house for Petter plant, and raise floor Iz".	28.	0.	0
II.	Remove the existing concrete bed used for the existing Petter plant and			
	lay a new foundation. (13) x 5:6" x 3:6" and 5:6" x 5:6" x	4.5	0 -	0
	(10°).	52.	I5.	0
12.	Extend the East end of the Power house building. IO' I", to match existing, to take the extra cooling tanks	183	тБ	0
т 7	Dravision of avtra avhaust nit	100.	10.	0
12.	(7'6'' x 6'3'' x 5'0'').	2I.	0.	0
		348.	0.	0
	10% Contingencies.	34.	0.	0.
		£382.	0.	0.

SAY....£380. 0. 0.

Cr. Roberts. Director Public Works. 27/9/34.

43)



No. (It is requested that, in any reference to this minute, the above Number and the date may be quoted.)

Front To.

THE COLONIAL SECRETARY,

Stanley, Falkland Islands.

November 19th 1935.

To From

MINUTE.

Chief Electrician.

Electrical Department.

I have to report that owing to the fact that we are now running both engines continously it will be necessary to erect a more efficient exhaust system. We have the necessary exhaust pipe and I have been into the matter with the Public Works department. The work will cost in the region of 243. This work cannot be left until next year as we have to do the whole work in practically one change over so as to keep the electrical service in running order. As this work is of an urgent nature I have actually commenced alterations in the exhaust system but I have to state that it might be necessary to call for a small special warrant to complete the work.

Gw Butch

It is requested t, in any refer- te to this minute,	MINUTE. November 21st 1935
above Number I the date may quoted).	
From	To
Chief Electrician.	THE COLONIAL SECRETARY.
Electrical Department.	Stapley Faikland Islands

46

In reply to your minute of 13/11/35 Red 45 I have to state that owing to the inefficient exhaust great heating is being experienced in that system and also the curtailed exhaust is causing loss of power from the driving engines and I consider it necessary to alter this system immediately. This overheating and loss of power has been going on some time but I have been endeavouring to hold over the alteration as this work would normally have been carried out when the new engine was purchased and installed, but we have to safeguard without possibility of the new engine for some time. The small amount of money required approximately 250 to effect the change over to an efficient system is not comparable with the damage that can be done through not having the system improved. The question of waiting till next year does not help the Situation at all , my duty as Thief Electrician is to safeguard these expensive machines from dumage and I have taken steps to do so and I respectfully ask that His excellency should sanction the issue of a small special warrant to complete this work should the necessity arise.

Mr Mercer in his acting capacity as Chief Electrician also went into this matter, as Mr Mercer did not know how the vote money was allocated he did not feel justified in spending money that had probably been allowed for some other work and consequently he allowed for this work to be done next year, but since my return to duty I have been to the power house whenever possible and I have found that the exhaust system is overheated to a very great extent and should be altered at the earliest possible moment, I have to respectfully report that as I consider this work urgent I have commenced certain operations which will facilitate a quick change to the new exhaust system.

Gwintehen

MINUTE. (It is requested that, in any refer-ence to this minute. June 25th 1936 the above Number and the date may be quoted.) To ston bol Lec Port Stanley From chief Elee Port Stanley how that we have both engines running in good order again on the new Supply of fuel the time signal will be given every night at the usual time 9 han. Palso frefose to dim the lights slowly at # 11. 40 Pm instead of 11. 50 Pm, this will give feagle at parties Clubs, meeting etcete more the to get to their Somes Ten mentes is very slort notice of the shutting doan of the fourer house. a note will be shown to this effect in Friday's issue of the Verguin & will also be give our over the Broadcast seisten - Garbuteler