

2055

1714	1 7 1 4

(Formerly)

ELECTRICAL DEPARTMENT.

CONNECTED FILES.

NUMBER	
0927	Works & Communications - Centralisation of.
1714/A	Staff - Electrical.
1714/B	Electrical Stores.
1714/C	Instruments for Repair.
1714/D	Outstanding Accounts
1714/E	Unallocated Electrical stores.
1714/F.	Rates of Pay for Electrical labour
0825/D	Public works Dept. Power house staff.
0040/L	Power supply (C.D.W) Grant.
0428	Construction of New Power house.
0014/V	Supply of Petrol, Paraffin & oil.
0584	Storage tanks, oil etc.

SEE ALSO 0428
SERIES.

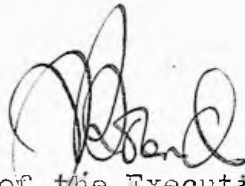
Extract from the Minutes of a Meeting of Executive Council
held 12th July, 1955.

1714.

6. ELECTRICAL SECTION OF P.W.D.

Council agreed to the separation of the Electrical Section from the Public Works Department and the appointment of Mr. E. C. Gutteridge as Superintendent of Power and Electrical Installations with effect from 1st August, 1955. His salary to be raised from Scale B (£540 x £30 - £660 + £140 per annum Expatriation Pay) to Scale B extending to the first point in A1 (£720 per annum + £180 Expatriation Pay).

Matter to be referred to Standing Finance Committee for approval of extra financial provision.


Clerk of the Executive Council.

No.

MEMORANDUM.

It is requested that, in any reference to this memorandum the above number and date should be quoted.

CONFIDENTIAL

13th ^{July}~~June~~, 19 55. 4

From: The Colonial Secretary,

To: Standing Finance Committee,

Stanley, Falkland Islands.

SUBJECT:- Future of the Electrical Section of the Public Works Department.

At the present time the provision of the electricity supply, the maintenance and management of the Power House and electrical installation and maintenance is the ultimate responsibility of the Superintendent of Public Works, to whom the Superintendent of the Power House is subordinate and responsible.

Consideration has been given to this system of administration and the chain of responsibility in the light of the following factors:-

1. The value of the Power House and the principal installations is estimated at approximately £42,000 the most valuable single Government installation.
2. The day to day responsibility for the management of the Power House and the maintenance and provision of electricity in fact rests with the Superintendent of the Power House.
3. In the particular circumstances of the Falkland Islands the Superintendent of the Power House has dual responsibilities. He is the Manager of the Power House and the electricity supply to Stanley on the one hand and on the other he is the adviser to Government on electrical matters and installations, not only in the Falklands but in the Dependencies.
4. The Superintendent of the Power House, in view of his dual responsibilities, must be an experienced and competent officer in a specialised and, in some respects, an independent field.

In the circumstances, it is considered that there is a strong case, on administrative and technical grounds, for divorcing the electrical section from the Public Works Department, and it is suggested that the electrical section should become a separate but minor department of Government and that the Superintendent of the Power House should become Superintendent of Power and Electrical Installations on the understanding that he would retain his present responsibility for the management and supervision of the Power House. He would administer the electrical section's votes and the staff of the electrical section of the Public Works Department would be transferred to the new Power and Electrical Department. The Superintendent of Works would retain responsibility for buildings and building fabric.

It is not considered that the transition would present any practical difficulty. It is, however, considered reasonable that in view of the separate and independent responsibilities of the holder of the post of Superintendent of Power and Electrical Installations, the salary of

/the

5

the post should be raised from Scale B (£540 x £30 - £660 + £140 p.a. Expatriation Pay) to Scale B extending to the first point in Scale A1 (£720 p.a. plus £180 p.a. Expatriation Pay) in the case of an officer who does not possess specialist qualifications or to Scale B extending to the second point in Scale A1 (£750 p.a. + £180 p.a. Expatriation Pay) in the case of an officer who does possess specialist qualifications (e.g. M.I.E.E., M. (Mech) E., A.M.I.E.E., A.M. (Mech)E., or B. Sc.(E).

The principle of divorcing the electrical section from the Public Works Department and its establishment as a separate minor department of Government has been approved by the Governor-in-Council. Honourable Members of Standing Finance Committee are accordingly asked to recommend for approval, with effect from the 1st of August, 1955, the increased emoluments proposed in the preceding paragraph for which supplementary financial provision amounting to £55, under Head XIV, Public Works, sub-head 1B - xvii Electrical, Superintendent Power Station and £37 under xxiii Expatriation Pay will be required.

(Sgd) S.G. Treas.

ACTING COLONIAL SECRETARY.

ADT/VP

1714

7

GAZETTE NOTICE.

Colonial Secretary's Office,
Stanley, Falkland Islands.

29th July, 1955.

It is hereby notified that His Honour the Officer
Administering the Government has been pleased to appoint

MR. E. C. CUTFERTIDGE

to be Superintendent, Power & Electrical Installations, with
effect from 1st August, 1955. With effect from the same
date the Electrical Section of the Public Works Department
will be known as the Power & Electrical Department and will
become a separate department of Government.

By Command,

(Sgd.) S. G. Trees

Acting Colonial Secretary.

Ref. P/474. 1714



Public Works Department,
Stanley, Falkland Islands.

20th January, 19 60

POWER HOUSE FENCE.

- 85 Standards, 10'6" long overall to stand 8'6" out of ground.
Top 18" bent outwards. Punched with holes to take 12 strands of
Barbed Wire.
- 6 Corner Posts ~~11'0"~~ 11'0" long overall to stand 8'6" out of ground
with top 18" bent outwards. Punched with holes to take 2 sets of 12
Galv straining eye bolts.
- 4 Gate Posts 11'0" long overall to stand 8'6" out of ground with top 18"
bent outwards, each punched to take 12 Galv eye straining bolts,
complete with gate hangings.

Burf

8

GOVERNMENT TELEGRAPH SERVICE

9

FALKLAND ISLANDS

SENT

W. & S. LTD.

Number	Office of Origin	Words	Handed In at	Date
	Rgy			27. 1. 60.
To	Crown London		(H.o. A/c)	

No. 33. Please telegraph quotations 85 concrete standards 10 feet 6 inches overall bored to take 12 strands barbed wire plus 6 corner posts and four gate posts as per illustration page 441 New Scientist 17th September

Secretary

b.u. 20260

Time JB/IM

Reply sent 10. Copy sent to S/W & P.E. (S)
 Reply sent 12

324



Memorandum

18th February 1960.

From:- The Supt. P.E. Dept.

To:- The Hon. The Colonial Secretary,
Stanley.

Subject:- Water Cooler

I have the honour to inform you that provision was being made in the estimates for 1960/61 to replace two water coolers (one having been replaced in the previous year.) On inspection it has been found that the conditions of these Coolers is critical, and although they may possibly continue in operation until funds are granted in the coming financial year, it is also possible that they may cease to operate. The result of which would be serious and lead to shutting down two sets until either temporary repairs were made or a new Cooler built.

These Coolers are parts of the original equipment and I consider they have now reached the end of their useful life, It may therefore be thought appropriate to draw from the Replacement Fund to meet the cost of a new Cooler.

I have already approached The Works Engineer of the Falkland Islands Company to obtain an estimate of the cost. On obtaining authorisation for the building of a new cooler I will then in accordance with Government practise offer the work to tender, I feel fairly certain however that the F.I.C. are the only contractors here who could undertake the task, you may consider that in view of this there is no need to offer the work to tender.

Reply at 14.

A handwritten signature in dark ink, appearing to be "G. ...".

Supt. P.E. Dept.

DECODE.

TELEGRAM.

From..... Crown Agents for Oversea Governments and Administrations.

To..... Colonial Secretary, Stanley.

Despatched : 25th February, 19 60. *Time* : 1250.

Received : 25th February, 19 60. *Time* : 1530.

9 Your telegram No. 33 dated 28th January.

Ebor concrete offer 85 standards £86 six corner posts each with two struts £19 four gate posts each with one strut £13 F.O.B. London further quotations expected will cable upon receipt.

1
15
Crown.

Copy to S.P.E.D.
(Intld.)

JB

P/L : IM

✓
KIV II

4th March

60

To: SUPERINTENDENT OF POWER & ELECTRICITY

From: HON. COLONIAL SECRETARY

(Copies to Col. Treasurer and
Superintendent of Public Works)POWER SERVICE COOLERS

In view of the critical condition of these coolers you are authorised to take immediate steps to replace them.

Their replacement is a proper charge against the renewals fund and in the first instance this is what should be done. On the other hand, however, it might be advisable to charge the cost against revenue and the question of doing so will be put to the Standing Finance Committee at its next meeting.

[Signature]
COLONIAL SECRETARY

*Is temporary work available?
Temporary with 9.0.5*

DECODE.

No. 18

TELEGRAM.

From.....CROWN AGENTS, LONDON.....

To.....COLONIAL SECRETARY, STANLEY.....

Despatched : 29th February, 19 60 Time : 1755
Received : 1st March, 19 60 Time : 1500

Your telegram No. 33. Our letter 25th February.

Concrete Standards.

Penfold Fencing offer 85 intermediate posts £85 six corner posts each with two struts and two sets fittings £21 four gate posts each with one strut one set fittings and straight extensions £10 f.o.b. London delivery 3 to 4 weeks.

CROWN.

16 Sted
to note pl
Supt. for est
4.3.60

P/L:MF

Copy sent to Supt. Power and Electrical Dept.

1.3.60.

16

H.C.S.

Thank thank you, will you also
can to S.W. who will decide and plan order.

Spencer
4-3-60.

17

R.W.

To you accordingly Spencer
7-3-60

18

H.C.S.

Please look and now on order

S.P.E.D.

19.

to note, pl.

4-4-60.

Spencer
20 2/4/60.

H.C.S.

Thank thank you. Spencer 5-4-60.

Spencer

D. 13

It is requested that, in any reference to this memorandum, the above number and date should be quoted.



MEMORANDUM.

6th April, 19 60

To: Colonial Treasurer.

Stanley, Falkland Islands.

To The Honourable

The Colonial Secretary

STANLEY.

SUBJECT:- Power Station Coolers.

14

I refer to your Memorandum 1714 dated 4th March, 1960 to the Superintendent of Works authorising replacement of the Power Station Coolers.

In accordance with Colonial Regulation 215 I should be grateful for the Governor's authority to charge the cost of replacement (in the first instance at least) to the Power Station Renewals Fund.

The estimate for replacement is £550 and it is noted that the question of charging the cost against revenue will be considered by the Standing Finance Committee.

L. Lilcau
Colonial Treasurer.

HT/JR.

Reply at 214

Y.E.

While you were away South, the Supt. P & E. draws my attention to the fact that one of the water coolers at the Power Station was in a critical position. At my request he followed up his verbal report with J11 and I authorized him to take immediate steps to replace it. The P.W.D. have built a new one and as far as I can see have made an excellent job of it.

It is a fair charge against unswath - but in this case I feel it would be better to charge it in due course to a new item - with S.F.C.'s approval and I propose to put the matter to S.F.C. In the meantime may I have your approval to charge against unswath in the first instance

J. 11, 14 & 21. ref.

G.G.F.
14.4.60.

23

HCS.

Yes. Sorry this was overlaid

J.A. 28.4.60

1714

3rd May

60

From: Officer Administrating the
Government

To: COLONIAL TREASURER

Power Station Coolers

21 Your memorandum 13 of 6th April - Power Station Coolers.

The Governor has approved the proposal to charge the cost of replacing the Power Station coolers in the first instance to the Power Station Renewals Fund in accordance with Colonial Regulation 215.

As you are aware, however, the Standing Finance Committee has recently agreed to the suggestion that the cost should be borne against Revenue. (Power & Electric - new item, Water Cooling, Power Station - £550).

Signed A.G. Denton-Thompson

Officer Administrating the Government

c. c. Auditor

AGDE/EN

Recd for SFC extract 20 165-60

No.

It is requested that, in any reference to this memorandum, the above number and date should be quoted.

MEMORANDUM.

26

16th August

To:- The Hon. The Colonial Secretary

Stanley.

From:- The Supt. P.E. Dept.

Stanley, Falkland Islands.

SUBJECT:- Office Alterations at the Power Station

I have the honour to ask you to refer to Head XIX Special Expenditure, Item 18 Alteration to Power Station, in the current Estimates.

The alterations are those which will extend the office in order to provide better facilities to consumers when paying their accounts, and also to enable room to be made for additional switchgear.

The Superintendent of Works estimated these alterations would cost £450. (this amount was approved by the Legislature)

I regret that it did not occur to me at the time to ask that toilet facilities for the female clerk be built into the extension, at the moment there are no toilet facilities for a female in the Station. I enquired recently what the additional cost would be, and was told by the S/W that £75 would be sufficient to enable the work to be carried out.

May I ask that consideration is given to applying for additional funds to enable this work to be carried out.

Supt. Power & Electrical
Department.

S/W

27.

for an estimate.

Revised

CS

Hel

I agree with the above.

28

2/9/60

SFC 29

8

3/9/60

As CT

Note for SFC pl.

30

3-9-60

31

How to do,

Noted for the next meeting of
S. L. C., thank you.

[Signature]

A.C.T.

3.8.60.

See 23.9.60

How to do,

32

Starting this committee approved
additional provision of £75 for the
purpose of including a ticket for the
female clerk in the approved alteration
to the Purus Station.

[Signature]

A.C.T.

29.9.60.

W. when SLE
wanted to
a few lines

SLE
Noted by *[Signature]* 8/10/60
to note 32 il.

See 7.10.60.

[Signature]

7.10.60

Noted thank you.

[Signature]

7-10-60

10-10-60

17th June,

60

Gentlemen,

I have to inform you that this Government will be acquiring two Mirrlees/Brush 198KW star wound 3 phase 4 wire 400/230V 50 cycle 600 rpm rotating field type TLB6 alternator sets which were originally supplied to the Colonial Development Corporation whose reference number was 130/129 of 1951. Makers Contract numbers 35901 and 35902. These machines were installed at the Falkland Islands Freezing Company's Plant at Ajax Bay in the Falkland Islands and it is the intention to dismantle them and ship them into Stanley and re-erect them in the Government Power Station. The existing plant in the Power Station consists of 3 x 150KW and 1 x 75KW 3 phase 4 wire 400/230V 50 cycle 600 rpm rotating field type EPV6 Blackstone/Crompton Parkinson alternator sets. I should be grateful if you would be good enough to contact Messrs. Mirrlees/Brush Engineering informing them of this Government's intention and ask their advice on the following matters:-

(1) Difficulty is expected in the removal of the sets owing to the remoteness of the site and lack of facilities for lifting. It is planned to dismantle the sets into their smaller components and onload them to a small fishing vessel from a beach. Makers should be asked of any particular difficulties characteristic of these machines that might be encountered during such an operation.

(2) It has been noted that the machines are fitted with closed circuit radiator cooling for both engine and lubricating oil. It may not be convenient to employ this type of cooling system when the machines are re-erected, and the makers should be asked if closed circuit cooling, using heat exchangers and employing a water cooling tower for raw water cooling might be fitted. If this is possible, details and prices for the conversion of the two engines should be given but should not include the cost of a water cooling tower which would be constructed locally.

(3) Makers should be asked to supply all equipment which in their opinion is necessary for the re-erection of these two engines, this equipment should consist of holding down bolts, wedges, packings, gaskets, and a full set of drawings of foundation layout etc.

(4) The Brush Electrical Engineering Company (their ref: 613029 of 1951) suppliers of the alternators and switchboard should be asked for a full set of wiring diagrams for the alternators, switchboard and synchronising panel. It is planned to operate these Brush alternators in parallel with the existing Crompton Parkinson Alternators which are equipped with Isenthal type voltage regulators. The Brush alternators are equipped with carbon pile regulators. It is planned to make a solid connection between the busbars of the existing Crompton Parkinson Clad "A" type switch board which comprises incoming feeders from the existing machines and the out going feeders to the supply, and the busbars of the Brush Switch Board etc.

See lib.

/2. It would.....

Crown Agents for Oversea Governments & Administrations,
4, Millbank,
LONDON, S.W.1.

4-2.
Reply at 530

COPY

36.
824

- 2 -

2. It would be appreciated if the reply could be forwarded as soon as conveniently possible.

I am,
Gentlemen,
Your obedient servant,

(Sgd.) D. R. Morrison.

for COLONIAL SECRETARY

Su 19/7/60

No mail
23/7

Copy to Supt. Power and Electrical Dept.

Su 21.8.60.

GOVERNMENT TELEGRAPH SERVICE

FALKLAND ISLANDS

SENT



W.A.S.C.

Number Office of Origin Words Handed in at Date

2. 8. 60.

To
 GPO London (H.O.A/C)

Hirplees/Brush oil engine generator TL Mark 11 Number 690 foundation drawing number 40462 dated 16th March 1950 stop Please enquire if depth of engine foundation block may be reduced to 3½ feet vice 4½ feet as very hard unbroken rock foundation discovered or whether engine foundation block remain at 4½ feet and be raised 1 foot above floor level ^{telegraphic} a/reply is urgently required.

Reply at 38 EE.

Time Secretary. Rec 9 8. 60.

DECODE.

TELEGRAM.

No. 17.

From Crown Agents, London.....

To Colonial Secretary, Stanley.....

Despatched :	9th August,	19 60.	Time : 1545
Received :	10th August,	19 60.	Time : 1000

825

Your telegram 2nd August.

Mirrlees confirm foundation block may be 3½ feet below floor only but total block depth must remain at 4½ feet. Reply to your letter 17th June will be sent immediately information available.

Crown

~~227~~ 35

Phoned to Mr. Gutteridge.
Please send him a copy. #H.

P/L : LH

By 21. 8. 60.

GOVERNMENT TELEGRAPH SERVICE

FALKLAND ISLANDS

RECEIVED

(W. & S. Ltd.—250 Pd/7/59).

Number	Office of Origin	Words	Handed in at	Date
130	etat Ajax Bay	67	0920	14/9

To Colonial Secretary Stanley

See 4-1 329
 I advise that the following telegram is sent to Crown London
 Begins. Reference my letter regarding Mirrlees generating unit
 foundation sole plate for alternator and combination foundation
 sole plates for pedestal bearing and exciter should be included
 and dispatched with other items advised by manufacturers for the
 machines. ends You will no doubt include reference number and
 date of original letter stop

Gatteridge

Time BRS 4

GOVERNMENT TELEGRAPH SERV.

FALKLAND ISLANDS AND DEPENDENCIES.

SENT

(W. & S. Ltd.—250 Pd/7/59).

Number	Office of Origin	Words	Handed in at
	Psy		
To			
CROWN LONDON			(HOA/o)

~~335~~ No. 302. Reference my letter 0588/VI of 17th June 1960 regarding
 Mirrlees generating unit foundation sole plate for alternator and
 combination foundation sole plates for pedestal bearing and exciter
 should be included and dispatched with other items advised by
 manufacturers for the machines

Secretary

Time ECG/LH

DECODE.

83e
42.

TELEGRAM.

From Crown Agents, London.

To Colonial Secretary, Stanley.

Despatched : 20th October, 19 60. Time : 1731.

Received : 21st October, 19 60. Time : 0930.

~~82~~35 Your letter 0588/VI June 17th.

Mirrlees state no difficulty should be experienced with transferring sets to Stanley if instructions in manual complied with. Firm quote following prices. Closed circuit cooling including heat exchangers water pumps and starters £350 f.o.b. for two sets. Recommended equipment for re-installing sets including water pipes foundation bolts oil coolers engine joints £818 f.o.b. for two sets. Existing avrs will require conversion to qcc control at small cost to enable sets to work in parallel with blackstone sets. Please state which of above to be ordered. Confirming quotation and drawings being sent airwise.

Crown.

Copy to S.P.E.

DRM

Reply at 45

Copy sent *[Signature]*

P/L:IM

GOVERNMENT TELEGRAPH SERVICE.

FALKLAND ISLANDS AND DEPENDENCIES.

SENT.

Number	Office of Origin	Words	Handed in at	Date
				24.10.60.

To

CROWN LONDON

(H.O. A/C)

42

NO. 352. YOURTEL 21ST OCTOBER PLEASE ORDER FOR IMMEDIATE DELIVERY FOUNDATION BOLTS COMMA ENGINE JOINTS COMMA FOUNDATION SOLE PLATES FOR ALTERNATOR PEEDESTAL BEARING AND EXCITER STOP ITEMS AND INSTRUCTIONS FOR CONVERTING AVRS TO QCC CONTROL STOP GRATEFUL YOU TELEGRAPH DELIVERY DATES OF ABOVE

SECRETARY

ECG/IM

*Copy sent to S.P.E.D.
 [Signature]*

Time

*16. 11. 60
 8. 11. 60
 4. 11. 60
 31. 10. 60.*

THE FOLLOWING REFERENCE AND THE DATE OF THIS LETTER SHOULD BE QUOTED IN COMMUNICATIONS.

EE1/Falkland Is. 8608.

CROWN AGENTS FOR OVERSEA GOVERNMENTS AND ADMINISTRATIONS

4. MILLBANK. LONDON. S.W.1.

TELEGRAMS { INLAND: "CROWN, SOWEST, LONDON." OVERSEA: "CROWN, LONDON." TELEPHONE: ABBEY 7730 TELEX NO. 24209



27th October, 1960.

Sir,

198 KW. Diesel Generating Sets.

35
... 48 49 42 I am directed to refer to your letter 0588/VI dated 17th June 1960 and to enclose one copy of each of a letter dated the 17th, and a quotation dated the 14th October, 1960, which have been received from Mirrlees, Bickerton and Day Ltd. (Hawker Siddeley Brush International Ltd.). These confirm the preliminary information contained in the telegram to you from this office dated the 20th October 1960.

35 2. The following comments are made on the various points raised in your letter :-

(1). The firm state that there should be no difficulty in dismantling and building the sets provided the instructions in the manual are adhered to and the work carried out with care.

54
... (2). It is possible to modify the engines for closed circuit water cooling and the firm have quoted for the necessary heat exchangers, water pumps etc. It is noted that you would construct the cooling tower locally and details are provided of the necessary cooling and flow rates. The enclosed drawing 42116 shows piping diagram for the suggested cooling system.

37 38 (3). Included in the quotation are sets of holding down bolts, packing pieces etc. for the engines and alternators. Reference is made to your telegram dated 3rd August and to the reply dated 9th August 1960 when it was confirmed that the foundation blocks may be 3 1/2 feet only below floor level, provided that the total block depth is at least 4 1/2 feet.

52-54
... (4). One copy of each of Brush drawings SGHS 613029/1 and FOL/105835 are attached and these show the diagram of connections of the switchboard and alternator respectively. The Stores automatic voltage regulators on this switchboard are arranged for the special astatic method of parallel operation and you will note that it will be necessary to modify them to the more standard quadrature current compensation method, as for the Isenthal regulators at Stanley.

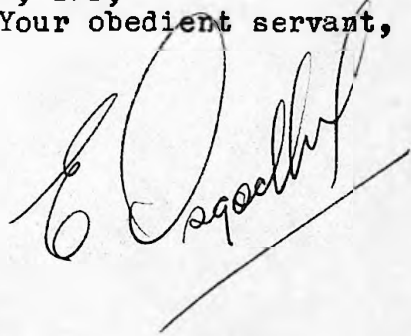
/continued overleaf.....

The Colonial Secretary,
Colonial Secretary's Office,
Stanley,
Falkland Islands.

45

3. Your telegram dated the 24th October 1960 continuing instructions to order foundation bolts, sole plates, AVR conversion equipment etc. was received just prior to despatch of this letter and you will no doubt have received details of the delivery dates of these items by telegram before you receive this letter.

I am, Sir,
Your obedient servant,



MIRRLEES, BICKERTON & DAY LIMITED

A MEMBER OF THE HAWKER SIDDELEY GROUP

DIESEL ENGINES

WORKS · HAZEL GROVE · STOCKPORT

TELEPHONE (14 LINES) STEPPING HILL 1000
TELEGRAMS: "MIRRLEES TELEX MANCHESTER" · TELEX NO. 66-316



OUR REF.
95/PB/HE/3590

YOUR REF
EEI/Falkland Islands 8608.

17th October, 1960.

The Crown Agents for Overseas Governments
and Administrations,
4, Millbank,
LONDON. S.W.1.



Dear Sirs,

Contract 3590 - TLB6 Mark II Engines -
Falkland Islands.

We have pleasure in advising that we are enclosing with this letter, quotations for material necessary to change the cooling system of the above engines from closed circuit with radiator to a closed circuit employing heat exchangers and water cooling tower. Also included are quotations for materials needed for the re-erection of these sets.

No difficulty should be experienced with the dismantling and rebuilding of these engines provided the instructions contained in the Manual are adhered to and the work is carried out with care.

The operation of these machines with the four Blackstone/Crompton Parkinson sets in parallel will necessitate modified connections to the A.V.R. Aux. Switch and new Transformer Shunting Resistances, so that the carbon pile A.V.R. supplied by us will be able to operate on the Q.C.C. method of connections instead ASTATIC as now arranged. Enclosed are diagrams of connections FOL.105835 and SGHS 613029/1.

Yours faithfully,
MIRRLEES, BICKERTON & DAY LIMITED.

W. Eades.
Service Manager.

SPE

49

HAWKER SIDDELEY BRUSH INTERNATIONAL LIMITED

MIRRLEES WORKS, HAZEL GROVE, STOCKPORT, CHESHIRE, ENGLAND

EXPORT ORGANISATION FOR

TELEPHONE
STEPPING HILL 1000
(14 lines)

Mirrlees

TELEGRAMS & CABLES
MIRRLEES MANCHESTER TELEX
Telex No. 66316

MIRRLEES, BICKERTON & DAY LTD.

Our Ref: **37/GWH/AM.Q.10119**

Your Ref:

14th October, 1960.

The Crown Agents for Oversea Governments &
Administrations,

4, Millbank,
London, S.W.1.

Dear Sirs,

Contract 3590 - TLB6 Mark II Engines. Falkland Islands.

At the request of our Service Department we have pleasure in quoting hereunder for equipment necessary for conversion of the above mentioned engines from radiator cooling to a heat exchanger system, and also for all necessary material for the re-erection of these engines.

Two 'Serok' Heat Exchangers of cast iron water boxes and cylinders with aluminium brass tubes located in brass or copper baffle plates. Each heat exchanger will have the following characteristics. Design No. A 47502.

	£90. 15. Od.	£181. 10. Od.
	each	

Fresh Water		
<u>Circulation Rate</u>	<u>Press Loss</u>	<u>Degrees F.</u>
G/HR	P.S.I.	IN OUT DIFF.
1950	5.6	170 151 19

Raw Water			
<u>Circulation Rate</u>	<u>Press Loss</u>	<u>Degrees F.</u>	<u>Dissipation</u>
G/HR	P.S.I.	IN	BTU/HR
1500	1-1½	88	362,000

The manufacturers state that only typical drawings will be supplied to you, with their equipment which are generally acceptable, but should special drawings be required these will be charged extra.

/Cont'd.....

A Member of the  Hawker Siddeley Group

Registered and Head Office of Hawker Siddeley Brush International Ltd: Duke's Court, Duke Street, St. James's, London, S.W.1.

- 2 -

Two 'SAFRAN' SCE-B3 self contained centrifugal pump units complete with $1\frac{1}{2}$ H.P. squirrel cage drip-proof motors of Brush manufacture, running at full load speed of 2900 R.P.M. suitable for operation on 440 volt, 3 phase, 50 cycles electric supply.

£56. 18. 3d. £ 113. 16. 6d.
each

Pump Specification

Discharge Branch	$1\frac{1}{2}$ " Flanged & Drilled B.S.T.D.
Suction Branch	2" Flanged & Drilled B.S.T.D.
Casing	Cast Iron
Impeller	Gunmetal fitted with phos. bronze wearing ring
Shaft	Mild steel fitted with wearing sleeve
Support Bracket	Cast Iron
Gland	Suitably packed (with spare packing)

Duty

Liquid Pumped	Water
Volume	25 gallons per minute (1,500 gallons per hour)
Total head (inclusive of frictional losses)	45 feet
R.P.M.	2900
B.H.P. req'd to drive	$1\frac{1}{2}$

Control Gear

Two Allen West type SC1 direct on push button starter having no-volt and overload releases and fitted with fully interlocked isolator	£14. 9. 6d. each	£28. 19. 0d.
---	---------------------	--------------

Extra for witnessed test and inspection of the complete units at maker's works	£ 7. 10. 0d.	£15. 0. 0d.
--	--------------	-------------

Extra for packing and delivery FOB	£ 3. 10. 0d.	£ 7. 0. 0d.
------------------------------------	--------------	-------------

Customer's cooling tower should be suitable for cooling 3,000 B.P.H. from 112° F down to 85° F., heat extraction 802,800 BTU's /HR.

Two sets of jacket water cooling pipes	} £350. 0. 0d. £700. 0. 0d. per set
Two sets of raw water pipes	
<u>Foundation Gear</u>	
Two sets of holding down belts for engines and generators	
Two sets of packing pieces	
Two sets of shims	

/Cont'd....

51

- 3 -

2 Oil coolers(standard TL)	£37. 13. 6d. each	£ 75. 7. 0d.
2 Engine sets of joints TL6	£21. 2. 0d.	£ 42. 4. 0d.
		<u>1163. 16. 6d.</u>
		<u>£</u>
		NET F.O.B.

The prices quoted cover your goodselves for 5% commission.

It is assumed that the existing exhaust system, starting air system, charging air system and fuel systems will be utilised.

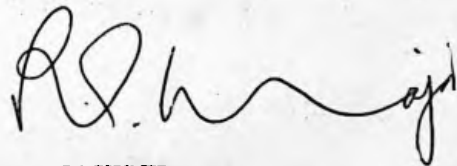
This enquiry is accepted on Crown Agents Conditions of Contract with the exception of Clause 9 (4) which we respectfully request be modified in so far as it affects the penalty. This we would like to read :-

"..... calculated at the rate of 1% per week or part of a week, up to a maximum of 5% on any work the delivery of which shall have been delayed beyond the date or dates of delivery specified..."

Also, the Price Variation Clause, since the prices quoted may be regarded as "fixed prices".

Delivery :- 16/18 weeks from receipt of order

Yours faithfully,
HAWKER SIDDELEY BRUSH INTERNATIONAL LIMITED.



p.p. W.E. JACKSON.
COMMERCIAL MANAGER.

GOVERNMENT TELEGRAPH SERVICE

55

FALKLAND ISLANDS

SENT

W. A. S. LTD.

Number	Office of Origin	Words	Handed in at	Date
				11.11.60.
To				
Crown London			(H.o. A/c)	

47

46 No. 375. Reference your letter EEL/Falkland Is para 3
 no telegraphic reply received grateful you do utmost to
 expedite delivery of packings/joints holding down bolts sole
 plates and conversion items and instructions for AVRs stop
 Engines are urgently needed and ready for re-erection but
 await these necessary items

Secretary

Time ECG/IM

Reply at 56/81 R U 20 11 60

DECODE.

TELEGRAM.

From Crown Agents, London.

To Colonial Secretary, Stanley.

Despatched : 16th November, 19 60. Time : 1510.

Received : 17th November, 19 60. Time : 1020.

55 Your telegram No. 375 November 11th.

Regret delay in replying. Best delivery F.O.B. February 6th 1961. Approx total price foundation bolts sole plates etc £272. Every effort being made to improve delivery.

Crown.

Copy to S.P.E.
DRM

Sent by 17/11/60.

P/L : IM

(Intld.)
DM

Reply at 04

57

56. Anything further we can/should do on this.

2. R.

58

17. 11. 60

ACS:

Justified you draw O.S. attention to the long delay
On the 21-35 para 3. asked O.S. in June to obtain
essentials for re-creation, these items are usually
obtainable "off the shelf", they have only recently placed
firm order, as a result of which we will not
receive them until late November. It leaves little
time for me to photo and ink commission before my
UK leave.

3. R.

2. R.

17-11-60.

64

GOVERNMENT TELEGRAPH SERVICE

FALKLAND ISLANDS

SENT

W. & S. LTD.

Number	Office of Origin	Words	Handed in at	Date
	Psy			19.11.60
To				
CROWN LONDON				(HOA/c)

No. 391. Yourtel 16th November stop Engine parts stop Please make every endeavour to advance delivery date stop Delay in supplying these items to delivery date mentioned may effect continuity of Electricity supply owing to increasing demand

Secretary

Time HLB/LH

Copy to: S.P.E.D.

Bu 29.11.60
26/1/61 (M.S.O)

ACKNOWLEDGMENT OF ORDER **ADVISE OF ORDER.**

83

N.B. The "delivery due" date shown means completion at firm's works

and Islands 8608/1

In
of
A
D
J
T
4. P
C

Col. Sec. tel. No. 375 dd. 11.11.60.
Messrs. Hawker Siddeley Brush International Ltd.,
Mirrlees Works,
Hazel Grove,
Stockport,
Cheshire.

INNN AGENTS
Instruments and Administrations
1, LONDON, S.W.1.

Order Dated :—

We accept this order placed for and on behalf of the Government of Falkland Islands

and agree to supply, on the terms stipulated, Foundation bolts etc.
specified below, in accordance with the Crown Agents' General Conditions of Contract dated June, 1957, and, where applicable, Special Conditions of Contract dated June, 1957.

Signature _____ Address MIRRLEES WORKS, HAZEL GROVE, STOCKPORT, CHESHIRE.

Dated this 10th day of January 19 61 CHESHIRE.

This order is subject to inspection by Chief Inspecting Engineer before despatch.

ITEM NO.	QUANTITY	DETAILED DESCRIPTION OF ARTICLES ORDERED	ESTIMATED COST	RATE	AMOUNT
1A	2 sets	Foundation bolts etc. for T1B6 engines			80 4 0
1B	2 "	Joints etc. for T1B6 engines			42 3 0
1C	2 "	Foundation sole plates, bolts etc. for Brush alternator and exciter pedestal bearings.			131 6 0
1D	2 "	Equipment to convert Stones' AVR from static to quadrature current control for parallel operation.			
1E	3 "	Drawings, instructions etc. to enable installation of the equipment to be carried out on site. To include foundation and arrangement drawings of			25 0 0

For the Attention of Mr. P. Brogan

DELIVERY DATE: very effort will be made to deliver this material by 6.2.61 Cost of articles specified on continuation sheet (if any) /contd. Less 5% discount except

If economy can be effected by so doing, firm should quote for despatch by Parcel Post, sub-divided if necessary. Firms may offer delivery at ports other than Liverpool or London if by so doing they can deliver f.o.b. more cheaply. For delivery f.o.b. London price must include port rates.

DISCOUNTS AND TRADE ALLOWANCES Item 1E
Packing and delivery f.o.b. or postage to PORT & POST CHARGES
NET AMOUNT PAYABLE on receipt of Bills of Lading £ 282 14 9
(including all charges) on receipt of P.O. Cert. of Posting £

12	12	8
266	0	4
16	14	5
282	14	9

POSTAL ADDRESS

SHIPPING MARK

Reqn. 8608

C ↑ A The Administrator,
Port Stanley,
Falkland Islands.

Ind. No. Col. Sec's tel. No. 375 dd. 11.11.60.

Reqn. 8608

C ↑ A

No. O.A.G.
PORT STANLEY
VIA MONTEVIDEO

Gross Weight

Ind. No. Col. Sec's tel. No. 375 dd. 11.11.60.

FOR USE IN CROWN AGENTS' OFFICE

16 FEB 1961

W/HR/ Falkland Islands 8608/1

TO MESSAGE: Hawker Siddeley Brush International Ltd.

ITEM No.	QUANTITY	DETAILED DESCRIPTION OF ARTICLES	ESTIMATED COST	RATE	AMOUNT
		<p>the engine, alternator and switch-gear and diagrams of connections of the alternator, switchgear and AVR equipment. The AVR diagram should show clearly how the conversion to 000 is affected.</p> <p>The above items are required for the two generating sets supplied originally to the Colonial Development Corporation under your Contract Nos. 35901 and 35902, which are now to be transferred to Stanley Power Station. You should include in the order any items, such as packing pieces etc, not specifically mentioned above, which you consider necessary to re-install the equipment effectively. The sets when installed should be capable of operating in parallel with three 150 KW and one 75 KW generating sets with Blackstone MW engines and Crompton Parkinson alternators.</p> <p>The drawings etc. in item 11 should be supplied as detailed in clause 12 of C.A. Spec. 93:1960 and sent to the following address :-</p> <p style="padding-left: 40px;">The Colonial Secretary, Port Stanley, Falkland Islands.</p> <p>The above confirms the telex message from this office dated 25th October, 1960 and accepts part of the equipment included in your quotation 37/GW/ MW.14049 dated 14th October and letter 95/PB/HR/3590 dated 17th October, 1960.</p> <p><u>Approx. total price £272.0.0. f.o.b.</u></p> <p>It is noted from your telex message of the 14th November, 1960, that the delivery for the above will be 12 weeks, the contractual delivery date will therefore be the 6th February, 1961.</p> <p>You are reminded that the equipment on this order is very urgently required and you should do your utmost to improve upon the delivery if at all possible.</p>			

W/EEL Falkland Islands 8608/1

Gentlemen,

Your reference: 37/GRC/MW.SC.16475

I am directed to confirm that the order dated 23rd November, 1960, for Foundation Bolts under the above requisition should be proceeded with, in accordance with the modifications to Clause 9(4) of the Crown Agents' General Conditions of Contract suggested in your letter of the 30th January, 1961. It is noted that the Price Variation Clause does not apply, since the prices quoted in your acknowledgment of the order are firm. These prices are approved and accepted. The contract date for delivery is 6th February, 1961, and you are reminded that inspection of this material before despatch by the Chief Inspecting Engineer is required.

I am, Gentlemen,
Your obedient servant,

Messrs. Hawker Siddeley Brush
International Ltd.,
Mirrlees Works,
Hazel Grove,
Stockport, Cheshire.

/HBB

THE CROWN AGENTS
FOR OVERSEA GOVERNMENTS AND ADMINISTRATIONS.

4 MILLBANK,
LONDON, S.W.1.

13th February, 1961

All communications to be addressed to the Crown Agents, the above reference and the date of this letter being quoted.

Letter { No. Authy. Col. Sec. telegm.
 { No. 375
 { Date 11.11.60

Indent { No.
 { Date

Department:—

Sir,

I am directed to append a report in connection with the indent or other communication referred to hereon.

I am, Sir,

Your obedient servant,

A. Smith

The Administrator,
Port Stanley,
FALKLAND ISLANDS.

ITEM No.	SUBJECT	REMARKS
1A - E	Engine Spares Etd.	<p>With reference to the report sent to you on the 31st January, the spares against items 1A and 1B, and some of the drawings against item 1E, have now been approved by the Crown Agents inspecting engineer and are being packed for shipment. Despatch of these items will be arranged by the first available vessel and you will be notified of details by the normal shipping advices.</p> <p>With regard to the Brush Alternator Spares against items 1C and 1D and the balance of the drawings against item 1E, the contractors state that these are not expected to be available for inspection until the end of February/early March 1961. Hawker Siddeley Brush International Ltd., are being urged to improve upon this delivery promise and a further report will be sent to you when the outstanding spares have passed in-spection and are available for despatch.</p>

87.

S.P.E.D.

CJE/HJE

9 w/d copies from B.C.P.

[Signature]
13/6

Power & Electrical Department 1960-61

Power Station

The two Mirrlees diesel generating units each of 200 kilowatt output were successfully dismantled and brought in from Ajax Bay. One unit has been rebuilt and installed in Stanley, bringing the total output of the Station to 725 kilowatts. The second unit will be placed in store and held in reserve.

Street Lighting

There has been a major improvement in street lighting along the whole of Davis Street. Other improvements are scheduled, these include, Brandon Road, Allardyce Street, Pioneer Row, Saint Mary's Walk, Ross Road, East and West.

Camp

Normal maintenance on diesel generating sets has been carried out at both boarding schools. At Darwin a new generator house has been built, the two original diesels plus one additional new unit have been installed, this is for the purpose of providing a continuous supply to an oil burning unit.

General

Work has been continued throughout the year on house wiring, repair and maintenance of domestic apparatus and improvements to the distribution system. The increase in the use of domestic appliances of all kinds is reflected in the increase in output of the Station. This is expected to reach over a Million units this year.

99

4CS
17A We haven't asked Depts. for material for some years now - see 0448/viii attached.

DR
16.5.61

Lo
12 6 61

29th December,

61.

Gentlemen,

It is proposed to change the existing vibrating contact voltage regulators fitted to our Blackstone alternator sets to the carbon pile type as fitted to our recently installed Brush alternator set. It is thought that the existing voltage control cubicles might be adapted to house the proposed new regulators.

2. The number and type of sets to be converted are, three Blackstone/Crompton Parkinson 187.5 KVA and one Blackstone/Higgs 100 KVA alternator set. The following drawing numbers etc. apply:-

	<u>Drawing Number</u>	<u>Order Number</u>
Crompton Parkinson	90188D	491065/2
	108128D	531303/2
	115838C	-
	156928B	-
Brush Engineering	BGH8613029/1	
	B5967162	

(Crompton Parkinson) Crown Agents ref. 5837/1 dated 25.9.53
 (Brush Engineering) Crown Agents ref. 3A/Falkland Islands
 8608/1 dated 25.11.60.

Messrs. J. Stone and Co. (Deptford) Ltd. are the manufacturers of the regulators.

3. I am to ask if you will obtain from the manufacturers their quotations for a complete conversion. It should be noted that the Brush regulator set has been changed from Astatic control to Q.C.C. to suit the Crompton Parkinson sets which supply an unbalanced load.

I am,
 Gentlemen,
 Your obedient servant,

(Sgd.) H.L. Bound

for COLONIAL SECRETARY.

Crown Agents for Oversea Governments and Administrations,
 11, Abchurch Lane,
 London, E.C. 4.

10. 1. 1965
 Reply
 at 11

THE FOLLOWING REFERENCE AND THE
DATE OF THIS LETTER SHOULD BE
QUOTED IN COMMUNICATIONS.

CROWN AGENTS

FOR OVERSEA GOVERNMENTS AND ADMINISTRATIONS

4, MILLBANK,
LONDON, S.W.1.

EEI/Falkland Islands 9057.

TELEGRAMS (INLAND : "CROWN, SOWEST, LONDON,"
OVERSEA : "CROWN, LONDON S W 1")

TELEPHONE : ABBEY 7730

TELEX No. 24209

13th March, 1962.

Gentlemen,

Conversion of Automatic Voltage
Regulators on Diesel Alternator Sets.

I am directed to acknowledge receipt of your letter No. 1714 dated 29th December, 1961, requesting quotations for the conversion of existing automatic voltage regulators, and to state that the matter has been taken up with Blackstone & Co. and Hawker Siddeley Brush International Ltd., who supplied the sets in the first instance.

2. There appears to be some difficulty in obtaining the necessary data for the three 187.5 KVA sets, as records may not be available. Nevertheless, could you please inform this office of the details on the rating plates on the three generating sets, since these will be required if Blackstone & Co. Ltd. or Hawker Siddeley Brush International Ltd. are unable to locate the necessary data.

I am, Gentlemen,
Your obedient servant,

(Handwritten signature)

Reply at 104

102.

S.P.E.D.

*f. 101. To see and for
necessary action, ph. [initials]*

Colonial Secretary's Office,
Stanley,
FALKLAND ISLANDS.

*Att CS. 103
Draft telegram C.C.45
at [unclear] for your approval
please 10-4-62.*

*for C.S.
10. 4. 62.*

FN/VT



NEWTON BROTHERS (Derby) LTD.

ELECTRICAL ENGINEERS AND MANUFACTURERS

ALFRETON ROAD • DERBY



Specialised **ELECTRICAL EQUIPMENT** including
Automatic Voltage & Current Regulators • Rotary Transformers • Motor
Generators • Lightweight Aircraft Generators • High Frequency Alternators
Power Units for Electronic Equipment

Crown Agents
for Oversea Governments and Administrations,
4 Millbank,
London S.W.1.

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IMPERIAL BUILDINGS • 56 KINGSWAY
LONDON, W.C.2 • Tel. Holborn 0623

D.G.I. & A.R.B.
APPROVED

Your Reference **EE1/Falkland Islands 9057**

Our Reference **RE/MRS/VRG. 37654.**

Tel. Ext. **10.**

Date

27th April, 1962.

PLEASE QUOTE OUR REFERENCE
NUMBER ON ALL CORRESPONDENCE

ESTIMATE

Dear Sirs,

Conversation of Automatic Voltage Regulators on Diesel Alternator Sets

We thank you for your enquiry of the 3rd April, 1962 and apologise for the delay in replying. We now have pleasure in putting forward our tender for the conversion of the two types of regulator as follows:-

137.5 KVA. Blackstone Crompton Sets

For these we are putting forward the following :-

- 3 - "Newton-Derby" type 79S automatic carbon pile voltage regulators, generally as drawing No. 255327 enclosed (typical only must not be worked to until confirmed). The regulators would be suitable for mounting inside the panel shown on drawing 15692 SB and would be designed to control the output of the above alternators at 405 volts $\pm 2\frac{1}{2}$.

Price..... £53.12s.0d.

100 KVA. Blackstone Higgs Set

For this set we would again put forward our type 79S regulator which would externally similar to those shown above although internal parts would differ to some degree.

Price..... £53.12s.0d.

The above prices are nett for delivery in this country F.O.R. and should you require this equipment packed for shipment and delivery F.O.B. the above prices would be subject to an additional 5% and would be in accordance with the attached form A.E.

For the technical specifications we are enclosing two copies of our operation, care and maintenance instruction booklets which gives basic details of these regulators, and we feel that these will be satisfactory for the present. In the event of an order a full design will be drawn up and an addendum sheet giving detailed settings for each type would be forwarded.

The equipments offered above would have our standard finish i.e. tropical black matt stoving enamel unless otherwise specified by you.

All Quotations and Sales are subject to the Conditions printed on the back of the page

/Contd...

30th May,

62.

Gentlemen,

Conversion of Automatic Voltage
Regulators on Diesel Alternator Sets

109

I am directed to refer to your letter dated the 8th May, 1962, reference EEL/Falkland Islands 9057 and to inform you that three sets of Regulators suitable for the 187.5 KVA Blackstone Crompton sets, and one Regulator suitable for the Blackstone Higgs 100 KVA set should be ordered from Messrs. Newton Brothers of Derby their letter reference RH/NRS/VRG037654 dated the 24th April, 1962 refers.

2. Will you please stress the fact that all of the machines for conversion operate in parallel and supply an unbalanced load. Also that full descriptive diagrams showing actual alterations to the original Crompton Parkinson drawing No. 9018SD must be given along with full operating instructions. It is assumed that the existing C.ts. etc. will be used as there is no mention of any subsidiary components. Confirmatory Indent No. 144/62 follows.

I am,

Gentlemen,

Your obedient servant,

(Sgd.) H. L. Baud

for COLONIAL SECRETARY.

Crown Agents for Oversea Governments and Administrations,
4, Millbank,
LONDON, S.W.1.

ECG/IM.

Pa.
B
21.5.62

Communications to be addressed to
THE CROWN AGENTS
FOR OVERSEA GOVERNMENTS AND ADMINISTRATIONS
the following reference and the date
of this letter being quoted.



117
4, MILLBANK,
LONDON, S.W.1.

EM2/FALKLAND ISLES 9148.

9th July, 1962.

TELEGRAMS { INLAND: "CROWN, SOWEST, LONDON."
OVERSEA: "CROWN, LONDON."
Ext. 563.
TELEPHONE: ABBEY 7730.



Sir,

108
I wish to acknowledge your letter No. 1714 dated 10th May requesting descriptive literature, including prices, of various types of Domestic Oil Fired Apparatus, including Cookers and Central and Domestic Water Heating Boilers.

Enquiries were issued to 6 firms in the United Kingdom, but only 3 of these are able to offer equipment in accordance with your general requirements. Messrs. Ideal-Standard Ltd. have forwarded leaflets and prices of their 'Paragon' series boilers and also their 'Neo-Classic' boilers. They state that the 'Paragon' type boilers are supplied complete with oil burners, but that these are intended for use with a much lighter oil than that mentioned by you in your letter and the type recommended is the Esso Domesticol type of oil. With regard to the 'Neo-Classic' boilers the prices do not cover for the oil burners, but that the boilers are designed for the provision of these which would have to be purchased direct from the manufacturers, say, Messrs. Nu-Way Heating Plants Ltd. or some other firm.

Messrs. Allied Iron Founders Ltd. have forwarded a leaflet showing the boilers offered by them together with a price list. It will be seen that the prices mentioned by them cover for the provision of Nu-Way burners of the type shown in the attached leaflet.

Messrs. Perkins Boilers Ltd. have forwarded a selection of leaflets illustrating various boilers manufactured by them, together with a price list. They state that certain boilers are intended for use with vapourising burners and some with pressure-jet burners and that, strictly speaking, the vapourising burners should be used with vapourising oil of the kerosene type, but they understand that these boilers are used on seagoing vessels with 35 seconds gas oil. They feel, therefore, that it might be advisable to consider the use of simple vapourising burners rather than those designed for using 35 seconds oil.

It is trusted that the information forwarded is generally in line with your requirements. An enquiry is being directed to Messrs. Nu-Way Heating Plants Ltd. requesting information as to the type of burners recommended by them for the 'Neo-Classic' boilers offered by Messrs. Ideal-Standard Ltd. and this information will follow as soon as it is received.

Further information will be obtained if required on receipt of your more specific instructions as to the boilers and/or burners in which you are particularly interested.

Yours faithfully,
For the Crown Agents,

J. Anderson

The Colonial Secretary,
STANLEY,
FALKLAND ISLANDS.

ILA/JCH

THE FOLLOWING REFERENCE AND THE
DATE OF THIS LETTER SHOULD BE
QUOTED IN COMMUNICATIONS.

EM2/FALKLAND ISLES 9148.

TELEGRAMS } INLAND: "CROWN SOWEST LONDON"
 } OVERSEA: "CROWN LONDON SW1"
TELEPHONE: ABBEY 7730 Ext. 563.
TELEX NO. 24209

118

CROWN AGENTS

FOR OVERSEA GOVERNMENTS AND ADMINISTRATIONS

4. MILLBANK,
LONDON, S.W.1.



9th July, 1962.

Dear Sirs,

Prices have recently been received from Messrs. Ideal-Standard Ltd. for boilers of their 'Paragon' and 'Neo-Classic' type for the Falkland Islands. It is understood from Messrs. Ideal-Standard that, although the Neo-Classic boilers are designed to be fitted with oil burners, they do not supply these and that it will be necessary to buy them separately. It would be appreciated therefore if you would please forward particulars with prices and deliveries of the burners which would be suitable for their Neo-Classic range of boilers and to burn Admiralty diesel oil, origin Trinidad, S.G.O.85 having a viscosity of 35 seconds Redwood No. 1 at 100°F.

Your quotations and illustrated leaflets should please be forwarded in duplicate. The equipment should preferably be suitable for a power supply of 220 volts, single phase, 50 cycles, A.C.

Yours faithfully,
For the Crown Agents.

J. Anderson

Messrs. Nu-Way Heating Plants Ltd.,
DROITWICH,
Worcestershire.

ILA/JCH

More from 17.

B.P.E.S.

109

for your observations pl.

Rem for O.A.G.

14.8.62

Y.H. I have removed illustrations
leaflets and will hold in my office.
Draft letter ^{reference 120.} cover to CAs for your
approval please.

[Signature]



120

Nu-way Heating Plants Ltd

AUTOMATIC COAL STOKERS
ROTAVAC INDUSTRIAL OIL BURNERS
AUTOMATIC OIL BURNERS

DIRECTORS

H. C. USBORNE, M.A. (CHAIRMAN).
H. F. C. NEWSOM, M.A., A.M.I.MECH.E. (MANAGING DIRECTOR)
LT.-COL. R. V. C. BROOK, O.B.E., M.I.MECH.E., ETC.
C. G. WHITFIELD.
W. J. O. BARTLETT, M.C., F.C.C.S., M.I.E.E.
T. SMART.
D. A. SCOTT, M.A.
W. J. NIENHUIS PRESIDENT OF NU-WAY SOCIETY

Registered and Head Office:

P.O. Box No. 1, VINES LANE

DROITWICH
WORCESTERSHIRE

TELEGRAMS: JASNU, DROITWICH
TELEPHONE: DROITWICH 2331

LONDON BRANCH OFFICE:
22 KINGLY STREET, LONDON, W.1

Please address all correspondence to Droitwich

YOUR REF

OUR REF. JAB/DT.

28th June 1962.
dictd.25th June.

The Crown Agents,
4 Millbank,
LONDON S.W.1.

Contract EM2/Falkland Is.8033/1.

Dear Sir,

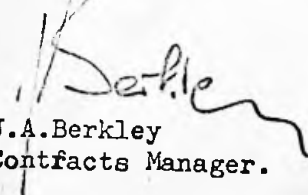
We would refer to your letter of May 17th, which unfortunately has just arrived, and note that it has been re-directed from Cheshire.

Your letter requests that you require to know the cost of a replacement pump, but on urgent investigation the writer finds that all you really need is a solenoid valve which can be supplied at £4, and a different type of filter which can be supplied at £3. It is presumed that the inner assembly of the burner is on site.

Also find enclosed a photo-stat copy of instructions for conversion of a ZH. burner to ZL and note that the pre-heater tank on the front of the burner should be disconnected.

We look forward to hearing from you further on this matter and assure you that should you wish to order parts, the writer will arrange for an immediate despatch.

Yours faithfully,
NU-WAY HEATING PLANTS LIMITED.


J.A. Berkley
Contracts Manager.

PRELIMINARY CONVERSION OF HEAVY OIL ENGINE

PRIMARY CONVERSION OF HEAVY OIL ENGINE
TO GAS OIL

For a permanent conversion of the of engine, all bearings, valves and gas oil it is necessary to replace several of the major parts.

The following parts should be disassembled and may be removed from the burner trap, if required.

- 1) The fuel pump and fuel nozzle.
- 2) The cold oil filter.
- 3) The solenoid valve.
- 4) The inner nozzle assembly complete.

The filter should be replaced with a Turbulator type filter. The oil should feed from this filter to the pump inlet. The pump inlet 5/16" copper pipe should be fitted with a 1/2" Jans 200/2 valve, which should be mounted on a 1/2" line of 5/16" diameter steel pipe (approximately 3' long) and lead to the first half of the gasoil inner nozzle.

The inner nozzle should then be cleared for the passage of gas oil. It should be fitted with nozzle(s) for the engine. The nozzle(s) will be of a larger setting than the one fitted when the engine was running on heavy fuel. Since the pump pressure should be reduced to 175 P.S.I. and a correspondingly smaller clearance will be obtained.

The retaining nut pins on the end of the pump should be removed and the strainer replaced.

The burner should then be revised in accordance with the correct wiring diagram, and then checked for correct operation.

122-

This has got a bit muddled.

~~These~~ 120 & 121 must have gone to SPE
as well as 117 & 118. In that case the drops is off.

20/9/62.

HCS.

120 - 121. Note, parts from animal
killed at cover may be destroyed.

23/10/62.

THE FOLLOWING REFERENCE AND THE DATE OF THIS LETTER SHOULD BE QUOTED IN COMMUNICATIONS.

123

CROWN AGENTS

FOR OVERSEA GOVERNMENTS AND ADMINISTRATIONS

EM2/Falkland Is.9148

4. MILLBANK,

LONDON, S.W.1

TELEGRAMS | INLAND: "CROWN, SOWEST, LONDON."
| OVERSEA: "CROWN, LONDON SW 1"

TELEPHONE: ABBEY 7730

TELEX NO 24209



22nd August, 1962

Dear Sir,

Domestic Oil-Fired Heaters etc.

108.

We would refer again to your letter No.1714 dated 10th May requesting descriptive literature with prices of various types of domestic oil-fired apparatus including cookers and water heating boilers etc.

When forwarding copies of the quotations received with this office letter of 9th July, it was stated that the "Neo-Classic" boilers offered by Messrs. Ideal Standard Ltd. did not include provision of oil burners and that an enquiry had been directed to Messrs. Nu-Way Heating Plants Ltd. for burners recommended for these boilers.

at h.s
...

A copy of Messrs. Nu-Way Heating Plants' quotation of 16th August is now attached for your reference and it will be seen that they offer two automatic oil-burning units, one suitable for the Ideal "Neo-Classic" Series 1 range of boilers and the other for the Series 2 range. It is trusted that this information in conjunction with that previously forwarded to you will be in accordance with your requirements.

Yours faithfully,

J. Anderson

for the Crown Agents.

The Colonial Secretary,
Stanley,
Falkland Islands.

Kiv 122

ILA/MFA

124.

S.P.E.D.

To see f. 123 pt, or to withdraw specifications.

B

in c.s. 5.9.62

1108. With...

9th February,

63.

Gentlemen,

Automatic Voltage Regulators.

I am directed to ask you to pass the following enquiry to Messrs. Newton Bros. (Derby), referring to their letter of the 18th December, 1962 reference 400250/1 RM. Order number 9057/1. Crown Agents reference X/3A/Falkland Islands 9057/51.

2. All four Regulators were received in good order and undamaged. It was decided to instal the regulator belonging to the 100 KVA Higgs set in the first instance, and observe its behaviour in parallel with the 245 KVA Brush set fitted with a carbon pile AVR. manufactured by 'Stones'.

3. Your instructions were read and the connection diagram studied. Although not included in your instructions, the earth connection from terminal 'L' of the power factor compensating C.T. was removed from the Higgs set, as a virtual short circuit would occur when the AVR. was switched to automatic. The machine was run up to speed and the voltage adjusted on the hand control to 415 volts, it remained quite steady, there was no load on the machine. The change over switch was turned to automatic and the voltage oscillated through approximately 80 volts and would not settle. A slight forward movement of the exciter brushes was made as recommended, but with no result. The machine was closed down and a careful inspection of the wiring and AVR. was made but no fault in either the wiring or the AVR. was discovered. The original variable ballast resistance from the Isenthal AVR. was inserted as a series resistance in the carbon pile leg to terminal 3 on the AVR. The effect was to cure the instability and the voltage remained steady at 415 on automatic.

4. The machine was then paralleled with the 245KVA. Brush set but power factor correction had to be made by hand by adjusting the variable ballast resistance inserted in the carbon pile circuit, there was no compensation for power factor. On further examination it was found that the Brush set had the power factor compensating C.T. in the red phase whereas the Higgs corresponding transformer was in the yellow phase. This was corrected by inserting the Higgs C.T. in the red phase to match the Brush set. The machines were again paralleled but again there was no effective sharing of the reactive load. We assume that the Brush AVR. is correct as it behaves quite well with the other 137 KVA sets that are to be converted. Once the Higgs set has been paralleled and the voltage adjusted by hand to give equal distribution of reactive load it appears to operate well, although it must be admitted that the load changes are small and gradual. It is thought however that if the circuit is correct and the AVR. operating properly no adjustment by hand to the AVR. should be necessary when paralleling the machine and making it take up load, adjustment for this being effected only by means of the machines governor by hand adjustment. The fault, if there is one, would appear to lie in the power factor compensation circuit.

Crown Agents for Oversea Governments and Administrations,
4, Millbank,
LONDON. S.W.1.

See 32 in 2/1446

5. Your advice on this trouble would be much appreciated. Drawings other than your own and to which you may wish to refer are; Crompton Parkinson No. 9018SD dated 7/7/49. Crompton Parkinson No. 10312SD. dated 25/9/53 and Brush Electrical No. B5967162. dated 25/11/60.

I am,
Gentlemen,
Your obedient servant,

[Handwritten signature]
COLONIAL SECRETARY.

Copy sent to S.P.E.D.

[Handwritten signature]
14.2.60

23rd April, 1963.

Gentlemen,

Please receive as per advice of shipment the following items -

Case No. 1 59 BRYCE and 73 C.A.V. fuel injector nozzles.

Case No. 2 Seven sets of big end bearings and 3

2. All of the above items have been used and have no value. All originated and were manufactured in the United Kingdom.

3. I should be grateful if you would forward the contents of case No. 1 fuel injector nozzles, to Messrs. C.A.V. or Bryce for reconditioning. Any nozzles found to be beyond repair should be scrapped. The big end bearings in cases Nos. 2 & 3 should be sent to Messrs. Blackstone of Stamford for remetalling.

4. On completion of reconditioning I would be pleased if you would arrange to have all items returned to this Government at your earliest convenience.

I am,
Gentlemen,
Your obedient servant,

(Sgd.) H.L. Bound

for COLONIAL SECRETARY.

Crown Agents for Oversea Governments and Administrations,
4, Millbank,
LONDON, S.W.1.

ECG/IM.

All letters to be addressed to the CROWN AGENTS this reference being quoted.

THE CROWN AGENTS
FOR OVERSEA GOVERNMENTS AND ADMINISTRATIONS

4 MILLBANK, LONDON, S.W.1.

3rd July, 1963.

G4/Falkland Is. 9442

The Colonial Secretary,
Port Stanley,
Falkland Islands.

Dear Sir,

The following report is submitted for your information
in connection with your indent (or letter).

Yours faithfully,

for The Crown Agents.

Your Indent {
No.
Date



Your Letter {
No. 1714
Date 23rd April, 1963.

Department

ITEM No.

3

SUBJECT

Bearings

REMARKS

With reference to your above quoted letter the big end bearings in cases Nos. 2 and 3 have now been sent to Messrs Blackstone & Co., who have advised us that the approximate cost of remounting will be between £17. and £20 per pair, but the exact figure cannot be given until work is in the course of being undertaken.

They also state that they have only received six pairs of big end bearings and it is assumed that these were all that were returned by you.

It is proposed to instruct Blackstone & Co. to proceed with the work at the cost estimated by them, and it is assumed that this will be acceptable to you.

585-3
To note above pl. and
advise if acceptable.
H.C.S.
6.8.63 DFM
7-8-63

SW.

1714

3130

7th August,

63.

Gentlemen,

I am directed to refer to your letter G4/Falkland Is. 9442 of the 3rd July, 1963, regarding the remounting of bearings and to advise you that the procedure outlined in your letter is acceptable. It is confirmed that only six pairs of big end bearings were forwarded.

I am,
Gentlemen,
Your obedient servant,

(Sgd) H. I. Bound.

For COLONIAL SECRETARY

Crown Agents for Oversea Governments and Administrations,
4, Millbank,
LONDON, S. W. 1.

DRM/FH

Rec 23.9.63
BU 7390
(H. I. Bound)

8th April,

64.

Dear Sirs,

Mr. E.C. Gutteridge the Superintendent of this Government's Electricity undertaking, will arrive in England on leave on or about the 7th of June. While on leave I wish him to enquire into matters relating to equipment, materials and projects of interest to us. I shall be grateful if you will be good enough to give him advice and the necessary introductions.

2. The matters into which he is to enquire are -
- i. The operation of automatic voltage regulators as supplied by Messrs. Newton Bros. (Derby). Newton's and your reference 400250/1.RH. X/3A/FIs. respectively.
 - ii. Operation and conversion of oil burners. (Messrs. Ma-Way's of Droitwich.)
 - iii. Matters relating to the operation and efficiency of the Stanley Power Station.
 - iv. The suitability and cost of pre-fabricated two and three bedroom houses and hostels. (Middlesex Co., etc.)
 - v. Modern trends and constructions in indoor and outdoor swimming pools including costs and heating arrangements.
 - vi. Matters arising from the order for a six inch oil pipeline and materials, please see my letter 1905 and dated the 20th March, 1964.
 - vii. Television.

3. Mr. W.J. Coutts who is Senior Electrician in the same Department will sometimes accompany Mr. Gutteridge.

4. Mr. Gutteridge has been instructed to contact you soon after his arrival, should however there be any immediate urgency in respect of vi. above, he may be contacted through -

Mr. J. Gutteridge.
95 Cumberland House,
Kingston Hill,
SURREY.

Yours faithfully,

(Sgd.) H.L. Bound

for COLONIAL SECRETARY.

Crown Agents for Oversea Governments and Administrations,
4, Millbank,
LONDON, S.W.1.

WHT/IM.

Copy to S/PE

Jan
8 4 64

THE FOLLOWING REFERENCE AND THE
DATE OF THIS LETTER SHOULD BE
QUOTED IN COMMUNICATIONS.

CROWN AGENTS

FOR OVERSEA GOVERNMENTS AND ADMINISTRATIONS

PH/FALK. IS. 4/50615

4. MILLBANK,

LONDON, S.W.1.

TELEGRAMS } INLAND: "CROWN SOWEST LONDON"
 } OVERSEA: "CROWN LONDON SW1"
TELEPHONE: ABBEY 7730
TELEX NO. 24209



12th October 1964.

SPE file
take a
mt
W!
2.12.64

Dear Sir,

Your letter 1714 dated 8th April 1964

We were pleased to welcome Mr. Gutteridge to the Office during his recent vacation and in this department we discussed the problem of converting Rayburn Cookers to oil firing and the provision of some means of drying clothes in the hospital laundry.

2. A copy of the correspondence from Kempsafe is enclosed with respect to the Rayburn Cookers and they can supply a suitable conversion kit for models No. 2, No. 3 and "Royal", details of their offer including freight and Crown Agents' charges are as shown below:-

F.O.B. Cost	£82.-.-.
Freight	£1. 6.1.
Insurance	5.-.
C.A. Charges	£3. 6.5.

Total C.I.F. Cost £86.17.6. per kit.

3. Regarding the drying of clothes in the hospital laundry Mr. Gutteridge stated that you had a small room which could possibly be converted into a drying room by the adaptation of a suitable spare heater and since electricity is expensive he suggested that an oil burning heater with a booster fan might be suitable. He stated that he had already received information on this from Nu-way Heating Plants Ltd. but should you require any further details from Nu-ways we shall be pleased to act on your behalf.

4. It was agreed that we should supply you with C.I.F. costs and descriptive literature of Hydro-Extractors, Drying Tumblers and Drying Cupboards which may suit your requirements and the attached schedule gives details of the equipment offered.

5. We estimate that the laundry from a 20 bed hospital is between 600 and 800 lbs dry weight per week. The capacity of the drying means selected will depend on the moisture content of the laundry, after washing and wringing, and also the degree of moisture required at the ironing stage. Unless a multi-roll ironing machine is available, capable of removing a considerable quantity of moisture, it will be necessary to pass all the laundry through both the hydro-extractor and the drying tumbler or drying cupboard.

Cont'd....

Colonial Secretary's Office.
Stanley,
Falkland Islands.

Colonial Secretary

6. From the schedule you will observe that any of the units offered will easily cope with the estimated quantity of laundry. The hydro-extractor can operate 4-5 times per/hour the drying tumblers and drying cupboard 2-3 times per hour the figures shown being calculated on the minimum hourly output.

7. We do not know how the clothes are washed and treated at present, but understand that ironing is done by hand and assume that clothes are passed through a wringer or extractor before drying and ironing. If the present methods are acceptable, it may be preferable to equip a drying room only.

8. It is hoped that the above information together with the schedule and descriptive literature will prove interesting and helpful and we shall be very pleased to offer you any further assistance you may require.

Yours faithfully,



for the Crown Agents.

Z2H/FALK. IS. 4/50615

SCHEDULE OF MACHINES OFFERED FOR DRYING CLOTHES AT THE HOSPITAL LAUNDRY.

TYPE OF EQUIPMENT	MODEL	MANUFACTURER	CAPACITY LBS. DRY WT.		STEAM LBS/HR.	ELECTRICITY	C.I.F. COST + C.A. CHARGES	REMARKS
			PER LOAD	PER HR.				
Hydro Extractor	"16"	Broadbent	20	80	-	1/2 H.P. Motor	£269	3 phase only
Drying Tumbler	Windsor I	Loyt	25	50	120	- " -	£348.8.2.	
" "	T12 "AIRFLO"	Lister	12	24	80/100	3/4 H.P. Motor	£369.10.1.	
" "	T12 "AIRFLO"	- " -	12	24	-	3/4 H.P. Motor + 12 X.W. Heaters	£411.10.1.	
" "	T30 "AIRFLO"	- " -	30	60	150	1 1/2 H.P. Motor	£523.8.7.	
Drying Cabinet	DRG 7/111	- " -	20	40	90/100	1/2 H.P. Motor	£403.8.7.	

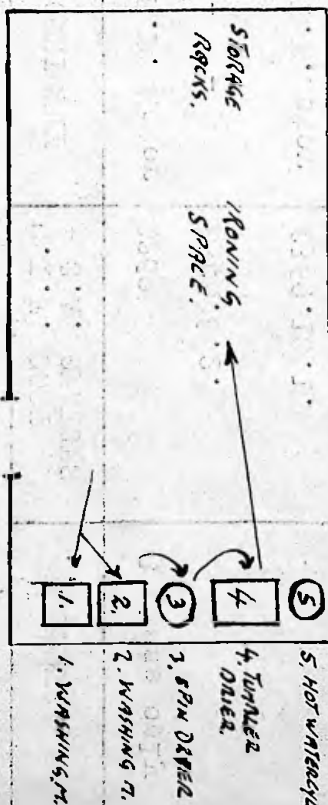
S.P.E

Q. at 158 pt.

note

S.M.O.

You may wish to consider completely automating your laundry, this could easily be done. You would need two of the Bendix type fully automatic washing machines. One large, One small, One Hydro extractor, One drying tumbler. The advantage is of course no hand labour, dirty clothes are placed in the two automatic washers, here they are washed sinned and water is extracted, they are then passed on to the spin drier which will extract practically all moisture, from there on to the hydro drier where they are tumbled dry ready for ironing. There would be no more wet floors or damp atmosphere, the space required would be approximately 1/3rd of the present washing room. But would some all of the existing machinery?



2-71-65.

S.P.E. attention change this in.
 I think in case of production
 I appreciate all you have done in the way of investigation, and am sorry not to be able to carry out your plan for the laundry.

M.S. 77-2-65

C.S. / For information, I think it will work Brickley.

20-2-65.

Noted.
 Shrewsbury
 23.2.65

Pa

D1B/FALK IS.4/50798.

9th December, 1965.

Dear Mr. Gutteridge,

Reference is made to your letter dated 23rd September, 1965 and the background to the necessity of extending Stanley Power Station is noted with interest.

On receipt of your letter Hawker Siddeley International Limited were asked to submit a budgetary estimate for two 500 kw sets arranged for automatic control, in line with your requirements. We attach a copy of a letter received from the Firm dated 12th October, 1965, from which you will note that they are not in a position to put forward a suitable offer. In light of this, and the fact that Blackstone & Company are now part of the Hawker Siddeley group, including Brush Electrical Limited, a similar enquiry has been sent to Blackstone. We assume that you would have no objection to ordering Blackstone sets and we are sure that Blackstone would be willing to include Brush alternators suitable for parallel operation with the existing 200 kw machines. A copy of the Blackstone booklet relating to their generating sets is attached and it would appear that the sets with either the EV16 or EVS12 engines would be most suitable for your requirements. These engines are of the twin bank design with crank shaft speeds of approximately 600 r.p.m. driving an alternator through a gear box at 750 r.p.m.

On the question of the alternator neutrals, it is confirmed that it is standard recommended practice to operate several machines in parallel with only one of the neutrals connected to the neutral bar. The reason for this can best be demonstrated by reference to a vector diagram but the following description may be helpful. On a three phase system, the end windings of the three phases can be connected as a star point since for a true sine wave the voltage at the end of the windings add up vectorially to zero. No alternators, however, generate a perfect sine wave and the deviation from the sine wave results in harmonic voltage, mainly of the odd numbers, being generated, the third harmonic being sometimes quite substantial. It so happens that the third harmonic voltages in the three windings do not add up to zero but add arithmetically giving a relatively large third harmonic potential at the neutral point. If all the neutral points are connected together, this provides a circuit for large currents resulting from the third harmonic voltages to circulate through the low reactance path comprising all the machine windings in parallel. If, however, one neutral only is connected, then low currents only circulate through the system from this one machine. There would be virtually no third harmonic current from the other machines since there is no complete circuit through which they can pass. Sometimes, with identical machines of modern design, the manufacturer may allow operation in parallel with the neutrals connected. More often than not, however, the fact that neutrals links are included on generator panels in place of neutral

E.C.Gutteridge Esq.,
Power & Electrical Dept,
STANLEY. F.IS.

2/...

C.As. Reference D1B/Falk. Is. 4/50798.

24th December 1965.

Dear Mr. Johnston,

666

Thank you for your letter of the above reference dated 9th December 1965. I note that Blackstone are now part of the Hawker Siddeley group. Blackstone machines would be equally as acceptable as Mirrlees. The Blackstone booklet you enclosed is very informative and useful.

I am most grateful to you for the information contained in the succeeding paragraphs of the letter regarding my previous question on isolation of neutrals of machines operating in parallel. Your reasoning was clearly followed and understood. I am taking immediate steps to isolate these neutrals. From this it is also understood the reason why the A.V.Rs. have not operated as they should. I am looking forward with interest to see the results these modifications will make. Again my thanks for this information.

V. Johnston Esq.,
Crown Agents,
4, Millbank, Westminster,
LONDON S.W.1.

Yours sincerely

(E.C.Gutteridge)
Supt. Power & Electrical
Department.

Copy to, Colonial Secretary.

ECG/CW.

Pa



168

10-2-1966.

REPAIRS TO ENGINE DAMAGE.

EA 9/2
W. 15/2

To the Colonial Secretary.

I have to inform you that on the midnight to 3.am. shift on the 4th of February, No.2. Blackstone generating set suffered extensive damage through overheating. The Watchkeeper on duty was Senior Engineman, T.J.Carey.

T.J.Carey.

On taking over my watch on the 4th of February at midnight I followed the normal routine of taking load and temperature readings of the machines on load. The midnight, 1.am. and 2.am. readings and loads were normal. At 2.am. No.2. Blackstone only was working. At approximately 2-45.am. I went into the workshop adjoining the engineroom. I visited the engineroom on two occasions to satisfy myself that the load had not increased and that all was well. On my third visit at 3.am. to take temperature readings (readings are taken and recorded every hour) I noticed a smoky vapour arising above the running machine, I hurried to investigate it was immediately apparent that the machine was overheated. I quickly transferred the machine's load to No.1. machine, closed down No.2. hand pumped lubricating oil through and barred the machine over to prevent seizure. I noted that the raw water cooling water pump was operating (stoppage of this pump is usual cause of overheating). I then phoned A.J.Blyth the Assistant Superintendent asking him to come to the Station.

A.J.Blyth. Asst. Superintendent.

I was called to the Station by phone at approximately 3-15.am. on the morning of February the 4th. On arriving I was told that No.2. machine had badly overheated, the cause unknown. I examined the machine and found that the heat exchanger was cool, the main block was moderately warm but the cylinder heads and water manifold were hot to the extent that paintwork had blistered. The inner and outer water circuit circulating pumps were both in order. I opened a water ventilating valve on the water manifold to discover if water was there, there was none. I checked the water make up tank and found it full and cool. I opened the connection from this make up tank on the engine end and found water flowed freely from the make up tank. I then shut the valve on the make up tank between tank and engine and told the Watchkeeper to leave the engine to cool of it's own accord. I did not want water put on to the then very hot heads. I returned home.

At 7-30.am. I was back at the Station and reported the matter to the Superintendent. He told me it was most important to find the cause, the damage must also be assessed.

Reply at 170

I proceeded to dismantle the machine. All of the cylinder heads were cracked. The water pipework from the water make up tank was corroded, but not to the extent to prevent a sufficient flow of water. Both pumps were examined and both were in proper order. The high water temperature alarm system in the water make up tank was tested and found to be working. The following facts had now to be considered.

- a. There had been no failure of water pumps.
- b. The high water temperature alarm had not sounded. X
- c. There was no restriction in the water piping to the engine.
- d. The heat exchanger was cool.
- e. The engine block was moderately warm.
- f. The cylinder heads were overheated as was the water Manifold above it.
- g. There was no water in the tops of the cylinder heads or in the water manifold.
- h. The engine water make up tank was full and cool.
- i. There was no indication inside or outside of the engine of any leakage of water.

I closely examined all of the engine water circuits to discover where the water had gone and could find no evidence of leakage. I went back and re-examined the cylinder heads and noted that No.3. head was by far the worse. I closely inspected and found that the crack had been fired, indicating that the head had been cracked to some degree for some time. From this it is reasoned after much consideration, that this crack suddenly worsened and opened, allowing water to be drawn in on the suction stroke, ejected back into the water circuit through the now widened crack on the compression stroke, drawn in again on the working stroke and ejected outside of the engine through the open exhaust port on the exhaust stroke. This sequence would rapidly pump the water out to the level found. Water flowing from the make up tank would not arrive in sufficient quantity to counter this action and the machine would rapidly overheat. I examined the exhaust port and valve stem of this cylinder head and found evidence of water having passed through. The above explanation would account for all factors relating to the overheating including the non sounding of the audible alarm system.

It is therefore my considered opinion that No.3. cylinder head cracked to the extent whereby the cooling water was pumped out through the exhaust port. The engine would rapidly overheat and lead to the happenings described.

E.C. Gutteridge,
Supt.

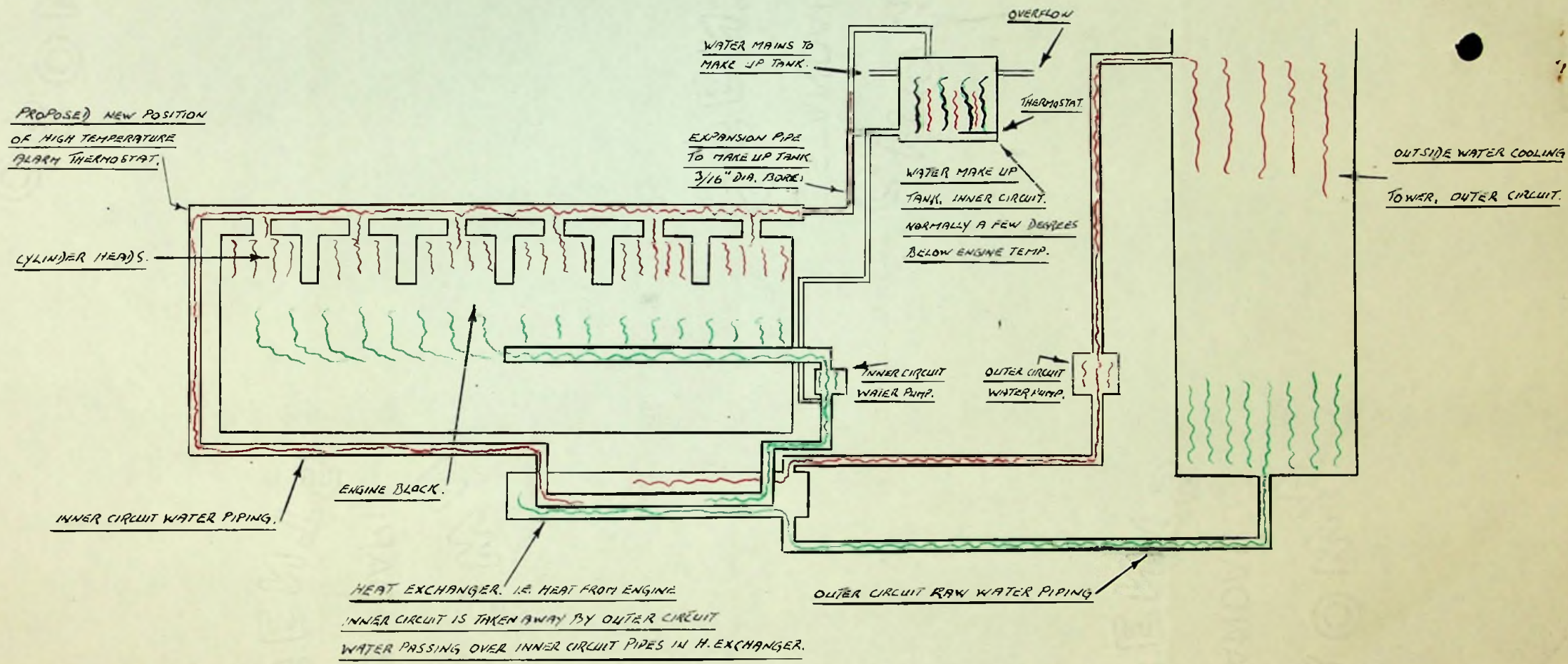
I have examined with the Asst. Supt. all of what has been described and agree with the diagnosis. The safeguard of the high water temperature alarm thermostat in the inner water circuit which has worked on all occasions of overheating before, failed because it was isolated in the make up tank, by the water being pumped away.

The alarm thermostats will be re-positioned directly into the water manifolds above the cylinder heads.

Damage is estimated at \$400, being the cost of six cylinder heads.



Supt. Power & Electrical Dept.



SCHEMATIC DIAGRAM OF BLACKSTONE EPV6 COOLING WATER, INNER AND OUTER CIRCUITS.

[Signature]
10-2-66.

108 a

72.

John 168

169

This is self-explanatory.

Fortunately we have enough spares in stock to replace the necessary parts. The recent truncated S.F.C. approved funds for further replacement spares which we have used.

A full explanation will have to be given to the next ~~S.F.C.~~ full-scale S.F.C.

I am satisfied that no further enquiry or action is necessary. Mr Gulinidze has made it clear to me that this was not a matter of carelessness, but of something quite unexpected and new to us.

S1

15/2

CS
Noted

CA
11/2