

Home (1916) Department.
(Education)

Ordinary SERIES.

G.O., No. 1148

DATED the 2nd Nov. 1916

[Despatch Abstract.]

Experiments in glass manufacture.

Approving, subject to certain remarks, the proposals of the
officer in charge of the Department of Industries for the conduct of
further -----

DEPARTMENT.



Registered 4/10/16 1916

Subject

Submitting an estimate of the approximate expenditure required for the experiment in Glass Factory.

ENCLOS RES.

No. Price Sheet

Spare copies

No. E 8

Station Madras, Dated the 22nd September 1916.

From (Name) M.E. Couchman, Esq., I.C.S.
(Designation) Special Officer, Department of Industries.

To The Secretary to the Government of Madras,
Home (Educational) Department.
Through The Accountant-General Madras.

Sir,

I have the honour to submit an estimate of the approximate expenditure which will be required for the experiment in glass manufacture.

2. The new furnace has been completed, but the electric connections have yet to be made, and the staff trained. Statement marked V shows the expenditure proposed for October. It includes Rs. 4500 for connecting the factory with the works. Most of this will be recoverable in the event of the experiment turning out unsuccessful, as the chief part of the cost is the copper wire, the price of which is very high at present. Rs. 1500 is needed for constructing bins to hold the raw materials (sand, lime and

soda) and for miscellaneous repairs to the buildings and plant. (Statement No. VI). The balance of Rs. 2000 is made up of the cost of the raw materials for October, staff, (including apprentices, to be trained) and experiments with oil burners.

3. Statement II shows the cost of the staff. It is proposed to work the furnace continually, as this will be most economical. This will necessitate the employment of three shifts of workmen.

The expenditure which would be required if working was continued in February and March is also shown.

4. Statement No. III shows the cost of electricity for power and lighting. It has been decided to use electric power owing to its greater reliability, and to the fact that the oil engine installed at the factory is not powerful enough for our purpose. We have the requisite electric motors. All that is required is to connect them with the main.

5. Statement No. IV shows the estimate of profit and loss. This has been framed on conservative lines, as the price of soda-water bottles is now a good deal more than Rs. 20. It must, however, be pointed out that the success of the experiment depends very largely on the staff. If the staff proves incapable of working the machinery fast enough, the experiment will fail. I believe, however, that there is a chance of success, though the chance would have been better if a professional glass-maker could have been obtained from England. If the government approve the suggestion, an attempt may be made even now to procure an Expert from England. Mr. Klein, whose entertainment was sanctioned in G.O. No. 982 Educational dated 1-9-16 has in the interval obtained other employment and is no longer available.

6. Assuming that the calculations have been made correctly, the figures show a net loss of Rs. 2520 up to the end of January. From thence onwards a profit of Rs. 4000

a month is anticipated.

7. The total expenditure up to the end of January next will be Rs. 28,000. If the estimate of Rs. 17,000 which I have submitted for the working of the pencil factory is approved, there will only remain about Rs. 6000. Out of the lump sum of Rs. 37,000 provided in the current year's budget for experimental works under "28 Bm Scientific and Minor Department" "Miscellaneous Experiments". An additional grant of Rs. 17,000 will therefore be necessary. I consider that as we have gone so far now, it is advisable to incur this expenditure if the money can be found. I do not think that there would be any use in attempting to start work with less expenditure. I will report in a few days if there will be savings under other heads which could be reappropriated towards meeting this amount.

I have the honour to be,

Sir,

Your most obedient servant,

M. L. Bouchman

Special Officer.

H
25/18

vide Subsequent
letter no. 10-12
10-12 info

Page 6 info
to 2370 during
the 3 months
1966 to 1967

Page 6 info Stat. IV Col. 9

M.N.

4

A.- Statement showing required quantities of Raw material & Liquid Fuel
in tons.

	Expected quantity in tons of glass ware manu factured.	Raw materials requir- ed in tons.			Required quantity of Liquid fuel in Tons.
		Sand	Na Co 2 3	Shells (lime)	
November	10	9	3.5	2	16
December	20	18	7.0	4	24
January	48	42	16.0	10	36
Total up to January	78	69	26.5	16	76
February	72	62	24.0	15	36
March	84	72	28.0	18	36
Total in Feb. and March	156	134	52.0	33	72

1. Statement showing approximate prices of the above material.

	Glass ware in tons	Sand @ RS 8/- per ton.	Na Co @ 110 per ton	Shells (lime) @ 25/-	Liquid fuel @ RS. 50 per ton	Total value of materials	Value allowed in the Estimate.
(1)	(2)	(3)	(4)	(5)	(6)	(7) <i>Val of Columns (3) to (6)</i>	(8)
November	10	72	385	50	800	1307	1500
December	20	144	770	100	1200	2214	2500
January	48	336	1760	250	1800	4146	4500
Total to January	78	552	2915	400	3800	7667	8500
February	72	496	2640	375	1800	5311	5500
March	84	576	3080	450	1800	5906	6000
Total in Feb and March	156	1072	5720	825	3600	11217	11500

1. Statement showing provision for Supervisor and labour.

	November.	December.	January.	February.	March.
(a) Remuneration to Dr. Simonson	250	250	250	250	250
(b) Engineer	100	100	100	100	100
(c) Chemist	-	100	100	100	100
(d) Clerk & Store Keeper	25	50	50	50	50
(e) Existing labour including mechanics	320	320	320	320	320
(f) 20 apprentices @ 7/8	150	150	-	-	-
(g) 20 apprentices @ 10/0	-	200	200	-	-
(h) 20 apprentices @ 12/8	-	-	250	250	250
(i) 20 apprentices @ 15/-	-	-	300	300	300
(j) 20 apprentices @ 20/8	-	-	-	350	350
(k) Blowers 20/-	-	40	100	160	400
(l) Casual labour	50	100	150	200	200
(m) Miscellaneous	100	100	100	100	100
Total	995	1410	1920	2180	2420
Actuals allowed for	Rs1000	Rs1500	Rs2000	Rs2250	Rs2500
		4500		4750	

7/11/15

111 Statement showing the Power and Lighting charges to be paid to the
Madras Electric Supply Corporation
for Electricity.

	Standing charges.	Running charges	Lighting charges.	Total provision
November	200	275	75	550
December	200	300	100	600 } 1350
January	200	400	100	700
February	200	400	100	700
March	200	400	100	700 } 1400

IV. Statement showing approximate profit or loss.

	As per statement 1	As per statement 11	As per statement 111	Total Expenditure	Ap. by manu- fact- ures.	Ap. by sales Receipts	profit or Loss
November	1500	1000	550	3050	80	20/- 1600/-	- 1450
December	2500	1500	600	4600	160	20/- 3200/-	- 1400
January	4500	2000	700	7200	384	20/- 7680/-	+ 480
Total to January	8500	4500	1850	14850	624	20/- 12480/-	- 2370
February	5500	2250	700	8450	576	20/- 11520/-	+ 3070
March	6000	2500	700	9200	672	20/- 13440/-	+ 4240
Total Feb & March	11500	4750	1400	17650	1248	20/- 24960	7310

(Raw material)

(Supervision & labour)

24/8

(Cost of Electricity for Power & Lighting)

Statement V

Expenditure in October 1916 for Experiments.

		Rs.
(i)	Existing staff (monthly paid including remuneration for Dr. Simonsen)	430
(ii)	Existing daily paid staff	220
(iii)	Provision for 20 apprentices @ 7/8	150
(iv)	Raw Materials 350 Liquid fuel 350	700
(v)	Provision for experimental burners	500
		2000
(vi)	Construction of bins and miscellaneous repairs as per statement VI	1500
(vii)	Approximate cost of Electric fittings.	4500
	Total Rs.	8000

in
Abstract referred to/ Page 1

and in Statement V. item (vi)
on page 7 ante

Details.Amount in Rs.

Repairs of Ball Mill	...	...	100
Exhaust passage for regenerator	...		65
Parapet walls across the building			35
Concreting the floor.			140
Filling up the pit			45
Re-tiling the smithy shed			40
Construction of oil tanks, platforms			50

 475

Construction of Bins as per suggestions ofDr. Simonsen.

c.ft

<u>18 bins</u>	Brick in mud 2500 @ 25 per 100 c.ft.	625
	Plastering 4500 C.Ft. @ 3/-	135
	Concrete floor. 1400 @ 10/-	140
	Repairs of gates	15
	Construction of Experimental furnace	110

 1025

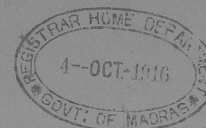
Total Rs. 1500.

 1500

4,000-10-11-15.

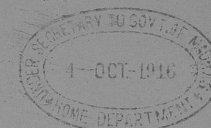
9
OFFICE OF THE ACCOUNTANT-GENERAL, MADRAS,

Fort St. George, the 2nd of October 1916



No. Tri P.A. - (7808)

ENCLOSURES (6)



Forwarded.

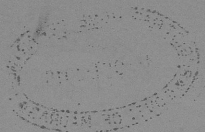
2. The necessary re-appropriation of grants should be sanctioned to meet the expenditure before it is incurred.

H. S. S.
Deputy Accountant-General.

To

The Secretary to the Government of Madras,

HOME (Educational) DEPARTMENT.



DEPARTMENT.

Received 8-10-1916 Registered 9-10-1916

Subject.

Submitting for sanction a reappropriation statement for additional allotment required in connection with Glass Experiments.

ENCLOS RES.
No. 2 Sheets
8 parts copies

G. Car No. 8.

Station Madras, Dated the 30th September 1916.

From (Name) M.E. Couchman, Esq., I.C.S.,
(Designation) Special Officer, Department of Industries.

To The Secretary to the Government of Madras,
Home (Education) Department.
Through The Accountant-General Madras.
Sir,

In continuation of my letter No. E.8 of 22nd instant regarding the glass experiments I have the honour to report that the additional amount of Rs. 17000 required for the experiments may be reappropriated from the provision of Rs. 26325 under the head of "Salaries-Director of Industries".

2. The expenditure under this head up to date is only Rs. 6720. It is unlikely that a full-time Inspector of Schools will be appointed.

3. If my proposals which will shortly be submitted to government, for the employment of Mr. Fyfe for the inspection of the Industrial Schools are approved, they will only

pay 1/2

Page 207 7/20/16

27.500 - 1200

= 26325
including the pay of the Inspector for the Bureau of Industrial Information

RE-APPROPRIATION STATEMENT to accompany all applications for sanction to expenditure not provided for in the budget,
or for additional allotments.

Director of Industries DEPARTMENT OF INDUSTRIES

Major minor, sub and detailed heads of budget (a).	HEADS OF ESTIMATE PROPOSED TO BE INCREASED.				HEADS OF ESTIMATE PROPOSED TO BE REDUCED.				REMARKS.
	1	2	3	4	5	6	7	8	9
	Amounts as in the sanctioned estimate.	Actual expenditure up to date.	Probable expenditure during the year.	Amount of additional allotment required.	Amounts as in the sanctioned estimate.	Actual expenditure up to date.	Probable expenditure during the year.	Amount available for re-appropriation.	
26 Pm. Scientific and Major Department - 1.1a Cellulose Paper mill	25,000 + 40,000 - 5,000 (a) 37,000	3,850	40,200	17,000	26,325	6,720	750	18,555	(a) An additional allotment of Rs 20,000. broadbanding 2,000. No. 266 from 1956-57 to 1957-58. No. 266 from 1957-58 to 1958-59. No. 266 from 1958-59 to 1959-60. No. 266 from 1959-60 to 1960-61. No. 266 from 1960-61 to 1961-62. for line brick buildings.
Salaries									(b) Rs 26,325.00 from the Department of Industries and the Government of India. The Government of India has agreed to contribute Rs. 18,555.00 towards the same.

(a) The sum dealt must be given in the present (a) Budget Estimate

NOTE.—If no re-appropriation is possible, the urgency and necessity for the expenditure must be fully explained.

Director of Industries

Rs.
6450
10550
17,000

30-9-1916

I have the honour to be,
Sir,
Your most obedient servant,
M. L. Choudhury.
Special Officer.

Pay of Director of Industries
2 CA
18,000
6,125
19,125
- 6,720
12,405

entail an expenditure of Rs. 750 in the current year. This will leave a balance of Rs. 6450 under this head.

4. If no whole-time Director is appointed till the end of the year there will be a further saving of Rs. 12405 under the head of his salary. From this a sum of Rs. 10550 may be re-appropriated, to make up the requisite amount.

A reappropriation statement in duplicate is enclosed.

M.N.

lv. note

CA^o 2824.

Deposited at 962-63 (H)
12-9-16

pages 12 & 13 of ~~24~~
41. 962 (H)
12-9-16

12-9-16

page 27 of 41. 962 (H)
page 27 of 41.

Rome (Bureau) Sept

In connection with Mr. Leuchman's proposals for the appointment of Mr. Albert Klein for conducting experiments in glass-making, it appears desirable to obtain definite information as to what money is required for these experiments. In his letter No. E.8. dated the 31st July 1916. Mr. Treasurer stated that expenditure at the rate of ~~Rs. 1000~~ ^{about} ~~per mensem~~ would have to be incurred on the experiments for a period of six months. Submitted that Mr. Leuchman may be requested to state whether Mr. Treasurer's estimate is correct and, if so, whether the amount can be met from the ^(sanctioned) ~~(budget)~~ grant of Rs. 37,000 for glass & other miscellaneous experiments.

2. As regards Mr. Leuchman's proposal to make enquiries for a glass expert in England it is submitted that the engagement of persons in the United Kingdom for service in India rests with the

Secretary

Secretary of State it may therefore be necessary to address him through the Govt of India in case an expert should be recruited. But there seems to be no objection to the Director making enquiries ^{unofficially} of the services of any expert will be available, especially as Mr. Bonchman assures ^{himself} that no expert will be employed without the sanction of the Govt.

page 8 of ~~11~~ 12.9.16

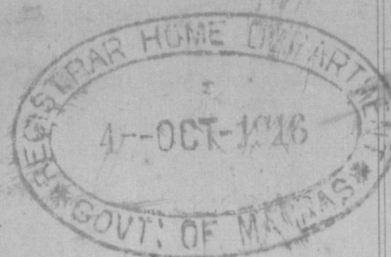
SR
11.9.16.
14
12/9/16

CR
11.9.16
L

Mr. Cawthra
12.9.16

Colno 1886-2
12.9.16

Cf.



Returned

Please see my official letter of 22nd ult. which deals with the whole question.

MR.
3. X. 16

Pages 1-9 CF CR-3554. From the Special Officer.

Pages 10-13 CF " 3594. From Dept. of Industries No. 89/1229-16
No. 9/30.9.16

para 2, page 1 of cf.
+ page 7 of cf.

para 7, p. 3 of cf.

23000
17650 (p. 6 of cf.)
6650

page 5 of cf.

Please see the notes on pages 1 & 2 supra. Mr. Conchman estimates the expenditure for October on glass experiment at Rs 8000. If the experiment is continued up to the end of January next the expenditure will amount to Rs 23000; if up to the end of March, it will be Rs 40000. For the present Mr. Conchman applies for sanction to an expenditure of Rs 23000. Of this the items of recurring expenditure ^{on schedule} mainly consist of

- (1) The payment of an allowance of Rs 250 ^(a month) to Mr. Simonson, Prof. of Chemistry, Presidency College.
- (2) The employment of a chemical assistant on Rs 100 per mensem.
- (3) The employment of an engineer on Rs 100 per mensem.
- + (4) The employment ^{a clerk & bookkeeper at} of apprentices at progressive rates of wages per month.

2. As regards items (1) & (2) above Mr. Conchman has sent a separate com -

The file has been found
on. It may be noted here
that further up the
proposed allowance to
be given as excessive.

Ch. 4
14. 10.

Page 2 of 4

18/10/17

communication requesting for
sanction for the expenditure.
The file on the subject has been
sent to the Financial Deptt.
for remarks.

3. As regards item (3) - employ-
ment of an engineer on Rs 100
per mensem - it is submitted that
necessity in G.O. No 962 Estt, dated
the 12th September 1916, the Govt.
sanctioned the employment of
Mr. Albert Klein, an engineer,
for the glass experiment. Mr.
Leachman now states that
Mr. Klein has obtained other employ-
ment. Recently the P.W.D. have
placed the services of a mecha-
nical engineer at the disposal
of Mr. Leachman for the glass
experiment. There are already
four posts of temporary super-
visors in the Deptt. of Industries
for industrial experiments.
One of these posts will be
occupied by the officer deputed
by the P.W.D. + no new post need
therefore be sanctioned.

It may be noted here that in
another

* Gp. is in Revenue.

another connection it was reported to the Govt. that the senior assistant to Mr. Couchman, H. R. Ry. J. Narayan murti, (Sub. engineer) was also working in the glass factory. Perhaps he has now been shifted from that place.

4. Mr. Couchman proposes to employ a certain number of men every month as apprentices. Apparently these apprentices will be trained in the work connected with glass manufacture so that they may provide the necessary skilled labour for continuing the business. The proposal may be approved.

5. In the statement showing provision for supervision labour Mr. Couchman has provided Rs 25- for November + Rs 50 for the subsequent months for a clerk + storekeeper. As the experiment progress, the duties of the storekeeper will correspondingly increase and the proposal to fix his pay at Rs 50/- from ~~December~~ ^{December} onwards may be approved. Sanction to employ

page 5- of cf.
(Items 4 to 5)

page 5- of cf.
(Item d)

10/11/16

employ a clerk and storekeeper may be accorded on the rates of pay proposed.

6. The items of non-recurring expenditure on pages 7 & 8 of the current file do not seem to call for remarks.

para 7. p. 3 of c.f.

They be
Satisfied

pages 10 to 12 of c.f.

7. Mr. Couchman states that a sum of Rs. 6000 towards the expenditure of Rs. 23,000 proposed for the months October to January, may be met from the provision in the current year's budget for industrial experiments. For the balance of Rs. 17,000 he has submitted a reappropriation statement. [It may however be mentioned in this connection that the savings under salaries may be required to meet the pay of the special offices as it is proposed to extend the period ^{of special duty} by another six months.]

8. It is doubtful whether it will be convenient to close the experiment by the end of January as during this period the Govt. will only incur loss to the

The District
so that with a
the Punjab Govt.

page 6 of c.f.

Statement II, p. 6 of c.f.

Amount Rs. 4000
 p.m. vide prob
 on page 2 C.F.

Plent do 20h
 H. C. S. 1/10/16

para 5, p. 2

May 12/16

Elst
 14.10.16

para 2, page 1 + 2

10/10/16

the extent of Rs. 2,370. If it is continued in February + March an additional expenditure of Rs. 17,650 is anticipated; but this is expected to bring in a net profit of Rs. 7,310 for the two months. It may not be possible to reappropriate another sum of Rs. 17,000 from the industrial budget, in which case the financial Dept. may have to be approached for an additional allotment. But perhaps this question need not be considered now.

9. Mr. Leachman states that, if the Govt. approve the suggestion an attempt may be made even now to procure an expert from England. He has already been permitted to make the necessary preliminary enquiry and on receipt of definite recommendations as to rate of pay to be offered &c. the Secretary of State may be addressed through the Govt. of India to recruit a suitable expert. It is presumed that the expenditure now proposed

Should be sanctioned at once and an expert obtained from England later on. The file may be sent to the Financial Dept. for remarks.

SK
10.10.16.

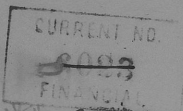
SK
10/10/16

SK
14.10.16



Volus 1886-2

19.10.16



6076

Regd. 19-10-16

lit to

SK
10/10/16

Financial Dept.

For the Asst. Secretary,

The expenditure which the Govt. has already incurred or is likely to incur in connection with the glass-making experiments is as shown below :-

(A) Purchase of the glass factory building and machinery. (Rs. 29,832.24)	23,000.
(B) Expenditure from September 1916 to 31st July 1917. (Rs. 13,000.)	13,000.
(C) Expenditure in August and September, 1916.	Not known.
(d) '00' October 1916 ..	8,000.
(e) '00' Nov. 1916 to January 1917.	14,350
(f) '00' Feb. 1917 to March 1917.	17,650

Cell 5 of Column II in May 1917

[It is not known whether any expenditure on glass making experiments was incurred in August and September 1916.]

2. The details of the proposed expenditure of Rs. 8,000 in October 1916 as given in Stat. V on page 7 of CF are:-

(a) Staff, raw materials &c...	Rs. 2,000
(b) Construction of bins and miscellaneous repairs (page 8 CF)	1,500
(c) Electric fittings.	4,500
Total Rs.	8,000

The Special officer (Mr. Couchman) has also forwarded the following rough forecast of the expenditure and receipts on account of glass-making experiments for the remaining months of the current year (November 1916 till the end of March 1917):-

(Stat. IV on page 6 CF.)	For 3 months Nov-16 till end of March 1917 Rs.	For 2 months Feb + March 1917 Rs.
(I) Raw materials &c.	8,500	11,500
(II) Staff (supervision) + labour.	4,500	4,750
(III) Power + lighting charges to be paid to the Madras Electric Supply Corporation for electricity.	1,850	1,400
(IV) Total charges	14,850	17,650
(V) Deduct anticipated receipts on account of sales [Col. 8 on page 6 CF.]	-12,480	24,960
(VI) Profit (+) or loss (-) [Col. 9 on page 6 CF.]	-2370	+7,310

3. Mr. Couchman considers it advisable that the experiments should be conducted at least till the end of January 1917 (para: 7 on page 3 CF). Submitted that this proposal which is supported by the Home Dept (Educ) vide paras. 7 and 8 on pages 6-7 ante may be accepted in Financial.

4. Funds:— The total expenditure from October 1916 till the end of January 1917 will amount to Rs. (8000 + 14,850) or Rs. 23,000 roundly and the Special officer proposes to meet the amount as follows:—

(I)	From the balance of the sanctioned grant of Rs. 37,000 for miscellaneous experiments [Para: 7 on page 3 CF]	Rs. 6,000
(II)	From the provision in the Budget for Salaries—Director of Industries. [Page 12 CF]	17,000
		<u>23,000</u>

Submitted that the proposal may be accepted, although, as pointed out in the Home Dept's note—(para 7 on page 6 ante)—the amount now reappropriated from item (II) may have to be found later on from other sources. Orders

Sanctioning the reappropriation proposed above may issue in financial, on receipt of the ^{Home} ~~Dept.~~ depts. pros. on this case.

5. Establishment:— In regard to the ^(Para 5 & 6) expenditure on account of establishment, which has been included in the total estimate of Rs. 23,000 for the period Oct. 16 to Jan. 17, the Home dept. (Encl.) has referred to the following items:—

- (1) Allowance of Rs. 250 per m. to Dr. Simon ^{- Sen}
- (2) Employment of a Chemical Asst on Rs. 800 per m.

These two items are being dealt with in a separate file. (Para 2 on page 4 and 5)

- (3) Employment of an Engineer on Rs. 100 per m.

The Home Dept's proposal that no new post need be sanctioned may be accepted.

- (4) Employment in Nov. 1916 of a clerk and Stockkeeper Rs. 25 ^[Para 3 on page 4 and 5] + increase in the pay of the clerk and Stockkeeper from Rs. 25 to Rs. 50 per m. from Dec. 1916. [Para 5 on page 5 and 6]

—→ May be accepted.

- (5) Employment of apprentices at progressive rates of wages per month ^[Para 4 on page 5 and 6]

—→ May be accepted.

6. Expert from England: - Please see para: 5 on page 2 of Cf. and para: 9 of Home Dept's note on pages 7-8 ante. If an expert from England is eventually appointed before the end of Jan^y 1917, the present experiments can, it is sub^d, be continued after that date. According to Mr. Conchman's rough calculations a profit of ^(about) Rs. 4,000 a month from 1st Feb^y 1917 is anticipated vide para: 6 on page 2 Cf.

Rs. K.
23.x.16.

Rs. 23.10.16

24.10.16

File no 6076-1 70
24.10.16

Home (Educ) no

Home (Education) Dept.

The financial Dept accept the proposals of this Dept in regard to the additional expenditure to be incurred on glass-making experiment. The question of a grant of remuneration of Rs 200 per mensem to Dr. Simonson + the employment of a chemical assistant which are included by the Honble Mr. Conchman in his proposals in the current file are separated.

Notes in And
26.10.16

Steno (1+5)
copy 5 of Cf. 24.10.16

separately under consideration. A reference has been made as to whether a lump sum of ^{500/-} ~~200/-~~ will not be sufficient remuneration to Dr. Simonsen. It is for consideration whether the issue of orders in this case may await the decision of that question or orders may issue at once in respect of the ^(10/-) items of expenditure in this file. If the latter course is to be adopted the draft order below is for approval.

SK
26.10.16.

H
28/10/16

Calc
31.10.16

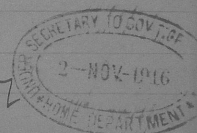
HE

Draft for
appt.

Rh
31/10

P.
1.11.16.

5500
2/11



[Ex. No. 1148 of the 2. 11. 16]

Box 4
enc 31/10
Recd 1/11

u.o. no 13
28-11-16

1676 on Glass Experiments, dated 29-11-16
by Mr. B. A. James.

The experiments now going on in glass making have been sanctioned by Government on the basis of Mr. Couchman's letter of the 28th July 1916 and the 22nd September 1916. But one or two statements in these letters require clearing up, and the estimates submitted with the latter letter require considerable revision.

2. In para 1 of his first letter Mr. Couchman pointed out that the main cause of the failure of the old company was the furnace. The furnace was intermittent and cost Rs.59-8-0 per day of 12 hours in fuel alone, whereas Mr. Tressler expected that the consumption of his furnace would not be more than 9 gallons an hour, or at As.3 a gallon, Rs.20-4-0 per day of 12 hours.

3. These statements are misleading. In the first place, the price of liquid fuel has gone up enormously. It cost us in October Rs.65 per ton or including cartage As.4/4 per gallon. Now it has gone up to Rs.70 per ton and it may go up higher.

4. Secondly Mr. Tressler's statement that the furnace consumption was only 9 gallons per hour is not of any value. The furnace is only one part of the expense in the matter of fuel. The neck-making and annealing operations take almost as much fuel. I have gone into this matter carefully with the records of our experiments, and my estimate of consumption is as follows:-

Furnace $7\frac{1}{2}$ gallons per hour.

Neck making $7\frac{1}{2}$ gallons per hour

Annealing 6 gallons per hour.

Total 21 gallons per hour.

5. We shall probably improve on these results, but I allow a margin in the interests of safe and cautious estimating. When, therefore, we are working continuously

para 2 of 80. 262
12.9.16
para 3 of 80. 1168
2.11.16

para 4 of 80. 912
12.9.16

para 11 of 80. 712

About 4 times
Tressler's estimate

with 3 shifts of workmen, we may expect a fuel consumption of 2 tons a day, or, at present prices, Rs. 140 a day. Counting 24 days to the month, this will mean an expenditure of not far short of Rs. 3,500 a month on fuel alone against a maximum of Rs. 1,800 provided in Mr. Couchman's estimate. The figure seems very high, and since we shan't be working day or night for 24 days a month for some time to come, we shan't attain it. But also I understand that, in its prospectus issued at the time when the old company tried to raise more capital, it estimated its fuel expenditure at Rs. 4,300 a month. So even at my figure we make a saving on the company's fuel bill.

6. Another point in which, going again by Mr. Tressler, Mr. Couchman expected a saving was alkali. I do not know on what Mr. Tressler was basing his expectations, but I think he was wrong. For our mixture appears to be the same as the company's. As a matter of fact, we do not know much about mixtures yet. Our first big experiment came off yesterday, and was not a success. We shall have to make further experiments till we arrive at a satisfactory mixture, and until we get it right, we cannot say whether we shall attain a cheaper mixture than that used by the company.

7. If Government require revised estimates, I will send them up. But I do not anticipate difficulty in keeping within the limits allowed me. I have given up the proposed electrical connections. They are too expensive, and I do not take into account the Rs. 4,500 sanctioned for this purpose. But I hope to keep within the balance of Rs. 18,500 allowed for experiments till the end of January. What I am doing at present is (1) testing the new furnace, the smaller one having collapsed, and (2) training blowers and neck-makers. When Mr. Narayanamurti returns from his tour in N. India, the question of mixture will be tackled. In January

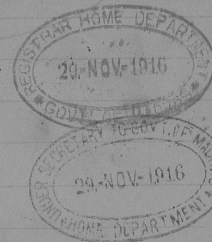
I hope to get the loan of Mr. Elland's services, and then I shall be in a better position to pronounce on our chances of success.

8. No orders are required on this note unless Government would like revised estimates to be prepared. I have written merely to correct certain mistakes in vital points in Mr. Couchman's previous letters.

Almas
29/11/16

Key Home Dept 1916
b. o.

Encl 4395
29. 11. 16.



Home (Edu.) Department.

It does not appear that revised estimates should be called for at this stage. This note may, it is submitted, be stitched with G.O. No 1148 Home (Education), dated the 2nd November 1916.

8th
2-12-16.

1/11
Stable

In / was with doubts ~~both~~ report the results of his further experiments in due course; we shall not have a

SK

portion to revise estimate until we get more reliable data.

Est

6. 12. 16

Letter to. Please do
as at K on previous page

8/14/16



Approving, subject to certain remarks, the proposals of the officer in charge of the Department of Industries for the conduct of further -----

” ” ” ” ” 19

C. No. 3554, From the officer in charge of the Dept. of Industries, No. E. 8, dated 22-9-16. 19

3594	do.	do.	G.8	30-9-	196
------	-----	-----	-----	-------	-----

" " " " " " " " 19

No. 1148, dated 2-11-1916

Mis

The Government approve, subject to the modifications indicated below, the proposals submitted by the officer in charge of the Department of Industries for the conduct of further experiments in the manufacture of glass.

3. The Government consider that the services of one of the four temporary supervisors in the ⁶Department ~~of~~ should be utilised in the glass factory and that the creation of a new post of Engineer on Rs.100 per mensem is unnecessary. They approve the proposal to employ a clerk ~~and~~ storekeeper on a pay of Rs.25/- in the first month of his employment and to raise his pay to Rs.50/- in the subsequent months. The proposal to allow

Page 5- page 57- MF

allow ~~excessive~~ rates of wages to apprentices ^(on the scale proposed) is also sanctioned. Separate orders will issue on the proposal to entrust the supervision of the chemical portion of the experiment to Dr. Simonsen and to employ an assistant on Rs. 100 per ^{month} ~~month~~ to work under him.

3. Sanction is ~~also~~ accorded to the incurring of the non-recurring expenditure detailed in statement V and of the other approved items of recurring expenditure for a period of ~~three~~ months as shown in the statements I, II and III submitted with the letter read above.

4. To meet the expenditure required in the conduct of the experiments a sum of Rs. 6,000 will be provided from the amount sanctioned for the current year on account of miscellaneous industrial experiments. Orders on the re-appropriation statement submitted with the second of the letters read above will issue in the Financial Department.

5. The officer in charge of the Department of Industries will, after making due inquiries, submit his recommendations to Government in regard to the recruitment of a glass expert in England, specifying the salary to ^{be} offered to him, and the conditions under which his services should be engaged.

S.F.
28-10-16,

Page 4 - Page 5 of 17

Page 7 of 17

Page 4 - 6 of 17

Page 12 of 17

To
The Officer in charge of the Department of Industries.
Financial Department.

Recd. 12/10/16
with inv. 10/10/16
9.11.16
Recd. 12/10/16
to Govt. only
3/11/16

3/11/16

When given for copying
When copied 2-11-16
When examined
When signed

18/6 20 only

Recd. 12/10/16

ORDER OF GOVERNMENT

ORDER OF GOVERNMENT

ORDER OF GOVERNMENT

STATEMENT WITH LISTS

PAGES NOT TIED UP, BEING MEANT FOR DESPATCH IN ORIGINAL

F.B.

A = Copy in full.
B = Not to be copied.
F = Copy abstract only.
Q = Copy heading only

A A A A A A A