1. Number of pages 30
2. Date of repair. 5-6-37
3. [illegible] References

M.R.O. 1—82,400—28-11-30.

MADRAS RECORD OFFICE.

Government of Madras.

Public Works **DEPARTMENT.**

Secs. 19-5-57

G.O. No.	945	Press Mis.
50-57		
Dated	19-5-	1857

Not to be folded or roughly handled

I

No. 50. Read the following letter from Colonel W. E. BAKER, Secretary to the Government of India; to J. D. BOURDILLON, Esq., Secretary to the Government of Fort Saint George, dated Fort William, the 9th April 1857, No. 1676.

SIR,

With reference to the correspondence noted in the margin, I am directed to forward for the information of the Right Honorable the Governor in Council of Fort Saint George, copy of a Despatch from the Honorable the Court of Directors No. 6, dated 18th February last, sanctioning the proposal, that Lieutenant Haig shall be permitted to proceed to Europe and America, at the public expense, for the purpose of inspecting the principal lines of river navigation.

Secretary Fort Saint George, No. 1605, dated 9th September 1856.
Reply to above No. 4741 dated 3rd October 1856.

PUBLIC WORKS DEPARTMENT.

No. 6 of 1857.

OUR GOVERNOR GENERAL OF INDIA IN COUNCIL.

1. Your letter No. 74 of the 3rd October 1856, refers to us with your strong recommendation, an application similarly recommended to you by the Government of Madras, from Lieutenant F. T. Haig, Civil Engineer of the Upper Godavery, for permission to proceed at the public expense on a tour of inspection to the principal lines of river navigation in Europe and America, during the interval which must precede our decision on a project, hereafter to be submitted to us for the improvement of the navigation of the Godavery.

2. Lieutenant Haig's main object during the proposed tour would be to obtain information on the following points.

1. The navigation of shallow rivers and of rivers of considerable fall such as some of the minor affluents of the Mississippi.
2. The sort of boats and steamers upon them.
3. The methods of removing or avoiding such impediments to navigation as are met with on the Godavery.
4. The different methods of construction of locks.
5. The modes of navigating rivers in their natural and unimproved state.
6. The improved methods and apparatus in use for constructing works of great magnitude such as those at Holyhead.

3. With this view he proposes to take the shortest route to Marseilles thence to proceed slowly up the Rhone, observing the mode there adopted of maintaining navigation during the dry months by confining the stream at the shallows between banks of stone, then to cross over into the Valley of the Loire by the Canal du-centre on his way to England, and after not more than a week's delay in this country to embark for America. He would then visit some of the most important lines of river navigation not however going further south than the confluence of the Ohio with the Mississippi as his chief purpose would be to examine the minor rivers rather than those of long uninterrupted flow, and after employing about two months in this manner, he would recross the Atlantic and devote about 6 weeks to similar investigations in Great Britain.

4. The extent of leave which he would require for the tour inclusive of sea voyages he calculates at 214 days.

5. Lieutenant Haig's application is made by himself with special advertence to the probability of operations on a great scale founded on his own recent survey being speedily adopted for the improvement of the Upper Godavery. He urges that in the execution of any such scheme knowledge of the latest experiments of European Engineering skill and of the appliances whereby American ingenuity converts rivers which would elsewhere be neglected as impracticable

into valuable commercial channels, could not fail to ensure better and more appropriate construction at greatly diminished cost. Your own recommendation of Lieutenant Haig's deputation to Europe and America is however made on more general grounds.

6. Whether much or little of what is proposed for the Godavery be sanctioned and even if the project be postponed indefinitely or rejected the acquisition by one of your Engineer Officers of the information desired by Lieutenant Haig could not, in your opinion be otherwise than very useul to your Government. On such of the Indian Rivers as are already more or less navigable additional impulse to navigation and especially to steam navigation could be given in no other way so easily and so effectually as by altering the form of the vessels in use. These are at present of very faulty construction but no trustworthy advice for their improvement has been at hand. The draught of water and the amount of steam power have been the points chiefly considered, other points of only secondary importance being left to be settled according to established routine. In America however, the navigation of shallow waters by steam and the sort of vessels most suitable for the purpose have been the subject of careful study, and more you believe is to be learned there on those points than in England or any other part of Europe.

7. We concur sufficiently in your views to think it desirable that steps should be taken from time to time to obtain for India the technical instruction which Europe and America are capable of affording on subjects intimately connected with her material progress. Lieutenant Haig's practical experience and recognized devotion to his profession, mark him as one peculiarly qualified to profit by the opportunity he seeks and the completion of the Survey, on which he has recently been engaged has suspended the demand for his services in their ordinary course. He may now therefore be spared for a while from his more regular duties and be permitted to engage in researches calculated to make his future labors more useful and we authorize you accordingly to depute him to Europe and America in the manner and for the purposes, you propose.

8. The extent of leave for which he originally applied was about 7 months, his plan having been to leave India early in last June, and to return in the January following, so as to be in readiness for the commencement of the projected Godavery works. We trust that the scheme for these works will be sufficiently matured to be entered in the Budget for 1857-58 yet it is certain that another year is the shortest interval that in the event of their being sanctioned can elapse before they are commenced.

9. We would not therefore restrict Lieutenant Haig to seven months leave if a somewhat longer time should be thought desirable for more completely accomplishing the objects of his mission, and we authorize you to grant him such leave of absence not exceeding twelve months as you may think proper.

10. His allowances during his employment on deputation we fix on the principle proposed by himself viz. that he shall have free passages to Europe and America and back his bona-fide travelling expenses on land at a rate not exceeding Rupees 20 per day for 80 days, a sum not exceeding Rupees 1,000 for the purchase of books and plans and his full Military and Civil allowances, viz. Rupees 220 a month Military and Rupees 700 a month Civil.

We are, &c.

London,
18th February 1857.

(Signed) W. H. SYKES,
and nine other Directors.

(True Copy.)

(Signed) W. E. BAKER, Colonel,
Secretary to the Government of India.

No. 51. ORDER THEREON, No. 945; dated 16th May 1857.

1. Ordered that copies of the above letter and of its enclosure be forwarded to the Chief Engineer for communication to Lieutenant F. Haig, District Engineer of the Upper Godavery.

2. The Honorable Court of Directors having permitted Lieutenant Haig to proceed to Europe and America, at the public expense, for the purpose of inspecting the principal lines of river Navigation, and having moreover authorized this Government to grant him leave for that purpose and to extend it if necessary to a period not exceeding twelve months, the Right Honorable the Governor in Council is pleased accordingly to grant Lieutenat F. Haig leave of absence, for the period of 12 months commencing from the date of embarkation.

3. The expense of Lieutenant Haig's passages to Europe and America, and back, will be defrayed by Government, and he will be allowed his bonafide travelling expenses on land at a rate not exceeding 20 Rupees per diem for 80 days, he will be granted a sum not exceeding Rupees 1,000 for the purchase of Books and Plans, and his full Military and Civil allowances, as entered in the margin, will be continued to him.

Military per month 220
Civil " 700

4. In Extract Minutes Consultation 8th December 1856, No. 2272, Lieutenant Haig was ordered to return to Dowlaishweram and arrange for the survey of the Canal and drainage works at the Sinteral barrier, a work which in his letter of the 4th November preceding, he calculated would be fully accomplished within two months. The work has recently been brought to a conclusion, and the Governor in Council now desires that Lieutenant Haig may be instructed to furnish a full report upon it before availing himself of the leave granted by these orders.

5. The Chief Engineer will be so good as to obtain Lieutenant Haig's opinion as to the measures to be pursued during his absence from India. The Government desire to be informed whether after his experience of the river, he is of opinion that it is desirable to undertake any works which, although of a minor character, are still calculated to facilitate traffic, or whether he would recommend that proceedings should be stopped pending the investigations which he is now about to make in Europe and America. The Government particularly advert to the plans recommended by Lieutenant Haig in his Memo. of the 28th June last

Pages 82 to 87.

No. IV. for the sanction of the Government of India to which application was made on the 8th December 1856, No. 2276, and they desire to know whether he would now recommend the post-ponement of those plans, their alteration, or their prosecution immediately that sanction is received. In the event of Lieutenant Haig recommending that work should stop until his return to India, the Government presume that the services of all Officers and subordinates attached to the Upper Godavery Division will be available for the general service of the Department.

6. Ordered that the above Resolution be communicated to the office of Account and Audit.

(Signed) H. FORBES,
Acting Secretary to Government.

No 1676

3

From

Colonel W. E. Baker,

Secretary to the Government of India.

To

I. D. Bourdillon Esqre.,

Secretary to Government

Fort St. George.

Dated the 9th April 1857.

Public Works Deptt
Public

Sir,

Secy Fort St George
No 1085 d/9th Septr 1856
Reply to above
No 1751 d/15th Octr 1856

With reference to the correspondence noted in the margin, I am directed to forward for the information of the Right Honble the Governor in Council of Fort St. George, copy of a despatch from the Honble the Court of Directors No 6 dated 18th February last, sanctioning the proposal, that Lieutenant Haig shall be permitted to proceed to Europe and America, at the public expense, for the purpose of inspecting the principal lines of river navigation.

I have the honor to be,
Sir,
Your most obedient servant

W. E. Baker Colonel
Secretary to the Govt. of India

Fort William,
The 9th April 1857.

E. F. L.

Public Works Department 5

N. 6 of 1857.

Our Governor General
of India in Council

1. Your letter N. 74 of the 3. October 1856, refers to us with your strong recommendation, an application similarly recommended to you by the Government of Madras, from Lieutt T. T. Haig, Civil Engineer of the Upper Godavery for permission to proceed at the public expence on a tour of inspection to the principal lines of river navigation in Europe and America, during the interval which must precede our decision on a project, hereafter to be submitted to us for the improvement of the navigation of the Godavery.—

2. Lieutt Haig's main object during the proposed tour would be to obtain information on the following points.—

1. The navigation of shallow rivers and of rivers of considerable fall such as some of the minor affluents of the Mississippi.—
2. The sort of boats and steamers upon them.—

The

Public Works Dep.t
Dep.t to Engy. No. 838
from the Secretary to the
Government of India
Dated 9.th
Received 28.th } March 1857

1 Enclosure,
J. C. No. 1676 of 1857
Requesting the sanction of the Honorable Court to Lieut.t Haig's deputation to the Railway lands, that Lieut.t Haig be permitted to proceed to Europe and America to visit the Public establishments for the purpose of inspecting the principal lines of River navigation.

Nos.

Dep.t Engy. No. 812.

Pub. Wks. Dep.t
Dep.t to Engy. No. 838
from the Secretary to the
Govt. of India
Dated 9.th March 1857
Rec.d 28.th

Dep.t Engy. No. 812.
to Secy. to Govt. of India
Dated 30.th March 1857
Rec.d 2.d April

Dep.t Engy. No. 812.
to Secy. to Govt. of India
Dated 30.th March 1857
Rec.d 2.d April

3. The methods of removing or avoiding such impediments to navigation as are met with on the Godavery.—

4. The different methods of construction of locks.—

5. The modes of navigating Rivers in their natural and unimproved state.—

6. The improved methods and apparatus in use for constructing works of great magnitude such as those at Holyhead.—

3. With this view he proposes to take the shortest route to Marseilles thence to proceed slowly up the Rhone, observing the mode there adopted of maintaining navigation during the dry months by confining the stream at the shallows between banks of stone, then to cross over into the Valley of the Loire by the Canal du Centre on his way to England and after not more than a week's delay in this country to embark for America. He would then visit some of the most important lines of river navigation not however going further South than the confluence of the Ohio with the Mississippi as his chief purpose would be to examine the minor rivers rather than those of long uninterrupted flow, and after employing about two months in this manner he would recross the Atlantic and devote about 6 weeks to similar investigations in Great Britain.—

4. The extent of leave which he would require for the tour inclusive of sea voyages he calculates at 2½ days.—

5. Lieutenant Haig's application is made by himself with special advertence to the probability of operations on a great scale founded on his own recent survey being speedily adopted for the improvement of the Upper Godavery. He urges that in the execution of any such scheme knowledge of the latest experiments of European Engineering skill and of the appliances whereby American ingenuity converts rivers which would elsewhere be neglected as impracticable into valuable commercial channels, could not fail to ensure better and more appropriate construction at greatly diminished cost. Your own recommendation of Lieut Haig's deputation to Europe and America is however made on more general grounds.—

6 Whether much or little of what is proposed for the Godavery be sanctioned and even if the project be postponed indefinitely or rejected the acquisition by one of your Engineer officers of the

the information desired by Lieut Haig could not, in your opinion be otherwise than very useful to your Government. On such of the Indian Rivers as are already more or less navigable additional impulse to navigation and especially to steam navigation could be given in no other way so easily and so effectually as by altering the form of the vessels in use. These are at present of very faulty construction but no trustworthy advice for their improvement has been at hand. The draught of water and the amount of steam power have been the points chiefly considered, other points of only secondary importance being left to be settled according to established routine. In America however the navigation of shallow waters by steam and the sort of vessels most suitable for the purpose have been the subject of careful study, and more you believe is to be learned there on those points than in England or any other part of Europe.—

7. We concur sufficiently in your views to think it desirable that steps should be taken from time to time to obtain for India the technical instruction which Europe and America are capable of affording on subjects intimately connected with her material progress. Lieut Haig's practical experience and recognized devotion to his profession mark him as one peculiarly qualified to profit by the opportunity he seeks and the completion of the survey, on which he has recently been engaged has suspended the demand for his services in their ordinary course. We may now therefore be spared for a while from his more regular duties and be permitted to engage in researches calculated to make his future labors more useful and we authorize you accordingly to depute him to Europe and America in the manner and for the purposes you propose.—

8. The extent of leave for which he was originally applied was about 7 months, his plan having been to leave India early in last June, and to return in the January following so as to be in readiness for the commencement of the projected Godavery works.— We trust that the scheme for these works will be sufficiently matured to be entered in the Budget for 1857/58 yet it is certain that another year is the shortest interval that in the event of their being sanctioned can elapse before they are commenced.—

We

9. We would not therefore restrict Lieut. Haig to seven months leave if a somewhat longer time should be thought desirable for more completely accomplishing the objects of his mission and we authorize you to grant him such leave of absence not exceeding twelve months as you may think proper.

10. His allowances during his employment on deputation we fix on the principle proposed by himself viz.t that he shall have free passage to Europe and America and back his bona fide travelling expenses on land at a rate not exceeding Rs.20 per day for 30 days a month not exceeding Rs.600 for the journeys to and from [illegible] and plans and his full Military and Civil allowances, viz.t Rs.220 a month Military and Rs.700 a month Civil.—

We are &c.
(Sd.) H. St. Sykes
and nine other Directors.—

London,
18th February 1857

(True Copy)

(Sd.) H. Walker Colonel
Secretary to the Govt. of India

Compd. H.D.L.

(Sd.) Illegible
Asst. Secretary to G.

Forwg

Pub: Works 1857 Dept.
Cons: 19th May
No 838

From the Government
of India
Dg 9th April/57

From Chief Engr 18th May 57 6
No 1648 in 6.

Conveying the sanction
of the Honorable Court No 6.
dated 18th February last,
that Lieut Haig be per-
mitted to proceed to Europe
and America at the Public
Expense for the purpose
of inspecting the principal
lines of River navigation

No 50-57.

W. Order

Public Works Dept.

9

No 945

Extract from the Minutes of Consultation
Under date the 16th May 1856.

Read the following
letter from the Secretary to
the Govt of India.

Here enter 9th April 1857 No 1676

Ordered that a Copy
of the above letter and
of its enclosure be for-
warded to the Chief En-
gineer for communica
tion to Lieut T. Haig
District Engineer of
the upper Godavery.

2. The Honorable
Court of Directors
having

having permitted Lieutt Haig to proceed to Europe and America, at the public expense, for the purpose of inspecting the principal lines of river navigation, and having moreover authorized this Govt to grant him leave for that purpose and to extend it if necessary to a period not exceeding twelve months, the Right Honble the Governor in Council is pleased accordingly to grant Lieutt J. Haig leave of absence for the period of 12 months commencing from the date of embarkation.

The

3. The expense of Lieutt Haig's passages to Europe and America, and back, will be defrayed by Govt, and he will be allowed his bonafide travelling expenses on land at a rate not exceeding Rupees 20 per diem for 80 days, he will be granted a sum not exceeding Rupees 1000 for the purchase of Books and Plans, and his full Military and Civil allowances as entered in the margin, will be continued to him.

Military per month 220 — —
Civil " — 700 — —

4. See Extract Minutes Consultation 8 December 1856 No 2272, Lieutt Haig was ordered to return to

Dowlaishweram

Dawlaiswerand arrange
for the survey of the Canal
and drainage works at the
Sinclerab barrier, a work...
which in his letter of the
4th November preceding,
he calculated would be
fully accomplished within
two Months. The work has
recently been brought to a
conclusion, and the Gover-
nor in Council now desires
that Lieut. Haig may be
instructed to furnish a
full report upon it before
availing himself of the
leave granted by these orders.

5th The Government
are of opinion that pend-
ing the preparation of
the

The Chief
Engineer will be so
good as to obtain
Lieut. Haigs opinion
as to the measures
to be pursued during
his absence from
India. The Govt
desire to be informed
whether after his
experience of the
river, he is of opinion
that it is desirable
to undertake any
works which, altho'
of a minor character,
are still calcu-
lated to facilitate
traffic, or whether
he would recommend
that proceedings should
be

should be stopped
pending the inves-
tigations which he
is now about to
make in Europe and
America. The Govt
particularly adverts
to the plans recom-
mended by Lieut.
Haig in his Mem.o of
the 28.th June last No.IV
for the formation of
the Govt. of India
to which application
was made on the
8.th Dec.r 1856 No.2276 and
they desire to know
whether he would
now recommend
the postponement
of those plans, their
alteration

Pages 82 to 87.

alteration, or their
prosecution imme-
diately that sanction
is received. And the
event of Lieutenant
Haig recommending
that work should
stop until his
return to India
the Govt. presume
that the services
of all Officers and
subordinates attached
to the Upper Godavery
Division will be
available for the
general service of
the Dept.

6 Ordered that
the above Resolu-
tion be communi-
cated to the Office
of

of Account and Audit=

Dr

Q Copies to the Chief Engr
Asst

1 — Asst Genl Ors
1 — Civil Auditor
3 — Orisy Depts

the plans for the Godavery which Lieut. Haig will mature after his visit to Europe and America, nothing should be undertaken on the river, and that consequently the services of the Officers and Subordinates of the Upper Godavery division may for the present be made available for the general duties of the Department. Before giving orders on the subject however the Government wish that Lieut. Haig's opinion should be communicated thro the Chief Engineer.

Ordered that the above Resolution be communicated

communicated to the Office
of Account and Audit—

Copy sent to Lt. Col. E.
by S. Nov. 1857. No. 18.

(17)

Public Works 1857 Dept.
Dft. Cons 19th May.

No 945.

Extract Minute of Cons.
Dft 16th May 57.

From Chief Engr. 15th June 57.
C. No. 122 in Cons. 1st Aug 57

From the Do. Of 12 Augt. 57 Cel. No. 1619 of
14th Sept.

From the Do. Of 18 Augt. 57 Cel. No. 1648 of
16th Sept. 57

From Do. Of 11th Aug. 57 Cel. No. 1566
in Ro.

(communicating to the Ch. Engr. the Sanction of the Hon. Court to the proposal of this Govt. that Lt. Haig should be permitted to proceed to Europe & America at the Public expense, for the purpose of inspecting the principal Lines of river Navigation.

No 50 & 51.

Cons 6 May 58 No. 11 & 12