(1) Number of pages 96

(2) Date of repair 3.9.96

(3) Initials of the Referencer Lm

TAMIL NADU ARCHIVES

GOVERNMENT OF TAMIL NADU

P.W.D DEPARTMENT

G.O. No. / B.P. No.	3822 / 3823 W	Press. / Mis.
Dated	30.9.1878	197

Not to be folded or roughly handled.

Archives I—10,006—19-4-79.

Irrigation P 1

382 V

№ 1653.

From, The Ag. District Engineer
Godavery District

To, The Chief Engineer
for Irrigation
Madras

Camp Main Canal Central Delta
17th August 1878
Despd 20th —do—

Sir.

In continuation of my demi-official of night of 16th and telegram of this morning, I have the honor to inform you in detail of the destruction of the Head Sluice of the Central Delta, and of the steps taken to stop the rush of water down the Delta.

2. It appears that about 4 P.M. of the 16th a Lascar employed in some work on the Head sluices noticed that there was a great bubbling

up

* Since said not to have been the case bubbling was heard but not seen -

up in the water some little distance below them and feeling frightened ran off to tell the Lock Superintendent when almost immediately the eastern arch fell in and was followed by the others. The catastrophe was so sudden and unexpected and when it occurred the rush of water was so powerful (there was at the time a difference of 11 feet between the level of the water in the River and in the Canal) that absolutely nothing could be done at the time.

I heard of the accident shortly after 6 o'clock and without feeling certain that the account was not exaggerated, for I expected that some of the small vents only had blown in, I started for the place with Lieut. Rawson, Capt. Barber, and the Assistant Engineer as soon as we could in the "Shamrock"

3. Owing to the darkness and the difficulty of navigation under the circumstances we did not reach the place until 8 o'clock - We then found that the report we had heard that the whole sluice had gone was scarcely exaggerated for all three of the main arches had gone, leaving however 4 of the small vents on the Eastern and 3 on the Western side standing and supporting the face wall above them.

4. The Canal below had filled so rapidly that only about 2 feet of inequality of level between the water in it and in the River remained.

5. It was evident that nothing of the slightest use could be done till a proper quantity of material and labor could be obtained, and it seems to me as well as I could judge at night that the wisest thing to do would be to put a sandbag and stone dam across the

the canal some little distance down where the banks were high and where the terrific fever which had occurred near the sluice had not deepened the bed.

6. We accordingly returned to Doolaishwaram, where we made arrangements for bags, tools &c and I wrote to the Head Assistant Collector for assistance and wrote the telegrams to the Chief Engineer and to you &c &c.

7. This morning Mr Johnson, the Head Assistant Collector (who had come over early with the Rajahmundry Tahsildar) Lieut. Rawson, the Anicut Supt. and myself came over in the "Shamrock" with 1600 bags and as many tools and Coolies as could be taken. Capt. Barker with his large steamer the "Godavery" brought over 4 large punts with materials

P3 382/2

and about 150 Coolies.

8. Inspection in the morning only confirmed my view of the previous night and the place at which I decided to put the dam is 725 yards below the site of the Head Sluice where the current though rapid is not disturbed and which is near the only reserve of stone, anywhere about the place.

9. The materials we had were conveyed to the place, the Coolies were set to work filling the bags and carrying stone from the reserve, and the Steamers were sent off for more materials and labor. It was evidently inadvisable to attempt the actual damming till we should be able to get everything ready to do it completely and tolerably uniformly from side to side and this involved

an

an amount of preparation which made it impossible to commence that work to-day, and not having heard anything from down the Delta and feeling very anxious to have some idea what the state of affairs was, and to see if I could not arrange for getting the water back to the River banks I went down in a small boat to Kalli leaving Lt Rawson in charge of operations.

10. It will probably be sufficient if without detailing all that came under my notice I say that from a little beyond 3 miles to the Lock (8¼ miles) there are numerous breaches in both banks and near the locks the banks are overtopped. The locks (Kalli & Lolla) and weirs are submerged, the balance

beams only of the former are visible and the bridge rail only of the latter. All the four works are turned but as yet I do not think any of the masonry has gone. Kalli weir & Lolla lock, especially the latter, have against them barriers of immense numbers of bamboos from rafts.

11. The water which is passing through the breaches and over the banks as above mentioned is flooding a broad strip of country on either side of Canal, but not up to the River banks. The water on the left side is flowing along parallel to the Canal, and entering the Bank Canal in its first reach, that on the right bank is finding its way to the Nattunga drain, but as the River water at the self acting sluice at the mouth of that drain is still as high as the water in

the

the Drain, and over the lands, none is escaping through it.

12. In the first breach of the Gunnaram Canal, the Delta Supt. informed me that there are 3 breaches in the right bank, water from these is going to the Kattunga Drain mentioned above, and two large ones in the left bank, the water from which is passing into the Gorinkala Drain, of course gorging it but relieving the Canal which is of great consequence as it may prevent overtopping and breaching of the banks close to the Gunnarams Aqueduct.

13. Mr Jackson, Delta Supt whom I met at Ralli, told me that he had not heard of any loss of life or anything more serious than a swamping of the country.

14. I sent off an Express to Mr Ellis telling him that I considered it

was not advisable that he should come up to the head of the Delta 382/74 that the safety of the Gunnaram Aqueduct was especially to be attended to, and the breaches of the River banks where advisable should receive early attention. I am now on my way back to the head.

I have the honr &c

(Signed) George. T. Walch

Ag Distt. Engineer.

Note. This was written in the boat on the way up from Ralli but it has not been found practicable to have fair copy made till to-day

(Initialled) G. T. W.

20 Augt. 1878

(True Copy)

Lt Col. RE.

Chief Engineer for Irrign

Ent
12.9.78.

NO. M1 Irrigation. P 6 3822/4

FROM, Dy. District
THE OFFG. SUPERINTENDING ENGINEER
at
GODAVERY DISTRICT

TO,
THE CHIEF ENGINEER
FOR IRRIGATION
MADRAS.

Encl. No. 1

CAMP DOWLAISHWERAM, Bobberlanka. 3rd Sept. 1878
Sept. 1st.

SIR,

I have the honor to forward herewith a diary of proceedings connected with damming the Main Canal Central Delta up to the Evening of the day on which you arrived at the work.

2. I would state that I have received most ready and active assistance from the Revenue and Police Departments. The Sub Collector, E. C. Johnson Esqre, to whom I sent intelligence of the accident on the night of its occurrence came over to Dowlaishwaram with the Tasildar Tahsildar early next morning, arranged for the supply by the Tahsildar of various materials which I required and of coolies, and himself came to the work, and though he left the same afternoon intended

to

to return next morning and stay some days - an intention which unfortunately he was prevented from carrying out owing to a severe accident. The Collector directly he heard of the destruction of the Head Sluice came to the place viâ Kottapetta and impressed his Sub-ordinates with the necessity of rendering any assistance which lay in their power. The Superintendent of Police, Major Morris, whom I omitted to inform of the accident nevertheless was over at the place next day with several of his men and himself lent personal assistance till the 19th when he had to leave owing to illness probably arising from, or at all events aggravated by, being out in the wet during a part of the previous night. His Inspector Mr. Benson was most energetic in collecting labor and Inspector B. Venkatiah Pedianny and the Constables under him have been of considerable use in mustering Cadjan Keeping gangs of Coolies &c.

3822/41

&c. -

3. The Officers and Subordinates of the Department who have been employed on and in connection with the work have done their duty, all have done it so willingly and well that I do not wish to make distinctions between them, but Asst Lieut Rawson and the Assist Superintendent fell the chief burden of the somewhat severe physical labor of the first five days and nights, after which I had to send Lieut Rawson to Doulaishwaram to manage the supply of stores, and since then Lieutenant Dorward, Mr. de Winton Mr Young and the Assist Superintendent have had immediate superintendence of the working parties and you yourself have seen how they have discharged their duties.

I have the honor to be
Sir
Your Most Obedt Servant

[signature]

To
The District Engineer Godavery

Irrigation

From
The Asst. District Engr.
Godavari
To
The Chief Engineer
for Irrigation

Dated 7th Feb 1878
Despd 7th —do—

No 41

Encls: Duc:

Central Delta-
Main Canal &c—
Forwarding Diary of
Operations connected
with Damming-

Godavari District

Diary of Operations
connected with Damming
Main Canal of Central Delta

—o—

17th — Got away from Dowlaish-
Above crest of Anicut — Heavy Breeze
Water U.S of Lock 9-6" — 9-6"
—do— L.S. of do. 8-6" — 8-6"
-waram in Steamer "Shamrock" about 7 A.M. accompanied by Mr Johnson the Collector, Lieut. Rawson R.E, and the Anicut Su-
-perintendent with as many coolies as the Steamer could carry, 760 tools &c. Big steamer "Godavery" followed with 4 punts loaded with more coolies, tools. bazulin &c- Inspected the Channel above the Sluice and the Canal for ½ mile down. decided that the best place to put bar or dam would be 725 yards

yards down the Canal because
(1) it was far enough down to
be beyond the hole which the last
rush through the ruined Sluice
must have caused for some dis-
-tance down. (2) the current
though rapid was not disturbed
at the place. (3) it was nearly
opposite a reserve of 360 cyds of stone
on the bank of the River. (4) the
banks on either side sloped down
to the bed and were not scarped.—
My idea was here to put such a dam,
or rather bar, as would without
actually keeping back all the water re-
-duce its flow to a moderate amount and
reduce the velocity down the approach channel
to the sluice so that we could there put the
dam to seclude all water, when the dam
or bar in the Canal could be arranged to
become the regulating one to pass water, after
the season of high freshes was over-

Having

Having decided on the site for operations the materials and tools were conveyed to the place and filling sand bags and carrying stone were gone on with to the extent the labor available admitted — Coolies 280 — During the night, which was a rough one, but little could be done beyond sewing up some bags, the Coolies generally were too tired. During this day I went down the Canal to Ralle and back as reported in my No. 1653 of 17th August 1876 —

above crest & Ancient River Bed
L.S of L. 9-6"-9-0
C.S of S. 8-6"-8-0

18th — Bag filling, and sewing, carrying of stone, making of six large grass "rollers", putting together of pile drivers, putting up shelter for the Comaties, putting in bags to protect banks where end of dam to be &c &c gone on with —
In the afternoon drove in 8 piles as far as length would admit but found that the from 4' to 5' which they could enter the sand was not enough to make them of any use. It had been thought that a row of these across the Canal with large Lanka grass rollers would make a good stop to keep materials thrown

in

in dam line carried beyond what
were intended to be dam stream line
in the bar or dam. Coolies ~~X~~ Night
work. Filling and sewing bags chiefly
were undertaken for first half
night— for Cyd stone brought over
from Dowlaiswaram— The Large steamer
already employed in bringing over coolies
and Materials:—
19th " From early morning till about
3.30 PM there was a very heavy storm of
rain and it was impossible to get coolies
to work. Got 2-3" feet points and
sheet piles into position across the stream
and built it up to end of each 3 sand
bags abutment 15' long and from
there work commenced in the afternoon
sliding bags down Sides; 3 bags were
laid down each side and then it
was moved laterally 2' and 3 more bags
laid down and so on continuously
across the Canal. Worked all
night and by morning of 20th had
got in 2 continuous rows (one in front
of other) each 3 bags deep. The
current was so powerful as to make
the management of the skids very
difficult but where the bags were
deposited they evidently stopped. 60
yards of stone and 40 of gravel
received from Dowlaiswaram—
Total number of coolies at work 665—
20th Worked all day (except a
stoppage of 2 hours (to clear
up payments) and Night
getting in sand bags; by 1
PM. 4 continuous rows of 3 bags deep
finished right across Canal and then
depositing of next layer of 6 bags
deep on these gone on with. The rising
water added considerably to the dif-
-ficulties. Filling & sewing bags,
carrying stone from the reserve, Ma-
-king sheds &c gone on with. Stone
received this day 102 Cyds from Dow-
-laiswaram. Coolies employed 700.
In the morning the Collector came
and saw the work. Lieutenant
Dorward and Mr Dellinton came

in & to day to assist.
wa 21st — In the morning 2 continuous above crest of Apron
of th rows of the second layer, Water U.S. Lock Morn. 10-1 Even. 10-10
wor of 6 bags deep were com- —"— L.S —"— 9-1 — 9-7
was =pleted — the boats there
afn were with difficulty, for anchors kept
fro coming home, moved forward to de-
chg =posit the front rows. The sand bag
and abutments or ends had to be raised
19. in order to get to the boats — The dif-
8. =ficulties of keeping boats in position
rain for sliding down bags now became
to u so great that I decided to go on throw-
: ch =ing stone across in front of the sand
and bag bar already formed — The trap
Tue punt was brought over from Dow-
slidi =laisharam and arrangements were
slid being made to work her backwards
was and forwards across the stream when
slid unfortunately before these were perfect-
aero =ed, injudicious handling when shift-
nigh =ing her position resulted in a jerk
got on the mooring chain which snapped
and she was carried down stream-
broadside on against the boats an-
=chored for sliding in bags, she hung

against them for a few seconds the
powerful current sucking under tipped
her forwards, & tearing the boats away
from their moorings she floated down
stream and sank. As the river was
still rising and the getting the boats
back into the position they were in
before, and keeping them there seemed im-
=possible I decided to try lengthening
the sand bag abutments, or approaches,
to about ½ length of a boat then
fastening a boat against each one
on the up stream side so that ½ her
length would project into the stream
then making a platform from end
of one boat to end of the other & so
forming a means of throwing right
across — Worked all night — Coo-
=lies on work 955 —
22d — The reduction of the water
— above crest of Apron
Water U.S of Lock 10-5" — 9-10 Morn. 5" 2"
Do. L.S of Lock 9-4" — 8'-11"
way by the projecting
sand bag groynes
was creating so con-
=siderable a disturbance that by mid-
day I decided it must be carried no
further and that boats must be dropped

down stream to the position where
bags and stone were to be deposited,
anchors here Kept on coming home,
so it was decided to get a rope across
the Canal and from it to let boats
down stern first into position. fortunate-
-ly there was amongst the Coal
boring apparatus a good Manilla
rope this was got across and an-
-choring arrangements for it got in-
Total coolies on work 1009 - Stone
from Dowlaishwaram this day 86 Cu.
-bic yards. Night, almost continuous
heavy rain (gauged at Dowlaishwaram
3".90) -

23d - Having received Colonel
Mullins telegram last night
and agreeing with him
that it would be advisa-
-ble to make this a dam and not
merely a bar, which for a time I in-
-tended it to be, I sent Lieutenant
Rawson over to superintend the expeditious
despatch of stone -

Having got alarming accounts
from Mr Ellis and as the river was
again rising I considered it prud-
-ent to tell the Collector and
Superintendent of Police that people
should be warned to leave the low
lying lands in the South east portion
of the Delta -

The arrangements for letting down
boats were finished; the carrying
of stone from reserve gone on with,
filling cuse and bags proceeded
with &c &c - Coolies on work 930 -
Stone from Dowlaishwaram in all
to to-day 352 Cubic yards which
with the quantity from the reserve
make about 650 ready for throwing
in -

24th - Much hindered by frequent
heavy rain -
Throwing in stone from
boats vigorously, the stream being very
powerful

Abstract of Meteorological Observations

	Morn.	Even.
Water & S Lock	9-10	8-11
— — L.S. Lock	10-5	9-5

Abstract of Meteorological Observations

	Morn.	Even.
Water U.S Lock	10-4	9-4
— — L.S. Lock	9-8	8-10

in powerful and most of the men with
w whom the boats have to be managed
of being untrained and not over intel.
we = ligent great care necessary on the
we part of the European officers to pre.
ev = vent mishaps. Coolies employed
fr 863 - Total thrown in to date -
ch 5768 filled sand bags, 298 Cyds
an Stone -
19 25th Throwing in stone proceeded
8. with as rapeditiously as possible
ra and got a head of the stone receiv.
to = ved from Doulaishwaram. —
Tightening up rope &c — Coolies
employed 860 -
26th Throwing in stone proceeded
with as fast as received; got in 248 Cyds in the
day - total in to date 456 Cyds -
Coolies employed 865 -
27th Throwing in - during day
254 Cubic yards to date 1010 Cyds -
Coolies employed 764 -

above ends & Anicut
Water W S Lock 9-4-9-(
— " — C S — 8-5-8-1/2

Anicut Flank
Masons Coolies
Water W S Lock 9-10 — 9-8
— " — C S — " — 9-0 — 8-10

Anicut Flank
Masons Coolies
Water W S Lock 9-2 — 8-6"
— " — C S. — 8-5 — 7-6"

28th

28th The overfall caused by the
Masons Coolies
Water W S Lock 8' — — 7-7" dam became thus 53'2"/16
— " — C S — 7-5" — 6'-2" day so considerable,
that we found dif.
- ficulty in working the boats with
their ends down it and decided
to try bridging the stream with two
boats broadside on just along the
line of dam before the overfall and
carrying along them from other boats,
throw the stone down the slope -
Made the necessary arrangements
and trial but found the system
would not answer and reverted to
the former system with modications -
Thrown in this day 105 Cyds
" to date 1115 -
Colonel Mullins arrived 3 P.M.

A. Sweales
Ag. District Engr. Godavari

Dolleswaram
7th Sept 1878

Diary of Operations connected with Receiving Main Canal & Central Delta.

Report. 3822/15

At Manepilly on 16th evening, breach to River embankment in Nagaram Island (already reported on) has been closed and river kept out of Vadabodi swamp; safe here so far.

Mondepulanka Lock & weir.

Received an express at 12 P.M. on this night that the Mondepulanka lock & weir were under 1½' of water; relieved this at once by opening out Bellampudi weir and cutting a breach to river embankment between Yenugapilly head and Aqueduct.

Gunnaram Aqueduct.

Visited Aqueduct on 17th morning; canal water 4' o/s upper of Aqueduct, it had during the night and morning (12 P.M. to 4 A.M.) overflowed the side walls to a height of 1'— Safe now, and so are Mondepulanka lock and weir. special orders given to embank at masonry sides to avert scour.

Gunnaram Canal.

Gunnaram Canal excepting a few trifling breaches to inner bank perfectly safe between 15th and 27th miles, water had gone over the inner bank in many places, no injury done any where; water considerably reduced by breaches and Bellampudi weir.

Aqueduct safe — and so is Nagaram Island

Ramachendrapur lock and weir had 2' going over their walls during 16th night — 9" going over at 3 P.M. on 17th both works sound — gave a breach at 14th mile stone to the Garinkala, so as to reduce the water to within walls of lock.

Ramachendrapur Lock & weir

Gunnaram Canal between 8th and 15th miles not much injured, several breaches to both banks of not much consequence; can be easily re-made. Country both sides under water.

Ralli & Lollah Locks and weirs still submerged. no dangrious repairs appear sound and safe also.

Water in Amalapur Canal not so high as to endangre its masonry works a few breaches have happened and relieved the Canal, no damage of any consequence Will inspect today and report further on this Canal; water on Nadupudy lock 1' on both sills on the 17th not much to fear.

Bank Canal nothing known; will inspect and report.

/Sd/ I. W. A. Ellis
Sub Engineer

18th 10 A.M.

I left Manepilly at 4 A.M. on 17th Gunnaram at 8 A.M. Ramachendrapur at 3 P.M.

Ralli lock — 6 P.M.

Received the District Engineers first express at 9 A.M. the second at 3.30 P.M — will go about the Delta as requested; tried to get up to Bobberlanka, but could not for want of means. (a small boat) — going on to Amalapur and Bank Canal.

/Sd/ I.E.

18th August 1878

(True Copy)
/By Order/
W. Wakefield Manager
District Engineers Office Godv.

No. 1615
To,
The Chief Engineer for Irrigation
for information.

Dowlaishweram
19th August 1878

Comp'd by

From

The Ag. District Engineer

Cydaroy

To

The Chief Engineer

for Irrigation

Dated 19th August 1878

Received

No. 1615

Central Delta —

Copy of Mr. Sub Engineer Ellis's report on the measures adopted by him during the great immundation of the —

18th August 1878.

D16 3622/2

Amalapur Canal.

First reach — the whole country between this reach and the Bank Canal under water, the villages of Ravalapalliam and Ravulapad more or less damaged; water having penetrated the houses — Not much water on the Palli village side. A big breach to right bank at 19" Mile, large enough to empty the Canal (50 yards length). Canal water much reduced below this breach.

Pallirella lock and Weir safe; water on upper sill at 2 P.M. (18th) = 5'-6"

on lower sill = 5'. 10.

The former was 9. 6" and latter 6'. 10" during 16th nights at 10 P.M flowing 6" over walls.

Ordered to open out Ambajapetta head Sluice -

Second Reach.

The waters from breaches in Amlapur Canal left bank and Bank Canal right bank are just coming into the second reach of the Amlapur Canal. Ordered a breach above Mukkamala lock, and below Billakurru junction, so as to draw

draw off from Bank Canal.

Mukkamala Lock and Weir

Water did not overtop this lock or Weir but stood 6'. 9" and 6'. 2" on upper and lower sills — Now it is 5'. 4" on upper and 4'. 11" on lower sill. These works are perfect. Billaturru has a strong current now into Amlapur Canal.

Third reach

Two breaches in this reach to the Kowsika in the 29th Mile. Masonry Works safe, water rippled over the lock at Nadupudy and overtopped the banks nearly two miles.

All below very good; arrangements have been made to guard against further rising.

(Signed) W. H. Ellis
Sub Engineer.

19th August 1878.

Bank Canal.

Quite full to overflowing; no breaches to left bank, water flowing through drainage mouths and fast filling the country between the Canal and river embankment. Water going over inner bank and pushing into Amlapur Canal second reach. One breach about 10 yards in

in length to right bank in 19th Mile; other minor breaches.

3822/18

One breach at Madupella about the 24th Mile of small size.

Nothing dangerous below; instructions given for breaches into river below 43d Mile.

(Signed) W. H. Ellis.

(True Copy)

G. D. Dykes. Executive Engineer
for Mr. District Engineer Godavery Dist.

No. 1635

To,

The Chief Engineer for Irrigation
Dowlaishweram
20th August 1878.

for information.

Compared by
B.R.

From

The Ag. District Engineer

Godavery.

To, The Chief Engineer

for Irrigation

Dated 20th August 1878,

Received

No. 1635

Central Delta — Report from Mr. Sub Engineer Ellis regarding the present inundation of the —

21st August 1878

Matters getting worse every moment — river rising, Ankampollam sluice has almost ceased to act. Water on land side of it between Gunnaram Canal and Vasista bank is flowing back into that canal below 11th mile. Its left bank has breached in several places, and the country round about Ralli village, is being fast submerged.

Ganti road under water, Gorinkala full, its bridge on this road gone. Water fast pouring into the low lands between Ganti road and Amalapur Gunnaram Road.

In short the whole country above Ganti road is inundated, and water rising. All villages have been warned against submersion. Water has not reached Amalapur yet. The country below this, is free of water up to date. And the Amlapur and Bendamurlanka Canals and their Channels are carrying off the surplus from the low lands.

The

The effect of the upper waters reaching the "parra" (low lying wet lands) is awful to contemplate, considering the country there being flat. Warning sent to each village by special messenger to look to lines.

No means of reducing the water by cuts into the river anywhere, as the water is higher there.

/Sd/ J. W. Ellis
22 August/78. Sub Engineer

(True Copy)

T. W. Upton. Ex: Engineer
For Ag. District Engineer Gor.

No. 1673.
To,
The Chief Engineer for Irrigation
for information.
Dowlaishweram
22nd August/78

Compd by DK.

Ap 23824
30-8-78

From,
The A.E. District Engineer
Godavery

To
The Chief Engineer
for Irrigation

Dated 23rd August/78
Recd

No. 1673

Central Delta Report
from Mr. Ellis Sub Engi-
neer on the state of the
from the action of the
flood—

No. 125. Camp Gunnaram 3822/11

From,
The Officer in charge,
Central Delta Div.

To,
The District Engineer
Godaveri.

Dated 24th
Recd } August 1878

Water still increasing - has reach-
-ed Gunnaram Amalapur road and
breached it in five places. Following
additional villages swamped excepting
high streets; all lands and crops subma-
-rged — no loss of life.

Itakota
Momidavarapad
Podagatlapilly
Ramachendrapur
Narendrapuram
Kattarulanka
Munjavaram.

The portion of the Delta now (24)
under water comprises the country
from

from the head, within the river embankments to Ganti road and below it, between Vassista and Vainateyam river banks to mouth of Gopinkala, and Amalapur Canal; or in other words the basins of the Howsika (upper) and Gorinkala. Water has not penetrated to lands under Amalapur and Bendamurlanka Canals below 22½ mile.

Sd/ I. W. A Ellis
Sub Engineer

(True Copy)

G. D. Wilson. Ex Engineer
For Ag. District Engineer Godavery

No. 1723
To
The Chief Engineer for Irrigation
for information

Dowlaiswaram
27th August 1915.

From,
The Ag. District Engr.
Godavery.

To
The Chief Engineer
for Irrigation.

Dated 27th August/78
Recd

No. 1723

Central Delta.
Further report by
Mr. Ellis Asst.
Engineer on the
state of — recent
-ly inundated-

P P 20 23/22

No. 236 I.

Memorandum.

Ends 9

The following information regarding the partial destruction of the head sluice of the Main Canal, Godavery Central Delta, the measures taken to obtain control over the water entering the Main Canal, and the results of the accident in this section of the Delta, is submitted for the information of Government.

Cause of accident to Head Sluice.

2. As to the cause of the failure of the head sluice there is little or nothing ascertainable. The sluice consisted of 3 main arches of 40 feet span each on piers 7 feet thick, these spans being divided into 15 vents by small piers. The sluice has been

in

in use for about 30 years and until just before the arches fell in there was no indication that any thing had gone wrong or that the foundation was insecure. The sluice was under the supervision of the Executive Engineer Eastern Delta, who has charge of the Anicut and head works. It was inspected by the Executive Engineer † Mr Valeh during the dry season, and such repairs, principally pointing the flooring &c, as were found to be necessary were carried out. It was noticed that some of the flooring stones were sand scored, and it was intended to take them out and replace them the following season. The sluice shutters being of the old form and hard to move the usual difficulty in regulating the depth of water in the Main Canal

had been experienced, and the depth 5 feet therein at the time of the accident was much greater than had been desired by the Range officer, Mr Ellis, who in consequence of heavy rain in the Delta, had sent up instructions to reduce the depth to 1½ feet, and who had as much as possible held up the water level at the Ralli head by putting the shutters into the Ralli & Lolla weirs. The shutter of the 9 vents of the sluice had, early in the month, been found unserviceable, and had been replaced by a shutter from Dowlaishwaram. On the afternoon of the 16 August the Lock Superintendent and Lascars were engaged in endeavouring to reduce the supply to the Canal by stuffing straw and grass in front of the shutters, and it was then noticed that a great

deal

deal of water was passing through
No 6 vent, the one West of the East
main pier. Suddenly at about ½ past
4 a noise was heard which was
no doubt the fall of the rear part of
a main pier, a crack appeared in
the face wall and the men had
barely time to get off the sluice before
the centre arch fell. The 3 Western
vents have stood uninjured and their
piers continue to support the front
part of the Western arch. Four
vents on the East side remain but
the outer two of these have separated
from the inner two.

The following entries in the water
register show the heads of water
against the sluice in August.

Date	above sluice	Below sluice	Difference or head
5th	18.41	3.83	14.58
6th	18.66	5.00	13.66
15th	16.17	5.00	11.17
16th	15.92	5.00.	10.92

1222
3822
26

The accident was not apparently directly
due to the head of water against the
sluice at the time, as this was
considerably less than 10 or 11 days
before and less than on many
previous occasions. It may however
have been due to great head lasting
over an unusually long period, and
have been caused by the washing
away of the sand under the
foundations. There is no detailed
plan of the foundations of the
Sluice, but the head sluices of
the 3 main Canals are nearly
identical in design, and a plan
of the Eastern Delta head sluice
shows that the lower foundations
there are wells. Indirect evidence
indicates that the failure occured
at the foundations and not at
the flooring, for the destruction
of this latter even had the cut stone
surface been displaced would have
taken a long time, the total thickness

being

being great. It was at first thought that the East main pier was the first to fall but soundings taken by Mr Walch seem to show that it was the West pier which first gave way, and this would account for a crack first appearing in the spandril over the East pier. Supposing the subjacent sand to have been washed away, the great weight on a main pier would naturally lead to the accident occuring first in the way in which it happened.

It is stated that in high freshes leakage is observable through the banks on either side of the head lock, and though there are now necessarily no indications of what the place was like some 30 years since, it is probable that there was much sand met with in cutting out the foundations of the head works.

Restoration of head sluice.

3. The debris of the old sluice will make it inadvisable to attempt its restoration, as it would be very difficult to get in reliable foundations, and it might lead to serious difficulty were the attempt to be made and afterwards abandoned seeing that there is none too much time available for the work which must be completed before the first rise of the river in 1879. The District Engineer has consequently been instructed to submit a design and site plan for a new sluice

Measures taken to stop the flow of water into the Delta.

4. Intelligence of the destruction of the Head sluice reached the District Engineer at Dowlaishwaram a little after 6 P.M. on the 16th August, and as soon as a steamer could be got ready he went over and with some difficulty, owing to the darkness, managed to reach the head and

ascertain

ascertain that the report which had reached him was unfortunately only too true. The District Engineer then returned to Dowlaishwaram and made preparations for damming the Canal. The next day the collection of materials at the site selected for the dam 725 yards below the head was commenced, and as nothing could be done until a large quantity of materials had been obtained, a slow operation as the state of the river made it impracticable for any steamer except the Godavery to bring over punts or other boats, Mr Walch went down to the Kalli head, 8 miles from the main Canal head, to see how matters stood, and to send off to Mr Ellis such instructions as were necessary. His letter of the 17th written in the boat as he was returning gives full information up to that time. The surface fall of

Copy appended

*against 0.30 the fall with a full supply.

Head lock sill	32.00	
water	14.50	
	46.50	
Kalli lock		
upper sill	29.95	
water	10.25	39.20
Fall		7.30

the water in the Main Canal was then about 0.91 a mile. The water was 14.50 feet deep at head of Main Canal and 10.25 on the upper sill of the Kalli lock, the side walls of which are 7.25 feet above the sill, so that there were 3 feet of water going right over the lock, the balance beams of the gates being alone visible. The Lolla lock was similarly submerged, the lock weirs were blocked by rafts of bamboos which had broken loose and been swept down by the current. The country was under water though not up to the river banks, and it seemed to be inevitable that a clean sweep must be made of the locks and lock weirs on the Canals.

5. The District Engineer has furnished the appended narrative of the proceedings and course of the work up to the 28th August, when the undersigned arrived at the scene

of

of the accident. The water in the river had then fallen to 7½ feet on the crest of the anicut and was still falling. The steamer Shamrock was able on that day for the first time to bring over boats with materials. About 1,000 cubic yards of stone had been put into the dam across the canal, the current had become moderate, the arrangements had been carefully organized for working the stone boats and enabling them to deposit stone in the right place without being swept down by the current, and though progress had so far been slow the results of the work of the next four days were rendered practicable by the arrangements which had been made, and which allowed full advantage to be taken of the more favourable

state of the river. While the river continued high and the current at the head of the Central Delta rapid it was impossible to work expeditiously, for the boats had to be carefully dropped into the head lock channel and cautiously worked down to the dam site where also very great care was necessary to prevent their being carried down too far. Lt. Dowars and Mr de Winton had been brought over from the Western Delta and were in charge of the Dam work. Mr Young from the Eastern Delta was specially charged with the management of the boats from the time they were dropped by the steamers until they were returned empty to them. A Manilla hemp cable had been stretched across the Canal just above the dam and

from

from this ropes were hung at fixed intervals, ~~from~~ from which the punts were warped into position with their sterns just on the line of the dam. With all the precautions taken and all the instructions given to the coolies on the boats some of the prow punts were swept over the dam but only one - a trap punt was sunk and will easily be recovered. By the evening of the 1st September nearly 2400 cubic yards of stone had been placed in the dam and the water levels were above the dam 43·60

below — do — 39·82

the lower level representing about 7½ feet in the main Canal or somewhat less than a full supply. Before noon the next day when Mr Walch and the undersigned started to visit

the Delta, the water below the dam had been reduced to 39.25 and the greater part of the crest of the dam had reached the water surface, and control had been fully re-established with, it is hoped, no probability of it's being again even partially lost.

Further arrangements to be made -

6. The further arrangements to be made have been the subject of anxious consideration. Not only have flood waters to be excluded, and the river diagrams show clearly that one or perhaps two high freshes are to be expected in September, that a high fresh in October is possible though not probable, and that these may reach a level almost as high as that of August, but the Delta has to be supplied with water until January next. It was originally

originally the intention, as a matter of precaution, after the dam in the first mile had been raised sufficiently to check the current at the head, to put up a second stone dam above the ruined head sluice, so as to secure additional safety and to divide the head of water in high freshes into 2 nearly equal parts. Also in case of a slip at one dam, the other would be available to stop the flow of water while the damage was being made good. The two dams would clearly be safer, but they would greatly increase the difficulty of affording an adequate supply to the Delta irrigation as the river falls, and this difficulty is one, which it is desirable not to incur if it can

Vide Memo No 1431/2 D. 19 Aug. 75 in Photo No 709. 6 Sept. 75.

possibly be avoided. Moreover such an upper dam would inevitably cause scour below it which might add to the difficulty of constructing the new sluice, while an earthen bund above the stone dam would eventually be necessary and the space available is very limited. The present dam abuts at its right flank on excellent soil, but the left flank is less favourably circumstanced, and slight settlements have occurred partly no doubt from scour below the dam, but partly from the displacement of the soil on which this flank rests. These have been made good and precautionary measures taken. The crest of the stone dam will be 9 feet wide and will be made up to 44.00,

or

or 12 feet above the sill of the head sluice, for a length of 150 feet, and the ends will be raised to 45.00 to reduce action at the flanks and to provide for settlements until these, which are more likely to occur there, or which occurring there would be of more consequence, have been made good. The banks at the flanks are being revetted with sandbags faced with stone up to 54, and provision will be made for raising the crest of the dam with sandbags to a probable extreme height of 6 feet above the stone, or to 50.00, which would stop all overflow with 12 feet of water going over the anicut. Should the river fall and more water than can pass through the dam be wanted, the stone crest will be evenly lowered as much as

may be necessary, the stone taken away being stacked at the sides for replacement from time to time as required. A reserve of 500 cubic yards of stone will be kept on the banks in readiness to make good any slips, and about 30 per cent more sandbags will be kept available for use if required. In this way it is hoped that full control will be maintained and that, though not without some difficulty and vigilance the necessary supply to the Canals will be kept up. An officer will be kept at the dam until the freshes are over. It will probably be found desirable to construct a temporary work of regulation in connection with the old head sluices for adjusting the flow of water during slight rises in the

river

river after the freshes are over.
The subject has been discussed
and it was decided that no
such work could be designed
and carried out as could be
safely trusted to, for the next
6 weeks or so, but after that such
a work might be of service. There
are 4 vents of the old sluice which
are available, and a timber
framework with baulk or plank
shutters can be used to regulate
the discharge through the gap
with a head of not more than
3 or 4 feet. The framework would
be supported by piles.

4. Had it been practicable in
the first instance to throw a
dam across the canal above the
head sluice, this would have been
in some respects preferable, but it

was not possible to construct such
a dam while the rush of water
continued. The length of canal
or channel leading to the head sluice
is limited; in addition to the
strong current running through
the head sluice there is, a few
yards distant, the rapid current
caused by the draught of the
undersluices, and the stone boats
could not have been safely worked
in such a position neither could
the dam have been thrown up
in any thing like the same time.
Had a dam above the sluice been
practicable the navigation
would have been unobstructed
while now for a time a transfer
of goods and passengers will
have to be made at the dam,
but after all danger from considerable
freshes is over, the dam will be

cut

cut down so as to allow boats to pass and in the meantime arrangements will be made to facilitate the transfer from boats on either side of the dam.

8. Since the above remarks were written the raising of the stone dam to its full height and nearly to the full section intended had been accomplished, and the water below had been so far lowered as to make the head against the dam very nearly 6 feet, the depth of water above being 12 feet. The partial damming of the water during the earlier operations had necessarily led to great scour of the bed of the Canal a short distance below, and on the evening of the 5th Instant a slip or settlement

occurred which lowered the crest of the dam at one part to some 3 5/12 4 or 5 feet below the rest, and when the undersigned returned from the Delta on the 6th. this was being dealt with, and much of the lowered crest had then been restored, but the powerful current made it difficult to get any of the stone thrown in behind the crest to stand. By the evening no water was passing over the crest but during the night the river rose some 6 inches and some of the previous day's work was washed down. It was then determined to widen the dam up stream and by the evening Complete stability had been secured. A width of nearly 30 feet has been added at one part and from this the dam slopes to the two flanks.

The

The deep hole in the rear slope has been filled in and on the morning of the 8th the current had been so far diminished as to admit of a small boat (nama) being worked right up to the toe of the dam below and soundings were taken which afforded a satisfactory assurance that at any rate much of the original bar of sandbags remained in position, and that every where stone was to be found supporting the toe of the slope of the dam. The dam was last inspected at 3 P.M. on the 8th and then the water below was at 35.75 or about 3.90 feet deep above normal feed level. The head of water against the dam was as great as it will at any time need to be, and all movement had ceased. There will doubtless be other slips and settlements but unless they be of very great extent vertically they can be promptly and rapidly dealt with by throwing in

32.00
11.00
43.00
35.75
about 7.25

stone in front of the dam. All requisite instructions have been given to the District Engineer, and an Assistant Engineer will remain in charge until the freshes are over.

No 3 of 9th Sept 78
" K. 9 Sept 78

Up to the evening of the 7th, 4000 cubic yards of stone had been put into the dam, and the arrangements now admit of nearly 500 cubic yards being put in daily.

Reserves to be made good.

9. Some of the stone used in the construction of the dam has been taken from the reserves maintained at Vadapilli and elsewhere to meet emergent cases of erosion or otherwise, and the stone so taken should be replaced directly the boats are no longer required for the work at the head of the Central Delta, and the cost should be charged to the dam. It is of importance that reserves should be maintained wherever there is any probability

probability of their being needed, for time is often of the utmost value in such cases.

10. Communication by land or water throughout the Delta having been restored by the subsidence of the flood, the general extent of damage done to the canals is tolerably well known, and though the outlay required for its repair cannot just yet be stated, it is certain that the injuries sustained are very insignificant, and the only masonry work known to have been destroyed is the bridge over the Gorinkala drain on the Ganti road. — Effects of admission of flood water

11. There are breaches in the two banks of the Main Canal none of which are of consequence, and they are now serving to drain into the Canal the water which remained on the adjacent lands. Since the water has fallen also there have been a good many slips of the Canal banks — Main Canal

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5827/58

with which the continued heavy rain has no doubt had something to do. The Ralli lock and weirs and the Lolla lock and weir after long submergence are uninjured, but there is a breach about 16 feet deep round the right wing of the Lolla weir, and the weir channel is being closed to admit of this being attended to.

The water was on the 2nd just up to the top of the walls of the Ralli lock but vigorous measures were taken to clear the Ralli weir, which is of great capacity, of bamboos and drift, and by the middle of the following day the water had been lowered about 2¼ feet and the rush through the breach at the Lolla weir so far checked that a Range boat was passed through it the following morning without

much

much difficulty, the Lolla lock being silted up and the breach being the only way of getting into the Bank Canal.

Bank Canal

12. A large part of the overflow from the Main Canal on its left bank went into the Bank Canal by the line of the Vachili drain which falls in just below the Lolla weir channel. None of the water went to the river (Gowtami Godavery) At 11 miles from the head of this Canal and 19 miles from head of Dowlaiswaram the Ganti road crosses by a trussed wooden bridge, and in these 11 miles most of the surplus water left the Canal and flowed across to the Amalapur Canal inundating the intermediate strip of country, which is at all times rather badly drained. No damage of any consequence to the Canal was done: a good deal of low bank was washed away and that was all. The Canal is in its present state available for both navigation and irrigation. Below the 19th mile the water in the Canal did not rise to any considerable height above the normal full supply level. A breach into the river was made in the 43rd mile as a precautionary measure.

Billakurru Canal

13. From the 22nd mile of the Bank Canal the Billakurru Canal was followed which falls into the Amalapur Canal in the 26th mile. This junction Canal is uninspired.

Amalapur Canal 4th & 5th

14: The Amalapur Canal was followed down to the Nadapudi lock which could not be reached owing to the water being too shallow. By this Canal a return to the Kalli head was made. There are several large breaches in the right bank of

this

this canal, and most of them were purposely made to relieve the country to the Eastward. The surplus from the upper part went into the Gorinkala drain, and that from the lower part into the upper Kowsika drain. The places selected for breaches were judiciously selected, and very little damage was done to the country for a time submerged, while at only 3 of the breaches was there water flowing out at the time of inspection, and that at a small depth. These breaches will be bunded across at once and irrigation and navigation to Amalapur restored. It is proposed to build two surplus weirs one in the 12th mile and another near the infall of the Billakurru Canal to discharge into the two drains. These will be useful under ordinary circumstances. The Pullivella and Vadapudi locks were just topped,

P.W.D. 5827/26

but no damage was done to them or to their weirs. The Mpukkamala lock which lies between them was not submerged at the upper end.

In the left bank above, and close to the 11th mile a cut was made before the accident to the head sluice, to drain the land to the Eastward, and this was much enlarged during the flood - the lands were still under water though the Canal water was about 2 feet below its normal level, and no water was flowing in or out. These lands are therefore very low and need drainage either Southwards or under the Amalapur Canal Westwards into the Gorinkala drain. They are not irrigated lands.

In two places huts had been put up on the Canal left bank for the shelter of villagers whose

dwelling

the dwellings had been submerged.
pu They were occupied by the poorer
to classes and nothing was heard
th of any material damage to superior
dr houses. One of the villages, Ravulapad,
in is in the 15th mile and just below
pu the village a cut through the left
pu bank was draining a good deal
du of water into the Canal.
fo The other huts were close to the
3 18th mile stone. The wet cultivation
ff generally looks well and so far
an as could be learnt very little of
le it has suffered injury. There is
a much dry cultivation in good order
to to the West of the Amalapuram
to Canal, and to the East of this
a Canal it appears that owing
in to the heavy and long Continued
di rain much of the low lying
ci land had not been cultivated.
Na On the whole it is probable that so much good has

1855
30 27 5

been done by the enrichment of the lands by silt as harm by inundation, but of course the sufferers by the latter are not generally the gainers by the former.

This Canal will in a few days be again in Complete working order.

Gunnaram Canal 3rd.

15. It was this Canal which on the first news of the accident being received, occasioned the greatest anxiety lest the great aqueduct, over the Vanteyam Godavary which supplies the Naggaram island, should be injured. The water at first rose to 1 foot over the side walls, and the lock and lock weir a short distance below were for a time in Considerable danger, but directly the principal quantity of water made its appearance a surplus weir, discharging into the Gorinkala was opened,

a

a breach was made in the left bank a short distance above the aqueduct, and the Canal was completely relieved and damage averted.

The Canal was inspected down to the Ramachendrapur lock in the 15th mile, and the damage in this reach is confined to a breach in the left bank made to pass surplus into the Gorintala drain. Some water was running out, but there will be no difficulty in closing it.

At the lock water went a few inches over the chamber walls and gates but was stopped, except at the latter, by the approaches of the tail bay bridge. No damage was done at the lock weir; 6 inches of water passed over the bridge but strange to say this weir which has been supposed for years to be

very insecure, both piers having canted over considerably to the rear, sustained no damage whatever, and its apron, pavements &c are all in excellent order though so severely tried.

Kattunga Drain

16. To the west of the Gunnaram Canal there is a drain which has its head not far from the Ralli lock and which discharges into the Vasista Godavery opposite the 12th mile by the Ankampolem surplus sluice. This drain discharges much of the spill from the right bank of the Main Canal and did excellent service though no water could get out when the river was at its greatest height. The sluice has been cracked and much shaken, but it will probably be repairable should it not be deemed advisable

to

to replace it by a more capacious work, it having only one vent 4 by 6 feet and 6 square miles of country draining down to it.

17. The Gorinkala and upper Kowsika drains acted wonderfully well, and the Southern part of the Delta or that below the Gunnaram and Amalapur road suffered hardly at all, and it was that part of the Delta the submergence of which would, it was feared, do much harm and perhaps occasion loss of life. A breach was unwisely made in the road without authority and might have led to increased damage, and the ryots made a breach into the Bendamurlanka canal which was a mistake, as it could do little good and might have done harm, but otherwise to the South of from 25 to 30 miles from the head

Gorinkala and upper Kowsika drains.

there was little or no inundation.

18. It is with much pleasure that the undersigned brings to the favourable notice of Government the excellent conduct of Mr. Sub Engineer Ellis, the Range officer, under circumstances exceptionally trying. Knowing the Delta thoroughly he set to work to relieve it of the vast amount of water poured into the canals and the action taken by him was prompt and judicious. To his exertions are due the absence of all serious damage and probably the safety of the Gunnaram aqueduct, any accident to which would perhaps have rendered the irrigation of the Nagaram island impracticable for a year at least. The action taken by him has been completely successful and the value of the service rendered by him in this emergency has been very great.

Mr Ellis's reports are appended
2 of 18th August
21 — do —
24 — do —

38 22/39

Mr Ellis

Mr Ellis has just earned by previous good service his promotion to the 1st grade of Sub Engineer, and the undersigned would venture to recommend the grant of a personal allowance to him as a well merited acknowledgment.

19. The measures adopted by the District Engineer, Mr Walch, on the occurrence of the accident to the head sluice are deserving of full commendation, and he has been most ably and zealously assisted by every one who was called to his aid. In the first instance the work had to be undertaken by Mr Walch and Lt Rawson, but on the 20th Lt Dorward and Mr de Winton from the Western Delta arrived, Lt Rawson was sent back to Dowlaishwaram to superintend the despatch of stone, and Mr Young was placed in charge of the boats from the time they were dropped

by the steamers to their return empty thereto. The construction of the stone dam has been carried out by Lt Dorward and Mr de Winton and has entailed extremely hard work for 3 weeks, it having been found essential that they should be on the work from morning to night to personally superintend the warping of the boats into position; indeed, an absence from the punts even for a few minutes, to attend to other pressing arrangements, in several cases led to boats being carried over the fall. Sun, rain, and the splashing from the stone had to be borne, and the fatigue has necessarily been very great. The Ancut Superintendent Ramana Naidoo has also rendered excellent service.

Capt. Barber of the Godavery Steamer has been most energetic and has maintained a constant supply of

Stone

Stone boats to the work. The Revenue officers gave prompt aid in the supply of labour which without their assistance could not have obtained in adequate numbers in the first instance, and the Superintendent of Police sent a detachment of Constables which has been of much use in preserving order.

20. One mishap which ought not to have occurred has to be reported. A large punt made out of the Lotus steamer was on the afternoon of the 31st August being warped out to the Godavery steamer at Dowlaishwaram, when the strong current there running caught the bows and the rope broke. The punt being without an anchor which had, it is said, been taken out some days before for the work at the dam drifted rapidly away and struck on the pampered crest of the anicut on which it stuck. On examination the next day it was found that the bottom had been damaged so the punt was secured by a hawser, some 60 tons of stone were taken out, and the holes in the bottom were temporarily stopped. Further operations had to be postponed until the next morning the 2d September, when it was hoped that on taking out the rest of the stone and cutting the hawser the punt would have floated over the anicut, and this would have been accomplished had not the heel post caught on the edge of the weir the result of which was that the fore part filled and the punt went down. It is hoped that it may be recovered in the dry season. The District Engineer has been requested to enquire fully into the circumstances of the punt being without an anchor, which is

against

against the rules. The rope ought not to have parted but some excuse for this may be admitted seeing that all tackle has been subjected to unusual wear and tear during the last 3 weeks.

1878
P.W. Dept
No. 10252

Cocanada Candl.
9 September 1878
Dep. 13 —dr

Rec'd.
13 Sept/78

Undersigned Lieut. Col. R.E.
Chief Engineer for Irrigation

To

The Joint Secy to Govt
P.W.D. Irrig.n Branch

S.P. 7091. of 6.9.78.

Recd 25.9.78. Sent 30.9.78
Cir 14.9.78. Rec'd 25.9.78
Rec'd O.C. Lieut 25 Sept

Ink 11.6.78

3822/42

Secy to Govt of State

~~Subject~~

Head Sluices of Godavery Central Delta carried away on 17th Instant &c Inconsequent damage yet reported —Stat—

~~Superintending Engineer~~
~~proceeding to Delta~~

~~Local~~
~~District~~ Engineers hope
to dam Canal—
Chief Superintending Engineer irrigation
proceeding to Delta—

23/9

Cir 14-9-78 Rec'd 25-9-78
Rec'd O.C. & Sent 25 Sept

Index
11.10.78

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Telegram to the Secretary of State
for India dated 23d Augt 78.

Head Sluices of Godavery
Central Delta carried away on
17th — No further or consequent
damage yet reported — Engineers hope
to dam Canal — Chief Engineer
Irrigation proceeding to Delta —

(By Order)
(Sgd) E.A. Ford Col RE
Secy to Govt P.W.D.

Telegram despatched
23d Augt 78.

3822/94

Telegram

To London
Secretary.

23d Aug/78.

Head Sluices of Godavery Central Delta carried away in seventeenth. No further or consequent damage yet reported. Engineers hope to dam canal. Chief Engineer proceeding to Delta.

By order

J. R. A. Foord Colr
Secy to Govt Mad

for attn

PUBLIC WORKS DEPARTMENT. 3827/46

3827/46

PUBLIC WORKS DEPARTMENT. 3822/46

Memo. of the Chief Engr. for Irrigⁿ. No. 236 I
dy. 9 Sept. 1878.

FOR ORDERS.

Lt. Col. Lieut. Colᴸ
13/9 Jt. Secretary to Govt
Pr. D. Irrigⁿ. Branch

In reporting my inability
to take charge as C.E.
Upper Chenab Canal, I
wish admirably to
submit for the
of Engineer Establishment
Govt. give time to Captain
Govt. Engr. Supt. &
Civil Supt. & the
Col. Inundation Canals
Irrigⁿ. to perform
Executive Engr. Western
Canal Division

FOR ORDERS.

Rec'd 25-9-78. Rel 30-9-78
Cir 14-9-78. Rel 25-9-78
O.L. Rel 25 Sept

No 3822 Public Works Department.

PROCEEDINGS OF THE MADRAS GOVERNMENT.

UNDER date the 30 Sept 78.

Read the following :—

From

The Chief Engr: for Irrgn. (No 236. I. d/ 9 Sept 78)

His Excellency the Governor in Council has read with much satisfaction Colonel Mullins' most interesting report, and desires that the thanks of Government be conveyed to that officer, and the other officers and Subordinates of the P. W. Department concerned, as also to those of the Revenue and Police Departments who afforded assistance on the

occasion.

It is remarked that Mr Sub Engineer Ellis has been quite lately promoted to Sub Engineer 1st Grade: Government will, however, be glad to receive such definite further proposals for his advancement as Colonel Mullins R.E. desires to make.

A copy of these Proceedings will be forwarded to the Government of India

R. No: 3823 of 30 Sept/75

Copy of the above forwarded to the Govt. of India for information.

Lt Col.

Colonel Scylla R.E. Quetta 23/9
Lieut Col Crookshank Peshawar 22/9
S.E. for
S.E. Godavery 9 21
Rev. Sept
Judges Sept
Draft 16-10
25 copies sent to
Govt of India 16-10

26-3-04 ✓

10252

G.O. of [1878] Public Works.

PUBLIC WORKS

Dated

Received

Encl.

G. O. 30 Sept 1878, No. 3822 3823

Entered

Nos. 317-318
319.

73-16.
43-16.

Damage to the Head Sluice Main Canal Central Godavari Delta

Conveying the thanks of Government to Col Mullins and to several officers and subordinates of the P.W. Revenue & Police Depts: in connection with the measures taken to repair the —— calling for definite proposals with regard to the Ord Engr Ellis & a Copy of these Proceedings ordered to be forwarded to the Govt of India

Forwarding the Proceedings of the Government with Reference to the measures taken by Col Mullins in connection with the Damage done to the Head Sluice Main Canal Central Godavari Delta

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Secretary