

(1) Number of pages _____

(2) Date of repair _____

(3) Initials of the Referencer _____

MADRAS RECORD OFFICE

Government of Madras

Public Works

DEPARTMENT

G.O. No.	3103 D	Press
B.P. No.		Mis.
Dated	31-10-	195

Not to be folded or roughly handled

1 Superintending Engineers Office
No 70 1st Division Kristna
Masulpatam 3rd (October/74
13

From

Major J. O. Hastie R.E.
Offg. Supg. Engr 1st Divⁿ
Kristna

To

Lieut Col J. Mullins R.E.
Chief Engineer for Irrigation

Sir

I have the honor to
report an unusually high fresh
in the Kristna, which has
done a considerable amount
of damage to the works in
both Deltas.

2 The river was beginning
to get rather low as is usual
in the end of September, when
a rise was telegraphed from
Kurnul on the 23rd. On the
24th Evening water had risen
to 14' 9" above the Ancient 25th.
Morning it was 16' 11" Evening 18'
26th Morning 18' 8" Evening 19' 5" the

the maximum height, it fell on the 27th to 17' 2" by evening, remained at this height all 28th, 29th morning was 18' 10" Evening 17' 8"; 30th morning 15' 5" and after that it fell rapidly.

3. I should explain that being able to watch the flood throughout I observed that although the weather was quite calm and still, there was a considerable surge or wave on the water surface, which caused the reading on the gauge to vary considerably, this surge was most noticeable when the water was rising and decreased as the water fell. I had therefore the gauge watched continually and every rise and fall caused by this surge recorded, the mean of the heights being entered in the register, thus, though the greatest registered height is 19' 5" above ancient crest, the gauge once marked 19' 10½" for a few seconds.

4. The registers of former years show

show that only on two occasions since the ancient was built, in July 1859 and in August 1868 did the river rise above 17' on the ancient and then only to 17' 3". Before the ancient was built in July 1853 a height of 37' 9" (ancient is now 20') was registered, and this is the highest flood of which I have any information.

5. The head works at Kerpada not having been built to withstand a flood of this height, the water rose over the string course of head sluices rushing with some force through the openings of the front sluices and over the head sluices ^{roadway} and down through the openings of the rear sluices. To check this rush a bund was made along the middle of the roadway and across the bridge at each end. The mose wall at this end of the entrance chamber to lock was completely submerged and the side wall was only saved from damage by the rush of

of water by continual attention.
The water was within 3" of the
top of the lock gates. Half the
workshop yards was flooded,
the floor of the District Office
being under water, and the
water backing through the
weep holes in parapet wall
round lock bungalow flooded
part of the small compounds.
At Sutanagaram the head
sluice platform being outside
the parapet wall of the bridge
was submerged without water
running over into Canal, but it
was necessary to raise temporary
bunds between lock and head
sluices, and on either side, and
to add planking to the lock gates.
The head works however as far
as I have observed are unimpaired.
The principal damage
done is to canals and river
embankments, and as I am
not yet in possession of detailed
information of the damage done
I can only describe generally
what has occurred. In the
Eastern Delta, the river bank
above

above Beywada was only just
saved with the aid of the ⁵³
villagers who were all washed
out of their villages and were
bivouacked behind the bund;
below the head sluices the
leakage through the bank
between canal and river was
very heavy but caused no
damage, in place where the
water came into Canal just
above Yamamalakuduru hill
was quickly bunded, and the
Canal to Hankipadu (the
lock) was thus preserved.
Below Hankipadu the Canal
has suffered greatly. The river
bank gave way all along
apparently and the water
spreading over the Delta, topped
the Canal bank for some miles
making many breaches through
both banks, the first serious
one is near Mellur, below which
there is only one in the reach
upto Veerankhy (2nd lock) of any
consequence.

Consequence. The water having
passed through the Canal
swept over the country to the
Pull air, filled up the large
hollow near Sharnpudy and
Kapilashwar am, breached
back across the Canal near
Sharnpudy tunnel, topping
the banks and in many
places quite sweeping them
away and poured down toward
the 1st drainage between river
and Canal. Passing on along
Canal it made large breaches
through the Canal at Corintur
and Panamur where the level
was above the top of the bank
of junction Canal and then
seems to have gone off to
Sallapally. When the water
at Berwada was beginning
to subside the accumulation
of flood water in the Salla-
pally drainage breached
back again from West to East
into

* 1/2 m. headmole

into Canal, but these breaches
were of little consequence and
were soon stopped. The flood
in the swamps near Masuli-
patam was so high that
the water topped the Canal
banks from outside and
made many small breaches
in places, but these being
constantly attended to were
closed from time to time.

^{From} The Western Delta I have
no reliable accounts yet
but I understand the Nizam
-patam Canal is but little
injured, the river embank-
ment of course has
breached all over and
water getting in Western
Bank Channel, backed
up to Revendrappa di lock
and flowed down the Nizam-
-patam Canal. To keep it
down it was necessary
to open both escapes at
Doozirala

Doo girala and put 8'6" into
Comamore channel. Maximum
supply being 6'. It is therefore
probable that the channel
has suffered to some extent
though the gagerlamudiy
escape having been fully
opened (which has never
been done before) the damage
is supposed to be slight;
the Toongabhadra however is
likely to have suffered from
the amount of flood water
sent down it. The worst damage
of course is to river bank
- ment. Western Bank Channel
and works in Repalli. Communi-
- cation is so difficult at present
however, that I cannot
form an idea of the extent
of damage.

8 Every effort is being
made to close the breaches
in the Masulpatam Canal
and open it to traffic but

but the Srirampudy ^{bank}
must be left open till ^{9B} the
water has drained off. I
hope however to reopen for
navigation on the 6th. The
canal is quite silted up
in some places and in others
the bund has been swept
away and deposited in the
side channel which it has
quite silted up and a great
deal of work has to be done
9 I cannot at present

Estimate what it will cost
to repair the damage done
but I fear that the Estimates
will exceed 50000 Rs. much of the
work however may be postponed
till the hot weather but I shall
have to ask for an additional
allotment under agricultural
repairs of at least 20000 Rs. this
year. In anticipation of allot-
- ment I am proceeding with
all the emergency works as
fast as possible.

10 The damage done to crops
is of course considerable but

but I believe it will be found that the wet crops have suffered comparatively little, except in the Sallapalli Zamindari, in the lower parts of Repally and Rapatlu and in the Divi Islands where the crops are expected to be totally destroyed. Dry crops have necessarily been destroyed in many places, but I am happy to say no loss of life has been reported to me yet. Though a large number of villages have been submerged and the inhabitants have been driven to take refuge on mounds, trees and roofs.

11 One or two Dhories were carried over the Anicut by the flood and one which caught in the telegraph wire, had a very narrow escape. — the large wire is at the lowest part of its curve only 21 feet above the Anicut and is dangerous even in moderate floods. I brought the

Small wire
by the Anicut
about 10 feet
above the
main wire
by the Anicut

113
the matter to the notice of the assistant Superintendent of Telegraphs at Berwada some time since without any result.
12 I happened to be in the Western Delta on the 24th and was able with some trouble to reach Berwada that evening, where I remained till the flood subsided and all danger to the head works was over. I posted Mr. Lewis the assistant Engineer in charge of 1st Range at Sutanagar and was in communication with him by signals across the river, the ferry being able to pass but seldom. With Lieut. Campbell at Masulpatam I was in constant communication by telegraph. Mr. Peters, assistant Engineer in charge of 6th Range I despatched to the Masulpatam Canal below Kanhipadu and sent Rawson R.E. assistant Engineer in charge of 2nd Range to the Canal.

Canals in the Western Delta.
Every assistance has been
given to me by these officers
at much personal inconvenience.
Lieut. Campbell especially, who is
only now recovering from serious
illness, having insisted on being
personally on the works. I wish
to bring to the notice of Govt. here
the services of the Assistant Supt.
P. Vankatasubiah who was
acting under my immediate
orders at Raywada. His arrange-
ments in carrying out the protective
works I considered necessary
were excellent and his energy
and activity in working day
and night for several days
beyond all praise. The Amunt
and Quarry Establishments
and other men on monthly
pay at Raywada whom I
was compelled to keep at
work at night. I propose
with the sanction of Govt.
to give extra pay to, for the time
they

they were so employed. ¹³³
13. As soon as I can give a
detailed account of the
damage done, I will report
further. In the meantime
I am fully alive to the
necessity of opening the channels
quickly to supply the standing
wet crops, and of reopening
canals for navigation as early
as possible. Officers and
subordinates are actively
employed in carrying out
repairs to effect this.
14. The cause nearly all the
damage done is the bursting
of the river Embankment. This
has never been effectually
made up to withstand the
highest flood on record, and
in the Eastern Delta, where
there is no bank channel
it is entirely in ghumdari,
and there has been some
correspondence on the subject
of keeping it up, with the Collector
and one of the ghumdars who
claimed

who claimed the bank
and said he would keep
it in repair on one or two
occasions this year. Men
have been called upon to
make villagers repair worn
portions of the bank, but
if these repairs had been
carried out the bank even
then would not have with-
stood a flood of 2 feet above
the highest known water
mark.

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

Yours truly
Major A. E.
Offg Supg Engr 1st Div
Kristna

2. April 1871
10. 10. 1871

1513

near the head
of

P. W. 1874 Dept.
 No. 6574
 From C. S. No 1874
 The Offg. Supg Engr
 Krishna

To The Chief Engineer
 for Irrigation

Dated 3rd October 1874
 Recd 9th do
 Recd 20th do

Reports on the
 damage done to
 the Krishna Belli
 Works by the recent
 Extra-ordinary freshes
 of Krishna River

G. L. 3/10/74

Ch 703

Recd to C. S. 20 Oct 74

Proceedings of the Madras Government
 Read the following

The Offg. Supg Engr
 Krishna (46 C. S. 70 dated
 3rd Oct 1874)

G. L. 3/10/74 of 31st October, 1874

The Government
 have learnt with
 much satisfaction
 that prompt and
 energetic measures
 were taken by the
 Superintending En-
 gineer, Krishna, to
 avert damage from
 the very high flood
 of the latter part
 of September. These
 measures were attend-
 ed with success, so
 far as the preven-
 tion of breaches
 near the heads
 of

We must see that
 the effect of the
 flood was
 not so great as
 it appeared to be
 at first.

Kindly see the
 situation

of the Canals were concerned, and undoubtedly the damage sustained in both Deltas would have been vastly increased had the head works been turned, or had the main canal of the Eastern Delta breached near its head

2. The unremitting exertions of Messrs Peters and Norris and of Lieutenants Michael Campbell and Rawson deserve, and will receive through Major Hasted, the acknowledgments of His Excellency the Governor in

in Council 190

3. The ancient Surveyor, P. Venkataiah, whose services on this occasion were of very great value, and the Ancient & Quarry Establishments, who worked day and night, and did so much to render the head works safe, will each receive a gratuity of one month's pay

4. It may be gathered from the particulars given in paras 2 & 4 of Major Hasted's letter that the flood of this year was but

but little, if at all,
greater than that
of 1853, seeing that
the actual difference
of level reached at
Berzabadah was only
 $1\frac{2}{3}$ feet, which in-
crease would be ~~for~~
by accounted for by
the obstruction caused
by the Anicut. It
is quite clear there-
fore that the head
works must be con-
siderably raised,
so as to be entirely
safe even with a
higher flood than
any yet recorded.
The proper margin
above the flood
of 1874 will be de-
termined by the
Chief

39.5
37.9

Chief Engineer for
Irrigation in com-
munication with
Major Hasted, and
the requisite esti-
mates will be pre-
pared for imme-
diate sanction.

5 The early com-
pletion or forma-
tion of sufficient-
ly high and strong
flood banks, a-
long both margins
of the river below
the anicut, is of
much importance
for the Western Od.
to the estimate
for the Bank Ca-
anal, now before Go-
vernment, makes
provision for a bank
the

the sufficiency of
which should be
further inquired
into in the light
of the recent flood
levels. For the Eastern
Delta embankment
provision will be made
in the estimates
now under prepa-
ration. This bank
it appears traverses
for the most part
Zemindari estates,
which occupy the
greater part of
the area between
the river and the
Maulipatam Canal,
and it will be as-
certained in the
Revenue Department
what

what contribution
towards the ²²⁵⁵cost
of making the
flood bank on
this side secure
will be made by
the Zemindars. The
maintenance of the
embankment, when
completed, will
be undertaken
by Government: a
matter of so much
importance cannot
be left to any pri-
vate individuals,
and those who
have the care
of the Delta works
generally must
be responsible for
the exclusion of
flood

flood waters.

6. The telegraph cables should be raised to a clear height of at least 50 feet above the ancient crest, and the Superintending Engineer will ascertain from the Superintendent of Telegraphs, Madras Division, within what time he will be prepared to carry out this alteration.

7. The Chief Engineer for Irrigation will supplement, to such extent as may be necessary, the Agricultural report.

50
repair grant of the
Madras District, in
order that the
canals may be
placed in working
order without de-
lay, and that
the crops may
not suffer from
want of water.

W. 14/10/74

[Signature]

4
To the S. E. Madras
Controlling Officer
Chief Engr for S. E.
Rev. Dep. Engr

Engrs - despatch 31/10/74 only to S. E. Madras -
S. Copies despatch 18/11/74.

Gobt. of {1874} Madras.

PUBLIC WORKS.

To

THE CONSULTING ENGINEER FOR

RAILWAYS.

Dated October 19th.

Recd.

Encl.

G. O., 19th October 1874, No. 2,974.

OCTOBER.

Nos. 421-422

Landing of Railway Stores at Tuticorin
—The Government of India addressed on
the subject of the proposal of the Agent
of the South Indian Railway
for the purchase of
the landing of

703-704

On 22/10/74
on 12/11/74 Ret 31/10/74

6574
Govt. of 1874. Madras.
PUBLIC WORKS.

To
The Super.
Engineer

Dated

Recd.

Encl.

G. O. 21 Oct. 74. No. 3103D

Nos. 703-704.

Floods in the Krishna &c.

Passing orders on the
Report submitted by the
Supg. Engr. on the damages
done to the Delta Works
during the late freshes &
granting a gratuity of one
month's pay each to the
Ancient Superintendents & the
Ancient & Quary Estab-
lishment for services rendered
on the occasion.

703-704

Recd 22/10/74
on 22/10/74 Ret 31/10/74