

(1) Number of pages 64
(2) Date of repair 2.1.5.57
(3) Initials of the Referencer [Signature]

TAMIL NADU ARCHIVES

GOVERNMENT OF TAMIL NADU

P.W. DEPARTMENT

G.O. No.	929-W	Press.
B.P. No.		Mis.
Dated	20-4-1885	198

Not to be folded or roughly handled.

1/909
20TH APRIL 1885, No. 929 W., PUBLIC WORKS.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

General.
Establishment.

READ—the following papers:—

From J. W. RUNDALL, Esq., Superintending Engineer, II Circle, to the Chief Engineer, Public Works Department, dated Masulipatam, 30th March 1885, No. 119 B.C.

I have the honor to forward, herewith, for your approval and sanction of Government, a "statement of proposition" for revision of permanent toll establishment required in the Buckingham Canal division.

2. The shroff for collecting wharfage fees at the elephant gate bridge recently purchased, sanction for whose appointment is now applied for, has been entertained, in anticipation of sanction, from the forenoon of the 3rd February 1885.

3. A sum of Rs. 50 has been received from the shroff as security, and I request you will be so good as to accord your sanction for fixing the above amount.

ENCLOSURE.
BUCKINGHAM CANAL DIVISION.

Statement of establishment required for collecting wharfage fees at the elephant gate wharf purchased from the Madras Municipality, vide G.O., No. 37 L., dated 10th January 1885.

ORDER SANCTIONING PERMANENT ESTABLISHMENT.			NATURE OF CHANGE.										PROPOSITION.										
No.	Date.	Office to which the proposition refers.	Present scale.					Proposed scale.					Permanent.		Temporary.		Remarks.						
			No.	Designation.	Minimum.	Increment.	Maximum.	Pay.	Average or fixed.	No.	Designation.	Minimum.	Increment.	Maximum.	Pay.	Average or fixed.		Amount.	Period.	Amount.	Period.		
562 W.	30th Feb. 1883.	Toll offices, Buckingham Canal Division.	1	Wharf superintendent at Rs. 50 ..	50	..	50	50	Rs.	Rs.	1	Wharf superintendent at Rs. 50 at Madras ..	15	..	15	50	50	Rs.	..	..	..		
2615 W.	24th Oct. 1884.		1	Clerk 5th class, 1st grade, at Rs. 17½ ..	15	1	20	17½	17½	Rs.	Rs.	2	Toll-keepers at Rs. 15 ..	10	1	15	30	30	Rs.	..	..	..	
2194 W.	4th Sept. 1884.	2	Toll-keepers at Rs. 15 ..	10	1	15	12½	12½	Rs.	Rs.	2	Assistant toll-keeper at Rs. 15 ..	10	1	15	12½	12½	Rs.	..	..	..	..	
		2	Assistant toll-keeper at Rs. 17½ ..	10	1	15	12½	12½	Rs.	Rs.	2	Wharf clerks at Rs. 17½ ..	..	..	..	35	35	Rs.	..	..	..	..	
		2	Wharf clerks at Rs. 7 ..	..	..	..	..	..	Rs.	Rs.	4	Lascars at Rs. 7 ..	..	..	..	28	28	Rs.	..	..	..	..	
2708 W.	16th " 1883.	11	Do. at " 6 ..	..	..	..	28	28	Rs.	Rs.	1	Do. at " 6 ..	..	..	..	65	65	Rs.	..	..	..	..	
		1	Clerk, 4th class, 3rd grade ..	20	2	30	25	25	Rs.	Rs.	1	Clerk, 4th class, 3rd grade ..	20	2	30	25	25	Rs.	..	..	..	..	
		1	Do. 5th do. 1st do. ..	15	1	20	17½	17½	Rs.	Rs.	1	Do. 5th do. 1st do. ..	15	1	20	17½	17½	Rs.	..	..	..	..	
		1	Lascar ..	..	..	6	6	6	Rs.	Rs.	1	Lascar ..	..	..	..	8	8	Rs.	..	..	..	..	
				Total ..	..	..	300	287½	287½	Rs.	Rs.		Total ..	..	..	308	295½	295½	Rs.	..	..	..	..

BUCKINGHAM CANAL,
24th March 1885.

30th March 1885.

(Signed) R. R. E. DRAKE-BROCKMAN, Major, R.E., A.I.C.E.,
Executive Engineer, Buckingham Canal Division.
(Signed) J. W. RUNDALL,
Superintending Engineer, II Circle.

2/929

Office note from the Examiner, Public Works Accounts, dated Madras, 13th April 1885, No. 28.

Entries in the column "present scale" of the proposition statement herewith have been duly checked. It is noticed that calculation in the case of average or fixed pay has not been made agreeably to section 43 (a) of the acting allowance code. The necessary correction has been made by this office.

ORDER—dated 20th April 1885, No. 929 W., Public Works.

The revised scale of toll establishment required for the Buckingham Canal division is sanctioned, as proposed by the Superintending Engineer, II Circle.

2. This sanction has been registered as Provincial No. 6 W. of 1885-86, and classified as Establishment, Permanent.

3. The security of Rs. 50 fixed for the shroff is approved.

(True Extract.)

Major, R.E.,
Under Secy. to Govt., P.W.D.

To the Superintending Engineer, II Circle.
" Examiner, Public Works Accounts.
" Chief Engineer for Irrigation.

Exd. E. Fernandez
Spare Copies

GENERAL.
ESTABLISHMENT

Gobt. of 1885 Madras.

PUBLIC WORKS.

Dated April, 20th.

Recd.

Encl.

G.O., 20th April 1885, No. 929 W

APRIL.

Buckingham Canal Division
Revised scale of toll establishment for the
—, sanctioned, and the security of Rs. 50
fixed for the shroff, approved.

3/929
From the Committee convened in accordance with Proceedings of Madras Government, No. 612 I., of the 5th August 1882, to the Chief Engineer for Irrigation, dated Camp, Ellore, 12th October 1882.

We have the honor to report that having met at Pedda Ganjam we have discussed the matters referred for our consideration regarding the modifications of the Navigation Rules for the canal system of the East Coast.

2. As regards the first point to which our attention was directed, we have agreed that tolls cannot be entirely abolished, but that tolls should be charged on the basis of time rather than on that of distance or direction of journey. This would admit of the number of toll stations at present existing being considerably reduced.

3. We consider it necessary to maintain a system of tolls in the interests of the public, for although annual licenses are simpler and less harassing to frequent users of the canals, yet the occasional use of the canals of a system should not necessitate the taking out of a whole year's license.

4. We think that if tolls are kept within reasonable limits as to rate and frequency of collection, boats which otherwise would confine themselves to the one system for which they were licensed would make occasional use of the canals of other systems to the general advantage of the public.

5. We therefore recommend the retention of tolls, but on a modified system.

6. Our proposals are that tolls shall be paid at the rate of one-fourth the annual license fee for each separate system, and that a toll once paid at any station of a system shall clear the vessel through all the canals of that system and in any direction for a period of six weeks.

7. We have fixed upon this period as that which would suffice for a through return trip for the greatest distance on the main line, and we have fixed the amount so that it shall be to the advantage of users of the canals for more than six months to take out a license.

8. It will be seen that tolls under this system are practically short licenses.

9. In considering the positions for toll stations, we have thought it advisable to place them as far as possible where there is a natural stop, not at places where artificial bars have to be placed across clear reaches of the canals at which all traffic is stopped, whether toll has to be taken or not.

10. We propose therefore that the only toll stations shall be the head locks of each section of the deltas, all tidal locks, the Ellore Lock, the Western Tammileru Aqueduct on the Kistna Ellore Canal, where the Godavari and Kistna Systems join, and the following places on the Buckingham Canal:—

- (1.) Pedda Ganjam, where the Kistna and Buckingham Canal Systems join.
- (2.) Kandleru River.—We propose this place, because a toll station intermediate between Pedda Ganjam and Shadayankupam Lock is required, so that boats working on the canal between these places can obtain toll tickets without being compelled to proceed for that purpose to either extremity of this long reach of 188 miles.
- (3.) Shadayankupam Lock (north of Madras).
- (4.) Adyar Southern Lock (south of Madras).

11. The toll stations on the three systems will be reduced from a present number of 47 to 20.

12. We propose that the period for which a toll ticket remains current shall in the case of *rafts* be only one month, as it is very necessary that they should not be allowed to linger in the canal to the inconvenience of the general traffic.

13. Under the rules for rafts sanctioned in G.O., No. 384, of the 8th May 1882, a fresh toll was charged at the end of three weeks, or when the raft changed its direction. We propose that as in the case of boats a toll once paid shall clear a raft throughout the system and in any direction, but that the toll should in consideration of the much greater length of canal which will be thus opened out by one payment be double the present Godavari and Kistna rates. This however will be a very considerable reduction on the present Buckingham Canal rates. The proposed rates form but a small proportion of the value of rafts, and hence will not be oppressive.

14. Points 2 and 3 mentioned in paragraph 5 of the Government Order as specially referred to us are so intimately connected that it is necessary to consider them together.

15. For through traffic it is essential that there shall be only one unit of measurement, and we consider the unit should be that formerly in use in the deltas, and still in use on the Buckingham Canal, viz., 50 cubic feet, which may for convenience be called a ton.

16. We consider that having fixed a measure of capacity and provided for uniformity in the system of measurement, it is unnecessary that any attempt should be made to reconcile this with the *weight* carrying capacity of various builds of boats.

17. As regards the rates of license fees having reverted to the previous unit we propose for the Godavari system to revert also to the previous rate of Rs. 2 per 50 cubic feet in the case of cargo boats.

18. In the case of the Kistna we consider it equitable to fix a rate somewhat higher than that in use with the old unit (Re. 1), because the main line of the system has recently been much improved and connected with the Buckingham Canal. We therefore propose a fee of Rs. 1½ per 50 cubic feet.

19. Hitherto the rate for licenses for the whole of the Buckingham Canal has been nearly five times the Godavari rate, and nearly seven times the Kistna rate, the mileage on the Buckingham Canal being not so much as that of the Kistna system and about ¾ths of that of the Godavari. The result has been that boats working on the Buckingham Canal have found it to their advantage to work under the present very complicated system of tolls rather than to take out licenses.

20. Considering that the Buckingham Canal serves a great extent of country, and has a more important terminus than any in either the Godavari or Kistna systems, we consider it advisable to recommend a rate of Rs. 3 per 50 cubic feet for the amount of annual license fee.

21. In order to encourage through traffic we propose a considerable reduction on the total license fees of the three systems separately when boats take out through licenses. The rate for these through licenses for cargo boats we would fix at Rs. 5 per 50 cubic feet.

22. As regards passenger vessels we find that the type of boats in use in the deltas differs so much from those in use on the Buckingham Canal that it is necessary to classify them.

23. For the Godavari and Kistna systems, having reverted to the former unit of measurement, we propose, as in the case of cargo boats, to revert to the former rate.

24. For the Buckingham Canal the proposed rates for the corresponding classes of boats have been made the same as in the deltas.

25. In the case of passenger boats we have however proposed one important modification of present rules, viz., that the space to be allowed for a passenger be increased from 5 to 7½ square feet. This we believe to be advisable in the interests of the public, as with five square feet boats carrying their full number are known to be

inconveniently crowded for long journeys. With through communication made cheaper and simpler it is hoped that the numbers undertaking long journeys may be increased.

26. We also propose that passenger boats should be allowed to take out through licenses at reduced rates.

27. Special provision has been made for a modification of the rule regarding the number of passengers, on the occasion of festivals near Madras, to suit the circumstances of the local traffic at those times.

28. We propose that the revenue derived from through licenses should be credited to each system on the following proportions:—

Cargo Boats.							Rs.
Amount of through license	...	...	...	...	...	...	5
Godavari System	...	...	...	...	...	1 8 0	
Kistna do.	...	...	...	...	...	1 4 0	
Buckingham Canal System	...	...	...	...	...	2 4 0	5
Passenger Boats.							
(a) and (c) classes, through license	...	...	...	...	...	...	10
Godavari System	...	...	...	...	...	3 0 0	
Kistna do.	...	...	...	...	...	2 8 0	
Buckingham Canal System	...	...	...	...	...	4 8 0	10
(b) and (d) classes, through license	...	...	...	...	...	...	7
Godavari System	...	...	...	...	...	2 4 0	
Kistna do.	...	...	...	...	...	1 8 0	
Buckingham Canal System	...	...	...	...	...	3 4 0	7

As the proposed through license for steamers is Rs. 10 per 50 cubic feet, the amount to be credited to each system will be the same as in the case of (a) and (c) passenger boats.

29. In the case of steamers we propose that they shall, as heretofore, pay double the rates for cargo boats, both for licenses and for tolls.

30. Instead of keeping the existing division of rules and bye-laws, which as at present arranged is inconvenient and occasionally misleading, we propose that all the regulations shall be embodied into one set of rules, and that these should be applicable to all the three systems.

31. We have accordingly prepared the draft of a set of rules embodying our present proposals and such of the old rules and bye-laws as it is advisable still to maintain, and submit them herewith for approval. We believe that these rules will be found more concise than the old ones, and more easily intelligible by those whom they affect.

32. We have drawn out and appended to these rules license and toll ticket forms adapted to the new rules.

33. As the Buckingham Canal has been placed under Madras Act I of 1870 ("The Canals and Ferry Act"), whereas the canals of the delta systems have not been brought under that Act, there may probably be differences in their management which would be unadvisable and likely to lead to complications when attempting to work the three systems as one combined whole. We think all should be under the same rules. We are strongly of opinion, however, that the Delta Canal Officers should not be made Magistrates, as their work is important and always heavy. In the deltas there has been no practical difficulty in enforcing the navigation rules, because the numerous locks in both systems have enabled boats transgressing to be at once punished by stoppage.

34. We also desire to bring to notice that the Buckingham Canal is at present worked under the direct orders of the Chief Engineer, Public Works Department,

and the Delta Canals under the orders of the Chief Engineer for Irrigation. We would invite attention, if the navigation of the three systems is to be worked as a whole, to the advisability of ensuring uniformity of orders.

35. If the new rules are to be brought into force for the next calendar year, which seems very advisable, we are of opinion that the orders of Government should be received by the 30th November at the latest.

We have the honor to be,

Sir,

Your most obedient servants,

(Signed) J. W. RUNDALL,
Superintending Engineer.

(") G. T. WALCH,
Offg. Superintending Engineer.

(") W. S. OTTMANN,
Honorary Assist. Engr., P.W.D.

Draft of Revised Navigation Rules for the Godavari, Kistna, and Buckingham Canals.

Reference to present Rules.

Delta Rules I.
Buckingham Canal Rules III.

Delta Rules II.
Buckingham Canal Rules III.

Delta Rules III.
Buckingham Canal Rules III.

New Rule.

Delta Rules V.
Buckingham Canal Rules VIII.

SYSTEMS.

I. GENERAL.

1. No vessel or raft will be allowed to enter or make use of any canal unless the owner shall have previously taken out a license, or unless toll shall have been paid as hereinafter provided.

II. LICENSES.

2. Licenses will be issued for vessels for a calendar year only, and will entitle the vessel to navigate the canals of the system for which the license is issued from date of issue to 31st December following. The owner of a vessel desiring to obtain a license shall apply in person or by letter to an officer empowered to issue licenses, viz., the Executive Engineer of the division or officer authorized in writing by him. The owner shall give to the licensing officer the information required to fill up the license as shown in the license form.

3. Every vessel licensed for the conveyance of cargo shall pay a license fee as follows:—

For the Godavari System Rs. 2 per ton of 50 cubic feet.

For the Kistna System „ 1½ do.

For the Buckingham Canal „ 3 do.

N.B.—Godavari System Licenses and Toll Tickets hold good as far as the Western Tammiluru Aqueduct on the Kistna Ellore Canal.

4. The annual license fees payable on cargo vessels for the three systems separately can be compounded for one through license available over all the three systems at the rate of Rs. 5 per ton. A boat which has already taken out a license for either of the three systems will not be permitted to compound for that calendar year.

5. The gross tonnage of all vessels will be obtained by the following rule:—

$$\frac{L \times B \times D}{50}$$

L being the length between the stern and fore post at half the midship depth.

B being one-sixth of the sum of five widths taken at equal distances along the above length. The width to be measured from the rib on one side to the planking (skin) on the other side.

D being the depth measured amidship from the top of the keelson, or of the centre plank, to the underside of the deck planking, or to the top of the gunwale in open or passenger vessels. The net or registered tonnage on which the fee will be charged will be—

For steamers, the gross tonnage less one-third.

For other vessels, the gross tonnage less 15 per cent.

Fractions of a ton above the half will be charged as one ton.

6. On payment of the license fee according to the rates fixed, a license will be issued which will entitle the vessel to the use of all the canals of the system named in the license without any other payment whatever. If a vessel after the issue of a license be enlarged, it shall not ply again until it has been remeasured, and a new license taken out. This will be granted on surrender of the previous license and on payment of the prescribed rate per ton for the difference between the old and new tonnage. The penalty for using on the canals an enlarged vessel without a new license being taken out will be the forfeiture of the license fee previously paid.

7. The license number with the distinguishing letter * of the system must be painted conspicuously in English figures, not less than four inches in height, on each bow of the vessel.

The tonnage of the vessel must be similarly marked in English figures on each side of the sternpost.

These marks must be put on the vessel before it commences to use the canals at the expense of the owner, who will be responsible that they are not defaced or obliterated.

8. License will be issued to vessels adapted for the conveyance of passengers under the following conditions and at the following rates.

Such vessels will be measured for tonnage under Rule V, and they will be permitted to carry one passenger for every 7½ square feet of covered space. The covered space will be calculated from the following measurements:—

Length, over all of covered space.
Breadth, the mean of three widths taken at equal distances.

Passenger boats will be divided into the following classes:—

- Boats of the "Rahadāri" or transit boat type, taking a license which leaves optional to the owner the fares to be charged and the caste of the passengers to be carried.
- Boats of the "Rahadāri" or transit boat type, taking a license by the acceptance of which the owner

Delta Rule V.
Buckingham Canal Rules, none.

Delta Rules VI.
Buckingham Canal Rules IV and V.

Delta Rules VII.
Buckingham Canal Rules IX.

undertakes to convey all passengers for whom there is room according to the rules, irrespective of caste, and at rates not exceeding the following maxima, viz., in the general cabin 2 pies per mile per passenger including one cooly head load of luggage; in the separate fore or aft cabins, for every $7\frac{1}{2}$ square feet of cabin, 3 pies per mile per passenger, including one cooly head load of luggage. Any passenger wishing to reserve a separate cabin for his exclusive use will be entitled to do so on paying the full hire for the whole cabin.

A whole boat of this class shall not be hired out to one individual, except by permission of the Executive Engineer or officer authorised by him to issue licenses.

(c) Boats of the budgerow type, plying for hire, but not carrying cargo, the rate of fare and the passengers to be carried being optional with the owner.

(d) Boats of the "top boat" type, having a covered space for the protection of passengers, taking a license by the acceptance of which the owner undertakes to convey all passengers for whom there is room according to the rules, irrespective of caste, and at rates not exceeding 2 pies per mile per passenger, including one cooly head load of luggage.

During festivals in the neighbourhood of Madras, the rule limiting the number of passengers to be carried by this class of boat may, on application, be temporarily suspended by the Executive Engineer in charge of the division, or officer duly authorized by him to issue licenses.

The license fees for passenger boats will be as follows for each system:—

(a) Class, Rs. 4 per ton.
(b) " " 3 "
(c) " " 4 "
(d) " " 3 "

9. The annual license fees payable on passenger boats can be compounded for one through license available over all the three systems at the following rates:—

(a) Class, Rs. 10 per ton.
(b) " " 7 "
(c) " " 10 "
(d) " " 7 "

10. The number of the license issued for a passenger vessel must be painted on the bows in the manner prescribed for cargo vessels.

The tonnage of the vessel and the number of passengers which she is licensed to carry must be painted conspicuously on the stern of the vessel or on the afterpart of the cabin. The number of passengers will be preceded by the letter P.

New Rule.

Delta Rules VIII.
Buckingham Canal Rules IV and V.

Delta Rules IX.
Buckingham Canal Rules IX.

Delta Rules X.
Buckingham Canal Rules, part of IX.

Delta Rules XI.
Buckingham Canal Rules, none.

Delta Rules XV (8).
Buckingham Canal Rules, Schedule A.

Delta Rules XII.
Buckingham Canal Rules XII.

Delta Rules XIV.
Buckingham Canal Rules III (2nd).

Delta Rules XIV (4).
Buckingham Canal, Schedule B.

Delta Rules XV (9).
Buckingham Canal Rules, Schedule B.

New Rule.

Delta Rules XIV.

11. Passenger vessels may carry cargo as well as passengers, subject to the following conditions:—

- (1) That vessels of the types (b) and (d) must convey passengers, when required to do so, in preference to cargo.
- (2) That the quantity of cargo be not greater than the registered tonnage less 400 lb. for each passenger on board.

12. Vessels, the private property of individuals, making use of the canals, but not carrying goods or passengers, or plying for hire, will be licensed to use the canals of a system on payment of a fee of Rs. 12 for the calendar year.

13. Pleasure boats used for rowing on the canals, but not carrying goods or passengers, will be licensed to use the canals of a system on payment of a fee of Rs. 1 for the calendar year.

14. All fees payable by steamers will be double those of ordinary cargo boats.

The number of the license and tonnage must be painted on steamers in the manner prescribed for cargo boats.

15. No person who has taken out a license for the navigation of the canals shall have any claim to compensation, in consequence of the closure of all or of any of the canals for repairs, or because of insufficiency of water, or on account of any other impediment to navigation.

III. TOLLS.

16. Vessels not holding a license will be allowed to navigate the canals on payment of the hereinafter stated tolls and on the following conditions:—

The rates of toll per ton will be—

Cargo and Passenger Boats.		Rs.
Godavari System ...	...	8
Kistna " ...	...	6
Buckingham Canal ...	...	12

Steamers.		Rs.
Godavari System ...	...	1
Kistna " ...	...	0 $\frac{1}{2}$
Buckingham Canal ...	...	1 $\frac{1}{2}$

Private Boats referred to in Rule XII.

For each boat, for each system, Rs. 3.

A toll once paid at any toll station of a system will clear the vessel over all the canals of that system and in any direction for a period of six weeks, except in the case of rafts, which must either be removed from the canals within one month from the date of the toll ticket, or again pay toll.

The toll stations in the Godavari and Kistna Systems will be—

The head lock of each section* of delta.

* Godavari Sections.		All tidal locks.
Eastern.		The Ellore Lock.
Central.		The Western Tam-
Western.		milern Aqueduct on the
Kistna Sections.		Kistna Ellore Canal.
Eastern.		The toll stations on
Western.		the Buckingham Canal

will be as follows:—

1. Pedda Ganjam.
2. Kandlern River.
3. Shadayankupam Lock.
4. Adyar Southern Lock.

Delta Rules XIII.
Buckingham Canal Rules, Schedule B.

New Rule.

Delta Rules XIII (1).

Delta Bye-law 18.
Buckingham Canal Rule VII.

Buckingham Canal Rule VII.

Delta Bye-law No. 9.
Buckingham Canal Rule X.

Buckingham Canal Rules VII.

Delta Bye-law 1.
Buckingham Canal Bye-law 1.

Delta Bye-law 2.
Buckingham Canal Bye-law 2.

New Rule.

Delta Bye-law 3.
Buckingham Canal Bye-law III.

To determine the tonnage for tolls vessels will be measured under Rule V.

A list of the toll stations for each system will be affixed to a notice board at each toll station in that system.

17. Rafts shall pay tolls at the following rates:—

Logs of timber, rough or squared, as
for each unit of 100 square feet. 8

Bamboos for each unit of 100
square feet. 4

Rafts of timber and bamboos mixed will be
charged at the rate for timber.

All fractions of the unit will be charged for
as a full unit.

IV. REGULATIONS.

18. The extreme dimensions of any vessel
allowed to navigate the canals will be 90 feet in
length and 13 feet in breadth over all.

Boats built before the 31st December 1880,
which exceed the above dimensions, may receive
a special license at the discretion of the
Executive Engineer of the Division.

No boat drawing more than 3½ feet will be
admitted into any lock.

To suit the conditions of masonry works
on the southern sections of the Buckingham
Canal, the height of fixed fittings such as the
roofs of boats, steps of masts, funnel sockets, &c.,
shall be there limited to 6½ feet above water
level. A similar limit shall be applied to piled
cargo.

19. No raft of larger dimensions than 90
feet in length, by 12 feet in breadth, or of more
than 2' draught will be allowed on the canals.
Rafts exceeding these dimensions will be stop-
ped until they are reduced and a fresh toll paid
on the then measurement under Rule XVI.

20. Boats carrying cargo must have a free
board of not less than 9 inches; boats carrying
passengers must have a free board of not less
than 1 foot.

21. No vessel or raft shall moor on the
towing-path side if there be only one tow-path,
or on the windward side of a canal if there be two
tow-paths, except when actually loading or
unloading.

22. No cargo shall be loaded or unloaded
and no passengers be shipped or landed at any
lock, or on any masonry work other than the
quays or wharfs specially provided for the
purpose.

23. No goods shall be stacked on any tow-
path or on the canal side of any tow-path under
any circumstances, nor shall they be stacked on
canal lands without special permission of the
canal officers.

24. No vessel shall be repaired in any canal
at any time, without the written permission on
the Divisional Executive Engineer, and then
only at the place and during the time named
in the written permission. Materials used in the
repair of vessels will, unless removed from the
canal before, or at the time of, the vessels
departure, be confiscated, and any expense
incurred in their removal must be paid by the
owner of the vessel under penalty of suspension
of license until it be paid.

Delta Bye-law 4.
Buckingham Canal Bye-law IV.

Delta Bye-law 5.
Buckingham Canal Bye-law V.

Delta Rules, part of Bye-law 12.
Buckingham Canal Rules, part of Bye-law X.

Canal Rules XIII (5).
Do. Bye-law 12.

Delta Bye-law 12.
Buckingham Canal Bye-law X.

Canal Rule XV (3).

Delta Bye-law 13.
Buckingham Canal Bye-law X.

Delta Bye-law 6.
Buckingham Canal Bye-laws VI, VII, and VIII.

New Rule.

Delta Bye-law 14.
Buckingham Canal Bye-law XIII.

Delta Bye-law 8.

Delta Bye-law 11.

25. At any lock, or other masonry work,
no vessel or raft shall moor within the limits
fixed by notice boards.

26. Every vessel when moored in any canal
shall have its masts down, shall be made fast
stem and stern to the bank and in a single
line.

Every vessel when thus moored shall be in
charge of at least one man, and must between
sunset and sunrise exhibit a clear bright light,
at not less than 4' above the water level, visible
all round.

Rafts when moored must be securely fastened
to the canal bank at both ends, and between
sunset and sunrise must exhibit a clear light at
each outer corner.

27. Vessels when moving must between sunset
and sunrise exhibit the following lights:—
All boats one clear bright light at the fore-
end, fixed not less than 4 feet above the
water.

Steamers, three lights as follows:—One clear
white light on the upper deck abaft the funnel,
a bull's-eye bright red light on the post (left)
side, a bull's-eye bright green light on the star-
board (right) side.

The bull's-eye to be not less than 8 inches in
diameter. The lights to be so placed and fitted
that both may be visible only from a point
ahead of the vessel, and so as not to be obscured
by any of the fittings, cargo, or passengers.
Subject to these provisions the lights may be
placed on the front or on top of the cabin, at
the sides of the vessel near the bow, or on
supports specially provided for the purpose.

Passenger boats must, in addition to the
outside light, keep at least one bright light
in the general cabin.

28. When vessels meet on the Godavari
and Kistna Canals, those going with the current
shall give way. In the Buckingham Canal
vessels going north shall give way. Vessels
under sail shall give way to vessels being towed,
and steamers shall give way to all boats.

29. The licenses of cargo boats in an unsafe
condition may be suspended by any officer
authorized to issue licenses until the vessels be
put into a proper state of repair.

30. All passenger vessels shall, whenever it
may appear to him to be advisable, be inspected
by the Executive Engineer in charge of the
Division, or other officer duly authorized by
him. The licenses of such as are not main-
tained in a proper state of repair and cleanliness
shall be withdrawn until the vessels are fit for
use by the public.

31. No person unless duly authorized shall
interfere with the locks or any part of their
machinery.

32. Any passenger vessel apparently over-
loaded must, when required by the Executive
Engineer, or by an officer duly authorized by
him, by the Superintendent or Assistant Superin-
tendent of Police, or by a Magistrate, stop at

Delta Bye-law 10.
Buckingham Canal Bye-law XII.

Delta Bye-law 10.
Buckingham Canal, Schedule A.

Delta Rule XV (1).

Delta Rules XV (4).
Buckingham Canal Bye-law XI.

Delta Rules XV (7).
Buckingham Canal Bye-law XI.

Delta Rules XV (11).
Do. XVI.

Buckingham Canal Rule XIII.

Buckingham Canal Rules III.

Delta Bye-law 19.

any place to have the number of its passengers counted and its cargo examined.

33. Every vessel and raft must have its license or toll ticket always on board. These shall be produced when called for by any Lock or Toll Superintendent or other duly authorized officer.

34. In the case of a license or toll ticket being lost, and a duplicate copy being required, the fee for its issue will be Rs. 2.

35. All steamers using the canals shall be inspected by the Executive Engineer or officer authorized by him, who will see that the machinery is in fair working order, that the boilers are provided with proper gauges, and are apparently in safe working order. The Executive Engineer or other officer will issue an inspection certificate in the form appended, which will hold good for six months.

No steamer shall travel at a greater speed than 8 miles per hour by day-light and 5 miles per hour at night.

Steamers shall reduce their speed to three miles an hour when they come within half a mile of a lock, and shall then whistle to give notice of their approach to the lock establishment. Steamers must be warped into and out of locks, and will not be allowed to use their propellers until quite clear of the locks.

Steamers shall whistle when within a 100 yards of any boat, and reduce speed to 5 miles an hour.

36. Any vessel or raft damaging the works of the canal or any Government property on them shall have its license or toll ticket taken away and shall not be allowed to use the canals until the cost of repairing the damage has been estimated and the amount has been paid. A pass shall be given by the officer suspending the license to enable the vessel to proceed to its destination.

37. Sea-going vessels brought into rivers and backwards for shelter, for repair, or for any other purpose except to ply for hire, shall anchor or lay up outside the fair way of canal traffic, which will be defined by the canal officers; such vessels will not be allowed to enter the main line of the canals for the purpose of proceeding from one river or backwater to another river or backwater, or for any other purpose, except in accordance with the rules prescribed for the use of the canals.

38. All boats used solely for fishing purposes which have to pass through any portion of the Buckingham Canal must be registered, but will not be charged any fee.

39. Officers in charge of canals are empowered summarily to remove vessels which may have sunk in a canal waterway of any system, or rafts which have been in the canals for more than one month, and shall have failed to pay on demand the fresh toll leviable under Rule XVI, and to recover cost of removal afterwards.

Vessels sunk, abandoned, or left for more than three days without a man in charge will be dealt with as follows:—

(a.) If the vessel be licensed a notice will be sent by post, by the officer in charge of the canal, to the registered owner requiring him to remove the vessel within 15 days. Failing such removal the vessel will be sold by auction after giving not less than 15 days' notice of intended sale in the District Gazette.

(b.) In the case of unlicensed vessels a notice will be published in the District Gazette requiring the removal of the vessel within 15 days, and stating that if not so removed the vessel will be sold by auction. Such sale may be fixed to take place on any date not prior to 30 days from the date of the publication of the notice to remove. Vessels removed under this rule lie at the owner's risk.

Owners applying to recover possession of vessels or rafts referred to in this bye-law must, before their removal will be permitted, pay all expenses which may have been incurred.

The sale-proceeds of a vessel sold under this bye-law will be available to meet all expenses incurred in the removal and sale of such vessel, and to repair all damage which may have resulted to the canal from its being sunk or abandoned therein. Any balance remaining will be paid to the owner if claimed within three months from the date of the sale; otherwise such balance will be carried to the credit of Government.

Delta Bye-law 15.
Buckingham Canal Bye-law XIV.

40. Executive Engineers in charge of sections of the deltas and of the Buckingham Canal and other officers duly authorized by them will have power to suspend the license of any vessel on account of the infringement of any of the rules and regulations for periods not exceeding—

15 days for a first offence,
30 days for a second offence in the same calendar year,
60 days for a third offence in the same calendar year,

and for a fourth offence in the same calendar year the license may be cancelled.

Vessels plying under a toll ticket may be punished by the suspension of the toll ticket for 15 days for a first offence, and by the withdrawal of the toll ticket for a second offence.

41. Superintending Engineers will exercise the same powers as Executive Engineers in respect of any of these rules.

(Signed) J. W. RUNDALL,
President for Committee.

Delta Bye-law 16.
12th October 1882.

Memorandum regarding the different Forms of Licenses.

It is proposed that the license and toll tickets shall be on different colored paper for each system—

Godavari	...	...	...	...	...	White.
Kistna	...	...	...	...	...	Red.
Buckingham Canal	...	...	...	...	...	Blue.

Through licenses will be printed on green paper.

When a license is taken out, a copy of the navigation rules in the vernacular is to be given to every boat-owner who has not already got one.

When printed for issue, the license forms and tickets will have a counterfoil separated from the original by perforations.

All license forms and toll ticket should be printed on good stout paper.

12th October 1882.

(Signed) J. W. RUNDALL.

System

TOLL TICKET FOR RAFT.

తెప్ప పన్ను టికిట్.

No.	Dimensions		Length	feet.
నెం	కొలలు	పొడగు		అడుగులు.
		Breadth	feet.	
		వెడల్పు		అడుగులు.
	Superficial Area	square feet.		
	చతురం కొల్ల	చతురం అడుగులు.		
Description of Raft				
తెప్ప వివరం				
Amount of Toll paid.	Rupees	Annas		
పెట్టించిన పన్ను మొత్తం.	రూపాయలు	అణాలు		
Issued at				
ఓటియచ్చిన స్థలం				
Date of issue				
ఓటియచ్చిన తారీఖు				
This ticket will hold good for one month only.				

Toll Superintendent.

This ticket is issued subject to the Navigation Rules sanctioned in S. O.

No. dated

System

TOLL TICKET FOR RAFT.

తెప్ప పన్ను టికిట్.

No.	Dimensions		Length	feet.
నెం	కొలలు	పొడగు		అడుగులు.
		Breadth	feet.	
		వెడల్పు		అడుగులు.
	Superficial Area	square feet.		
	చతురం కొల్ల	చతురం అడుగులు.		
Description of Raft				
తెప్ప వివరం				
Amount of Toll paid.	Rupees	Annas		
పెట్టించిన పన్ను మొత్తం.	రూపాయలు	అణాలు		
Issued at				
ఓటియచ్చిన స్థలం				
Date of issue				
ఓటియచ్చిన తారీఖు				
This ticket will hold good for one month only.				

Toll Superintendent.

This ticket is issued subject to the Navigation Rules sanctioned in S. O.

No. dated

9/9/82

తెక్కపాడను 90 అడుగులు, పెడల్పు 12 అడుగులు, 2 అడుగుల నీటిలో పోయినంత
మెట్టపాదం అందుతుంది.

పన్ను రేట్లు.

అ. అ. అ.

Rafts not to exceed 30 feet in length, 12 in breadth, 2 feet in draught.

RATES OF TOLL.

annus.

Logs of timber, rough or squared, per unit of 100 square feet 8

Bamboos per unit of 100 square feet 4

Fractions of the unit will be charged for as a full unit.

Rafts of timber and bamboos mixed will be charged for at the rate for timber.

License for Passenger Vessel, Class (A) or (C), for 18

System
Owner's name
Vessel built at

No. of License
Residence
in the year

Maximum number of passengers ; less one for every 400 lb. of cargo carried.
Fares to be charged and caste of passengers to be carried, *optional*.

EXTREME DIMENSIONS OVER ALL.		DIMENSIONS FOR TONNAGE.				Gross Tonnage.	Deduction of 15 per Cent.	Net Tonnage for License.	License Fee paid.	Date of Issue.	Place of Issue.
Length.	Breadth.	L.	B.	D.	Cubic Feet.						
FEET.	FEET.	FT. IN.	FT. IN.	FT. IN.					RS. A.		

Signature of Licensing Officer.

This License is issued subject to the Navigation Rules sanctioned in G.O., No.
dated

License for Passenger Vessel, Class (B) or (D), for 18

System
Owner's name
Vessel built at

No. of License
Residence
in the year

Maximum number of passengers ...
... { In the general cabin
... { In the fore cabin
... { In the aft cabin

Total No.

one for every 400 lb. of cargo carried. less

The holder of this license is required to convey all passengers, for whom there may be room, irrespective of caste, at rates for each passenger (including one cooly headload of luggage) not exceeding 2 pies in the general cabin, and 3 pies in the separate fore and aft cabins, per mile.

EXTREME DIMENSIONS OVER ALL.		DIMENSIONS FOR TONNAGE.				Gross Tonnage.	Deduction of 15 per Cent.	Net Tonnage for License.	License Fee paid.	Date of Issue.	Place of Issue.
Length.	Breadth.	L.	B.	D.	Cubic Feet.						
FEET.	FEET.	FT. IN.	FT. IN.	FT. IN.					RS. A.		

Signature of Licensing Officer.

This License is issued subject to the Navigation Rules sanctioned in G.O., No.
dated

In 1877, when it was necessary to find work for thousands of starving people, the connection of the northern and southern sections of the canal through Madras, which had been planned many years before, was undertaken, and the northern extension from Kistnapatam to Pedda Ganjam to join the Kistna Delta Canals being also pushed on vigorously under the government of the Duke of Buckingham, the canal was opened throughout, in 1878, from the Pálár, 47 miles south of Madras, to Pedda Ganjam, 196 miles north, under the name of the Buckingham Canal.

In 1879 the navigation rules for this canal now in force were introduced, under which the canal was divided into six sections. Copy of these rules is attached. Generally speaking they imposed a license fee of Rs. 2 per ton for all boats, except fishing and pleasure boats, the license clearing the boat for one section only. On entering any other section, the boat had to pay a toll of four annas a ton, or boat-owners were allowed to compound for a year's tolls throughout the canal for Rs. 10 a ton.

The navigation receipts have been as follows:—

	Rs.
1880	1,09,805
1881	1,20,056

2. The Godáviri Delta Canals navigation commenced in the year 1853, the ancient having been completed in 1852. The navigation was started under the auspices of Government officers, but before long the natives were out of leading strings and took up the navigation with a will, so that in 1863-64, ten years after the navigation commenced, the number of boats on the Delta Canal was 1,200, and the annual receipts amounted to Rs. 24,493. On first opening the navigation no tolls were charged, as was noticed in 1859 by the then Governor, Sir Charles Trevelyan, in a minute on the Godáviri irrigation and navigation. He says: "The canals are all toll-free, for it has been wisely determined that it is better to take the Government dues in a consolidated form on the crops than to harass and mulct the people by exactions which cannot be confined to those demanded on behalf of the public." In November 1863, however, a license fee of one rupee per ton was charged.

As the canals have been extended, the navigation rules have been, from time to time, revised, and the license fees raised, and toll stations have been instituted generally at the head and tail locks of each canal, so that boats are not compelled to take out licenses for the year, but may, if it suits their convenience, pay by the trip. Up to 1882 the rates for license fees were generally speaking (taking 50 cubic feet to represent a ton)—

Cargo boats	2 rupees per ton.
Passenger boats—	
First class	4 "
Second class	3 "
Rafts, timber	4 annas per 100 square feet.
" bamboos, &c.	2 "

The measurement of boats was, up to that time, much the same in the Godáviri and Buckingham Canals, and the unit of measurement, 50 cubic feet to a ton, was the same, but in 1882 revised rules for the Godáviri and Kistna Canals were sanctioned by Government, in which the unit of measurement was altered to a ton of 75 cubic feet, and, as in the Buckingham Canal 50 cubic feet were still continued the unit, there arose difficulties in the case of through traffic, which have brought to notice the necessity for introducing rules of general applicability.

In introducing new rules for navigation in the Delta Canals, the rule has been laid down that navigation should be made to pay, that is, not only should the receipts cover the working expenses, but also interest on the original cost of works constructed solely in the interests of navigation. In a system of canals which combine irrigation and navigation there is, of course, great difficulty in apportioning the share of cost, but under instructions that have been issued from this office, this has been settled, and the yearly accounts show the maintenance charges and interest compared with the receipts. The accounts of last year, ending 31st December 1881, show the following results:—

	Rs.
Maintenance charges	55,106
Interest	24,504
Total	79,610
Receipts	55,670

that is, the receipts more than covered the working expenses, but were insufficient to meet the charge for interest. It was contemplated that, as the canals approached completion, the maintenance charges would become lighter, and the receipts would increase until they were sufficient to cover all charges. It is, however, to be noticed that, when the Godáviri completion estimates were submitted to the Government of India, all that was claimed for navigation receipts was that they should cover maintenance charges.

3. The Kistna Delta Canal navigation, which was opened a few years later than the Godáviri, was started in the same way, and has been generally under the same rules, but as in the Kistna Delta the canals are less advanced than in the Godáviri, the license fees charged are less per ton than in the Godáviri. In the last revised rules, 1882, cargo boats were charged $2\frac{1}{2}$ rupees against $3\frac{1}{2}$ rupees a ton in the Godáviri.

The accounts of last year ending 31st December 1881 show the following results:—

	Rs.
Maintenance charge	60,330
Interest	8,054
Total	68,384
Receipts	21,788

but the maintenance charges were much higher than they should have been, in consequence of damage caused by floods.

4. The length of navigable canal now open is—

	MILES.
In the Godáviri Delta	
" Kistna	458
" Buckingham Canal	278
	243
Total	979

The through line from Pálár south of Madras to the port of Cocanada in the mouth of Godáviri is—

	MILES.
In Godáviri	
" Kistna	78
" Buckingham Canal	110
	243
Total	431

When the Delta Canals are completed there will be the following lengths of canals navigable:—

	MILES.
In Godavari	502½
" Kistna	349

while the Buckingham Canal may possibly be extended southwards to near Point Calimere, a distance of 156 miles from the Pálar.

5. Under the rules as they at present stand, it will be seen that there are considerable obstacles in the way of through navigation. The rates of license fee for each system of canals are now certainly not oppressive in the deltas, but 10 rupees a ton per annum for the use of 243 miles of the Buckingham Canal seems very heavy. Supposing a boat to ply between Madras and Cocanada continually, and to take out licenses for all canals, it would pay—

Buckingham Canal	10 rupees per ton of 50 cubic feet.
Kistna Canals	2½ " " of 75 "
Godavari Canals	3½ " " of 75 "

or a license might be taken out for one section, and tolls paid at entering each other section, which would clear the boat for one trip. In any case, at each toll station on the through journey, 5 on the Buckingham Canal, 3 on the Kistna, and 2 on the Godavari, the boat would be stopped to exhibit its license, and a door would be opened for "exactions which cannot be confined to those demanded on behalf of the public." Taking into account the very incomplete state of the Buckingham Canal, and the difficulty which is at times experienced in navigating it, the high rate of license fees, and the interruptions to traffic caused by the frequent toll stations, it is surprising that navigation has extended as it has. It must also be noticed that the Kistna Canals are closed for repairs for three months yearly, and the through traffic is necessarily interrupted for that time.

6. The Committee appointed by Government in G.O., No. 612 L., dated 5th August 1882, was instructed to take the following points specially into consideration:—

- (1) The abolition, as far as possible, of tolls;
- (2) The license fees to be charged for the canals throughout;
- (3) The measurement of boats with reference to the adoption of one unit of measurement;

and in their report now submitted they have embodied their proposals attaching a revised set of rules to be applicable to all the canals on the East Coast if their proposals are approved.

7. The Committee originally appointed consisted of Mr. Rundall, Superintending Engineer, Second Circle; Mr. Walch, Officiating Superintending Engineer, First Circle, and Major Drake-Brockman; but in consequence of the latter officer having taken leave before the Committee could meet, Mr. Ottmann, Honorary Assistant Engineer, who was acting for him, was appointed in his place. Mr. Ottmann has submitted a separate memorandum calling attention to some additions, which on further consideration he suggests should be made to the rules proposed by the Committee, and these will be considered further on. The whole of the papers were on the return of Major Drake-Brockman from leave sent for his consideration, and he has stated his concurrence generally with the Committee's views.

8. Regarding the first point referred to them, the Committee consider that tolls cannot be entirely abolished, but that to allow of the occasional use of the canals without taking out a license, toll stations must be maintained at the head locks of each section of the deltas, all tidal locks, at Ellore near the junction of the Godavari and Kistna Canals, and four places on the Buckingham Canal, for the public convenience, thus reducing the number of toll stations from 47 to 20. To these proposals I agree on the understanding that the toll stations are maintained for the public convenience only, that no obstructions such as now exist in the shape of a chain drawn across the canal shall be allowed, and that the toll-taker has no authority to stop any boat or call for the production of its license unless there is some apparent infringement of

the rules. A subordinate in the position of a Lock Superintendent or toll-keeper should never be allowed the powers of an Inspecting Officer. It apparently was contemplated by Mr. Ottmann that, at the proposed toll stations on the Buckingham Canal, all licenses would be produced for examination as at present, and in his memorandum he specially notices that some examination of the boats will be necessary, while the canal remains as at present one open reach from Shadayankupam Lock to Pedda Ganjam. There is of course an opening for boats to ply in this reach without licenses to get in by paying a toll and remain at work for an indefinite period, but this will be impossible when flood-gates are constructed at several places, and meanwhile I consider that the Division and Sub-division officers should, as Inspecting Officers, pay special attention to the subject, and endeavor to prevent evasions of fees. Under no circumstances would I allow the toll-keepers to have any thing to do with this duty; they should be restricted to issuing toll tickets when called upon to do so. It is better to risk some loss than to harass the traffic. As to the amount of toll I shall have to make some remarks further on.

9. The Committee recommend that one unit of measurement should be adopted for all canals, and that the ton should consist of 50 cubic feet. It is only lately, in August 1881, that, on the recommendation of Colonel Mullins, a ton of 75 cubic feet was introduced into the Godavari and Kistna Canals. The reasons for this change are given in the note printed with G.O., No. 484 L., dated 3rd August 1881, and I am unwilling to propose any radical alterations, but I quite agree with the Committee that to avoid confusion there must be only one unit of measurement, and I consider it quite unnecessary to make any attempt to reconcile the weight of cargo with the cubic space it occupies. For some years a ton has been considered to be 50 cubic feet, and I would retain this measurement, charging license fees by this unit, and only providing in the rules for a certain safe free board in all cases.

10. The Committee next proceed to give the rates at which they propose to fix license fees and tolls, and here they follow the system at present in force to some extent. They propose a separate license fee for each system, and a compound rate for all these systems, but they do not propose to retain the present plan of charging a separate fee for each section of the Buckingham Canal. Passenger boats of both classes are dealt with in the same way as cargo boats, also steamers. I am prepared here to go a great deal further than the Committee. What I desire to see is one demand to clear all the canals. I would remove all obstacles in the way of navigation that I possibly could, believing that the interests of Government will be best served by improving the communications, stimulating consumption, and consequently extending production.

The argument that, if 2 rupees is charged for carriage of 100 miles, more should be charged for carriage of 300 miles is not here I think applicable. In the case of the Godavari and Kistna Delta Canals, the irrigation gives a splendid return on the expenditure without any receipts from navigation, and the Buckingham Canal has been carried out as a Protective Public Work, and a return is to be looked for, from free and extended use of it. I consider that all that should be looked for is that the navigation receipts should cover the working expenses, by which I mean the cost of the navigation establishments and of maintenance of navigation works, and this I believe will soon be the case on all three of the existing systems. It must be remembered that the canals of two of these systems are still in a very incomplete state, and it should not be expected that as soon as a canal is opened it will pay its way.

11. The following statement shows at a glance the present rates of license fees, those proposed by the Committee, and those which I propose, and I have endeavored to make a comparison in statements appended between the actual receipts of last year, those to be expected if the Committee's rates are introduced, and if the rates I propose are adopted. The receipts should, I think, be credited to the system to which the boat belongs; that is, a Kistna boat might be licensed in the Buckingham Canal, but the license fees would be credited to the Kistna system. I do not look for an immediate return, but I do expect that the opening of the canal to traffic in this way will eventually prove remunerative to Government, and I allow that it will be practicable to raise these rates at some future time:—

Cargo Boats.	Present Rates per Ton of 50 Cubic Feet.	Rates proposed by Committee.	Rates proposed by Chief Engineer for Irrigation.
	RS.	Rs. per Ton of 50 C. Feet.	Rs. per Ton of 50 C. Feet.
Godáviri	2½	2½	
Kistna	1½	1½	
Buckingham Canal ...	2 per section, 10 for whole canal.	3 } 5	2½
<i>Passenger Boats, 1st Class.</i>			
Godáviri	4½	4	
Kistna	4½	4	
Buckingham Canal ...	2 per section, 4 for whole canal.	4 } 10	5
<i>Passenger Boats, 2nd Class.</i>			
Godáviri	3½	3	
Kistna	3½	3	
Buckingham Canal ...	2 per section, 4 for whole canal.	3 } 7	3
<i>Steamers.</i>			
Godáviri	5	4	
Kistna	5	3	
Buckingham Canal ...	As cargo on passenger boats.	6 } 10	5
<i>Rafts, Timber.</i>			
Godáviri	4 annas per 100 square feet each canal.	8 annas per 100 sq. feet.	8 annas per 100 sq. feet.
Kistna	Do. ...	Do. ...	Do. do.
Buckingham Canal ...	1 anna per sq. yard...	Do. ...	Do. do.
<i>Rafts, Bamboo.</i>			
Godáviri	2 annas per 100 sq. feet.	4 annas per 100 sq. feet.	4 annas per 100 sq. feet.
Kistna	Do. ...	Do. ...	Do. do.
Buckingham Canal ...	1 anna per sq. yard...	Do. ...	Do. do.
<i>Tolls for Vessels.</i>			
Godáviri	4 annas per ton each canal.	8 annas per ton per system.	8 annas per ton per system.
Kistna	Do. ...	6 do. ...	Do. do.
Buckingham Canal ...	4 annas per ton each section of canal.	12 do. ...	Do. do.
<i>Tolls for Steamers.</i>			
Godáviri	Same as vessels ...	1 rupee per ton per system.	1 rupee per ton per system.
Kistna	...	12 annas do. ...	Do. do.
Buckingham Canal ...	...	1½ rupees do. ...	Do. do.

If my recommendations are approved, revised rules and bye-laws, which shall be applicable to all canals, will be drawn up. I agree with the Committee in considering that the navigation must be worked in the same way on all three systems, but I see the difficulty that there will be in enforcing the rules by stoppage of license on the Buckingham Canal where the open reach is so long, and I think it will be necessary, until the proposed improvements to the canal are carried out, to continue to the Buckingham Canal Divisional Officer the powers of a First-class Magistrate.

12. As regards the difficulty referred to by the Committee in consequence of the Delta Canals being under the orders of the Chief Engineer for Irrigation, and the

Buckingham Canal under those of the Chief Engineer, Department Public Works, I may state my opinion that the Buckingham Canal should be under the Chief Engineer for Irrigation. It would tend to uniformity, and I am disposed to think that all water works should be in charge of the Irrigation Branch. I say this without expressing any personal feelings in the matter.

13. The Committee ask for early orders, so that the new rules may be introduced on the 1st January 1882. This opens another question, viz., whether it is necessary that the navigation rates should continue to relate to the calendar year. The arrangement necessitates the figures in the accounts being shown for receipts in the calendar year, and for charges in the official year, and as I have lately recommended that the revenue year should be made to correspond with the official year, so I now recommend that the navigation year should be made to correspond with the official year. The change may occasion trifling inconvenience at first, but there are, I believe, no insuperable difficulties in the way.

14. In preparing revised rules I propose to take into consideration the addition proposed by Mr. Ottmann to be made to Section I.

CHEPAUK,
6th November 1882.

(Signed) J. O. HASTED, Col. R.E.,
Chief Engineer for Irrigation.

To the Joint Secretary to Government, Public Works Department, Irrigation Branch.

STATEMENT showing the Navigation Receipts and Charges of the Godáviri, Kistna, and Buckingham Canals.

Year.	Receipts.	Year.	Maintenance Charges.	Balance.	Interest.
<i>Godáviri Canal.</i>					
	RS.		RS.	RS.	RS.
1876	39,952	1875-76	37,713	2,239	23,372
1877	44,742	1876-77	37,959	6,783	25,154
1878	53,386	1877-78	43,855	9,531	27,125
1879	63,348	1878-79	40,582	22,766	28,128
1880	51,315	1879-80	47,307	3,908	28,994
1881	55,670	1880-81	55,106	564	24,504
<i>Kistna Canals.</i>					
1876	18,377	1875-76	31,963	— 13,586	300
1877	14,876	1876-77	29,584	— 14,708	308
1878	16,396	1877-78	25,262	— 8,866	373
1879	23,294	1878-79	34,653	— 11,359	2,916
1880	23,834	1879-80	35,980	— 12,146	5,807
1881	21,788	1880-81	60,330	— 38,542	8,054
<i>Buckingham Canal.</i>					
1880	1,03,805	1879-80	82,519	27,286	...
1881	1,20,056	1880-81	1,56,734	— 36,678	...

The maintenance charges on the Kistna and Buckingham Canals during 1880-81 were unusually high, owing to the damages caused by extraordinary floods and cyclone. The increase in the interest charges to the Kistna Canals is owing to the cost of the locks recently constructed on the Commamur Canal having been included in the amount on which interest was calculated.

STATEMENT showing the Estimated Receipts from Navigation at the Rates now in force compared with those proposed by the Committee and the Chief Engineer for Irrigation.

	Actual Collection for 1881.			Estimated Collection at the Rates now in force.			Estimated Collection at the Rates proposed by the Committee.			Estimated Collection at the Rates proposed by the Chief Engineer for Irrigation.		
	Tons.	Rate.	Amount.	Tons.	Rate.	Amount.	Tons.	Rate.	Amount.	Tons.	Rate.	Amount.
Godavari Canals.												
Cargo boats	21,530	2	41,935	14,354	3½	50,239	16,148	2	32,296	21,530	2½	53,825
Do. by compounding	..	..	..	..	..	..	..	..	..	..	..	..
Passenger boat, 2nd class.	1,913	3	5,739	1,375	5	6,875	10,710	1½	16,065	1,913	3	5,739
Do. by compounding	..	..	..	..	..	..	..	..	..	..	..	..
Steamers	21	5	105	14	7½	105	21	4	84	21	5	105
Tolls	..	..	..	..	..	..	..	..	..	..	..	..
Rafts	10,319	½	2,079	6,880	½	1,720	10,319	½	5,160	..	..	1,000
Miscellaneous Revenue	..	..	358	..	..	358	..	..	358	..	..	358
Total	..	..	56,070	..	..	63,782	..	..	71,708	..	..	70,997
Kistna Canals.												
Cargo boats	14,957	1	14,957	9,971	2½	24,927	11,218	1½	16,827	14,957	2½	37,392
Do. by compounding	..	..	..	..	..	..	..	..	..	..	..	..
Passenger boat, 2nd class.	793	3	2,379	629	5	2,045	595	3	1,785	793	3	2,379
Do. by compounding	..	..	..	..	..	..	..	..	..	..	..	..
Tolls	..	..	..	..	..	..	..	..	..	..	..	..
Rafts	10,996	½	2,749	7,331	½	1,833	10,996	½	4,123	..	..	1,000
Miscellaneous	..	..	204	..	..	204	..	..	204	..	..	204
Total	..	..	21,788	..	..	31,093	..	..	42,764	..	..	43,943
Buckingham Canals.												
Cargo boats	6,352	2	12,704	..	..	..	4,764	3	14,292	6,352	2½	15,880
Do. by compounding	..	..	..	..	..	..	..	..	..	..	..	..
Passenger boats, 2nd class.	3,240	2	6,480	..	..	..	10,710	2½	24,097	3,240	3	9,720
Do. by compounding	..	..	..	..	..	..	2,435	3	7,305	..	..	..
Tolls	..	..	..	..	..	..	1,480	2½	3,470	..	..	..
Rafts	..	..	95,667	..	..	..	..	..	..	..	..	1,600
Miscellaneous	..	..	100	..	..	..	..	..	750	..	..	75
Total	..	..	1,20,065	..	..	..	..	..	54,343	..	..	32,279

Memorandum by the Executive Engineer, Buckingham Canal, replying to questions put by the Chief Engineer, Public Works Department.

(1.) What the annual maintenance charges may, on completion of the work, amount to?

The allotment for maintenance during the current year is —

For Southern Canal, 61 miles, at Rs. 110	Rs. 6,710
„ Northern „ 207 „ at „ 275	56,925
Minor repairs to masonry works	63,635
	5,000
	68,635

The allotment hitherto made for the Southern Canal has been found sufficient, and I think when the canal reaches have been remodelled throughout, the whole canal will be put into a condition that as regards the cost of maintenance, will compare favorably with the present condition of the Southern Canal. The immunity the Southern Canal enjoys from inordinate silting, results from the drainage flowing into its backwater in numerous small drainages, and not in a concentrated form through large streams or rivers which carry down large quantities of silt, and backing into the several still-water reaches of the Northern Canal, form large shoals at their entrances and for considerable distances upwards from their mouths. I consider therefore that when the improvements to the canal have been effected that no greater expenditure per mile will

be necessary for its maintenance than has been found requisite for the Southern Canal even in its present unimproved condition. For the 266 miles therefrom an allotment of Rs. 30,000 should prove sufficient, but taking into account the number of river crossings on the Northern Canal that are liable to obstruction, a sum of Rs. 10,000 may be added, bringing the sum total to Rs. 40,000.

(2.) What at the end of the remaining eight or nine years required for completion of the works under the lately revised Estimate the sums levied for licenses and tolls under the revised scale should, making due allowance for all reasonable increase, amount to?

With regard to this subject it may not be out of place, to give here a few particulars regarding the progress of navigation on the Buckingham Canal, and show the effect that the raising of tolls thereon of late years has had upon its development.

Prior to the assumption in October 1879, of the duty of levying tolls upon or issuing licenses for boats that were plying on the canal, the Collector of the Chingleput District was accustomed to levy, under the orders of the Board of Revenue, a toll of four annas per ton upon every cargo boat, and four annas per trip on every passenger boat passed through the Shadayankupam Lock towards Madras. No tolls were levied on boats entering Madras from the southward. The receipts from these aggregated respectively in 1875, 1876, 1877 and 1878 Rs. 51,113, 39,869, 23,110, and 47,130. The falling off in 1876, 1877 may be attributed to the famine. The receipts from the licenses issued to boats on the Southern Canal amounted to an average collection of Rs. 1,400. In October 1879 this system was abolished, and licenses and tolls began to be levied under the new Navigation Rules which still continue in force.

The collections in 1880, 1881 and up to November 1882 amounted to Rs. 1,09,808, 1,16,527, and 1,00,037, respectively, or to more than twice the amount previously collected. Instead, however, of the number of boats decreasing, consequent upon the multiplying of toll stations and the introduction of a more complicated system of tolls under the rules, the number has actually progressively increased as is shown from the table hereto appended:—

Years.	UNCOVERED CARGO BOATS.		COVERED CARGO, PASSENGER AND RAFTS BOATS.		DECK AND DINGHY BOATS.		FISHING BOATS.		MISCELLANEOUS BOATS.		TOTAL.	
	Number.	Tonnage.	Number.	Tonnage.	Number.	Tonnage.	Number.	Tonnage.	Number.	Tonnage.	Number.	Tonnage.
1879	252	3,974	282	1,919	4	70	144	232	41	92	723	6,287
1880	369	6,206	468	3,567	19	315	90	110	46	80	992	10,278
1881	379	6,352	533	3,240	29	367	155	* 211	32	45	1,125	10,215
1882	377	6,394	554	3,522	22	283	62	* 152	40	200	1,055	10,551

The establishment of tolling stations does not appear therefore to have had a prejudicial effect upon the number of boats that use the canal. The brunt of paying the tolls comes upon the well-to-do merchants who hire the boats for carrying their goods to market, and this they can always afford to do without difficulty, and the boat-owner who builds his boat to earn a livelihood is in no way affected. The principle, however, of abolishing toll stations, and removing the powers from petty subordinates of extorting more than they are authorized to collect is a correct one, and should if possible be carried out. But the retention of two tolling stations on the canal, say, at Shadayankupam and another at Adyar Lock, would not be objectionable, as these stations would from their proximity to the headquarters of the division be open to frequent check and scrutiny. I would recommend, therefore, as a direct means of simplifying the method of collection of revenue that a modification of the original system of collections, viz., 4 annas per ton on all boats, be established. The number of boats that passed through the locks at Shadayankupam and the Adyar during 1881 amounted to 241,207 tons, which at 4 annas per ton would give 60,000 and odd rupees. This added to the expected revenue from Licenses as per statement

* These do not pay tolls nor fees.

given by the Chief Engineer for Irrigation would bring up the receipts of the Buckingham Canal to about 93,000 rupees.

The charge under the establishment proposed under this scheme in the accompanying table would be 11,500 rupees, which added to the amount required for maintenance would bring the sum total of charges to Rs. 51,500.

BUCKINGHAM CANAL.

TABLE showing the Establishment proposed for Toll Offices, Locks and Flood-gates.

Locality.	ESTABLISHMENT.		Average Salary per Month.	Amount per Annum.	Total.
	No.	Nature of Appointment.			
Toll Office at Shadayankupam.	1	Clerk, IV Class, 2nd Grade	Rs. 35		
	1	Do. 3rd "	25		
	1	Clerk, V Class, 1st Grade	17½		
	1	Do. 2nd "	12½		
	2	Peons at Rs. 7 each	14		
			104	1,248	
Lock at Shadayankupam.	1	Head Lascar	8		
	4	Lascars at Rs. 7 each	28		
			36	432	
Junction Canal Lock at Adyar.	1	Head Lascar	7		
	4	Lascars at Rs. 6 each	24		
			31	372	
Sadras Canal Lock at Adyar.	1	Head Lascar	7		
	4	Lascars at Rs. 6 each	24		
			31	372	
Toll Office at Adyar Lock.	1	Clerk, IV Class, 3rd Grade	25		
	1	Clerk, V Class, 1st Grade	17½		
	2	Peons at Rs. 7 each	14		
	2	Lascars at Rs. 6 each	12		
			68½	822	
47 Flood-gates, 2 Lascars at each.	94	Lascars at Rs. 6 each	564	6,768	
Basin at Madras	1	Clerk, IV Class, 2nd Grade	35		
	3	Peons at Rs. 6 each	18		
			53	636	
Division Office at Madras.	1	Clerk, IV Class, 3rd Grade	25		
	1	Clerk, V Class, 1st Grade	17½		
	2	Peons at Rs. 6 each	12		
			54½	654	
		Contingencies		196	
		Total			11,500

(Signed) R. R. E. DRAKE-BROCKMAN, Major, R.E.,
Executive Engineer, Buckingham Canal.

CHEPAUK,
16th December 1882.

Note by the Chief Engineer, Public Works Department.

It having been brought under the notice of Government that hindrance to the traffic between Madras and the northern deltas was caused by the navigation rules of the Buckingham Canal differing from those applicable to the Godavari and Kistna deltas, and to the possible abuses from the through traffic being called upon to pay frequent tolls, the following Committee was, under G.O., of 5th August 1882, No. 612 I., appointed to consider and report on the matter, viz.:—

J. W. Rundall, Esq., Superintending Engineer, Second Circle, President.
G. T. Walch, Esq., Officiating Superintending Engineer, First Circle, } Members.
Major Drake-Brockman, Executive Engineer, Buckingham Canal, }

2. The points to which the attention of the Committee was specially drawn were—

- (1) The abolition, as far as possible, of tolls.
- (2) The license fees to be charged for the canals throughout.
- (3) The measurement of the boats with reference to the adoption of one unit of measurement.

3. Major Drake-Brockman being absent on leave, his place was taken on the Committee by his *locum tenens*, Mr. Ottmann, Honorary Assistant Engineer; but as will be observed from the printed collection now submitted, the Executive Engineer has had every opportunity for expressing his opinion.

4. The accompanying papers are in themselves so full and complete that, it will be needless to do more than summarize the conclusions arrived at by the Committee, and those of the Chief Engineer for Irrigation, who has noted at length on the case.

5. On the first point referred to them the Committee consider that although tolls cannot be entirely abolished, the number of existing stations may with advantage be reduced from 47 to 20. To allow of the occasional use of the canals without taking out a license, toll stations must, they consider, be maintained at the head locks of each section of the deltas, at all tidal locks, at Ellore near the junction of the Godavari and Kistna Canals, and at four places (viz., Pedda Ganjam, Kundaleru, Shadayankupam, and Adyar) on the Buckingham Canal.

6. In regard to the second point the Committee propose a very considerable reduction on the license fees, especially on the Buckingham Canal, which are nearly five times those for the corresponding lengths of the Godavari Canals.

7. By paragraph 28 the proposed through rates, and the proportions in which the revenue should be credited to each system should, they consider, be as follows:—

Cargo Boats.

Amount of through licenses	RS.	A.	P.
Godavari system	5	0	0
Kistna "	1	8	0
Buckingham Canal	1	4	0
	2	4	0
	5	0	0

Passenger Boats.

(a) and (c) classes, through license			
Godavari system	10	0	0
Kistna "	3	0	0
Buckingham Canal	2	8	0
	4	8	0
(b) and (d) classes, through license			
Godavari system	10	0	0
Kistna "	2	4	0
Buckingham Canal	1	8	0
	3	4	0
	7	0	0

8. On the third point the Committee definitely recommend that the unit hitherto adopted for the Buckingham Canal, viz., that 50 cubic feet should represent

a registered ton, instead of 75 cubic feet, as not long since introduced on the Godavari and Kistna Deltas.

9. The Chief Engineer for Irrigation accepts the Committee's recommendation on the first head, with the proviso that no obstruction such as a chain drawn across the canal (as at present) shall be allowed at the tolling stations; also that the toll-taker shall have no authority to stop any boat for the production of its license unless there is some evident infringement of the rules. He would confine all such action to the Inspecting Officers alone, considering it better to risk some loss than harass traffic.

10. Under the second head Colonel Hasted, while agreeing to the general principles, is prepared to go much further than the Committee by making one demand for license to clear all the canals, and by otherwise removing all possible obstacles to navigation, believing that the interests of Government would best be served by improving the communications, stimulating consumption, and extending production. All he considers that should be looked for is that, the navigation receipts should cover the working expenses when the canals have been completed and brought into normal condition, excluding interest charge on capital outlay.

11. The scales of license fees as suggested by Colonel Hasted (see paragraph 11 of his Note) for cargo boats, passenger boats, and steamers, are just one-half those recommended by the Committee, while for rafts the scale is the same.

12. In the matter of tolls, he would substitute the uniform rate of 8 annas per ton for boats, and one rupee per ton for steamers for each system, in lieu of the Committee's rather heavier rates, and the existing ones on the Buckingham Canal, which are acknowledged to be both heavy and vexatious.

13. Major Drake-Brockman, to whom the question of licenses and tolls was referred, chiefly in view to show what would be the probable financial effect of the suggestions made by the Committee, and by the Chief Engineer for Irrigation, has recorded his opinion in a memorandum of the 16th December.

14. The main point brought prominently into view by this officer, is the large outlay now required for the maintenance of the Buckingham Canal in its present incomplete condition, and the sensible reduction which must occur when the improvement works, which have been estimated for and are being carried out, shall have been completed. The total future annual charge for the 266 miles open, he considers, should not exceed Rs. 40,000.

15. While showing what the collection from tolls has been during the past four years, he has taken no credit for future increase, which, when the trade has been freed from the present harassing system of tolls, may reasonably be expected to show itself. The growth of the revenue in the last few years does not, it is thought, prove that tolls are acceptable to boat-owners or others engaged in trade, so much as that the vitality of the traffic is so great that, the revenue has increased in a very marked manner in spite of all obstacles.

16. In addition to the license fees proposed by the Chief Engineer for Irrigation, Major Drake-Brockman would establish only two toll stations, viz., at the Adyar lock, the head of the southern branch, and at Shadayankupam, the southern extremity of the north branch of the Buckingham Canal.

17. With a toll of 4 annas per ton on the whole outward and inward traffic passing the locks (aggregating 241,207 tons) he calculates on a revenue from this source only of Rs. 60,000 per annum.

18. The plan, though apparently simple, would have the objection that the rate charged on boats plying near the extremities of the canals would be unduly heavy, while others might escape all tolls, e.g., a boat making three outward trips would pass the toll station six times, and pay $1\frac{1}{2}$ rupees per ton, which is certainly very heavy, while any boat plying within the full length of the canal beyond the toll station, would pay nothing.

19. Colonel Hasted, on a further reference made to him regarding the cost of establishment, gives the following for his scheme:—

Toll Stations.	Establishment.	Pay.	Total.
		RS.	RS.
Shadayankupam Lock	1 Superintendent	15	41
	2 Lascars at Rs. 7	14	
	2 Do. at „ 6	12	
Adyar Lock	1 Superintendent	15	41
	2 Lascars at Rs. 7	14	
	2 Do. at „ 6	12	
Pedda Ganjam Lock	1 Superintendent	15	21
	1 Lascar	6	
Kundaleru	1 Superintendent	15	21
	1 Lascar	6	
Wharf at Madras	1 Superintendent	50	79½
	1 Clerk	17½	
	2 Lascars at Rs. 6	12	
Total per Mensem		...	258
Total per Annum		...	3,096

20. Assuming the maintenance charges at Rs. 40,000, the amount estimated by Major Drake-Brockman, allowing for contingencies, establishment and maintenance, would not exceed Rs. 45,000 per annum when the canal shall have been completed.

21. As even with the present imperfectly developed traffic the license fees and tolls would on Colonel Hasted's scale amount as shown to over Rs. 32,000 per annum, it would only need a wharfage charge of about 1 anna a ton levied at Madras, to bring receipts and disbursements into equilibrium.

22. A wharf is now being constructed near the basin at Madras, and it may be desirable to build another to south of the Adyar lock. A charge such as that indicated at both places would be in every way reasonable, and it certainly would be necessary to prevent all discharge of cargo excepting at the selected places.

23. On the whole, therefore, the proposals put forward by the Chief Engineer for Irrigation, supplemented by the small wharfage charge which he himself has suggested, would, it is thought, prove most suitable.

24. It is of the utmost moment that a work which holds out such promise of success in ordinary years, and of proving itself of inestimable value during famine, should be freed in its infancy from all needless trammels.

25. Among other points which have incidentally entered into the questions raised, is one regarding the branch of this department, by which in future the work should be controlled.

26. Reasons have hitherto existed, needless here to state, which have made it advisable to retain the control in the general branch of the department. These, however, do not now exist in the same force as formerly, and certainly if in future complete uniformity of management is to be introduced for all the canals as forming part of a general system, it would be desirable to transfer the management of the Buckingham Canal to the Irrigation Branch.

27. Another point has reference to the period covered by the annual returns, which hitherto has been the calendar and not the official year. There seems no reason why the latter should not now be reverted to as being in every way the most convenient. Should the above approve themselves to Government, orders might issue at a sufficiently early date to admit of the introduction of the new system in its entirety from the 1st April next.

MADRAS,
26th January 1883.

(Signed) R. H. SANKEY, Colonel, R.E.,
Chief Engineer, P.W.D.

18
929
20TH FEBRUARY 1883, No. 562 W., PUBLIC WORKS.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Buildings and Roads.
Civil Works.

No. 139.

READ—the following paper :—

- From the Committee convened in Proceedings, Madras Government, No. 612 I., of 5th August 1882, dated 12th October 1882.
Memorandum by the Chief Engineer for Irrigation, dated 6th November 1882, No. 117 I.
" " Executive Engineer, Buckingham Canal Division, dated 16th December 1882.
" " Chief Engineer, Public Works Department, dated 26th January 1883.

No. 140.

ORDER—dated 20th February 1883, No. 562 W., Public Works.

The Government accept the recommendations of the Committee, with the modifications suggested by the Chief Engineer for Irrigation, and the Chief Engineer, Public Works Department.

2. The Chief Engineer for Irrigation will submit, in time to admit of their introduction by the 1st April 1883, a revised draft of the rules for publication in the *Fort St. George Gazette* and communication to officers concerned.

3. The official, instead of the calendar, year will in future be adopted in regard to the preparation of navigation returns, &c., and from 1st April next all matters relating to the Buckingham Canal will be dealt with in the Irrigation Branch.

(True Extract.)

(Signed) R. H. SANKEY, Colonel, R.E.,
Secretary to Govt., P.W.D.

To the Chief Engineer for Irrigation.
" Superintending Engineer, First Circle.
" " " Second "
" " " Third "
" Board of Revenue.
" Revenue Department.
" Supg. Engineer Fifth Circle.

Exd. A. F. Goodall.
Spare Copies

BUILDINGS AND ROADS.
CIVIL WORKS.

Govt. of (1883) Madras
PUBLIC WORKS.

Dated February, 20th.

Recd.

Encl.

G.O., 20th Feb. 1883, No. 562 W.

FEBRUARY.
Nos. 139-140.

Navigation Rules

*Revised — for the Canal System of the
East Coast.*

19
999
4TH SEPTEMBER 1884, No. 2184 W., PUBLIC WORKS.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

General.
Establishment.

READ—the following papers:—

From Colonel H. L. PRENDERGAST, R.E., Superintending Engineer, V Circle,
to the Chief Engineer for Irrigation, dated Chepāk, 16th August 1884,
No. 1882.

In your memorandum, No. V/25-B.C., dated 26th July 1884, approval was given
to the basins at Muthukur and Kottapatam being declared wharves, and I have the
honor to submit, for sanction, a statement showing a proposed increase of Rs. 34-8-0
monthly in the canal establishment.

2. There is at present no establishment at Kottapatam, but the toll-keeper and
peon at Pedda Ganjam have been ordered by the Executive Engineer to remove to
Kottapatam as a toll office at Pedda Ganjam is of little use.

3. It is proposed to raise the pay of the toll-keepers at Muthukur and Kotta-
patam from Rs. 15 to Rs. 17-8-0 on account of their having to perform the more
responsible duties of wharf clerks. An extra lascar is required for both these stations
to take wharfage collections to the treasuries.

4. An additional clerk is wanted in the division office on a salary of Rs. 15 to
Rs. 20, so as to assist the establishment in checking the wharf office accounts of the
three stations—Madras, Muthukur and Kottapatam.

(Signed) H. L. PRENDERGAST, Colonel, R.E.,
Superintending Engineer, V Circle.

Exd. E. Fernandez
Spare Copies

GENERAL
ESTABLISHMENT.

Govt. of (1884) Madras
PUBLIC WORKS.

Dated September, 4th.

Recd.

G.O., 4th Sept. 1884, No. 2184 W.

SEPTEMBER.

Buckingham Canal Estab-
lishment

Certain increases to the —, sanctioned.

21/929
26TH SEPTEMBER 1883, No. 2708 W., PUBLIC WORKS.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

General.
Establishment.

READ—the following letter from Colonel H. L. PRENDERGAST, R.E., Superintending Engineer, Fifth Circle, to the Chief Engineer for Irrigation, dated Bangalore, 18th September 1883, No. 2249:—

In G.O., No. 1482 W., dated 23rd May 1883, sanction was given to the retention for three months, from the 1st July 1883, of the toll establishment employed in the Buckingham Canal Office. In paragraph 4 of my letter in G.O., No. 855 W., dated 15th March 1883, I stated that when this establishment is broken up a toll establishment on a reduced scale will be proposed.

2. The establishment has been discharged on the 12th instant, with the exception of one clerk, fourth class, third grade, on Rs. 30 and one peon on Rs. 6. The Executive Engineer reports that this establishment is required for the collection of license fees and the checking and compilation of the traffic registers. I have the honor to request that sanction may be given to the permanent employment of the clerk and peon from the 12th instant.

No. 66 E.W.

Forwarded to the Chief Engineer, Public Works Department, with a recommendation that the establishment applied for may be sanctioned.

CHEPAUK,
20th September 1883.

(Signed) A. S. RUSSELL,
for Chief Engineer for Irrigation.

ORDER—dated 26th September 1883, No. 2708 W., Public Works.

Sanctioned.

(True Extract.)

(Signed) J. SHAW-STEWART, Colonel, R.E.,
Secretary to Govt., P.W.D.

To the Superintending Engineer, Fifth Circle.
" Chief Engineer for Irrigation.
" Examiner, Public Works Accounts.

Exd. E. Fernandez.
Spare Copies

GENERAL
ESTABLISHMENT.

Govt. of [1883] Madras

PUBLIC WORKS.

Dated September, 26th.

Recd.

G.O., 26th Sept. 1883, No. 2708 W.

SEPTEMBER.

Buckingham Canal Division

Sanctioning a permanent toll establish-
ment of a clerk and a peon for the —.

22
929
24TH OCTOBER 1884, No. 2616 W., PUBLIC WORKS.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

General.
Establishment.

READ—the following letter from Colonel H. L. PRENDERGAST, R.E., Superintending Engineer, V Circle, to the Chief Engineer for Irrigation, dated Chepāk, 6th October 1884, No. 2584 :—

In June 1880, when reductions were made in the toll establishment of the Buckingham canal, consequent on the introduction of the revised rules, the establishment sanctioned for the Shadayancoppam lock was—a superintendent with an assistant, a cashier with an assistant, a head lascar and six lascars. The total cost of this establishment was Rs. 125 monthly. When the latest revised rules came into force the establishment was reduced, in G.O., No. 562 W., dated 20th February 1883, to a superintendent and four lascars on Rs. 41 monthly.

2. It is now found that this lock establishment is not equal to the work. The superintendent, in addition to his general duties, has to keep the register of traffic of boats coming into Madras, in order that the wharfage collection at Madras may be checked, and has also to see that all boats passing the lock from Madras have obtained wharf clearance tickets in Madras.

Boats from both directions arrive at the lock at uncertain times throughout the day and night, and it is not possible for one man to be perpetually on duty. An assistant to the superintendent is thus required; and as the four lascars are fully occupied in working the lock gates,—two during the day and two during the night,—an additional lascar is wanted when remittances have to be brought to the divisional office and in times of flood.

3. I have the honor to submit a statement showing an additional cost of Rs. 18-8-0 per mensem, and to request that the increase to the establishment may be sanctioned.

ENCLOSURE.

Statement of proposition for an increase of the Establishment at the Shadayancoppam Lock of the Buckingham Canal.

ORDER SANCTIONING PRESENT ESTABLISHMENT.	No.	Date.	Office to which proposition refers.	NATURE OF CHANGES.										PROPOSITION.			
				Present Scale.					Proposed Scale.					Permanent.		Temporary.	
				No.	Designation.	Minimum.	Increment.	Maximum.	Average or Fixed.	No.	Designation.	Minimum.	Increment.	Maximum.	Average or Fixed.	Increase per Month.	Period.

G.O. No. 562 W.	20th February 1883.	Shadayancoppam Lock office.	1	Toll-keeper	Rs. 7	..	..	..	Rs. 15	1	Toll-keeper	Rs. 10	..	..	Rs. 15	..	..
				2	Lascars at Rs. 7	..	..	..	Rs. 14	1	Assistant Toll-keeper	Rs. 10	..	..	Rs. 14	..	..
				2	Do. at " 6	..	..	..	Rs. 12	2	Lascars at Rs. 7	Rs. 10	..	..	Rs. 14	..	..
				2	Do. at " 6	..	..	..	Rs. 12	3	Do. at " 6	Rs. 10	..	..	Rs. 14	..	..
				Total ..		..	..	..	Rs. 41	Total ..		..	..	..	Rs. 59 1/2	..	..

CHERPÁK,
6th October 1884.(Signed) H. L. PRENDERGAST, Colonel, R.E.,
Superintending Engineer, V Circle.

Forwarded to the Chief Engineer, Public Works Department, with a recommendation that the proposed increase of establishment at the Shadayancoppam lock on the Buckingham canal may be sanctioned.

Ootacamund,
20th October 1884.(Signed) J. O. HASTED, Colonel, R.E.,
Chief Engineer for Irrigation.

ORDER—dated 24th October 1884, No. 2616 W., Public Works.

The proposed increase of establishment is sanctioned.

2. This sanction has been registered as Provincial No. 55 W. of 1884-85, and classified as "Establishment, Permanent."

(True Extract.)

(Signed) J. SHAW-STEWART, Colonel, R.E.,
Secretary to Govt., P.W.D.

To the Superintending Engineer, V Circle.
" Chief Engineer for Irrigation.
" Examiner, Public Works Accounts.

Exd. A. Grubert.
Spare Copies

GENERAL
ESTABLISHMENT.

Govt. of (1884) Madras
PUBLIC WORKS.

Dated October, 24th.

Recd.

Encl.

G.O., 24th Oct. 1884, No. 2616 W.

OCTOBER.

Establishment

Proposed increase of — at the Shadayan-
coppam lock on the Buckingham canal,
sanctioned.

10TH JANUARY 1885, No. 37 I., PUBLIC WORKS.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.

Read—the following paper :—

G.O., dated 16th December 1884, Mis. No. 2920, Financial.

Read—the following letter from the President, Municipal Commission, Madras, to the Chief Secretary to Government, dated 8th December 1884, No. 1624 :—

With reference to G.O., Mis. No. 2426, dated 14th October 1884, on G.O., No. 919 I., Public Works, dated 14th October 1884, I have the honor to inform you that the Commissioners are willing to transfer to Government the elephant gate wharf for Rs. 3,148-13-6, being the actual amount expended thereon *plus* the usual charge of 10 per cent. for supervision.

2. The receipts from the wharf at half the ordinary canal rates have been 10 per cent. on the outlay.

3. A copy of the resolution of the Commissioners is herewith enclosed.

4. No new wharf on the banks of the Kuam will be commenced without the special sanction of Government, as noted in paragraph 4 of the Chief Engineer's note.

5. The wharfage rates at the Trevelyan basin wharf will be raised to the Government tariff.

ENCLOSURE.

Resolution referred to.

That the wharf at the elephant gate bridge be transferred to Government on payment of the amount expended upon it including the usual 10 per cent. charged by the municipality for supervision.

Order—dated 16th December 1884, Mis. No. 2920, Financial.

Communicated to the Public Works Department, with reference to order in that department, dated 8th October 1884, No. 919 I.

(True Extract.)

(Signed) J. D. REES,
Under Secy. to Govt.

ORDER—dated 10th January 1885, No. 37 I., Public Works.

The Government approves of the purchase, from the Madras Municipality, of the elephant gate wharf for the sum of Rs. 3,149. The cost will be met from the amount reserved in G.O., No. 249 I., dated 4th March 1884, for unforeseen works on the Buckingham canal, which sum will then be reduced to Rs. 7,161.

2. This sanction has been registered as No. 183 I. of 1884-85, and classified as shown below:—

H. Public Works not classed as Productive.

44. Irrigation and Navigation Works for which Capital and Revenue Accounts are kept.

Capital.

I. Works.

Buckingham Canal.

(2) Main Canals and Branches.

I. Navigation Works.

Elephant gate wharf

...

...

...

...

...

...

...

...

RS.

3,149

3. The Superintending Engineer, V Circle, will suggest a reappropriation of funds from the current year's grant for works of the Buckingham canal for meeting the present payment.

4. The wharfage fees at the elephant gate bridge wharf, from the date of its transfer to Government, will of course be raised to the usual Government tariff.

(True Extract.)

(Signed)

J. O. HASTED, Colonel, R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Superintending Engineer, V Circle.
" Chief Engineer for Irrigation.
" Examiner, Public Works Accounts.
" Revenue Department.
" Financial "

25
928

IRRIGATION.

Govt. of (1885) Madras.

PUBLIC WORKS.

Dated January, 10th.

Recd.

Encl.

G.O., 10th Jan. 1885, No. 37 I.

JANUARY.

Elephant Gate Wharf

Orders sanctioning purchase, from the Madras Municipality, of the —.

No. 1193C

26/939
Superintending Engineer's Office
2nd Circle, Masulipatam
30th March 1885.

From

The Superintending Engineer,
2nd Circle.

S.

The Chief Engineer,
Public Works Department,
Madras.

Enclosure one

Sir,

I have the honor to forward herewith for your approval and sanction of Government, a "Statement of Proposition" for revision of Permanent Toll Establishment required in the Buckingham Canal Division.

2. The Shroff for Collecting wharfage fees at the Elephant gate bridge recently purchased, sanction for whose appointment is now applied for, has been entertained in anticipation of sanction from the forenoon of the 3rd February 1885.

3. A sum of Rs 50 has been received from the Shroff as security, and I

request you will be so good as to assign
your sanction for fixing the above amount.

I have the honor to be,

Sir,

Your most Obedt. Servant.

L. W. Russell
Superintending Engineer,
2nd Circle.

97
929

Chapelle
No 867D
9th April 85

To C
R. M. 18.
9. 4. 85

For check as
regards present
scale

C.S.

D.W.

7. 4. 85

From the Superintending Engineer
2nd Circle

To the Chief Engineer
R. W. D.
Madras



Dated 30th March 1885

Despd 31st do

Recd 6/4/85

Recd

No 119 B.C.

Buckingham Canal Division
Statement of proposition for
- sion of Permanent Toll Establi-
- ment required in the - Forward
for approval & sanction of Govt.

To

Enclosure to No 119 B.C. 1/30 March
1885 from S. B. 2^d Circle

Buckingham Canal Division

Statement of establishment required for collecting wharfage fees at the Elephant Gate wharf purchased from the Madras Municipality vide G.O. No 371 dated 10th January/15.

Order Sanctioning present Establishment		Date	Office to which the proposition refers.	Nature of change				Proposition		Remarks			
				Present scale		Proposed scale		Permanent			Temporary		
				No	Designation	Minimum	Maximum	Minimum	Maximum		Minimum	Maximum	Minimum
				No	Designation	Minimum	Maximum	Minimum	Maximum	Minimum	Maximum	Minimum	Maximum
5624.	20 th Feb/83			1	Wharf Lathi @ Rs 50	50	50	1	Wharf Lathi @ Rs 50	50	50		
2616	24 th Oct/84			1	clerk's clasp per grade	15	20	1	clerk's clasp per grade	20	17 1/2		
				2	Tall keepers @ Rs 15		30	2	Tall keepers @ Rs 15	15	12 1/2		
				1	Assistant Tall keeper	10	15	1	Assistant Tall keeper	35	35		
				2	Wharf flats @ Rs 14		35	2	Wharf flats @ Rs 14	28	28		
				4	Lascars @ Rs 7		28	4	Lascars @ Rs 7	66	66		
				11	Lascars @ Rs 6		66	11	Lascars @ Rs 6	30	25		
				1	clerk's clasp 3 rd grade	20	30	1	clerk's clasp 3 rd grade	15	17 1/2		
				1	clerk's clasp 5 th grade	15	20	1	clerk's clasp 5 th grade		6		
				1	Lascar		6	1	Lascar		8		
				1	Shroff				Shroff		8		
				300 28 1/2				308 29 1/2				8	

Buckingham Canal Division

Cam

1885

Superintendent

Medan - Kanchi
Executive Engineer
B.C. Division

[Form No. viii.]

GOVT.
OF MADRAS.]

1885.

[P. W.
DEPT.]

EXAMINER, P. W. ACCOUNTS.

Madras, 13 APRIL 1885.

OFFICE NOTE No. 20

To

W.

ENTRIES IN THE COLUMN 'PRESENT

SCALE' OF THE PROPOSITION STATEMENT

HEREWITH HAVE BEEN GULY CHECKED. IT

IS NOTICED THAT CALCULATION IN THE

CASE OF AVERAGE OR FIXED PAY HAS NOT

BEEN MADE AGREESABLY TO SECTION 43 (A)

OF THE ACTING ALLOWANCE CODE. THE

NECESSARY CORRECTION HAS BEEN MADE BY

THIS OFFICE.

KEEP WITH

Genl. No.

listed

188

C.

No 60562W. 20. 2. 83
 " 2184W. 4. 9. 84
 " 2708W. 26. 9. 83.
 " 2616W. 24. 10. 84
 " 37J. 10-1. 85.
 No 867J. 9-4. 85.

Recd 3352

Recd 464/85

P. W. 1885

$\frac{30}{929}$
 DEPARTMENT.

P. W. C. No. 3148.

The Supy. Ingr
II field

No. 119 B. C.

Dated 30th March 1885

Recd. 6th April 1885

SUBJECT.

Forwards for approval & sanction
 of Government Statement of
 proposition for revision of
 Permanent Toll Relabellment
 required in the Buckingham
 Canal Division

Disposal.

No 867 Day 9th April
To C

For Check as
 regards present
 Scale.

of C. B.

979W D.W.

Cu

16:4

G.O. No. 37 S of 10.1.85
 " 2616 W of 24.10.84
 " 2708 W of 26.9.83
 " 21821 W of 4.9.84
 " 562 W of 20.2.83

No 929 W

PUBLIC WORKS DEPARTMENT.

PROCEEDINGS OF THE MADRAS GOVERNMENT.

Under date the 20th April 1885.

Read the following

From the Suptg. Engineer II Circle. N. E. No. 119 B.C. of 30th March 1885
 Office note from the Examiner P.W. Accts. N. E. No. 28 of 13th April 1885.

The revised scale of Toll
 Reestablishment required for the
 Buckingham Canal Division is
 sanctioned, as proposed by the
 Superintending Engineer II Circle.

2. This sanction has been registered
 as Provincial No. 6 W of 1885-86, and
 classified as Reestablishment, Per-
 manent.

3. The security of Rs. 50 fixed for
 the shroff is approved.

To The Suptg. Engr. II Circle
 " Examiner P.W. Accounts
 " Chief Engineer for Irrigation

Cy.
 15-4-85

16.4.85

3352

Gobt. of (1885) Madras.
PUBLIC WORKS.

Dated

22/4/13

Recd.

Encl.

G.O., 20 April 1885, No. 929.

Buckingham Canal No.

Revised scale of
all establishment
in the — Sanctioned
Security of Rs 50 fixed
for the staff approved

60
~~4~~
4

sd
2/4

sd
2/4