

(1) Number of pages 12
(2) Date of repair 9. 3. 87
(3) Initials of the Referencer bna

TAMIL NADU ARCHIVES

GOVERNMENT OF TAMIL NADU

P. W. D. DEPARTMENT

S. C. S.

G.O. No.	1388	Press.
B.P. No.	W	Mis.
Dated 14-6-1880-197.		

Not to be folded or roughly handled

S. S.

1388

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

14th June 1880, No. 1,388 W.

Buildings and Roads.
Civil Works.

Read the following papers :—

No. 34. From Major H. M. VIBART, R.E., Acting Superintending Engineer, Third Circle, to the Chief Engineer, Public Works Department, dated Chepauk, 22nd December 1879, No. 7,457.

I HAVE the honor to forward statements of tests undertaken to ascertain the "load line" carrying capacity of boats as compared with their measured tonnage as prescribed by the rules in force for the navigation of the Buckingham Canal. These experiments have been carefully carried out by Mr. Sub-Engineer Ottmann, Executive Officer in charge of the canal. He was led to carry them out from observing that boats generally carried less than their measured tonnage.

2. I also beg to forward statements regarding the great disparity between the measurements of boats on the Buckingham Canal as compared with those on the Godavari and Kistna systems of navigation.

1st.—As regards the "load line capacity," experiments have been made as regards five different kinds of boats —

	No. tested.
Madras top boats	10
Do. cargo boats	5
Kistna and Godavari cargo boats	3
Do. do. passenger boats	3
Deck boats, barrel-shaped	4

By a reference to the statements it will be found that in only one class of boats does the registered tonnage agree with the tonnage capable of being carried up to load line. I enclose four sketches of boats in use on the canal, the one marked A being the Madras cargo boat above alluded to. In all the other descriptions in use the tonnage capable of being carried up to load line is greatly less than the registered tonnage. In the Madras top boats it is found to be nearly 24 per cent. less; in the Kistna and Godavari cargo boats about 30 per cent.; the Godavari and Kistna passenger boats nearly 32 per cent.; and the deck boats, barrel-shaped, actually 55 per cent. less.

3. To remedy this state of things I would recommend that the method of measurement should remain as it is, but that to each class of boats a co-efficient should

be applied which would reduce the measured tonnage to that capable of being carried up to load line.

Thus I would propose the co-efficients to be—

For Madras cargo boats	Unity.
For do. top do.	76
For Kistna and Godavari cargo boats	70
For do. do. passenger boats	68
For deck barrel-shaped boats	45

4. Next as to the Buckingham Canal measurements as compared with those taken in Godavari and Kistna, 110 cases are given in the statement now submitted. Of these, ten are rahadari boats. The difference is found to be greatest in these owing to measurements being taken (in the Godavari and Kistna) to the top of the upper deck instead of to gunwale. The depth of vessel should, it seems to me, most certainly be taken from the gunwale and not the top of the upper deck, which is merely put up for a protection to goods and passengers.

The aggregate tonnage of these ten boats in the original registry came to 558 tons, whereas the present tonnage, according to Buckingham Canal Rules, is only 206, and if the co-efficient proposed was introduced (viz., '68), it would only amount to 140, or an average of about 14 tons each boat.

The cargo boats given in the list number 96; the aggregate tonnage of these originally was set down at 2,730, whereas, according to Buckingham Canal Rules, it is 2,058 only, and if the co-efficient proposed be applied, it will be further reduced to 1,440.6, or only to an average of 15 tons per boat.

There are only four top boats in the list. The aggregate tonnage of the four having previously been 48 tons, is now 40 tons, an average of 10 tons in place of 12 for each boat.

In the list sent in there are two boats about which there appears to be some mistake. Mr. Ottmann being away I am unable to be sure on this point, but the two boats I allude to are marked in the list with an asterisk—

No. 1,672, cargo boat.

„ 1,793, top boat.

The original tonnage in both these cases is set down as less than the present tonnage under Buckingham Canal Rules. I am inclined to think these must be clerical errors.

5. In conclusion I have the honor to request you will be good enough to inform what steps should be taken to remedy the two serious matters that are brought to light in this letter.

THIRD CLASS.

STATEMENT showing the former and present Tonnage of Boats plying on the Buckingham Canal.

Boat No.	Description of Boat.	Tonnage as per original Registry.	Present Tonnage as per Buckingham Canal Rules.	Remarks.
1,905	Rahadari boat	50	19	These boats, which belong to Kistna and Godavari Canals, were measured there to top of deck over gunwale some 3 feet 9 inches, consequently the great disparity between former and present tonnage.
2,023	Do.	60	22	
1,845	Do.	67	25	
1,848	Do.	49	15	
1,856	Do.	43	15	
2,028	Do.	60	20	
1,895	Do.	49	19	

Statement showing the former and present Tonnage of Boats, &c.—cont.

Boat Number.	Description of Boat.	Tonnage as per original Registry.	Present Tonnage as per Buckingham Canal Rules.	Remarks.
1,878	Rahadari boat	77	29	These boats, which belong to Kistna and Godavari Canals, were there measured to top of deck over gunwale some 3 feet, consequently the great disparity between former and present tonnage.
1,860	Do.	51	21	
2,046	Do.	52	21	
10		558	206	
1,206	Cargo boat	42	31	
1,633	Do.	25	22	
1,457	Do.	23	20	
1,401	Do.	19	16	
1,389	Do.	19	16	
1,692	Do.	33	29	
1,148	Do.	28	23	
1,672	Do.	9	12	
632	Do.	25	20	
1,066	Do.	25	21	
1,520	Do.	23	19	
1,176	Do.	36	27	
910	Do.	26	20	
857	Do.	33	24	
1,327	Do.	19	14	
1,452	Do.	17	13	
1,099	Do.	38	28	
923	Do.	32	24	
1,458	Do.	36	27	
1,324	Do.	28	21	
1,037	Do.	36	27	
1,445	Do.	37	25	
1,311	Do.	39	27	
1,474	Do.	20	16	
1,578	Do.	18	15	
1,231	Do.	16	11	
888	Do.	17	14	
1,189	Do.	40	28	
1,192	Do.	40	29	
1,408	Do.	20	16	
1,038	Do.	36	23	
1,380	Do.	31	24	
1,201	Do.	34	23	
1,313	Do.	36	25	
1,146	Do.	35	26	
1,027	Do.	37	27	
1,224	Do.	34	26	
1,059	Do.	35	25	
1,409	Do.	37	25	
884	Do.	32	21	
1,546	Do.	32	27	
999	Do.	33	24	
949	Do.	27	22	
1,368	Do.	36	25	
1,219	Do.	30	22	
1,376	Do.	30	23	
1,102	Do.	34	25	
1,281	Do.	40	27	
1,239	Do.	29	21	
1,040	Do.	36	25	
1,888	Do.	15	12	
955	Do.	32	23	

Statement showing the former and present Tonnage of Boats, &c.—cont.

Boat Number.	Description of Boat.	Tonnage as per original Registry.	Present Tonnage as per Buckingham Canal Rules.	Remarks.
1,181	Cargo boat ...	40	28	
1,547	Do. ...	34	28	
1,125	Do. ...	36	26	
1,120	Do. ...	33	25	
1,283	Do. ...	37	26	
1,207	Do. ...	40	30	
1,600	Do. ...	31	27	
1,014	Do. ...	30	22	
1,391	Do. ...	18	14	
1,461	Do. ...	25	21	
1,913	Do. ...	31	22	
976	Do. ...	21	17	
1,079	Do. ...	24	18	
1,147	Do. ...	20	15	
1,388	Do. ...	25	19	
1,033	Do. ...	33	23	
1,357	Do. ...	30	22	
1,435	Do. ...	38	29	
973	Do. ...	28	22	
1,977	Do. ...	39	29	
1,430	Do. ...	33	25	
2,005	Do. ...	35	26	
1,611	Do. ...	38	30	
1,241	Do. ...	15	11	
1,234	Do. ...	20	15	
1,392	Do. ...	16	13	
1,545	Do. ...	35	29	
2,001	Do. ...	33	26	
1,293	Do. ...	39	27	
1,463	Do. ...	19	16	
1,259	Do. ...	20	15	
1,212	Do. ...	20	13	
1,226	Do. ...	19	14	
1,377	Do. ...	19	15	
1,006	Do. ...	17	14	
1,188	Do. ...	19	15	
1,237	Do. ...	21	16	
1,198	Do. ...	31	21	
1,144	Do. ...	20	16	
1,065	Do. ...	22	18	
1,115	Do. ...	19	16	
1,264	Do. ...	22	16	
1,295	Do. ...	24	17	
1,204	Do. ...	21	15	
96		2,730	2,058	
* 1,793	Top boat ...	6	9	
1,949	Do. ...	17	13	
2,025	Do. ...	11	8	
1,987	Do. ...	14	10	
4		48	40	

CHEPAUK,
20th December 1879.

(Signed) H. M. VIBART, Major, R.E.,
Ag. Supg Engineer, Third Circle.

THIRD CIRCLE.

STATEMENT of the Result of Experiments to test "Load Line" carrying capacities of Boats as compared with measured Tonnage as per Buckingham Canal Rules.

Boat Number.	Description of Boat.	Extreme Length.	Extreme Breadth.	Midship Depth.	Registered Tonnage.	Draught or Load Line marked.	Tonnage capable of being carried up to Load Line.	Draught above the Load Line if the full tonnage of the boat is shipped.	Entire draught required to load the registered tonnage of Column 6.	Remarks.
1,525 } C./21 1,742 1,766 1,682 2,000 C./155 1,979 1,734 C./32 1,998 1,987 2,038	Madras top boat.	FT. IN. 35 6 6 11 35 3 6 10 33 12 7 2 38 6 7 0 40 9 6 11 42 6 6 11 42 6 7 7 43 9 7 4 46 3 6 11 42 9 7 6	FT. IN. 2 5 2 6 2 6 2 6 2 8 2 9 2 6 2 10 2 11 2 11	FT. IN. 6 1 5 6 1 6 7 1 8 7 1 6 8 1 8 8 1 9 9 1 6 9 1 10 10 1 11 10 1 11	FT. IN. 4 1/2 4 1/2 4 1/2 4 1/2 6 6 1/2 5 1/2 7 9 1/2 8	FT. IN. 0 5 0 5 0 5 1/2 0 7 0 5 0 4 0 7 0 6 0 1 1/2 0 7	FT. IN. 1 10 1 11 1 11 1/2 2 1 2 1 2 1 2 1 1/2 2 4 2 1 2 6			
2,001 } 1,357 } C./262 } 1,311 } 1,412 } 1,146 } C./338 }	Madras cargo boat.	54 3 12 8 56 3 11 11 57 9 13 0 47 3 11 8 56 3 12 3	3 7 1/2 3 4 3 6 3 5 1/2 3 5 1/2	25 22 27 22 26	2 6 2 4 2 6 2 5 1/2 2 5 1/2	26 22 27 22 26				
K. 1,986 } M. 1,948 } K. 2,006 } M. 1,977 } K. 1,557 } M. 2,093 }	Kistna and Godavari cargo boat.	29 7 6 1 40 11 7 8 33 0 6 1	2 10 3 6 3 0	9 19 10	1 10 2 6 2 0	7 12 1/2 7	0 6 0 8 0 8	2 4 3 2 2 8		
C./5 } 1,847 } 1,678 } F./45 } 1,860 } F./6 }	Kistna and Godavari passenger boat.	68 3 9 6 66 3 9 6 58 6 8 10	3 10 1/2 3 8 3 4	27 29 21	2 6 2 6 2 6	17 22 1/2 13	0 7 0 10 ..	3 1 3 4 ..		
K. 204 } M. 2,097 } K. 2,210 } M. 2,088 } K. 2,142 } M. 2,094 } K. 2,301 } M. 2,099 }	Duck boats, barrel-shaped.	27 4 7 7 38 4 7 8 32 2 8 0 34 0 8 2	3 11 1/2 5 6 4 4 5 3	12 28 16 25	2 6 2 6 2 6 2 6	6 1/2 10 1/2 9 1/2 9 1/2				

In the case of all these boats the midship depth of which does not allow of 1 foot clear height of gunwale above water level, the load line has been marked 1 foot below gunwale without reference to the 2 1/2 feet draught of the rules, as it has been frequently seen that boats loaded lower in the water too frequently sink in the open parts of the lake in adverse winds or if there is much of a swell. These boats could not be tested above the "load line," as they were very leaky and one of them broken up.

CHEPAUK,
21st December 1879.

(Signed) H. M. VIBART, Major, R.E.,
Ag. Supg. Engr., Third Circle.

No. 34-A. From Major H. M. VIBART, R.E., Acting Superintending Engineer, Third Circle, to the Chief Engineer, Public Works Department, dated Chepauk, 24th December 1879, No. 7,527.

In continuation of my letter, No. 7,457, dated 22nd December 1879, I have the honor to enclose copy of a further statement submitted by the Executive Officer, Buckingham Canal Division, showing the former and present tonnage of boats plying on the canal as ascertained from 26th November to 11th December 1879.

No. 4.—Statement showing the former and present Tonnage of Boats plying on the Buckingham Canal.

Boat Number.	Description of Boat.	Tonnage as per original Registry.	Present Tonnage as per Buckingham Canal Rules.	Remarks.
1,414	Cargo boat ...	28	23	
1,100	Do. ...	19	15	
1,092	Do. ...	38	27	
1,122	Do. ...	35	25	
969	Do. ...	29	23	
1,774	Do. ...	32	27	
980	Do. ...	35	24	
1,078	Do. ...	37	27	
1,228	Do. ...	20	14	
1,243	Do. ...	23	15	
1,296	Do. ...	23	17	
1,054	Do. ...	30	23	
1,517	Do. ...	23	19	
1,516	Do. ...	23	20	
1,055	Do. ...	26	19	
1,173	Do. ...	31	22	
1,126	Do. ...	32	25	
1,287	Do. ...	38	26	
865	Do. ...	27	20	
1,268	Do. ...	20	14	
1,184	Do. ...	30	20	
1,410	Do. ...	25	19	
1,242	Do. ...	33	23	
1,494	Do. ...	24	20	
1,052	Do. ...	20	15	
1,090	Do. ...	29	21	
854	Do. ...	23	18	
1,075	Do. ...	26	20	
985	Do. ...	31	22	
838	Do. ...	30	22	
1,091	Do. ...	30	22	
1,191	Do. ...	35	23	
1,612	Do. ...	30	27	
1,072	Do. ...	28	22	
1,108	Do. ...	31	23	
1,232	Do. ...	16	12	
1,029	Do. ...	32	23	
1,413	Do. ...	18	14	
1,383	Do. ...	21	17	
1,223	Do. ...	30	22	
1,539	Do. ...	25	22	
1,568	Do. ...	26	21	
1,276	Do. ...	21	17	
1,297	Do. ...	21	17	
1,314	Do. ...	26	20	
1,447	Do. ...	18	13	
1,056	Do. ...	28	22	
1,110	Do. ...	18	11	
1,026	Do. ...	23	19	
1,467	Do. ...	25	20	
495	Do. ...	32	23	
981	Do. ...	30	24	
1,499	Do. ...	24	20	
821	Do. ...	32	23	
1,369	Do. ...	32	24	
1,398	Do. ...	18	14	
1,015	Do. ...	31	23	

No. 4.—Statement showing the former and present Tonnage of Boats, &c.—*cont.*

Boat Number.	Description of Boat.	Tonnage as per original Registry.	Present Tonnage as per Buckingham Canal Rules.	Remarks.
1,696	Top boat ...	5	8	These boats, which belong to Kistna and Godavari Canals, were there measured to top of deck over gunwale some 3 feet 9 inches, consequently the great disparity between former and present tonnage.
1,844	Dingu boat ...	28	21	
1,846	Rahadari boat ...	67	22	
1,885	Do. ...	68	24	

In the cases where difference is 2 tons and under, those boats are not brought on the statement.

PEDDA GANJAM,
17th December 1879.

(Signed) S. OTTMANN,
Executive Officer in charge,
Buckingham Canal Division.

No. 34-B. From Captain A. AWDRY, R.E., Superintendent of Works, Buckingham Canal, to the Chief Engineer, Public Works Department, dated Madras, 28th February 1880, No. 3,962.

WITH reference to your No. 4,003 of yesterday's date, I have the honor to inform you that the measurements of the boats did not in my opinion extend over a sufficient number of boats to make it advisable to assume a co-efficient on the data collected. I am therefore having some more boats of each class measured and will report the result at an early date.

No. 34-C. From the same Officer, dated Chepauk, 13th May 1880, No. 478.

I HAVE the honor, with reference to your No. 4,003 of the 27th December, to inform you that as I did not consider enough boats had been tested to obtain a true co-efficient for application to the registered tonnage arrived at under the rules for the canal, I ordered Mr. Ottmann to test more boats of each class so as to bring the number tested of each kind up to at least twenty.

2. The testing has been going on for some time, but there has been great difficulty in obtaining some classes of the boats for the purpose, so the full number has not even yet been tried for two classes of boats; as however I have received further calls from your office for my report, I can no longer delay it, but must submit it on the data already collected.

3. In regard to the "Madras cargo boat," only five had originally been experimented on, so fifteen more had to be; these have now been tested, and it is found that the twenty boats taken together will in reality carry (when loaded to a load line not more than 2½ feet above the lowest point of the bottom nor less than 1 foot below gunwale) an actual gross load of 461 tons, against 421 tons as arrived at by the canal rules. From this it appears that the co-efficient to be applied to the calculation by rule of this class of boat is 1.09, but I do not recommend the application of a co-efficient to enhance the tonnage already laid down by the rules: it would rather be preferable to mark the load line on this class of boat with a 13-inch free board as they are open boats; however I am inclined to keep the 12-inch free board and let the boatmen take the risk of sinking if they carry the registered load, as there is little or no danger to life, but only to property, in over-loading.

4. Of the "Madras top boats," ten were tested before and ten more have now been tested. The results of the first testing gave 80 tons registered against 61 tons which could actually be carried by the boats if they are to have a free board of 1 foot; none of these boats were over 2 feet 11½ inches in maximum depth; so allowing 1 foot free board, none of them have nearly the maximum draught of 2½ feet allowed by the rules; the shape of these boats in section is much more curved below than above, so that each inch of extra draught makes a very considerable difference in a boat's carrying capacity. The boat-builders are now building these boats deeper than formerly, so that of the ten boats recently tested four (like the "cargo boats") can carry as much as or more than the registered tonnage, the result of the ten boats being that the four largest ones registered at 38 tons will carry 38½ tons, while six smaller boats registered at 42 tons will only carry 33 tons. I therefore recommend that, in view to encourage the boatmen to incur the slight extra expense of the addition of a higher free board which will make their boats much safer and better, the rule should be admitted as correct for all top boats and 1 foot of free board allowed in marking the load line. The total number of top boats tested is 20, giving a registered tonnage of 161 tons, but an actual of 132½ tons, so that if any reduction is to be made and the free board kept at 1 foot the co-efficient for top boats should be .82; however, as stated above, I do not recommend the application of a co-efficient to the registered tonnage of these boats, and I believe that the free boards of all will soon be raised.

5. There has been difficulty in obtaining "Kistna and Godavari passenger boats" (rahadari boats) and "decked (barrel-shaped) cargo boats;" only fifteen of the former have been tested and ten of the latter, but the "barrel-shaped boats" are (when the depth is measured to the gunwale instead of to the highest point on the curved deck) so like the "Kistna and Godavari cargo boats" that a fair co-efficient can probably be obtained for. Of the cargo boats, seven extra boats, making 27 in all, have been measured.

6. The "Kistna and Godavari cargo boats" results are that 27 boats registered to carry 477 tons can carry (when drawing 2½ feet of water) 382½ tons, giving a co-efficient of .8 to be applied to the registered tonnage as arrived at by the rules.

7. The fifteen "Rahadari boats" tested gave an aggregate tonnage of 235½ tons, but they are registered at 333 tons; these boats are not very deep and carry a large number of passengers, so the free board should not be cut lower than 12 inches when marking the load line. The co-efficient for these boats is .7.

8. The ten "barrel-shaped boats" show a registered tonnage of 201 tons, but the measurement for depth should, I think, not be taken into the upward curved of the deck, but should only be taken as high as the underside of the deck at the gunwale. The carrying power of these boats to load line is only 117¾ tons. I think that they should be measured in the manner stated above, and have the same co-efficient of .8 applied to them as is used for the "Kistna and Godavari cargo boats."

9. In conclusion I have the honor to recommend that it should be laid down that the load line should, besides being not more than 2½ feet above the bottom of the boat, be not less than 1 foot below the lowest point in the gunwale, and that for measurement of depth of decked boats the distance of the underside of the deck planking at the gunwale be taken from the upper surface of the limber strake. For Madras "cargo" and "top boats" the measurements as now made may be assumed to be correct, while for all classes of Kistna and Godavari boats (which being intended for deeper water have more curve at the bottom than the Madras boats) a co-efficient of .8 be applied to the measurements arrived at by rule.

10. I have also the honor to request instructions as to whether Government would wish action to be taken to prevent boats passing along the canal loaded beyond their load lines, or whether they may be allowed to pass and take the risk of sticking on the bottom if of deep draught, or being swamped if of too low free board? I have at the same time the honor to inform you that I should prefer not to have to allow Toll Superintendents and others to harass boatmen by any restriction of depth of draught or free board being laid down.

11. The question as to payment for licenses for budgerows was raised by me in my Nos. 4075 of 10th March and 4253 of 22nd March, and referred back with your Nos. 851 of 15th March and 1,103 of 13th ultimo for further information, so the matter may well be brought forward now while I am addressing you about the rules. I would propose that Rule X of the Kistna and Godavari Navigation Rules published in G.O., No. 481 L, of the 1st September 1879, be made applicable to the case of vessels (such as budgerows) not plying for hire, and that the license for them should extend throughout the whole Buckingham Canal, but that in the case of vessels (such as budgerows) plying for hire the Kistna and Godavari Rule VII for "first-class vessels" be made applicable, the license of Rs. 4 per ton being a license for the whole Buckingham Canal, and not for only one section of it.

12. I have the honor to return the file of papers forwarded to me with your No. 4,003 of the 27th December, together with a statement showing the particulars of all the boats which have been tested.

No. 34-D. From Captain A. AWDRY, R.E., Superintendent of Works, Buckingham Canal, to the Chief Engineer, Public Works Department, dated 1st June 1880, No. 705.

WITH reference to the note by His Grace, dated 20th ultimo, on the tonnage and load line question, forwarded for modification of my No. 478 of 13th ultimo, I have the honor to offer the following observations.

2. With regard to the tonnage which boats can safely carry, it will be necessary for Government to decide on the amount of free board to be allowed in calculation of the tonnage, for in closed reaches of the canal in calm weather a boat will be perfectly safe with 6 inches of free board, while the same boat would not be taken across an open reach of the canal in a high wind with 2 feet of free board. One foot is, I think, a fair minimum free board to allow; the boatmen themselves can judge whether if they have left less it will be safe for them to travel in the weather at the time.

3. If a free board of 12 inches is decided on by Government, the measurements of boats already made will be correct according to the rules, for in taking the depth for the calculation of their tonnage a free board of 12 inches has been allowed. I gather from His Grace's note that my paragraph 10 is generally approved of, but that the right to punish a boat which sinks or sticks and obstructs traffic from having too small a free board or being over-loaded should be retained, but only enforced by authority superior to the Toll Superintendents.

4. Dangerous over-crowding of passengers would, under all circumstances, be dealt with according to rule at once.

5. With regard to the co-efficients to be applied, I cannot say that I am satisfied that in every case there will be no hardship; they are arrived at by striking averages, and in the nature of averages some boats will carry more and some less. The cases pointed out by His Grace would not be covered by the co-efficients, although taking the average the co-efficient is the correct one.

6. The course which I have the honor to suggest (instead of using co-efficients) as being absolutely fair is as follows:—

(1.) The registered tonnage to be, as now, arrived at by the calculation in the rules, the free board being 12 inches, and no co-efficient being applied.

(2.) Arrangements to be made for actually testing by weights the capacity to

		A. P.
* Cost	Rs. 638.17	= 7 8 per ton.
Tonnage	1,329	
Alteration of painting of boat, say	0 4	
	Total .. 8 0	

load line of any boat brought for the purpose to the basin, a fee of 8 annas per actual ton carrying capacity arrived at being charged. (This fee has been suggested as being the actual cost* of the testing done already.)

- (3.) The boat to be entitled to a refund of surplus license fee and extra tolls paid for it during the calendar year in which it was tested, *i.e.*, back to the commencement of the period of the license under which it is then plying.

This method appears to me to have the merit of absolute fairness and justice, and with the diversity of build and carrying capacity even in boats of the same class affords, as far as I can see, the only really satisfactory solution of the difficulty.

7. Where such has not already been done, all boats which have been tested will at once have extra tolls and license fees refunded to them back to the commencement of the license period in which they were tested, but many refunds have already been made.

No. 35. ORDER THEREON, 14th June 1880, No. 1,388 W.

THE proposal to fix 12 inches as a minimum free board and the suggestions made in the 6th paragraph of the last of the letters above recorded are approved.

2. The fee should be remitted if the boat proves to have been over-measured.
3. The remarks made in the 10th paragraph of the letter of the 13th May, No. 478, are also generally concurred in. Where it is desirable to punish boat-owners for over-loading, or allowing too small a free board, the necessary action must be taken by competent authority.
4. Revised draft rules should be submitted by the Superintendent for publication.

(True Extract.)

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

To the Superintendent of Works, Buckingham Canal.

Exd. A. F. Goodall,
Spare Copies

1388/6

BUILDINGS AND ROAD
CIVIL WORKS.

Govt. of (1880) Madras.

PUBLIC WORKS.

To

THE SUPERINTENDENT OF WORKS,
BUCKINGHAM CANAL.

Dated June, 14th.

Issued

Recd.

Encl.

G. O., 14th June 1880, No. 1,388 W.

JUNE.

Nos. 20-21.

*Tonnage and Load Line of Boats on the
Buckingham Canal.—Passing orders on
letters from the Superintendent of Works
regarding the —.*