Public Works (1898) Department.

G.O., No. 2150. W

DATED 24 August 98

[Despatch Abstract.] Engineer's Plant Rate List, Class B ——— (enclosing Delhi Tools) for 1899: Circular from the Director of Ry: Construction forwarding Copies of ——— Memorandum. Communicated to

9

Indexed 24/8

[P. W. 15. 1,000—23-6-98.]

BACK PAPERS.

G.O.	No.	Department.	Date.	G.O.	No.	Department.	Date.

FURTHER PAPERS.

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Public works (1898) Department.

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Govt Actuary

From The Director of Railway Construction.

Cir No. 6.

Dated 4.7.98

Received 8.8.98

Registered

Enclosures 1 (60 s.c)

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SUBJECT.

Rate list, class B, "Engineer's Plant" (excluding Jetty Tools) for 1899

Forwarding a copy of ←.

0.L.5302 W/9

BACK PAPERS.

G.O.	No.	Department.	Date.
	2267 W. dated 18-8-97 2670 W dated 19-9-96		

FURTHER PAPERS.

G.O.	No.	Department.	Date.

Enclosure to Director of Railway Construction's Circular No. 6 of 1898.

RATE LIST.

CLASS B.

ENGINEERS' PLANT (EXCLUDING PETTY TOOLS).

FOR 1897.

G. C. Press, Simla.—No. 1465 P. W. D.—9-7-98.—50.

Enclosure to Director of Railway Construction's Circular No. 6 of 1898.

Statement showing the average rate per ton for entire sea-freight on Class B Stores imported from England to the several ports during 1897.

Class of stores.	Kurrachee.		Bombay.		Coconada, Vizagapatam, or Madras.		Calcutta.		Rangoon.		Remarks.
	s.	*d.*	*s.*	*d.*	*s.*	*d.*	*s.*	*d.*	*s.*	*d.*	
Class B, "Engineers' Plant" (excluding petty tools).	22	6	*Nil.*		35	6	25	6	25	0	67 shillings average for Boilers, Engines and Heavy Machines.

CLASS OF STORES B.—ENGINEERS' PLANT (EXCLUDING PETTY TOOLS).

Contracted for in 1897.

Contract number and date.	Articles.	Details.	Rate—Free on board. Amount. £ s. d.	Unit.	For what railway.	Remarks.
71/816 — 19-6-97 ...	Colliery plant. Condensers...	Floyd's patent, each with bend and blow through valve for Floyd's Tangyes patent "special" steam pumps, 12" steam cylinder, 6" water cylinder, maker's number 18220.	10 5 0	Each.	Umaria Colliery.	
73/24 — 6-8-97 ...	Hose ...	Flexible, steam, internal diameter spiral 1¼", flanged, to suit No. 6 pulsometer, in lengths of 25 feet each with clips and flange.	0 3 8	Foot.		Extra for fittings £8.
72/153 — 9-7-97 ...	Kibbles ...	Or sinking buckets, capacity to be 75 gallons made of wrought iron coated with red oxide of iron paint.	3 17 6	Each.		
71/157 — 11-6-97 ...	Pump, *feed* ...	For multitubular boilers	84 10 0	Each.		
68/315 — 24-3-97	Pulley clips	Fowler's patent, six feet diameter, complete with clips and one brake ring.	56 10 0	Each.	North-Western.	Dandot Colliery.
		Clips for ditto	9 0 0	Set.		
71/163 — 11-6-97 ...	Rail-bender...	"Vojaecks" patent for pit rails, suitable for bending steel rails of Vignoles section weighing 18 lbs. per yard.	12 0 0	Each	Umaria Colliery.	

CLASS OF STORES B.—ENGINEERS' PLANT (EXCLUDING PETTY TOOLS)—*continued.*

Contracted for in 1897.

Contracted number and date	Articles.	Details.	Rate—Free on board. Amount.	Unit.	For what railway.	Remarks.
	Colliery Plant—*concld.*		£ s. d.			
73/141 — 18-8-97	Rollers ...	Friction horizontal, of best cast steel with mild steel spindles, each roller complete with 2 cast steel pedestals and bolts for work on the Bhaganwala colliery incline.	0 16 9	Each.	North-Western.	
71/70 — 9-6-97	Screen, revolving	Circular with shaft level wheel and pinion complete for Robinson's washers.	47 5 0	Each.	Umaria Colliery.	
71/368 — 23-6-97	Wheel and axles.	Cast steel for pit tubs 1' 6" gauge × 10" diameter and 1½" round, wrought iron axles	0 9 9	Per pair.	Umaria Colliery.	
72/92 — 6-7-97		For mining wagons	0 7 6	„	Warora Colliery ...	
68/359 — 23-6-97	Disintegrator.	Carter's No. 2½ size (without portable stand) fitted with chilled iron ratchet linings, self lubricating bearings and one special end door, 4 pair of cast iron screens (1½ pair of $\frac{1}{2\frac{1}{2}}$" mesh, 1½ pair of $\frac{1}{16}$" mesh, and one pair of ⅛" mesh) 1 extra set of beaters, 1 spanner.	40 0 0	Each.	Oudh and Rohilkhand.	
		Spare parts of— Automatic worm feed and 3 step pulleys	12 0 0	„		
		Dust balloon 6' diameter	1 15 0	„		
74/77 — 7-9-97	Diving gear ...	*Liebe and Gorman's spare parts of*— Diving dress, waterproof, double tanned twill	0 5 5	Each.	East Coast.	Godavari Bridge.
		Flannel caps	0 1 6	„		
		„ drawers	0 4 6	Pair.		
		Guernsey facks, white	0 5 2	Each.		
		Life line	0 3 4	100 Fathoms		
		Navy duck over-all of canvas, for wearing over diving dress.	0 14 0	Each.		
		Prepared canvas for repairs	0 5 0	Sq. yard.		
		Solution for repairs in cans of 1 lb. each...	0 2 9	Can.		
		Vulcanized tubing with gunmetal union joints in lengths of 100 feet each ...	9 4 0	Each.		
		Yarn hose (worsted stocking) ...	0 2 4	Pair.		
72/141 — 8-7-97	Engines and boilers...	With suitable pumps, double barrel, and either single or double acting with a plunger speed not exceeding 60 feet per minute, each capable of delivering 3,000 gallons of water per hour.	277 7 6	Each	Mari-Attock.	
		With suitable pumps, double barrel, and either single or double acting with a plunger speed not exceeding 60 feet per minute, each capable of delivering 4,000 gallons of water per hour.	211 7 6	„		

CLASS OF STORES B.—ENGINEERS' PLANT (EXCLUDING PETTY TOOLS)—*continued.*

Contracted for in 1897.

Contract number and date.	Articles.	Details.	Rate- Free on board. Amount.	Rate- Free on board. Unit.	For what railway.	Remarks.
			£ s. d.			
71 / 374 — 24-6-97 ...	Ropes—*contd.*	Flexible steel wire, 6 strands, each, 12 wires, 2″ circumference weighing about 2½ lb. per fathom with breaking strain of 7 tons; to be used as a running rope to haul the moving load across the cable, working speed not to exceed 400 feet per minute.	2 10 0	Cwt.	Mari-Attock ...	*Wooden reels and packing £1 extra.* Weight of rope about 9½ cwt.
73 / 172 — 20-8-97 ...		Wire, steel, Lang's lay, in coils of 260 fathoms, 3″ circumference, number of strands 6, number of wires in each strand 11. Diameter of outer wires ·098 diameter of inner wires ·057. Breaking strain of wire in lbs. outer wires 1850, inner strain of wire in lbs. 520. Number of twists each wire wall stand without breaking in length of 6″ outer wires 24 inner in a length of 6″ wires 45 breaking strain of each strand 15,030 lbs. weight per fathom of rope 11 lbs.	2 7 6	,,	Dandot and Bhaganwala Collieries, North-Western Railway.	Weight of 1 rope=1·27 tons.
		Wire, steel, Lang's lay, 1¾″ circumference, in coils of 350 fathoms without splice and guaranteed for a breaking strain of not less than 10½ tons.	1 14 0	,,		Weight of rope about 10¼ cwt.
74 / 340 — 25-9-97 ...	Ropes—*concld.* ...	Wire, steel, Bullivants flexible; in coils of 124 fathoms, 2¼″ circumference, number of strands 6, number of wires in each strand 19. Diameter of each wire in inches ·045. Breaking strain of each wire in lbs. 325. Number of twists each wire will stand without breaking in a length of 6 inches 40. Number of twists per foot of strand 5. Number of twists per foot of finished rope 1⅘. Breaking strain of each strand in lbs. 5300. Weight per fathom of rope in lbs. 5.	2 10 0	Cwt.	North-Western.	*Reels and packing extra. Weight of rope about 6¼ cwt.*
66 / 309 — 25-1-97 ...	Steamers ...	*Spare gear for—* Combined steam and hand steering gear for A class steamers 189 feet long *vide*., Appendix A.	129 0 0	Each.	Eastern Bengal.	
		Combined steam and hand steering gear for B class steamers 151 feet long, *vide* appendix A.	147 10 0	,,		
76 / 39 — 4-11-97 ...		One cover, cylinder, back, for high pressure cylinder complete, one cover, cylinder, back, for low pressure cylinder complete, one piston rod high pressure, one piston rod low pressure, one piston head high pressure complete, one piston head low pressure. 632 Condenser tubes ⅝″ external diameter No 19 I. W. G., 47 plain boiler tubes 3½″ external diameter No. 10 I. W. G., and 10 boiler tubes (stay) 3¼″ external diameter, swelled at both ends and screwed 9 threads per inch No. 9 I. W. G.	285 10 0	Lot.	East Coast,	

CLASS OF STORES B.—ENGINEERS' PLANT (EXCLUDING PETTY TOOLS)—*continued.*

Contracted for in 1897.

Contract number and date.	Articles.	Details.	Rate—Free on board. Amount.	Unit.	For what railway.	Remarks.
			£ s. d.			
69/186 14-4-97 ...	Forges	Portable, direct acting. "Allday's patent" "Climax" A-326 with Root's blowers, complete.	13 10 0	Each.	Eastern Bengal.	
75/296 26-10-97		Portable "Climax" with hearth plates 23" diameter and direct acting blowers ...	12 0 0	"	North-Western.	
69/79 6-4-97 ...	Injectors ...	Gunmetal, Gresham's patent—				
		4 M. M.	3 7 6	Each	Eastern Bengal.	
		3 M. M.	2 12 6	"	"	
70/148 13-5-97 ...	Jacks ...	Combined, Haley's, and traversing, to lift 10 tons with ratchets complete.	8 5 0	Each	Eastern Bengal.	
75/277 23-10-97...		Screw, lifting and traversing, 20 tons with levers and ratchets, steel cylinder, screw and angles, and with gunmetal nuts ...	6 10 0	"	East Coast.	
69/418 30-4-97...	Oars	Ashwood—				
		12 feet long	0 5 6	Each	Eastern Bengal.	
		14 feet long	0 6 5	"		
69/174 10-4-97	Pumps	Double cylinder, hand power, with suction and delivery pipes, &c., &c., complete, 2 fly wheels, barrels $3\frac{1}{2}$", 8" stroke and capable of delivering 1,000 gallons of water per hour.	26 13 6	"	Eastern Bengal ...	Mymensing-Jamalpur Extension.
71/110 9-6-97		Double cylinder, hand power, with suction and delivery pipes, &c., complete, 2 fly wheels, barrels $3\frac{1}{2}$", 8" stroke and capable of delivering 1,000 gallons of water per hour. Each pump is supplied with the following piping 50 feet of $2\frac{1}{4}$" bore galvanized lap welded wrought iron suction pipe with flanges and strainer, 75 feet of $2\frac{1}{4}$" bore galvanized lap welded wrought iron delivery pipe with flanges, and 4 wrought iron elbows with flanges to fit the straight piping	31 5 10	"	Sultanpur-Bogra-Kaligunj.	
71/233 16-6-97.	Ropes ...	Wire, steel plough, Lang's patent, $\frac{3}{4}$" diameter, 2000 feet in length	1 6 0	Cwt.	Umaria Colliery.	Same as contract $\frac{69}{79}$, dated 7th August 1896.
71/307 18-6-97.		Wire, steel plough, Lang's patent, 600 feet long, $2\frac{3}{4}$" circumference, $\frac{7}{8}$" diameter, number of stands 6, number of wires in each stand 7, diameter, of each wire in inches ·095 breaking strain of each wire in lbs. 1430, number of twists each wire will stand without breaking in a length of 6 inches; 20, description of core in rope, hemp number of twists per foot of finished rope $1\frac{1}{2}$. Breaking strain of each strand in lbs.; 8175 weight per fathom of rope in lbs. $7\frac{1}{2}$	16 5 0	Each.	Umaria Colliery.	*Wooden reels, and packing extra.*
71/374 24-6-97.		Best selected extra plough steel wire cable galvanized, 6" circumference with hemp core, weighing about say 33 lbs. per fathom, with breaking strain of about 139 tons, to be used as a fixed cable stretched across a span of 1200 feet with a dip of 30 feet, to carry a moving load of $2\frac{1}{2}$ tons across the span.	2 10 0	Cwt.	Mari-Attock	Wooden reel, packing, &c., £3 weight of rope = 3·08 tons.

CLASS OF STORES B.—ENGINEERS' PLANT (EXCLUDING PETTY TOOLS)—*concluded.*

Contracted for in 1897.

Contract number and date.	Articles.	Details.	Rate—Free on board. Amount.	Rate—Free on board. Unit.	For what railway.	Remarks.
74/285 — 22-9-97	Sea sounding apparatus.	Cooper and Wigzell's patent, B pattern, complete.	12 10 0	Each.	Eastern Bengal.	
69/175 — 10-4-97	Tubes ...	Wrought-iron, stay with double nuts at each end, 6′ 1¼″ ×2½″ outside diameter ×$\frac{5}{16}$″ thick.	0 7 2	Each.		
		Wrought-iron boiler for steamers, 6′ 0″×2½″ outside diameter×No. 11 B. W. G., thick.	0 2 10	,,		
66/330 — 26-1-97	Windlass ...	Steam and hand complete, including bow stoppers.	105 0 0	Each.		
73/249 — 27-8-96	Wheels and axles	For light trollies for Engineers; 5′-6″ gauge.	4 15 0	...	Oudh & Rohilkhand.	
		For heavy trollies for permanent way Inspectors; 5′-6″ gauge.	5 1 0			

Appendix A.

Steam and hand steering gear for A class steamers 189 feet long as supplied on contract No. $\frac{66}{305}$, dated 25th January 1897 to the Eastern Bengal State Railway.

To consist of a double cylinder engine arranged horizontally and working through a worm and worm wheel to a chain barrel on the same shaft as the worm wheel, the barrel being supported on cast iron standards which in turn support the soleplate. The gear to be arranged so that the chain barrel shall point fore and aft. Hand gear to be provided in front of the steam gear and to consist of a teak hand-wheel 5′ 0″ diameter supported on a cast iron standard and connected to the barrel shaft by means of a spur wheel and pinion. To change from steam to hand gear and *vice versâ* to be made by a double clutch on the barrel shaft between the worm wheel and the spur wheel for the hand gear the clutch being worked by a lever. The steam gear to be worked from the upper deck with controlling shafting the controlling standard being of brass with a 2′ 9″ teak steering wheel on the after side. The engine cylinders to be 5″ diameter × 7½″ stroke.

Steam and hand steering gear for B class steamers 151 feet long as supplied on contract $\frac{66}{305}$, dated 25th January 1897 to the Eastern Bengal State Railway.

To consist of a double cylinder engine arranged vertically and working through a worm and worm wheel to a chain barrel on the same shaft as the worm wheel, the barrel being supported by the main frame and a cast iron standard. The gear to be arranged so that the chain barrel shall point fore and aft and hand gear to be provided consisting of a teak hand-wheel 5′ 0″ diameter connected to the barrel shaft by means of a spur wheel and pinion.

The change from steam to hand gear and *vice versâ* to be effected by the hand gear pinion being drawn out of gear or put into gear as necessary, two feathers being fitted to the hand-wheel shaft for that purpose and a clutch lever provided with slippers for holding pinion wheel in the desired position. The steam gear to be worked by controlling shafting from the upper bridge a brass controlling standard being provided with a 2′ 9″ teak hand-wheel on after side. The engine cylinder to be 4″ diameter by 6″ stroke.

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[*For General distribution.*]

Circular No. 6.

FROM

THE DIRECTOR OF RAILWAY CONSTRUCTION,

TO

THE MANAGER, NORTH WESTERN RAILWAY.
THE MANAGER, OUDH AND ROHILKHAND RAILWAY.
THE MANAGER, EASTERN BENGAL STATE RAILWAY.
THE MANAGER, EAST COAST STATE RAILWAY.
THE ENGINEER-IN-CHIEF, INDUS BRIDGE WORKS, AND BRITISH SECTION, SHADIPALLI-BALOTRA RAILWAY.
THE ENGINEER-IN-CHIEF, MARI-ATTOCK RAILWAY.
THE ENGINEER-IN-CHIEF, BEZWADA-MADRAS RAILWAY.
THE ENGINEER-IN-CHIEF, GODAVARI BRIDGE WORKS.
THE ENGINEER-IN-CHIEF, HARDWAR-DEHRA RAILWAY.
THE ENGINEER-IN-CHIEF, VIZIANAGRAM-RAIPUR RAILWAY SURVEY.
THE ENGINEER-IN-CHIEF, BOMBAY-SIND CONNECTION SURVEY.
THE ENGINEER-IN-CHIEF, REWARI-KUCHAMAN CHORD RAILWAY SURVEY.
THE PORT STOREKEEPER, STATE RAILWAY DEPARTMENT, CALCUTTA.

Rate List, Class B.—"Engineer's Plant" (excluding Petty Tools) for 1897.

Simla, the 4th July 1898.

SIR,

I have the honour to forward, for information and guidance, a printed statement, showing the actual English rates, *free on board* in England for class B Stores, "Engineers' Plant" (excluding Petty Tools), contracted for by the Stores Department of the India Office during 1897.

2. A table giving the average rates of sea freight, for class B Stores imported from England to the several ports in India for State Railways during 1897 is prefixed to the rate list.

3. In order to arrive at the total cost of class B Stores landed in India, an insurance charge of one-half per cent.* on the *free on board* cost, *plus* entire sea-freight, should be added in addition to other incidental charges and exchange, which latter should be calculated at the official rate for the year.

I have the honour to be,

SIR,

Your most obedient Servant,

C. W. HODSON,
Director.

Documents accompanying.

1. Statement showing the average rate per ton for entire sea-freight on Class B Stores imported from England to the several ports during 1897.
2. Rate List, Class B.—"Engineers' Plant" (excluding Petty Tools), 1897.

* For State Railway Stores and Irrigation Works only classed as Imperial. Stores for Provincial and Local funds and for railways constructed by Native States are charged one per cent. as heretofore.

The Secretaries to the Governments of Madras, Bombay, Bengal, the North-Western Provinces and Oudh, the Punjab and Burma, Public Works Department.
The Secretaries to the Chief Commissioners of the Central Provinces and Assam, Public Works Department.
The Secretaries to the Residents at Hyderabad and in Mysore, Public Works Department.
The Secretaries to the Agents to the Governor General, Rajputana and Central India and Baluchistan, Public Works Department.
The Superintendent of Port Blair and Chief Commissioner, Andaman and Nicobar Islands.
The Director General of Telegraphs.
The Director General of Military Works.
The Chief Engineer, Kashmir.
The Accountant General, Bengal.
The Consulting Engineers for Railways, Madras, Bombay and Burma.
The Consulting Engineers to the Government of India for Railways, Calcutta, Lucknow and Assam.

Copy forwarded to the Local Governments and Administrations and to the Officers noted in the margin for information, with the intimation that all Railway Administrations have been supplied with copies direct.

G Lubbock Lieut R.E.

for Director.

To

The Secretary to the Govt of Madras
Public Works Department

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G. C. Press, Simla.—No. 1463 P. W. D.—6-7-98.—50.