

- (1) பக்கங்களின் எண்ணிக்கை 22
(2) புதுக்கித் திருப்பிய நாள் 12/15
(3) ஆதாரங்குறிப்பவர் சுருக்கொப்பம் 10/15

தமிழ்நாடு ஆவணக் காப்பகம்.

தமிழ்நாடு அரசு

P.W.D துறை

51

அரசாணை எண். மு. கோப்புத் தாள் எண்.	58	அச்சகம் பலவகை
நாள் :	7-1-1891	198

மடிக்கவோ கண்டபடி கையாடவோ கூடாது

11 Sheets

ஆவண, கர-1-18,006-15-6-87.

சுப

58

Enclosure to Director General of Railways' Circular No. 30 of 1890.

RATE LIST.

CLASS B.

ENGINEERS' PLANT

(excluding Petty Tools)

FOR 1889.

Enclosure to Director General of Railways' Circular No. 30, dated 7th November 1890.

Statement showing the average rate per ton for entire sea freight on Class B Stores imported from England at the several ports during 1889-90.

Class of Stores.	Port of Bombay.		Port of Calcutta.		Port of Karachi.		Port of Rangoon.		REMARKS.
	s.	d.	s.	d.	s.	d.	s.	d.	
Class B,—“Engineer's Plant” (excluding Petty Tools) ...	25	6	26	0	26	0	32	0	

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

Contracted for in 1889.

Number and date of Contract.	Articles.	Details.	RATE—PER UNIT OF BOARD.				REMARKS.
			Amount.			Unit.	
			£	s.	d.		
2675, 13-3-89 ...	Anchors	With iron stocks (Martin's patent) 4 cwt. ...	3	0	0	Cwt.	
" "	"	" " " 3 cwt. ...					
2130, 16-3-89 ...	Barrows	For hot ashes, ungalvanized, "Victoria;" body made of plate iron or steel ...	1	10	0	Each.	
1918, 4-2-89 ...	Blocks	Differential, pulley (Weston's), with chain complete, 1 ton, No. 6 ...	2	2	0	Set.	
" "	"	" " " 10 cwt. ...	1	8	0	"	
2642, 31-7-89 ...	Cranes	Light, Derrick, to lift 2 tons ...	70	0	0	Each.	
2475, 22-6-89 ...	Engines.	Coupled, horizontal, high-pressure, non-condensing, stationary, steam winding, mounted on strong cast-iron beds of hollow section, supplied with duplicate parts, an automatic dial indicator and bell to show the position of the cage in a shaft 300 feet deep, of 5 inches bore, straight wrought-iron steam piping, with one tee and three right angled bends and all necessary fittings, pipes, valves, bolts, washers, &c., for the complete connection, erection, and fixing of the engine ready for work in India. Duplicate parts of above. One spare set of rings and springs for each piston. One spare set of brasses for each bearing of the engine and winding drum shafts. One spare set of connecting rod brasses for both ends of both brasses.	1,103	0	0	Each.	

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

Contracted for in 1889.

Number and date of Contract.	Articles.	Details.	RATE—FREE ON BOARD.				REMARKS.
			Amount.			Unit.	
			£	s.	d.		
2820, 7-10-89 ...	Engines, steam, portable. Spare parts of —	Injectors, gun metal, Giffords 10 in. m., all the cones being made removable for renewal Pistons with rings Piston rods, crucible, cast steel, carefully annealed Ferrules, steel, 1½" long X ⅜" thick, to suit boiler tubes 2¼" inside diameter	15	0	0	Each.	
2847, 17-10-89 ...			9	15	0	"	
			4	10	0	"	
			4	0	0	Per %	
2672, 13-8-89 ...	Engines, winding, spare parts.	Spur wheels for winding engines without pinions	46	0	0	Each.	
2790, 23-9-89 ...	Glasses, gauge ...	15" x ⅓" { Plain glasses 1½" x ⅓" }	0	2	10	Dozen.	
	"		0	3	6	"	
1885, 29-1-89 ...	Gauges	Rail, platelayers, steel, 5' 6" gauge. They are to be made not less than 6' 6" long over all, of mild steel ⅜" diameter in the middle	0	7	9	Each.	
2630, 23-7-89 ...	Hempstead	26' 4½" wide, on rolled beams and cast-iron columns, 2 screens and kick-ups or tipplers, with corrugated iron roof Ornamental safety hooks or links Compensating springs Cages, steel Catches or keeps for cages	911	18	0	Each.	
			46	15	0	For 3.	
			24	0	0	Ditto.	
			308	10	0	Ditto.	
			132	4	0	For 2 pairs.	

For descriptive schedule, vide Appendix A.

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

Contracted for in 1889.

Number and date of Contract.	Articles.	Details.	RATE—PER ON BOARD.				REMARKS.
			Amount.			Unit.	
			£	s.	d.		
2126, 16-3-89 ...		Bottle, traversing, 10 tons, height 16" when down, 10" traverse ...	3	7	6	Each.	
2256, 14-5-89 ...		Traversing, 10 tons, height 16" when down, traverse 10", complete with ratchets ...	3	7	6	"	
2343, 2-11-89 ...		Traversing, 10 tons, height 16" when down, traverse 13" ...	3	10	0	"	
2344, 2-11-89 ...		" 12 " 16" " " 13" (tested to 15 tons) ...	4	0	0	"	
3147, 23-12-89 ...		Bottle, traversing, with ratchet and lever, 10 tons, height 21" when down, traverse 10"	5	10	0	"	
2660, 7-3-89 ...	Jacks, screw.	Traversing, with levers and ratchets, 20 tons, with steel cylinders, screws, and angles and cross nuts ...	3	18	6	"	
2256, 14-5-89 ...		Without lever, for 4½lbs. flat-footed rails ...	2	8	0	Each.	
2126, 16-3-89 ...		With lever " " " " " " " "	2	10	0	"	
3068, 28-11-89 ...		" " " " " " " "	2	12	6	"	
1880, 26-1-89 ...	Jim crows.	With lever, for 75lbs. flat-footed rails, the span 2¼" and the screw 2¼" diameter, each jimcrow weighs 200 lbs.; lever 6" long by 1¼" diameter	3	10	6	"	
2661, 7-7-89 ...		" " and double-headed rails ditto ...	3	17	3	"	

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

Contracted for in 1889.

Number and date of Contract.	Articles.	Details.	RATE—FEE ON BOARD.				REMARKS.
			Amount.			Unit.	
1889, 28-1-89 ...	* Machine, rock drill	Improved "Climax," each fitted with patent liner adjusting cradles or jacket, also latest improved patent (reversible tappet valve), also gunmetal stuffing boxes and glands, complete with unions and spanners	£	s.	d.	Each.	* R. Stephen and Son's patent. For details, see Appendix B, page 12.
1899, 26-1-89 ...	Machine, rock drill	Spare valves and tumblers for—	64	10	0	Each.	
3044, 26-11-89 ...	Monkeys	Pile, driving, 4 ton	1	15	0	Set.	
1847, 21-1-89 ...	" Steam, ...	Improved direct acting pile driver—, cylinder 9½" diameter and 6' 6" stroke, piston rod 3½" diameter, and steam hose, with flanges and connections, but without boiler and steam winch (fl. size 80 cwt.) with 40 feet flexible tubing and 20 feet steam pipe ...	5	15	0	Each.	Total weight 2½ tons.
2274, 17-5-89 ...	Oars	Ashwood, 14 and 16 feet	108	0	0	"	
1995, 16-2-89 ...	Presses	Rail, straightening, for 50 lbs. flat-footed rails. The machine is to be made in accordance with drawing B. 155, but arranged for punching and bending rails	0	0	5½	Foot.	
2685, 28-8-89 ...	Pump	Cameron's patent, double ram	33	0	0	Each.	With two sets of punches and dies for punching holes 1" diameter. Fide Appendix.
2094, 5-3-89 ...	" spare parts ...	Brass liners, 5 feet long x 14½" external diameter, 14" internal diameter, for working barrel for Attock pumps	626	18	0	Each.	
2813, 3-10-89 ...	Ramps	Russell's, cast steel, engine and carriage, double, for 75 lbs. Vignole section rails No. 5.	173	0	0	Ton Each.	
2644, 1-8-89 ...	"	Russell's, cast steel, double, left and right combined, two to a set. Suitable for re-railing engines, heaviest load on any pair of wheels being 16 tons or 8 tons per wheel.	10	10	0	Set.	"
			12	10	0	"	

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

Contracted for in 1889.

Number and date of Contract.	Articles.	Details.	RATE—FEE ON BOARD.				REMARKS.
			Amount.		Unit.		
			£	s.	d.		
2177, 29-3-89 ...	Ramps	Stroudley's patent, 2' 10" long for 41½ lbs. flat-footed rails (4 in a set—2 right hand and 2 left), suitable for re-railing engines weighing 22 tons, heaviest load on any pair of wheels being 8 tons	10	0	0	Set.	
2761, 18-9-89 ...	Rings	India-rubber, for gauge glasses	0	4	3	Per %	
2019, 21-2-89 ...		Wire, in lengths of 500 feet, with spliced eye at each end, suitable for a working load of 8 tons.	51	15	0	Each.	Weight of 2 ropes 42½ cwt., at 40 cwt. ... = 85 0 Splicing 4, at £ 1 each ... = 4 0 Reels and packing 2, at £ 2 each ... = 4 0 Testing 210 tons, at 1s. a ton ... = 10-10 Total for 2 ropes ... 103-10
2181, 4-4-89 ...	Ropes wire.	Each rope is to take a breaking strain of 80 tons, and is to work round a barrel 4 feet in diameter. A thimble is to be spliced in each end of rope; such splice to be tested to 50 tons. The rope is to be made six strands each of 24 wires, with hemp centres, and is to be of the best quality of improved patent crucible steel, taking a breaking strain of about 90 tons to the square inch. Best plough steel, 500 feet in length, with spliced eye at each end, the splices to be suitable for pit work, estimated weight ½ ton ...	50	10	0	Each.	
		<i>Description of rope.</i> The rope is to be suitable for a working load of 8 tons, and to work round a drum 4 feet in diameter. The breaking strain of the rope is to be not less than 80 tons. The rope is to have a spliced eye at each end and the splices warranted for a load of 50 tons.					
2266, 20-5-89 ...		(1) Winding, plough, steel, Lang's patent, 80 fathoms, weight 7½ lbs. per fathom @ £ 3-7-0 cwt. Conical socket for rope (2) For guide, with steel core 50 fathoms long, weight 9 lbs. per fathom, @ 0-15-0 cwt. Conical sockets for above	17	19	0	Each.	
			0	12	6	"	
			3	0	3	"	
			0	10	6	"	

CLASS OF STORES B, ENGINEERS' PLANT (EXCLUDING PETTY TOOLS)--contd;

Contracted for in 1889.

CLASS OF STORES B, ENGINEERS' PLANT (EXCLUDING PETTY TOOLS).—*cont'd.*

Contracted for in 1889.

Number and date of Contract.	Articles.	Details.	RATE—PER CENT OF BOARD.			REMARKS.
			Amount.		Unit.	
			£	s. d.		
2474—contd.	...	<i>Description of rope.</i> The rope is to take a breaking strain of 60 tons, thus allowing a margin of safety over the working load of 10 to 1. To be made 6 strands each of 19 wires, and the wire to be best selected improved patent crucible steel. The heart of the rope to be of best Russian hemp. The rope is to weigh 19 lbs. to the fathom.	3	7	0	Cwt. or for 3 ropes.
2747, 13-9-89	...	Craddock's plough steel, Lang's patent, 24" circumference 350 feet long, estimated weight of 1 rope cwt. 2 qr. 3 lb. 7	28	4	9	
	Ropes wire—concld.	<i>Particulars of rope.</i> Circumference of rope, ... 24 inches Number of strands 6 Number of wires in each strand 7 Diameter of each wire 1081 inches Breaking strain of wire 1,330 lbs. Breaking strain of each strand 9,334 lbs. Safe working load 2½ tons Weight per fathom of rope 5-4 lbs. Diameter of drum round which the rope will safely work 60 inches				

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

Contracted for in 1889.

Number and date of Contract.	Articles.	Details.	RATE—FREE OF BOARD.				REMARKS.
			Amount.			Unit.	
1831, 15-8-90 ...		Heavy material, 5' 6" gauge : wheels with axles and bearings for—; wheels about 1' 6" diameter, tyres not less than 4 inches wide, axles about 1 1/2", suitable for carrying about 2 tons per trolley ...	4	5	0	Set.	
2658, 7-8-89 ...		Light, 5' 6" gauge : wheels with axles and bearings for—; wheels 3' 3" diameter with 4" steel tyres, axles not more than 1" ...	6	5	0	"	
3137, 14-12-89 ...	Trolleys Platelayers.	Light 5' 6" gauge : wheels with axles and bearings for :— " metre gauge : wheels and axles for—; diameter of wheels 27" ...	5	3	0	"	
1897, 16-2-89 ...		Gun metal bearings for—ditto, metre gauge ...	5	17	6	"	
		Wheels, cast steel for—; bored, and key way cut and ground on tread ...	0	7	6	Pair.	
2099, 7-3-89 ...	Tubs mining.	Metre gauge, bottom plates of 10 lbs. per foot and side plates of 7 lbs. per foot ...	2	19	0	Set of 4 wheels.	
		<i>Specification of Tubs.</i> The size of the underframe of oak 5' x 4', cross slots 5" x 3", body to be 4 feet long by 3 feet x 2 feet inside, to hold 25 cubic feet when full. The wheels to be of steel 12" diameter. The axles to be of steel 2" diameter, a strong bar to run round top edge of body, in which end door is to hinge. The bottom of door to be fastened with tripping hooks to allow the tubs to be tipped from a tipping frame. No springs or fancy work required, but good strong tubs.	6	8	0	Each.	

APPENDIX A.

58

7

Appendix A.

Heapstead, 26' 4 $\frac{1}{2}$ " wide, on rolled beams and cast iron columns, 2 screens and kick-ups or tipplers with corrugated iron roof; as per schedule below.
Contract No. 2630.

		Cwt.	qrs.	lbs.	£	s.	d.
	<i>Descriptive Schedule.</i>						
Item (a)	One Heapstead, consisting of cast iron columns, corrugated iron roof, ridge and spouts, wrought iron Principals and Tie Rods, Heapstead Floor formed of wrought iron rolled Girders, and covered with wrought iron Flat sheets, planed edges, 2 Jigging Screens fitted with screen bars, Vibrating Suspending Links, 2 Coal Shields or flats with suspending chains and weights; all the necessary Shafting, Eccentric Sheaves, and Rods to give motion to the jigging screens 2 wrought iron Kick-ups with Shield Plates, Steam Engine to drive Shafting and jigging screens with 10" cylinders, 18" stroke fitted with Fly Wheel and Governor complete	774	0	0	911	18	0
Item (b)	3 Ormeroid's Patent Safety Hooks, cylinders, and connections, for a working load of 4 tons	10	0	0	46	15	0
Item (c)	3 Compensating Springs, Shackles and Pins complete for a working load of 4 tons	4	0	0	24	0	0
Item (d)	3 Steel Cages, each made to suit two of the trollies on one deck, and to allow of the coal being loaded 18" above the top of the trolley; to be fitted with 6 cage chains with adjusting screw catches for fastening trollies, wrought iron roof with doors to take in long material, the sides of the cage to be fitted with Brackets and Brasses to suit the Guide Ropes; the cages to be packed in pieces, so that they can be put together on arrival	100	0	0	303	10	0
Item (e)	2 Sets of Batches or Keeps to suit the before mentioned Cages, made of the best-forged iron for a 14' 0" diameter Shaft, to be easily worked by Bankmen at top of pit by lever at either end of the cage; and made so that they fall to on their own accord as soon as the cage has passed, 2 wrought iron Beams for supporting the cages and to which they will be fitted, all complete to a 14' 0" diameter shaft and the centres of cages	75	0	0	132	4	0
	TOTAL	963	0	0	1,421	7	0

Appendix B.

Schedule of Machine Rock Drill, "Climax," with duplicate parts and Tunnel bars, supplied by R. Stephens & Son, Wheal Crofty Iron Works, Carn Brea, Cornwall, as per contract No. 1899-A.

		£	s.	d.	Unit.
For drills	18-4" Improved "Climax" Rock Drills each fitted with R. Stephens & Son's patent liner, adjusting cradles or jackets, also latest improved patent (reversible tappet valve) also Gunmetal Stuffing Boxes and Glands, complete with unions and spanners. Cylinders 4" diameter	2			
Clamps	18-Improved Universal Steel Clamps each fitted with steel grippings, plates, set screws and washers	64	10	0	Each.
Hose	18-1 1/4" bore x 6 ply best quality Rubber and Canvas Hose Pipes, each 20' 0" long, outside to be covered with tarred marline, and fitted with strong brass unions and air taps.	6	0	0	"
Water Hose	18-1 1/2" x 5 ply best Rubber and Canvas Hose, each 20' 0" long, covered with marline and fitted with brass unions, taps, and water jets complete	5	0	0	"
Tunnel bars	9, Steel Tube Tunnel Bars, each 6' 6" long over all when closed x 4 1/2" diameter, x 3/8" thick finished, each fitted with self-tightening conical brass nuts, and wrought iron jacking screws, to be worked by Capstan Bars	3	0	0	"
Borers	90 Borers, each 1' 6" long x 1 1/2" steel x 2 1/2" bits	10	0	0	"
	90 Ditto 2' 6" " x 1 1/2" " x 2 1/2" "	0	8	2	"
Duplicate parts.					
Ratchets	4 sets Steel Ratchet Wheels for each Machine, in all 72 wheels	0	15	0	"
Bars	4 Steel Twisting Bars for each Machine, in all 72 bars	2	0	0	"
Cylinders	4-4" "Climax" Cylinder	10	0	0	"
Cradles	4 Improved liner Adjusting Cradles	6	0	0	"
Pistons	6-4" Steel Piston Rods complete, with Twisting Nuts and Steel Collars	7	0	0	"
Feed screws	12 Steel Feed Screws, complete, with Locking Nuts	2	0	0	"
Nuts	24 Steel Feed Nuts	1	10	0	"
Rings	12 dozen India Rubber Buffer Rings	0	2	0	"
"	6 " Wrought Iron Piston Rings	0	5	0	"
Pawls	4 " Steel Pawls	0	5	0	"
Covers	6 Improved Gun-metal Stuffing Boxes and Glands	4	0	0	"
Back covers	6 Back Covers	2	5	0	"
Springs	4 dozen Steel Pawl Springs	0	0	6	"
"	12 " " Piston "	0	0	3	"
"	12 Coils Steel Spiral Springs	0	6	0	Coil.
Buffers	4 dozen Valve Box Buffers	0	2	0	Each.
Bolts	12 Valve Bolts complete with Cones and Nuts	0	12	0	"
Rings	12 Steel Front Buffer Rings	0	8	0	"
Screws	4 Stretcher Bar Screws and Nuts	4	0	0	"
Packing	20 lbs. Machine Packing	0	2	6	lb.
Bolts	12 steel Swivel Bolts and Nuts	0	12	6	Each.
Nuts	12 Brass Twisting Nuts	0	12	0	"

Appendix C.

Specification of Pump, &c., showing prices in detail as per contract No. 2685.

		£	s.	d.
Pump	One 9" Double Ram Pump, 12 1/2" stroke with 18" Steam Cylinders, with back cut off Valves, capable of discharging 20,000 gallons per hour to a height of 255 feet with 40 lbs. Steam pressure when running, about 65 revolutions per minute, with governor and equilibrium valve	274	0	0
Condenser	Camerons make of Condenser	16	0	0
Cocks	Two 3 1/2" Gun-Metal Cocks (three way) with handles and pipes to Condenser	25	0	0
Priming cocks	Two Priming Cocks and Pipes	2	10	0
Drawings	Drawings and Photo	25	0	0
Packing	Packing all parts except Columns, Fly Wheels and Bed Plate which would be sent loose	10	0	0
	Carriage to Liverpool or Birkenhead	5	5	0
	Carriage to London	10	10	0
	Weight about 8 tons			
Pipes	For Delivery, 280' 6" galvanized Cast Iron Pipes faced flanges, 4 bends, 1 T piece with bolts, nuts and joints for Suction, 20' 7" galvanized Cast Iron Pipes, faced flanges, 2 bends with bolts, nuts and joints	140	0	0
	These weigh about 8 1/2 tons—			
	Delivery and Suction Pipes packed in 3 cases	10	0	0
	Carriage to Liverpool or Birkenhead	5	11	6
	Carriage to London	11	3	0
Steam pipes	350' 4" Wrought Iron Screwed Steam Pipes with flanges faced and drilled, 6' 4" bends, one 4" T piece with bolts and nuts...	99	0	0
	Weight about 2 tons packed in one case	3	10	0
	Carriage to Liverpool or Birkenhead	1	7	6
	Carriage to London	2	15	0
Foot valve	One Foot Valve and Strainer suitable for 7 1/2" Suction Pipe...	9	0	0
	Weight about 8 cwt.—			
	Carriage to Liverpool or Birkenhead	0	5	0
	Carriage to London	0	10	0

22

85

p

10

Railroad Class B - Engineers' Rules

I have the honor to forward to you the enclosed statement showing the total number of hours worked by the various classes of employees of the Chicago and North Western Railway Company during the month of May, 1900.

A table showing the average rate of pay for each class of employees is also enclosed. The same is based on the rates of pay in effect during the month of May, 1900.

Very respectfully,
J. A. WHELAN, General Manager

Enclosed for the Chicago and North Western Railway Company are the following documents:

V. W. C. 112. 6.

B

Communicated to
Officers of the P.W. Dept. in
Continuation of G.O. No.
3082 W & 18th Nov 1890.

WCB
6.1.91

FROM

THE DIRECTOR GENERAL
OF RAILWAYS,

TO

6050

Circular No. 30.

Dated Simla, the 7th November 1890.

Received

4/1/91
Recd (5750)

58 W & 17th Jan 1891

(11)

Ch. S. for Simla ✓

Super Engrs. ✓

S. of W. P. P. ✓

Ch. of Port ✓

Engrs. & Surveyors ✓

See top 9/1/91
P. 2/1

INDIAN STATE RAILWAYS.

Rate List, Class B.—"Engineers' Plant," ex-
cluding Petty Tools, for 1889.

G. C. Press, Simla.—No. 435 P. W. D.—19-11-90.—1,000.