

(1) Number of pages _____

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MADRAS RECORD OFFICE.

Government of Madras.

Public Works DEPARTMENT.

G.O. No. 823	Press Mis.
Dated 26 2	1872.

Not to be folded or roughly handled

*Proceedings of the Madras Government, Public Works Department,
26th February 1872.*

No. 419. Read the following Circular from the Government of India, Public Works Department, (Railway) :—

Alterations in the usually accepted equivalents }
for the comparison of measures on the metri- } (Here enter No. 3, dated 17th January 1872.)
cal and British standards.

No. 420. ORDER THEREON, 26th February 1872, No. 523.

RAILWAY, No. 59.

COMMUNICATED to the Consulting Engineer for Railways in continuation of G.O., No. 516, dated 26th February 1872.

(True Extract.)

Colonel, R.E.,
Secretary to Government.

EQUIVALENTS OF METRICAL WEIGHTS AND MEASURES ON THE BRITISH STANDARD.

			OLD EQUIVALENT.	NEW EQUIVALENT.
1 Kilometre	=	...	0.621382 mile	0.62156 mile
1 Metre	=	...	1.093633 yards	1.09394 yards
			3.280899 feet	3.28183 feet
			39.370790 inches	39.38200 inches
1 Mile	=	...	1609.315 metres	1608.850 metres
1 Yard	=	...	0.91438 metre	0.91412 metre
1 Foot	=	...	0.30479 "	0.30470 "
1 Inch	=	...	0.02539954 "	0.02539231 "
1 Square decimetre	=	...	15.50059 square inches	15.50942 square inches
			1.19603 " yards	1.19671 " yards
1 Square metre	=	...	10.7643 square feet	10.77013 square feet
1 Are	=	...	119.60332 " yards	119.67144 " yards
1 Hectare	=	...	2.47144 acres	2.47255 acres
1 Square inch	=	...	0.06451 squaredecimr.	0.0644765 square decimr.
1 " foot	=	...	0.092890 " metre	0.0928461 " metre
1 " yard	=	...	0.836097 " "	0.83561 " "
1 Acre	=	...	0.40467 hectare	0.40444 hectare
1 Square mile	=	...	258.98944 hectares	258.8400 hectares
1 Cubic metre	=	...	35.31658 cubic feet	35.34675 cubic feet
			1.30802 " yards	1.30914 " yards
1 Cubic inch	=	...	16.38618 cubic centimrs.	16.37207 cubic centimrs.
1 " foot	=	...	28.315311 " decimrs.	28.29087 " decimrs.
1 " yard	=	...	0.76451 " metre	0.76385 " metre
1 Litre	=	...	0.22024 gallon	0.22018 gallon
1 Gallon	=	...	4.54041 litres	4.54173 litres

The kilogram remains unchanged, being 15432.34874 grains, or 2.204621lbs. avoirdupois; 1,000 kilograms equal 0.984206 ton.

1 Pound Avoirdupois equals 0.45359265 kilogram.

1 Ton equals 1016.04754 kilograms.

EQUIVALENTS OF METRICAL WEIGHTS AND
MEASURES ON THE BRITISH STANDARD.

(PROVISIONAL.)

DIMENSIONS TO BE FOLLOWED IN THE CONSTRUCTION OF INDIAN
NARROW GAUGE RAILWAYS.

Gauge 1 metre.

Single line

		<i>Formation.</i>	Metres.	Ft.	In.	
(a).—Side slopes according to soil and climate.	1	Minimum width of formation in bank (<i>a</i>)	3-60	11	9-8	
	2	" " " in cutting(<i>b</i>)	4-30	14	1-3	
(b).—Side slopes and width of side drains to vary with circumstances.	3	Standard widths of " " <i>(b)</i>	4-30 4-50 5-00 5-50	14 14 16 18	1-3 9-2 4-9 0-6	
	4	Minimum radius of curves	100-00	323	2-2	
	5	Maximum exterior width of masonry under bridges from face to face ...	3-60	11	9-8	
		<i>Girder bridges.</i>				
	6	Rolling load per metre of track to be assumed in calculations for strength of girders—	Kilos.	Tons per foot.		
		Openings 2 metres to 4 metres in the clear	6,600	1-979		
		" 4 " to 6 " " "	5,000	1-499		
		" 6 " to 15 " " "	3,300	0-990		
(c).—Thus 20 metre girders for a single track should be calculated for a rolling load of 15 × 3,300 + 5 × 2,000 = 59,500 kilos.		Additional load per metre of track for each metre of clear opening above 15 metres(<i>c</i>)	2,000	0-600		
						Rolling load on each girder.
	7	Openings spanned by girders are to be of one of the following dimensions of clear span only (<i>d</i>)—	Metres.	Ft.	In.	
(d).—Type girders for these dimensions will be kept in stock. All bridges with spans greater than 40 metres will be of special design.		(Rolled beams)	2-00	6	6-8	Kilos. 13,200
		" " " " " " " " " " " "	3-00	9	10-1	12-99
		" " " " " " " " " " " "	4-00	13	1-5	19,800
		(Plate girders)	6-00	19	8-3	25-40
		" " " " " " " " " " " "	12-00	39	4-6	29-53
		(Lattice or Warren girders)	18-00	59	0-9	38-97
		" " " " " " " " " " " "	25-00	82	0-6	55,500
		" " " " " " " " " " " "	30-00	98	5-5	54-63
		" " " " " " " " " " " "	40-00	131	3-3	69,500
		<i>Ballast.</i>				78-2
	8	Minimum depth of ballast below sleeper ...	0-15	0	5-9	97-99
	9	Maximum width of " at top ...	2-15	7	0-7	
	10	" " of " at bottom ...	3-00	9	10-1	
		<i>Transverse wooden sleepers.</i>				
	11	Standard length of transverse wooden sleepers	1-85	6	0-9	
	12	" width of base of " " " "	-20	0	7-9	
	13	Minimum width of " " " " "	-18	0	7-1	
	14	" depth of " " " " "	-10	0	3-9	
	15	" width of heart-wood at rail seat ...	-10	0	3-9	
	16	" area of " in cross-section	Sq. centimetres, 170	Sq. in. 26-37		
(e).—Number to increase proportionately to diminution of width of base of sleepers used.	17	Ordinary number of standard sleepers to kilometre of track(<i>e</i>)	No. 1,250	No. per mile. 2,011		
		<i>Rails.</i>				
	18	Flat-footed rail without chairs, but with shoes to give the cant, joints fished, fastenings, bolts or spikes, ordinary weight per lineal metre	Kilos. 18 or 20	Lbs. per yard. 36-3 or 40-3		
		<i>Level-crossings, stations, and fixed structures over line.</i>				
	19	Minimum distance from centre to centre of tracks in stations or sheds	Metres.	Ft.	In.	
	20	Minimum distance from centre to centre of tracks in open line	3-60	11	9-8	
	21	Minimum horizontal distance from centre of track to edge of platform	3-00	9	10-1	
	22	Minimum horizontal distance from centre of track to any structure other than platform(<i>f</i>)	1-40	4	7-1	
(f).—No switches, signal-wires, or structure of any kind, to be erected within this minimum distance.	23	Maximum height above rail-level of passenger platform	2-00	6	6-8	
	24	Maximum height above rail-level of goods platform	-08	0	3-2	
	25	Minimum height above rail-level of over-bridges, and similar structures, at centre of track	-25	0	9-8	
	26	Minimum height above rail-level of ditto at a horizontal distance of 2-00 metres from centre of track	3-60	11	9-8	
	27	Minimum width of door-ways of engine-sheds, carriage-sheds, or goods-sheds ...	2-50	8	2-5	
			3-00	9	10-1	

NOTE.—When the precise dimensions of the rolling stock are decided, such alterations in this table, that may be called for, will be notified, and it will be supplemented with the dimensions of the stock adopted. It is not, however, expected that any considerable variation from the dimensions of this table will be necessary.

DIMENSIONS TO BE FOLLOWED IN THE CON-
STRUCTION OF INDIAN NARROW GAUGE
RAILWAYS.

P. W. 1872 No. 3

GOVERNMENT OF INDIA.
PUBLIC WORKS DEPARTMENT.
RAILWAY.

To
THE LOCAL GOVERNMENTS AND ADMINIS-
TRATIONS, AND TO THE CONSULTING,
CHIEF, AND SUPERINTENDING ENGINEERS
IN CHARGE OF RAILWAYS.

CIRCULAR No. 3 RAILWAY.

Dated January 17, 1872.

Received 5th Feb 1872

Encl. 1.

Alterations in the usually accepted equiva-
lents for the comparison of measures on the
metrical and British standards.

P. W. D. Press.—25-1-72—354.

No 523-26 Feb 1872
With an order

35/2
on 17th Jan 1872
The letter from Govt of India is enclosed
in confirmation of P. W. D. No. 3 of 1872

in confirmation of P. W. D. No. 3 of 1872

Comm. & to the Com. Sec. for Railways

W. D. Press

C/2 514

Govt. of 1872 Madras.

PUBLIC WORKS.

To the Consulting Eng^r
for Railways

Dated

Recd.

Encl. /

G. O. 26th Feb^y 1872 No. 523.

Nos. 4191420

Measures. Circular from
the Govt of India regarding
alterations in the usually
accepted equivalents for the
comparison of measures on
the metrical and British
standards. Com^d W. H. Jones.
Eng^r for Ry.