

Freight Cars for European Continental Service Being Built in Canada.

The British Government is having built by the National Steel Car Co. at Hamilton, Ont., for service in France and Belgium, 1,300 steel frame covered cars of the M. M. Nord type, which are largely used in some parts of the European continent. One hundred of them are being provided with accommodation at one end for a brakeman on guard. The principal dimensions of the 1,200 cars are as follows:—

Length over end sills	25 ft. 3 5-32 ins.
Width over side sills	8 ft. 7 15-16 ins.
Length over buffers, free	28 ft. 5 1/8 ins.
Length over buffers, compressed	27 ft. 11 7-16 ins.
Length over pulling face of draw hooks	26 ft. 5 1/2 ins.
Wheel base	11 ft. 7 25-32 ins.
Height from rail to centre of buffers and draft gear	3 ft. 5 3-16 ins.
Height from rail to top of floor	4 ft. 0 1-32 ins.
Height from rail to top of roof caps	12 ft. 0 29-32 ins.
Total length over roof	25 ft. 5 1/2 ins.
Total width over roof	9 ft. 2 13-32 ins.
Inside dimensions—	
Clear length between end protection boards	24 ft. 11 7-32 ins.
Clear width, between base boards	8 ft. 4 ins.
Clear height under leg of inside plate tee	7 ft. 1 19-32 ins.
Clear height of door opening	6 ft. 11 3/4 ins.
Clear width of door opening	4 ft. 11 1-16 ins.
Cubic capacity	1482 cu. ft.

The cars are mounted on 4 rolled steel wheel 40 15-16 ins. dia. on tread line and forged steel axles with 5 1/2 x 11 11-32 in. journals placed at 6 ft. 7 23-32 ins. centres. The journal boxes are of cast steel and are equipped with cast steel covers bolted on malleable iron oil reservoirs, arranged to be filled from outside and provided with oil pad, spring and wick, also bronze bearing, cast steel wedge and wood dust guard. The pedestals are of cast steel with forged tie bars. The bearing springs are of semi-elliptic type and rest on top of the journal box, being connected to the car by means of forged links attached to spring ends and cast steel brackets secured to car sills. The brake gear is operated by hand only, by means of two long levers, one at each diagonally opposite end of car, two wheels only being braked through cast steel brake heads, provided with oak blocks, each being operated independently of the other. The buffers are of the plunger type with volute springs, each having a total compression of 2 27-32 ins. The draw gear is composed of a forged steel draw hook with shank secured to a cast steel compression washer by means of a chrome nickel steel key. Between the compression washer and a steel bearing casting secured to end sill is a volute compression spring, connection with another car made by a screw coupling and shackle.

CONSTRUCTION OF CAR UNDER-FRAME—Pedestal sills:—Two 10 in. 30 lb. I-beams continuous between inside of end sill webs into which they are coped and connected to end sills by means of a 17 x 3/4 in. end sill top cover, an 8 1/2 x 3/8 in. end sill bottom cover and a cast steel angle connection of substantial design. End sills:—Two 10 in. 27.2 lb. ship channels continuous between inside of flange of corner post angle. Crossties:—Near ends of car, two 10 in. 21.8 lb. ship channels, continuous between inside of webs of pedestal sills into which they are coped, connections being made by 5-16 in. top and bottom gussets and 4 x 4 x 3/8 in. angle connections. Crossties:—Near centre and intermediate, three 6 in. 12.5 lb. ship channels, continuous between and coped into pedestal sills and connected to them by 5-16 in. gussets, bottom, and 4 x 4 x 3/8 in. angle connections, the middle part of the upper

flange is provided with a 7 x 3/8 in. cover plate 3 ft. 1 1/4 in. long. Centre sills:—At end, two 10 in. 25 lb. I-beams at each end, coped into end sill and end cross tie respectively, connected to end sill top and bottom cover and to cross tie top and bottom 5-16 in. gussets, also connected to end sill and cross tie webs with 4 x 4 x 3/8 in. angle connections. Floor stringers:—Two 3 in. 7.1 lb. ship channels continuous between backs of each cross ties, and connected to cross tie gussets and top cover plates. Side sills, 4 x 3 x 3/8 in. angles continuous between and coped into inside of end sill web. The side sills are supported for their length between end sills by cast steel extension brackets. These being riveted to the pedestal sills. Floorboards:—1,25-32 in. thick with plane joints in angle formed by flooring and siding is secured a base board 31-32 in. thick.

CONSTRUCTION OF CAR SUPER-STRUCTURE—Side posts:—Three per side, 3 in. x 7.1 lb. ship channel. Door stop posts:—Composed of 1 per side, 5 3/4 ft. structural channel with 4 1/2 x 3 x 3/8 in. angle riveted to web, long leg of angle turned out to form a door stop. All the above posts are secured at their lower end to the side sill angle and extension casting. Corner posts:—4 x 4 x 3/8 in. angle. Each portion of side frame between side door and corner posts is provided with a 3 1/4 x 5-16 in. brace secured to side sill against door post and to side post and corner post. End posts:—4 x 4 in. x 10.5 lb. tee, 2 per end. Side plate:—4 x 2 in. x 6.7 lb. tee continuous between inside flange of corner post angle. Side and end sheathing of 31-32 in. tongued and grooved boards. Side door is of the sliding type with bottom corners provided with brackets and rollers and arranged to run along the tee track. The top corners of the door are provided with eye castings arranged to fit over and slide along a guide rod. A shutter of pressed steel no. 20 gauge is arranged in upper right hand portion of side door, the bottom edge of shutter is equipped with hinges to enable it to be swung out and down. The door framing consists of 2 1/4 x 2 1/4 x 1/4 in. angles with a centre vertical stiffener of 3-16 in. pressed plate at centre.

CONSTRUCTION OF CAR ROOF—The roof is of the camber type, having a carline radius of 15 ft. 6 15-16 ins. Carlines:—12 per car, including end carlines 2 1/4 x 2 1/4 x 5-16 in. angle, vertical leg being bent to form connection to side plate—in addition to plate connection—the other leg carried over side plate to support eaves. Roof boards laid longitudinally and secured direct to carlines. Roof covering of no. 22 gauge galvanized iron.

Regarding the 100 cars mentioned in the opening paragraph, the chief difference is in the accommodation for the brakeman. The principal dimensions and features that differ from the 1,200 cars are as follows,—

Height from rail to centre of buffers and draft gear at brake box end	3 ft. 4 25-32 ins.
Height from rail to top of brake box roof	13 ft. 1 29-32 ins.
Total length over main roof	23 ft. 9 27-32 ins.
Total length over main roof, including brake box	25 ft. 9 21-32 ins.
Inside dimensions—	
Clear length between end protection boards	23 ft. 3 17-32 ins.
Cubic capacity	1386 cu. ft.

The brake gear is operated by hand only from one end to brake mast provided with a spiral worm. This actuates a series of levers, all wheels being equipped with two each, combined brake head and shoe. Both kinds of car are equipped with footboards below each side door opening, brackets for

signals and lamps, end safety chains and suitable hooks and chains, etc., inside car for securing cattle or merchandise.

List of Canadian Northern Pacific Railway Stations.

Following is a list of station points between Port Mann, B. C., and Yellowhead Pass, showing the mileage of each from New Westminster bridge and the altitudes. The class of station to be built is shown by the figures immediately after the names of the stations:—1 designates a special station; 2, a third class station; 3, combined station and shelter house; 4, section house; 5, shelter; 6, future siding; D. p., division point:—

Mileage.	Stations.	Altitudes.
4.0	Port Mann, 1	16
10.7	Port Kells	26
14.7	Langley, 2	24
20.0	Glen Valley, 5	24
20.5	Mount Lehman, 5	31
25.5	Matsqui, 2	24
35.9	Sumas, 5	36
41.4	Arnold, 5	31
46.2	Rosidewack, 1	36
52.7	Rosedale, 2	52
57.0	Cheam	80
63.8	Riley, 3	101
68.2	Laidlaw, 3	96
70.0	St. Elmo, 5	106
73.9	Floods	119
77.5	Hope, 1	157
82.0	Trafalgar Bar	162
86.3	Squeah	187
91.2	Yale, 3	220
99.7	Stout	282
105.3	Chapmans Bar, 3	355
118.3	Boston Bar, 1, D.p.	452
124.2	Boothroyd, 4	519
128.2	Inkitsaph, 6	568
113.5	Falls Creek, 4	606
139.5	Cisco	604
145.7	Lytton, 2	568
152.5	Gossett, 4	626
160.4	Seddell, 3	702
164.5	Scoonka	721
168.7	Spences Bridge, 2	740
174.5	Martel, 4	803
178.2	Minnabarriet, 6	854
185.0	Basque, 3	900
194.9	Ashcroft, 2	995
202.6	McAbee, 3	1,031
207.3	Anglesey	1,078
211.0	Walhachin, 3	1,086
218.0	Savona, 3	1,173
222.9	Copper Creek	1,171
230.0	Cox, 3	1,171
235.7	Tranquille, 3	1,183
244.0	Kamloops Jct., 1, D.p.	1,153
250.8	St. Paul, 3	1,172
258.3	Hefferley, 3	1,185
266.6	McLure, 3	1,188
274.8	Louis Creek, 3	1,232
285.1	Genier, 3	1,256
292.2	Chu-cha, 2	1,280
300.6	Boulder Creek, 3	1,289
309.3	Mosquito Flats, 3	1,310
315.0	Clearwater Crossing, 3	1,338
321.6	Birch Island, 3	1,394
330.0	Vavenby, 3	1,543
335.7	John Irvine, 3	1,638
345.8	McMurphy, 3	1,793
353.3	Wire Cache, 3	1,899
358.2	Avola, 3	1,903
364.6	Cottonwood Flats	2,008
369.5	Messiter, 3	2,082
375.2	Wolfenden, 3	2,179
379.0	Trout Creek, 6	2,196
383.3	Blue River, 1, D.p.	2,244
393.0	Thunder River, 3	2,265
401.6	Pyrampid Creek, 3	2,315
409.2	Levendors, 3	2,376
418.9	Clemina, 3	2,684
424	Albreda, 3	2,801
432.8	Canoe River	2,713
437.5	Cranberry, 6	2,648
443.5	Swift Creek	2,603
450	Jackman	2,821
458	Morey	3,056
464	Mount Robson	3,241
470	Resplendent	3,415
478	Rainbow	3,396
485	Grantbrook	3,451
494	Tucerne, 1, D.p.	3,647
499	Yellowhead	3,708

We are indebted to T. H. White, Chief Engineer, Canadian Northern Pacific Railway, for the foregoing.

The Inn, St. Andrews, N.B., which closed for the season on Sept. 15, will not be operated as one of the Canadian Pacific Ry.'s hotels in future. The C.P.R. will, of course, continue to operate the Algonquin Hotel, St. Andrews.