

## FROM "J" TO "DX" IN THE WAIKATO

By T. A. McGavin

THE recent celebration of a hundred years of railways at Auckland focusses attention on activity in that part of the country, and it therefore seems appropriate to have a look at the standard of locomotive performance on the 138 km main line between Auckland and Frankton over the past 30 years or so. My own observations of locomotive work on this section date back to early 1941, and a recent experience behind a "Dx" on the "Silver Star" loaded to a full 14 total, a solid 565 tonnes gross, sent me searching through my notebooks. The outcome is the appended summary of ten non-stop runs made over this line at various times on the old "Daylight Limited", "Scenic Daylight", and other trains. The principal station times recorded on these occasions are set out in Table 1.

ON the first run, streamlined "J" class 4-8-2 No. 1210, then little more than 12 months old, was at the head of a 9-total "Daylight Limited" that I estimated to weigh 245 tons all told behind the tender, or about 250 tonnes. Scheduled departure time was 8.0 a.m., the same as the present-day "Silver Fern", but the train was not due in Wellington until 11.10 p.m., no fewer than 4 hr. 20 min. later than today's air-conditioned railcar. The run to Frankton was allowed 136 min. start to stop, with a maximum allowable speed of 50 m.p.h. (80.5 km/hr) on straight track. The most severe permanent speed restrictions were to 20

m.p.h. through the turnouts to and from the single line through Ngaruawahia station. At that time single line extended also from Paerata to Ohinewai, but the turnouts here affected up trains.

The "Daylight" was allowed 49 minutes to pass Paerata, 47.5 km; we arrived there in 48 min. 15 sec. without exceeding 74 km/hr at any point, but the up "Night Limited" was running a little late and we had to wait for it to come off the single line. Another short stop was required in the loop at Pokeno to cross the up morning passenger (train 190) from Frankton, so we had now dropped 8½ minutes on schedule.



Photograph: W. W. Stewart

On 20 November 1946 "J" class 4-8-2 No. 1210 leaves Auckland with train 121, the express for Taneatua, while "Ww" class 4-6-4T No. 572 takes water.

Two temporary speed restrictions beyond Mercer and Te Kauwhata made us 9 min. down at Ohinewai, but then we had a clear road and gained three minutes thence to Frankton. Speed briefly reached about 83 km/hr (52 m.p.h.) near Huntly, but generally we did not exceed 77 km/hr (48 m.p.h.).

Very few more "Daylight Limiteds" were run after January 1941 owing to wartime conditions and the subsequent fuel and crew shortages until October 1949. At Labour Day weekend that year an opportunity was taken to run an accelerated "Daylight" down from Auckland on the Friday and Monday and up on the Saturday and Tuesday, to test the feasibility of a 13½-hour schedule. Timed out of Auckland at 8.10 a.m. the train was allowed 130 minutes for the non-stop run to Frankton, and when I travelled on the Monday "J" 1213, now oil-fired, had no difficulty whatever in

completing the 138.3 km in 124½ minutes. The train was in fact 6½ minutes early through Ohinewai and it was necessary to "kill" time in the concluding stages. This run is featured in column No. 2 of Table 1.

It will be seen that the driver set out with a will to get time in hand. By passing Papakura in just four seconds over 28 minutes he had already gained four minutes on the new timing, having averaged 84.3 km/hr (52.4 m.p.h.) over the 13.4 km from Papatoetoe. In spite of a signal check costing an estimated 1½ minutes approaching Pokeno, he was 5 minutes ahead at Mercer and 6½ minutes early at Ohinewai. Thereafter the run was relatively quiet.

Just over six years later I was able to record the work of an oil-fired North British "Ja" class 4-8-2, No. 1276, with a similar 7-total "Daylight Limited". This was the last run of the 1955-56

TABLE 1 — NZR AUCKLAND - FRANKTON

| Locomotive       | Class | Number | 1      | 2      | 3      | 4      | 5      | 6      | 7      | 8      | 9      | 10     |
|------------------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Distance         | miles | km     | 0 00   | 0 00   | 0 00   | 0 00   | 0 00   | 0 00   | 0 00   | 0 00   | 0 00   | 0 00   |
| Load, vehicles   | 2.06  | 3.32   | 5 18   | 4 49   | 4 55   | 5 07   | 5 07   | 5 07   | 5 07   | 5 07   | 5 07   | 5 07   |
| Load, tons tare  | 5.05  | 8.13   | 10 42  | 8 46   | 8 43   | 9 21   | 9 21   | 9 21   | 9 21   | 9 21   | 9 21   | 9 21   |
| Load, tons gross | 6.74  | 10.85  | 13 18  | 10 44  | 10 49  | 11 23  | 11 08  | 11 23  | 11 08  | 11 23  | 11 07  | 11 32  |
| Date             | 8.50  | 13.68  | 15 54  | 13 03  | 12 55  | 13 27  | 13 21  | 13 21  | 13 21  | 13 21  | 13 16  | 13 39  |
|                  | 10.32 | 16.61  | 18 52  | 15 47  | 15 55  | 16 29  | 16 30  | 16 30  | 16 30  | 16 30  | 16 31  | 16 39  |
|                  | 12.65 | 20.36  | 22 34  | 18 31  | 18 31  | 18 31  | 18 31  | 18 31  | 18 31  | 18 31  | 18 31  | 18 39  |
|                  | 14.40 | 23.17  | 25 23  | 20 32  | 20 32  | 20 32  | 20 32  | 20 32  | 20 32  | 20 32  | 20 32  | 20 39  |
|                  | 16.59 | 26.70  | 28 37  | 23 02  | 23 02  | 23 02  | 23 02  | 23 02  | 23 02  | 23 02  | 23 02  | 23 39  |
|                  | 18.74 | 30.16  | 31 34  | 25 28  | 25 28  | 25 28  | 25 28  | 25 28  | 25 28  | 25 28  | 25 28  | 25 39  |
|                  | 20.99 | 33.78  | 34 49  | 28 04  | 28 04  | 28 04  | 28 04  | 28 04  | 28 04  | 28 04  | 28 04  | 28 39  |
|                  | 24.17 | 38.90  | 42 39  | 32 06  | 32 06  | 32 06  | 32 06  | 32 06  | 32 06  | 32 06  | 32 06  | 32 39  |
|                  | 29.52 | 47.51  | 54 00  | 38 55  | 38 55  | 38 55  | 38 55  | 38 55  | 38 55  | 38 55  | 38 55  | 39 39  |
|                  | 32.29 | 51.95  | 58 54  | 43 55  | 43 55  | 43 55  | 43 55  | 43 55  | 43 55  | 43 55  | 43 55  | 44 39  |
|                  | 37.02 | 59.87  | 65 20  | 50 04  | 50 04  | 50 04  | 50 04  | 50 04  | 50 04  | 50 04  | 50 04  | 50 39  |
|                  | 41.85 | 67.35  | 73 30  | 57 59  | 57 59  | 57 59  | 57 59  | 57 59  | 57 59  | 57 59  | 57 59  | 58 39  |
|                  | 44.49 | 71.60  | 79 30  | 62 24  | 62 24  | 62 24  | 62 24  | 62 24  | 62 24  | 62 24  | 62 24  | 63 39  |
|                  | 47.39 | 76.11  | 84 11  | 66 17  | 66 17  | 66 17  | 66 17  | 66 17  | 66 17  | 66 17  | 66 17  | 67 39  |
|                  | 50.99 | 82.06  | 89 38  | 71 30  | 71 30  | 71 30  | 71 30  | 71 30  | 71 30  | 71 30  | 71 30  | 72 39  |
|                  | 55.41 | 89.17  | 96 16  | 77 51  | 77 51  | 77 51  | 77 51  | 77 51  | 77 51  | 77 51  | 77 51  | 78 39  |
|                  | 61.31 | 98.67  | 105 07 | 86 33  | 86 33  | 86 33  | 86 33  | 86 33  | 86 33  | 86 33  | 86 33  | 87 39  |
|                  | 66.45 | 106.94 | 112 00 | 94 36  | 94 36  | 94 36  | 94 36  | 94 36  | 94 36  | 94 36  | 94 36  | 95 39  |
|                  | 70.99 | 114.25 | 118 45 | —      | —      | —      | —      | —      | —      | —      | —      | —      |
|                  | 75.60 | 121.67 | 126 35 | 108 14 | 108 14 | 108 14 | 108 14 | 108 14 | 108 14 | 108 14 | 108 14 | 109 39 |
|                  | 79.02 | 127.17 | 132 47 | 113 47 | 113 47 | 113 47 | 113 47 | 113 47 | 113 47 | 113 47 | 113 47 | 114 39 |
|                  | 82.57 | 133.88 | 136 54 | 118 10 | 118 10 | 118 10 | 118 10 | 118 10 | 118 10 | 118 10 | 118 10 | 119 39 |
|                  | 85.94 | 138.31 | 142 00 | 124 32 | 124 32 | 124 32 | 124 32 | 124 32 | 124 32 | 124 32 | 124 32 | 125 39 |



Photograph: W. W. Stewart

The first postwar "Daylight Limited" to leave Auckland was headed by oil-fired "J" class 4-8-2 No. 1213 on 21 October 1949, now with some of its "streamline" sheathing removed. No. 1213 worked the train to Frankton.

season, by which time the Auckland-Frankton allowance had been extended slightly to 134 minutes in order to fit in with other traffic. When allowance is made for the speed restriction at Papatoetoe and the signal check approaching Papakura it will be seen that the times corresponded very closely with those obtained on the 1949 run. A perfectly horrible series of signal stops, however, while the crew let us in and out of the crossing loop at Amokura to pass a very tardy "Night Limited", cost a full nine minutes, yet despite another very severe speed restriction (at Huntly, to 7 m.p.h.) our driver contrived to bring us into Frankton in less than a minute over the scheduled time.

In February 1957 a special enthusiasts' train to Cambridge was worked as far as Frankton by one of the then new 750 h.p. "Dg" class diesel-electric locomotives, No. 791. Progress in the early stages was checked by a lengthy signal delay at Westfield and then by a slowing to 12 m.p.h. at Wiri for track relaying. But then the wheels began to spin! The 12.2 km between Manurewa and Drury were reeled off in 7 min. 57 sec., an average speed of 91.2 km/hr (57.2 m.p.h.), and the 1 in 100 banks up to Paerata and Pukekohe were cleared without falling below 69 km/hr (43 m.p.h.) at any point. Our running across the Whangamarino swamp was rather more restrained than on the previous





Photograph: W. W. Stewart.

On 24 October 1949 "J" 1213 (later reclassified "Jb") was again on the "Daylight Limited", seen here accelerating through Otahuhu after the usual slowing through Westfield junction.

runs, but in spite of more speed restrictions at Te Kauwhata and Huntly all except 13 seconds of the lost time was recovered. It was an exhilarating run.

In December 1960 the "Daylight Limited" was replaced by the diesel-hauled "Scenic Daylight" timed to cover the then 424 miles from Auckland to Wellington in 12 hr. 45 min. Departure time was moved forward to 8.30 a.m. and the Wellington arrival time brought back to 9.15 p.m. The first stage to Frankton was now allowed 125 min., a smart timing considering that the line maximum speed was still held at 50 m.p.h. Double line now extended from Auckland to Amokura and from Te Kauwhata to Frankton (except through Ngaruawahia) but otherwise the alignment was little changed.

For the first few seasons the batch of 10 "Da"s supplied by Clyde Engineering in 1957 provided the power from which locomotives for the "Scenic Daylight" were drawn; they were the only members of the class at that time cleared for running at passenger-train speeds. One day in January 1962 I found No. 1431 at the head of the standard 8-total train weighing loaded about 240 tons, and the run to Frankton produced the results shown in column 5 of Table 1. The general standard of running was very similar to that of "J" 1213 in column 2, but temporary speed restrictions at Westfield and south of Manurewa and Drury caused the "Da" to take six more minutes than the "J" to clear Paerata. By Mercer the arrears had been reduced to 2½ minutes, but the train



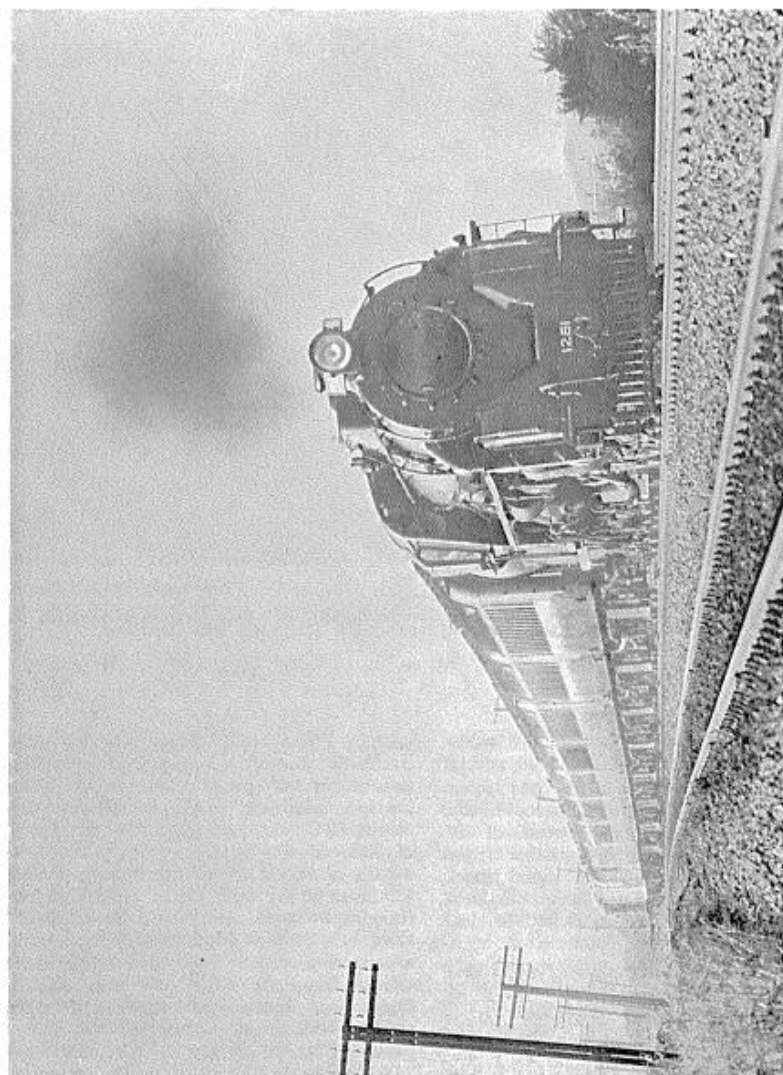
Photograph: W. W. Stewart

The first "express" working of one of the new North British "Ja" class locomotives occurred on 8 July 1952 when No. 1283 took the afternoon express, No. 227, south from Auckland.

was then taken much more quietly across the swamp country than the 1949 special until the "Da" was opened out again to scamper from Te Kauwhata to Huntly, 17.8 km, at an average speed of 82 km/hr (51 m.p.h.). Despite another speed restriction at Taupiri and a signal check outside Frankton, the run was completed just within the 125-min. schedule laid down.

Five years later, in January 1967, I was fortunate in being able to travel on John Murphy's special chartered railcar from Wellington to Auckland and back, when for the first and probably the only time in history, the return journey between these two cities was made well within a period of 24 hours. Leaving Auckland 37 minutes late on the return

journey, "Rm" 30's driver showed what could be done by running at or about the maximum speed of 60 m.p.h. (96.6 km/hr) wherever track conditions permitted. The times set out in column 6 of Table 1 display the result, which was a gain of almost 17 minutes on the special 115-min. timing laid down. Speed restrictions at Pānmure and just south of Drury were the only hindrances, but rapid acceleration from each minimised their effect. Generally "Rm" 30 ran like a hare. Note for example the 11.52 miles (18.54 km) from Papatōetoe to Drury covered in 11 min. 30 sec., and the 11.04 miles (17.77 km) from Te Kauwhata to Huntly put behind us in 10 min. 55 sec. No risks were taken, but every possible opportunity was seized, and we were fortunate to have a clear road.



Photograph: W. W. G. Pryce  
 The day of the "Ja" — No. 1281 flies along at top speed past Te Rapa towards Frankton with No. 227 express one fine summer evening in January 1965.

In 1968 one of the 88-seat articulated railcars, "Rm" 131, was modified and repainted for what became known later as the "Blue Streak" service, and I was able to time its first shakedown run from Auckland to Wellington in September before it began regular commercial service on this run on 1 October. The timetable now allowed 116 minutes from Auckland to Frankton and our driver had to contend with no fewer than seven temporary speed restrictions in this area alone. He also perhaps took a little too seriously a request to slow down while morning tea was served south of Te Kauwhata and ran at barely 30 m.p.h. for a considerable distance, losing some 9 minutes between Te Kauwhata and Huntly in the process. Nevertheless he contrived to maintain schedule by some spirited running elsewhere.

It is interesting to note that "Rm" 131 did even better than "Rm" 30 over some sections, notably from Otahuhu to Papakura, 17.17 km (10.67 miles) in 10 min. 30 sec. compared with 10 min. 40 sec. The final sprint from Ngaruawahia was also faster, in spite of a speed restriction on the approach to Frankton. The net time on this run could not have been much longer than that achieved by "Rm" 30.

Another run on the "Scenic Daylight" is tabulated in column 8, but this time with one of the later series of "Da"s built in Canada, No. 1529. This time a speed restriction at Panmure, a long series of signal checks from Manurewa to Papakura, and severe speed restrictions over bridges under repair or reconstruction each side of Drury caused us to take a full 53 minutes to clear Pukekohe, 52 km, but less inhibited running was possible thereafter, and Frankton was reached in just over 123 minutes. The time of only 38 min. 28 sec. for the 49.14 km from Te Kauwhata to Frankton was especially good. In fact it was surpassed only by "Rm" 30 in this table.

Introduction of the "Silver Star" sleeping-car express in September 1971 brought a new dimension to locomotive performance on the Main Trunk. Twice as heavy in normal circumstances as the "Scenic Daylight", the new trains were powered by two "Da" class locomotives for the

first two years, until the new "Dx" class took over in late August 1973.

The "Silver Star" is not an easy train to time. Apart from the difficulties of darkness only one side of the line is visible to the recorder, and a keen ear is needed to detect the wheel beats at rail joints. Hence my logs of the two runs set out in columns 9 and 10 of Table 1 are not as complete as they might be. On the first of these two runs, Nos. 1525 and 1522, mustering 2,620 h.p. for traction between them, had a standard 12-car train of about 480 tonnes gross weight, or about 640 tonnes including the weight of the locomotives. On the second occasion, in October 1973, "Dx" 2610, with a rated 2,600 h.p. available for traction, was faced with the maximum load of 14 cars representing about 565 tonnes with passengers and luggage, or about 662 tonnes including the locomotive's weight. The two "Da"s had a clear road over the first 80 kilometres and had gained almost two minutes on schedule by the time they passed Mercer, but a need to navigate the loop at Whangamarino to cross a long goods train on the main line made us 1½ minutes down at Te Kauwhata. This was recovered north of Ngaruawahia, where the timetable allows a small recovery margin, and the run was completed comfortably within the 125-min. booking for the 138.3 km.

The "Silver Star" timetable, incidentally, calls for Papakura to be passed in 30 minutes from the start, Pukekohe in 46, Mercer 64, Te Kauwhata 82, Huntly 96, and Ngaruawahia in 109 minutes. The "Dx" suffered a long speed restriction through Otahuhu for track upgrading, costing a full 3 minutes, but was on time at Te Kauwhata and a minute ahead at Huntly. A speed restriction at Taupiri and a concluding signal check, however, combined to cause a final deficit of 2½ minutes. The ability of the locomotive to maintain well over 80 km/hr on level track with this heavy load, unprecedentedly heavy by the standards of bygone years, was well illustrated by the time of 13 min. 3 sec. from Te Kauwhata to Huntly, an average of 81.7 km/hr.

Early the next morning an interesting run was recorded from Palmerston North to Wellington, as set out in Table 2. The timing of 135 minutes for the 136.2 km includes a fairly substantial margin for



**TABLE 2—NZR PALMERSTON  
NORTH-WELLINGTON**

Train No. 229 "Silver Star" 23 October 1973  
Locomotive: Class "Dx" Diesel-Electric No. 2610  
Load: 14 total, 547 tonnes tare, 565 tonnes gross.

| Distance | Timing Points    | Sched. Times | Actual Times | Average Speeds |
|----------|------------------|--------------|--------------|----------------|
| km       |                  | min.         | m. s.        | km/hr          |
| 0.00     | PALMERSTON N.    | 0            | 0 00         | —              |
| 6.31     | Longburn         | —            | 5 47         | 65.5           |
| 11.99    | Linton (site)    | —            | 11 13        | 62.7           |
| 17.69    | Tokomaru         | —            | 15 06        | 88.1           |
|          |                  |              | S/R          |                |
| 29.60    | Shannon          | —            | 26 10        | 64.6           |
| 36.76    | Koputarua        | —            | 31 22        | 82.6           |
| 44.56    | Queen Street     | —            | 37 32        | 75.9           |
| 45.90    | LEVIN            | —            | 38 32        | 80.4           |
| 56.83    | Manakau          | —            | 48 06        | 68.5           |
|          |                  |              | S/R          |                |
| 65.69    | OTAKI            | 56           | 58 48        | 49.7           |
| 71.37    | Te Horo (site)   | —            | 63 22        | 74.6           |
| 80.79    | Waikanae         | —            | 70 49        | 72.6           |
| 87.97    | Paraparaumu      | —            | 76 19        | 78.3           |
| 94.40    | McKays           | 79           | 80 54        | 84.2           |
| 97.35    | PAEKAKARIKI      | 83           | 83 47        | 61.4           |
| 100.92   | (North Junc.)    | 88           | 87 57        | 51.4           |
| 104.08   | (South Junc.)    | 93           | 92 02        | 46.4           |
| 104.94   | Muri             | —            | 93 10        | 45.5           |
| 105.88   | Pukerua Bay      | —            | 94 20        | 48.3           |
| 111.75   | Plimmerton       | —            | 100 36       | 56.2           |
|          |                  |              | sig stop.    |                |
| 118.51   | PORIRUA          | 116          | 109 35       | —              |
|          |                  |              | sig.         |                |
| 122.49   | Tawa             | —            | 116 42       | 33.6           |
|          |                  |              | sig.         |                |
| 126.46   | (Tunnel 2 — In)  | —            | 122 19       | 42.4           |
| 132.29   | (Tunnel 1 — Out) | —            | 127 13       | 71.4           |
|          |                  |              | sig.         |                |
| 136.25   | WELLINGTON       | 135          | 137 28       | 23.2           |

LEFT, UPPER: The first "Blue Streak" railcar, "Rm" 131, on an Auckland-Wellington journey in 1968 shortly after the run described in this article.

LEFT, LOWER: The down "Silver Star" south of Paraparaumu, headed by 2,750 h.p. "Dx" class diesel-electric locomotive No. 2601.

Photographs: N.Z. Railways Publicity (upper) and D. M. Cole (lower).

time recovery, so nothing really spectacular could be expected, but top speeds up to about 90 km/hr were noted on level track. Our "flight" across the Makerua Plains was interrupted by a long slowing south of Tokomaru for work on the track, but the 1 in 100 grade south of Koputarua was surmounted without falling below 72 km/hr (45 m.p.h.). With another speed restriction beyond Manakau, we had dropped nearly 3 minutes on schedule on passing Otaki, but this was soon recovered by clearing the Otaki-Paekakariki section, 31.7 km, within 25 minutes.

Perhaps the most interesting feature of this run was the climb at 1 in 66 from North Junction to Pukerua Bay. This was surmounted with apparently the greatest of ease, and with the mammoth load of 565 tonnes, easily the heaviest train on which I have ever travelled in New Zealand, without falling below 45 km/hr (28 m.p.h.) at any stage, and in fact recovering to 48 km/hr near the top of the bank. Beyond Plimmerton, however, we caught up with the morning commuter traffic, and the rest of the run was punctuated by signal checks making a punctual arrival impossible. On normal running times from Plimmerton, we could have reached Wellington in 122 minutes from Palmerston North. But the capabilities of the new power had been amply demonstrated. It was a decided contrast with the efforts of the steam locomotives of the 1940s.

### New Wagons of Class "Ukb"

Developed from the production series of "Uk" wagons, which began to be built in considerable numbers in 1971 for overseas container traffic, a new type classified "Ukb" is making its appearance this year. One hundred and thirty are on order from the Hillside Workshops. The "Ukb" differs from the "Uk" principally in that it is fully decked, has pockets for end boards, and is fitted with means for

tying down ropes. Otherwise the "Ukb" is of the same general design as the "Uk", which measures 15.952 m over headstocks, 16.876 m over buffers, and 2.210 m across the deck. Bogies are pitched at 12.192 m between centres, and floor height above rail level is 889 mm when the wagon is unladen. The "Ukb" wagons, however, are somewhat heavier than the "Uk" which have an average tare of 13.720 tonnes and a rated load carrying capacity of 43 tonnes.