LOCOMOTIVES AND THEIR PERFORMANCE, No. 22

SOME RECENT OBSERVATIONS

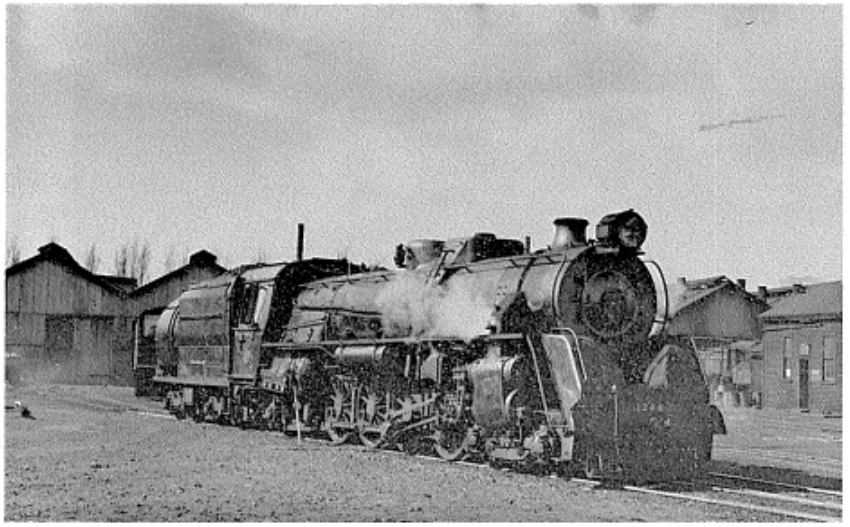
By T. A. McGavin

IT is some considerable time now since we paid any extended attention in these pages to the present-day work of locomotives on New Zealand express trains. In view of the impending retirement of the last steam locomotives in regular service on the New Zealand railway system, I would like to present some examples of runs timed over the Canterbury Plains during the past five or six years behind the highly capable "Ja" class 4-8-2 locomotives that have been the mainstay of South Island main-line services since the early 1950s. By way of contrast, I hope also to find space to describe some exceptionally meritorious runs recently recorded behind "Da" class diesel-electrics from Palmerston North to Wellington, when time recovery on fast schedules was of impressive magnitude.

Although the first of the 109-ton "Ja"s was turned out by Hillside Workshops in December 1946, it was another ten years before the 35th and last was completed. In the earlier 1950s, they were running an average of 40,000 miles a year each, but this utilisation dropped slightly after the introduction of the "Dh" class diesel-electrics between Oamaru and Dunedin in 1956. In the three years after all the Hillside "Ja"s were in service, that is from 1 April 1957 to 31 March 1960 (which happens to be the latest period for which statistics have been published), they ran an aggregate of more than 4,000,000 miles, or an average of 38,258 miles per locomotive each year. This work was accomplished almost entirely over the 367-mile main line between Christchurch and Invercargill, but they also worked north to Kaikoura, and on the section of the Midland Line westward to Arthur's Pass.

Undoubtedly the hardest sustained efforts were required with heavy loads at high speeds over the plains between Christchurch and Oamaru, 151 miles, though one must not play down unduly the efforts required on the 1 in 50 gradients between Oamaru and Dunedin, nor the work required in maintaining high average speeds over undulating country south of Dunedin, where speed restrictions for curves are much more numerous than in Canterbury. Gordon Troup gave an exhaustive review of their prowess on South Island express trains between Christchurch and Oamaru in these pages in 1958 (Volume 15, issue 75, beginning at page 5). Here I give details of three runs between Christchurch and Timaru, all timed between 1963 and 1969, showing that the standard of their work had in no way declined.

Table 1 shows runs on the schedule that became effective in March 1963, when the "South Island Limited's" time between Christchurch and Invercargill was reduced to 11hr. 40min., mainly by reduction in the station time at Oamaru. Partly in

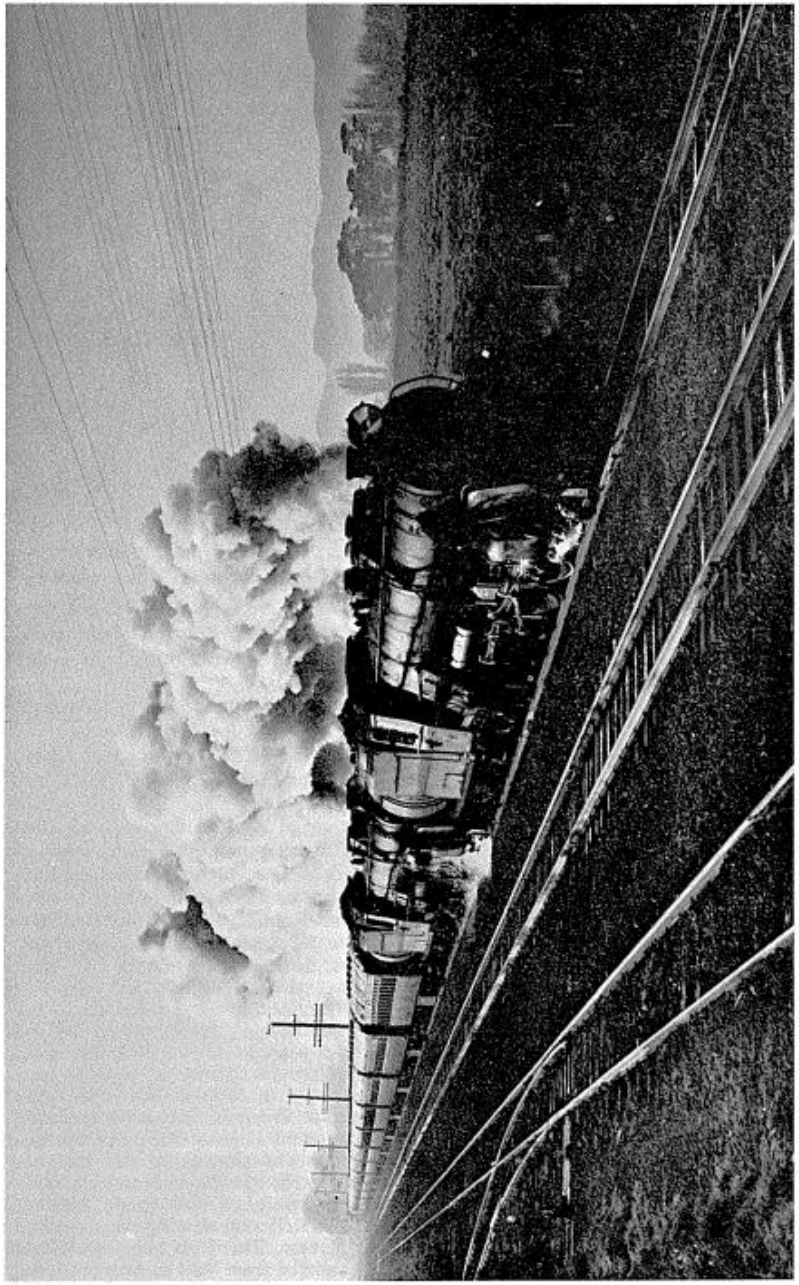


Photograph: N.Z. Railways Publicity

One of the 35 "Ja" class 4-8-2 locomotives, No. 1246, at Linwood locomotive depot, Christchurch, in 1968.

deference to the busy level crossings between Christchurch and Addington, partly because it is traditional to treat steam locomotives easily at the beginning of a long run, and partly because the line rises gradually, but almost continuously, for the first 43 miles to an altitude of 384 feet, exits from Christchurch are not notorious for their rapidity. On the first run tabulated, "Ja" 1267 with a trailing load of at least 285 tons, and with the stimulus of a departure seven minutes behind time, produced the second-fastest time I have ever recorded out to Rolleston; 21min. 46sec. for the 13.7 miles. In spite of the Burnham stop and the slowing then required over the Selwyn River bridge just south of Norwood, more than four minutes were gained to Rakaia. With the engine now really warmed up to its work, acceleration out of Rakaia was rapid. A rate of 50 m.p.h. was attained well within two miles, and the 16.7 miles to Ashburton were completed in 20min. 25sec., an average speed of 49.1 m.p.h. from start to stop without exceeding a maximum of 57. The 14 miles from peg 44 (two miles from Rakaia) to peg 58 (just outside Ashburton) were covered in 15min. 30sec. The train was now just over a minute late.

The only faster run than this that I have known out of Christchurch personally was one day in 1962 behind "Ja" 1270 with a 12-total train of 296 tons tare and about 340 gross. This driver really made sure of recovering a late start of three minutes. Against the rising gradient, he had the train rolling at 40 m.p.h. as early as Middleton, was up to 50 m.p.h. before Templeton, and was through Rolleston (where all down trains have to slow beyond the station to about 30 m.p.h. for the turnout on to the single line) in only 20min. 40sec. Up the faintly rising grade, four feet to the mile, through Burnham (where a stop for once was not required) towards Norwood, speed was raised to 55 m.p.h., but on the gradually steepening climb beyond Dunsandel our rate of progress was allowed to fall away to 45 m.p.h. on the 1 in 236 approaching Bankside. Nevertheless, 18 miles (pegs 22 to 40) beyond the Rolleston slowing were covered in 21min. 8sec. The 35.5 miles to Rakaia were completed from start to stop in 47min.



Photograph: N.Z. Railways Publicity

A pair of "Ja" class locomotives accelerate a 15-total train 143—the "South Island Limited"—out of Christchurch through Middleton on a frosty morning in August 1964.

TABLE 1 — CHRISTCHURCH-TIMARU

"South Island Limited" : "Ja" Locomotives

Locomotive Number			1267		1253		1270	
Load, Number of Cars			10		12		16	
,, Tons Tare			250		308		387	
,, Tons Gross			285		345		450	
Distance	**Timing Points**	**Sched.**	**Actual**	**Speeds §**	**Actual**	**Speeds §**	**Actual**	**Speeds §**
miles		min.	m.s.	m.p.h.	m.s.	m.p.h.	m.s.	m.p.h.
0.00	CHRISTCHURCH	0	0.00	—	0.00	—	0.00	—
1.34	Addington	5	4.02	19.9	4.46	16.9	5.10	15.6
3.01	Middleton	—	6.52	35.4	7.52	32.3	8.02	34.9
4.29	Sockburn	—	8.49	39.4	9.52	38.4	9.54	41.1
5.49	Hornby	12	10.37	40.0	11.44	38.6	11.39	41.1
8.67	Templeton	—	15.10	41.9	16.26	40.6	16.17	41.2
13.71	Rolleston	24	21.46	45.8	23.22	43.6	23.02	44.8
17.79	Burnham	c	27.31	42.6	29.16	41.5	29.13	39.6
		31	28.07	—	(pass)		29.46	—
21.70	Norwood	—	34.24	37.3	34.10	47.9	36.22	33.5
			S/R					
24.51	Dunsandel	41	38.30	41.1	37.20	53.2	39.47	49.3
30.55	Bankside	—	43.31	51.6	44.23	51.4	47.22	47.8
					S/R			
35.51	RAKAIA	56	51.43	48.0	53.26	32.9	53.54	45.5
5.21	Chertsey	—	7.23	40.4	7.53	39.6	8.12	38.1
							S/R	
10.68	Dromore	15	13.24	54.5	14.21	50.8	16.29	39.6
13.15	Fairfield	—	16.00	57.0	17.05	54.2	19.16	53.2
16.69	ASHBURTON	23	20.25	48.1	21.14	51.2	23.19	52.4
2.19	Tinwald	4	4.10	31.5	4.26	29.6	4.43	27.7
6.05	Winslow	—	8.20	55.6	8.43	54.1	9.13	51.9
					S/R			
11.59	Hinds	—	13.52	60.1	16.51	40.9	15.25	53.6
19.55	Ealing	26	22.03	58.1	25.44	53.8	24.56	50.2
			S/R					
22.27	Rangitata	—	26.20	38.4	29.00	50.0	28.01	52.9
28.60	ORARI	38	33.39	51.9	36.43	49.2	35.02	54.1
3.81	Winchester	—	5.04	45.1	5.40	40.3	5.29	41.7
7.47	TEMUKA	11	9.00	55.8	10.22	46.7	9.27	55.4
2.35	Arowhenua	—	4.32	31.1	—	—	4.29	31.4
8.00	Washdyke	11	10.25	57.6	12.28	38.5	10.56	52.5
11.18	TIMARU	17	15.08	40.4	17.33	37.5	16.02	37.4

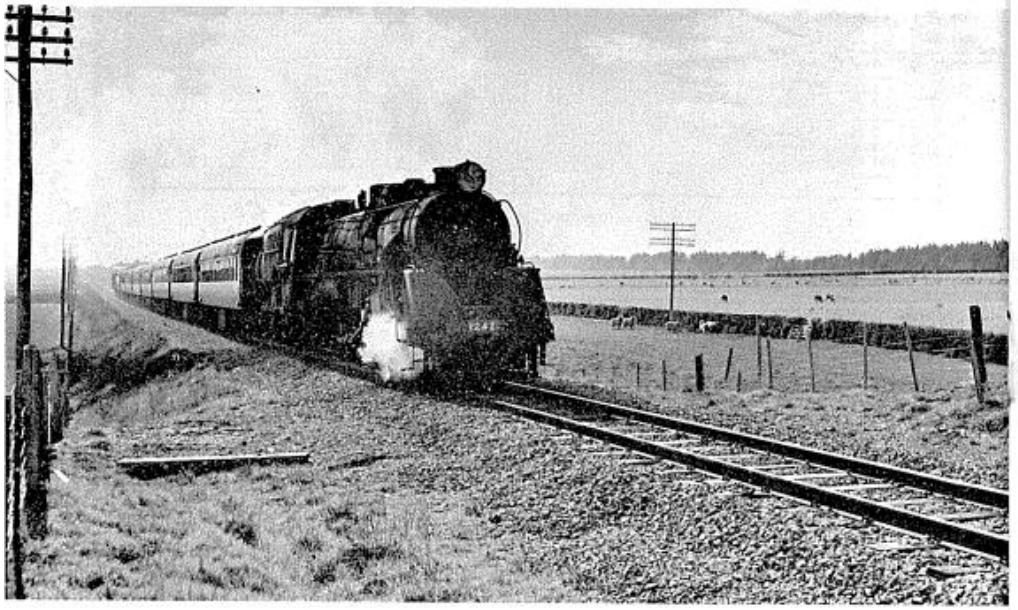
§ Average speeds from point to point.

54sec., a gain of eight minutes on schedule. The 16.7 miles to Ashburton were then run off in 22min. 4sec., and the remainder of the run to Timaru, being well on time, was not of special note.

Returning now to the tabulated run behind "Ja" 1267, we may now note the fastest time I have yet recorded from Ashburton to Orari. Although there was a speed restriction for track relaying just beyond Ealing, the 28.6 miles were covered at an average speed of 51.1 m.p.h. from start to stop. On the level track beyond Tinwald, speed rose from 55 m.p.h. gradually and almost imperceptibly to a maximum of 63 near Hinds. The long drag thence up to Ealing—an average of about 1 in 390, but including short pinches of 1 in 200—had no more effect than to reduce the rate to 57 m.p.h. The 16 miles between pegs 62 and 78, including the entire climb, were covered in 16min. 23½sec.

Because of overtime at stations, the pace remained brisk. The 7.5 miles downhill from Orari to Temuka were run off, start to stop, in 9 minutes exactly, five miles being covered in 4min. 52sec. with a maximum of 62 m.p.h.; and the final 11.2 miles into Timaru occupied just over 15 minutes, to bring the train in just ahead of time.

Photographs: N.Z. Railways Publicity



On Run No. 2, "Ja" 1253 had a heavier 12-total train, of about 345 tons gross weight. This was in October 1969 and, as can be seen, was another competent performance, with practically all running times well within the schedules laid down, in spite of two speed restrictions for track relaying that cost all of five minutes.

On this occasion I was not in a position to time from milepegs, which are on the left-hand side travelling south, but we maintained 53 m.p.h. from Norwood through Dunsandel, and topped Bankside at 48. A momentary maximum of 55 m.p.h. was attained near Fairfield, and south of Ashburton we ran at between 51 and 55 m.p.h. wherever possible. It appeared that some minor locomotive trouble developed at Temuka, because acceleration out of this station was much below par (though we were doing a healthy 51 through Washdyke) and there was an extended stop at Timaru while the trouble was rectified. I suspect that No. 1253 may have been in a somewhat run-down condition for, although its driver succeeded in running the northbound Limited back to Christchurch from Oamaru without losing any more time (in fact, he gained quite a bit), it was noticeable that there was reluctance to run at much more than 52 or 53 m.p.h. There were times, indeed, when there was a deliberate easing of the pace.

The third run tabulated in Table 1 is a prize in my collection. Normally the express train loads for a single "Ja" have been held to about 400 tons gross weight, an assisting engine being provided for heavier trains to ensure timekeeping. But on this occasion in 1967, a 16-total train of 387 tons tare and fully 450 tons gross (for the load included five vans of luggage, mails, and parcels) was taken unassisted by "Ja" 1270 and an obviously keen and hard-working crew as far as Timaru. I'm quite sure the fireman must have been perspiring freely after this effort.

Once clear of Addington, better times were maintained even than by No. 1253, and out to Rolleston within a few seconds of the time of No. 1267 which had had less than two-thirds of the load. Speed was worked up from 40 m.p.h. at Middleton to a maximum of 47 just beyond Templeton, and 46 m.p.h. was attained again after the slowing at Rolleston. I think the run from Burnham up to Rakaia was simply magnificent. A rate of 50 m.p.h. was attained on the short level stretch across the Selwyn River, and the climb to Bankside was carried without falling below 46 m.p.h. The run from Rakaia to Ashburton was spoiled by a slowing to 19 m.p.h. for track relaying work between Chertsey and Dromore, but a peak of 57 m.p.h. was attained on the outskirts of Ashburton.

The attainment of an average speed of 49 m.p.h. from start to stop over the 28.6 miles from Ashburton to Orari was an equally magnificent effort for this class of locomotive with such a load. It will be recalled that the "Ja" has no more than 44 tons available for adhesion, that the driving wheel diameter is only 54 inches, and that its nominal starting tractive effort (at 85 percent of the 200 lb. per sq. in. working pressure) is just 26,520 lb. It is of relatively modest size as express locomotives go, but 1270's driver and fireman coaxed their 560 odd tons of train (including the weight of the locomotive) quickly up to a steady 53 or 54 m.p.h. on the level track through Winslow and Hinds, and we were holding a steady 48½ m.p.h. as we approached the summit of the climb to Ealing. The mile-a-minute rate was just touched on the down grade when they shut off for the Orari stop. Twenty-five miles (pegs 62 to 87) were covered in 28min. 20sec.

Out of Orari, understandably, the acceleration was not quite so rapid as that of No. 1267 with the lighter train, but four miles were covered on this gentle downward slope in just under four minutes, the top speed being 62 m.p.h. Once again there was a spirited dash for Timaru, with a peak speed of 55 m.p.h. approaching Washdyke. With such a long train, there had been some unavoidable overtime at stations, but, after being seven minutes late away from Christchurch, and eight down from Ashburton,

LEFT, UPPER: The down "South Island Limited" crossing the Rangitata River on its journey south to Invercargill, on 1 June, 1967.

LEFT, LOWER: Racing across the Canterbury Plains near Chertsey between Rakaia and Ashburton, in September 1965, "Ja" 1242 is near the highest point on the line between Christchurch and Invercargill.

the arrival at Timaru was no more than five minutes behind schedule. Again I say, magnificent!

Space does not permit of discussion of the work between Timaru and Oamaru, or further south (not at this stage anyway), nor is there room to mention any northbound runs at this time, but I would like to conclude this temporary tribute to the "Ja"s with the details of an excellent run made back in 1955 when the "South Island Limited" made only restricted stops on three days a week. Between Christchurch and Oamaru, the only stops were at Ashburton and Timaru, but the schedules were not unduly difficult, having been arranged at a time when the "Ab" class Pacifics were ruling the roost in Canterbury. Brief reference to this run was made in Noel Palmer and Bill Stewart's *Cavalcade of New Zealand Locomotives*, but here now in Table 2 are more details.

The date was 5 September 1955 when the "South Island Limited" out of Christchurch comprised eight passenger cars and two vans for an aggregate tare of 275 tons and gross weight of about 300 tons headed by "Ja" 1267. It will be seen that there was the usual very quiet departure from Christchurch, no faster than was necessary to maintain schedule, even though departure had been two minutes behind time. But once the train was on to the single line beyond Rolleston, the pace was quickened, perhaps to get a little time in hand for the Selwyn bridge slowing. Rakaia was passed well on time, but shortly afterwards a Westinghouse airbrake hose burst, bringing the train to a stand for 4min. 20sec. while a replacement was fitted. This delay, plus excess time spent at Ashburton for refreshments, proved to be the stimulus for the notable run that followed, when no fewer than 12 minutes were gained on schedule between Ashburton and Washdyke, 44.1 miles cleared in only 48min. 5sec. from the start.

The mile-a-minute rate was attained near Winslow and, although milepeg times are not available, it appears that a speed approaching 65 m.p.h. must have been attained near Hinds, and that the climb to Ealing must have been surmounted at better than 50 m.p.h. The 30 miles from Winslow to Temuka were covered in 30min. 20sec., and the average station-to-station speeds show that a remarkably even pace was maintained from Ealing down to Temuka, the 16.52 miles being covered in 16min. 30sec. The pace was eased beyond Temuka,

TABLE 2

CHRISTCHURCH-TIMARU

"South Island Limited" 1955

Locomotive Class	Ja
Locomotive Number	1267
Load, Number of Cars	10
,, Tons Tare	275
,, Tons Gross	300

Distance	Timing Points	Sched.	Actual	Speeds §
miles		min.	m.s.	m.p.h.
0.00	CHRISTCHURCH	0	0.00	—
1.34	Addington	5	5.43	14.1
3.01	Middleton	—	9.30	26.5
4.29	Sockburn	—	11.20	41.9
5.49	Hornby	13	13.08	40.0
8.67	Templeton	—	17.38	42.4
13.71	Rolleston	25	24.33	43.7
17.79	Burnham	—	30.30	41.1
21.70	Norwood	—	34.38	56.7
			S/R	
24.51	Dunsandel	41	40.10	30.5
30.55	Bankside	—	48.18	44.5
35.51	Rakaia	57	54.20	49.3
			stop ϕ	
46.19	Dromore	—	75.00	—
48.66	Fairfield	—	77.43	54.5
52.20	ASHBURTON	79	82.05	48.6
2.19	Tinwald	5	4.50	27.2
6.05	Winslow	10	9.10	53.4
11.59	Hinds	17	14.28	62.7
19.55	Ealing	28	23.00	56.0
22.27	Rangitata	32	25.44	59.7
28.60	Orari	40	32.00	60.6
32.41	Winchester	45	35.48	60.2
36.07	Temuka	50	39.30	59.3
38.42	Arowhenua	—	42.10	52.9
44.07	Washdyke	60	48.05	57.3
47.25	TIMARU	66	54.52	28.1

§ Averages from station to station.
ϕ Emergency stop to replace burst hose.

and I suspect that there must have been a speed restriction on the approaches to Timaru, for the time from Washdyke in was well over a minute more than the normal for this section. As it was, the average speed from start to stop was 51.7 m.p.h. With a normal run in, the time could have been brought down to only about 53 minutes, or 53.5 m.p.h.

With a Timaru crew, the continuation run of 51.6 miles from Timaru to Oamaru was completed in 72min. 11sec., against the 75 minutes scheduled, and in spite of three severe (15 m.p.h.) speed restrictions. On the return journey the same day with the northbound "Limited", the 51.6 miles to Timaru occupied 78min. 42sec., the loss of 3¾ minutes being entirely accounted for by

Photograph: N.Z. Railways Publicity

On a high-speed stretch of the North Island main trunk line, train 229, the Auckland-Wellington "Night Limited", races through Tokomaru in early-morning sunshine. The "Da" class locomotive is No. 1529.

the severe slowings at St. Andrews and Pareora. The 47.3 miles from Timaru to Oamaru, however, allowed 72 minutes, were run in 63min. 30sec. without any higher speed than 53 m.p.h., and the final 52.2 miles into Christchurch, allowed 75 minutes, were completed in 71min. 20sec. in spite of two severe slowings en route, but again without any unusually high speeds.

As I write this article, the new schedules for the diesel-hauled "Southerner", which is to replace the "South Island Limited" in December this year, have just been announced. This new service will be allowed only 3hr. 35min. for the 151 miles from Christchurch to Oamaru, 21 minutes quicker than the allowance for the 1955 "Limited", though the Ashburton and Timaru station allowances will be much shorter, and the Selwyn and Waitaki bridge slowings are no longer with us. Although the load of the "Southerner" appears likely to be no more than about 220 or 250 tons gross, it will be most interesting to see what the 1,050 h.p. "Dj" class diesel-electrics will make of the new schedules. I suspect that, with maximum speeds in the region of 55 m.p.h., they will have not the slightest difficulty.

It is tempting to contemplate that a reasonably early objective could be an allowance of 3 hours or less for the 151 miles between Christchurch and Oamaru, including the Ashburton and Timaru stops. With the completion of relaying with 91 lb. rail, the installation of CTC and automatic signalling to eliminate the problems of tablet-exchanging at high speed (work which is now in hand in this area), and the provision of suitably geared locomotives, such an objective would, I think, be not too fanciful.

To show what is being done with diesel traction in the North Island on fast express services, I conclude this offering with Table 3, showing two runs from Palmerston North to Wellington behind "Da" class 1,425 h.p. diesel-electrics of General Motors extraction. The first was behind "Da" 1526 with an 11-total Auckland-Wellington "Night Limited" due to leave Palmerston North at 6.44 a.m. On this occasion, departure was 13 minutes behind time, and there was the handicap of two severe speed

TABLE 3 — PALMERSTON NORTH-WELLINGTON

"Da" Class Diesel-Electric Locomotives

Train Number	229	J-9
Locomotive Number	1526	1518
Load, Number of Cars	11	8
,, Tons Tare	324	222
,, Tons Gross	350	240

Timing Points	Distance	Sched.	Actual	Speeds §	Distance	Sched.	Actual	Speeds §
	miles	min.	m.s.	m.p.h.	miles	min.	m.s.	m.p.h.
PALMERSTON N.	0.00	0	0.00	—	0.00	0	0.00	—
Longburn	3.92	—	5.30	42.8	3.92	6/9	5.09	45.7
Linton	7.45	—	9.44	50.0	7.45	—	9.20	50.6
			S/R					
Tokomaru	10.99	—	14.59	40.5	10.99	—	13.01	57.7
			S/R					
Shannon	18.39	26	25.03	44.1	18.39	—	20.51	56.7
Koputaroa	22.84	—	29.17	63.1	22.84	—	25.29	57.6
Queen Street	27.69	—	34.46	53.1	27.69	—	30.56	53.4
LEVIN	28.52	41	36.11	35.2	28.52	39	31.52	53.3
Ohau	3.15	—	5.18	35.7	31.67	—	35.33	51.3
Manakau	6.79	—	9.08	57.0	33.31	—	39.24	56.7
			S/R					
Otaki	12.30	20	18.20	35.9	40.82	58	47.33	40.6
Te Horo	15.83	—	22.17	53.6	44.35	—	51.32	53.2
Waikanae	21.68	—	28.48	53.9	50.20	—	58.13	52.5
Paraparaumu	26.14	—	33.22	58.6	54.66	—	63.00	55.9
(McKays)	30.14	45	37.18	61.0	58.66	80	67.15	56.5
PAEKAKARIKI	31.97	49	39.58	41.2	60.49	85	69.45	43.9
(North Jn.)	2.22	6	4.46	27.9	2.22	6	4.08	32.2
(South Jn.)	4.18	11	9.25	25.3	4.18	11	7.50	31.8
Pukerua Bay	5.30	—	11.58	26.3	5.30	—	9.44	35.4
Plimmerton	8.95	—	17.42	38.2	8.95	—	15.17	39.5
			S/R					
Paremata	10.57	—	20.58	29.7	10.57	—	17.13	50.3
Porirua	13.15	26	24.17	46.7	13.15	25	19.55	57.3
Linden	14.88	—	26.22	49.8	14.88	—	21.54	52.3
Tawa	15.62	—	27.21	45.1	15.62	—	22.44	53.3
(Tunnel 2)	18.09	—	31.11	38.7	18.09	—	25.50	47.8
							S/R	
(Tunnel 1, exit)	21.71	—	35.41	48.3	21.71	—	30.51	43.3
Kaiwharawhara	22.57	—	36.51	45.3	22.57	—	32.09	40.6
WELLINGTON	24.17	44	40.36	25.6	24.17	42	35.48	26.3

§ Average speeds from point to point.

restrictions for track repairs south of Linton and Tokomaru respectively (just where speed would normally be at its highest), yet Wellington was reached two minutes early. Running of this quality I had experienced before on the lighter "Scenic Daylights", but this time the load was at least 100 tons greater. The locomotive demonstrated its ability to maintain 64 m.p.h. with 350 tons on level track (for at least two miles between Shannon and Koputaroa), and wherever track conditions permitted speed quickly and easily reached the mile-a-minute pace. The 2¼-mile bank at 1 in 100 south of Koputaroa reduced speed no lower than 45 m.p.h., and the short banks at the same inclination between Ohau and Manakau hardly seemed to exist. After the easing for the curves at Waikanae and across the river, the eight miles from peg 36 to peg 28 were covered in 7min. 54sec. This was the first time I had recorded a time of less than 40 minutes on an express train from Levin to Paekakariki, 32 miles.

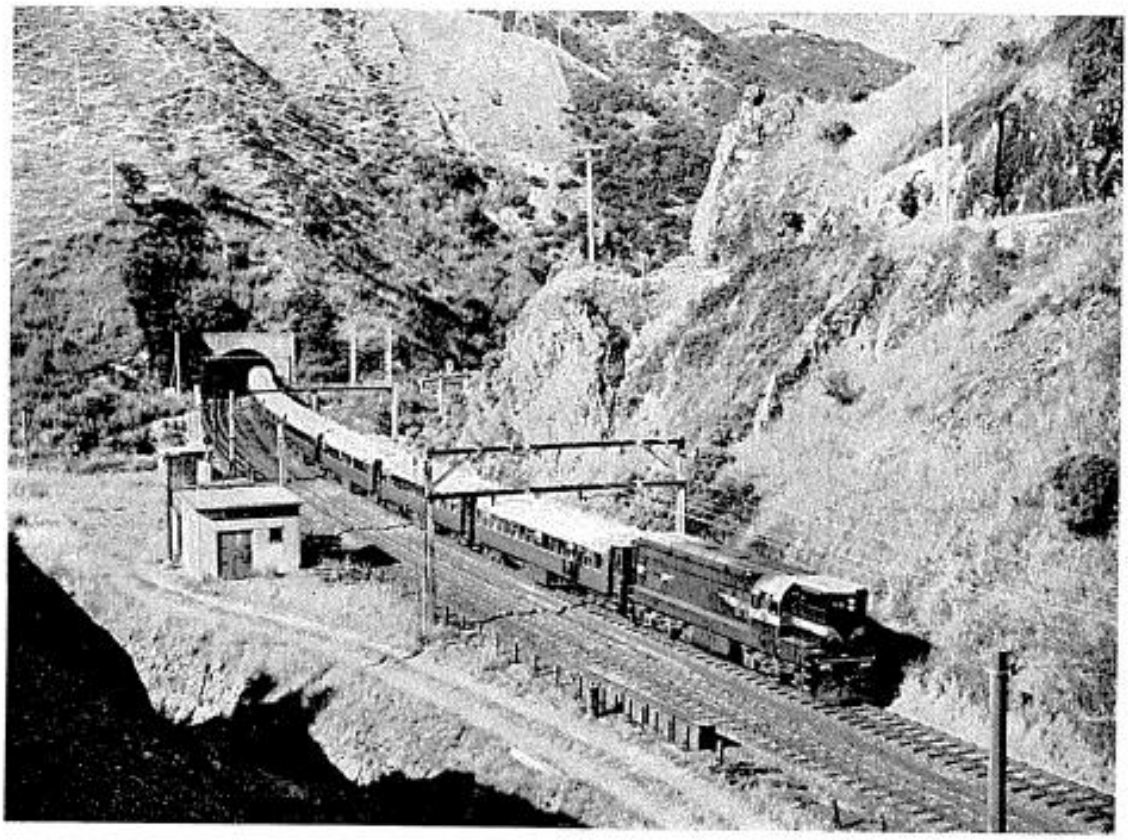
With the train almost on time at Paekakariki, there was less need for haste, but the run over the final 24.2 miles was still good, after allowing for the speed restrictions between Paekakariki and Plimmerton. The train was taken up the 1 in 66 climb from North Junction to Pukerua Bay at

Photograph: R. J. McGavin

On a dull Sunday morning in July 1968, the 7.30 p.m. Auckland-Wellington express (train 221) crosses the causeway between Paremata and Porirua, about 12 miles from Wellington. The houses of Plimmerton can be seen in the background.

26 m.p.h., and after a severe speed restriction near Paremata a pace of 56 m.p.h. was attained through Porirua. After easing for curves, the climb to the tunnel was surmounted at a minimum of 37 m.p.h. I estimate the net time for the 24.2 miles at about 39 minutes.

The second run in Table 3, with "Da" 1518 at the head of a 240-ton "Scenic Daylight", gave me the fastest time I have ever experienced on this train. It is allowed 128 minutes for the 84.7 miles, including allowance for a crossing with train 626 at Longburn, and a stop at Paekakariki. Because of delays caused by extensive track reconstruction and repair work in hand between Waiouru and Mangaweka, departure from Palmerston North was 16 minutes late. This meant, however, that the scheduled stop at Longburn was not required, and the result was the recovery not only of the full 16 minutes, but of another five besides, to give an arrival in Wellington practically five minutes ahead of time. Including a stop of 1min. 19sec. at Paekakariki, the 84.7 miles were covered in just under 107 minutes. The run from Palmerston North to Paekakariki was the first I had ever experienced in less than 70 minutes on an ordinary express train; the average speed from start to stop being 52.3 m.p.h. As the average station-to-station speeds indicate, this run was notable for the sustenance of speed in the range of 55 to 60 m.p.h. over long distances. The 30 miles between pegs 82 (just north of the Manawatu River bridge) and 52 (just south of Manakau), including the climb over the



Photograph: R. J. McGavin

A special summer holiday "Scenic Daylight" express crossing the Ngauranga Gorge between Nos. 1 and 2 Tunnels on the climb out of Wellington in December 1967. The locomotive: "Da" 1530.

Koputaroa bank, where the minimum was 47 m.p.h., occupied just 32min. 31sec., an average of 55.4 m.p.h. A similar pace was maintained south of Waikanae, the peak on this stretch being 59 m.p.h. for two miles.

South of Paekakariki, an excellent run was made. On the 1 in 66 climb to Pukerua Bay, speed recovered to 36 m.p.h. after the speed-restricted stretch through the tunnels, and a rousing pace was regained beyond Paremata, through Porirua, and up the climb through Tawa, the minimum on the 1 in 100 being 46 m.p.h. A speed restriction over the bridge between Nos. 2 and 1 tunnels spoiled the downhill time into the city, but the final 15.2 miles from Plimmerton into Wellington occupied only 20min. 31sec., quite as good as any run I have had on this train behind the "Ew" class straight electrics formerly used south of Paekakariki.

The time of 35min. 48sec. from Paekakariki to Wellington has been eclipsed, apart from on railcars, only once in my experience, and that was a subsequent run on the same train, in January this year, when the Paekakariki-Wellington time was brought down by the driver of "Da" 1422 to 34min. 34sec. Pukerua Bay was cleared in 9min. 47sec., and Plimmerton in exactly 15 minutes, the final 15.2 miles being covered in 19min. 34sec.

The "Da" class diesel-electrics, with a designed top speed of only 62 m.p.h., are certainly turning in some excellent performances in everyday service. These runs show, too, that the day-to-day running of express trains in New Zealand is every bit as smart as that to be found on other large 3ft. 6in. gauge railway systems.