

NEW NAMED TRAIN SERVICES FOR NEW ZEALAND

By T. A. McGavin

AS briefly noted in our last number, at page 104, New Zealand Railways' latest upgraded passenger train, the "Endeavour", entered service between Wellington and Napier, 197 miles (317 km), on 6 November 1972. Shortly afterwards, the long-awaited "Silver Fern" diesel-electric railcars arrived from Japan. Following commissioning and a series of trial runs, they entered service between Wellington and Auckland, providing a service daily except Sunday each way from Thursday 14 December. They replaced the "Blue Streak" railcars, which had been running a thrice-weekly service each way since 1 October 1968, and the "Blue Streak" cars were thereupon transferred to the Wellington-New Plymouth route from Monday 18 December, taking up the running of Nos. 507 and 610 services Monday to Saturday on accelerated schedules with fewer stops. The Friday and Sunday evening services, Nos. 673 and 674, on this route are now worked by 88-seat articulated railcars, and the surviving 52-seat "Standard" cars of 1938 vintage have been withdrawn.

Wellington-Napier "Endeavour"

For this train, usually headed by a 1,425 h.p. "Da" class diesel-electric locomotive, four passenger cars Nos. 1905, 1928, 1947 and 1976 were completely refurbished internally, and a former North Island main trunk first-class car, No. 1892, was refitted as a buffet car in "Southerner" style and mounted on new bogies imported from Japan. Externally all were finished in two shades of blue with white roofs — again like the "Southerner" — and one of the spare "Southerner" vans, "F" 610, was brought up from the South Island. Cars Nos. 1928 and 1976 were provided with hostess compartments, the main passenger (smoking) compartment

having 32 seats, all with adjustable three-position reclining backs and all rotatable to face the direction of travel. Cars Nos. 1905 and 1947 are non-smokers having 36 seats each. All cars have wall-to-wall carpet, curtains, new-style windows, and fluorescent lighting. Goko oil-fired air heaters are fitted to each car for winter warmth.

From its inception the "Endeavour" has been marshalled thus from the north end: non-smoker, smoker, buffet car, non-smoker, smoker, and van. The passenger cars weigh between 27.0 and 27.6 tons each, while the buffet car scales 31.1 tons. With the 23-ton van, the total tare of the train is therefore 163 tons, giving a total gross weight when fully loaded of about 175 tons.



Photograph: N.Z. Railways Publicity

New Zealand Railways' new Wellington-Napier "Endeavour" express beginning the climb out of Wellington on 20 November 1972, headed by "Da" 1455.

In the buffet car, the menu offers patrons a wide choice. On the northbound journey morning tea is available from 9.00 to 10.50 a.m. and lunch between 11.15 and 12.45 p.m. Southbound, afternoon tea is offered from 2.30 to 3.45 p.m. and dinner from 4.45 to 7.00 p.m. Wine is available with luncheon and dinner, and passengers in the smoking cars may order liquor to be served at their seats by the hostesses. Soft drinks may be ordered in all cars, and hostesses will also bring refreshments or meals as desired to the seats of the

aged, incapacitated, and mothers with young children.

The "Endeavour" leaves Wellington as train 632 at 7.55 a.m. daily except Sunday and is due to reach Napier at 1.25 p.m. It returns as train 957, leaving Napier at 2.05 p.m. and arriving at Wellington at 7.37 p.m., a round trip of 394 miles (634 km) each day. Stops en route are restricted to Paekakariki, Otaki, Levin, Palmerston North, Woodville, Dannevirke, Waipukurau, and Hastings. To connect with the "Endeavour", an 88-seat articulated

TABLE 1
"Endeavour" Wellington to Napier
Monday to Saturday

km			a.m.	km/hr
0.0	Wellington	dep	7.55	—
38.9	Paekakariki	arr	c 8.33	61.4
	"	dep	c 8.34	—
70.6	Otaki	arr	x 9.01	70.5
	"	dep	x 9.02	—
90.3	Levin	arr	9.21	62.2
	"	dep	9.22	—
136.2	Palmerston N.	arr	9.56	81.0
	"	dep	9.58	—
165.8	Woodville	a:r	10.34	49.3
	"	dep	10.36	—
191.9	Dannevirke	a:r	11.03	58.0
	"	dep	11.04	—
247.0	Waipukurau	arr	12.05	54.2
	"	dep	12.06	—
297.9	Hastings	arr	1.00	56.6
	"	dep	1.02	—
316.8	Napier	arr	1.25	49.3
			p.m.	

Journey Time: 5hr. 30min. (57.6 km/hr)

Running Time: 5hr. 19min. (59.6 km/hr)

c Stops only to pick up passengers.

x Stops only if required. Passengers should be at the station a few minutes earlier than the time shown.

railcar leaves Gisborne at 9.35 a.m. to reach Napier at 1.35 p.m. It returns to Gisborne after connecting with the northbound "Endeavour", being timed to leave Napier at 1.55 p.m. and to reach Gisborne, 131.7 miles (212 km), at 5.55 p.m.

These services replace the former 7.55 a.m. Wellington-Gisborne and 8.0 a.m. Gisborne-Wellington railcars, but the Sunday railcars leaving Wellington at 2.05 p.m. for Napier and Gisborne, and leaving Gisborne at 11.05 a.m. and Napier at 3.05 p.m. for Wellington continue to run. The present morning railcar from Napier to Wellington (train 955), and its return service in the afternoon (No. 634) Monday to Saturday, also continue to run, but the morning car now leaves at 7.50 instead of 8.05 a.m. and the afternoon one at 3.05 instead of 2.55 p.m. They are due to reach their destinations at 1.28 p.m. and 8.50 p.m. respectively.

The one-way or single journey fare from Wellington to Napier on this upgraded service is \$5.25, compared with the ordinary railcar fare of \$4.25 and a standard first-class fare of \$5.85 for a corresponding distance. The scale of fares appears to be approximately, but not precisely, on the same level as those charged for "Southerner" travel in the South Island.

Summaries of the timetables are set out in Tables 1 and 2, showing also the average speeds required between stops. To assist readers to get used to the style of things to come, distances are shown in kilometres and the speeds in kilometres per hour. Considering the track alignment, and the character and capacity of the equipment, some remarkably smart running is required. For the first time in New Zealand, a locomotive-hauled train is expected to average more than 50 m.p.h.

TABLE 2
"Endeavour" Napier to Wellington
Monday to Saturday

km			p.m.	km/hr
0.0	Napier	dep	2.05	—
18.9	Hastings	arr	2.26	54.0
	"	dep	2.28	—
69.8	Waipukurau	arr	3.24	54.5
	"	dep	3.25	—
124.9	Dannevirke	arr	4.25	55.1
	"	dep	4.26	—
151.0	Woodville	arr	4.51	62.6
	"	dep	4.53	—
180.6	Palmerston N.	arr	5.29	49.3
	"	dep	5.31	—
226.5	Levin	arr	6.05	81.0
	"	dep	6.06	—
246.2	Otaki	arr	x 6.27	56.3
	"	dep	x 6.28	—
277.9	Paekakariki	arr	b 6.57	65.6
	"	dep	b 6.58	—
316.8	Wellington	arr	7.37	59.8
			p.m.	

Journey Time: 5hr. 32min. (57.3 km/hr)

Running Time: 5hr. 21min. (59.2 km/hr)

b Stops only to set down passengers.

x Stops only if required. Passengers should be at the station a few minutes earlier than the time shown.



ABOVE: An "Endeavour" hostess attends to the requirements of a passenger.

LEFT, UPPER: Preparing appetising dishes in the "Endeavour's" buffet car.

LEFT, CENTRE AND LOWER: Scenes in the buffet car of "Endeavour". It can seat 20 passengers at a time.

Photographs: N.Z. Railways Publicity



(80 km/hr) on a start-to-stop run, the Levin-Palmerston North run being allowed no more than 34 minutes in each direction. Hitherto the fastest start-to-stop bookings for locomotive-hauled trains in this country have only rarely topped 45 m.p.h. (72 km/hr), as with the "Southerner" in Canterbury, but some railcar runs mainly in the Manawatu have topped the 50 m.p.h. mark. It must be remembered of course that the timetables are based on maximum running speeds of 60 m.p.h. for railcars and 55 m.p.h. for passenger trains.

Between Palmerston North and Napier the maximum speed for express trains is 50 m.p.h. on favourable sections of track, but there are numerous restrictions for curves and other features, including 15 m.p.h. for two miles through the Manawatu Gorge. Gradients also are significant

factors in keeping the speed down. These reach 1 in 47 against northbound trains climbing towards Matamau north of Dannevirke, and 1 in 46 against southbound trains south of Opapa, between Hastings and Waipukurau.

Your editor was privileged to travel on a preview run of the new "Endeavour" service on 1 November 1972, when some 150 guests representing local bodies, business interests, travel agencies, and news media sampled the train. The performance and facilities of the new service drew favourable comment from all participants. Because the through railcar service was still running, the preview run left Wellington at 8.45 a.m. to reach Napier at 2.28 p.m., and left Napier at 3.10 p.m. to arrive at Wellington at 8.55 p.m.

Temporary speed restrictions for bridge and track renewals caused a loss of three minutes between Wellington and Levin, and a slight signal check at Koputaroa caused the Levin-Palmerston North sprint to be extended to 34 min. 31 sec. even though 17 miles were covered in 17 min. 48 sec. Between Palmerston North and Napier time was in hand on most sections, a time of 23 min. 53 sec. for the 16.2 miles (26.1 km) from Woodville to Dannevirke, mainly uphill, being particularly good. In spite of delays caused by a stop to change crews at Matamau and a dropped tablet at Marakeke, the train was only a minute behind schedule at Napier.

On the return journey, lengthy stops at Waipukurau and Dannevirke, plus a signal stop at Marakeke to pick up the tablet for the next section, made us 11 minutes behind time on leaving Dannevirke, but eight minutes of these were recovered by Palmerston North. The 24.6 miles (39.6 km) from Longburn to Levin were run from start to stop in 29 min. 40 sec. against the 32 minutes allowed, and arrival at Wellington was right on time. First impressions were entirely favourable.

The "Silver Fern" Railcars

The three new twin-coach air-conditioned diesel-electric railcars ordered in May 1970 for the Wellington-Auckland daytime express service arrived at Auck-

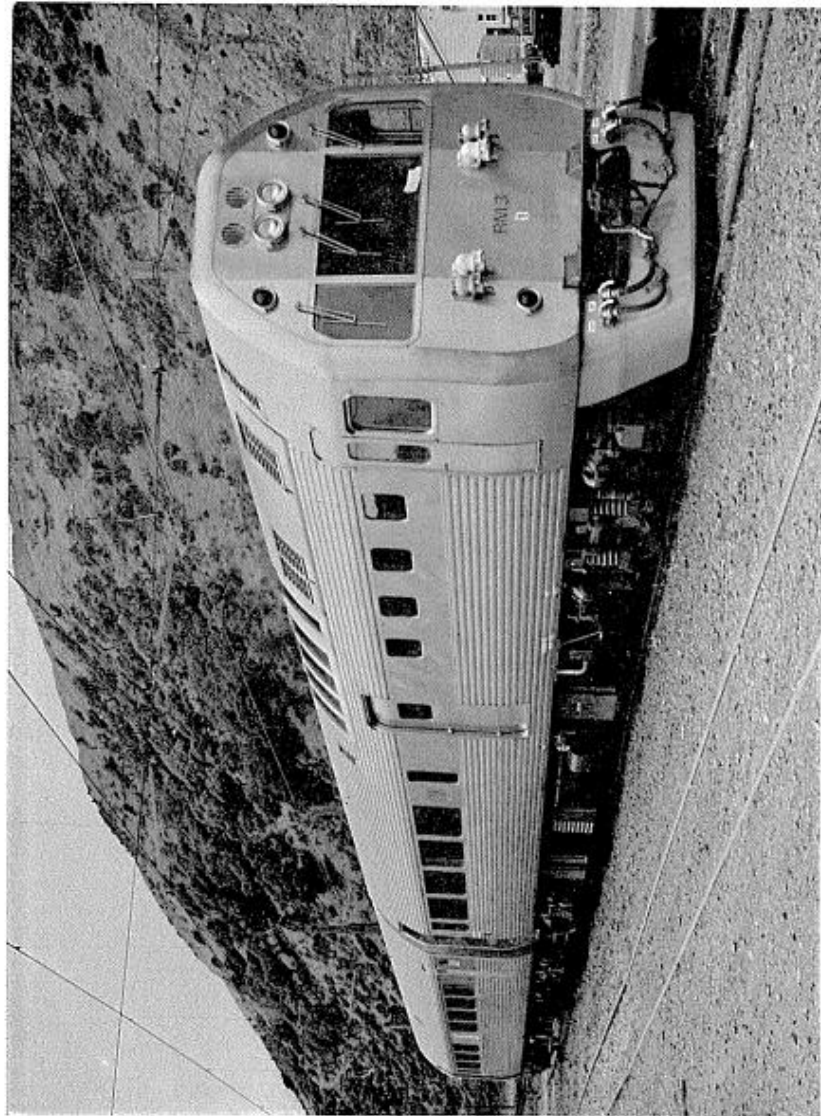
land from Japan on 11 November 1972, made demonstration runs for invited guests on 13 December, and entered regular daily service in place of the former "Blue Streak" cars the following day. The "Silver Fern" railcars, as they are known, were supplied by the Nissho-Iwai Company of Japan, representing a consortium of Kawasaki Heavy Industries Ltd and the Tokyo Shibaura Electric Co. Ltd.

Fully air-conditioned, the new 96-seat railcars numbered "Rm" 1, 2, and 3 provide a service six days a week in each direction, leaving Auckland at 8 a.m. and Wellington at 8.20 a.m. Monday to Saturday, double the frequency offered by the 80-seat "Blue Streak" railcars. The southbound journey is allowed 10 hr. 50 min. for the 423 miles (681 km), and the northbound 11 hours, both as before, though some of the intermediate times are slightly changed to allow for a crossing at Rangataua, south of Ohakune. Normally one car is in use in each direction and one is spare at Wellington for servicing.

Externally finished with ribbed stainless-steel sheathing on a corrosion-resistant carbon-steel frame, each new 105-ton "Silver Fern" railcar comprises two 75 ft double-bogie coaches permanently coupled to give a total length of 155 feet. The maximum height above rail is 12 ft. 4 in. and the width 9 feet. The width decreases towards the ends in a slight taper to give adequate side clearances in curved tunnels. These vehicles are therefore the longest yet to run on New Zealand Railways. By comparison the overall length of the Vulcan railcars is 68 ft. 3 in., and that of the standard railcars almost 68 feet.

A 1,010 horsepower D398TA Caterpillar diesel engine, housed in a sound-insulated compartment, drives a direct-coupled alternator which supplies power through silicon rectifiers to the direct-current electric motors mounted on the bogies. The horsepower available for traction is 970, with the other 40 h.p. being used to drive radiator fans for the roof-mounted radiators.

Because New Zealand railway engineers wanted most of the output of the main engine available for traction, a small auxiliary engine (a Caterpillar D330T type



Photograph: N.Z. Railways Publicity

One of the three 1,010 h.p. diesel-electric "Silver Fern" two-coach railcars placed in service by New Zealand Railways in December 1972, photographed at Paekakariki. Fully air-conditioned, these 96-seat units have a designed top speed of 75 m.p.h.

rated at 115 h.p.) was installed in the power compartment. This auxiliary engine is connected to an alternator which has a 415 V 3-phase output. This power is used for lighting, heating, and the air-conditioning of the passenger compartments, for control equipment and the air compressor. The running gear consists of one three-axle bogie and three two-axle bogies, and the layout is unusual in that the outer bogies of each car are powered. This means that the second half of the articulated car cannot be truly described as a trailer car. The reason for this layout, which necessitates a high-voltage lead for traction current from the front half of the railcar to the "trailer" half, is that New Zealand Railways engineers felt it undesirable for an unpowered trailer to be propelled at high speeds. The three-axle bogie is under the main diesel engine and carries two traction motors, as does the other power bogie at the outer end of the second car. The wheel diameter of the powered bogies is 3 ft. 1 in. while that of the centre idler axle of the three-axle bogie and the two trailer bogies is 2 ft. 7 in.

The four traction motors, two on each of the outer bogies, have a continuous rating of 200 h.p. each, a total of 800 h.p. They are of the self-ventilating type, which means their outer casings are larger than in the case of blower-ventilated motors. Accordingly, the floor height is higher than usual, 3 ft. 11½ in. above rail level. Self-ventilated motors were chosen to eliminate the noise that can be caused by blowers.

Underfloor-mounted equipment includes a fuel tank holding 440 gallons of diesel oil, ample for both engines on the Wellington-Auckland run, and batteries for starting the auxiliary diesel engine. Underneath the power compartment are the carbon dioxide bottles of an automatic fire extinguisher which protects the power compartment and which can also be triggered manually. Also mounted underfloor is a toilet system new to New Zealand Railways. Comprising storage tanks, a pump, and filter, this system uses treated recirculated water for toilet flushing.

A Westinghouse electro-pneumatic brake system of the "Westcode" type is fitted. This gives seven stages of braking, and if the electric system fails normal

pneumatic braking automatically comes into play with no alteration of any braking power which might be applied at that moment. The electro-pneumatic system was chosen as it is faster acting than the normal pneumatic system, a useful asset especially when up to three-cars may one day be run in multiple. There are twin brake pipes between both cars, one being a train pipe and the other connecting the main reservoirs.

In the three passenger compartments, two of 36 and 32 seats for smokers, and one of 28 seats for non-smokers, the walls and ceilings are lined with plastic-faced hardboard of the type used in the Silver Star cars. Fluorescent strip lighting has been installed and air-conditioning ducts run along the ceiling. Although this air is heated to some degree in cold weather additional heaters are fitted along the skirting of the side walls.

The passenger compartment floors have wall-to-wall carpet and the seats are of the three-position reclining type, covered with a wool fabric. Passengers have adjustable footrests, individual refreshment trays which fold away in the armrests, and ashtrays on the centre armrests. There is a net bag on the back of each seat for stowing small articles. The seats, which are padded with foam plastic on rubber webbing, can be reversed by rotation. The interior of each of the three railcars is finished in a different colour scheme, each scheme being common to all passenger compartments on one railcar.

The large windows fitted to the vehicles are a popular feature. They are 5 ft. 7 in. long, covering the spacing of two pairs of seats, and are double-glazed for sound and heat insulation. A third pane of glass encloses the venetian blinds, which are similar to those fitted to the Silver Star sleeping cars and worked by revolving a small handle. Each window has two blinds, one for each pair of seats.

All windows, except the central end window of each driver's cab, are of safety glass. The driver's windscreen however is of a special hardened laminate consisting of two layers of tough glass with a plastic film in between, the whole being half an inch thick. This glass is so strong that steel grilles are unnecessary.

Two hostesses on each railcar serve light refreshments to passengers at their

seats (this service being covered by the fare), and a meal stop is made at Taihape in each direction. The fare for the through journey remains unchanged at \$13.30, or just over 3 cents a mile. Passengers are provided with colourful information folders, one describing the railcar and the service and one describing the route and features of interest during the journey.

Demonstration runs for invited guests were arranged from Auckland to Taumarunui and back and from Wellington to Taihape and back on Wednesday 13 December. "Rm" 3 was provided for the run from Wellington and pleased its passengers immensely with its smooth, quiet ride, even at the highest speeds. It also demonstrated complete competence to maintain the fast schedules, completing the 84.7 miles (136.2 km) from Wellington to Palmerston North in 107 min. 57 sec. against 110 minutes allowed. The 27.3 miles (43.9 km) thence to Marton occupied 35 min. 36 sec., schedule 37 minutes, and the final 44.4 miles (71.5 km) to Taihape over some difficult country were completed just two seconds inside the scheduled time of 67 minutes.

The railcar had been timed to leave Wellington at 8.50 a.m. and to reach Taihape at 12.30 p.m. with a 5-minute stop at Palmerston North and a brief halt at Marton. On the return journey after an official function (and some unseasonably heavy rain!), "Rm" 3 left Taihape 13 minutes behind the scheduled time of 1.30 p.m. The 44.4 miles (71.5 km) to Marton were completed in 64 min. 31 sec. (schedule 67 min.), the 27.3 miles thence to Palmerston North in 33 min. 45 sec. (schedule 37 min.), and the final 84.7 miles to Wellington in 107 min. 22 sec. (schedule 115 min.), including a check at Otaki costing five minutes and a signal check and stop costing two minutes outside the terminus awaiting a platform. By then we were ahead of time.

Although normal maximum operating speed is 60 m.p.h., a short demonstration of the new railcar's speed capability was given on a stretch of recently renewed track south of Feilding. Here successive half miles from milepeg 97 to peg 95 were covered in 25, 24, 24, and 25 seconds, indicating a rate of 75 m.p.h. (120 km/hr) over a full mile. South of

Palmerston North, Levin was cleared in 29 min. 04 sec. from the start, a distance of 28.5 miles (45.9 km). Over the 17 miles from peg 81, north of Linton, to peg 64 at the foot of the 1 in 100 grade south of Koputaroa, speed was maintained constantly between 60 and 70 m.p.h. on nearly level track, and the time of 15 min. 26 sec. represented an average speed of 66.1 m.p.h. (106.4 km/hr). The riding of the car at these speeds was as steady as could be wished.

"Rm" 3 worked the first public service out of Wellington on Thursday 14 December, and "Rm" 1 on the Friday. On 21 December Nos. 3 and 2 were seen coupled in multiple leaving Wellington, but this seems unlikely to be a frequent occurrence because of servicing requirements.

"Blue Streak" Transferred to Taranaki

Railcar "Rm" 119 worked the last "Blue Streak" service from Wellington to Auckland on Wednesday 13 December. The following day it was taken from Auckland to New Plymouth and on 15 December was demonstrated to the public at railway stations between New Plymouth and Hawera. From Monday 18 December the "Blue Streak" railcars took up the running of Nos. 507 and 610 services between Wellington and New Plymouth, 242.1 miles (389.6 km), on revised schedules reducing the number of intermediate passenger stops from 26 to 14 and increasing the lunch-time stop at Palmerston North from 10 to 20 minutes.

No 610 railcar now leaves Wellington at 9.50 instead of 9.40 a.m., calls at Porirua (to pick up only), Paraparaumu and Otaki (if required), Levin, Palmerston North (11.52 a.m.-12.12 p.m.), Feilding, Kakariki (to change crews with No. 507), Marton, Aramoho, Waverley, Patea, Hawera, Eltham, Stratford, and Inglewood, and reaches New Plymouth at 4.30 p.m., as before. No. 507 now leaves New Plymouth at 9 a.m., 55 minutes later, makes corresponding stops including Palmerston North from 1.14 to 1.35 p.m., and is due in Wellington at 3.33 p.m., only 25 minutes later than before.



Photograph: J. A. Gaul

The Sunday "Southerner", normal coaches but no buffet car, approaches Clinton on 18 April 1971 on its morning run from Invercargill to Dunedin.

The schedule of less than two hours from Palmerston North to Wellington, including four stops, is especially notable. This includes a 34-min. start-to-stop booking from Palmerston North to Levin.

A new fare of \$6 applies between Wellington and New Plymouth for "Blue Streak" service, compared with the normal railcar fare of \$5.25. The intermediate fares between Wellington and Palmerston North correspond with those charged for the "Endeavour", and the scale otherwise appears to be on a similar basis.

Hostesses continue to travel on each "Blue Streak" railcar. They serve morning tea southbound and afternoon tea northbound, and at other times serve passengers with drinks to order.

Introduction of these new services brings to five the number of prestige or

named train services on New Zealand Railways, the "Southerner" (December 1970), the "Silver Star" (September 1971), the "Endeavour" (November 1972), the "Silver Fern" (December 1972), and the "Blue Streak". The latter of course had been the pioneer of this progressive movement, having been introduced between Auckland and Wellington in October 1968 before being replaced by the "Silver Fern". Next step apparently will be the upgrading of Nos. 227 and 626 express trains between Auckland and Wellington, including the provision of buffet cars. Already spoken of in many circles as the "Northerner", but without any specific official blessing, these trains appear likely to comprise refurbished first-class day coaches and sleeping cars. Present indications are that they could be running in their new form some time in 1974.