

## No. 21.

The SUPERINTENDING ENGINEER, Christchurch, to the ENGINEER-IN-CHIEF.

(Telegram.)

15th October, 1877.

*Re* Malvern coal. Since despatch of my telegram of this date, written authority has been received for £20 for purchase of ten tons of Sheath's coal. Locomotive Engineer reports Parker as the best. Please instruct me which to send.

The Engineer-in-Chief.

JOHN MENZIES,  
(For Superintending Engineer.)

## No. 22.

The SUPERINTENDING ENGINEER, Christchurch, to the ENGINEER-IN-CHIEF.

(Telegram.)

24th October, 1877.

*Re* coal from Auckland. Obtained from Parker, Springfield pit.

The Engineer-in-Chief.

W. CONYERS.

## No. 23.

MEMORANDUM FOR ENGINEER-IN-CHIEF.

*In re Canterbury Coal.*

I RECEIVED the Canterbury coal on November 1st. It was served out to two engines on the 2nd, the Fairlie and a 6-wheels coupled. On Sunday, 4th, two trials were made from Auckland to Newcastle. The 9-inch cylinder Fairlie, with a train of two sets of rail trollies (timber trucks), seven high-sided wagons of sleepers, and van; total weight, 80 tons 8 cwt. Left Auckland 7.50 a.m., arrived at Newcastle 12.41 p.m.

The other train was taken by a 6-wheels coupled 10½-inch cylinder class F engine. Three sets of rail trollies, one high-sided wagon of fastenings, and van; total weight, 59 tons 19 cwt. Left Auckland 8.20 a.m., arrived at Newcastle 1.6 p.m.

I attach tracings of the line as far as Mercer, showing grades, but beyond Mercer, not having a section, I have merely given the distances. In comparing these results with the previous ones sent you of Waikato coal, trial plotted on same section, it must be borne in mind that the class F engine, with Waikato coal, is shown with 10-lb. pressure light. I was incorrectly informed in starting that the gauge was wrong. You have, therefore, to add 10 lbs. to each pressure given with class F engine in Waikato coal trial.

The trial of both kinds of coal was made with the same Fairlie, but with different class F engines.

The Fairlie had a fine day for the Waikato coal, and 83½ tons distributed on a few vehicles, being iron; but for Canterbury coal a wet misty day, 3 tons less, but more vehicles, having a lot of sleeper wagons. She slipped badly in the bank going out of Auckland yard, the rails being very greasy, and also slipped on the long bank at 26 miles.

The class F had same load within 1 cwt., distributed in same manner in both trials; only slipped in bank at 26 miles.

The Fairlie made the trip train—83 tons 15 cwt., with 20 cwt. Waikato; 80 tons 8 cwt., with 22 cwt. Canterbury.

The class F made the trip train—60 tons, with 12 cwt. Waikato; 59 tons 19 cwt., with 10½ cwt. Canterbury. Total distance, 73½ miles.

## WEIGHT OF COAL.

Canterbury, 1 cubic yard ...	...	...	...	1,433 lbs.
Waikato, 1 „ ...	...	...	...	1,209 „
Difference ...	...	...	...	224 „

## ASH IN SMOKE-BOX.

Equal quantities, Canterbury	...	...	...	lbs. oz.
„ „ Waikato	...	...	...	4 13
				2 12
Difference ...	...	...	...	2 1

Its appearance seems to be between our own contract coal, Taupiri Coal Company, and Foote's Miranda coal. It is more lasting than the Waikato, appears to have less smoke; is heavier, especially the ash. Has more clinker than the Taupiri, about the same as Miranda. The Taupiri, in fact, has seldom any. The Fairlie had about four shovelfull of clinker in each fire-box.

The class F about five shovelfull; scarcely any ash in either ash-pan. From this I am led to believe that the Canterbury coal could be burnt with ordinary fire-bars, and perhaps without spark-catchers. Having one old-style chimney left, I purpose, after the approaching holidays, to replace it on one of the engines, and, with fire-bars separated, by taking out some of them, to have a trial up the bank with a heavy load at night, to see whether many sparks are thrown out.

Auckland, 6th November, 1877.

A. V. MACDONALD.