across to the up line, to allow of the down passenger train for the South Wales line to leave the station at 11h. 32m.

Neither the booking constable nor the porter told the signalman on duty at the high signal box that commands a view of the South Wales line over the top of the road bridge, that the engine of the 5 a.m. down coal train was going down to take the nine trucks out of the siding, and the signalman states that he did not see the engine leave nor return. The up South Wales line is protected by a distant signal, which is 846 yards from the signal box, and by two home signals, respectively at 549 and 117 yards from the signal box, the outer one being used to protect the through crossing and cross-over road. There is also a level crossing, with up and down signals, 43 yards west of the distant signal, and the gatekeeper is instructed to look to the state of the up distant signal, and keep his own up signal at danger when the distant signal is at danger.

An up coal train 7.50 a.m. for Gloucester reached Grange Court station at 10.33, and, according to the signalman, it left at 11.43, and in consequence the up distant and two up home signals were all at danger when this coal train left for Gloucester.

The 6.10 a.m. up passenger train from Carmarthen is appointed to stop at all stations. On that morning it had engine and tender, six carriages, and one horse box on, with two guards, one riding in a van next to the engine, and the other in a break carriage at the tail of the train. As the train approached the level crossing all the signals were on at danger against it, and the gatekeeper showed a green or caution flag, and the driver states that he shut off the steam, and reduced his speed to ten miles an hour: but when he had just passed the level crossing, the distant and home signals were all taken off, and he then turned on the steam again. There is a curve in the line between the level crossing and the station, which would prevent a driver from seeing, at any great distance, whether trucks standing on the up main line were on the main line or in the broad gauge siding, and the driver says that when he passed the outside home signal he saw trucks standing on the main line, 100 or 150 yards in front of him, and he immediately did all he could to reduce his speed and stop, by shutting off the steam, reversing his engine, putting on the steam the reverse way, whistling for the guards' breaks, while the fireman put on his break, and both sand boxes were freely used. The collision took place about 11h. 48, and the train is said to have been running at three miles an hour according to the driver, and five or six, according to the guard of the train, who was slightly hurt.

Nothing was thrown off the line. The passenger train engine had the buffer plank broken, one buffer knocked off, life guards bent, and cylinder cocks broken, and the end of one coal truck was damaged.

The collision was occasioned by the signalman having taken off the up signals while nine loaded coal trucks were standing on the up line, the outside truck being about 300 yards west from the signal box.

I think the booking constable is the person mostly to be blamed for this collision, for not having told the signalman that he was about to take trucks out of the broad gauge (South Wales) siding, and to place them on the up main line; but if the signalman had carefully looked down the line before he took off his distant and home signals I think he could have seen that there were trucks on the main line, as well as the 35 that still remained in the siding.

Locking apparatus has recently been renewed in the signal box; but I notice that the cross-over roads are not properly protected, inasmuch as the points should be bolt locked by the distant signals in each direction.

I have, &c.,
W. Yolland,
Colonel.

The Secretary,
Railway Department,
Board of Trade.

Printed copies of this report were sent to the company on the 21st January.

LANCASHIRE AND YORKSHIRE RAILWAY.

(*Board of Trade*)
Railway Department
Whitehall, 2nd August 1870.

Sir,

I have the honour to report, for the information of the Board of Trade, in obedience to your minute of the 19th ult., the result of my inquiry into the circumstances which attended a collision that occurred on the 13th ult., between a passenger train and two coal waggons, at the Rochdale station of the Lancashire and Yorkshire Railway. Twenty-one passengers are returned as having been injured on this occasion.

There are large goods and coal yards at the eastern and western ends of the Rochdale station, and those situated on the western side of the station are entered by points on the south or up line, about 440 yards west of the western end of the passenger platform. At this place there is a signalman's low box placed on the north side of the lines, and there are points leading into the goods yard, south of the railway, called the Milkstone sidings, and others, leading across the down line into the coal yard on the north side of the railway.

Rochdale station is protected on the western side by a station signal at the platform, and a distant signal placed 710 yards from it, or 270 yards further west than the points leading into the coal and goods yards; and the signalman who is charged with the control of these points is furnished with a distant signal in each direction; that towards the west, against a down train, being 532 yards from the signal box, or 262 yards outside the Rochdale down distant signal before referred to. The station is approached from the west on a rising gradient of 1 in 330.

On the morning of the 13th ult., an up mineral and goods pick-up train left Mirfield at 6 h. 40 m., stopped at nearly all stations, and reached the eastern end of Rochdale station, where it put off waggons, at 10 h. 30 m., and then proceeded to the western side of the station, which was reached at 10 h. 41 m. Here the train was stopped on the main line, some waggons were uncoupled, and the engine drew ahead with the remainder over the points, and another waggon was then unhooked, and the engine was called back by signal, and this waggon was shunted back into the sidings lying south of the main line. The engine, with other waggons, then returned to the main line. While this train was proceeding from Rochdale to the western side of the station a coal agent applied to the shunter on duty, and told him that he wanted to have two waggons of coal, which were in this train, placed in the sidings lying north of the main lines; and the shunter, when the train had arrived, asked the signalman on duty if he could turn those two waggons across the down line into the coal yard north of the railway. The signalman was engaged in holding the points to turn the waggon into the Milkstone sidings, and he says that he asked the shunter if he could see the down mail train approaching; and on being answered in the negative, he told him to put on the down distant signal, which was done by the shunter at about 10 h. 43 m., at which time, according to the signalman and shunter, nothing could be seen of any down train approaching the

station. When the shunter had put on the down distant signal to "danger" he walked a short distance (10 yards) towards Rochdale, stopped and stood there for a minute or better, with his back to the west, and then turned about, and walked towards the signalman's cabin; and when he had got close to it he saw the down train approaching, about 50 yards from him, and at this time the wheels of the first of the two waggons were just passing the points to cross from the up main line, across the down main line, and thence into the coal yard. The collision immediately followed, and is said to have taken place about 10 h. 44½ m. The engine of the down train came in contact with the leading coal waggon, knocked it off the road and shattered it to pieces, and threw the other coal waggon also off the line.

The engine was thrown off the rails to the left, ran about 50 yards, and fell over on its left side. Five carriages and a break van were also thrown off the rails, and the engine and four carriages were a good deal damaged, to the extent, it is estimated, of about 200*l*.

The train which had run into the coal waggons was the down mail train, appointed to leave Manchester at 10 h. 15 m. a.m. It consisted of engine and tender, and seven vehicles, with one set of continuous breaks worked from the guard's break van, the last vehicle but one in the train.

The driver and fireman of this train both state that the down signals were all at "all right" as they approached Rochdale station, and that when they were about 50 yards from the crossing at the Milkstone sidings they observed the waggons coming across from the up line, at which time they were running about 15 miles an hour. The driver then sounded the whistle for the guard's breaks, and the fireman put on the tender break, but it was too late to arrest the progress of the train. The guard of this train did not observe the distant signal until after the collision, and then it was on at "danger."

The mail train is due at Rochdale at 10 h. 45 m., and it was running to its proper time, and the collision occurred exactly at the time when the mail train was due at that spot. No blame attaches to the driver and fireman of the goods train for pushing the waggons back in obedience to the signal from the goods guard, as they did not know, when they backed the train, whether the coal waggons were about to be put into the sidings south of the main lines, or pushed across to the coal yard north of the main lines; but the guard of the goods train admits that "according "to the regulations he should have looked to see "that the distant signal was on before the waggons "were pushed across the down main line, but it is "not the usual thing to do it." And the signalman on duty informed me, "that a train does not always "keep to its proper time, and I hold that I am justi- "fied in fouling a main line, by crossing waggons "from one line to another when a mail train is due, "provided the crossing is protected by my distant "signal being on, and I can see that nothing is then "approaching."

Strange to say, the company's book of regulations does not prohibit shunting even when a train is actually due to pass the place and on the line where the shunt is to be made. It is not, therefore, in my opinion, surprising that, with such regulations and such servants, who are responsible for the safe working, that collisions do occur on the Lancashire and Yorkshire railway.

I am altogether unable to reconcile the conflicting statements as to the distant signal. Whether it was on or not when the mail train passed it seems very doubtful; but I am rather inclined to think it might have been put on immediately after the mail train engine passed it.

Rochdale station requires to be re-arranged in order to provide for the public safety. Raised signal huts should be put up at the eastern and western ends of the station, and, possibly, a third in the centre. And as I understand that the directors of the Lancashire and Yorkshire Railway Company have authorized the line between Manchester and Rochdale to be worked on the absolute block system, I trust that it will be done in a complete manner, so that the line shall be wholly under the control of the signalmen at the telegraph stations; and that the points and signals shall be so arranged and interlocked that no engine or train can come out of a siding on to the running line without the consent of a signalman. Further, that no two trains should be permitted to approach a junction telegraph station from a main line and a branch line at one and the same time. I believe it to be far better to have nothing to do with the absolute block system for working traffic than to introduce it nominally, without placing the entire control in the hands of the signalmen.

I have, &c.,

The Secretary,
(*Railway Department,*)
Board of Trade.

W. Yolland,
Colonel.

Printed copies of this report were sent to the company on the 9th August.

LANCASHIRE AND YORKSHIRE RAILWAY.

Leeds,
Sir, 17*th September* 1870.

In compliance with the instructions contained in your minute of the 14th instant, I have the honour to report, for the information of the Board of Trade, the result of my inquiry into the circumstances connected with the accident which occurred on the 13th instant in Upholland tunnel near Wigan on the Lancashire and Yorkshire Railway, through an express train from Liverpool to Manchester running off the line.

As the result of this accident, two passengers were unfortunately killed, another had his arm broken and head cut, and one or two others were shaken and bruised.

Upholland tunnel lies about 4½ miles on the west or Liverpool side of Wigan, Pimbo Lane station being about 300 yards west of its western end, and Upholland signal station and watering place for goods trains being about the same distance east of its eastern end. The tunnel is 955 yards long, and the traffic through it is worked on the absolute block system, for which purpose there are telegraphic instruments at Pimbo Lane and Upholland stations. As an additional precaution, there are self-acting treadle signals at each end of the tunnel. These are put to danger when an engine passes over them before entering the tunnel, a bell being at the same time rung at the station at the other end of the tunnel. As soon as the engine or train, after emerging from the tunnel, has passed beyond the block station, the treadle signal is taken off by the signalman, and the line unblocked.

The line rises in approaching from the westward at about 1 in 390 up to the centre of the tunnel, whence it falls eastward at about the same rate, as far as Upholland signal station. The line through the tunnel is straight. The permanent way consists of double-headed rails weighing 80 lbs. to the yard, secured by outside keys and cast iron chairs weighing 48 lbs. each; these latter being spiked to rectangular sleepers, 10 in. × 5 in., laid at an