

ARRANGEMENT FOR TRANSFERRING WAGONS FROM RUSSIAN 5 ft. GAUGE RAILWAYS TO AUSTRIAN 4 ft. 8½ in. GAUGE AT NOVOSIELITSA.

## Breidsprecher Break of Gauge Device

THE axle-changing device for goods wagons illustrated was designed by Mr. Breidsprecher, manager of the Marienburg-Mlawa Railway, which formed the middle link of the Warsaw-Dantzic (Gdansk) line, and in 1901 was installed at the interchange station of Illowo, where the standard gauge (4 ft. 8½ in.) met the broad Russian (5 ft.). This was in pre-war times of course; nowadays it is normal European gauge throughout in both directions, and generally throughout Poland. The idea of this device was, that as the frames of goods wagons—Russian and German—differed but little (and also the distance between buffers) it was sufficient to change the axles to enable the German wagons to circulate on the Russian railway and *vice versa*. The problem lay in how to effect the exchange.

Mr. Breidsprecher's invention was a kind of channel arranged in a certain part of the track, which up to the middle of the channel was standard gauge, viz., 4 ft. 8½ in. and beyond became a broad one (5 ft.).

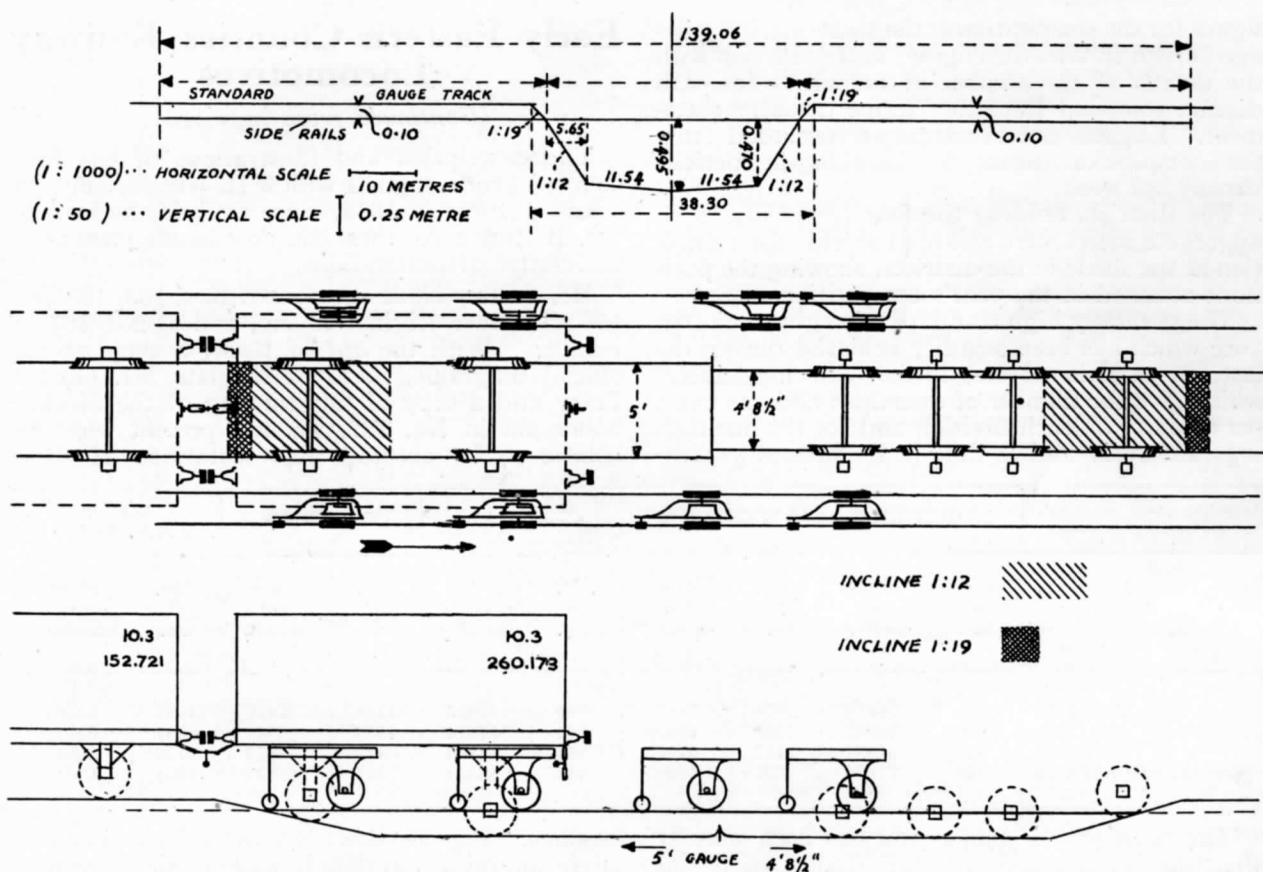
At the side of the main track ran two side tracks of much smaller gauge, 1 ft. 6 in. While the main 5 ft. gauge track goes down into the channel by a short incline of 1:19 and then 1:12, the side tracks remain on the level. The main track terminates at the middle of the channel, and then begins the standard gauge, 4 ft. 8½ in. This latter, after an equal length, emerges by 1:12 and 1:19 inclines on to the level. On the narrow side-tracks are provided a number of 3-wheeled trucks, depending on the number of wagons to be dealt with; if five—as usual—there must be 20 trucks—four for each wagon. When the first wagon of a

train, pushed forward by a shunting engine reaches the place where the narrow (side) tracks begin, the trucks are placed by a couple of men under the frame of the wagon and the axle guard straps released so that the axles may be lowered freely when the wheels reach the incline. The released axles run down (together with axle-boxes), and accumulate at the end of the track in the middle of the channel, to await their turn for adjustment to another set of wagons, coming off the standard gauge line. The wagons minus their axles and now supported by the side-trucks, are moving farther, still pushed forward by the engine, and when over the changed track (in the channel) the waiting axles (together with their axleboxes) are caught, one by one by workmen (with a kind of hook) and led slightly forward until they reach a spot on the incline where the lowered stirrups can thus be connected to the axle-guard jaws of the wagons. When the first wagon of the set reaches the end of the incline and leaves the side trucks, the standard gauge shunting engine is attached and hauls away the whole set slowly, so as to give time for the men to perform their procedure with each axle.

The time required for the whole proceeding is said to have been 12-14 minutes per set, which must be considered a very effective one; no more than two men at each end were necessary, which compared with the number when employed unloading and re-loading is a "quantité negligible."

As far as can be ascertained, the device was installed at Lodz, at Illowo, and at Novosielitsa (Austrian frontier, now in Roumania). There were also some small installations of the system to meet local demands.

The system has now been abolished as the expense, coupled with renewal of the apparatus,



ARRANGEMENT FOR CHANGING WAGON AXLES AT THE BREAK OF GAUGE BETWEEN POLAND AND GERMANY PRE WAR.

were regarded as superfluous. The present exchange of wagons with Soviet Russia does not exceed 30 per day—which is done by simply lifting the wagon—in the same way as in workshops—and changing the axles while it remains slung. The only changing place at the present time is Zdobunovo on the former Kiev-Brest Railway.

The costs of the installation in Novosielitsa are said to have been 35,000 roubles pre-war; 120 wagons per day could be dealt with in each direction; the unloading and reloading cost in former times 1 r. 25 k = 2s. 6d. per wagon (chiefly wood, in the shape of planks, etc.); the installation of this plant reduced costs to 10 r. = £1 per day—the salary of four “fitters.”

Mr. R. A. Thom, C.B.E., mechanical engineer, Southern Area, L.N.E.R., is retiring at the end of July. He served his time on the former Great North of Scotland Railway, starting in 1888. From 1898 to 1902 he was with the Metropolitan Rly. and a private firm. Otherwise he has been with the L.N.E.R. and its constituents during the whole of his career.

Another 100 twelve-ton special shock absorbing wagons have been built at the L.M.S. works at Derby for the conveyance of sanitary tubes, earthenware, and china in crates, and similar traffic.

## L.M.S.R. Engine Casualties

**A** PRESENTATION of Motive Power Shields by Sir Josiah Stamp, G.C.B., G.B.E., was made at Euston on May 25. The proceedings were opened by Mr. C. R. Byrom and interesting remarks on the success of the Motive Power League were made by Mr. E. J. H. Lemon and Mr. D. C. Urie.

The efficient maintenance and management of the steam locomotives whilst at the disposal of the Operating department plays a very prominent part in the success or otherwise of punctual train working.

Three years ago a competition was formed as an adjunct to the punctuality leagues under which all ranks in the 29 Motive Power areas compete against one another in an endeavour to reduce engine failures. Twenty-nine points are awarded each four-weekly period to the district obtaining the highest miles per engine casualty debitable to the owning shed. The district with the next highest mileage secures 28 points, and so on in order of merit, the lowest scoring one point.

The basis for calculating the miles per casualty