



R 32

### The Nässjö Electric Interlocking Plant.

The greater part of the Swedish public, during its travels, has undoubtedly passed through the Nässjö railway station and had its attention attracted to the lively railway traffic existing at this point, Nässjö being a very important multiple junction from which lines branch out both to

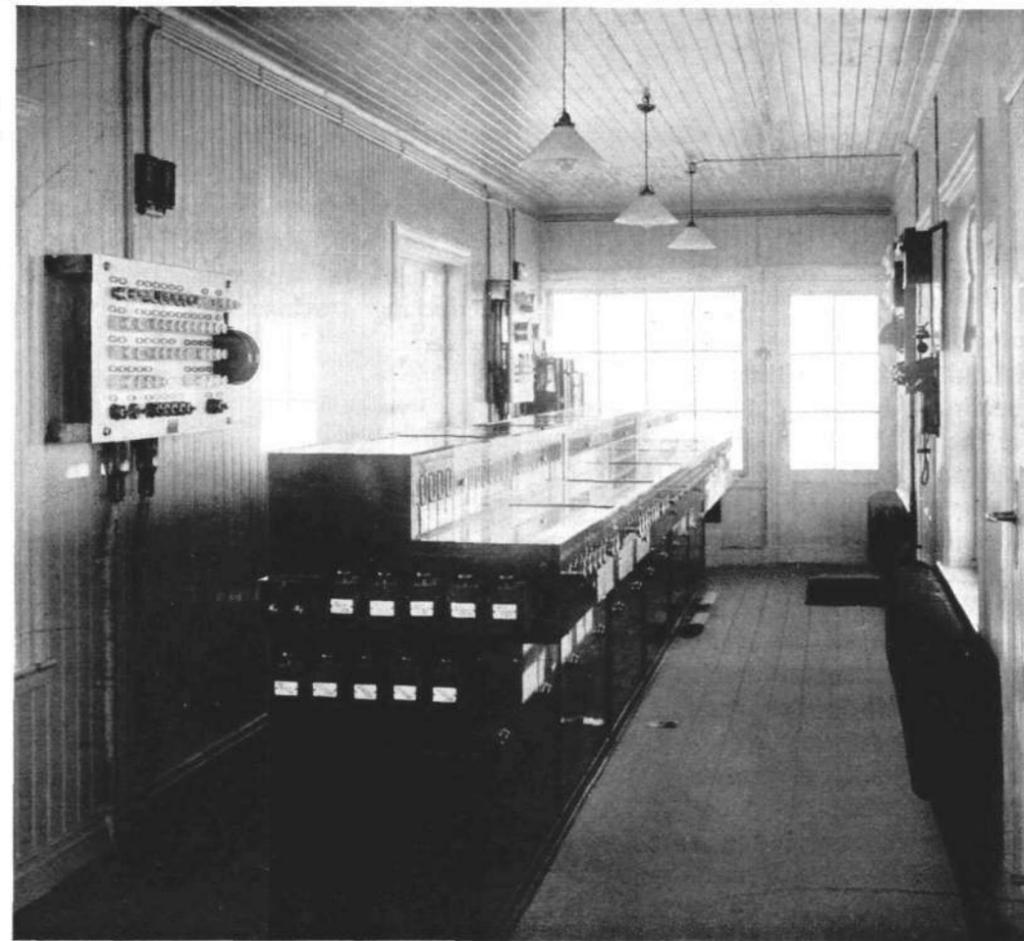


R 40 Signal Tower at North End of Station Yard.

the East and the West from the Stockholm—Malmö State Railway main line. To the East we have the Nässjö—Oskarshamn Railway, with the Kalmar Railway a little further south, while the state line to Jönköping and Falköping branches off to the Northwest, with the Halmstad—Nässjö Railway to the Southwest. All of these railways, in turn, form main lines for others of a more local character. It is therefore evident that Nässjö must be a very lively centre of traffic, where, to a large extent, both passengers and goods »change trains». Should the old adage »In darkest Småland» still be applicable to any part of this honourable province, it certainly cannot be applied to Nässjö since the station has now been completely modernized and equipped with an electric interlocking plant.

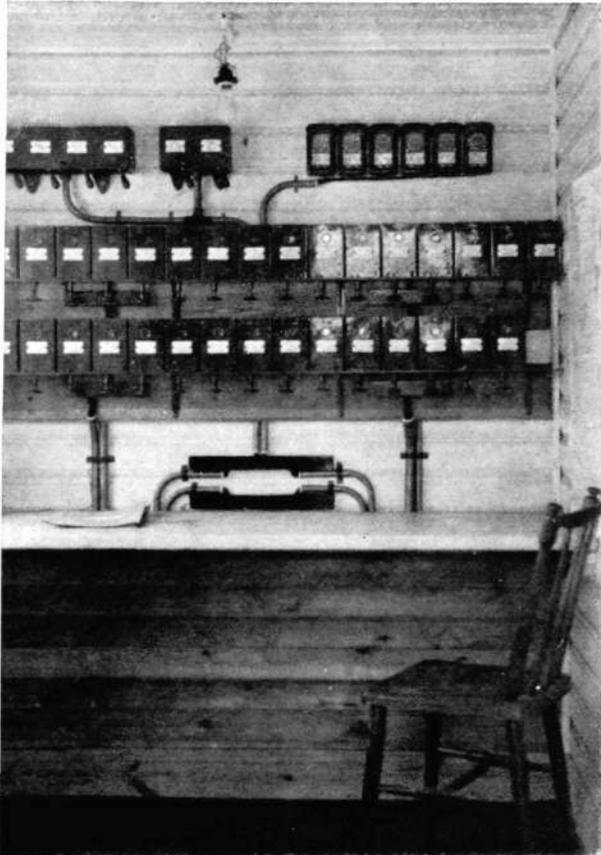
A schematic view of the modern arrangements of this passenger station is shown on the above track plan. Three wide intermediate platforms (2, 3 & 4) have been constructed, and are connected to platform 1, outside the station house, by means of a tunnel, making it unnecessary for passengers to cross the tracks when changing trains. The tracks which are situated next to the platforms are used for passenger trains, and

### NÄSSJÖ.



R 39

The North Interlocking Machine.



R 43 Release Apparatus, Emergency Switch and Indicators in Release Apparatus Cabin on Platform 3.

The release apparatus, which prevents the setting of incoming signals to clear without the consent of the station master, is housed in a cabin (release apparatus cabin) on platform 3. This gives the station master absolute control of incoming trains. There are 33 release field instruments, corresponding to the number of incoming tracks. Should an incoming semaphore have been set to clear from either one of the interlocking machines, it is possible for the station master, if necessary, to reset it to stop by means of the emergency switch arrangement in this cabin. The incoming signals are repeated by means of indicators in the release apparatus cabin.

Nineteen points and three skotch blocks, one three-armed and two double armed incoming signals, all provided with distance signals, and three one-armed and two double armed starting signals are operated from the south interlocking machine I, located at the south end of the station yard, east of the incoming track from Gissebäck. In addition, the positions of three points are electrically recorded at this interlocking machine by means of point circuit breakers, and the positions of two points are mechanically recorded by means of mechanical point locks. The interlocking machine has twenty eight levers

tracks XI, XII and XIII for freight trains, which can be directly brought out over a hump for the making up of trains at the shunting station situated west of the incoming track from Äng.

The electric interlocking plant, comprising the passenger station only, has been built by Signalbolaget, the electric apparatus being delivered by L. M. Ericsson and the mechanical details (semaphores, skotch blocks, base parts and connections for the operating devices, etc) by Avos. This plant, at the present time the largest in Sweden, is divided into two signal cabin zones, one at each end of the station yard. Each zone is equipped with an interlocking machine from which points and signals are operated.



R 42 Double Point and Starting Signals at South End of Station Yard.

for the above named purposes, and is four metres long.

The north interlocking machine (II) is located within the track system at the north end of the station yard. Not less than fifty eight points and five skotch blocks, one double armed and two three-armed in-

coming signals with distance signals; one three-armed, three double armed and three one-armed starting signals, and finally, three shunt signals are connected to the same. Forty eight of the points and four of the skotch blocks are operated from this interlocking machine, while five of the points and one of the skotch blocks are merely locked, the positions of the remaining five points being recorded at the same by means of point circuit breakers. This machine is, therefore, one of the largest built by L. M. E. and is furnished with fifty three levers. Its length is six metres.



R 44

Shunting Signals M<sub>I</sub>—M<sub>III</sub>, Arranged as Dwarf Signals.

The crowded space within the track system has made it necessary to place the starting signals for tracks XI and XII, as well as a special shunt signal for shunting over the aforementioned hump, on a signal bridge. All other signals stand free.

The shunting signals (M<sub>I</sub> to M<sub>III</sub>) which are connected to interlocking machine II — for regulating shunt movements from the engine-house in the north end of the station yard — are of the American type and are designed as light signals. They are now being used in Sweden for the first time, and give a »stop» signal by means of two horizontally placed white lights and a »clear» signal by means of two vertically placed white lights.

Points operated from the interlocking machines and from which they are not clearly visible, have been connected to track circuits so as to prevent a too early turning over of the points. The placing of a car on such a track circuit automatically causes the lever of that point, to which the circuit is associated, to become locked, preventing the turning over of the point until the car has been removed from the track circuit.

Track circuits have also been arranged for some of the tracks for the control of clearance at points, thus simplifying the station master's inspection duties. In like manner, track circuits have been arranged between the incoming signals for the incoming tracks from Solberga, Ång and Grims-torp, and their respective distance signals for giving notice of the arrival of trains. Warning



R 41

Signal Bridge in North Signal Cabin Zone.

is given of the arrival of a train and its entrance into such a track circuit by means of an indicator in the signal cabin.

Track circuit locking with release at passage of the last car axle is arranged for both incoming and starting tracks.

The setting of incoming and starting signals to clear — after the track has been cleared — can only be accomplished, as far as the incoming track is concerned, after release by the station master, causing the locking of the proper points and skotch blocks. This is done by shifting the position of the proper signal lever. The track circuit lock is released when a train has advanced over a track and the last axle has passed an insulated rail and a rail contact, usually placed after the last point in the track, after which the signal lever can be returned to normal, all obstacles preventing the turning over of points etc., having been removed when the train passed the points group. The incoming or starting signal,

showing »clear» is automatically set to »stop» at the same time as the signal lever is released in the above mentioned manner.

The incoming of trains from the South to tracks X, XI, XII and XIII require the receiving of a release signal by interlocking machine I not only from the station master, but also from interlocking machine II, as some of the points controlled by machine II must also be locked for the admitting of trains from the South to any one of the above mentioned tracks.

Electric power required for this plant is furnished by two Nife storage batteries, the one with a potential of 130 V. for the point and signal motors, and the other with a potential of 30 V. for the circuit to relays, point and signal lever magnets, etc. These batteries are charged by means of two mercury rectifiers which, together with the batteries, are placed in signal cabin II and are tended by its personnel.

*E. G. W.*