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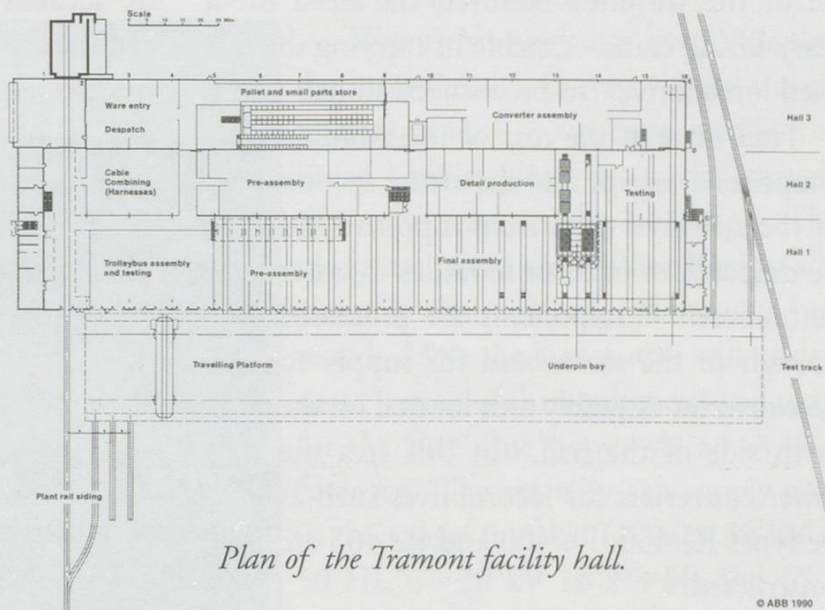
## THE OERLIKON TRAMONT FACILITY. PART 2

**Malcolm Hardy-Randall**

*Malcolm Hardy-Randall continues the story of the Tramont facility by describing the facility and how it works. Part 1 was published in the last issue dated June.*

The board of directors of ABB decided in December 1987 to commence building a new construction, testing and assembly plant at the chosen site of Stierenried located within the Oerlikon area. The site chosen was at that time being used as a welding plant for the Chinese locomotive project, and would be converted at the end of the contract. The TRAction (Equipment) Mounting plant - called TRAMONT for short - would be able to assemble and test electric powered locomotives or trolleybuses required by the various railway or road transport companies.

The concept behind the new plant was that it would be built to allow a flow system based on just in time delivery principle to be employed whereby components and units arrive from suppliers and contractors at the back of the plant when they are required, and finished locomotives and road vehicles depart from the front. Building of the plant took place in two phases. Phase one comprising halls

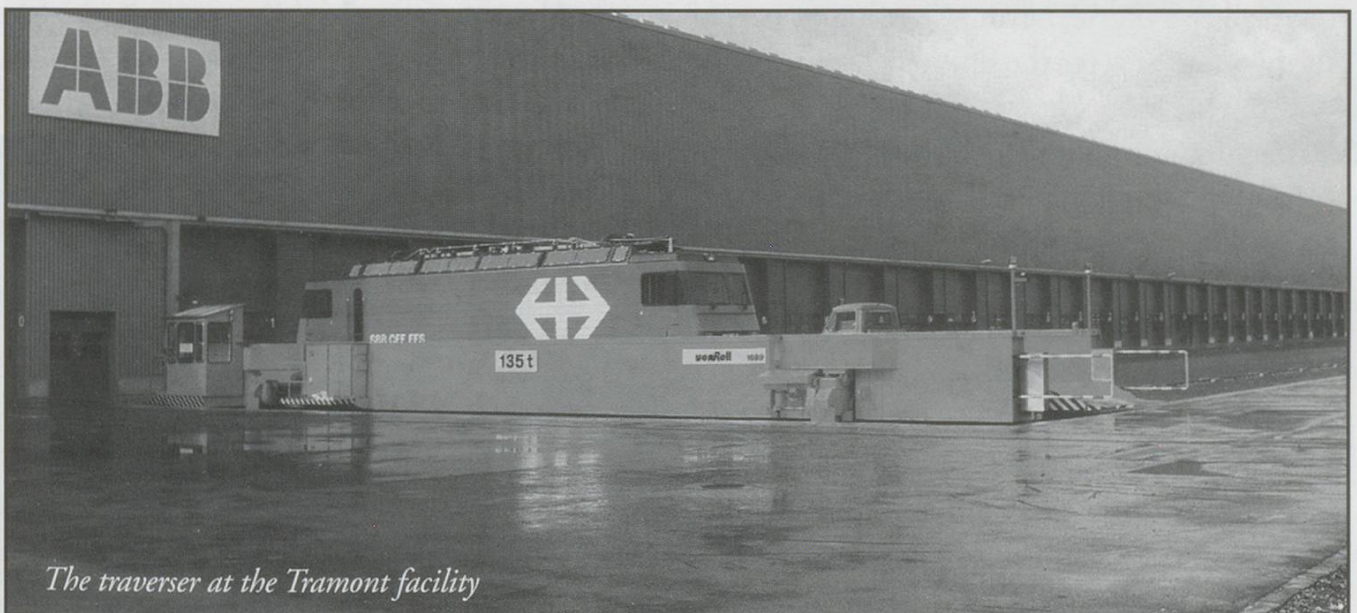


*Plan of the Tramont facility hall.*

© ABB 1990

one and two being rebuilt first and completed in the summer of 1989. Phase two comprising the addition of the third hall was completed in the spring of 1990.

The plant consists of three interconnected halls each one measuring nearly 180 metres long x 20 metres wide. A railway track on the south side connects the component arrival section with the main railway network. In the front of the building is a traverser that connects all the assembly bays with the railway network



*The traverser at the Tramont facility*



via the plant siding and a 300 metre multi-gauge test track located on the north side. The traverser built by von Roll of Bern has a capacity of up to six axles with a mass of 135 tonnes, and can travel at 100 metres per minute. The use of the traverser removed the need for a heavy lifting crane - capable of carrying the finished locomotive - to be installed in hall one.

Hall three at the rear of the building comprises a receipt and departure section for the arrival of parts from suppliers and the despatch of units or modules to other contractors. Components are processed through to the stores area for supply to the converter assembly area located on the north side of the hall. In this area the power converters for locomotives such as the types Re 450, Re 460 and Re 465 are constructed.

*The test area outside the main hall.*



Hall two on the north side contains part of the final test area for the finished locomotive or passenger coach. Next to the test area is the detail production section that constructs the cabinets and modules to be used in the various vehicles and on the south side of the hall is the cable construction section. Here all plugs and connectors are fitted to the various cables and wired into a harness ready for the pre-assembly section to build into the modules and cabinets. The method of connecting the various cabinets and modules within the vehicle is

wherever possible via a plug and socket assembly, as this gives flexibility in testing, assembly and replacement as and when required under the routine overhaul system employed by the railway companies. Computerised test facilities are located in the spares arrival section and within each of the assembly areas, giving a progressive testing regime within the plant.

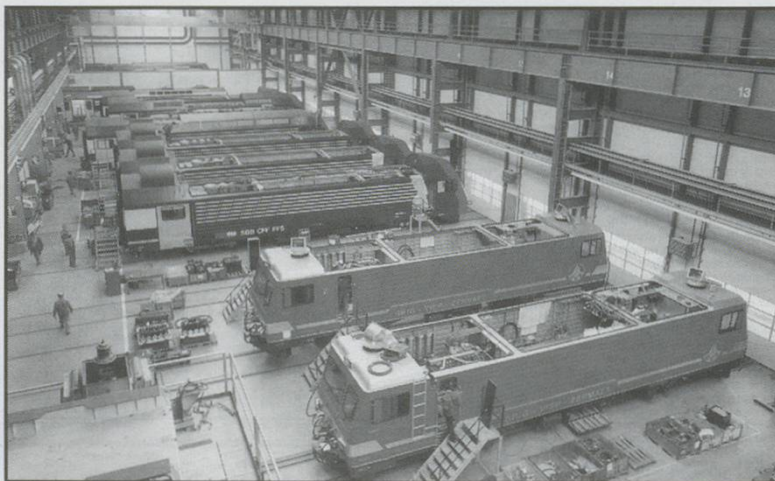


*The trolleybus assembly area on the South side.*

Hall one is where all the parts and sub-assemblies come together to form a finished trolley-bus or railway locomotive. On the south side is located the trolleybus assembly area where bus bodies arrive for the installation of the components required for operation. All work on the buses, including testing, takes place in this area and when ready the bus is despatched via the traverser to its destination.

Next to the bus assembly area is the pre-assembly area for railway locomotives. Here modules for installation into the locomotives

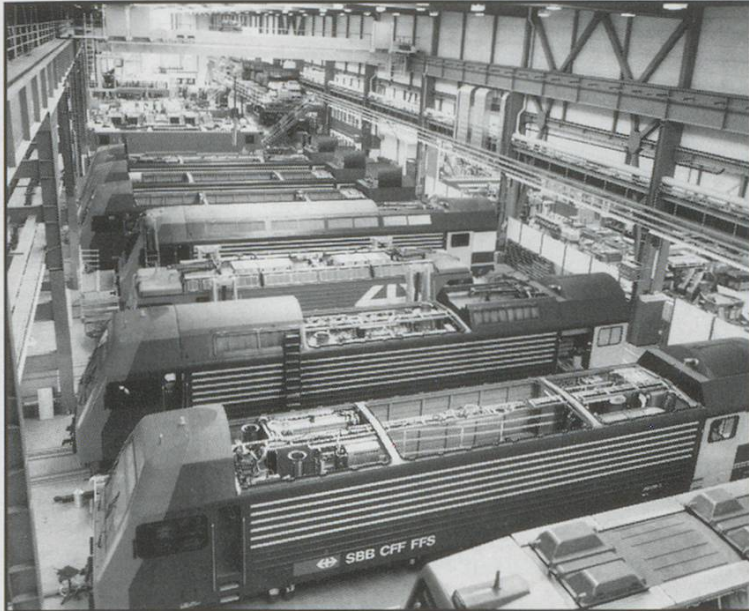
*The pre-assembly area.*





are completed and laid out in the area ready for the arrival of the body from the contractor. Locomotive bodies are in the main built by SLM Winterthur and shipped to Oerlikon on

*View of the pre-assembly area from the other end*



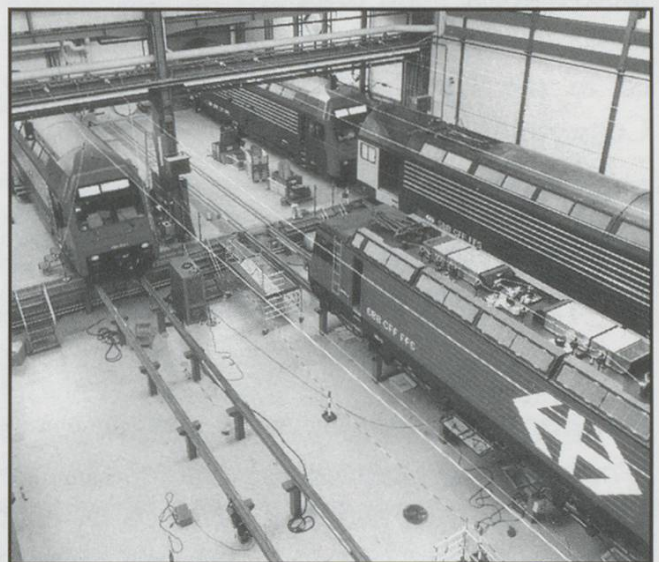
non operational transit bogies. The body containing just pneumatic equipment and pipework is brought from the railway siding to the underpin area where the transit bogie is replaced by support bogies to allow movement around the facility. When this work is complete the body is transported once again via the traverser to its respective bay.

An overhead hand-controlled crane - lifting capacity 21 tonnes - is used to lift the modules and transformers into the various locomotives. For the final assembly of components the locomotive is moved to one of the bays near the north end of the building. Once all installation work has been completed the locomotive is moved once again to one of the two underpin bays.

In the underpin bays, the locomotive will have its general carriage bogies removed and be fitted with its operating bogies. The locomotive body is held on supports, while the bogies sat on the lifting platform are lowered to a chamber below the floor of the hall. Here the carriage bogies are removed and replaced with fully operational bogies of the type required for

the locomotive. The platform is then raised up under the locomotive and the bogies are then wired into the main connections of the locomotive electrical and control systems. The platform has a capacity of 74 tonnes and travels at 0.4 metres per minute.

When this work has been completed the locomotive is moved via the traverser to one of four ( metre, cape, standard and broad ) multi-gauge test tracks located at the north end of the building. These tracks are raised above floor level to allow access to the underside of the unit being tested. Here the locomotive will undergo static testing of the equipment and receive for the first time power via an overhead catenary. The catenary can supply power in the range; 0 - 4kV DC, 0 - 30 kV AC 50 Hz, 0 - 20 kV 16 2/3 Hz and 15 kV AC 16 2/3 Hz. Also in the test area passenger coaches will undergo testing of the air-conditioning, lighting and power systems.



*The inside test area. Note the catenary*

It has to be remembered that as the parts progress through the plant they undergo rigorous testing, so that by the time they are fitted into the locomotive the testing required is at a much higher unit level. The static tests cover; wiring, control circuits, pneumatic equipment, power and all electronic functions.





*The outside test track with a soon to be delivered (at the time) BVZ HGe4/4II.*

The system that is used to gather all the test information is a DEC unit connected via an Ethernet link to all the terminals and test facilities on site, it also has the capability of accepting data from the maintenance computer fitted on the locomotive itself. This allows the downloading of test and running data from the locomotive to the plant computer for analysis and diagnostic work. The DEC system is connected to the IBM main-frame system in the Consortium headquarters offices in Baden via

the PTT network. This system allows Adtranz to gather information from all the locomotives in use via links to maintenance sites, and all the testing data and thereby be able to detect any anomaly before it becomes a major problem.

When all static testing is complete the locomotive is taken out onto the multi-gauge test track. Here the locomotive will undergo basic operating and control tests, as soon as they are complete it will be taken, where possible, to the respective customers track for load and running tests. All locomotives undergo the same test routine. Once the locomotive has successfully completed its trials it will be handed over to the customer for acceptance into its fleet.

References used.

*References used.*

1. 100 Jahre Elektrische Bahnen in der Schweiz.  
Walter Traub

2. MFO Bulletin Oerlikon

3. Asea Brown Boveri. Information documents.

Photographs / drawings supplied by ADtranz Oerlikon.

## **20TH ANNUAL GENERAL MEETING & SPRING MEET**

### **BELGRAVE SUITE, CRESTA COURT HOTEL, ALTRINCHAM**

### **SATURDAY 17th MARCH 2001 - 11.30 to 17.00 - AGM 14.30**

Organised by the Manchester Branch on behalf of the Management Committee

*Confirmed trade stands/displays - WINCO, GREAT LITTLE TRAINS, MITV, CONTIKITS, TREVOR RIDLEY RAILWAY LITERATURE, MANCHESTER BRANCH BRING & BUY STALL Photographic Competition (prints), G scale test circuit, layouts, displays, quiz, raffle etc.*

**Your input is needed - offers of layouts/displays to Dave Howsam please**  
**Swiss Diorama Competition**

*(HO/HOm & OO 2 sq ft max area; smaller "scales" 1 sq ft max area; larger scales 4 sq ft max area)*

*Word scales has been used loosely but HO/HOm/OO means 1:87 to 1:72, check with Dave Howsam if clarification is needed. There is no height restriction!!*

**Have a Go!**

Saturday Evening Dinner £17 - Full menu and booking details in next issue.

It is hoped to organise a Friday evening meeting following those at Bristol & Derby.

Special rates for accommodation at the hotel for Friday &/or Saturday have been arranged:-

Single rooms £39.50, small doubles £39.50, Doubles or twins 59.50

These are room prices, full breakfast is £7.95 - continental also available.

Full accommodation details and alternatives available in next issue