

# KVMRT Electric Train Assembly Plant, Hulu Selangor

MECHANICAL ENGINEERING TECHNICAL DIVISION



reported by  
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Assembled train car ready for roll out

A state-of-the-art train assembly plant was set up in Hulu Selangor by SMH Rail Sdn. Bhd. to assemble Malaysia's first MRT train cars.

Some information on electric train cars:

- Each train set comprises 4 cars. Each car has the capacity to carry 300 passengers, adding up to a total of 1,200 passengers
- During peak operation hours, the trains will be ferrying 24,000 people per hour in each direction
- 174 passenger seats in each train with 45 seats in each end cars and 42 seats in the middle cars
- Trains are disabled-user friendly, with six seats dedicated for disabled passengers
- Doors are also equipped with beeping sound and light to guide disabled passengers during closing and opening of doors
- Trains are equipped for fully automated, driver-less and conductor-less operation
- Maximum speed is 100km per hour and the average speed is 40km per hour
- The train interior and exterior finishes are non-flammable

## BRIEFING

First, participants were briefed on the safety aspects as well as the dos and don'ts when in the assembly area. SMH Project Director Neville Krogh talked about the impact

that the plant had brought to the community in the town of Rosa.

"SMH employs 95% of its work force from local talents. It has transformed locals from motorcycle mechanics to train builders," he said.

He also shared his view that engineers should always work in the field to understand the root causes of problems. After he explained the train system and that in the assembly plant, the participants were given a tour.

The assembly plant is divided into a few areas:

### Loading Area

Car body starts at loading area. One Motor Car and one Trailing Car will start the production simultaneously.

### Station 1

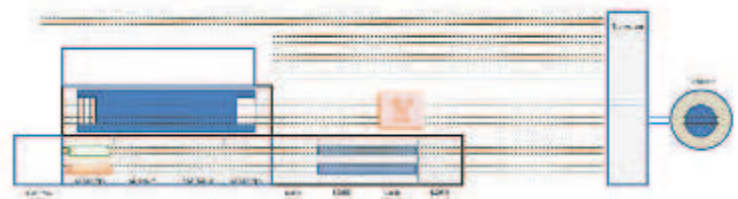
These cars will spend 4 days in Station 1 where thermal insulation, cable ducts interior, thread strip passenger room, HVAC unit and gangway are installed at platform level. At ground level, coupler, underframe part 1 piping and cable ducts are installed.

### Station 2

Upon completion of works at Station 1, the cars will spend another 4 days at station 2 where cabling passenger room part 1, air duct passenger room, windscreen washer, driver desk and destination indicator head are installed at platform level. At ground level, underframe part 2 piping, underframe part 1 cabling and underframe equipment are installed.

### Station 3

At Station 3, the cars will spend 4 days for the installation, at platform level, of earthing, ceiling, side wall panel and end wall panel. At ground level, cabling and underframe part 2 cabling installation take place.



Assembly plant layout



*Mcarat Bogie Line 4*



*Train Bogie*

**Station 4**

At Station 4, these cars will spend the next 4 days where handrails, draft scree, handles, passenger seats, line covering, cove, fire extinguisher, rain gutter covers and labels are installed. This is the last station on the car body and there after they are transferred to Bogie Lines.

**BOGIE LINES**

The cars will spend 2 days at Bogie Line 1 for pre-assembly of cabling and piping. They will then move to Bogie Line 2 where levelling tests and Bogie Assembly takes place over 2 days. Next, these cars go to Bogie Line 3 where wheel load test is conducted. This also takes 2 days. Lastly, the train will move to Bogie Line 4 where electrical single car testing, continuity and isolation tests are conducted.

Upon completion, the completed carbody of Mcar and Tcar goes to the Commissioning Line. Using turntable and transverse, these sets of cars are then combined with another Mcar and Tcar to complete 1 unit of trainset. The traincar is then sent for water testing at the water test area. This is the last test and when it's completed, the traincar is ready to roll out. ■



*Ir. Syed Neguib presenting a token to Mr. Neville Krogh*