



# LGB Speeds into the Future: Answers to Questions about Onboard Decoders

**September 25, 2002**

Ernst Paul Lehmann Patentwerk, the maker of LGB-The Big Train, has taken a big step into the future by making a public commitment to factory equip its new locos with advanced, digital decoders, allowing them to be used on analog or digital layouts without modification. More than sixteen new LGB locos will be equipped with onboard "Multi-Train System" decoders, and Lehmann says it will add the feature to even more of its locos in the future.

"Digital is the future of model railroading," said Rolf Richter, Managing Partner at Lehmann, "and we are committed to giving our customers the advantages of digital operation with the same simplicity, reliability and value they expect from LGB trains."



**Products, specifications and availability dates are subject to change without notice.**

## **Q: What is an "onboard" decoder?**

A: An onboard decoder is a LGB Multi-Train System decoder integrated into the main locomotive circuit board. The traditional, "add-on" decoder is a separate circuit board that must be installed in the loco.



## **Q: How can I identify locos with an onboard decoder?**

A: Loco with an onboard decoder can be identified -- in our new items brochures and on the loco package -- by this new "Analog + Digital" pictogram.

There are a very few exceptions:

1. Some locos (for example, some 2x872 Mikados) with electronics manufactured in 2001 are equipped with add-on decoders, not onboard decoders.
2. The locos included with the 7x255 MTS Digital Starter Sets are equipped with add-on decoders, not onboard decoders.

## **Q: Can locomotives with onboard decoders run on analog layouts?**

A: Yes. No modifications are necessary to run the loco on either an analog or a Multi-Train System layout. In fact, all MTS decoders -- onboard and add-on -- are engineered to automatically switch between digital and analog operation.

## **Q: Will locomotives with onboard decoders cost more?**

A: No. Although there are new costs involved with the onboard decoders, there are also cost savings. For example, the adoption of a "universal" main circuit board will allow us reduce development costs and increase production quantities. But whatever the balance, we are committed to adding the decoders without raising prices. We strongly feel that digital operation is key to the future of model railroading.

## **Q: What does this mean for me?**

A: If you already have an MTS layout, the onboard decoder eliminates costs of decoder installation -- a savings of up to 200 Euros per loco. Plus it eliminates installation hassles and preserves the LGB warranty.

However, if you have an analog layout, the decoder senses analog power and automatically switches to analog operation. So you can go to a friend's layout -- no matter whether it is analog or MTS digital -- and run the loco.

Then, when you decide to convert to digital operations, it will be easy: Just get an MTS Central Station and a remote, and you'll be ready to have fun with the Multi-Train System.

**Q: What about decoder installation in older locomotives?**

A: The new 55021 "Type 2" decoder -- with advanced features like "back EMF" -- is now available and can be installed in the vast majority of older LGB locos.

**Q: Why is the 55030 Motor Current Booster no longer available?**

A: The 55030 was created to resolve synchronization issues with early MTS decoders (versions "V1" and "V2"). However, newer LGB decoders are extremely well synchronized, and for two-motor locomotives, simply use two decoders. Make sure that both decoders are from the same series (V3, ME1-1, etc.). On locos that require a 55026 Decoder Interface Cable, connect the cable to one decoder only. Both decoders should be connected to the pins on the loco circuit board.

**Q: Can third-party decoders be installed in locos with onboard decoders?**

A: As in the past, installation of a third-party decoder may require removal of the main circuit board and the loss of all functions -- light control, voltage regulation, sound and so on -- provided by the main circuit board. As always, we do not recommend or support the use of third-party components, and the user of third-party components assumes the risk for any damage.

**Q: Can a loco with onboard decoder run on layouts operated with third-party digital components?**

A: If the components are compatible with the NMRA DCC standard, then you probably can control the basic loco functions -- speed and direction -- on a layout with third-party components. However, advanced loco functions -- like sounds -- may not function as expected. Again, we do not recommend or support the use of third-party components, and the user of third-party components assumes the risk for any damage.

**Q: Is the onboard decoder programmable?**

A: Yes. Advanced users can program many features, including individual speed steps, output voltage for motor, lights and functions, acceleration and braking, starting voltage and many other functions. However, all this is optional. The consumer only needs to program the loco address. Everything else is factory-preset and does not need to be changed.

**Q: When will other locos be built with the onboard decoder?**

A: In the next few years, we will gradually include the onboard decoder in almost all LGB locos. During the transition, you will see some locos built without decoders, some built with add-on decoders (often called ".8" locos) and some with onboard decoders.

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