

Meeting Minutes – Spring 2001

Gladbeck, Germany – April 20th & 21st

- Welcome and Opening statement by Brian Barnt, DCC Manager
- Presentation of Plaques to Rutger Friberg and Bernd Lenz
- Status Report on Standards: Approved for next ballot by the NMRA BOT, forwarded to the Bulletin for publication, also available on the Web in PDF format.
- Status Report on the Recommended Practices: All proposed changes (except RP-9.2.3) sent to the Bulletin for member comment, also available on the Web in PDF format.
- Analog Output Instruction: Comments needed
- Accessory Decoder Connector: Comments also needed

[Rutger Friberg graciously took over running the meeting –Thanks Rutger!]

Conformance and Inspection

MOROP is organized very different than the NMRA, which makes it difficult to organize a C & I committee. MOROP had a different idea – create a block box that manufacturers could rent. Unfortunately, developing such a box is presently beyond the financial means of MOROP.

- Do European manufacturers support the idea of C & I Testing? Yes
- Should be done by a neutral third party
- What is the time involved for testing?
- Where do we find volunteers?
- We need educate the market about Conformance and Inspection importance!
- Use of a testing organization?
- Costs of support go down with C & I approved products!
- (Abbinck) Suggestion that we do decoder testing in Europe first.
- (Barnt) Suggestion that we do Command Station testing first since it is easier.
- (Lenz) Suggestions to have a ‘helper’ in Europe to verify the package/directions/etc. are complete before sending to the US. Tests still done in the US.
- (Fuhs) Suggestion for testing at a university.

<Break>

- Jan Abbinck volunteered to help coordinate.
- **TASK:** (Barnt) Determine List of Requirements for Testing (Time, Materials, Skills, Procedures)

MOROP Presentation

Presented (in German) by Hr. Claus Dahl for ?

Morop presentation about a standard network for model railroads. This control network would have a meta-language to define the control objects. The meta-language would exist separate from any device. The meta-language describes the actions used to control a model railroad. The meta-language would work on all older technology-based model railroads as well as modern high-tech model railroads.
{discussion on ideas in German}

Programming Issues

- Compatibility between decoders when operating works well.
- Programming has multiple methods implemented in Command Stations.
- What do we do to improve compatibility? How do we improve compatibility? How much backward compatibility is required?
- Require that programming types which are supported be documented.
- To program blindly, Direct Mode is required.
- Suggestion to move programming methods from the RPs to the Standards.
- Backward Compatibility – Existing designs must be grandfathered.
- Written comments from Digitrax summarized (by Rutger Friberg)

RP Addition, RP-9.2.3, Line 86: “A decoder which supports Direct Mode must support all three instruction types.” [Bit Manipulation, Byte Verify, Byte Write] **Aye: 15 Nay: 0 Abstain: 4**

RP Change, RP-9.2.3, Section F: Direct Mode required for “New” Command Stations, effective 1-Aug-2002. Review of exact wording by 21-Aug-01. **Aye: 18 Nay: 0 Abstain: 6**

RP Change, RP-9.2.3, Section F: Direct Mode required for “New” Decoders, effective 1-Aug-2002. Review of exact wording by 21-Aug-01. **Aye: 16 Nay: 1 Abstain: 7**

- Backward Compatibility requirements for Command Stations:
 - Address-Only is Required
 - Register
 - Paging
 - Direct is Required
- Leaving backward compatibility up to the manufacturers allows product differentiation.
- (Lenz) Register Mode is as simple to implement as Address-Only.
- (Fuhs) Page Mode always has been a repair, since nothing better was available.

RP Change, RP-9.2.3 Section F: All programming modes required in command stations.
Aye: 2 Nay: 12 Abstain: 9

RP Change, RP-9.2.3 Section F: Direct and Register modes required in command stations.
Aye: 14 Nay: 0 Abstain: 10

RP Change, RP-9.2.3 Section F: Address-Only and Direct modes required in command stations.
Aye: 1 Nay: 11 Abstain: 10

RP Change, RP-9.2.3 Section F: Direct and Register modes required in command stations.
Aye: 14 Nay: 0 Abstain: 10

RP Change, RP-9.2.3, Section F: Add Direct and Register mode requirements to RP-9.2.3, effective 1-Aug-2002. **Aye: 14 Nay: 0 Abstain: 10**

Wording for these RP changes will be distributed before the end of the meeting.

{End of Day}

Advanced Acknowledgement and Advanced Feedback

- Presentation by Bernd Lenz about Advanced Acknowledgement and Advanced Feedback

DCC:

Preamble	SB	Data	IPB	Data	IPB	Error Corr.	EB
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Bi-Directional:

Addr.	SB	Data	A1	Data	A2	Error Corr.	
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SB: Packet Start Bit
IPB: Inter-packet Bit
EB: Packet End Bit
A1: Acknowledge Bit 1
A2: Acknowledge Bit 2

Bi-directional communications uses the DCC packet to synchronize the incoming data. The return reply is sent during the next packet (i.e. the reply lags the packet by one packet time).

For Advanced Acknowledgement: (N/R = No Response)

A1	A2	Meaning
N/R	N/R	Decoder did not receive command.

0		1		Positive Reply
1		0		Negative Reply
1		1		Error (Invalid)

- (Förster) Error correction should not be defined as XOR – A more suitable forward error correction should be examined.
- (Sperrer/ Förster): Method, as presented is highly depended on bit-detection method.
- (Lenz) Layouts are unknown electrically. Bernd then updated us on his research since last year's presentation in Wetzlar.
 - Low Cost
 - All Scales
 - Easy for the end-user

- Presentation by Peter Ziegler about Signal-Controlled Speed-Influence (Update from presentation at Long Beach convention).
[Note: MX9 (Track Section Module) has input from the Power Station, and 16 outputs]

Method uses extra one bits between DCC packets to signal the decoder; the Power Station 'chops out' the bits.

- Presentation by Evald Sperrer about Signal-Controlled Speed-Influence using a computer.
- (Linder) Discussed reasons to use speed-influence. Software solution uses no additional hardware in the decoder. This method does not depend on the DCC data transmission.
- (Sperrer) Answered questions about track sections. Each track section is divided into 2 halves. When trains cross boundaries, the track sections are set to whichever speed is higher.
- Discussion about the various proposals:
- (Lenz) Signal-controlled Speed Influence is good because it removes any delay from the control loop.
- (Ames) These proposals are independent. Signal-control requires additional preamble bits, and is not backward compatible.
- (Förster) The two proposals:
 1. Back-channel from the decoder (Advanced Ack)
 2. Application (Sig.-Ctrl Spd-Inf) is separate from the back-channel.

{Break; everyone examined Zimo demo layout}

- (Muller) Advanced Acknowledgement is a general approach – requires the command station to do signal-control. Users will not want to swap decoders. Manufacturers could implement signal-control into existing designs, then in 5 years, command stations could begin to support it, similar to how 4-digit addressing has been phased in.
- (Lenz) Command Stations would need to be upgraded as well. To be successful, Signal-controlled Speed-Influence would need to be in the Standards.
- (Sperrer) Command Stations would just need to send additional preamble bits.
- (Linder) discussions of command stations are irrelevant. All new features also need command station upgrades.
- (Ames) TI-9.2.1 already contains information in this [Zimo] proposal.
- (Förster) Use caution about supporting two different Acknowledgement approaches.
- (Linder) Ask questions about differences between Standards, RP's, and TI's.
- (Friberg) User benefits should drive decisions.
- (Förster) [Asking question] Acknowledgement can happen anywhere? Yes.
- (Ziegler) [Answering question] Pulse is about 5 amps, for a limited time.
- (Lenz/Förster) High-current pulses DAMAGE the pickups on locomotives in a very short time.
- (Zigler) [Answering question] The signal is 'chopped out' for every packet in the section.
- Move TI to draft RP; Zimo Acknowledgement is not moved except for placeholders.

{Break for Lunch and Tour of Uhlenbrock factory}

Several attendees left the meeting before the tour.

RP Changes, RP-9.2.3, Line 299: 'Command Stations must support direct mode by 1-Aug-2002' ...
Aye: 20 Nay: 0 Abstain: 0

RP Changes, RP-9.2.3, Line 305: 'Decoders must support direct...'
Aye: 20 Nay: 0 Abstain: 0

RP Changes, RP-9.2.3, Section F (entire): Aye: 20 Nay: 0 Abstain: 0

For those not attending the meeting, the entire RP-9.2.3 with all modifications, dated April, 2001 is included as a separate PDF file with this report.

Signals Discussion

The aim is to have 'smart decoders' for train signals. A number representing the 'picture' that the signal displays is what is transmitted. Bill Attaras (battaras@earthlink.net) is consolidating the information.

Brief discussion on plans.

- Bernd Lenz will contact Hr. Erbert for more information.
- Stan Ames will provide method for reducing the numbers necessary.

Miscellaneous

- Brian Barnt will review the Maximum Programming Current on the track. *Max. Decoder current: 100 mA. No record of minimum a Command Station must supply.*
- Stan Ames will assist ESU to investigate programming problems. *Done.*
- Bernd Lenz will provide special software to test the current levels required. *Done.*

Resolution by group to resolve the programming timing problems. **Unanimous, except for 1 abstention.**

Next Meetings:

NMRA National Convention: St. Louis, MO, July 12th, 8:30 am to 12:30 pm in the TWA Dome.
RCHTA/MRIA Show: **Tentative** Meeting, Chicago, IL, September 7th, 7:30 pm – 11:30 pm
Spring 2002: Wien (Vienna) Austria, April 5-7 or April 12-14, 2002; Peter Ziegler will coordinate.

Summary

- Brian Barnt summarized notes from meeting

Thanks to Dr. Thomas Birner, Rutiger Uhlenbrock, and Rutger Friberg for arranging this meeting.