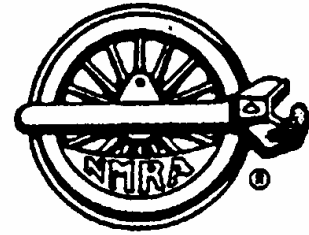


Minutes of the NMRA DCC Working Group Meeting



Dates: 31 March – 2 April, 2005
Location: Neuendettelsau, Germany

Attendee list follows the minutes
Minutes recorded by Michael Greene

Meeting Host & Sponsorship - This meeting of the NMRA DCC Working Group (DCCWG) was most graciously hosted by Fleischmann. We wish to thank Fleischmann for their sponsorship of this meeting, the Fleischmann factory tour on Friday morning, and their sponsorship of the Friday evening dinner.



A photo of the attendees (less our esteemed photographer, Mr. Rutger Friberg) in front of the church across from the hotel.

The meeting opened with a group welcome dinner Thursday evening at the Hotel Gasthof Sonne in Neuendettelsau, providing an opportunity for informal discussions among attendees.

Friday's agenda began with a tour of the Fleischmann facility at Heilsbronn, with guided tours by Fleischmann representatives.

After the Fleischmann tour, the group returned to the meeting facilities at the Hotel Gasthof Sonne for the remainder of the meeting. The meeting was formally opened at 11am by Rutger Friberg, NMRA Technical Department Director. After a brief review of meeting logistics by Messrs. Friberg and Jan Abbink (NMRA DCC Europe Coordinator), the meeting moved to the prepared agenda.

Interim Management Group – Mr. Friberg discussed the transition in the NMRA DCC Working Group management, and his appointment of the Interim Management Group (IMG). The IMG is in place for a short duration and charged with both interim management of the DCC Working Group, and with examining & recommending any changes (to the NMRA Technical Department Director) that would improve the organization & effectiveness of the NMRA DCC Working Group.

The members of the Interim Management Group are as follows:

- Michael Greene (former DCCWG Chair)
- Brian Barnt (former DCCWG Chair)
- Bill Ataras (WS Ataras Engineering)
- Jürgen Lindner (ESU)
- David Nicholson (ZTC)
- Fred Severson (QSI)

Mr. Greene and Mr. Barnt are both previous chairs of the DCC Working Group, and are joined by two representatives from the US DCC manufacturing community and two representatives from the European DCC manufacturing community. Mr. Greene is also currently the program manager for the NMRA Conformance & Inspection Program within the Technical Dept.

After introducing the IMG and its role, the meeting moved on to the next agenda topic.

Digital – Back to Roots – Next the meeting heard a presentation from Prof. Rainer Voges on the recently completed survey of BDEF club members (BDEF is the national German model railway organization). The survey captured 9000 responses from among members. Average age of club members is 42.2 years. The participants were surveyed on a variety of topics. Among the results was a ranking of interests of the respondents including:

1. Collecting
2. Operating
3. –
4. Building
5. –
6. Book, DVD
7. –
8. Digital Technologies

(Editor's note: While the list obviously had entries at each position, the editor only captured the ones noted in his meeting minutes. The slides from this presentation were in German – once an English language version of the presentation material is available we will post it.) It was important to note the relative ranking the respondents placed on digital technologies in model railroading, as compared with other interests and activities.

Location Dependent Information Transmission – During the course of the two days of the meeting, Dr. Peter Ziegler & Mr. Arnold Hübsch of Zimo led a discussion and provided a demonstration on the topic of Location Dependent Information Transmission. The demonstration was by means of Zimo's "signal controlled speed influence" and "location dependent function control" and its use together with bi-directional communications using RP-9.3.1 and RP-9.3.2. Dr. Ziegler and Mr. Hübsch brought a working demonstration layout to the meeting. The general approach used is:

- Commands to the Loco – DCC
- Information back from the Loco – Bi-Directional RPs (or other proprietary systems)
- Location specific information sent to the decoder – various methods such as HLU (Zimo), ABC (Lenz), Inverted LISSY, magnets, etc.

A number of comments/questions/topics raised in the discussion included:

- Keep the system open – don't follow just one specific method – perhaps use RPs to document different methods
- Should we focus on just what is going over the rails?
- Will there be a "standard" solution for stopping/braking a loco?
- Will the NMRA support the concept of conflicting RP's? (the context here was that if the NMRA documents differing methods via RP's then the RP's may in fact be in conflict)
- What about the situation where certain CVs may have multiple uses depending on what method is used?

As a result of the discussion, a Location Dependent Study Group will be formed. Attendees expressing interest in joining the study group included Dr. Ziegler, Mr. Hübsch, Mr. Lenz, Mr. Ames, Ms. Zana Ireland (Digitrax), and Mr. Marcel Thomas (CDF).

A separate paper on this topic from Zimo is attached.



ZIMO_proposal_für_
DCCmeeting.pdf

Update on Bi-directional Communications – This agenda topic included two components:

- Update on RP-9.3.1 and RP-9.3.2 presented by Mr. Stan Ames and Mr. Brian Barnt
- Review of how the NMRA will address DCC "feedback" systems by Mr. Friberg

Messrs. Ames & Barnt discussed the additional work & testing that had been completed on bi-directional and specifically the revisions to RP-9.3.1 and RP-9.3.2. Mr. Ames reviewed the proposed changes in these two RPs. The revised drafts are attached and will also be posted to the DCCWG discussion list in a separate posting and also on the **dcc.info** web site.



RP-931 draft
2005-04-14 w update



RP-9.3.2 250 Draft
V2.06 MG1.pdf

In addition to the technical discussions, Mr. Ames indicated that one additional issue that needs to be decided is whether it would be recommended to the NMRA Technical Department and Board of Trustees that the NMRA:

1. Adopt RPs that codified requirements that required conforming manufacturers to support specifications that are designed to provide the best opportunity for working with existing decoders in the market, **or**
2. Adopt RPs that specify the minimum requirements for Bi-Directional, and document in a Technical Note the options for manufacturers who may wish to support the widest range of existing decoders in the market, and then leave the decision in this regard to each manufacturer.

Mr. Ames indicated that some manufacturers are not in favor of option 1. Mr. Ames presented no recommendation on this final question.

After completion of this review & discussion, meeting attendees were polled on whether or not the NMRA should proceed with adopting these revised RPs. The results of the poll were:

- Proceed (14 votes – 10 manufacturer representatives, 4 NMRA members)
- Abstain (11 votes – 10 manufacturer representatives, 1 NMRA member)
- Drop (1 vote – 1 manufacturer representative – Digitrax voted a conditional no, with indication that it would change to yes if the NMRA C&I requirement was removed from the RP, and the RPs were moved to Technical Note status)

After the completion of the poll, Mr. Greene indicated that as soon as the revised RPs were posted to the NMRA DCC Working Group discussion list, he would open a 2 week period for manufacturers unable to attend the meeting register their position on adopting the revised RPs, as well as other DCC Working Group members who wished to register a position on same.

After the completion of the update & discussion on the revisions to RP-9.3.1 and RP-9.3.2, Mr. Friberg indicated that the Technical Department was currently evaluating the options related to documenting information on other feedback methods beyond RP-9.3.1 and RP-9.3.2 (including proprietary methods assuming controlling parties were interested and agreeable). Mr. Friberg indicated that the initial area of study would be related to information regarding the interoperability of the various feedback methods, including steps that might be taken to avoid interference if more than one system were in use on a modeler's layout.

Service Mode Decoder Lock – Mr. Greene indicated that the Service Mode Decoder Lock revisions to RP-9.2.3 and RP-9.2.1, and Technical Note TN-2-05 have been forwarded to the NMRA Technical Dept Director with a recommendation that they be accepted and forwarded to the NMRA Board of Trustees for final approval. Two minor edits were incorporated in the final versions forwarded, and the final versions of RP-9.2.3, the associated Technical Note, and RP-9.2.1 which incorporate the revisions will be available on the NMRA DCC Working Group web site shortly.

More Functions – The next agenda topic discussed were the proposals advanced from various Working Group members to support additional "functions". During this discussion a number of topics were addressed including concerns regarding MRC's use of unauthorized address space for additional functions, as well as work underway by several manufacturers in this general area. This lengthy discussion achieved a much better understanding of manufacturers' interests in this area, and the

discussion revealed that there were really two types of new functionality that were needed:

1. Additional functions beyond F12
2. Control of binary states in decoders (hereinafter called Binary State Control)

After the discussion regarding functionality needs, discussion continued on the opcode alternatives and message formats that could be used for these two areas. At the completion of this discussion, there was significant agreement among meeting participants on the specific opcodes and message formats that should be brought forward in the topic drafts for these two areas.

As a result the following actions were taken:

- The current topic 0501151 is officially closed (including the formal comment period)
- Two new topics have been opened as follows:
 - Topic 0504021 (Function Expansion) – will address the requirements for additional functions beyond F12 – specifically Functions F13-F28
 - Topic 0504022 (Binary State Control) – will address the requirements for the control of binary states in decoders, specifically up to 32767 binary states

(Editor's Note: Subsequent to the conclusion of the meeting, Mr. Greene named Mr. Reinhard Müller as Topic editor for both of these topics. Drafts incorporating the proposed op codes and message formats discussed, agreed & documented during the meeting will be available to the DCCWG list shortly.)

- Mr. Ireland (Digitrax) indicated that he had discussed with situation with MRC regarding their use of opcodes for additional functional control in which the opcode usage was not approved by the NMRA, and he reported that they indicated to him that they would be willing to make modifications in an upcoming revision of software in their affected product if the NMRA moved quickly on this topic. Mr. Greene took the action to contact MRC on this topic and confirm their willingness to make this change.

New Connector – The introduction and overview of a 21 pin connector by developed by Märklin was the next agenda topic. After some discussion, a small team was chartered to review and develop a proposal based on this work that would allow the NMRA to document the connector for use by other manufacturers. The team is NOT a connector design team – the connector is already in commercial use. The team is chartered to document the connector and consider/document these additional areas related to the connector: suppliers, any legal issues, connector layout & size, spacing requirements (space required for decoders), current capacity, pinouts, applicability to various scales including (HO, S, O, and large scales). Topic number 0504023 (21 Pin Connector) has been assigned.

Mr. Müller was assigned as topic editor, with representatives from these manufacturers as additional team members:

Märklin	Uhlenbrock
ESU	Digitrax
Roco	Kühn

The team was also specifically asked to consider the application of the connector in large scales, and the possibilities for ditch light connections. The team is asked to report back with its review, documentation and analysis in time for the July 2005 DCC Working Group meeting.

Update on Testing – Messrs. Greene, Barnt, and Abbink provided general updates in the testing area.

While Mr. Alfred Capek (who has volunteered to lead the development of the DCC Test Center in Europe) was unable to attend the meeting, there are ongoing plans to get this Test Center up and running, beginning first with decoder testing.

Mr. Barnt showed a prototype of a PC104 based testing station which incorporates the NMRA DCC Decoder Test Board along with the PC104 computer. It provides a serial port for connection to another workstation, and uses an external DCC power station. A poll was taken to get a general sense of the interest of attendees in purchasing (at a reasonable price) such a test fixture if they are manufactured - interest in 10 of these test fixtures was indicated by those attending. In addition Mr. Barnt indicated that the so-called “White Box” tester, used for DCC packet capture, continues to be available, and those interested should contact him to obtain more details and/or purchase a unit.

Technical Handbook – Mr. Friberg provided an overview of the ongoing work within the NMRA Technical Department to revise the Technical Department Handbook.

Future DCC Working Group meetings – There was a short discussion of regarding the time of future meetings, and the attendees showed unanimous preference for a Spring meeting. Mr. Friberg will be talking with Märklin about hosting the next meeting. Jack Treves from MOROP indicated that MOROP would be interested in hosting the meeting following the next one.

In addition Mr. Friberg raised the topic of improving the balance in formal DCCWG meetings by adding a regularly schedule Fall meeting in the US. And he indicated that he would be inquiring as to whether American manufacturers might be willing to host such a Fall meeting of the DCCWG on an ongoing/rotating basis.

General Topics – In addition to the scheduled agenda topics, these additional topics were covered:

1. Status of the Decoder Lock topic – There was an inquiry from an attendee on the status of Topic 0305051. Since no one attending the meeting was certain of the status, Mr. Greene has the action to check with the Bob Jacobsen (previous DCCWG chair) for the status of this topic.
2. In-rush current issues – There was roundtable discussion about the issues presented by high in-rush current in certain decoders in the market, and how to handle them. Discussion included a number of ideas on how to address them, but in the end, there was agreement that a number of these issues could be avoided if new decoder manufacturers had some guidance on decoder design related to this issue – things such as possible issues, approaches that might be used to avoid them, etc. Mr. Greene took as an action to see if it was possible to get such a document drafted and made available to new manufacturers. Mr. Lenz, Mr. Ireland, and Mr. Barnt volunteered to contribute to the content of such a document.
3. Life-Like GP9 loco – an issue was raised regarding a particular Life-Like loco that had a NMRA Conformance warrant displayed on the box, but yet may not be in conformance. Mr. Greene indicated that said loco had not been awarded a NMRA Conformance Warrant and agreed to investigate the matter.

4. Improved Communications re: DCC – Mr. Friberg raised the question of whether the DCCWG should be doing more to improve the communications and DCC educational materials for dealers, customers, etc. Several manufacturers and manufacturer representatives didn't see this as an urgent need, as they already had their own active efforts underway in this regard. This discussion then turned to improved communications to manufacturers, and especially to new manufacturers to help them avoid common pitfalls as they bring new products to market. One item in particular mentioned was the compilation of a "known issues" document – this document would have a restricted distribution and could perhaps be made available to new manufacturers through the DCCWG when they become aware of a new manufacturer (such as when a request is made for a Manufacturer ID). The Technical Dept and DCCWG will investigate further the opportunities in this regard.
5. Use of Reserved CVs – there was some discussion regarding the use of reserved CVs by various manufacturers. As a result, Mr. Greene took an action to:
 - solicit information from all manufacturers currently using reserved CVs
 - prepare a proposal for the resolution of this issue

NOTE to Manufacturers: All manufacturers currently using (or planning to use) CVs currently reserved to the NMRA are requested to document the CVs and their usage and forward the information to Mr. Greene either via email (mgreene@cedarlane.com), via FAX to (1) 978-649-7015, or via paper mail to:

**Michael Greene
 NMRA DCC Working Group
 167 Westford St.
 Dunstable, MA 01827-2405 USA**

The meeting closed at approximately 12:00pm local time on Saturday April 2, 2005.

Attendees:

Name	Company
Marcel Thomas	CDF
Joachin Dietz	Dietz Modellbahntechnik
Hohlbaum Gunther	Dietz Modellbahntechnik
Zana Ireland	Digitrax Inc
A.J. Ireland	Digitrax Inc
Ewald Sperrer	E. Sperrer Software
Udo Ehrlinger	E.P. Lehmann
Dr. Thomas Birner	ESU
Reinhard Müller	FREMO
Rolf Flesichmann	Gebr. Fleischmann GmbH & Co KG
Dr. H. P. Förster	Gebr. Fleischmann GmbH & Co KG
Dr. Frank Grünig	Gebr. Fleischmann GmbH & Co KG
Lars Schilling	Gebr. Märklin & Cie
Andreas Weiss	Gebr. Märklin & Cie
Jürgen Pudert	Gebr. Märklin & Cie
Hiroshi Kato	KATO

Masayuki Kunitake	KATO
Torsten Kühn	Kühn Ing. Büro
Bernd Lenz	Lenz Elektronik GmbH
Deborah Ames	Lenz Agency of North America
Frank Stöhr	Massoth
Prof. Rainer B. Voges	MOBA, BDEF, Conrad
Jack Treves	MOROP
Stan Ames	NMRA
Michael Greene	NMRA
Jan Abbink	NMRA Coordinator Europe
Rutger Friberg	NMRA Tech Chair
Berthold Schopferer	Roco
Brian Barnt	Soundtraxx
Kersten Tams	Tams Elektronik GmbH
Winfried Seewald	Tillig
Rüdiger Uhlenbrock	Uhlenbrock Elektronik GmbH
Dr. Thomas Vaupel	Uhlenbrock Elektronik GmbH
Ingo Planert	Viessmann
Dr. Peter Ziegler	ZIMO
Arnold Hübsch	ZIMO