

Model Railroading in Germany

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Just like us ...

Model Railroading in Germany

Just like us ...
but even more so!

Model Railroading in Germany

- estimated 5m model rail hobbyists/enthusiasts
 - represents 6.2% of the total population
 - assumed gender bias of hobby → 12% of German males
- scale preferences:
 - HO is dominant (almost 3/4 of hobbyists)
 - N is a distant 2nd place (at about 1/5 of hobbyists)
 - third place cluster around:
 - Gauge 2, aka Garden railroads (9%)
 - Z scale: (8%)
 - Gauge 1 (7.6%) and TT (7.3%)
 - O scale (4.7%) and “all others” (together 1%)

*Source: BDEF, “Modellbahn-Marktanalyse 2007”; sample = 4,259 self-described model railroaders surveyed in 2006; 2004 study based on more than 7000 “beginning MRR” (having at least 5 years in hobby)

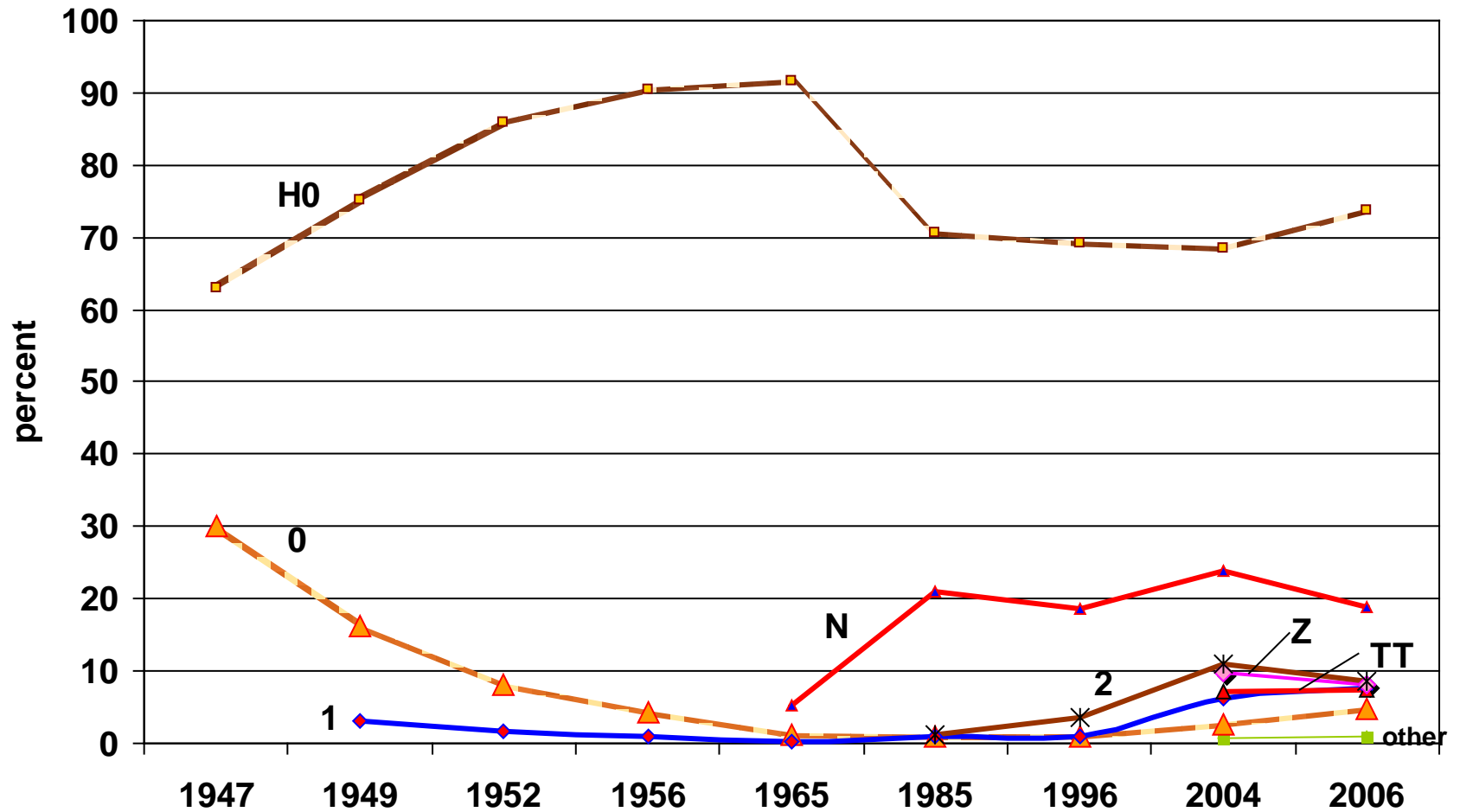
Model Railroading in Germany

- interest in narrow-gauge (“schmalspur”) modeling growing
 - notation:
 - “e” (for “Engspur” = 750-800mm = 30-36” gauge); for example “HOn3” or “On30” in USA
 - “m” (for “Meterspur” = 1000mm in prototype = ca. 39.4”); would be “On40” in USA
 - except for gauge 1 modelers, larger scale modelers tend to be more “narrow-minded” than smaller/smallest scale fans:
 - “2m/2e” 97% model narrow gauge alone or in addition to standard gauge
 - “Oe” = On30 32% model narrow and/or standard gauge
 - “H0e” = HOn3 18% (MIBA studies* found 13% in 1965 and 21% in 1985)
 - “TTe” 11%
 - “Ne” 5%

Scale	Standard Gauge (only)	Standard and Narrow Gauge	Narrow Gauge (only)	Total
Z	95,9 %	3,2 %	0,9 %	100 %
N	95,0 %	4,8 %	0,2 %	100 %
TT	89,3 %	9,4 %	1,3 %	100 %
H0	81,9 %	16,9 %	1,2 %	100 %
0	68,5 %	18,0 %	13,5 %	100 %
1	98,2 %	0,9 %	0,9 %	100 %
2	3,2 %	2,2 %	94,6 %	100 %

*Sources: BDEF, “Modellbahn-Marktanalyse 2004” cited in BDEF, “Modellbahn-Marktanalyse 2007”. *MIBA-Miniaturbahnen* is one of the numerous publications of the German language hobby press. Like *Model Railroader*, it has commissioned occasional surveys.

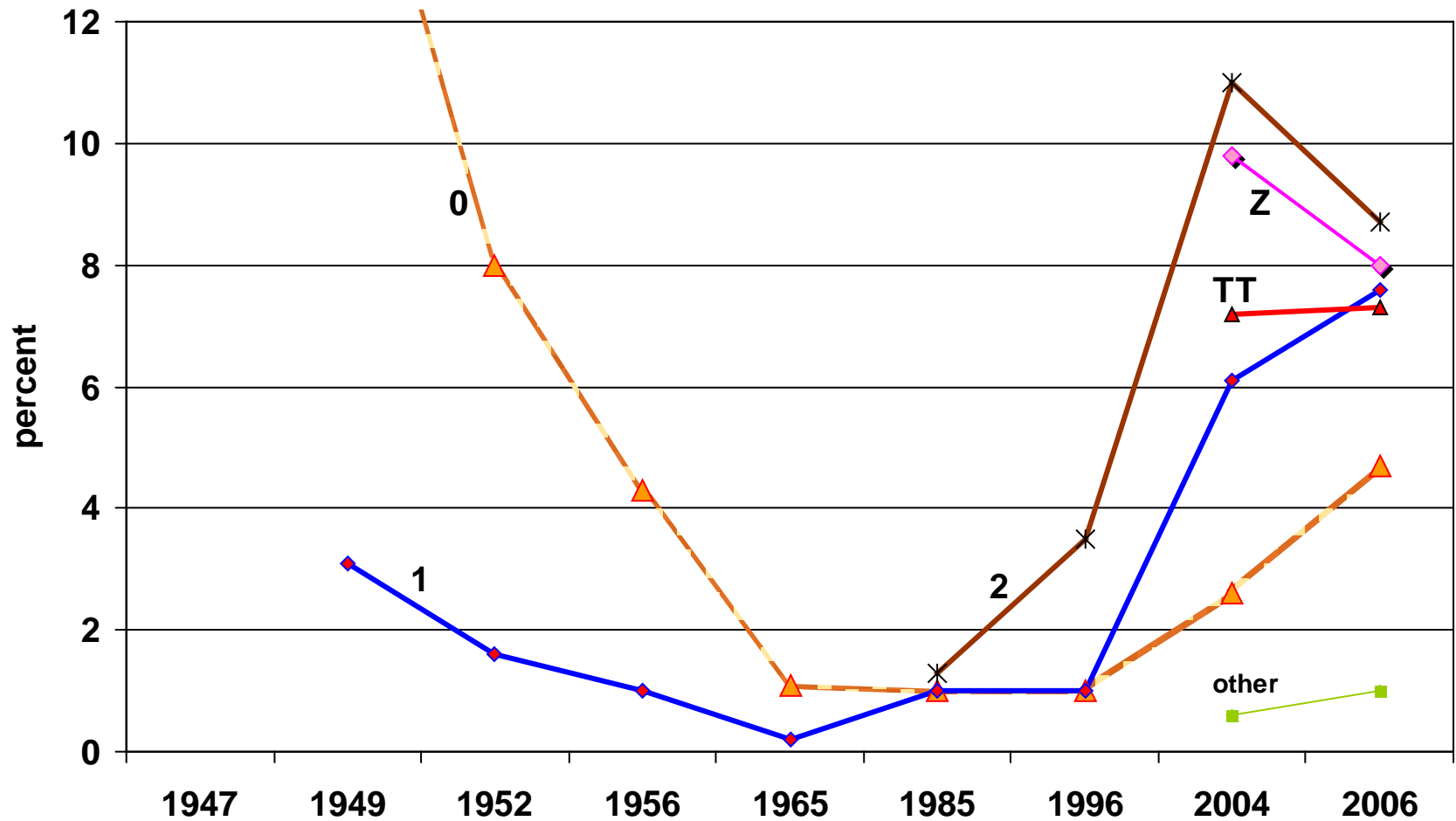
Market Share by Scale



*Source: BDEF, "Modellbahn-Marktanalyse 2007"

Market Share by Scale

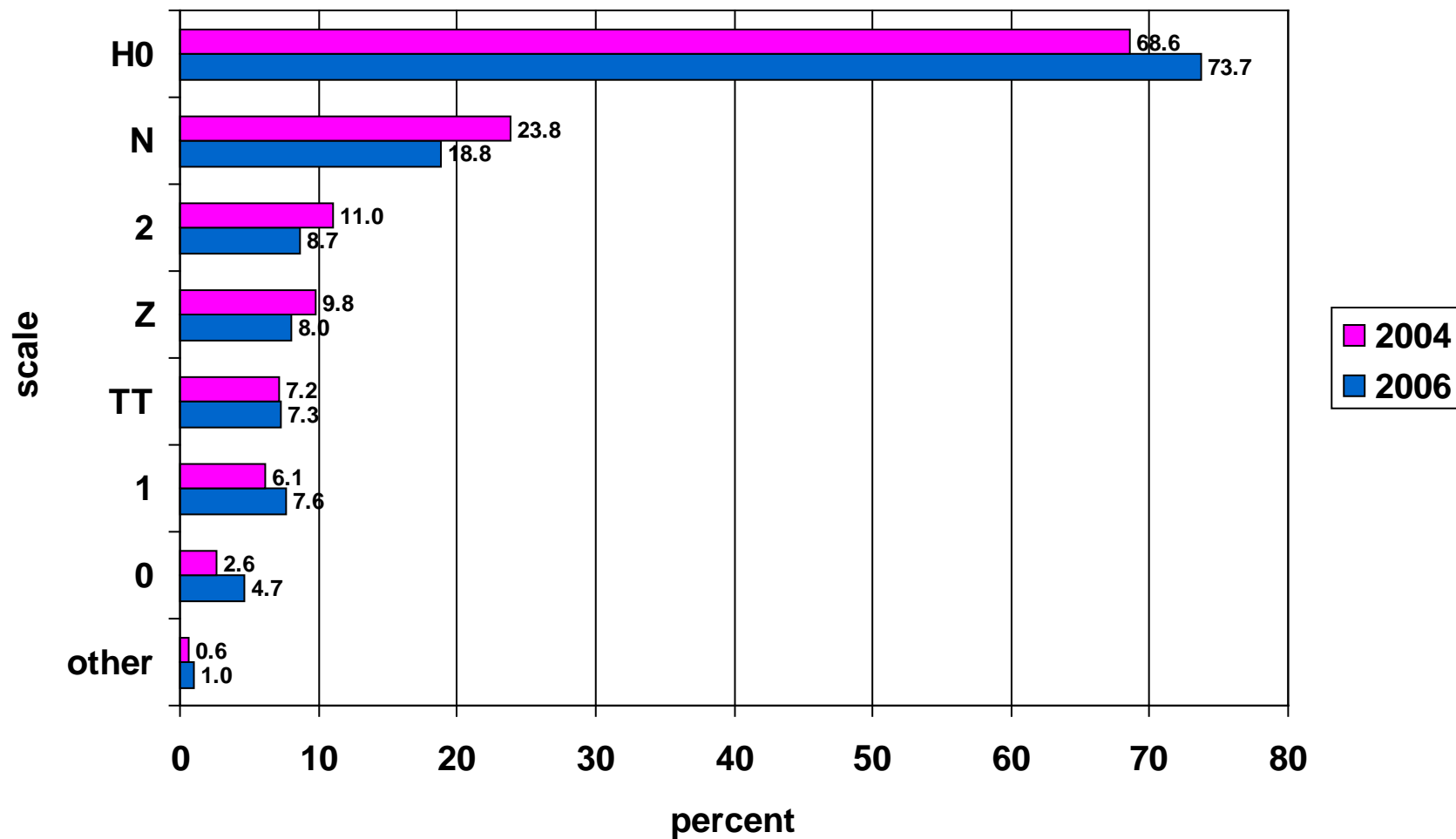
(detail)



*Source: BDEF, "Modellbahn-Marktanalyse 2007"

Market Share by Scale

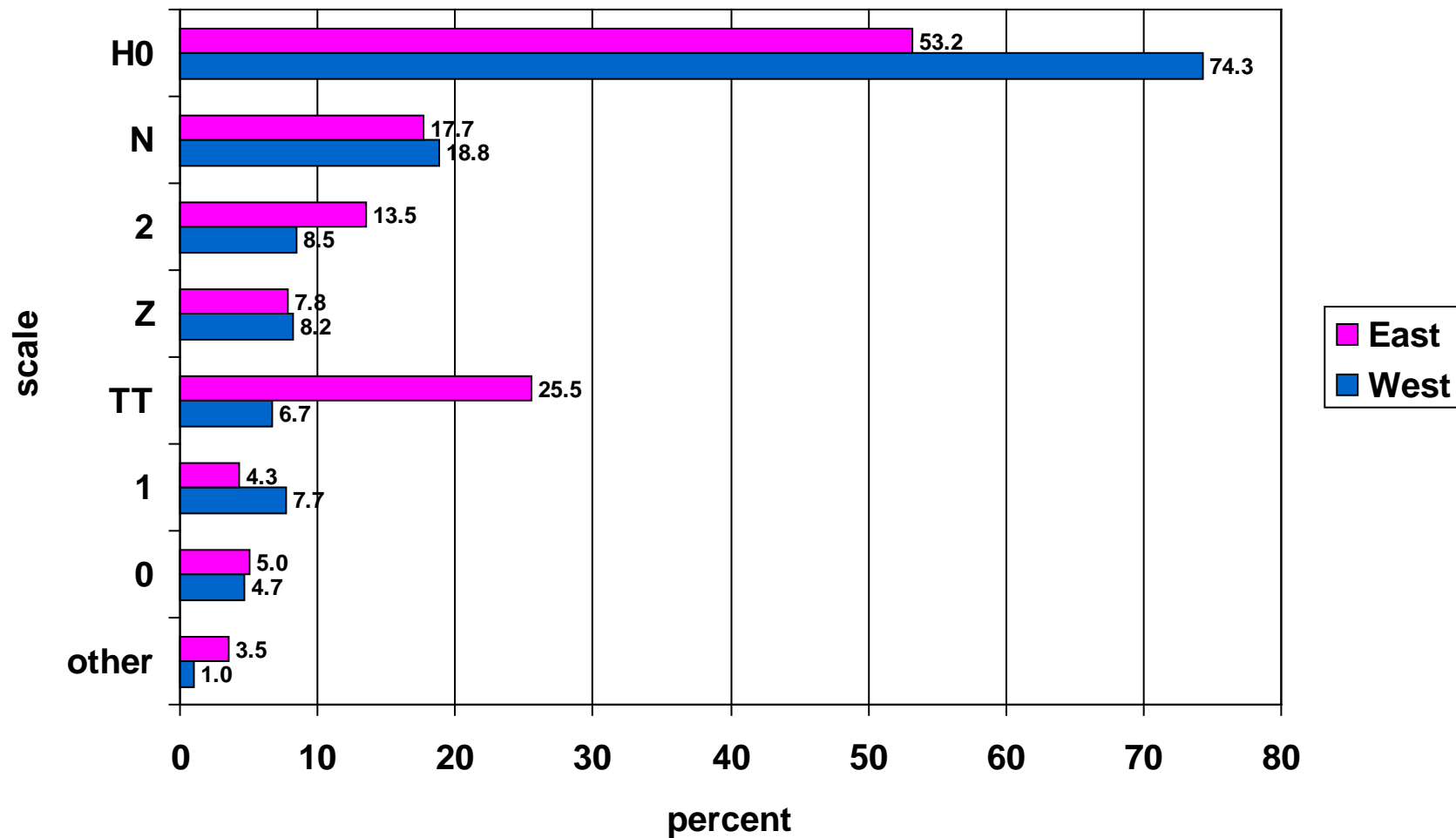
(overall)



*Source: BDEF, "Modellbahn-Marktanalyse 2007"

Market Share by Scale

(East vs. West)



*Source: BDEF, "Modellbahn-Marktanalyse 2007"

Overview of German MRR

Scale	Track Gauge (mm) standard / narrow	Proportion	Market share* in %
Z	6.5 / n.a.	1:220	8.0
N	9 / n.a.	1:160	18.8
TT	12 / n.a.	1:120	7.3
H0 / H0e	16.5 / 9.0	1:87	73.7
0 / 0e	32.0 / 16.5	1:48~1:43	4.7
I / Ie [aka “1”]	45.0 / 22.5	1:32	7.6
IIm / Ile [aka “2” or G]**	45.0 / 32.0	1:22.5	8.7

*Source: BDEF, “Modellbahn-Marktanalyse 2007”

** For Gauge 2, model track gauge given is for the typical “Meterspur” (IIm) and less typical “Engspur” (Ile).

History of MRR in Germany

- hobby dates back to start of rail transport:
 - 1836: 1 year after premiere of Nuremburg-Furth RR
 - earliest model illustrated design, operation of its steam engine “Adler” and its cars
 - not a toy; target customer: teachers and the technologically interested public:

“Steam car of the Nürnberg-Fürth Eisenbahn, with coal car and passenger coach, clockwork mechanism, painted tin, 9 fl.
the same, [only] larger, 12 fl.
the same, larger still, [but] of wood and paper, without coach, 13fl.”

- advertisement, *General Polytechnic Newspaper*, March 1836

- later: tinsplate w/ primitive mechanisms
 - 2-dimensional Locos and cars at first, like tin soldiers
 - then 3-dimensional “Table and Floor Runners” pulled by string
 - some w/ simple drives, e.g. springs, eccentric wheel, clockwork mechanism
 - “drippers” = actual mini-steam engines
 - however: no tracks or standardization of scale

History of MRR in Germany

- Age of Industrialization (late 19th century):
 - machines simplified production, cheap production → mass wares (like tinplate toys)
 - success of the German toy industry: quick adoption of technical developments (like chromolithography) and increasingly fine detail
 - toy train manufacturers were also quick to produce miniature tinplate versions of real-life technical and historical developments
- 1891: Märklin (est. 1859 in Göppingen) introduces a track system at the Leipzig Toy Fair (Leipziger Spielwarenmesse) – the largest toy fair in the world. This is a double breakthrough, made possible by the company's takeover of the Lutz company (Göppingen) that developed it:
 - the beginning of the norming of track gauge, which allowed for interchangeability of cars and accessories between manufacturers
 - the development of sectional track, switches, and crossings, which quickly pushed aside the “floor runners”



Carette & Rossignol, ca. 1900-1910



Märklin, ca. 1904-1914.

History of MRR in Germany

- soon accessorizing begins, with more cars, stations, signals, etc.



Bing, freight cars, ca. 1904



Issmayer, Anhalter Bahnhof, ca. 1900



Märklin, roundhouse (1900), turntable (1908),
E 1041 Lok (1924)

Source: <http://www.modellbahn-links.de/index.php?a=424>

History of MRR in Germany

- 1895: Nuremberg becomes heart of model railroad industry in Germany, with ca. 50 companies registered there making toy trains and accessories.
- While Märklin (in Göppingen) was still the largest manufacturer, there were many other well-known manufacturers in the German market, including Carette, Doll, Hess, Bub, Tipp & Co., Arnold, Distler, Issmayer, Kraus-Fandor, Planck, Schoenner, and Bing.



Issmayer, train set and accessories, 1900-1911



Märklin, airplane transport car, 1915

Source: <http://www.modellbahn-links.de/index.php?a=424>

History of MRR in Germany

- 1897: Märklin introduces “first” electric train; the claim is not universally accepted because tinplate industry press reported in 1882 that the Ernst Planck company was about to introduce an electric train.
- 1920s: electric model train became dream of many boys (and some girls)
- 1927: Breakthrough: dangerous high voltage systems replaced by low voltage transformers that reigned until the advent of various forms of cab control



Bing, Table Railway = first OO(~HO) set, UK 1922; Germany 1924



high voltage system banned in 1927

Source: <http://www.modellbahn-links.de/index.php?a=424>

History of MRR in Germany

- 1933-45: Military themes come to dominate the toy and German model train industry for some reason....



anti-tank guns transport



flak spotlight car

History of MRR in Germany

- 1945: After the war, Leipzig lost its luster and the toy fair moved west; it is now known as the “Nuremberg International Toy Fair” ([Spielwarenmesse Nürnberg](#)) and takes place every February.
- 1949-89: Germany partitioned and economies decoupled
 - East Germany (GDR): interest in TT scale grows (1980: TT = 45%, HO = 48%; compare to Russia today: TT = 41%, HO = 41%)
 - West Germany (FRG): “economic miracle”: postwar boom accompanied a rise of HO to 90% market share by the mid-1950s
- since 1990:
 - the larger scales (2 and 1) shrink to near nothing, but some evidence of growing interest in Gauge 2
 - TT share of east German market shrinking (1980: 45%; today: 25%)
 - modular groups, incl. [Freundeskreis europäischer Modellbahner e.V. \(FREMO\)](#)
 - diverse collectors scene, concentrated on historic items

Source: <http://www.modellbahn-links.de/index.php?a=424>

Photo: Christian Lindecke



History of MRR in Germany

- Outlook: still a vibrant hobby in Germany, but with two major problems:
 1. Global financial crisis:
 - Drastic reductions in credit for the industry
 - Throttling of investment, R&D, plus high labor costs in Europe; could lead to continued outsourcing to Asia
 - Outsourcing can reduce costs, but it has also raised issues of quality, intellectual property rights, consolidation of production in monopolistic companies (e.g. Kader)
 - Combination of these factors have nearly killed Märklin; see also Roco & Fleischmann
 2. Structural problem of declining interest:
 - Computer games have overtaken this hobby
 - Young people are just not getting into it
 - Analysis of the MR sector at this year's Nuremberg Toy Fair:

Innovation is the watchword of the industry, and “those who play, play digital.” But “winning over new adherents is among the most serious problems of this branch.” “Branch insiders say the unwritten law still holds: ‘Where a model train once stood, it will again; where it does not exist, it never will’.” In fact, “the earlier [the child] is led to the hobby, the better,” and where parents are not providing trains for their children, there is now “consensus” that the “model railroad virus” could possibly be spread in the schools. “In order to be infected, ... it is important to make experiences from a very young age.” Hence the ‘model trains and the school’ path is the correct approach to impart the satisfaction of creating something unique with instruction..... If [it must be] a model train, then [do it] right with technology that thrills!”

History of MRR in Germany

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 - West Germany (FRG): “economic miracle”: postwar boom accompanied a rise of HO to 90% market share by the mid-1950s
- the larger scales (2 and 1) shrink to near nothing, until recently the 2 gauge (representing mainly a 2m gauge prototype) has begun to come back (growing popularity of narrow-gauge)
- Today: diverse collectors scene, especially concentrated on the historic items.

MRR Organizations

- [Verband der Modelleisenbahner und Eisenbahnfreunde Europas \(MOROP\)](#)
– European peak association for model railroaders and railfans; (~ NMRA; since 1994 coop. w. NMRA, esp. on DCC standards)
- [Bundesverband Deutscher Eisenbahn-Freunde \(BDEF\)](#) – Federal Association of German Railfans
- [Modellbahnverband in Deutschland \(MOBA\)](#) – Link between model railway fans and the model railroad suppliers
- [Schweizerischer Verband Eisenbahn-Amateur \(SVEA\)](#) – the Swiss Association of model railroaders
- [Verband Oesterreichischer Modell-Eisenbahn-Clubs \(VOEMEC\)](#) – the Association of Austrian Model Railroad Clubs
- [Freundeskreises Europäischer Modellbahner - FREMO e. V.](#) – European Model Railroaders Ring
- [Internationale Arbeitsgemeinschaft Modellbahnbau Spur 0 e.V.](#) – International Working Group on O-gauge modelling

Standards and Norms

- **MOROP & NEM:**
 - **MOROP** is the abbreviation for the European federation, which organizes the various national associations of model railroad enthusiasts and railway friends in one European organization with its main seat in Bern, Switzerland. MOROP's main aim is the standardization of scales and measurements for models.
 - These standards, or norms, bear the name **NEM** (“Norms of European Model Railroads” aka “Normen Europäischer Modellbahnen” and “Normes Européennes de Modélisme”).
 - Since 1994 the MOROP has been keeping close ties to the NMRA, the corresponding body in the USA. At the moment, 23 associations and organizations with more than a total of 30,000 members are represented in the MOROP.

BDEF – The “German NMRA”

- “Bundesverband Deutscher Eisenbahn-Ereunde e.V.” = “Federal Association of German Railfans.”
- “The BDEF was founded 50 years ago and is an umbrella association representing both model railroad clubs and other railroad enthusiasts. There are more than 300 clubs and organizations with a total of about 12,000 members organized in the national association.”
- hosts a detailed website [[English version](#)]; “You may also visit our [German website](#) should your command of the German language allow this. There you will find a list of all participating clubs, their addresses and a short description of their layouts. This may be of interest to you when planning your next holiday in Germany....”

BDEF – The “German NMRA”

- **Benefits:** “The BDEF offers its participating clubs a variety of benefits, including club insurances, concession prices for model railroad exhibitions and museums, reduced price railroad magazines and additionally a fair amount of other relevant information for all kinds of railroad enthusiasts.”
- **Clubs and Members:** “Members of the BDEF clubs either have a model railroad layout or a garden railroad, or they build or collect model engines and other vehicles from certain periods or countries. The layouts are often in operation. Some of our members are extremely interested in the modern railroad, especially in the development of high-speed trains, for example the German Inter City Express (ICE) and in political issues concerning transport. Other members own narrow gauge railroads with historic railroad buildings, while another group restores old steam locomotives, other vehicles and machines and yet another group collect original railroad accessories. The club addresses can be found on this site.”

BDEF – The “German NMRA”

- **Trade Fairs and other Exhibitions:** “The BDEF has regular exhibits at 7 of the principle German trade fairs. The BDEF often organizes railroad exhibitions or is co-organizer of such exhibitions and is present at trade fairs with railroad participation. A main attraction at these events is the presentation of new award-winning models and layouts of member clubs.”
- **Board of Management:** “The Chairman of the Board of the BDEF is the President, who is assisted by 3 Vice-Presidents representing the Eastern, Western and Southern regions. Furthermore there is an Executive Manager at the association's headquarters in Hanover. The Chairmen of the Transport Politics Commission and the Model Railroads Committee, the Treasurer, the Public Relations Officer and the Exhibitions Convener have seats on the Board of Management. A number of experts in the fields of law, tax, norms and standardization in the model railroad sector, internet, electronics and digital systems and the editor of the BDEF annual are also board members.”

BDEF – The “German NMRA”

- **AK Verkehrspolitik/AK Modellbahn** (Committee for Transport Politics & Committee for Model Railroads): “These two committees are the main bodies representing the fundamental aims of the BDEF.”
- **Sponsors:** “In addition to the member clubs there are sponsors, who support the activities of the BDEF. The sponsors include representatives of the transport technology industry, publishers of professional magazines and manufacturers of model railways railroads, equipment and electronic systems.”
- **Annuals:** “Under this heading you will find information about our annuals. This handbook provides details of all our member clubs in Germany, their addresses and a short description of activities connected with the railroad in the state hosting the next annual congress.”

BDEF – The “German NMRA”

- **Annual General Meeting:** “All railroad enthusiasts, no matter the gauge, are welcome to visit us during our annual congress, which is usually held in May. A detailed program of events can be found under the appropriate heading.”
- **VDMT:** “The BDEF, although the largest representative of railroad enthusiasts, is not the sole organization of this type in Germany. A number of clubs are organized in the VDMT (Association of German Museums and Nostalgic Railroads). Naturally the BDEF co-operates with the VDMT.”

© **BDEF 2004** (Maureen Göbel)

Model Railroading Eras*

		1920 - 1925		1945 - 1950		1965 - 1970		1985 - 1990		2005 - 2010	
Era I	9%										
Era II		16%									
Era III				52%							
Era IV						42%					
Era V								21%			
Era VI											

Modeling no specific era: 31%

* as defined by NEM 800, section 5 [nem800_d.pdf]

Model Railroading Eras*

There are different systems of differentiation. The most well-known is the 5-era system developed in 1971 by railroad historian G. Barthel, which is the basis for the NEM 800 norm. But there are still raging debates over where to make the exact cuts, such as in the 1950s with the end of third class seating, or the introduction of a third headlight on Loks and the reduction of the size of the smoke deflectors.

- **Era I - 1835 – 1920:** **Länderbahn Era**

Almost every state had its own railway, such as the Royal Bavarian State Railway or the Prussian State Railways. Each railway had its own livery and logos. Exclusively steam at the beginning, toward the end the first E-Loks came online. Sometimes subdivided into 1a through 1f.
LÄNDERBAHNEN, KROKODIL STEAM E-LOKS (introduced ca. 1900)
- **Epoche II - 1920 - 1945/1949** **Reichsbahn Era**

This era begins with the founding of the Deutsche Reichsbahn and ends with WW2. In Germany this carries on through 1949. This era was the high time of steam. The colors were brown-green for passenger coaches and red-brown for freight cars. Introduction of some light signalling. This era is also subdivided, from 2a through 2d.
DR-DRG STEAM , E-LOKS LIVERIES: brown-green (passenger) and red-brown (freight)
- **Epoche III - 1945/1949 - 1968/1970/1975** **Postwar era and Economic Miracle**

This was the twilight of steam and the beginning of the Deutsche Bundesbahn (DB) in the west and Deutsche Reichsbahn (DR) in the east. This era is diverse and colorful: prewar stock is mixed with new and modern cars, and both diesel and E-Loks are present. This era is subdivided into categories 3a through 3c.
DECLINE OF STEAM, RISE OF DIESEL/ELEC DB (west) and DR (east)

* as defined by NEM 800, section 5 [nem800_d.pdf]

Model Railroading Eras*

- **Era IV - 1968/1970 – 1990** **Modernization and Integration**
The last steam engines no longer run. A unified numbering UIC system is introduced and long-distance trains get a standard livery. Three subdivisions: 4a to 4c.
END OF STEAM and STANDARDIZATION OF UIC NUMBERING
LIVERY: red/beige (local/regional passenger) AND ocean blue/beige (intercity/international passenger)
- **Era V - 1990 - 2005/2007** **Unification and Privatization**
Unification of the DB and DR after German unification, and privatization into DBAG. The ICE and other high-speed transport dominates the rail landscape. New competitors with their own liveries make a more colorful splash in this era. Toward the end of the 1990s the first advertisements appear on the cars, and the German trains adjust more to the European norms, so that you see more intraeuropean trains. This era has three subdivisions: 5a to 5c.

UNIFICATION and PRIVATIZATION: DB + DR = Deutsche Bahn AG (DBAG)
- **Era VI - 2005/2007 through today** **Current Era**
There are new reporting marks guidelines that require country identification and the UIC-Number of the Loks are adapted to the rolling stock.

CURRENT ERA: NEW UIC-NUMBERING MUST IDENTIFY COUNTRY OF ORIGIN
OF LOKS AND ROLLING STOCK

* as defined by NEM 800, section 5 [nem800_d.pdf]

Model RR Suppliers

(selected)



BEMO



märklin

Digital
plus
by Lenz



Rivarossi

Lima



FLEISCHMANN
Die Modellbahn der Profis

Jouef

ARNOLD

ade



Model RR Suppliers

(selected)

- commercial manufacturers of locomotives and rolling stock:
 - Märklin = leading European manufacturer (Göppingen; Nuremberg; Győr, Hungary)
 - HO gauge models since 1924; reintroduced Gauge 1 (1969); developed Z scale (1972)
 - AC control, with third “rail” in the center of ties (embedded & virtually hidden); also offers digital control
 - European mfg. in Germany and Hungary; export products (e.g. Trix) mfg. in PRC
 - 4 Feb. 2009: declared bankruptcy. Why?
 - banks that no longer give credit (even house bank with which they had 100-year relationship)
 - management consultants who were too well-paid despite knowing too little about the branch
 - poor management (see point above)
 - anonymous institutional investors who speculated on the company and now try to dump it
 - Fleischmann & Roco (Modelleisenbahn Holding GmbH)
 - smaller manufacturers: Piko, Brawa, Gützold, etc.
 - Arnold (UK) / Rivarossi (It.) / Lima (It.) / Jouef (Fr.), Hornby Railways (UK), [Hornby Int’l, UK]
 - “Marke Eigenbauten” (scratchbuilding): rare except for the ‘big layouts’: LOXX, MiWuLa
- commercial manufacturers of structures (kits):
 - Faller, Vollmer (quality kits, mostly styrene plastic)
 - Plastoy = (comparable to Plasticville)
 - craftsman structure kits rare; the ‘big layouts’ design and build their own structures (esp. LOXX, modeling Berlin); are
- commercial manufacturers of vehicles:
 - domestic: Wiking (Berlin), Busch, and Herpa
 - outsourced (Asia): Schuco, Mini-Metals, etc.
 - big layouts must build vehicles to scale for which there is no supplier, esp. airplanes: 747 (Air Force One), the A380

Model RR Suppliers

- Domestic production exceeds imports in Q1-3, 2006:
 - Total German production of model rail products (incl. accessories): € 87 Million
 - Exports (out of Germany): € 59 Million
 - Imports (into Germany): € 56 Million
 - 40% of these came from Austria
- Developments over the last 10 years (1995-2005):
 - ten year average: €272 Million
 - best year was 1999: €294 Million
 - continuous decline since then, to 2005: €141 Million
 - imports in 2005: € 66 Million

German MR Manufacturers

<u>Company (est.)</u>	<u>HQ/Locations</u>	<u>Sales (2009)</u>
Gebr. Märklin & Cie. GmbH (1859) ¹ – acquired Trix (1997) – acquired Hübner [Gauge 1] (2007) – acquired LGB (2007) – declared bankruptcy (2009)	Göppingen; Nürnberg; Győr, Hungary	€ 110.0 Million
Hornby Railways (1901) ²	Margate (Kent), UK	€ 69.5 Million
Roco Modelleisenbahnen GmbH (1960) ³	Bergheim, Austria	€ 32.3 Million
Gebr. Fleischmann GmbH & Co. KG (1887) ³	Heilsbronn (Nürnberg)	€ 18.2 Million

¹ in bankruptcy / restructuring since 4 February 2009

² part of Hornby International (Arnold, Rivarossi, Lima, Jouef, Thomas & Friends, and Heico-Modell)

³ part of Modelleisenbahn Holding GmbH (Austria): total: € 50.5 Million

Märklin

Gebr. Märklin & Cie. GmbH has been most devastated, both by a slew of poor management in recent years plus the onslaught of the global financial crisis. The company is for sale.

- last half decade have been bad
 - 2004: labor disputes
 - Jan. 2005: museum burgled – every single item (valued at € 1m+) stolen (recovered in Vienna , May '05)
 - 2006: Kingsbridge Capital takes over to “help“, losses continue to 14m € (9.9m € to mgt. consultants)
 - 2007: €16m losses; (€14m alone went to consultants)
 - 2008: €20m losses; 600 employees in Göppingen (HQ), 400 in Nuremberg (factory) were laid off
 - 4 Feb. 2009: forced to declare bankruptcy by institutional investors, including Kreissparkasse Göppingen (its “house bank ” of more than 100 years), Goldman Sachs, and various pension funds
- its restructuring (under Michael Pluta, liquidator) consisted of:
 - firing all of the consultants on day one
 - paring down the management team [now only 1 CEO and 6 (instead of 14) middle managers]
 - closing two locations, including the original factory in Heilsbronn near Nuremberg
 - laying off another 127 employees in Göppingen, 180 employees in Győr, Hungary (where some production has been outsourced since 1990s); thus leaving only design, development, printing, and plastic injection molding in Germany
 - gradual withdrawal from partnership with Sanda Kan, now owned by Kader (Hong Kong), mfr. of Bachmann products – to whom Kingsbridge sent the molds!
- Expectations for 2010:
 - 2009 calendar year: €110m in sales, positive balance before taxes and interest; Pluta: “Despite these good numbers, we know that we cannot afford to rest on our laurels.”
 - In SDR interview, Pluta said that “production is running, losses have been stopped, now we just need to find a buyer”

Fleischmann / Roco

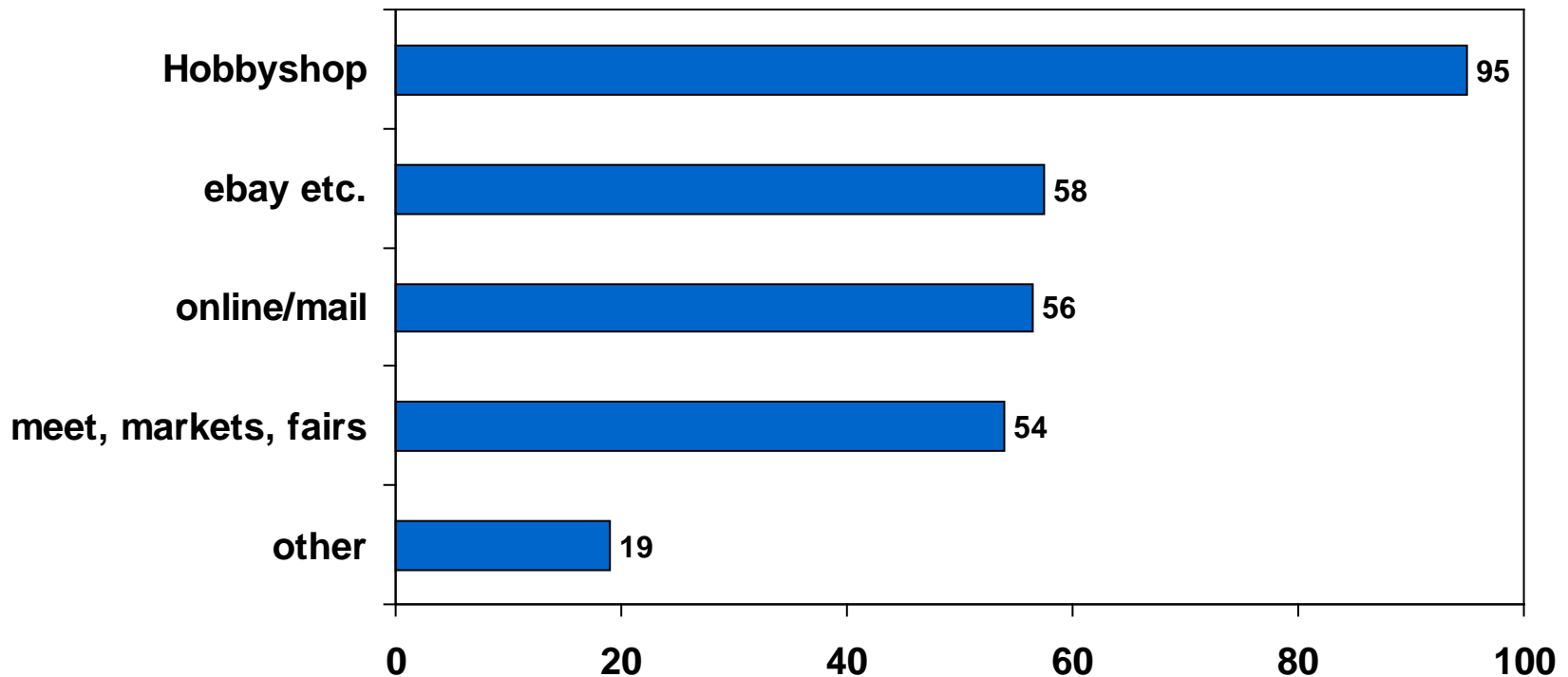
- Fleischmann (Heilsbronn near Nuremberg) faced bankruptcy in 2008; it was bought by Modelleisenbahn Holding GmbH (Bergheim, Austria), which had bought out the flailing Austrian company Roco a few years earlier.
- The restructuring at Fleischmann consisted of:
 - closing two locations, including the original factory in Heilsbronn
 - laying off 130 employees in Heilsbronn and another 30 in assembly in Arad (Romania)
 - leaving only design, development, printing, and plastic injection molding in Germany
- Expectations for 2010: less revenue but a better position
 - 2009: Sales for both brands together reached € 50,5 million (Roco: € 32.3m = operating profit of € 700k; Fleischmann: € 18.2m = a loss of € 3 million vs. 2008).
 - 2010: Sales goal of 53 million € (Fleischmann should be at 19 million €).
 - new positioning:
 - Roco will offer a universal palette in HO scale
 - Fleischmann will offer a universal palette in N scale plus older (thru 1950) prototypes in HO scale

Model Railroading in Germany

Hobbyist Behavior

Materials Sourcing

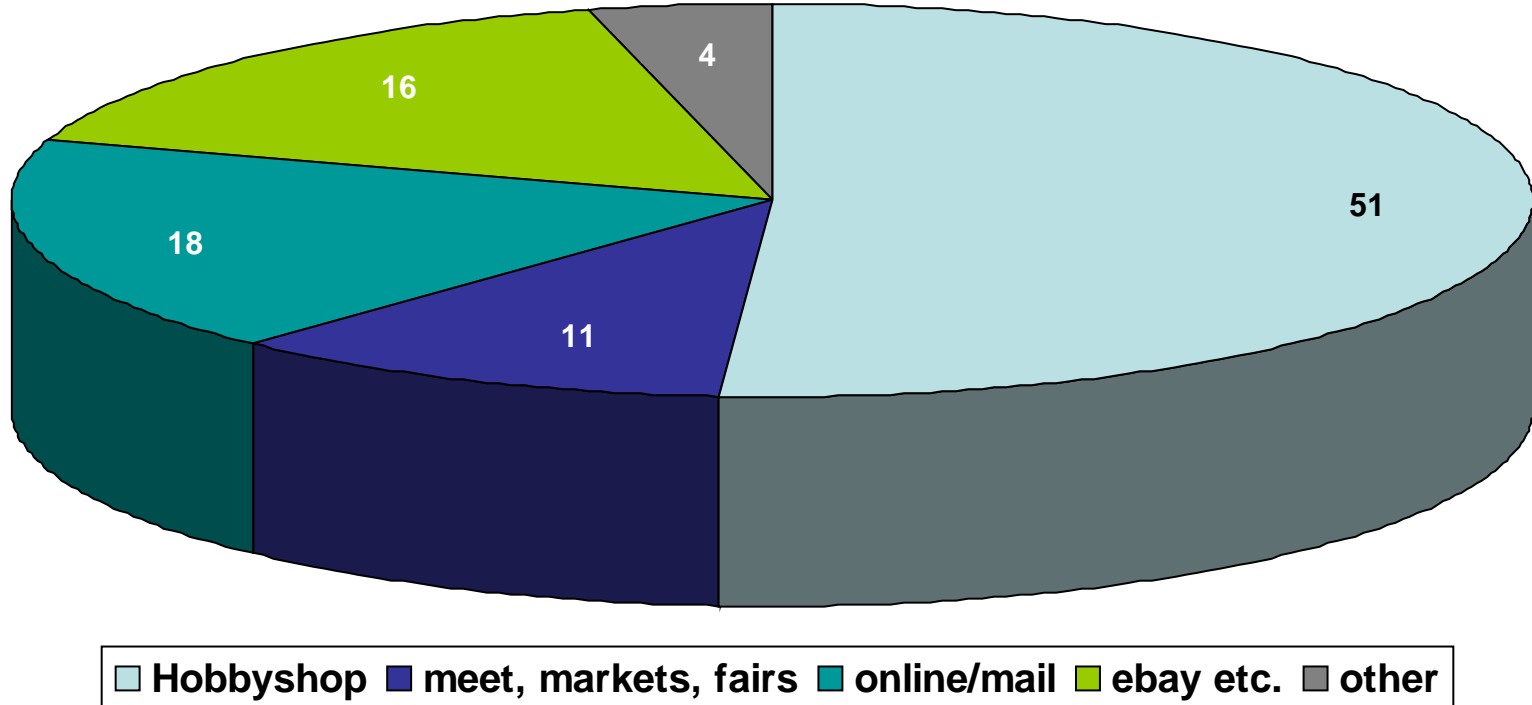
Where do you purchase hobby supplies?



*Source: BDEF, "Modellbahn-Marktanalyse 2007"

Materials Sourcing

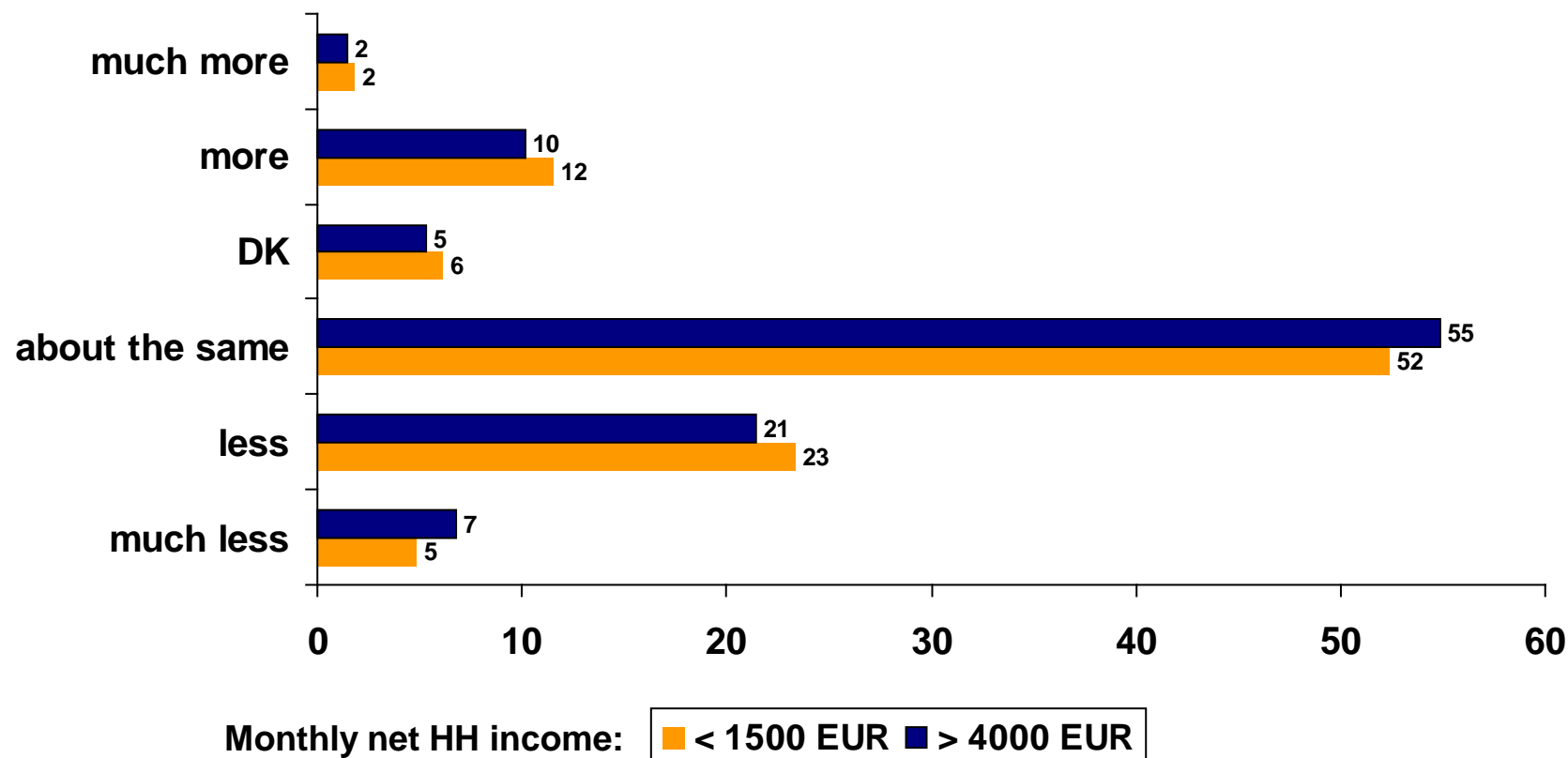
And what percent of your hobby Euro is spent at ...



*Source: BDEF, "Modellbahn-Marktanalyse 2007"

Purchase plans 2007

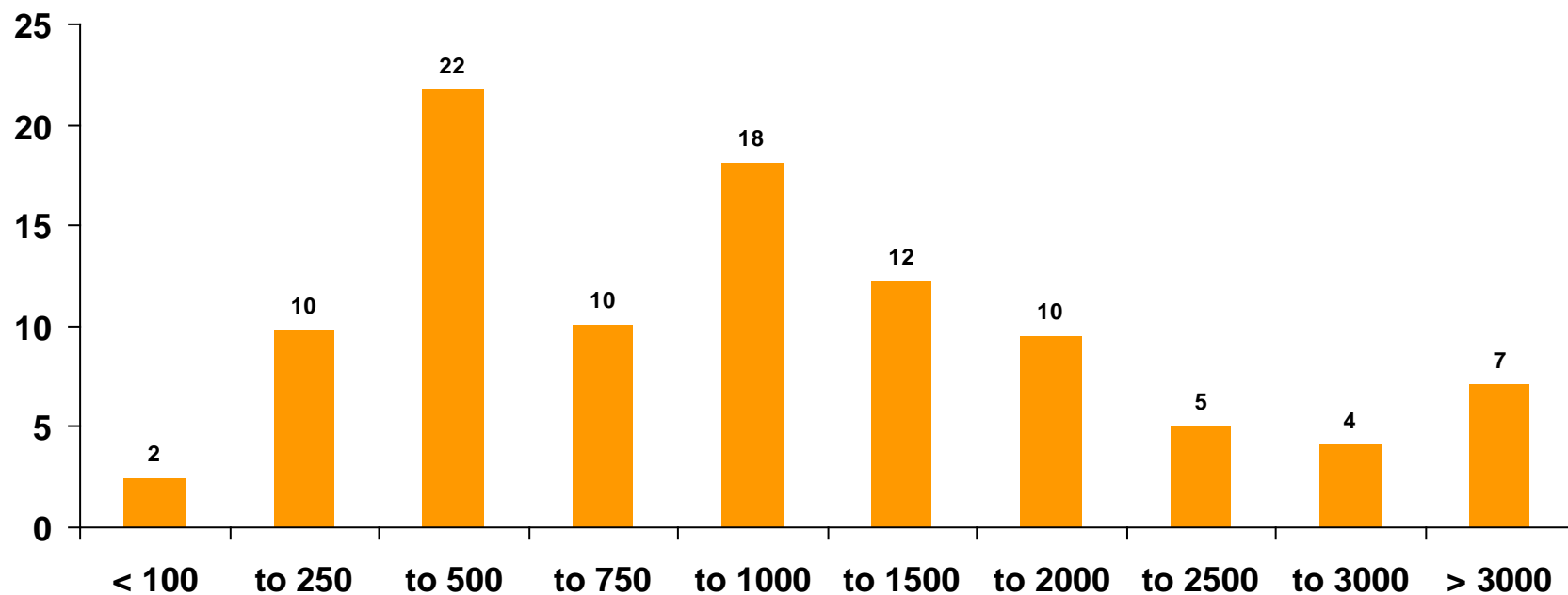
How much do you plan to spend on MR supplies this year compared to last year: ...



*Source: BDEF, "Modellbahn-Marktanalyse 2007"

Purchase plans 2007

How much did you spend last year on MR articles?



Euros spent on MR purchases in 2006

*Source: BDEF, "Modellbahn-Marktanalyse 2007"

* per capita: 1,114 Euro (725 Euro = new items)

The Gigantic Layouts

Loxx – Berlin

MiWuLa – Hamburg

LOXX Miniaturwelten Berlin

General overview: LOXX (Berlin)

Location/Site

- originally opened September 2004 off of Ku'Damm (in the center of West Berlin)
- moved across town summer 2008 to Alexanderplatz (in the center of East Berlin) and reopened in the upper floors of the “Alexa” shopping mall
- room: 3000 m² (= ca. 33,000 ft²)
- trackwork: 4+ km (= ca. 2.4 miles), representing 350km; handmade turnouts
- benchwork: 600 m² (= ca. 6,600 ft²)
- electronic control: DCC, assisted by 30 PCs & 80 surveillance cameras
- 400 locomotives in fleet; ca. 100 visible; 20-30 move simultaneously
- because vehicles, trains must operate 8 hours straight they’ve been “superfied”
- cost: € 3m (= \$ 4.1m), privately financed by owners and their families
- initators: Henrik (43) and Stefan (40) Goeddeke
- built by 30 employees, many of whom were unemployed, in 110-120k hours

The Gigantic Layouts

Technical overview: LOXX (Berlin)

Rail:

- Digital system: 2-rail digital with Lenz Digital plus Zentralen LZV100 (our own system) for performance reasons subdivided between movement, switching, and data relay (DCC, NMRA)
- Data relay: GBM16XS from Fa. Blücher Elektronik Berlin
- Magnetic steering:
 - in the visible areas: under-layout servo-mechanism (whisper drive) with DCC from MBTronik Kurt Harder
 - in the “shadow stations” using Lenz LS150
- Software: Railware PHS-Edition (preliminary version 5)
- Light signaling: LS-DEC-DB und LS-DEC-HL from Littfinski Daten Technik

CAR-System:

- Digital system: Infracar Karsten Hildebrand
- Data relay: LZV100 mit LR101 more than 1.000 reed contacts
- Magnetic steering: Adaption of the Mader-Magnet-Truck and our own under-layout servo-mechanism (whisper drive) with digital steering using DCC from MBTronik Kurt Harder
- Traffic signals: From Mader-Magnet-Truck according to Berlin prototpye
- Traffic signal control: developed by Blücher Elektronik Berlin (not yet available to the public)
- Software: Minicar-Control (not yet available to the public)
- Vehicles: many own constructions as well as "supercharged" cars of the Faller-Car-System and RIBU-Drive vehicles

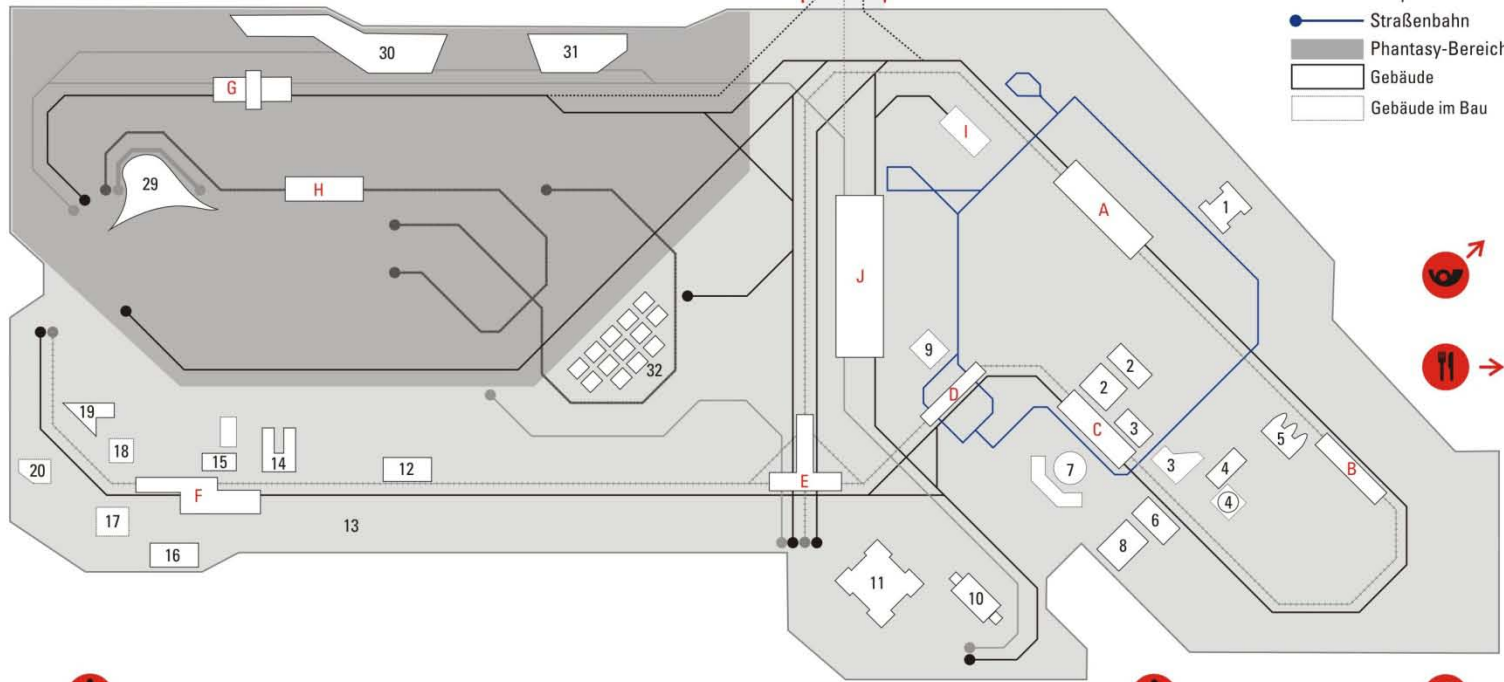
Anlagenübersicht

Bauabschnitt D (in Planung)

Übergang zum
Bauabschnitt E
(in Planung)

Bauabschnitt C
(in Fertigung)

- Fernverkehr
- S-Bahn
- Güterverkehr
- Nicht elektrifizierte Hauptstrecke
- Straßenbahn
- Phantasy-Bereich
- Gebäude
- Gebäude im Bau



Startbahn

LOXX City Airport

Landebahn

- A** S-Bhf Berlin-Ostbahnhof
- B** S-Bhf Jannowitzbrücke
- C** S+U-Bhf Alexanderplatz
- D** S-Bhf Hackescher Markt
- E** S-Bhf Ostkreuz
- F** S+U-Bhf Berlin-Zoologischer Garten
- G** Bhf Bergstadt
- H** Bhf Steinhausen
- I** Abstellgruppe „Wriezener Bahnhof“
- J** Güterbahnhof und ICE-Werkstätten Rummelsburg
- K** Airport-Bahnhof

- 1** Energie Forum
- 2** ParkInn Hotel am Alex und Galeria-Kaufhof
- 3** Alexander- und Berolina-Haus
- 4** Haus des Lehrers mit Kongresshalle
- 5** Trias-Gebäude („Bügeleisen-Häuser“)
- 6** Rathauspassagen und Cubix
- 7** Fernsehturm am Alex mit Ausstellungszentrum
- 8** Rotes Rathaus
- 9** Hackesche Höfe (in Bau)
- 10** Brandenburger Tor
- 11** Reichstag
- 12** Schleuse am Landwehrkanal
- 13** Zoologischer Garten
- 14** Cranz-Bau, Jebenstraße 1
- 15** Newton Stiftung und Foto-Museum
- 16** Hardenbergplatz mit „Giraffenhause“
- 17** Leineweberhaus, Youth Hostel (in Bau)
- 18** Theater des Westens (in Bau)
- 19** Kant-Dreieck
- 20** Neues Kranzlereck (in Bau)
- 21** Hangar 1
- 22** Hangar 2

- 23** Cargo
- 24** Terminal
- 25** Flughafen Feuerwache
- 26** Parkhaus
- 27** Flugsimulator
- 28** Airport Hotel
- 29** Steinbruch
- 30** Hafen-Anlage
- 31** Kaserne
- 32** Typische Berliner Vorortsiedlung





Photo: P. Al





From 23 to 26 June 2005, LOXX had its mobile layout at Berlin's Olympic Stadium for the International Childrens' Festival. The summer heat did a real number on the trackwork on this bridge.

Photo: LOXX-Miniaturwelten Berlin

LOXX Miniaturwelten Berlin

LOXX City-Airport: a working airport with planes that land and take off regularly!



Air Force One taxis to a stop in the secure area of the LOXX City-Airport Berlin.

President Obama is received warmly by Chancellor Merkel in this photograph, which I snapped in December 2008....

Photo: P. Altdorfer

LOXX Miniaturwelten Berlin

Introduction to LOXX [video](#) (10 min.)

The Gigantic Layouts

General overview: MiWuLa (Hamburg)

- the largest digitally-steered model railroad in the world (43k square feet); maybe the largest model railroad in the world?
- located in Hamburg's historic Speicherstadt district (19th century warehouse district)
- currently has 5 sections on two stories in 19th century warehouse loft that represent "Knuffingen" (Germany/Austria border); Hamburg and the North Sea coast; Scandinavia; Switzerland; and the United States (Florida, Las Vegas, Grand Canyon)
- initiators are Frederick and Gerrit Braun, who obtained a loan for DM 2 million (= € 1,023,600) from their Hamburg bank in 1999
- construction in three phases beginning December 2000; opened Phase 1 (Knuffingen, Hamburg and the coast, and the USA) in August 2001
- 160 employees build and run the layout
- expected completion date 2015 for the planned (working) airport (2010?); France, Italy, UK, Africa
- January 2010: announced an expansion within the building that will necessitate shifting sections...



The Gigantic Layouts

Technical overview: MiWuLa (Hamburg)

General

- space: ca. 4000 m² (43,056 ft²)
- benchwork: ca. 1500 m² (16,146 ft²) [*own video: 1100 m²*]
- track length (total): 11km (= 36,000+ feet = 6.6 miles)
- building cost:
 - €10 million so far
 - €15 million expected through 2015

Electronics and Animation

- DCC control, steered by 40 PCs, 200 surveillance cameras
- 900 trains and 12k rolling stock; longest train=14.5 m
- ships that navigate 30k liters of real water in Scandinavia
- animation: 300k LEDs; 150 moving cars/trucks/boats; flashbulbs; 150 interactive vignettes
- scenery: 200k trees, 200k people
- really, too much detail to fit!
- lots of sight gags and hidden treasures (UN election observers in FL; an underground base in Area 51; Carhenge; James Dean leaning on a barn door; a Mafia killer lurking about on a Hamburg roof; Saudis visiting hookers on the roadside; etc.)



AR: Hamburg Hbf.

Photo: B. Altdorfer





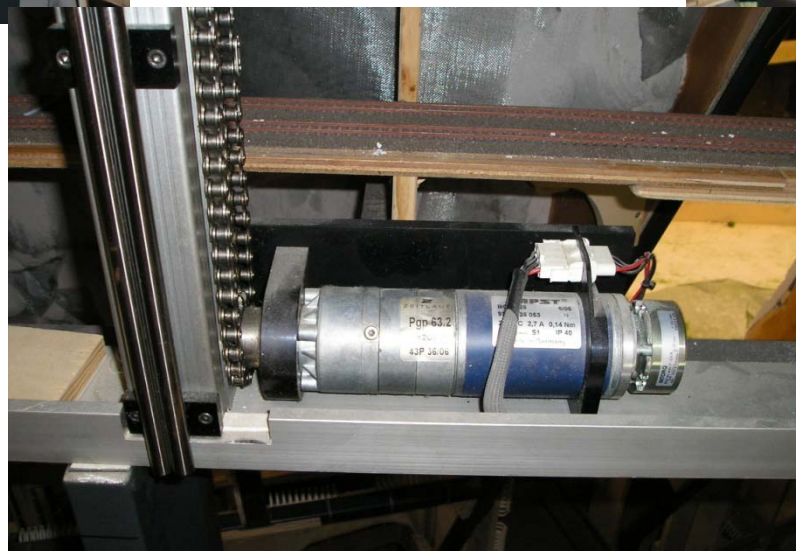
Photos: P. Altdorfer



Photo: P. Altdorfer



Photo: P. Altdorfer



Photos: P. Altdorfer





MiWuLa: Outlook for 2010

- **Expected 1 millionth visitor from Hamburg, 7 millionth visitor overall**
- **Expansion**
 - Acquisition of 2nd floor of building (Nord Event), Miniatur Wunderland will expand within the building to build two new sections: France and Italy. This will require relocating some of the existing sections.
- **Knuffingen Airport**
 - 8th layout, almost 3 years after opening Switzerland
 - expected to open in September
 - simulation of a commercial airport will set new technical standards
 - over 150 m² with a more realistic Car System, a 4 meter long car park, and an illuminated airfield
 - air traffic: regularly scheduled takeoffs, AR/DP displays, status reports, delays too, approaches/landings planned
- **Finishing touches for existing trackwork**
 - Replacement of overhead catenary (Sommerfeldt) in Hamburg
 - Renovation of the catenary in Austria, Harz, and Knuffingen are finished; with only few exceptions, all signals in the layouts Knuffingen, Hamburg, and Austria (converted to ÖBB) are finished. Only a few parts for semaphore signals are still missing. . Now, we “only” have Scandivia left for retrofitting. Also, we are considering adopting the railroad crossings of Switzerland in other layouts. Another technical project would be to activate turntables, which we already announced a while ago. We still have to decide on the location, the decorations, and puzzling out the permanent train traffic.
- **NEW: First Class to Wunderland travel offer (starting at 219 Euros)**
 - 1st class ICE-train travel to Hamburg (from any German train station) + 1 night in hotel of your choice
 - 1 admission to MiWuLa + 10 Euro gift certificate for hobby shop + 1 harbor boat tour
 - 1 Hamburg-Card (for local mass transit) + 15% discounts at selected merchants
 - Note: Transatlantic flight NOT INCLUDED in this package!





Zukünftiger Bauabschnitt
Afrika / Frankreich

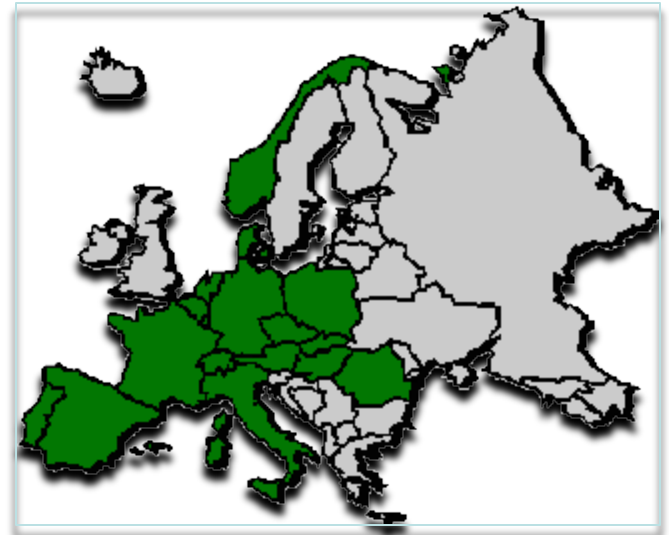
Miniatur-Wunderland

Videos

- MiWuLaTV: “Wunderland in 5 minutes” [official video](#)
- “Wunderland in 6 minutes” [unofficial video](#)
- “Wunderland in 3½ minutes” [another unofficial video](#)
- [cogwheel ride](#) through Austria
- various [cabrides](#) through MiWuLa

Sources / Links

- US Model Railroad Convention in Germany:
 - <http://www.us-convention-brd.de/indexe.htm> (in English)
 - 2nd annual convention in Germany, 19-20 September 2009 in Rodgau, (near Frankfurt/Main)
 - 18 layouts (up from about 14 at 2007 convention)
 - an “international mix“ with different scales, gauges, and layout construction types
 - also hosted „praxis-workshops“
- MOROP (European Union of Model Railroad and Railroad Friends):
 - peak assoc. of national MR orgs.
 - est. [norms](#) w/ industry & hobbyists
 - binding: NEM 102+103 (track clearance)
 - rec'd: e.g. for [cog railways](#), rail [profiles](#), etc.
 - couplers: no standard
 - coop. with NMRA since 1994 helped to establish DCC as an intl. standard



Map: MOROP

Other Internet Resources

- US Model Railroad Convention in Germany:
 - <http://www.us-convention-brd.de/>
 - <http://www.us-convention-brd.de/indexe.htm> (in English)
- NTrak modular group:
 - <http://www.germantrak.de/>
- travel package: [First Class to Wunderland](#)
 - starting at €219, includes:
 - 1st class ICE travel to Hamburg (from any German train station);
 - 1 night in hotel of your choice (includes breakfast)
 - 1 admission to MiWuLa + 10 Euro gift certificate for their shop
 - 1 harbor boat tour
 - 1 Hamburg-Card (local mass transit) + 15% discounts at various merchants
 - Note: Transatlantic flight NOT INCLUDED !