

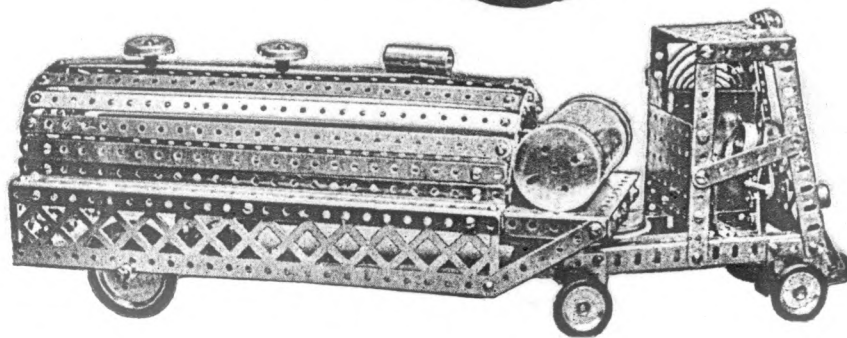
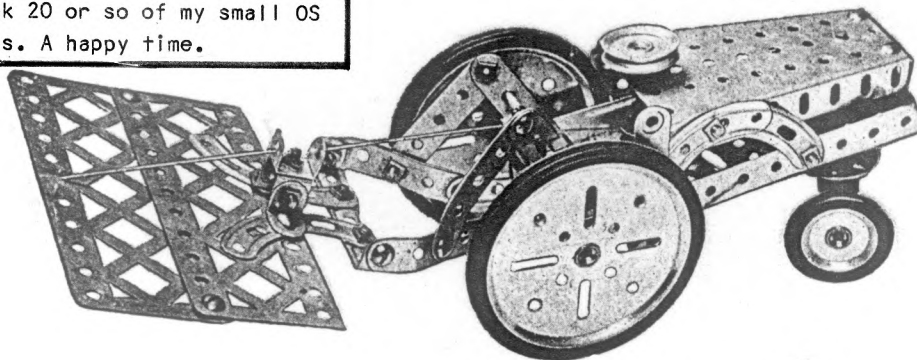


OTHER SYSTEMS NEWSLETTER

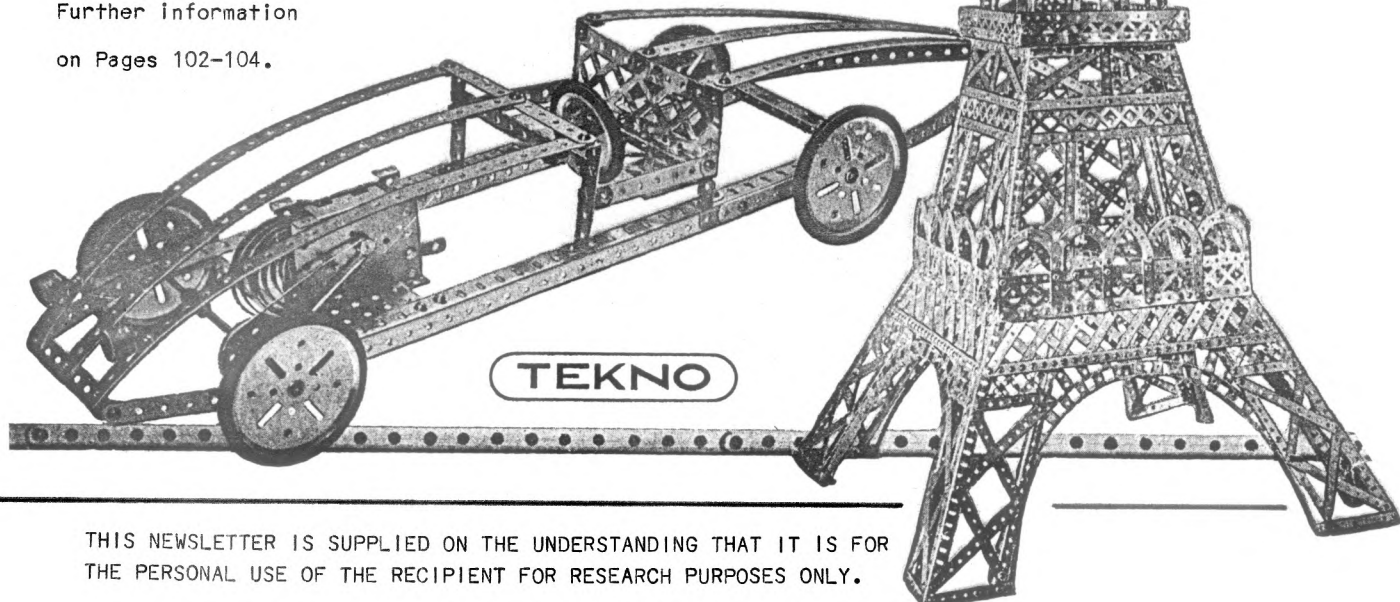
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OSN 5 October 1991

EDITORIAL TEKNO has nearly crowded me out so just a brief mention of some practical matters. This issue is larger at 32 pages and I hope to maintain that size in future if enough material is forthcoming. More pages and increased costs generally have inevitably driven the subscription rates up, please see p107 for details if, as will be the case for many readers, you need to renew your subscription. But for those sending money from overseas there are two ways in which you may save a little on bank charges - first Ed Barclay, Editor of The Canadian Meccanoman's Newsletter has kindly offered to collect OSN subs from North America, simply send him a cheque for the appropriate number of dollars, as given on p107, and he and I will do the rest. The arrangement is a reciprocal one and I am collecting UK subs for Ed's excellent Newsletter, please see p106 for details. For overseas subscribers generally I can now accept payment by VISA, details again on p107. I just have room to say how nice it was to chat with the OS enthusiasts who were at Skegex in July, Frank Beadle had about 50 boxes of his OS parts on display and I took 20 or so of my small OS models. A happy time.



Further information
on Pages 102-104.



THIS NEWSLETTER IS SUPPLIED ON THE UNDERSTANDING THAT IT IS FOR THE PERSONAL USE OF THE RECIPIENT FOR RESEARCH PURPOSES ONLY.

Instruction Book

Price 1/-

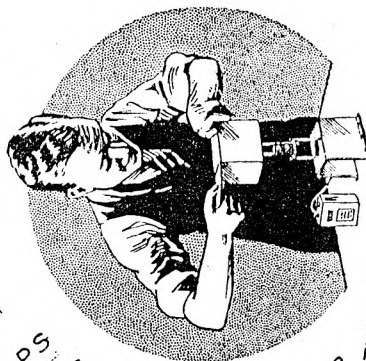
Construments

THE HOBBY OF TEN THOUSAND THRILLS

REGD. TRADE MARK

How to make & How to use GENUINE SCIENTIFIC OPTICAL & PHOTOGRAPHIC INSTRUMENTS from SIMPLE INTERCHANGEABLE PARTS

SIGNALLING LAMPS
TORCHES. MAGNIFIERS
MICROSCOPES. LAMP STANDS
SHADOWGRAPHS PHOTO-SHADOWGRAPHS
PINHOLE CAMERAS. LENS CAMERAS
MIDGET CAMERAS. PHOTO COPIERS
PHOTO-PRINTERS. DARK ROOM LAMPS
PHOTO-MICROSCOPES. KALEIDOSCOPIES
MAGIC LANTERNS. MICRO-PROJECTION APPARATUS



WATCH PROJECTORS. REFLECTOSCOPES. EPIDIASCOPIES

Scores of different Instruments from the same parts.

Copyright by CONSTRUMENTS LTD. 18, Grajs Inn Road, High Holborn, London, W.C.1

Fig 1

Instruments and Apparatus you can make with the Construments "100" Outfit

An Asterisk* indicates those which can be made from the "20" Outfit alone
The "100" Outfit consists of the "20" Outfit and the "Plus" Outfit together

- | | | | |
|---------------------------------------|--|---|---|
| Model No. | 41. Electric Torch (Tubular Type). | Model No. | 40. Pinhole Camera (for Transparent Objects). |
| 42. Spot-light. | 43. Signalling Lamp (Morse Code). | *41. Lens Camera (Box Type) with Hood. | 42. Lens Camera (Box Type) with Hood. |
| 44. Low Power Magnifier (4-leg Type). | 45. Low Power Magnifier (Tripod Type). | 43. Button-Hole-Picture Camera. (2-lens Type). | 44. Button-Hole-Picture Camera. (2-lens Type). |
| 46. " " " " (Box Type for Opaques). | 47. " " " " (Box Type for Transparencies). | 44. Micro-Reducing Camera. (for Photo Negatives). | 45. Micro-Reducing Camera. (for Photo Negatives). |
| 48. " " " " (Illuminated Type). | 49. " " " " (Stand Type A). | 46. Photo Copier and Enlarger. | 46. Photo Copier and Enlarger. |
| 49. " " " " (Stand Type B). | 50. " " " " (Stand Type C). | *47. Electric Lamp Photo Printer. | *47. Electric Lamp Photo Printer. |
| 50. " " " " (Stand Type D). | 51. " " " " (Stand Type E). | 49. Red Lamp for Dark Room. (Improved Type) | 49. Red Lamp for Dark Room. (Improved Type) |
| 51. " " " " (Stand Type F). | 52. " " " " (Stand Type G). | 51. Magic Lantern. | 51. Magic Lantern. |
| 52. " " " " (Stand Type H). | 53. " " " " (Stand Type I). | 52. Daylight Magic Lantern. | 52. Daylight Magic Lantern. |
| 53. " " " " (Stand Type J). | 54. " " " " (Stand Type K). | 53. Low Power Projection Microscope. (Type 2). | 53. Low Power Projection Microscope. (Type 2). |
| 54. " " " " (Stand Type L). | 55. " " " " (Stand Type M). | 55. Medium Power " " (Dark Room Type). | 55. Medium Power " " (Dark Room Type). |
| 55. " " " " (Stand Type N). | 56. " " " " (Stand Type O). | 57. Low Power Photo Microscope. | 57. Low Power Photo Microscope. |
| 56. " " " " (Stand Type P). | 57. " " " " (Stand Type Q). | 59. Medium Power " " | 59. Medium Power " " |
| 57. " " " " (Stand Type R). | 58. " " " " (Stand Type S). | 60. High Power " " | 60. High Power " " |
| 58. " " " " (Stand Type T). | 59. " " " " (Stand Type U). | *61. Hand Kaleidoscope. | *61. Hand Kaleidoscope. |
| 59. " " " " (Stand Type V). | 60. " " " " (Stand Type W). | *62. Simple Magnifying Kaleidoscope. | *62. Simple Magnifying Kaleidoscope. |
| 60. " " " " (Stand Type X). | 61. " " " " (Stand Type Y). | *63. Illuminated Kaleidoscope (Box Type with Lamp). | *63. Illuminated Kaleidoscope (Box Type with Lamp). |
| 61. " " " " (Stand Type Z). | 62. " " " " (Stand Type AA). | 64. " " " " (" " with Lamp). | 64. " " " " (" " with Lamp). |
| 62. " " " " (Stand Type AB). | 63. " " " " (Stand Type AC). | 65. Reflection Kaleidoscope. (For Projecting). | 65. Reflection Kaleidoscope. (For Projecting). |
| 63. " " " " (Stand Type AD). | 64. " " " " (Stand Type AE). | 66. " " " " (" " short distance). | 66. " " " " (" " short distance). |
| 64. " " " " (Stand Type AF). | 65. " " " " (Stand Type AG). | 67. " " " " (" " (High Power). | 67. " " " " (" " (High Power). |
| 65. " " " " (Stand Type AH). | 66. " " " " (Stand Type AI). | 68. Hand Micro-Kaleidoscope. | 68. Hand Micro-Kaleidoscope. |
| 66. " " " " (Stand Type AJ). | 67. " " " " (Stand Type AK). | 69. Stand Model Micro-Kaleidoscope. | 69. Stand Model Micro-Kaleidoscope. |
| 67. " " " " (Stand Type AL). | 68. " " " " (Stand Type AM). | 70. " " " " (" " (High Power). | 70. " " " " (" " (High Power). |
| 68. " " " " (Stand Type AN). | 69. " " " " (Stand Type AO). | 71. Tele-Kaleidoscope. | 71. Tele-Kaleidoscope. |
| 69. " " " " (Stand Type AP). | 70. " " " " (Stand Type AQ). | 72. Reverse Tele-Kaleidoscope. | 72. Reverse Tele-Kaleidoscope. |
| 70. " " " " (Stand Type AR). | 71. " " " " (Stand Type AS). | 73. Projection Kaleidoscope. | 73. Projection Kaleidoscope. |
| 71. " " " " (Stand Type AT). | 72. " " " " (Stand Type AU). | *74. Photo-Kaleidoscope. | *74. Photo-Kaleidoscope. |
| 72. " " " " (Stand Type AV). | 73. " " " " (Stand Type AW). | *75. Watch Projector. | *75. Watch Projector. |
| 73. " " " " (Stand Type AX). | 74. " " " " (Stand Type AY). | 77. " " " " (Photo Type). | 77. " " " " (Photo Type). |
| 74. " " " " (Stand Type AZ). | 75. " " " " (Stand Type BA). | *78. Epidiastroscope. | *78. Epidiastroscope. |
| 75. " " " " (Stand Type BB). | 76. " " " " (Stand Type BC). | *79. Reflectoscope. | *79. Reflectoscope. |
| 76. " " " " (Stand Type BD). | 77. " " " " (Stand Type BE). | 80. Periscope (Toy Model). | 80. Periscope (Toy Model). |
| 77. " " " " (Stand Type BF). | 78. " " " " (Stand Type BG). | 81. Astronomical Telescope (Model). | 81. Astronomical Telescope (Model). |
| 78. " " " " (Stand Type BH). | 79. " " " " (Stand Type BI). | | |
| 79. " " " " (Stand Type BJ). | 80. " " " " (Stand Type BK). | | |
| 80. " " " " (Stand Type BL). | 81. " " " " (Stand Type BM). | | |
| 81. " " " " (Stand Type BN). | | | |

Fig 2

NOTES ON CONSTRUMENTS John Hanby has sent photocopies of part of a CONSTRUMENTS manual from a set that he was given in 1935, together with some details of the parts and his recollections of that time. This material together with some other information, mostly from Geoff Wright, form the basis of these notes. MCS gives the date of CONSTRUMENTS as 1934 but it was introduced a little before this, 'British Tin Toys' (p.53) says 1933 and a 1934 advert reproduced there speaks of CONSTRUMENTS sets having existed for 2 years. The sets are called CONSTRUMENTS but so are other products of the company and the individual parts in the sets are also sometimes referred to as CONSTRUMENTS; 'models' made from the sets are always described as 'Instruments' in the manuals, as no doubt they are.

One manual to hand appears to predate the one John sent and its rather jazzy cover is shown at Fig 1 - the original measures about 7"x8". (All the illustrations except Fig 5 are at reduced scale) That it is earlier is deduced from the smaller range of sets and parts included in it and by an announcement that the house magazine CONSTRUMAG would soon appear, whereas it is advertised as a going concern in John's manual. It mentions outfits 20 and 100 and a PLUS outfit which converts the 20 to the 100. A DE LUXE set is also mentioned as being available shortly and it would include a 'Portable Dark Room' and photographic equipment as well as all the parts of the 100. The sets were priced at 18/6, 37/6, 21/-, 84/- and 42/- for the 20, 100, PLUS, DE LUXE, and the Portable Dark Room when supplied separately. The range of parts are those in MCS except that no suffix 'a' numbers were listed other than 41a. Parts 1 to 37 are included in set 20 but no other details of set contents are given. 81 Instruments that can be made from the 100 outfit are listed, of which 29 can be made from outfit 20. The names of the Instruments and their associated numbers are, with minor variations, the same as those listed in MCS, but those that can be made from set 20 differ significantly between the two. The complete list is shown in Fig 2.

In the probable chronological order the next item is the 1934 advert in 'Tin Toys' which lists sets 10, 20, 100, 100 PLUS and 200 at 10/-, 18/6, 37/6, 12/6 and 47/6 respectively. The 200 is said to be a new set and the 100 PLUS converts the 100 into the 200.

Going on now to John Hanby's manual, the data in MCS is taken from this source and what follows is additional information from it. But first this is the point to have John's account of CONSTRUMENTS - "In 1935 the basic sets available were the 10, 20, 100 and 200, the latter was the 100 plus equipment for making film projectors; there was also for a brief period a DE LUXE 100 set and the differences from the standard 100 were that it was in a wooden box, it included the Improved High Powered Objective (Part 48), and the finish of the parts was different: all the brass parts except the threaded rods were heavily chromium plated and highly polished instead of being lacquered, and the steel parts were matt black instead of being painted gold. From memory the 100 set cost 29/6, the DE LUXE 39/6 and the 200 37/6. At Christmas 1935, with the assistance of a good salesman at Hamleys, my mother bought me a DE LUXE set, with the proviso that it would be unwise to tell Dad - I now realise that 39/6 was a fairly large sum of money in those far off days. It is only of recent years that I have discovered that Ellison Hawks was the proprietor of CONSTRUMENTS, he carried with him various MECCANO habits and thus Instrument 84 needs 4 Plano-convex Lenses against the 3 included in the set. You will see from the adverts in the manual that more sophisticated outfits were also available, probably more suitable for educational establishments. I feel that if CONSTRUMENTS had been marketed under the MECCANO name at the time of KEMEX and ELEKTRON, it would have survived longer."

Returning to the manual, the front cover is in the same style as the reproduction in MCS (which is actually page 3 of the manual) except that the name CONSTRUMENTS is in block capitals; it is quite a sober cover with an actual size of 5"x8". Sets 10, 20 and 100, with linking sets 10 PLUS and 20 PLUS, are covered. The individual parts are illustrated in MCS but John has sent some dimensions which give a good idea of the size of the main components, these are given in Fig 7. He has also checked which of the metal parts are made of steel and which of brass, the steel ones are Nos 1, 2, 4, 4a, 7, 8, 9, 16, 37a, 38, 43, 44, and 45. All parts are substantially made and rigid. The Improved High Power Objective (48) and its Mount (48a) are not illustrated with all the other parts but are shown later in the manual in a section on using parts, see Fig 5. The MCS Price List of Construments (parts) is not quite complete and the missing ones are shown at the bottom of the righthand column of Fig 3.

The contents of sets are not given in MCS and so are shown in Fig 3. The names of the Instruments that can be made from sets 10 and 20 are in the manual but only the Instrument numbers for set 100. Part of the list is in MCS, the complete list is shown in Fig 4. Notice that Nos 27 and 28 cannot be made from this set because they require the Improved Objective. They are in fact simply Instruments 25 and 26 (High Power Compound Microscopes) fitted with the improved lens. Two Instruments from set 100 are shown in Fig 6.

As has already been mentioned the manual carries ads for other outfits: Chemistry Sets from 7/6,

LIST OF INSTRUMENTS IN "10" OUTFIT.

Name	No.
2 Ring Mounts	(3a)
1 3in. Optical Tube	(4)
1 1 1/2in. Optical Tube	(4a)
2 Camera Caps	(6a)
1 Distance Ring	(8)
1 Small Pinhole Disc	(9)
2 Split Rings	(10)
2 Screwed Rods (3in.)	(11)
4 1in. Screwed Bolts	(12)
4 1/2in. Screwed Bolts	(13)
15 Hexagonal Nuts	(15)
1 Combined Spanner and Screwdriver	(16)
1 Plano-Convex Lens	(18)
3 Mirrors (3in. x 1 1/16in.)	(19)
2 Mirrors (2in. square)	(20)
2 Glass Slides	(23)
1 Frosted Disc (1in. diameter)	(26)
1 Transparent Disc (Red)	(27)
2 Rubber Bands	(37)
1 3/16in. Lens Stop	(37a)
1 Instrument Stand	(38)
Instruction Book.	

LIST OF INSTRUMENTS IN "10" PLUS OUTFIT.

Name	No.
1 Optical Box	(1)
1 Lid for Optical Box	(2)
1 Screwed Ring Mount	(3)
1 Lampholder	(5)
2 Battery Clips	(7)
3 1in. Screwed Bolts	(12)
6 Terminal Nuts	(14)
1 Bi-Convex Lens	(17)
1 Glass Plate (3 1/2in. square)	(21)
1 Frosted Glass Plate (3 1/2in. square)	(22)
1 Focus Electric Bulb	(24)
1 Bi-Convex Electric Bulb	(25)
1 Blue Transparent Disc	(28)
1 Green Transparent Disc	(29)
1 Yellow Transparent Disc	(30)
1 Red Opaque Disc	(31)
1 Yellow Opaque Disc	(32)
1 Green Opaque Disc	(33)
1 Blue Opaque Disc	(34)
1 White Opaque Disc	(35)
1 Black Opaque Disc	(36)

LIST OF INSTRUMENTS IN "20" OUTFIT.

Name	No.
✓ 1 Optical Box	(1)
✓ 1 Lid for Optical Box	(2)
✓ 1 Screwed Ring Mount	(3)
✓ 1 Plain Ring Mount	(3a)
✓ 1 Optical Tube (3in.)	(4)
✓ 1 Optical Tube (1 1/2in.)	(4a)
✓ 1 Lampholder	(5)
✓ 1 Camera Cap	(6)
✓ 1 Camera Cap	(6a)
✓ 2 Battery Clips	(7)
✓ 1 Distance Ring	(8)
✓ 1 Small Pinhole Disc (1in. diam.)	(9)
✓ 2 Split Rings	(10)
✓ 2 3in. Screwed Rods	(11)
✓ 4 1in. Screwed Bolts	(12)
✓ 4 1/2in. Screwed Bolts	(13)
✓ 6 Terminal Nuts	(14)
✓ 15 Hexagonal Nuts	(15)
✓ 1 Combined Spanner and Screwdriver	(16)
✓ 1 Bi-Convex Lens	(17)
✓ 1 Plano-Convex Lens	(18)
✓ 3 Mirrors (3in. x 1 1/16in.)	(19)
✓ 2 Mirrors (2in. square)	(20)
✓ 1 Glass Plate (3 1/2in. square)	(21)
✓ 1 Frosted Glass Plate (3 1/2in. square)	(22)
✓ 2 Glass Slides (3in. x 1in.)	(23)
✓ 1 Focus Electric Bulb	(24)
✓ 1 Bi-Convex Electric Bulb	(25)
✓ 1 Frosted Disc (1in. diam.)	(26)
✓ 1 Red Transparent Disc (1in. diam.)	(27)
✓ 1 Yellow Transparent Disc (1in. diam.)	(28)
✓ 1 Green Transparent Disc (1in. diam.)	(29)
✓ 1 Blue Transparent Disc (1in. diam.)	(30)
✓ 1 Red Opaque Disc	(31)
✓ 1 Yellow Opaque Disc	(32)
✓ 1 Green Opaque Disc	(33)
✓ 1 Blue Opaque Disc	(34)
✓ 1 White Opaque Disc	(35)
✓ 1 Black Opaque Disc	(36)
✓ 2 Rubber Bands	(37)
✓ 1 3/16in. Lens Stop	(37a)
✓ 1 Instruction Book.	

LIST OF INSTRUMENTS IN "20" PLUS OUTFIT.

Name	No.
1 Screwed Ring Mount	(3)
1 Plain Ring Mount	(3a)
1 Split Ring	(10)
6 Hexagonal Nuts	(15)
2 Plano-Convex Lenses	(18)
4 Glass Slides (3in. x 1in.)	(23)
4 Rubber Bands	(37)
1 Instrument Stand	(38)
2 Tubular Mounts	(39)
2 Caps for Tubular Mounts	(40)
1 High Power Objective	(41)
1 Mount for High Power Objective	(41a)
1 Reflector	(42)
2 Spring Clips	(43)
1 Lens Stop (1in.)	(44)
1 Large Pinhole Disc	(45)
2 2in. Screwed Bolts	(46)
1 Glass Collecting Tube	(47)

LIST OF INSTRUMENTS IN "100" OUTFIT.

Name	No.
1 Optical Box	(1)
1 Lid for Optical Box	(2)
2 Screwed Ring Mounts	(3)
2 Plain Ring Mounts	(3a)
1 Optical Tube (3in.)	(4)
1 Optical Tube (1 1/2in.)	(4a)
1 Lampholder	(5)
1 Camera Cap	(6)
1 Camera Cap	(6a)
2 Battery Clips	(7)
1 Distance Ring	(8)
1 Small Pinhole Disc (1in. diam.)	(9)
3 Split Rings	(10)
2 3in. Screwed Rods	(11)
7 1in. Screwed Bolts	(12)
4 1/2in. Screwed Bolts	(13)
6 Terminal Nuts	(14)
21 Hexagonal Nuts	(15)
1 Combined Spanner and Screwdriver	(16)
1 Bi-Convex Lens	(17)
3 Plano-Convex Lenses	(18)
3 Mirrors (3in. x 1 1/16in.)	(19)

LIST OF INSTRUMENTS IN "100" OUTFIT.—Continued.

2 Mirrors (2in. square)	(20)
1 Glass Plate (3 1/2in. square)	(21)
1 Frosted Glass Plate (3 1/2in. square)	(22)
6 Glass Slides (3in. x 1in.)	(23)
1 Focus Electric Bulb	(24)
1 Bi-Convex Electric Bulb	(25)
1 Frosted Disc (1in. diam.)	(26)
1 Red Transparent Disc (1in. diam.)	(27)
1 Yellow Transparent Disc (1in. diam.)	(28)
1 Green Transparent Disc (1in. diam.)	(29)
1 Blue Transparent Disc (1in. diam.)	(30)
1 Red Opaque Disc (5/8in. diam.)	(31)
1 Yellow Opaque Disc (5/8in. diam.)	(32)
1 Green Opaque Disc (5/8in. diam.)	(33)
1 Blue Opaque Disc (5/8in. diam.)	(34)
1 White Opaque Disc (5/8in. diam.)	(35)
1 Black Opaque Disc (5/8in. diam.)	(36)
6 Rubber Bands	(37)
1 Lens Stop (3/16in.)	(37a)
1 Instrument Stand	(38)
2 Tubular Mounts	(39)
2 Caps for Tubular Mounts	(40)
1 High Power Objective	(41)
1 Mount for High Power Objective	(41a)
1 Reflector	(42)
2 Spring Clips	(43)
1 Lens Stop (1in.)	(44)
1 Large Pinhole Disc (1in. diam.)	(45)
2 Screwed Bolts (2in.)	(46)
1 Glass Collecting Tube	(47)

Note.—The "20" and "20" Plus Outfits form the "100" Outfit.

PRICE LIST OF INSTRUMENTS.

Name	No.	Price
Battery Clip	(7)	4
Camera Cap	(6)	6
Camera Cap	(6a)	6
Cap for Tubular Mount	(40)	6
Disc (Transparent 1in. diam. Red, Yellow, Green, Blue)	(27)-(30)	3 per set.
Discs (Opaque 5/8in. diam., Red, Yellow, Green, Blue, White, Black)	(31)-(36)	2 1/2 per set.
Distance Ring	(8)	2

Fig 3

INSTRUMENTS THAT CAN BE CONSTRUCTED WITH THE INSTRUMENTS "10" OUTFIT.

Model No.	Description.
5	Low Power Magnifier (3 Leg type).
6	Low Power Magnifier (4 Leg type).
11	Low Power Magnifier (Stand type).
92	Low Power Magnifier (Stand type).
93 and 93A	Reflector.
94	Reflector (Lens type).
79	Reflectoscope.
95	Camera Lucida.
96	Pinhole Camera (Pocket type).
96A and 96B	Pinhole Camera (Stand type).
97	Lens Camera (Pocket and Stand types).
98	Photo Printer.
99	Photo Copier.
100	Slide Projector.
61	Kaleidoscope (Hand type).
62	Kaleidoscope (Magnifying Hand type).
101	Kaleidoscope (Stand type for transparent objects).
102	Kaleidoscope (Stand type for opaque objects).
103	Periscope.
104	Crazy Mirrors.
105	Crazy Mirrors (Stand type).
106	Ophthalmoscope.

INSTRUMENTS THAT CAN BE CONSTRUCTED WITH THE INSTRUMENTS "20" OUTFIT.

Model No.	Description.
1	Electric Torch.
2	Spot Light.
3	Signalling Lamp.
5	Low Power Magnifier (3 Leg type).
6	Low Power Magnifier (4 Leg type).
7	Low Power Magnifier (Box type for Opaque Objects).
10	Low Power Magnifier (Illuminated Box type).
13	Low Power Magnifier (Illuminated Box type).
29	Shadowscope for Dark Room.
30	Daylight Shadowscope (Horizontal Projection).
31	Shadowscope for Dark Room (Reflection type, suitable for Living Objects).
37	Camera Obscura (Toy Model).

"20" OUTFIT.—Continued.

Model No.	Description.
38	Pinhole Camera (Box type).
39	Pinhole Camera (Midget type).
41	Lens Camera (Short Range, Box type).
42	Lens Camera (Long Range, Box type).
43	Balton Hole Picture Camera.
48	Electric Lamp Photo Printer.
50	Red Lamp for Dark Room.
61A and 61B	Hand Kaleidoscopes.
62A and 62B and 62C	Magnifying Kaleidoscopes.
63	Illuminated Kaleidoscope (Box type with Lamp).
66A and 66B	Reflection Kaleidoscopes (Box type).
67A and 67B	Reflection Kaleidoscopes (Projection type).
68A and 68B	Reflection Kaleidoscopes (Projection type).
69A and 69B	Hand Micro-Kaleidoscope.
76	Watch Projector (Reflection type).
87	Epidiascope.
93	Reflector.
94	Reflector (with Lens).
96	Midget Pinhole Camera.
97	Midget Lens Camera.
104	Crazy Mirrors.
106	Ophthalmoscope.

The following Models can also be made from the "20" Outfit by using an Optical Box (1) instead of the Instrument Stand (38).

79	Reflectoscope.
89	Picture Scanner.
95	Camera Lucida.
96A and 96B	Pinhole Camera and Stand.
98	Photo Printer.
99	Photo Copier.
100	Projector.
103	Periscope.
105	Crazy Mirrors.

INSTRUMENTS THAT CAN BE CONSTRUCTED WITH THE INSTRUMENTS "100" OUTFIT.

Models 1 to 108 (excluding 27 and 28) can be constructed from the "100" Outfit.

Fig 4

HIGH POWER OBJECTIVES. (Fig. 10.)

The High Power Objectives (41) and (48) may be mounted in their respective Mounts (41a) and (48a), with the Lens as at "A" or "B." The assembly is screwed on to the Ring Mount (3). Two adjustments for focus are therefore available when using Objective (41) and Mount (41a), but in the case of the

Improved Objective, the Mount (48a) is screwed up tightly on the Ring Mount (3), complete adjustment being obtained on the Objective (48).

Fig 5

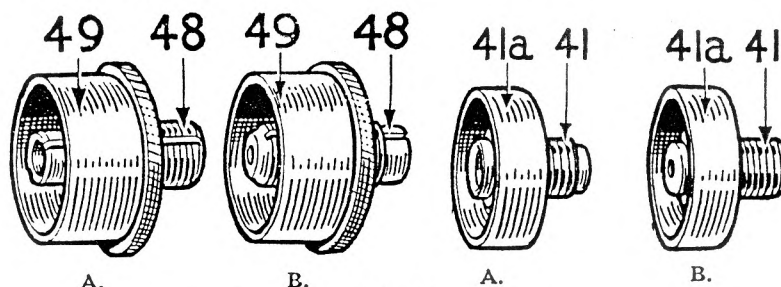


Fig. 10.

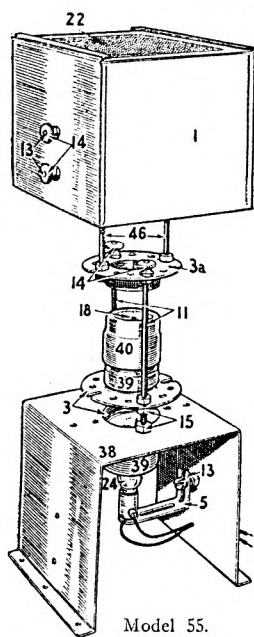
an Educational Set for General Science and Light (3½ Guineas in Cardboard Box, 4 Guineas in Stout Wood Box), and an Educational Biology Set (3½ Guineas in Stout Wooden Box). Also advertised is CONSTROL, a fluid for use by photographers to make photographic paper or to sensitize wood, silk and other fabrics, price 2/- per bottle. CONSTRUMENTS sets aimed at educational establishments are more fully described in a booklet issued by George Philip & Son, Ltd, an educational supply house. Its date is not known but it includes a quote from an official report which it states was issued in 1932. There is an Optical Set No 1 and although it costs the same as the Science and Light set above, the illustrations of the sets are different. The names of the parts in the set are given and their prices if they are bought individually. All the parts in the 100 set are included, with the same part numbers (and at the same prices) but there are additional parts numbered from 100 to 144. Optical Set No 2 is smaller and costs 45/-. There are also a number of instruments already made up, and an Optical Bench and Epidiascope which do not look as if they are made from standard parts. The Biological Set mentioned above is shown with some details of its contents, and there is also a cheaper version without the microscopes. Finally there are Chemistry Sets with part numbers in the 200's, a Naturalist's Field Outfit and CONSTROL Killing Fluid (which must not be tasted or inhaled).

The CONSTRUMENTS company seems to have been a serious supplier of science equipment and it is not known whether they were in business before the CONSTRUMENTS constructional sets appeared. The latter were well established before Ellison Hawks left MECCANO in 1935 but he may have been the driving force before he left, and if so that might explain why he reportedly left under a cloud. How long CONSTRUMENTS lasted is again not known, 'Tin Toys' indicates that the constructional sets were still on the market in 1937.

Since writing these notes I have come across ads for CONSTRUMENTS in the French MM's for August and October 1936; it was advertised by Etablissements HORNSTEIN in Paris, and four main sets were offered, one was illustrated but no set numbers were given. Another reference to CONSTRUMENTS appeared in the Sheffield Meccano Guild Magazine No 19 (Sept 1987) and shown there is a letter from Ellison Hawks to Hubert Lansley, dated March 1936, promising to send him a set. It is on headed CONSTRUMENTS LTD notepaper and thereon Hawkes is named as one of the 7 directors of the company. There is also reproduced an undated ad from MM, again with an illustration of a set, slightly different from that in the FMM's. Sets 10, 20 and 100 were offered together with conversion outfits, and the prices are those in the 'Tin Toys' advertisement.

MODEL 55.—MEDIUM POWER PROJECTION MICROSCOPE.

Parts required:—



- 1 Optical Box (1)
- 2 Screwed Ring Mounts (3)
- 1 Plain Ring Mount (3a)
- 1 Lampholder (5)
- 1 Distance Ring (8)
- 3 Split Rings (10)
- 2 3in. Screwed Rods (11)
- 1 1in. Screwed Bolt (12)
- 2 ½in. Screwed Bolts (13)
- 7 Terminal Nuts (14)
- 16 Hexagonal Nuts (15)
- 3 Plano-Convex Lenses (18)
- 1 Frosted Glass Screen (22)
- 1 Bi-Convex Electric Bulb (25)
- 1 Instrument Stand (38)
- 2 Tubular Mounts (39)
- 2 Caps for Tubular Mounts (40)
- 2 2in. Screwed Bolts (46)

When constructing this Model it will be helpful to refer to Model 54. In this case, however, 3in. Screwed Rods (11) are attached to the Instrument Stand and the upper Ring Mount (3) is secured to the Optical Box (1) by two 2in. Screwed Bolts (46)

instead of the other way round as in the previous Model. A Plano-Convex Lens is inserted into the Tubular Mount Cap and another Plano-Convex Lens into the Tubular Mount, the curved faces of the Lenses being arranged to face one another. It will be best to screw on the Tubular Mount and Cap to the lower Ring Mount before the upper Plain Ring Mount (3a) is placed in position, as the available space is small. To the underside of the Instrument Stand (38) fix a Ring Mount and to this attach a Tubular Mount to which has been fitted a Plano-Convex Lens with the curved side facing downwards.

To secure greater magnification the position of the Lenses may be altered in the following way. The Lens in the central Tubular Mount is lowered into the Ring Mount and the Lens in the Tubular Mount Cap is placed on a Distance Ring in the Tubular Mount.

Read the article on "Micro-Photograph in the Home," p. 15 of the February issue of the *Construmag*.

To use, place the microscope slide, or other object to be viewed, between the Instrument Stand and the lower Ring Mount, light the lamp, and focus on to the Frosted Glass Screen (22) which you can rest on the ledges at the top of the Optical Box. Insects' legs, all kinds of small objects mounted between Glass Slides (23), and many other small objects may be seen enlarged in a circle of light on the Frosted Screen, which should be placed frosted side downwards.

MODEL 56.—HIGH POWER PROJECTION MICROSCOPE.

Parts required:—

- 1 Optical Box (1)
- 2 Screwed Ring Mounts (3)
- 1 Lampholder (5)
- 1 Distance Ring (8)
- 1 Split Ring (10)
- 2 3in. Screwed Rods (11)
- 2 2in. Screwed Bolts (46)
- 1 1in. Screwed Bolt (12)
- 2 ½in. Screwed Bolts (13)
- 9 Terminal Nuts (14)
- 10 Hexagonal Nuts (15)
- 2 Plano-Convex Lenses (18)
- 1 Frosted Glass Screen (22)
- 1 Bi-Convex Electric Bulb (25)
- 1 Instrument Stand (38)
- 1 Tubular Mount (39)
- 1 Cap for Tubular Mount (40)
- 1 High Power Objective (41)
- 1 Mount for High Power Objective (41a)

Construct Model 56 as shown. A Ring Mount (3) is fixed to the under side of the Instrument Stand (38). To this Ring Mount screw a Tubular Mount containing two Plano-Convex Lenses (18) separated by a Distance Ring (8) and fixed by a Split Ring (10). This arrangement acts as a Condenser and focusses the light from the Bi-Convex Electric Bulb (25) on the object under observation. The Lamp should be adjusted carefully into a position which gives the best results.

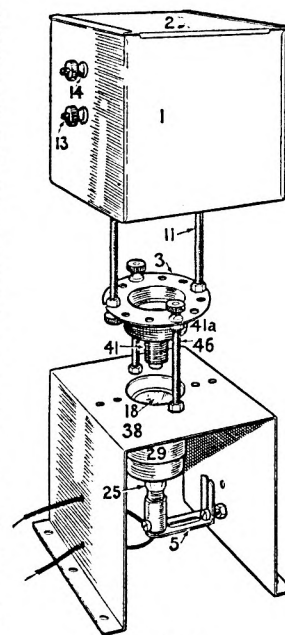
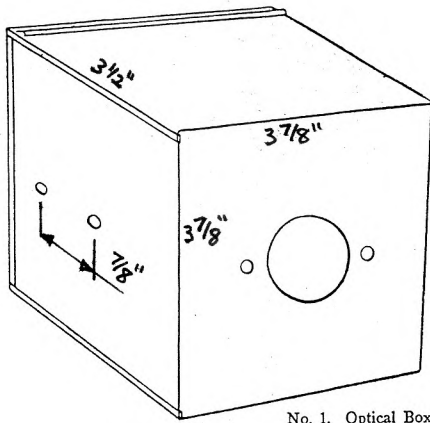
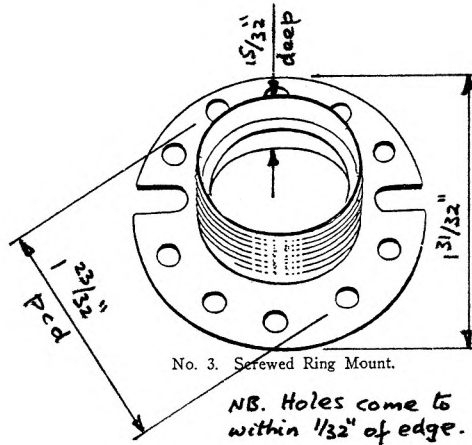


Fig 6

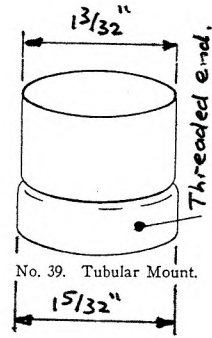


No. 1. Optical Box.

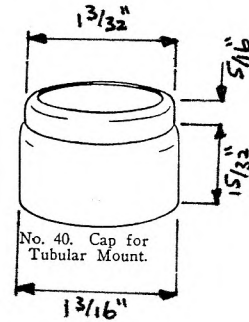


No. 3. Serewed Ring Mount.

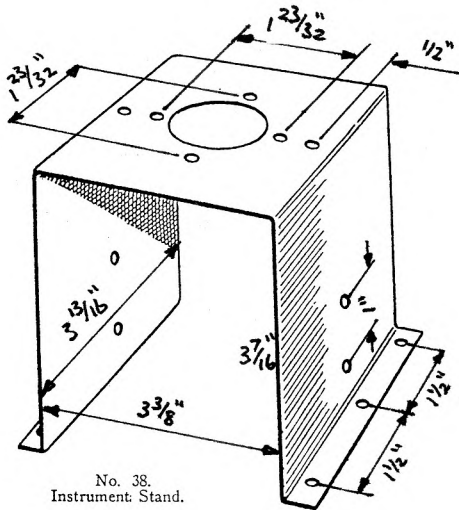
NB. Holes come to within 1/32" of edge.



No. 39. Tubular Mount.



No. 40. Cap for Tubular Mount.

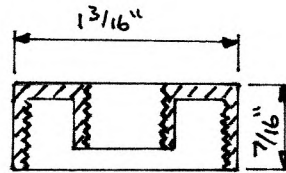


No. 38. Instrument Stand.



No. 41a. Mount for High Power Objective.

Fig 7



No. 41. High Power Objective.

SECTION

7/16" φ x 1 31/16" long

COMPARATIVE STRIP SHOW

The British Columbia (Canada) Meccano Club Magazine for Fall/Winter 1990 was labeled "The Strip and Girder Ready Reckoner." It dealt with combining strips or angle girders to make compound members of any length up to 50in. (127cm) using standard lengths of Meccano parts. The study concluded that Meccano needs, as additions to its range, girders of 4, 5 and 8.5in. (10, 12.7 and 21.5cm, or 8, 10 and 17 holes). The magazine is available from A. Newell Smith, 5336 - 4A Ave., Tsawassen, BC V4M 1H5, Canada, for \$6 Can. Most modelers have odd pieces of strips/girders, made by salvaging broken parts. Curiosity led me to compare seven major constructional systems (and one French supplier of Meccano-compatible parts) to see if the "compound member" approach gives a full range of desired lengths in each.

All these systems have strip or girder members of lengths 3 to 7, 9 and 11 holes/units. Four (AmiLac, Stokys, FAC, Automat) offer lengths of 8 and 10 holes. FAC has members 12 to 20 units inclusive. AmiLac has all the odd-number lengths from 13 to 25; Quincaillerie N.10 (Carbon-Blanc, France) has 12 to 15 and then odd-number lengths to 25. Construction, Stokys and Märklin each have only two or three lengths above 11, but Stokys has the longest, 80-hole girders and channels. Only Meccano, AmiLac and Quincaillerie N.10 offer 37- and 49-hole parts. (For convenience Exacto is lumped with Meccano in all this.) Stokys girders come only in even lengths above 11 holes: 16, 24, 32 and 80---why?

The conclusion from this comparison and the BCMEC "Ready Reckoner" is that most construction systems lack some desirable flexibility---though some expert Meccanomen have declared that additional parts are not needed. Where compatibility exists (FAC, Automat and Construction being excluded) Meccano can well be supplemented with AmiLac 8, 10, 17 and 21-hole parts. Stokys parts being aluminium may have some drawbacks, but Stokys 16, 24, 32 and 80-hole parts have no exact matches, and for uses such as crane jibs their lightness may be a useful factor. -- Don Redmond

REVIEW

CONSTRUCTIONAL TOYS by Basil Harley, Shire Publications Ltd, £1.95. (32pp)

This is a book of modest dimensions and ambitions, but also of a correspondingly modest price. Books in the Shire Album series are to be found in almost all museum shops in this country and aim to give the reader a brief and cheap introduction to some quite specific areas of the antique and collecting worlds. For instance, other titles include "Buttonhooks and Shoehorns" and "Old Telephones". Basil Harley already has two books in the series on "Toy Boats" and "Optical Toys" and also writes regularly in modelling magazines, especially on the subject of steam engines.

Given the editorial constraints he was working under Harley's major problem in writing this book was not in getting enough information to include but in deciding what to leave out. As we all know the field of constructional toys is vast so how has he narrowed it down to 32 pages?

His chosen chapter headings are Building Blocks, Meccano, Limited Variety Outfits, Imitation Meccano and Lego. The obvious omission is of constructional systems that are not Meccano-like in nature, but otherwise the choice is a reasonable one.

The Building Blocks chapter deals with the origins of constructional toys which are to be found with building blocks made by Bavarian craftsmen in the 18th century. But it goes on to consider a large number of building toys in a variety of media, such as rubber Minibrix, wooden Matador, plastic Bayco and many others about which very little has previously been published.

The Meccano chapter mostly covers familiar ground, with quite a comprehensive and accurate account of the development of the system before the war. However, Harley is very dismissive of developments post-war which he characterizes in terms of a steady decline into oblivion. This section ignores several technical developments and contains certain errors of fact. For instance, he describes the Calais factory as existing to "produce plastic Meccano kits for the European mainland" and does not seem to know that the factory still produces the full range of parts for world-wide sale.

The chapter on Limited Variety Outfits is very brief but none-the-less considers a good range of products including Meccano aeroplane and car sets, Marklin and Schuco car sets and Bowman steam outfits. The equally short section on Imitation Meccano again encompasses a wide range including Marklin, Erector, Primus, Juneero, Masterbuilder and modern foreign alternatives. The details here are brief but substantially correct.

The Lego section is longer and quite comprehensive although the fact that the original Lego bricks were the invention of an Englishman, namely Hilary Page of Kiddicraft fame, is not mentioned. The engineering limitations of Lego in comparison to Meccano are recognised although in other respects Harley is clearly quite taken with the system, claiming at one point that "Lego can be used to make cars and ships, robots and space stations far more realistic than those made by the old bolt-together metal outfits", an opinion with which I, and I suspect many readers of this journal, would wish to take issue.

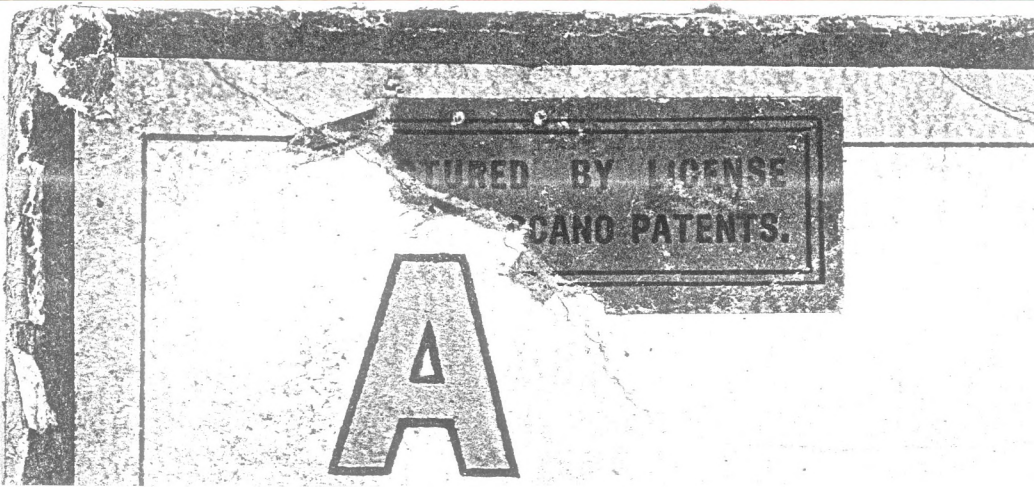
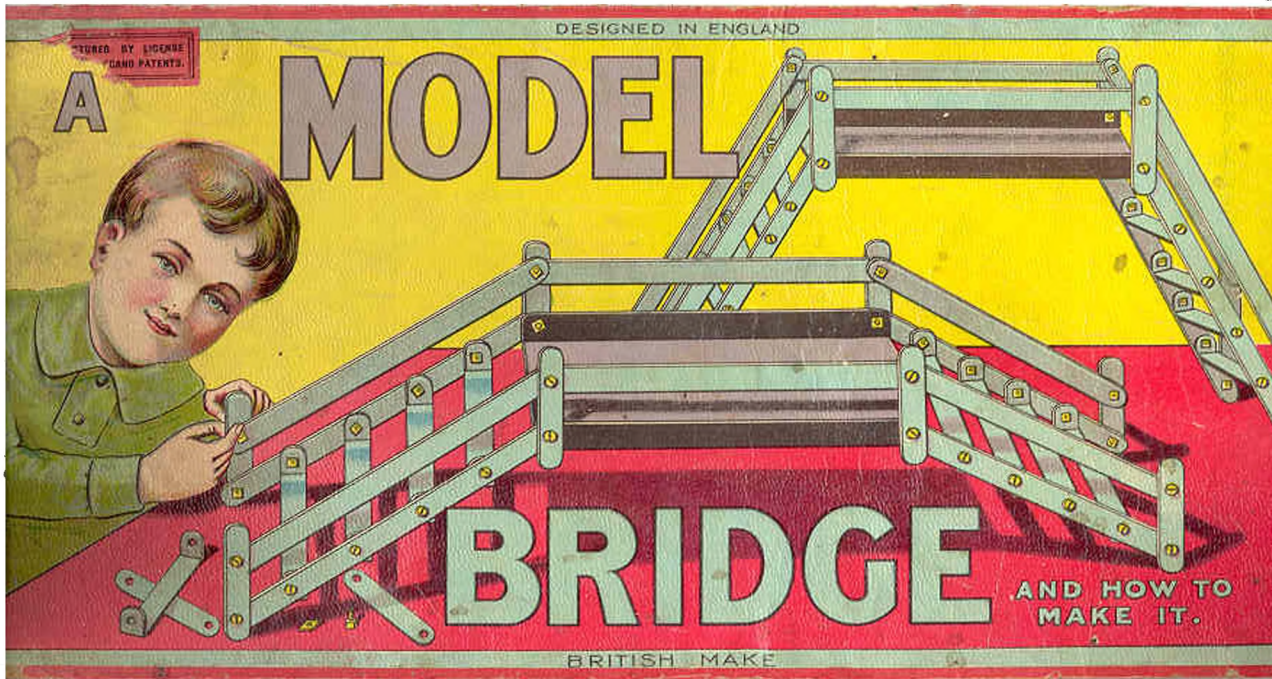
Despite its brevity over half the space in this book is taken up with illustrations in the forms of both photographs and reproductions of original literature. At this point I have to declare an interest in that a large number of the photographs are of items in my own collection. However I think I can fairly say that the illustrations are of good quality and complement the text nicely.

This book is far from being a magnum opus on the subject of constructional toys, but then it does not pretend to be, and within its limitations provides a useful introduction to the subject. It is broad in scope, well written and attempts to place the toys it mentions in their social context.

Malcolm Hanson

NEW SYSTEM - FALCO A reference was recently seen to this construction set, it was Italian and was said to date from the interwar period. A colour photo of a model, made in 1937, showed it to be of the Dinky Builder type with red, blue and silver plates.

MARKLIN 1990-91 Along with the latest copy of Infos from JEAN ESTEVE OBJETS was a 1990-91 MARKLIN brochure in English, French and Dutch. Compared with 1989-90 (see OSN 2, p16) all the sets are continued except that of the three Nostalgia Sets only 1075 (the prewar No 3) is listed. Both the Motors and the Power Screwdriver continue and so do the 7 Packs of Parts (1040 - 1047). The individual Parts available have also remained unchanged.



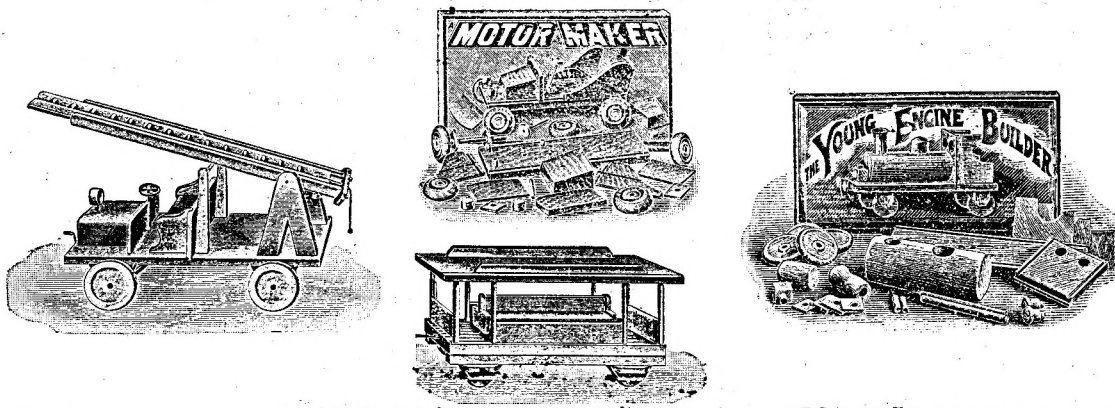
A MODEL BRIDGE (IN METAL).

INSTRUCTIONS FOR BUILDING.

If you look at the label you will see exactly how the bridge will look when finished. All the parts are made to fit perfectly, and you can easily screw them together with the nuts and bolts. The bridge can be taken to pieces and re-built over and over again. If one or two of the nuts and bolts are likely to come loose, which may happen when you are playing with the bridge, you can easily fix these much firmer by cutting out a small piece of cardboard and using it as a washer, you will find this a great improvement. You can easily pick out the top floor of the bridge which is a flat piece of steel; then you have the long strips which go over the side and form the rails, then the upright pieces which go at the corners on to which you bolt these rails, then the bent pieces which act as the steps of the bridge. You can make a low bridge to go over a stream, and the same bridge can be altered into a high bridge which would be the same as is made to go over railway lines.

If you like this toy ask to see a Metal Signal, a Metal Crane, packed in boxes as this and the same price. Other models made up in the same manner we think you will like such as Engine Builder, Motor, Maker, Fire Escape, Electric Tram, Road Roller, etc., as illustrated.

Designed, printed and manufactured on the British Isles.



'MODEL BRIDGE' SET Thanks to Brian Rowe the Editor is now the proud owner of the box lid and most of the parts of this little set. The lid measures $13\frac{1}{8} \times 6\frac{1}{2}$ " and its outside and the label on the underside are shown opposite at reduced scale. Its date is not known but it is said, judging by the artwork, that it is most likely to be around WW1. Its interest is twofold, first the parts are similar to MECCANO but with only the holes in them needed to assemble the bridge, and secondly the lid has a small label stuck on it, only half of which remains (see enlargement opposite), but it might have read MANUFACTURED BY LICENSE UNDER MECCANO PATENTS.

The parts consist of a black metallic finished $5\frac{1}{2} \times 2\frac{1}{2}$ " Double Flanged Plate with only 4 holes in it, one at each end of each flange; $5\frac{1}{2}$ " Strips with 6 holes at 1" spacing; $5\frac{1}{2}$ " Strips with just the end holes; 2" Strips with only the first and third holes; and $2\frac{1}{2}$ " DAS with only a hole in each lug. The bridge shown on the lid makes the 2" Strips look more like $2\frac{1}{2}$ " long with the centre and end holes missing, but otherwise the illustration is a fair representation of the parts. All the Strips are nickel plated and the ends are semi-radiused; they are accurately made with no sharp edges and apart from the missing holes could easily be thought to be of MECCANO origin, and certainly early 2" Strips usually had semi-radiused ends and examples of $5\frac{1}{2}$ " ones with that type of end are known. The Flanged Plate has the same dimensions as the MECCANO one but is of thinner gauge steel (.021") and there are one or two slightly sharp edges on it. The DAS are exactly the same width as the Flanged Plate and so fall towards the middle of the 3 widths of DAS given in DMS, but don't correspond exactly with any of them. None of the original nuts and bolts were with the surviving parts of the set.

So was this a MECCANO product, put out anonymously, perhaps to increase turnover by tapping into the cheap end of the market, rather like BRITISH MODEL BUILDER in the 1930's. Or was it to see how popular more realistic models with no superfluous holes might be. In either case why the label, well possibly a late thought to make any other manufacturer who might think of copying the idea, aware that patents might be infringed by doing so. But against this the toys advertised on the lower half of the inside of the lid look as if they were made of wood and this must make the MECCANO connection less likely.

So perhaps it was a question of another manufacturer having a bright idea and thinking that since the whole point of MECCANO was the equispaced holes, there would be no patent violation in producing parts with only the holes in them needed for assembly. And in principle this must surely be true, otherwise anything, or at least any toy, made of metal and bolted together would have been in trouble. But of course our hypothetical manufacturer chose to make his parts look very like MECCANO ones, with the holes spaced so that they would line up with MECCANO holes, and no doubt that could have led, by whatever route, to the label being attached, perhaps not until after the sets had gone on sale and Hornby had got to hear of it.

Neither theory sounds altogether convincing but whatever the explanation, since this is the only example of one of these sets that has turned up, it isn't very likely that they were popular enough to make anyone's fortune. From the point of view of dating this set does anyone know when the relevant MECCANO patent(s) expired. UK patents normally last for 16 years but in some circumstances they can be extended.

The other parallel sets advertised on the lid may have needed some different parts from those in the Bridge Set, longer Strips perhaps for the Crane. News of any parts that might fit the bill would be welcome, as incidentally would the following Strips - 5 of 2" with 2 holes and one of $5\frac{1}{2}$ " with 2 holes. These are the ones missing from the set and with them I could make the bridge entirely from original parts.

NECOBO GEARS Since OSN 4 appeared I have realised that FB's latest version of MCS contains a NECOBO Illustrated Parts List which looks earlier than the one in OSN 4, for one thing it ends at PN 140 and also the Manuals listed go only to Set 5. The interesting thing though is that it contains 5 gears which are not in the list in OSN 4 (but none, of course, of those in OSN 4 after PN 140). The five are Gears PNs 127, 128 and 129 with 16, 35 and 60 teeth respectively, and Nos 130, 130A - Worm Wheel (38 teeth) and Worm. If the 16 and 35 tooth wheels mesh at 1" centres as is likely the corresponding DP is 25.5 and for the 16 and 60 at 3 holes, 25.3. And for these DPs the equivalent Module is 1.0. So it seems that the original NECOBO gears were relatively coarse and as might be expected for a Continental system conformed to a particular Module rather than a DP. At some stage there was a change to the OSN 4 gears which are almost certainly compatible with MECCANO. If the Worm Wheel had the same pitch as the Gears it would have a diameter of about $\frac{3}{4}$ " and in the MCS illustration it looks larger than that if anything, but even $\frac{3}{4}$ " would mean a very small Worm for a mesh at $\frac{1}{2}$ " centres. Unfortunately the Worm isn't illustrated.

EDOBAUD There was an interesting piece on this system in 'Infos Jouets' Nos 9 and 10, and since it is likely that many OSN readers will not have seen it, a summary is provided. Keith Cameron drew my attention to the article and Jean Estève the editor of Infos kindly gave me permission to use the material

Shown opposite are three models made from EDOBAUD and they appeared in 1928 issues of a weekly magazine called CRI-CRI. Other models are featured in Infos, all taken from 1928 CRI-CRI's where they were accompanied by short write-ups praising EDOBAUD but giving little information about the models. Much stress was laid on the realism of the models both in appearance and in working. The text accompanying one crane seems to indicate that the model can either be built up from parts or bought fully assembled and ready to work. Models could be lit using an EDOBAUD transformer. It is thought that similar publicity appeared in L'INTREPIDE and perhaps in other weeklies put out by Editions Offenstadt. This information was in Infos No 9 together with illustrations of the parts, virtually identical to those in MCS.

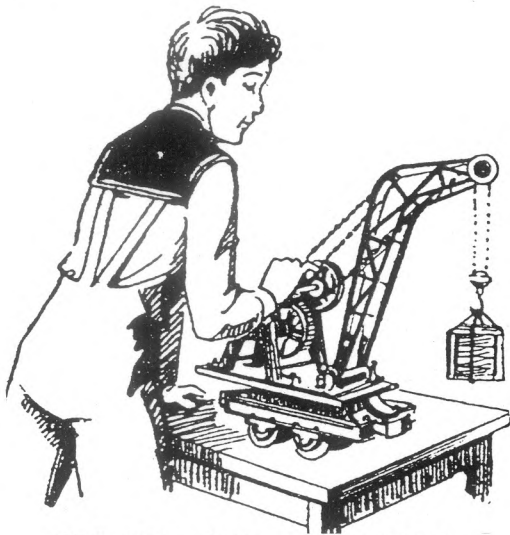
In No 10 extracts from a 1928 EDOBAUD catalogue are given. All the parts in MCS are listed and in addition a number of ready made machines and outfits. These last two categories are summarised below - for each item the French name is given first followed by it in English and then some description freely adapted from what was in Infos and including comments as well. All the illustrations in Infos are shown opposite or overleaf.

Ref

- 2003 INVERSEUR DE COURANT. Controller for electric motors with positions for forward, reverse, and stop.
- 2008 CISAILLE CIRCULAIRE. Circular saw. Cuts card and metal up to .2mm thick. Adjustable guide to allow strips of constant width to be cut.
- 2042 POMPE ASPIRANTE ET FOULANTE. Suction and force pump. Can be directly driven or can be connected to the reduction gearbox 2002 using 60 and 12 tooth gears.
- 2042 bis. As above but with bouteille d'air (air bottle?) on the delivery side. This and the cylinder are made of glass to allow the movement of the liquid to be seen.
- 2000 TREUIL. Winch. May be driven by hand or by an electric motor.
- 2002 REDUCTEUR DE VITESSE BLINDE ou multiplicateur. Fully enclosed reduction gearbox or step up gearbox. Gears run in oil but this may be a reference to the full size machine. Gear ratio 1:9.
- 2001 INVERSEUR PROGRESSIF. Variable speed unit. Allows 7 forward and 7 reverse speeds, step up or down, by changing the gears and pulleys. More than one unit can easily be used together.
- 2007 REDUCTEUR VERTICAL. Upright reduction unit. Designed to receive all the standard gears and pulleys and can equally be used for stepping up speed. It can be dismantled completely and can be converted into the Winch 2000 by the addition of a winding drum 9-10 and crosspieces 501.
- 2016 GROUPE ELECTRO REDUCTEUR. Electric motor driving reduction gearbox. The gearbox 2002 and the motor 2010 are mounted on a baseplate and the drive is through a pair of gears.
- 2016 bis. Accessory set to allow those with 2002 and 2010 to set up 2016 above.
- 2015 GROUPE ELECTRO TREUIL. Electric motor driving winch. Winch 2000 and motor 2010 on a baseplate with drive through a pair of gears.
- 2015 bis. Accessory set similar to 2016 bis. the gears have 12 and 60 teeth.
- 2010 MOTEUR ELECTRIQUE UNIVERSAL, Type normal. Universal electric motor. The smallest universal motor in existence. Use 2003 to obtain forward, reverse and off. Functions on AC or DC, 90 to 120 volts. Always put a light bulb in series, 50, 75, 100 watts depending on the output power required.
- 2010 bis MOTEUR ELECTRIQUE UNIVERSAL, Reinforce. As above but it is longer and more powerful.
- 2010 ter. A motor made as small as possible but with trouble free operation.
- 2044 LAPIDAIRE. Lapidary (?). Mounted on Base 24, supplied with two emery wheels.
- 2044 bis Adapteur seul. Adapter to allow 2044 to be used with the parts in the Drive sets.
- 2043 TRANSFORMATEUR. Transformer. Input 110 volts; output 4 volts. Allows 6 bulbs to be connected in parallel for lighting models.
- 2025 GRUE ROULANTE. Travelling crane. Consists of the winch 2000 and a jib formed from two Part 58, mounted on a platform which can rotate on the chassis 2019. (There is a reference to an illustration on the first page of the catalogue: it is too small to see clearly but looks similar to the crane in Fig 1.
- 2040 TETE DE GRUE ROTATIVE. A set to make a crane 'a tete mobile' (with moving head?)
- 2045 GRUE COMPLETE. Crane, fully assembled (?), complete in all detail (?). With electrically operated movements of hoisting and lowering the load, travel forwards and back, and slewing both ways. Supplied with track for travelling, electrical gear and control panel with 3 reversing switches. This crane may be one of those in CRI-CRI, see Fig 3.

BOITES CHARPENTES. Structural outfits.

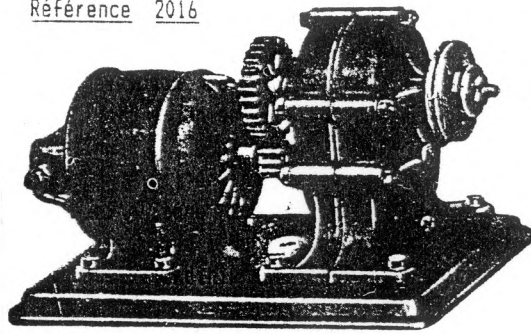
2031. Allows factories, stations, shelters, etc to be constructed, covered in corrugated sheet.



CRI-CRI n°526 25/10/1928
Grue sur wagon plate-forme

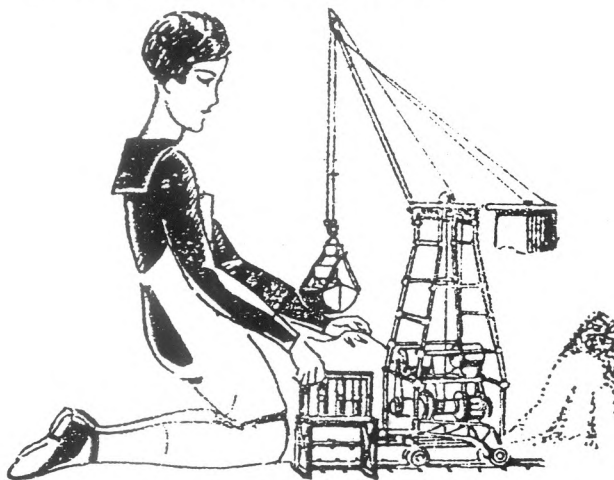
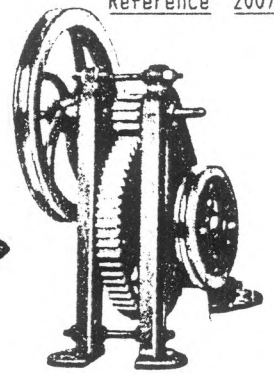
GRUPE ELECTRO REDUCTEUR

Référence 2016



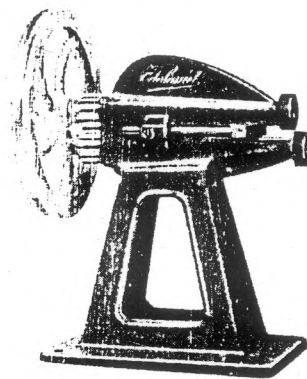
REDUCTEUR VERTICAL

Référence 2007



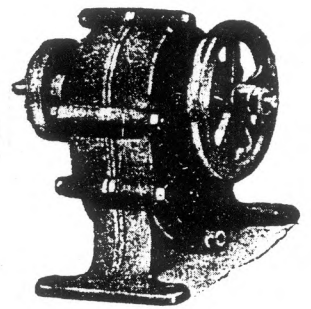
CRI-CRI n°531 29/11/1928
Grue à benne piocheuse

CISAILLE CIRCULAIRE

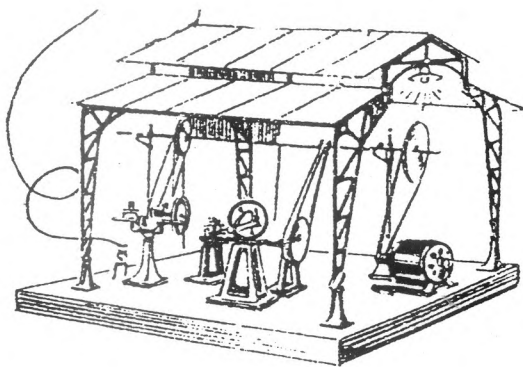


Référence 2008

REDUCTEUR DE VITESSE BLINDE
ou multiplicateur



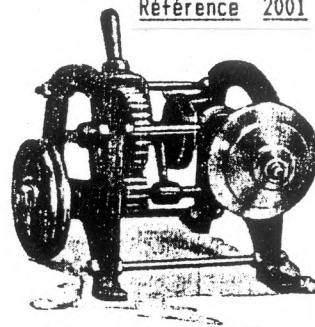
Référence 2002



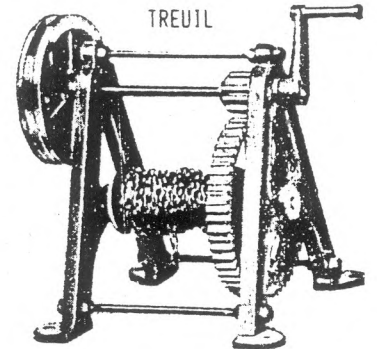
CRI-CRI n°529 15/11/1928
Usine sous hangar

INVERSEUR PROGRESSIF

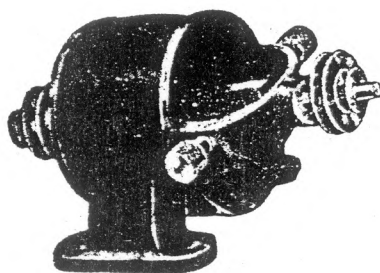
Référence 2001



TREUIL



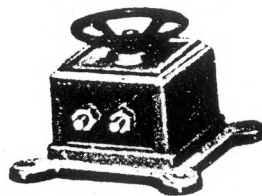
Référence 2000



MOTEUR ELECTRIQUE UNIVERSEL

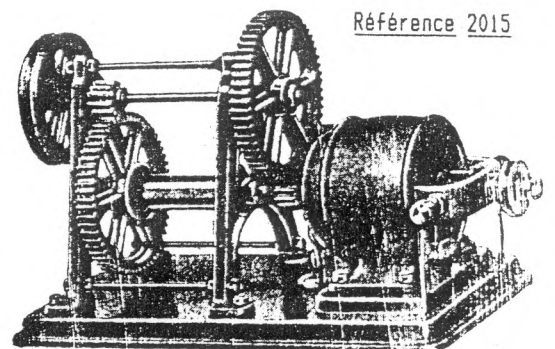
INVERSEUR DE COURANT

Référence 2003



GRUPE ELECTRO TREUIL

Référence 2015



2032. More and different pieces for larger models, factories with several bays, etc.

NOTE. All sets contain instructions for a number of models, from the very large range that are possible. To fix buildings down or where machines are to be driven the Mounting Boards available are ideal.

BOITES TRANSMISSION. Drive sets.

2004. Allows the construction of a driving system complete with supports, giving a reduction (or step up) ratio of 3:8. Includes a 200mm shaft.

2005. Contains the complete range of pulleys from "30 to 40mm" (sic), a 300mm shaft and vertical support pillars.

2006. Contains the parts of the first two sets with in addition 2 bearings to fit on the vertical pillar, and 150mm and 300mm shafts.

BOITES DIVERSES. Other sets.

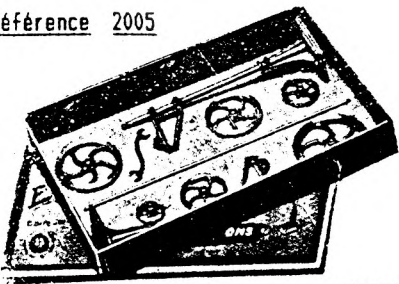
2012. Contains the parts needed to make the Winch 2000, a Reduction Unit 2007, and other mechanical assemblies.

2013. Has parts which allow the construction of the Enclosed Gearbox, 2002, etc.

Sets 2004, 2005, 2012 are said to be packed in red cardboard boxes; 2006 and 2013 in de luxe cardboard boxes. All these sets are supplied with a key for use with set screws, etc. The diameter of EDOBAUD shafts has not come out clearly in my MCS, it is stated in the list of parts to be 4mm; also the size of Part 552 (Threaded Rod) and 502 (Hex Nuts) is given as 3mm. The address of Etablissements Edobaud was 3 rue Edgard Quinet, OYONAX (Ain). Not all the parts referred to by Part No in the above descriptions of mechanisms are included in the list of parts.

Infos also says that in a future issue Edobaud constructional railway equipment will be described, there were also ready built train sets but there is little information available on these.

Référence 2005

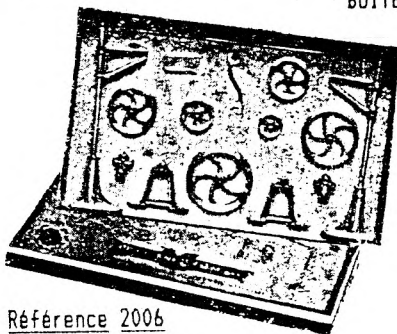


BOITES TRANSMISSION

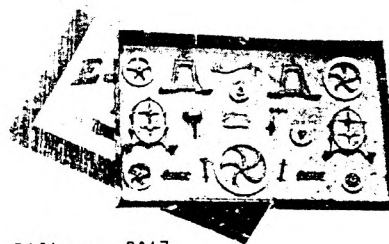


Référence 2012

BOITES DIVERSES




Référence 2006



Référence 2013

The ad below, sorry it has to be the wrong way up to fit it in, was sent by José Bernal Moreno and was from the periodical 'Little Folks' for January 1917. Clearly WW1 did not stifle competition. It is the only dated information that I have seen on PRIMUS and if, as seems almost certain, it was Set 1 at 7/6, then the range advertised didn't extend beyond Set 5. Perhaps Set 6 with its special parts had not yet been marketed, or perhaps it was unavailable due to the war.

Little Folks



I'VE GOT ONE!

"Mine is wood and metal —is yours only metal? The wood parts make my models look real and they're solid!"

FOR 7/6 you can get a Primus outfit—the world's finest constructional toy — which makes 41 models; aeroplanes, gun-carriages, railway wagons, munition-lorries, bridges, cranes, etc. The models look and *work* like the *real thing*. The most fascinating and instructive toy imaginable for any boy. Each box complete with tools and all instructions. Other sets 12/6, 25/-, 37/6 and 50/-.

ILLUSTRATED CATALOGUE
post free from
W. BUTCHER & SONS LTD.,
Farringdon Avenue,
LONDON, E.C.

"PRIMUS"
ENGINEERING
THE BRITISH TOY FOR THE BRITISH BOY

ASTRO BRAL AND SPACE SHIP BRAL In 1988 I bought a BRAL set in Milan and the name on the box was BRAL SPACE SHIP. It is a simplified version of the ASTRO BRAL set included in MCS (in FB's latest edition only I think), and the instruction leaflet contains only 2 models against the 6 for the larger set. There are no details of the contents of the ASTRO set in MCS but the parts in the SPACE set are as follows, using MECCANO part numbers:

Nickel plated steel: 4x2, 2x3, 8x12, 1x34, 2x48a, 4x126, 1x126a.

Brass plated steel: 38x37b.

Black painted steel: 2x9.

Zinc alloy: 2x23, 38x37b.

Grey plastic: 1x194e, 4x226.

White plastic: 1 nose cone, 3" long, which clips into a circular base plate.

Red plastic: 4 'engines'.

Black plastic: various small mouldings of guns, radar dish, etc.

Clear plastic: 1 cockpit canopy, 2 push-in 'screw' type fasteners which are needed to hold the canopy (insecurely) in place.

Misc: 1 sheet of labels, 1 plastic handled screwdriver.

The envelope type box that the set is packed in measures 15½"x12"x2" and as well as the name BRAL SPACE SHIP on the top it has the reference "Art 90050". Pictures of the 2 models featured in the instruction leaflet are also on the top face and one of them has ASTRO BRAL across one of its fins. This name isn't on any of the stick-on labels though. On the bottom of the box the parts included in the set are illustrated (no PN's are shown) together with the drawings of the models in the leaflet.

The above came to be written because Dennis Higginson sent me the ASTRO BRAL leaflet to look at (the illustrations in MCS come from it) and it was clear that the set I have is not just a repackaging of the ASTRO set but has fewer parts in it. There are obviously more plates in the ASTRO and there is also a largish circular transparent dome. It doesn't show well in my copy of MCS and I hope it will be clearer in the model reproduced here. The second illustration shows the other ASTRO canopy which is similar to the SPACE one. The model it is part of is similar to one of the two from the SPACE set, the other is a slightly simplified version of that shown in the first 3 illustrations of the 2nd row of p.(B)2 of MCS.

SUMMARY OF MANUAL

#Name: ASTRO BRAL. #Details of maker: BRAL, Milano. #Dates or Ref Nos: none. #Page size: 244x170mm deep. #No of pages: leaflet with 4 unnumbered pages. #Language: Italian, French, English, German, Spanish? #Printing: fulltone. Cover is shown in MCS. #Page nos of Parts List & highest PN: none. #Page nos of Set Contents & highest PN: none. #Sets covered: 1. #No of models: 6. #Name, model no, page no of first and last model of each set: there are no names or model nos. The 1st model is on p.2, the 6th on p.4. #Other notes: none.

SUMMARY OF MANUAL

#Name: SPACE SHIP BRAL. #Details of maker: BRAL, Milano. #Dates or Ref Nos: 20154 Milano-Italia-Via P. Lomazzo, 34. #Page size: 205x315mm deep. #No of pages: single sheet printed on both sides. #Language: Italian, French, German, English. #Printing: line drawings. The name on the leaflet is 'Kitspace bral' #Page nos of Parts List & highest PN: none. #Page nos of Set Contents & highest PN: none. #Sets covered: 1. #No of models: 2. #Name, model no, page no of first and last model of each set: no names or page nos. The models are on one side of the leaflet. #Other notes: the other side of the leaflet gives detailed instructions on how to bend strips and plates.

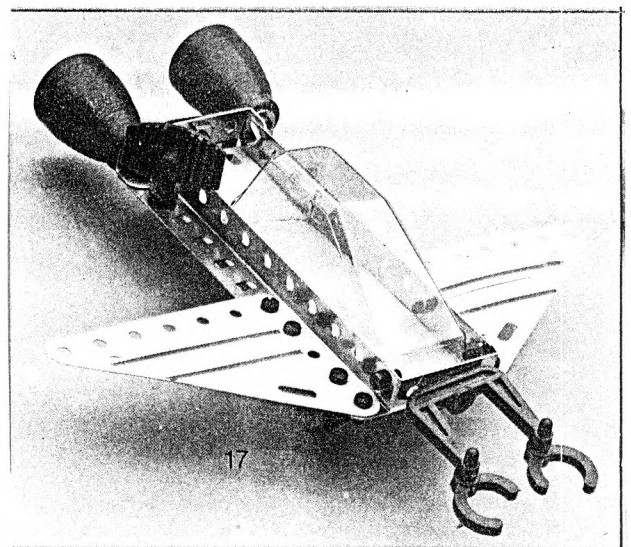
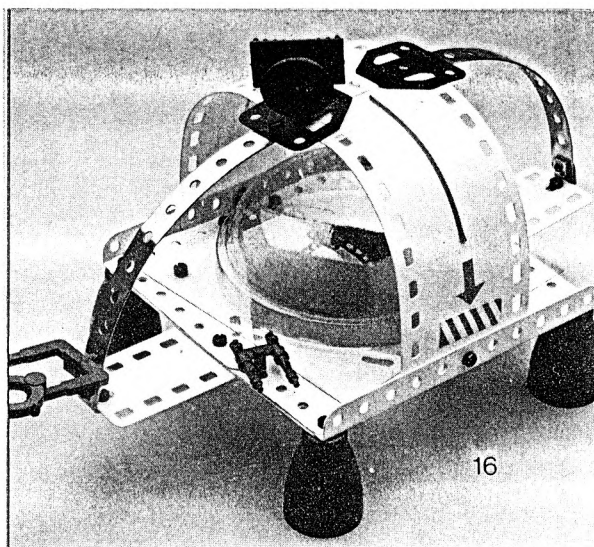




Fig 1



Fig 2



Fig 4

Fig 3

EFEL I thought when I looked at the two versions of EFEL shown in MCS that some of the details might have got a bit mixed up between the two of them, at any rate they didn't all agree with a set I once bought in France. So I asked Dr Figureau if he could let me have information on the EFEL sets in his collection, and he has sent me notes on which this article is based and some splendid colour photographs which have copied well enough to be included here.

The first thing is that there is a third distinct version of EFEL and it is probably the earliest. Fig 1 shows Set 6 and on the lid after EFEL is TYPE TRAVAUX PUBLICS (Type Public Works). Fig 5 is part of a photo of a second Set 6, this shows better the pulleys and the half and quarter discs. The contents of these two outfits differ slightly but both have the same 8 page manual. The box in Fig 1 is basically blue in colour, the other one is red; the label is the same in both cases. Details of the parts: the hole spacing is 10mm and the diameter of the axles is 2mm. All parts are in unpainted steel except for nuts and bolts, couplings and bosses, all of brass, and the screwdriver in aluminium.

The second version of EFEL is again labelled TYPE TRAVAUX PUBLICS and it is thought to have been made in the 1950's (a page in Frank Beadle's latest MCS shows these sets advertised in the Martinaud price list for 1962). Sets from this period are shown in Figs 2,3 4,. The earliest is a Set 1 (Fig 2) and the label on the lid is identical to those of the first version. The parts though are entirely different, the spacing is still 10mm but the holes are bigger to admit 4mm axles. All the parts are finished, the small brackets are nickel plated, the flanged plate is painted green, the longer strips and the DAS red, and the rest of the parts blue. The pulley wheels (about 2.5cm diameter) are red plastic. The spanner has EFEL stamped into it in large letters. Fig 3 shows a Set 0 with a different label on the lid, otherwise the parts are similar to those in the set 1 except that the plastic pulleys have brass bosses. The final set of this period (Fig 4) is a No 5 and it looks superb in the colour photo. Many additional parts are included with angle and flat girders of varying lengths (like the strips they are red unless they are 5 holes in length or less, when they are blue), various sizes of perforated plates in green and the large circular pulley in red. The all plastic, red small pulleys are fitted with white plastic rings.

The third version is the second in MCS (called E.F.E.L. there), and is completely different in all respects except that the axle size is still 4mm. The parts are well illustrated in MCS but Fig 6 is included, it is a Set OA, to show the lid and the rather nice box for small parts with 'Efel' written on it. The parts are of bare steel except that the pulleys are painted red. The spacing between centres of the slots along the length of the P plates and the C angle girders is 30mm. Note the 'Gede' on the box lid (top left) - this is the maker's name.

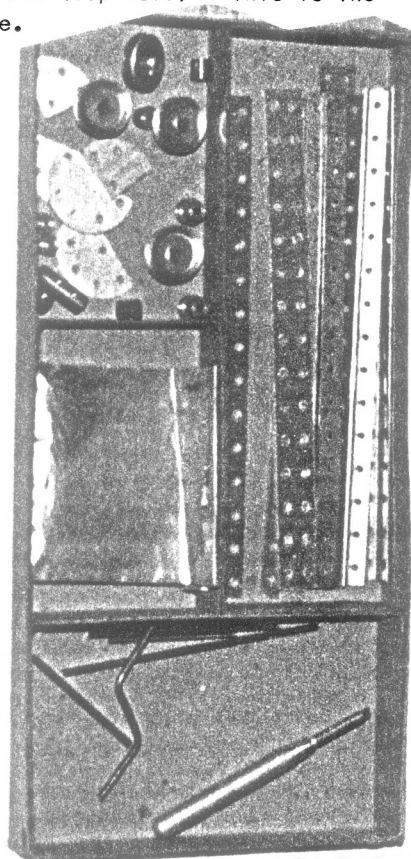


Fig 5



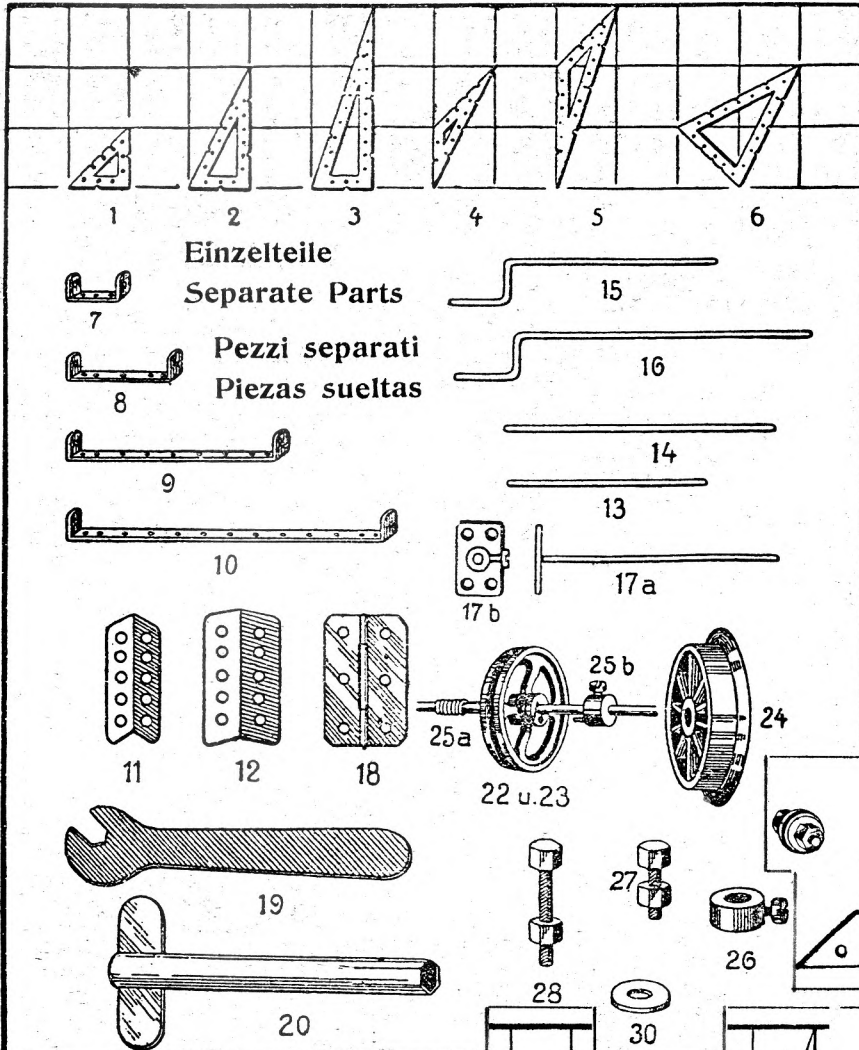
Fig 6

INSTRUCTIONS!

The binding-screw consists of a screw, two washers and a nut. Observe the curves of the washers, the hollow sides being placed opposite to each other. They are fastened at the side of a triangle. Another triangle is pushed between the washers and pressed against them, and the nut screwed on with the key. (Fig. 1).

All triangles are in definite geometrical proportions to each other. (Fig. 2).

Stays, Angles, Shafts, Cranks, long screws are used as shown in the illustrations; the rotating piece as in Fig. 3 and the spring-clutches as in fig. 4.

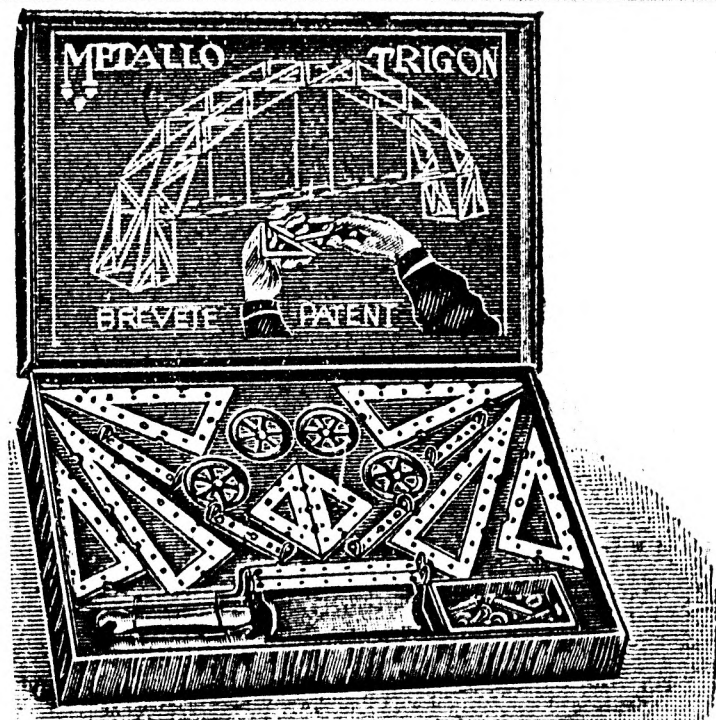
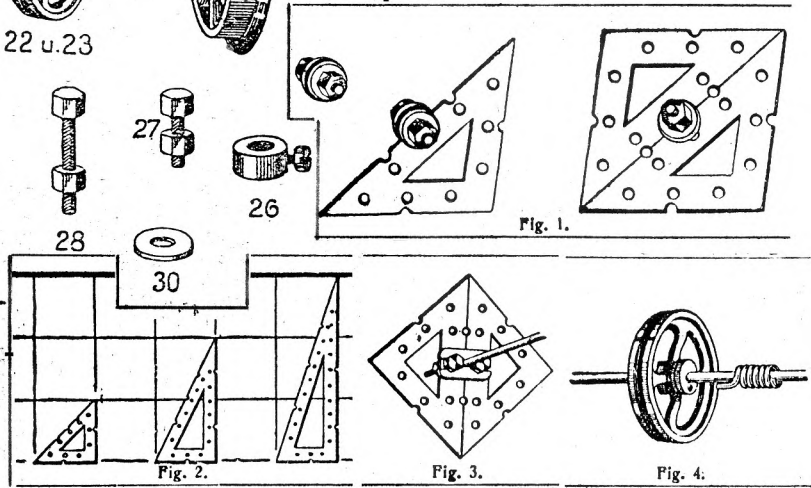


Einzelteile
Separate Parts

Pezzi separati
Piezas sueltas

Inhalt der Kästen **Contenuto delle scatole**
Contents of boxes **Contenido de los cajas**

Nr.	000	00	0	1	2	3	000	00	1A	2A
1	—	2	4	4	8	12	2	—	4	4
2	4	4	12	4	14	24	—	6	2	10
3	—	—	2	4	8	18	2	2	4	10
4	—	—	—	2	4	8	—	—	2	4
5	—	—	—	2	4	8	—	—	2	4
6	—	—	—	—	2	4	—	—	2	2
7	—	2	4	4	4	6	2	—	—	2
8	4	4	4	6	8	12	—	2	2	4
9	2	2	2	6	8	18	—	4	2	10
10	—	—	—	—	8	12	—	—	8	4
10a	—	—	—	2	4	6	—	2	2	2
11	2	2	4	4	6	12	2	2	2	6
12	—	—	—	2	4	8	—	2	2	4
13	—	—	1	2	3	6	1	1	1	3
14	—	—	1	2	3	6	1	1	1	3
15	—	1	1	1	2	3	—	—	1	1
16	—	1	1	1	2	3	1	—	1	1
17a	—	—	1	—	—	—	—	—	—	—
17b	—	—	—	1	1	2	—	1	—	1
18	—	—	—	1	2	4	—	1	1	2
19	2	2	2	1	2	2	—	—	1	—
20	—	—	—	1	1	1	—	1	—	—
21	1	1	1	1	1	1	—	—	—	—
22a	2	2	4	—	—	—	2	—	—	—
22b	—	—	—	4	4	4	—	—	—	—
23	—	—	—	—	2	2	—	2	—	—
24	—	—	—	—	4	4	—	—	—	4
25a	2	2	4	—	—	—	2	—	—	—
25b	—	—	—	4	4	6	—	4	—	2
26	—	—	—	—	4	12	—	—	4	8
27	8	10	18	36	72	150	8	18	36	78
28	2	2	2	4	6	12	—	2	2	6
29	10	12	20	40	78	162	8	20	38	84
30	16	20	36	72	144	300	16	36	72	156
31	—	1	1	1	1	2	—	—	—	1
32	Prsp	1 kl.	1 kl.	1 gr.	1 gr.	1 gr.	—	1 gr.	—	—
	55	69	119	220	414	830	49	103	194	416



Metallo-Trigon No. 0

NEW FACTS - METALLO TRIGON MCS lists this system (the name is mis-spelt as TRIGNON in some places, in some editions) and there is a sketch of some of the parts. Recently a Set 0 came to hand, incomplete but with the instruction manual. Reproduced from it, opposite and overleaf, are the Instructions, Illustrated Parts and Set Contents, the 0 set (x2), and four models. The manual covers only the 0 and 00 sets but the large Crane is shown as an example of a model from the largest outfit; the Bridge appears on the box lid and on the cover of the manual.

The following points are thought noteworthy

- # From the Set Contents it seems that there were 6 main sets, 000 to 3. There were also 4 'A' sets, 00A to 2A.
- # The 10 hole plate illustrated in MCS is not shown in this manual, nor is the tyre.
- # Of the parts in the Set Contents but not illustrated, 22a and 22b may be two different types of Pulleys, two sorts are shown in the manual models (and in MCS), one with 6 straight and the other with 4 curved spokes. From the Illustrated Parts 23 might be another, different Pulley, it is only included in Set 3. Part 29 is certainly the Nut and 32 will be the Instructions, a leaflet for 000, the small manual for 00 and 0, and a large one for sets 1 to 3. This leaves parts 10a, 21 and 31 unaccounted for.
- # The method of joining the triangular plates by clamping them with washers is unusual but works perfectly well in practice and makes for rapid assembly of structures. The washers are about 10mm diameter. The means of driving the wheels is again unusual and the driving members, parts 25a and 25b, have not been seen. The centre hole of DAS Nos 7 and 8 is extended on one side presumably to allow the driving pin to engage in it: the extension may just be visible in the illustration of the 0 set.
- # The parts are reasonably well finished but are not very accurately made and some vary a little one to another. The grid on which parts 1-6 are superimposed in the Illustrated Parts would have a full scale spacing of 5cm. The sketches in MCS give a good idea of the dimensions of the parts after allowing for the thickness of the pencil which was traced around them. The only real difference is the 6 spoke Pulley where the one seen is larger at 3.2cm diameter than the one illustrated. An example of the 4 spoke Pulley has not been seen.
- # All the parts seen, except the Pulley, are plated, some with a slightly mottled, bright galvanised look and some a duller, darker grey.

Prior to coming across this set I had had a fair selection of these parts for several years. Karst Quast came across them in a street market in Holland, all strung up on a piece of string, and thinking that I might like to have them he was good enough to send them over. I was intrigued because it was obvious that some care had been taken in designing the parts, especially the triangles. The only problem was to know how to use the latter for while it was clear that they were meant to butt together edge to edge, there seemed no parts that could be used to join them. I thought that perhaps the 10 hole Plate mentioned above might be used but I didn't have any and a great many would have been needed to make a reasonably sized model. So I gloated over my parts from time to time and then one day I decided that there must be a reason for the half holes on the edges of the triangles and that the only way to make use of them was to use washers to clamp the plates together. I had no original nuts, bolts or washers so I used some that seemed suitable and I ended up with a quite pleasant looking Hammerhead Crane with a jib some 20" long. Friends who saw it tended to be a bit sceptical about the method of construction but now I can show the manual to any doubting Thomases.

This is the only system I know that uses clamping with washers as a primary method of construction, and outside of TRIGON there aren't many parts to which it could be applied. In fact the only ones that come to mind are the PRIMUS Roof Ridges and Eaves which have a row of half holes along one edge. I have used the Eaves as the bottom members of a quite heavy bus body, clamping them to the chassis with washers. As with TRIGON the resulting joint was more than strong enough for its purpose.

SUMMARY OF MANUAL

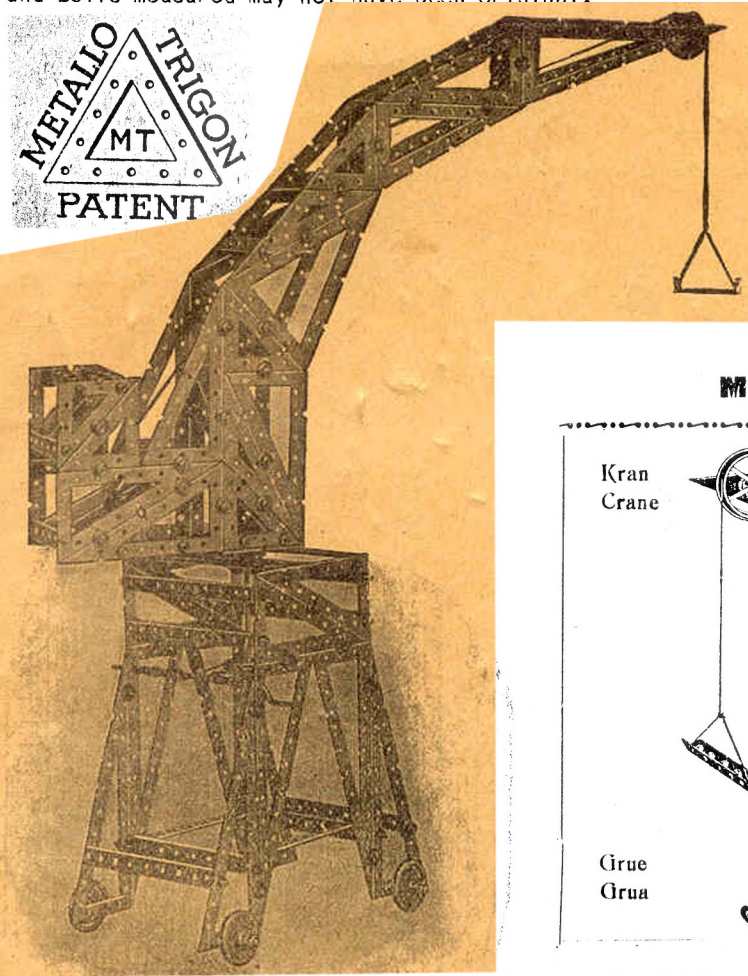
#Name: METALLO TRIGON. #Details of maker: none. #Dates or Ref Nos: 'Printed in Germany' on front cover. #Page size: 236x160mm deep. #No of pages: 12 including covers. #Language: German, English, Spanish, Italian. #Printing: the paper has turned very yellow with age. Apart from two fulltone illustrations the rest are black line drawings. The front cover is shown opposite, the hollow triangle has MT inside it and METALLO TRIGON PATENT around it. The other lettering is a slogan in the 4 languages. #Page nos of Parts List & highest PN: 12.30. #Page nos of Set



Contents & highest PN: 12.32. #Sets covered: 00,0 (but contents of sets for 000-3). #No of models for each set: 16.16. #Name, model no, page no of first and last model of each set: 00: Waggon, 1, 3. Door-way, 16, 6. 0: Waggon, 17, 7. Double-lift, 32, 10. #Other notes: none.

MCS SUPPLEMENTARY INFORMATION

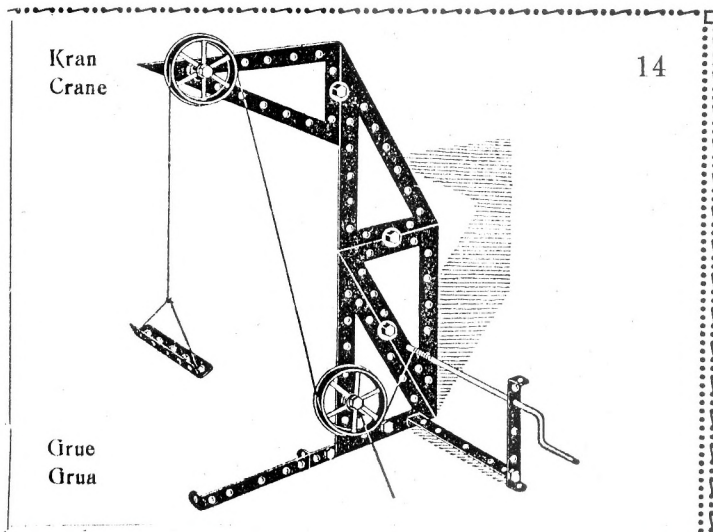
#Name: METALLO TRIGON #Hole spacing: generally 12.4 to 12.6mm but 12.0 in longest DAS. Also 8.0 to 8.5mm between outer pairs of holes in DAS. #Axle dia: 3.07mm. #Dia of holes in Strips/Bosses: 3.23-3.30mm but about 3.5mm in the 10 hole Brackets, 11 and 12/ 3.10mm. #Dia of Bosses: 8.08mm (part 17b). #Boss material/finish: brass/none. #DP or Module of gears: N/A. #Nut and Bolt - name or dia of thread/material/finish: M3/ steel/ brass. #Nut - sq or hex/size A/F: not seen. #Bolt head - shape/dia: buttonhead/ 5.63mm. #Other threads used: M2 for set screw. #Set screw - material/finish/head shape/dia: brass/none/cheesehead/3.05mm. #Pulley (nearest to 1") - material/finish: (3.2cm dia, 6 spoke) cast alloy/ gold paint. #Other unusual features not in MCS: method of clamping Triangles together and driving wheels. #Notes: the Axle and Bolts measured may not have been original.



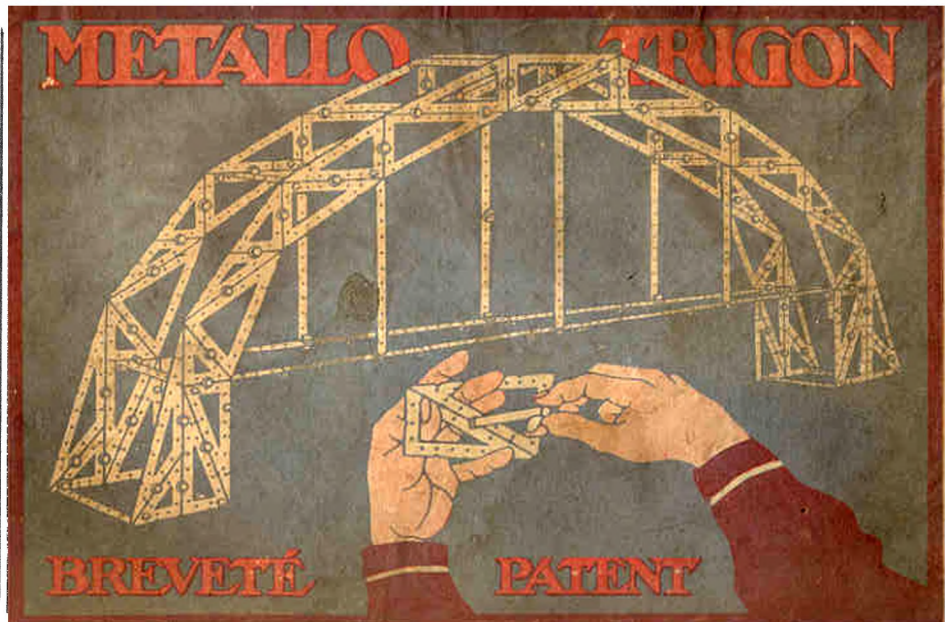
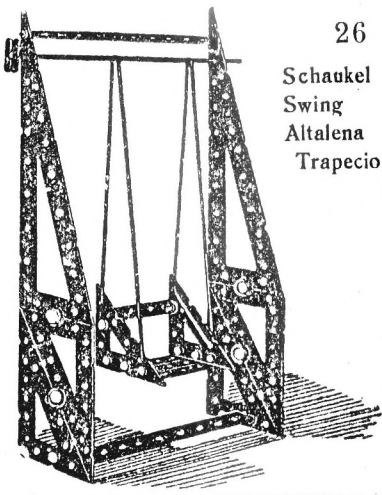
An ingenious and ideal
Toy for the
intelligent Boy!

Printed in Germany.

Metallo-Trigon No. 00



Metallo-Trigon No. 0



MYSTERY PART NO 7 This Plate with POLIVIT stamped on it (OSN 3, p47) turned out to be nothing to do with constructional systems: David Martin wrote, " 'The Polivit Plate is mainly aluminium and is used in the cleaning of large silver items. It must be completely submerged in boiling water containing a fairly strong solution of ordinary washing soda and the combined action of the aluminium and the soda removes stains from the silver. The solution passes through the perforations in the plate and the chemical reaction erodes the plate thus enlarging the holes.' "

MYSTERY PART NO 8 (the 'bucket' in OSN 4). No positive identification has been made but recently some MASTERBUILDER (MB) parts were seen, all painted in known MB colours except for a bucket and a Channel Girder, both of which were in exactly the same shade of yellow. So it seems almost certain that the bucket is a MB part. The only other practical possibility is that the two parts found had been repainted but against this Don Redmond has pointed out that in the NZ Fed magazine, Vol 8, No 2 of March 1983, Don Blakeborough had included said bucket as a Mystery Part and the the colour was given as yellow.

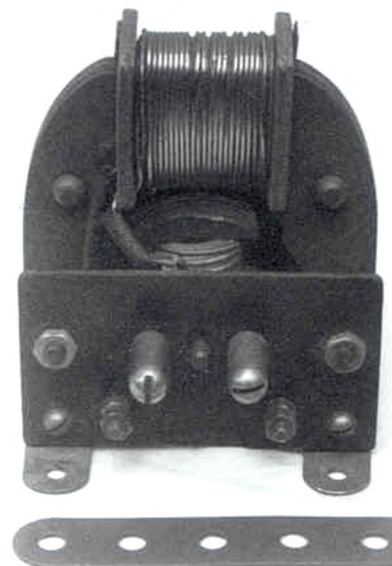
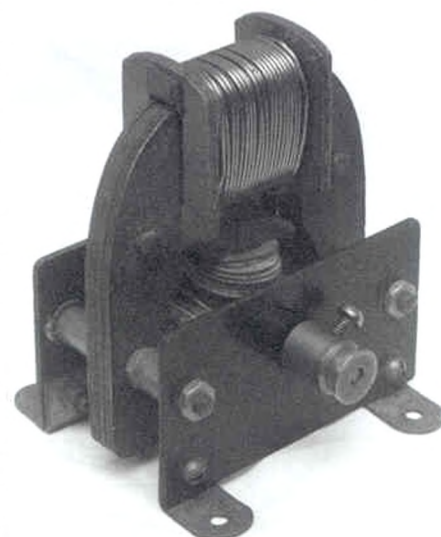
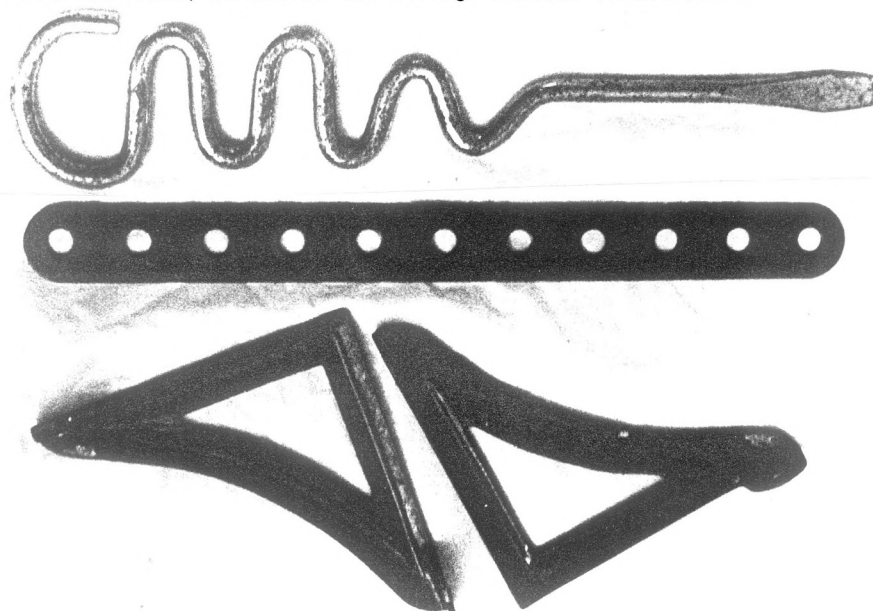
It should be mentioned that apart from the metallic black/nickel finished parts shown in MCS, and a few others of this series which were in larger sets, MB produced, probably at a later stage, additional, more conventional parts with a paint finish. These included flexible and flanged plates and the various parts were painted blue, orange or red. It is intended to summarise what little is known of these in a later issue and if anyone knows anything about MB which is not in MCS please let me know. Most but not all MB parts are stamped KW followed by a 4 figure number.

Don Redmond has sent details of several mysteries, first two different Couplings, MYSTERY PARTS NO 9. Both are 31/64" long (12.3mm), 3/8" dia. One has two tapped cross bores at right angles, and a smooth longitudinal bore 4.1mm. The other has two parallel tapped cross bores and a tapped longitudinal bore. All tappings are 5/32 BSW.

The next three items are illustrated below, MYSTERY PART NO 10 is the motor and Don writes, "It is obviously from a construction set; the angle brackets forming the feet are unworthy of any factory production item for more serious work; the windings are obviously low-voltage coarse ones very similar to the flat-commutator Meccano motors of the early years (ca.1916-20), and the pulley has an over-length setscrew. Despite the various screws being metric (M3.5 and M2) sizes, the shaft seems to be 1/8". But the dimension across the foot mounting holes (45mm) seems to confirm metric measurements of some kind. I see nothing in MCS that looks like it."

The motor was found with a 1928 Meccano No. 1X outfit and of MYSTERY PARTS NO 11 Don says "The two corner brackets were also in the same set. They look like one of the architectural construction sets, but the only fixing holes are in the outer corner lugs."

And on MYSTERY PART NO 12, "The screwdriver was found in a flea market. It is not a sewing machine screwdriver, at least our local sewing machine dealer-historian says not. Hardly intended for getting around corners into complicated models? But what other uses would there be for such a cheaply produced item? The blade certainly resembles the average Meccano screwdriver."



TEMSI - CONTENTS OF SETS No details are given in MCS and the table below is copied from the inside of a box lid omitting the conversion sets 0a to IVa. The date of the set it came from is not known but the Flanged Wheels in it are all metal rather than the later plastic variety. However the sets in a 1985 illustrated brochure look very similar to those described here, although by that time the Set 00 has been added. The only noticeable difference is that in 1985 there are 4 Rubber Rings in the No 0 and they have a tread on them. The English names of the parts are given in MCS but for convenience the MECCANO PN and description has been added for each, although of course there are detailed differences between TEMSI and MECCANO parts.

No	OMSCHRIJVING	INHOUD DER "TEMSI" DOZEN						MECCANO	
		Doos 0	Doos I	Doos II	Doos III	Doos IV	Doos V	PN	Description
1	Gep. stroken 25 gaten		2	4	6	10	10	1	Perforated Strip 25 holes
2	" " 11 "	4	4	6	10	18	18	2	" " 11 "
3	" " 7 "			1	2	6	6	3	" " 7 "
4	" " 6 "					2	2	4	" " 6 "
5	" " 5 "	6	6	9	12	12	12	5	" " 5 "
7	" " 3 "			2	2	4	4	6a	" " 3 "
8	Hoekbalken 25 "				4	8	8	8	Angle Girder 25 holes
10	Platte steunstukken	4	4	4	4	8	8	10	Fishplate
11	Dubbele			1	2	4	4	11	Double Bracket 1x1x1 hole
12	Hoeksteunstukken	4	8	12	16	24	24	12	Angle Bracket 1x1 hole
15	Assen lengte 12.5cm					2	2	15	Axle Rod 5"
15a	" " 11.5cm	2	2	3	3	3	3	15a	" " 4 1/2"
16	" " 9cm				1	2	4	16	" " 3 1/2"
17	" " 5cm		1	2	2	2	2	17	" " 2"
18	" " 2.5cm			1	1	2	2	18b	" " 1"
19	Draaikrukken		1	1	1	1	1	19	Crank Handle
20	Geflensde wielen				4	4	4	20	Flanged Wheel
21	Snaarw.(vast)diam. 38mm					1	4	21	Pulley, Bossed 1 1/2"
22	Snaarwielen (vast)	4	4	4	4	4	4	22	" Bossed 1"
22a	" (los)			2	2	2	2	22a	" No Boss 1"
23	" "			1	1	1	1	23	" No Boss 1/2"
23a	Snaarwiel 15mm. vast						1	23a	" Bossed 1/2"
24	Naafbuswielen		1	1	1	2	2	24	Bush Wheel
	Modelboek	No 0	I	II	III	IV	V		Manual
26	Rondsels					2	2	26	Pinion
27	Tandwiel					1	1	27a	Gear Wheel
28	Rubberbandjes	2	4	4				155	Rubber Ring
29	Rubberballonbandjes				4	4	4	142c	Tyre
32	Wormwiel					1	1	32	Worm Gear
33	Pallen					1	1	33	Pawl [2-sided type]
34	Moersleutel	1	1	1	1	1	1	34	Spanner
35	Pen met moer en draad						1	115	Threaded Pin with Nut
36	Schroevendraaier			1	1	1	1	36	Screwdriver
37	Boutjes en Moertjes	20	25	30	60	90	110	37	Nut and Bolt
37a	Stelschroefjes	4	5	7	15	25	33	69a	Grub Screw
44	Kussenblok		1	1	1	1	1	11a	Double Bracket 2x1x2 hole
45	Dubbel geb. strook				1	1	1	45	Double Bent Strip
48	Geb. strook 38x12 1/2						1	48	Dble Angle Strip 1x3x1 hole
52	Gep. rechth. platen	1	1	1	1	2	2	52	Flgd Perf Plate 11x5 hole
53	" " "					3	3	53	" " " 7x5 hole
54	Sectorplaten		1	2	2	2	2	54	Flanged Sector Plate 4"
57	Haak		1	1	1	1	1	57	Hook
59	Steelingen			2	4	6	6	59	Collar
60	Geb. stroken 63x12 1/2	4	4	4	6	6	8	48a	Dble Angle Strip 1x5x1 hole
61	Molenwieken				4	4	4	61	Windmill Sail [pre 1934]
62	Krukken				2	2	2	62	Single Arm Crank
63	Askoppelingen					2	2	63	Coupling
65	Buigz. pl. 140x38mm.						4	189	Flexible Plate 11x3 holes
67	" " 63x38mm.						4	188	" " 5x3 "
68	" " 140x63mm.						4	192	" " 11x5 "
69	" " 89x63mm.						2	190a	" " 7x5 "
70	" " 63x63mm.						4	190	" " 5x5 "
73	Hoekst.st. 38x25x12,5mm.						2	126	Trunnion
74	Vlakst. 38x38mm.						2	126a	Flat Trunnion
82	Sectorstrip						4	90a	Curve Strip, Stepped 2 1/2"
83	Hoekst.st. 25x25mm.						2	12a	Angle Bracket 2x2 hole
84	Stomph.st.stuk						4	12c	Obtuse Angle Bracket
85	Omgek. H.st.stuk						4	123	Reversed Angle Bracket 1/2"
87	Loopwiel						4	187	Road Wheel [first type]

ITEMS FROM LETTERS

1. On p46 of OSN 3 there was mention of a CONSTRUCTION set C17 and T.W.Comins has written to say that this was an error and the set in question was in fact C13.

2. From Don Redmond

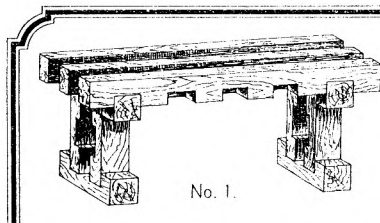
Chinese and Japanese (OSN no.4, top of p.72) unfortunately cannot easily be treated in the same way as Slavic or Greek alphabets, because they are syllabic rather than alphabetical, and there are so many (thousands) of syllables or of character names (in the case of Chinese) that only someone familiar with the language can readily provide a roman-alphabet equivalent. The process is called romanization, rather than transliteration (because it is not letter-by-letter).

Sorry, we seem to have done it again. Having got VINTIK I SHPUNTIK right, unfortunately KONSTRUKTOR-SHKOLNIK has got a P inserted (no.4, p.70, third column of list in item 1). MCS transliterates it correctly, except that it should be SHKOL'NIK with the "soft sound" mark after the L; a shkol'nik is a schoolboy. And that incredible ghost YMEAEU from MCS turned up again in your very good notes on re-arranging MCS (p.73, under Merkur). YMEAEU appears to have been a garbling of the second word in the name of a system of which the manual cover says КОHCTПVKTOP ЮHБИИ YMEAEU, which transliterates KONSTRUKTOR YUN'II UMELETS and means "young craftsman constructor". Whether the system should be listed under K or Y would seem to depend on how the words are used on box lids and elsewhere, because "KONSTRUKTOR" on the manual cover is placed so far away from the other two words.

Evidently BRAL (is the firm still Braglia?) seems to have a policy similar to Meccano SA, judging by Page's note (no.4 p.72), concentrating on sets to the exclusion of supplying spares. No answers have come to me from enquiries both direct to Milan, and through Rodolfo Piazzoli of the GAMB (Italian Meccano group), though BRAL seems to be in good supply with Merryland Toys, a firm with outlets in Toronto and Ottawa. BRAL prices are about a third of equivalent current Meccano prices in Canada.

[Guilty as charged m'Lord, except that I am not quite sure about YUN'II. From the Alphabet in OSN 4 there seems to be no "I" in the Russian alphabet but there is a "bi" which transliterates as "Y". So that would give YUNYI. What do you think?]

3. From John Hanby, "I was rather fascinated by the TRIX clockwork Moteur 2170 [p53, OSN 4], it would appear to have a reversing facility i.e. two levers, and as the shaft (output) is at right angles to the main spring it would be interesting to know the configuration.



Enclosed are some photocopies of THE A-L JOINTED-BARS BUILDING BOX, an educational outfit by E.J.Arnold. I picked this up recently but we had them in the Infants when I was at school in Littlehampton, West Sussex in 1928, so I am assuming that they were available between the wars. The photocopy of the Bars shows all that were in the box, the one crayoned in yellow is enclosed for your retention. The black holes you can see are by wood worm - who fortunately departed I would think a long time ago. I have

made a simple model which is reasonably effective and ideal for 4 - 6 year olds. [The set consists of various lengths of wooden bars, all with the same cross-section of about 7mm square, some of which can be seen in the model above. PCs of the box lid, the parts, and the manual, 6 in all, are available from the Editor.]

4. In reply to a question I had asked, André Barbe wrote that the French system MECANIC was put on the market by JEP (Jouet de Paris, 1902-1968) in 1921 and was withdrawn in 1923 after legal action by Hornby. The Strips and Angle Girders were nickel plated, as were the Pulleys, all the gears were brass, and the Plates were finished dull black. In 1931 JEP brought out FORGEACIER but it wasn't a great success because of the need to continually buy new lengths of the Strip material. [There was an article on FORGEACIER in INFOS JOUETS No 13 which I hope to return to in a later issue. For the record slightly different dates were given, MECANIC was said to have been launched in 1925 and FORGEACIER in 1932-33.]

5 Ashok Banerjee confirms that the META BUILD set mentioned in OSN 4 (p72) is the METAL CONSTRUCTION OUTFIT of OSN 3, p41. There are two versions of the META BUILD. a JUNIOR and a SENIOR outfit, the former will be fully described in the next issue and of the SENIOR Ashok writes, "I have examined the set but it does not seem to follow from the JUNIOR set, it has some square/rectangular plates with 4 flanges and a few additional parts".

HISTORY OF MARKLIN CONSTRUCTIONAL SETS - PART 2 The 1920 Illustrated List of Parts in MCS shows that MARKLIN had retained nearly all the MECCANO parts current in 1914, including the rather unsatisfactory Ship's Funnel, PN 64. By this time though, some important additions had been made, notably the circular parts 66 - 68, the 1" Pulley with Dog Clutch, PN 76, the Braced Girders, 81/1 to 81/5 and the Spoked Wheel. The latter at this stage, like the MECCANO equivalent when first introduced, had no boss - it also did not then have provision for a handle to be attached. Most of these parts were well designed but the Braced Girders cannot perhaps be considered ideal as a multipurpose part although they often look attractive when used in models. The finish of the steel parts was black metallic except that the Ship's Funnel was painted red and the Spoked Wheels, a lightish green.

The sets at this time, 0 to 6 were obviously based on MECCANO ones but had some extra parts, including the new ones. Through Set 4 the number of Nuts and Bolts was identical to those in 1919 MECCANO sets but in Set 5 there were 200 instead of 175 and in Set 6, 630 instead of 465. Overall, excluding Nuts, Bolts, Washers and Paper Clips, the No 6 from MARKLIN contained 1071 parts, against 644 in the MECCANO outfit. In 1922 of course MECCANO introduced the No 7 and while there was never a MARKLIN equivalent it was stated in Part 1 that the contents of the No 6 had increased by 700 parts in 1930 compared with 10 years earlier. There is some doubt about this though, no contents list is available for 1930 but Dennis Higginson sent one from a 1931 manual and this shows 2467 parts for the No 6 compared with my count of 1982 for the contents given in the 1920 manual. Well, getting on for 700 perhaps but the trouble is that the increase comes about in the main by a Nut and Bolt being listed and counted as two parts in 1931, whereas earlier a N&B was but one item. If manuals, nuts and bolts, washers and paperclips are all ignored the 1071 parts in the 1920 No 6 increased to 1124 in 1931. In the next manual available, for 1939, the contents of all the sets remained unchanged and details are in MCS(FB).

Between 1920 and 1939 the number of different parts in Set 6 rose from 68 to 98 but the number of parts available had risen from 74 to about 240 (excluding electrical parts). The 1931 list shows of course many, many additions compared with 1920 but many of them are extra lengths of Strips, Angle Girders and Flat Girders, all then available with 2,3,4,5,6,7,8,9,10,11,13,15,17,19,21,23 and 25 holes, and the many and various Brackets and Gearbox parts for which MARKLIN is well known. There are points of interest though, the large Gear Wheel No 31 had 96 teeth and there was a special sprocket chain link shaped I suppose so that part of it was proud of the run of the chain and could engage other parts. In the same vein PN 48a was a Strip that could be linked into the chain. Neither of these chain parts was listed in 1939 so maybe they weren't popular, for whatever reason. Part 50 wasn't in the 1939 list either and seems to be a holder for Flaschenbecher. What are Flaschenbecher? See Part 78. Parts 77 - 80a were not listed in 1939. One part that had been redesigned by 1931 was the Single Arm Crank, No 62 but I'm sure it was more versatile in its original MECCANO guise, and the redesigned part was not included in the 1931 or 1939 sets. Another part to be seen in 1931 was the "pastry cutter" type gear ring in different sizes (parts 89/21 to 89/96). This to me is MARKLIN's finest idea, a simple, elegant, cheap way of turning any ring into a gear, much better for a toy, even an adult toy, than MECCANO's 167a etc. I've mentioned all the parts that were deleted in 1939, the main ones added were 66b, 132, 133 and Tyres 209/20, 209/22. The whole range of parts available in 1939 are in the 1949 Illustrated Parts List included in MCS(FB), except for the Ship's Funnel, PN 64, which had finally disappeared by then, and 22a, the 1" Pulley without Boss.

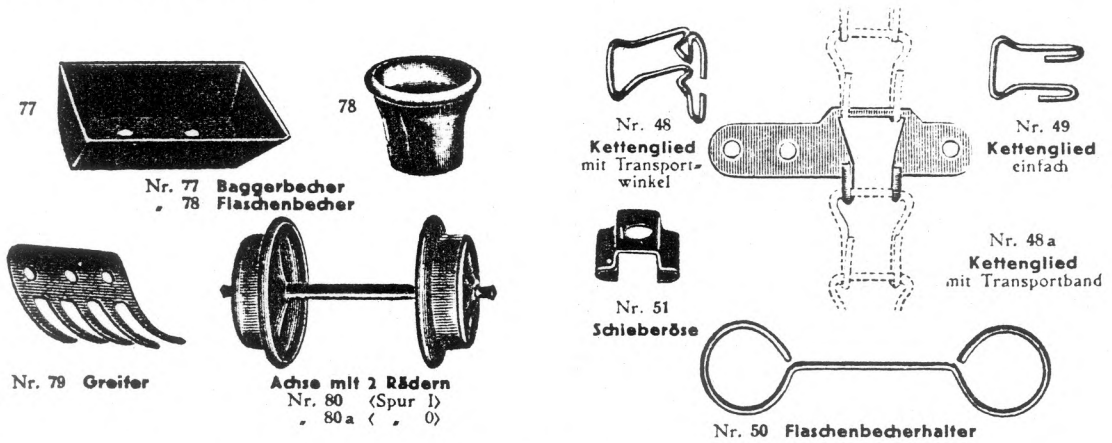
The main additions in 1949 compared with prewar were the Gear Wheels 31/75, 31/95, 31/120 and the Flexible Plates, 163 - 180. This list contained over 250 parts (ex electrical ones), more than in any other list seen. By 1957 the only changes were the addition of the Universal Gear (14 teeth and similar to the MECCANO 27f of 1970) and the deletion of the 2-hole Strip, but by 1959 over 40 more parts had gone, mainly various lengths of Girders and Strips but also a few mechanical parts including the 46 tooth Sprocket. In the next list available, for 1970, many other parts had been deleted with, again excluding electrical parts, less than 190 parts included. The list in MCS under MARKLIN C is very similar but slightly earlier with 11611 still included. By 1978 the total was less than 160 including the new Circular Front Plate for Loco Boilers (14022), and 6 new lengths of Axle Rod. Some new parts were introduced for the Theme Sets of the 1980's and the 1983/84 list (included in MCS in MARKLIN D) shows over 190 parts but by 1989/90 most of these had been deleted and there were less than 160 parts again. For the first time the Pinions and Pulley with integral dog clutch were not listed, nor the Paperclip (14110).

Returning to the sets, the range 99 to 105 introduced in 1947 equated roughly to the prewar 00-5 but with the addition of the new Flexible Plates, Tyres and a few other parts. Each set had, neglecting 'fastenings', roughly 25% more parts than its prewar counterpart and for the 105 the increase was even more, from 581 to 936 parts, with in addition 550 Nuts and Bolts, against 225 in the No 5. The 105 wasn't quite a No 6 but it wasn't far short and the new Flexible Plates made

up in many ways for the fewer Strips, Angle Brackets, etc. And then on top was the 105A but unfortunately no details of this are available. A manual dated 10/47 doesn't show it so it was probably introduced at a later date than the other sets. The contents of sets 99-105 for this period are in MCS(FB), and so are those for sets 1009 to 1014 and 1034 which replaced the 99-105 series in 1957. The new sets were almost identical to those they replaced but again no details are available of the add-on sets 1035 and 1036, and it is not known whether these were the 105A split up into two or whether 1035 replaced 105A and 1036 was a further extension.

The next stage, in 1975/76, was the A, B, C sets, and later the E3, and Dennis Higginson has again sent details of the contents. These sets were said to be a new departure but in fact A is very like the old 1010, and B and C very like 1011 and 1012. E3 is not so near to 1032 but bears it some resemblance. The Set Contents are given overleaf with MECCANO style names for the parts and omitting the connecting sets E1 and E2. No details are to hand of the current M30, M50 and M60 sets except that they are quoted as having 342, 458 and 664 parts compared with 181, 267, 444, and 230 for the A, B, C and E3.

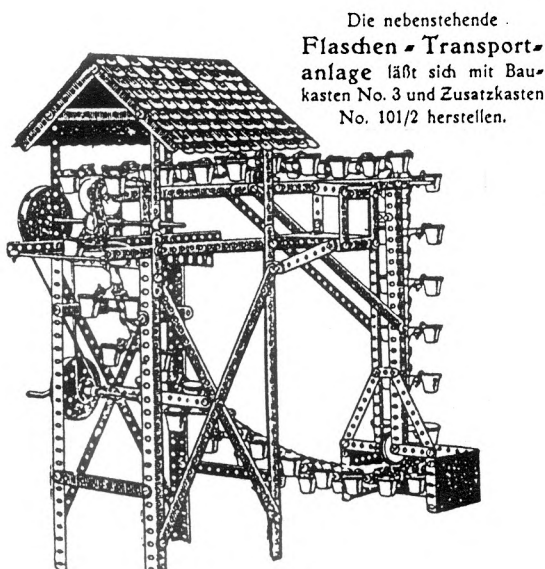
Finally MCS gives the hole spacing of MARBI as 6.35mm and says that it was displaced by MINEX. From Part 1 it is clear that MARBI had the same hole pitch as standard MARKLIN and both it and MINEX continued until WW2.



From the Illustrated List of Parts in the 1931 Manual.

FOOTNOTE. Since the above was written I have received more information from André Barbe and Georges Spinner. A Parts List from a 1922 manual shows that the parts available had not changed since 1920, nor had the set contents. The contents of the No 6 set in 1927 showed some changes, the most important of which were the inclusion of 5 sizes of the Gear Ring, PN 89, and the replacement of 2 x 1" Pulleys, 2 x 25t and 1 x 19t Pinions by the appropriate 'k' variant with integral dog clutch. Other additions were the Eye Piece with Boss (PN 56), while retaining the original version, and the Brackets 65, 65a and 88.

Going back to the 1922 material all is not always what it seems at first glance, the Parts List certainly contains no more parts than that of 1920 but there are two more manuals listed. These are for 'Transportanlagen' and 'Uhren' (Clocks) and must I think be for the Zusatzkasten mentioned in Part 1. In fact the photocopied material I have from the 1922 manual includes an ad



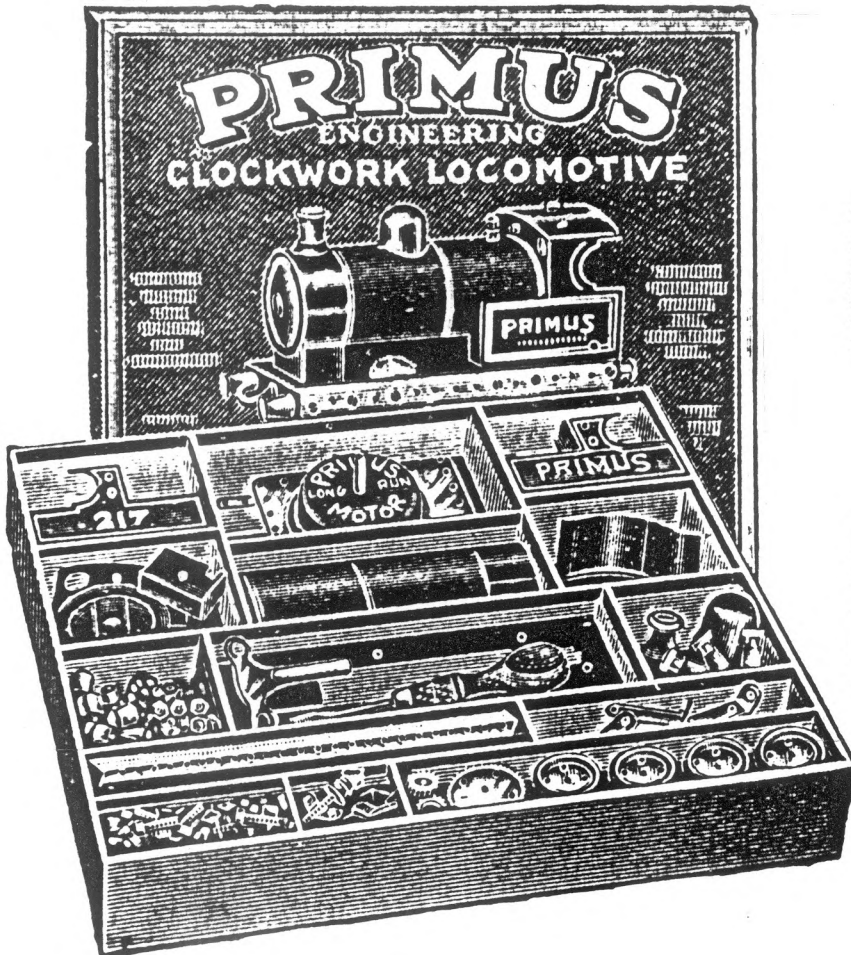
for the Transportanlagen Zusatzkasten Nos 101/1 and 101/2. Two points arise, first some Zusatzkasten existed as early as 1922 and were not introduced in the 1930's as stated in Part 1 (this was an error on my part). Secondly the picture of the 1922 Zusatzkasten clearly shows a number of parts not shown in the Parts List, including Axle Sets (PN 80) and lots of PN 50, Flaschenbecherhalter, their PNs are of course as given in later Lists. Another point of interest is the model opposite which shows how the Flaschenbecherhalter were used, they were attached to a Sprocket Chain (using PN 48 no doubt) and each carried a Flaschenbecher on each side. I can hardly resist the temptation to try to make some parts to see how well it all worked in practice.

[A List of Contents for the M sets is now to hand and will be included in OSN 6]

CONTENTS OF MARKLIN SETS A, B, C, E3

PN	Description	Set:	A	B	C	E3	PN	Description	Set:	A	B	C	E3	PN	Description	Set:	A	B	C	E3
10000	Fishplate		4	4	4	-	10312	Pulley, n/b, 12mm		1	1	1	-	11500	Cord		1	1	2	-
10001	Double Bracket, 1/2"		-	1	4	-	10325	" 25mm		2	4	4	-	11515	Spring Cord, 150mm		-	1	1	-
10002	Angle Bracket, 1/2"		10	14	16	20	10336	Flgd Pulley, 36mm		-	-	4	-	11605	Curved Strip, 5 h		2	2	4	-
10003	Strip, 3 hole		-	2	2	4	10338	Pulley, 38mm		-	-	-	1	11631	Flat Trunnion		-	2	2	-
10004	" 4 "		-	-	-	2	10365	Flgd Wheel, 65mm		-	2	4	-	11632	Trunnion		2	2	2	-
10005	" 5 "		6	7	12	-	10395	Hub Disc, 95mm		-	-	-	1	11700	Spanner		2	2	2	-
10006	" 6 "		-	-	-	4	10450	Gear Wheel, 50t		-	-	-	1	11713	Hook		1	1	1	-
10007	" 7 "		-	2	2	4	10457	" " 57t		-	-	-	1	11716	Crank		1	1	1	2
10009	" 9 "		-	-	2	2	10595	" " 95t		-	-	-	1	11718	Coupling		-	-	-	1
10011	" 11 "		4	6	16	2	10719	Pinion 19t		-	-	-	3	11720	Worm Housing		-	-	-	1
10025	" 25 "		-	4	10	-	10725	" 25t		-	-	-	1	11727	Washer		-	10	10	10
10040	Rev Ang Brkt, 1/2"		-	2	2	2	10901	Pawl		-	-	-	3	11731	Special Bracket		-	-	-	2
10044	Dble Brkt, 3x1x3 h		1	1	1	-	10910	Worm		-	-	-	1	11745	Hanger		-	-	-	1
10045	Double Bent Strip		-	-	1	-	10914	Universal Gear 14t		2	2	2	-	11765	Special Bracket		-	-	-	2
10046	DAS, 2x7x2 holes		-	-	-	1	10918	Gear Ring, 18t		-	1	1	-	11793	Universal Coupling		-	-	-	1
10055	Str 5h, oval end h		-	-	-	2	10940	" " 40t		-	1	1	-	11800	Parts Box		1	1	1	1
10059	Strip 9-hx1/2" pitch		2	2	2	-	10957	" " 57t		-	-	-	1	11810	Parts Tray		1	1	2	1
10067	DAS, 1x5x1 holes		2	4	6	-	11015	Hub Disc, 150mm		-	-	-	1	12400	Plastic Axle Clip		8	8	12	10
10105	Ang Girder, 5 hole		-	-	-	2	11036	Bush Wheel, 36mm		1	1	1	-	14000	Screwdriver		1	1	1	-
10107	" " 7 "		-	-	-	2	11059	Collar		-	2	4	6	14002	Screw, 8.5mm		35	50	85	75
10111	" " 11 "		-	-	-	6	11320	Flgd Plate, 5x11 h		1	1	1	1	14003	" 12mm		15	20	35	25
10125	" " 25 "		-	-	4	4	11330	" " 5x7 h		-	-	-	3	14004	" 25mm		1	1	1	-
10203	Axle, 30mm		-	-	-	3	11340	" Sector Plate		1	2	2	-	14010	Nut		55	75	130	100
10205	" 50mm		2	2	2	3	11405	Flex Plate, 3x5 h		2	2	6	-	14025	Tyre for 10325/914		4	4	4	-
10209	" 90mm		-	-	2	3	11415	" " 5x5 h		2	4	6	-	14036	" " 10336		-	-	4	-
10211	" 115mm		3	3	4	-	11419	" " 5x9 h		-	-	4	-	14900	Manual, German		1	1	1	-
10213	" 130mm		-	1	3	1	11421	" " 5x11 h		2	4	6	5	14902	" "		-	-	-	1

NOTE: Sets E1 and E2 convert A into B, and B into C. They contain exactly the parts necessary to do so.



PRIMUS LOCOMOTIVE OUTFIT

Contains 109 separate parts which are required to construct the Locomotive. The finished model is one of the best examples of constructional toys ever offered. Complete with Primus Clockwork Motor, fitted with control levers and reversing gear.

Price (including Instruction Book)

37/6

This set makes one locomotive and the superstructure is nicely made and finished. The wheels though are standard PRIMUS Flanged Wheels and they run in standard Trunnions, and somehow to me they don't marry happily with the top part. A rare item this and the ad, from a Bassett-Lowke catalogue of probably 1926 or 1928, came from Mick Burgess.

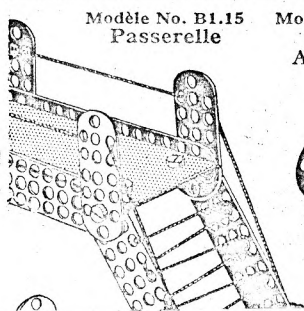
NEW FACTS - KLIPTIKO MCS does not include details of the Contents of Sets, the Table below (½ scale) was contributed by Geoff Wright and came from a manual with 20/B.P. and 9/32 on the back cover. Note the Set 0 which is not just a smaller version of Set 1, also the unnumbered Screws and Nuts, what were they used for?

CONTENTS OF SETS.

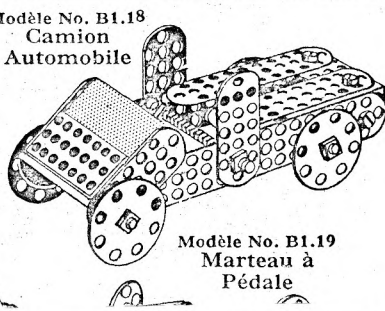
No.	Description	KLIPTIKO SETS.						ACCESSORY SETS.					
		1	2	3	4	5	6	0	1A	2A	3A	4A	5A
No. 1.	4 in. Clips ..	29	56	68	118	172	222	6	27	12	50	54	50
No. 2.	Half Clips ..				4	4	6	4			4		2
No. 3.	2 in. Tubes ..		6	6	10	16	24	2	6		4	6	8
No. 4.	4 in. Tubes ..	4	6	6	6	12	18	2	2			6	6
No. 5.	6½ in. Tubes ..	10	10	10	20	20	24	2			10		4
No. 6.	10 in. Tubes ..		8	8	12	24	46		8		4	12	22
No. 7.	6 in. Bent Tubes ..				12	12	12				12		
No. 8.	10 in. Bent Tubes ..					12	12					12	
No. 9.	1½ in. Wheels ..	4	5	5	5	5	8	4	1				3
No. 10.	3½ in. Wheels ..			4	4	4	4			4			
No. 11.	Buckets ..			12	20	30	32			12	8	10	2
No. 12.	Hopper ..			1	1	1	1			1			
No. 13.	Hooks ..	1	1	1	1	1	4						3
No. 16.	Hub Caps ..	4	4	4	4	24	24	4				20	
	Screws and Nuts ..				2	2	2				2		
	Cord ..	1	1	1	1	1	1						
	Cables, 4 ft. ..						2						2
Total number of pieces ..		53	97	126	220	340	442	24	44	29	94	120	102

INGENIEUR FRANCAIS This set is not I think mentioned in MCS, and all I have on it are 2 photocopied pages from a manual, given to me many years ago by M. Damotte of Central-Train. They are identical to the equivalent pages of the BRITISH MODEL BUILDER Outfit No 1 leaflet, apart from the language of course, and the Model Nos are the same. Parts of the two pages are reproduced below.

Ces Modèles sont faits avec la Boîte Ingénieur Français No. 1.

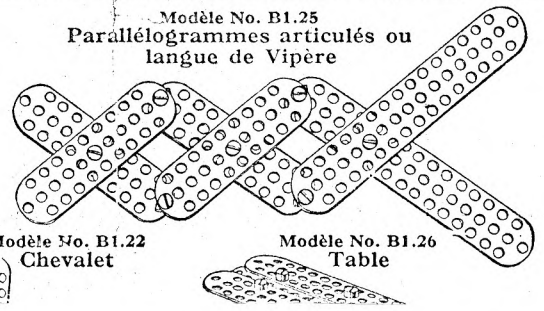


Modèle No. B1.15
Passerelle



Modèle No. B1.18
Camion
Automobile

Modèle No. B1.19
Marteau à
Pédale



Modèle No. B1.25
Parallélogrammes articulés ou
langue de Vipère

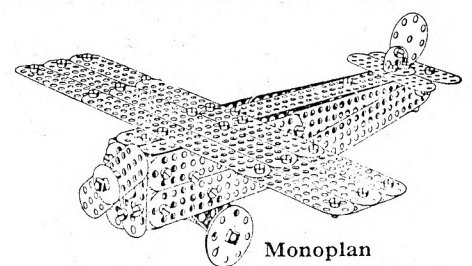
Modèle No. B1.22
Chevalet

Modèle No. B1.26
Table

COMPLETEZ VOS BOÎTES !

Jeunes gens! Examinez attentivement les beaux super-modèles reproduits sur cette page. Ils sont tous construits avec des pièces Ingénieur Français et chacune de ces pièces représente un véritable petit chef-d'œuvre de mécanique. Vous serez certainement désireux de monter de beaux et attrayants modèles, semblables à ceux qui figurent ici; vous serez à même de le faire, en complétant la Boîte que vous possédez déjà. Il suffit pour cela de faire l'acquisition de la Boîte No. 1 ou No. 2. Plus vous aurez de pièces, plus grandes et intéressantes seront vos possibilités de construction. L'Ingénieur Français est un passe-temps qui vous procurera des moments de vrai et inoubliable plaisir.

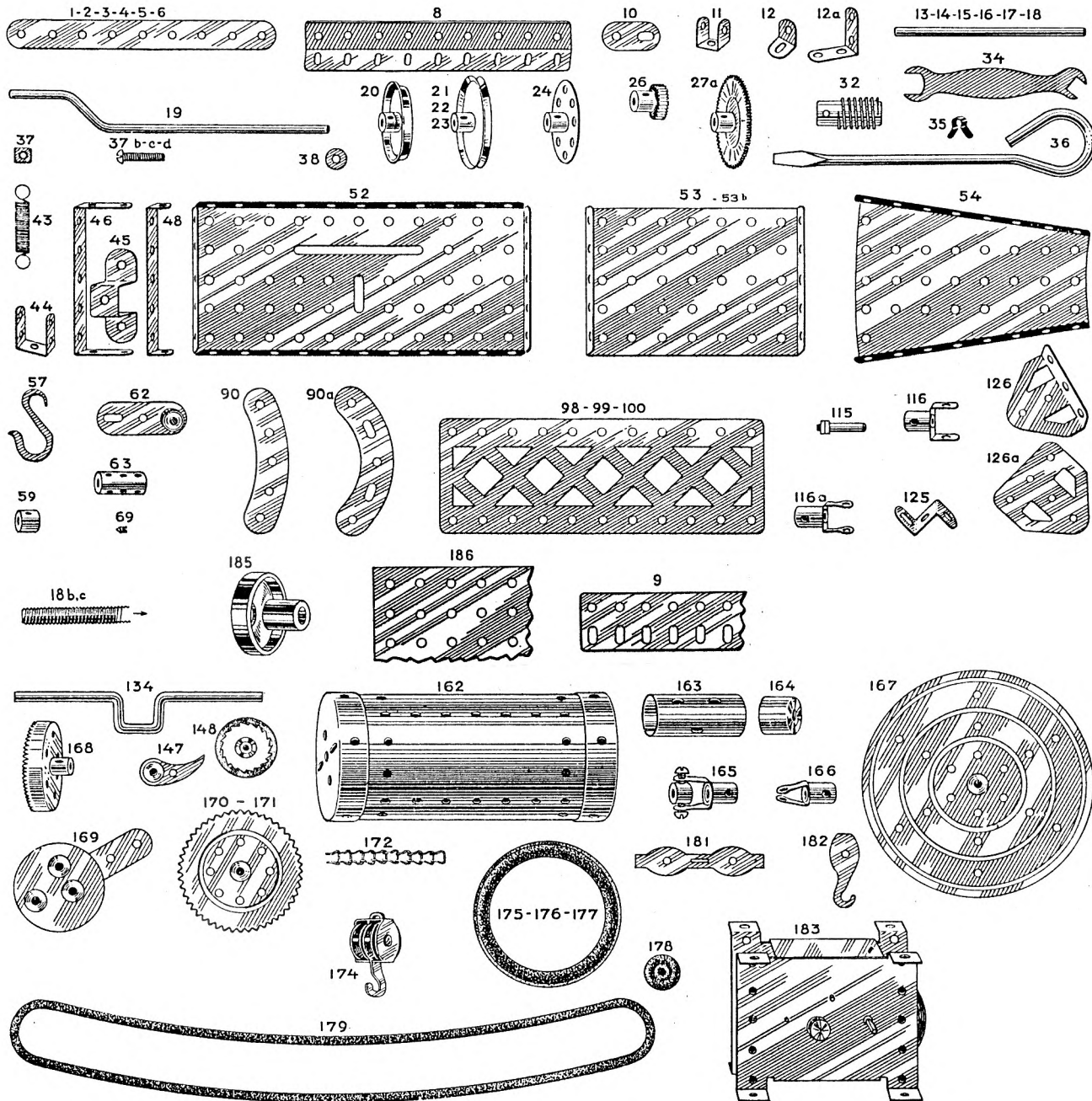
Un Choix de Modèles Ingénieur Français



Monoplan

NEW FACTS - TEKNO Brief details of this Norwegian system are included in MCS(FB) but more information is now available from a Price List and Manual that Pat Crozier-Cole lent me. He came across them in Norway in about 1970 and bought one part, a No 52 Flanged Plate, as a souvenir, but at least it does prove that the hole spacing is $\frac{1}{2}$ ". Reproduced below is the illustrated list of parts from the manual, the Price List shows exactly the same. As can be seen the parts mostly resemble 1930's style MECCANO but there are quite a few variations like the eccentric, Part 185, and 186 which, from the models in the manual, seems to be a fully perforated plate, 11x25 holes (see the Floating Crane opposite). The 2" and 3" Pulleys, 20a and 19b, are not illustrated but again from the models in the manual, the 2" has 4 holes while the 19b is to the MECCANO pattern (see opposite and the front cover). There are two motors, the CW one shown and an electric (PN 187), but only the CW is used in any of the models in the manual. [cont on p104]

DELER



- | | | | | | |
|-------------------------|----------------------------|--|----------------------------|------------------------------------|------------------------------|
| 1 Strimmel 25 hull | 9d Flat bjelke 9 hull | 20a Snorskive m. nav 50 mm | 43 Strekkfjær | 69 Seltskruer pr. dus. | 164 Kopp |
| 1a Strimmel 19 hull | 9e Flat bjelke 7 hull | 21 Snorskive m. nav 40 mm | 44 Bøyet strimmel U | 90 Krum strimmel 6 cm radius | 165 Kobling, universal |
| 1b Strimmel 15 hull | 9f Flat bjelke 6 hull | 22 Snorskive m. nav 30 mm | 45 Dobbelt bøyet strimmel | 90a Krum strimmel 9.5 cm radius | 166 Koblingsledd |
| 2 Strimmel 11 hull | 9g Flat bjelke 5 hull | 23a Snorskive m. nav 15 mm | 46 Dobbelt vinkelstrimmel | 98 Perforert mønsterplate 25 hull | 167 Dreieskive 96 mm |
| 2a Strimmel 9 hull | 9h Flat bjelke 3 hull | 23b Snorskive u. nav 15 mm | 48 Dobbelt vinkelstrimmel | 99 Perforert mønsterplate 19 hull | 168 Vinkelstannhjul |
| 3 Strimmel 7 hull | 10 Koblingsstykke | 24 Skive med boss | 48a Dobbelt vinkelstrimmel | 100 Perforert mønsterplate 15 hull | 169 Svingestykke m. eksenter |
| 4 Strimmel 6 hull | 11 Dobbeltvinkel U | 24a Skive uten boss | 48b Dobbelt vinkelstrimmel | 101 Perforert mønsterplate 11 hull | 170 Kjedefjøl 53 mm |
| 5 Strimmel 5 hull | 12 Vinkel 12 x 12 mm | 26 Tannhjul 15 mm | 48a Dobbelt vinkelstrimmel | 102 Perforert mønsterplate 9 hull | 171 Kjedefjøl 28 mm |
| 6a Strimmel 3 hull | 12a Vinkel 25 x 25 mm | 27a Tannhjul 40 mm | 48b Dobbelt vinkelstrimmel | 103 Perforert mønsterplate 7 hull | 172 Drivkjede, 1 m |
| 8 Vinkelbjelke 25 hull | 13 Aksel 29 cm | 32 Snekkedrev | 90 x 12 mm | 104 Perforert mønsterplate 5 hull | 174 Taljeblokk |
| 8a Vinkelbjelke 19 hull | 14 Aksel 20 cm | 34 Skrunøkkel | 52 Dekkplate med vinkel | 115 Stift med muttere | 175 Gummiring for 19b |
| 8b Vinkelbjelke 15 hull | 15 Aksel 13 cm | 35 Rytterklemme pr. dus. | 14 x 6 cm | 116 Gaffelkobling, bred | 176 Gummiring for 20a |
| 8c Vinkelbjelke 11 hull | 15a Aksel 11,5 cm | 36 Skrutrekker herdet | 53 Dekkplate med vinkel | 116a Gaffelkobling, smal | 177 Gummiring for 22 |
| 8d Vinkelbjelke 9 hull | 16 Aksel 9 cm | 37 Mutter 5/32" pr. dus. | 9 x 6 cm | 125 Z-vinkel | 178 Bildekk pr. stk. |
| 8e Vinkelbjelke 7 hull | 17 Aksel 5 cm | 37b Maskinskruer 5/32" x 1/4" pr. dus. | 126 Knuteplate med vinkel | 126a Knuteplate | 178 Miniatur gummihjul |
| 8f Vinkelbjelke 6 hull | 18a Aksel 4 cm | 37c Maskinskruer 5/32" x 3/4" pr. dus. | 126b Knuteplate | 134 Krumtappaksel | 179 Drivrem |
| 8g Vinkelbjelke 5 hull | 18b Aksel 9 cm gjenget | 37d Maskinskruer 5/32" x 3/8" pr. dus. | 137 Knuteplate | 147 Palhake | 181 Bæredåk |
| 8h Vinkelbjelke 3 hull | 18c Aksel 3,8 cm gjenget | 38 Stoppkve pr. dus. | 138 Knuteplate | 148 Palhjul | 182 Taljekrok |
| 9 Flat bjelke 25 hull | 19 Sveiv 19 cm | 38a Stoppkve pr. dus. | 139 Krumtappaksel | 148 Palhjul | 183 Fjærmotor |
| 9a Flat bjelke 19 hull | 19a Sveiv 13 cm | 38b Stoppkve pr. dus. | 140 Krumtappaksel | 148 Palhjul | 185 Kamhjul m. eksenter |
| 9b Flat bjelke 15 hull | 19b Snorskive m. nav 75 mm | 40 Linsnøre | 141 Krumtappaksel | 162 Strimmel med boss | 186 X-plater 32 x 15 cm |
| 9c Flat bjelke 11 hull | 20 Jernbanehjul | | 142 Krumtappaksel | 163 Liten sylinder | 187 Elektrisk motor |
| | | | 143 Krumtappaksel | 164 Kopp | 188 Plasthjul 60 mm |

TEKNO

Pr. 1. sept. 1964

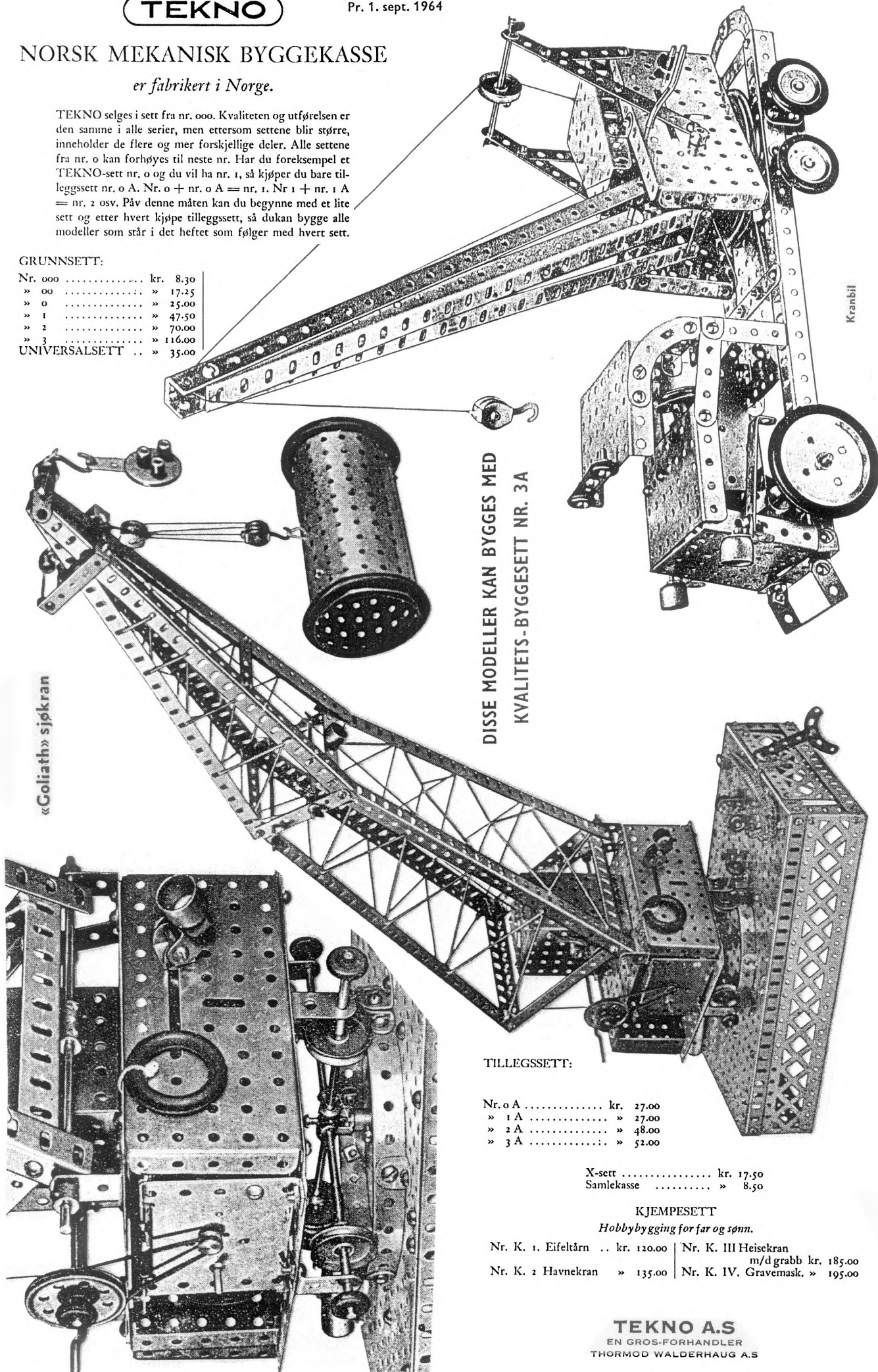
NORSK MEKANISK BYGGEKASSE

er fabrikkert i Norge.

TEKNO selges i sett fra nr. 000. Kvaliteten og utførelsen er den samme i alle serier, men ettersom settene blir større, inneholder de flere og mer forskjellige deler. Alle settene fra nr. 0 kan forhøyes til neste nr. Har du foreksempel et TEKNO-sett nr. 0 og du vil ha nr. 1, så kjøper du bare tilleggssett nr. 0 A. Nr. 0 + nr. 0 A = nr. 1. Nr 1 + nr. 1 A = nr. 2 osv. Påv denne måten kan du begynne med et lite sett og etter hvert kjøpe tilleggssett, så du kan bygge alle modeller som står i det heftet som følger med hvert sett.

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DISSE MODELLER KAN BYGGES MED
KVALITETS-BYGGESETT NR. 3A

«Goliath» sjøkran

Kranbil

TILLEGSSETT:

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TEKNO A.S
EN GROS-FORHANDLER
THORMOD WALDERHAUG A.S

Two models from Sets 3+3A are shown on the previous page together with parts of the Price List (top left and bottom right). It is dated Sept 1964 and lists 6 basic outfits 000-3 plus an add-on 3A and various others - K.1 to K.IV look as if they may be sets to build individual models.

The manual shows models from the 00 outfit to the 3A and although they are not by any means copies of early 1930's MECCANO models, many of them, particularly the vehicles, have the same skeletal look to them. One model, a helicopter, would not have been a prewar model. The illustrations are halftone and some of them are not very clear and leave quite a bit of mechanical detail to be worked out by the builder. The front cover includes a small photo of the largish loco that is illustrated in MCS, and the back cover shows a selection of models, some of which are shown on the front cover of this issue. Perhaps the Tower is from the K.1 set?

SUMMARY OF MANUAL

#Name: TEKNO #Details of maker: none #Dates or Ref Nos: none #Page size: 300x210mm deep #No of pages: 16 plus 4 unnumbered covers #Language: Norwegian #Printing: All halftone except line drawings of Illustrated Parts. Cover mostly in shades of blue & grey with yellow band at bottom. #Page nos of Parts List & highest PN: 16,iii. 188 #Page nos of Set Contents & highest PN: none #Sets covered: 00-3A #No of models for each set: 14,17,14,9,6,2 #Name, model no, page no of first and last model of each set: NB. No model nos. 00: Vedsager 1, Tenner 2. 0: Personvogn 3, Boretarn 5. 1: Vifte 6, Mixmaster 8. 2: Verksted 9, Gravemaskin.10. 3: Brannbil 11, Rambukk 13. 3A: "Goliath" sjokran 14(page not numbered), Kranbil 15. #Other notes: Back cover shows large "Eiffel" Tower & 6 other models.



EXHIBITION OF OTHER SYSTEMS AT GLOUCESTER Following the successful exhibition of Malcolm Hanson's "Building Toys" at the Gloucester Folk Museum last year, there is now to be a similar event but this time of Malcolm's "mechanical" Other Systems. These will be on show at the Museum between 14th December next and 29th March 1992, and there will be some 40 exhibits of sets/models. Among them will be some of the better known UK systems such as TRIX, PREMIER and VOGUE, early ones like STRUCTATOR and ARKIRECTO (the mechanical side of it), and foreign sets including STABIL, CONDOR and ERECTOR. There will also be a number of rare UK sets including TECNIKIT, the EMPIRE EDUCATIONAL KIT, CLIFFIX, MEX, and PA-DI-CA-CO, and DIY sets represented by JUNEERO, MANUFAX and PRESTACON. And in case you wonder what all this and much more besides is going to cost, admission is free: details of opening times etc from the Museum on 0452 26467.

ERECTOR 1991 As mentioned in OSN 3 MECCANO now own the ERECTOR name and since then ERECTOR has been relaunched in the USA. Ed Barclay has sent an 8 page brochure for the new, 1991, range of sets - the front cover shows a red (flexible type) plate, 9x13 holes (with a hole spacing of approximately 15mm), which



has the 2 panels, shown right, on it. The sets included are JUNIOR (plastic) ERECTOR Sets A and B, BASIC ERECTOR sets 1 to 4, ADVANCED ERECTOR Sets 5 and 6, and ULTIMATE ERECTOR, Set 10. All the sets look identical to the standard Calais range but the boxes have the MECCANO/ERECTOR badge, as on the front cover of the brochure.

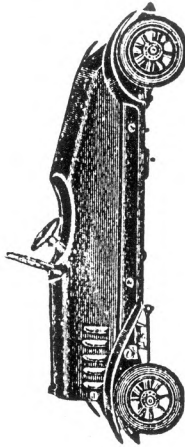


It is a bright, attractive brochure with some nice models illustrated and includes a short introduction from "Dominique Duvauchelle, President, Meccano/Erector". No model is shown from the No 10 set but it does say that apart from manual models there are enough parts in the set to build "any of the 1,500,000,000 you're bound to think up on your own".

THE "STRUCTO" Constructional Motor Cars.

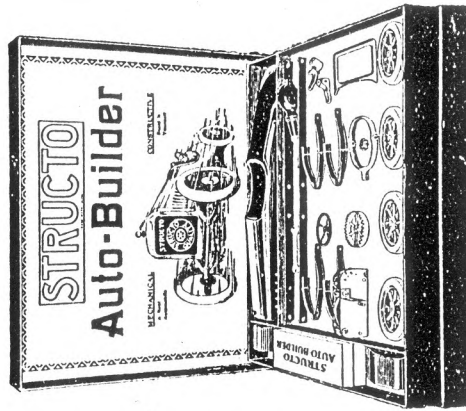
While the 'true to life' character of the "Structo" Model Cars has not been surpassed by any other make of mechanical toy, the system adopted by which the owner of the model builds it himself, gives it an additional fascination.

The "Structo" Auto Cars are miniature reproductions of the real thing. The motors are "clockwork" of exceptional power. The mechanism is arranged on the lines of the prototype, with the proper design of transmission and steering gear. Three types of cars are introduced in the series offered.



BEARCAT MOTOR No. 10.

A smart sturdy motor car equipped with double-unit motor, which delivers ample power to the rear wheels to drive car at high speed for a long time. Direct shaft drive; die-cast gears on rear axle. "Start" and "Stop" lever. 16 in. over all. Wheel base 12½ in. Finished in red enamel, nickel finish and black mud guard. Artillery type wheels, red hubs and spokes. This is an excellent model of a real motor car. Complete in display box as illustrated, ready to be constructed.



BEARCAT MOTOR No. 10

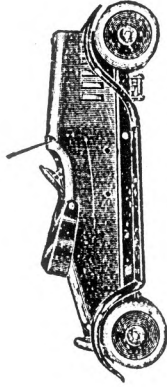
In box ready to build.

Price 40/-

"STRUCTO" Touring Car, No. 12.

This is a model of a de-luxe Touring Car fitted with a heavy triple spring motor, cut steel gears, disc wheels, spare wheel, rounded wheel splashers, plate glass wind screen and other features of a high-class motor car. It has two speeds forward and one reverse, and proper motor car steering gear. The model is 16 in. long over all, with a wheel base of 12½ in. Boxed in parts ready for assembly.

PRICE 57/6

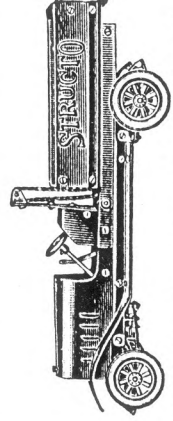


"STRUCTO" De Luxe Construction Outfit No. 12.

"STRUCTO" Commercial Car, Model No. 14.

This model Lorry carries a big load and is fitted with a tipping body and swinging rear door. It has a powerful triple spring motor, operating artillery wheels with a base of 12½ in. The model measures 18 in. long over all, and is finished in red enamel with black and nickel-plated fittings. Boxed in parts as other models.

PRICE 63/-



"STRUCTO" Construction Outfit No. 14.

Commercial Tipping Lorry.

THE CANADIAN MECCANOMAN'S NEWSLETTER (CMN) As I mentioned in my Editorial, as the result of a suggestion by Ed Barclay, the Editor of CMN, there is now an arrangement whereby he will collect North American subs for OSN and I will receive Sterling subs for CMN, the object being to avoid hassle and bank charges for subscribers. So anyone wishing to subscribe to CMN can send me £11 for the current year, cheques payable to P.A.Knowles please, just as for OSN.

I have subscribed to CMN for some time, it appears quarterly and is properly printed with real photos. The last issue ran to 20 pages and apart from items of current news, hints and tips, and the like, there was a photo feature on last year's Henley exhibition, full instructions for a most intriguing small steam engine with a revolving cylinder (which I'll not be able to resist making one day, but maybe not from MECCANO), and details of extensive additions to the well known Marble Bouncer, including a return path for marbles that have 'got away'. The sub also covers CMN Model Plans which are issued from time to time and contain full instructions for larger models. The last was a Gobeze/Partridge Remontoire Clock described by Keith Cameron, and the previous one a Chemical Fire Engine by Don Redmond, both splendid models of course.

Incidentally anyone is welcome to pay for CMN through me, there is no need to be an OSN subscriber, so if you have friends who might be interested please pass the word.

QUERIES

7. (OSN 4, p53) Nothing on NEO-STRUCTOR itself but Don Redmond wrote about what follows the name as below, and I would be pleased to include the full version of any other abbreviations that are sent in.

"BREV. FR. & ET." is an abbreviated form of the French for "patented in France and abroad". Perhaps a list could be accumulated and published of such mysterious abbreviations which occur in "other systems" parts and literature--such as "S.G.D.G.", "Ind. Arg." etc.

9. The MECCANO Coupling, PN 63, has three transverse bores, each at 90° to each other so the outer two are parallel. The MARKLIN equivalent again has three transverse bores but two adjacent ones are parallel and the third is at right angles. Originally MARKLIN used the MECCANO pattern but changed the design sometime in the 1920's. So why was the change made? Can anyone think of cases where there is a significant advantage in the MARKLIN configuration? The MECCANO one lends itself to making forks, sliding on rods $\frac{1}{2}$ " apart, being bolted across two holes of a Strip, and so on.

10. In MCS there is an aero set listed under METALCRAFT 'LYONS'. The lid of the set is shown and METALCRAFT Spirit of St. Louis can be seen, but nowhere in the entry can I see LYONS - where does that name come from please?

SMALL ADS

DINKY BUILDER, post-war blue and yellow. 31 Plates, including 1 with window and 1 with window/door, and 11 Rods. Not as new but quite good condition. £3 plus carriage (weight about 350g)

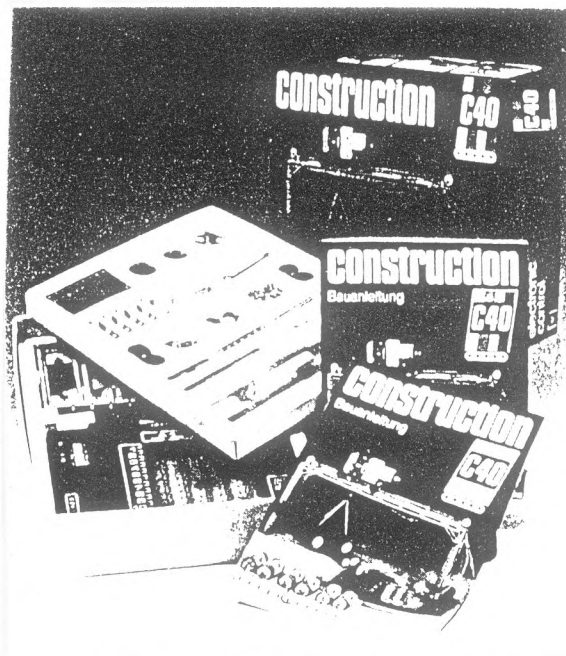
OS PHOTOS. At Skegex I took 60 colour photos of 49 Other Systems, mostly Frank Beadle's display cases of parts. The quality varies but I have found similar but less clear ones taken previously, very useful. Complete set of 6"x4" reprints from the negatives available at £12.50 plus carriage (weight about 300g). List of photos on request. Individual prints could be supplied at £0.50 each plus post.

TRIX. Remains of the large lot advertised in OSN 3 available as individual parts. Most available, list on request.

TRIX. Large collection which looks as if it was intended for the large TRIX Travelling Gantry Crane. Includes the Complete Engineering Manual and 4 motors but too few Nuts and Bolts (substitutes could be supplied). Over 330 parts excluding N&Bs (very little rust). £75 plus carriage.

All the above from the Editor but he would in all cases prefer to exchange for other OS parts, sets or literature, with cash adjustment if necessary.

CONSTRUCTION C40 ELECTRONIC CONTROL SET News of this set has recently come from Brian Rowe although how long it has been in production is not known. In a German educational catalogue it says that the set contains electric, electronic, and mechanical parts, 367 in total, including an Electronic Controller EC1800, a Battery Holder for 6 cells and 2 Geared Motors. It is said to be suitable for 10 year olds and to offer great scope to hobbyists in, for example, controlling model trains, making lights flash sequentially, and programmed music. Programmes can be easily changed and 10 programme steps are possible. Other applications mentioned are sound generators, tachometers and timer units. It concludes by saying that 4 models are described in the 32 page, A4 size Manual (colour throughout). Thanks to Peter Kessler for translating the above from the German original.



More details of the set will be included in the next issue but the little I can gather from the German language manual indicates that there are enough standard parts in the set, including 100 Nuts, to allow simple models to be made that demonstrate automatic reversing of 1 or 2 motors when limits of travel are reached. One model is for example the simple Gantry Crane that you may be able to make out on the cover of the manual in the illustration. If anyone has the necessary expertise I would welcome comments on the potential of this set, in terms if you like of the claims for it quoted above.

The C40 set is rather more expensive than other CONSTRUCTION outfits, but it does of course contain 2 geared motors and the electronic controller; in the German catalogue it is listed at DM75 and a C03 is 43.65. The C40 and other CONSTRUCTION material including spare parts may be available from Brian (23 Courtenay Park, Newton Abbot, TQ12 2HB) for anyone interested. On a less happy note I am told that the factory where CONSTRUCTION is made, in what was East Germany, is not working at present.

MYSTERY PART NO 13 David Martin would like to positively identify a 2" Pulley fitted with a black rubber, ribbed Tyre, with OLYMPIC AIR RIDE MULTI RIB moulded into both sides. The Pulley is similar in design to MECCANO PN 20a (3/8" dia, d/t 5/32W) and the two examples found both have traces of dark red paint on one side, whilst on the reverse one is painted medium green and the second has no paint on it at all. These parts were found among others stamped BUZ and EZY-BILT and the Tyres do look rather like the EZY-BILT PN 25A in MCS.

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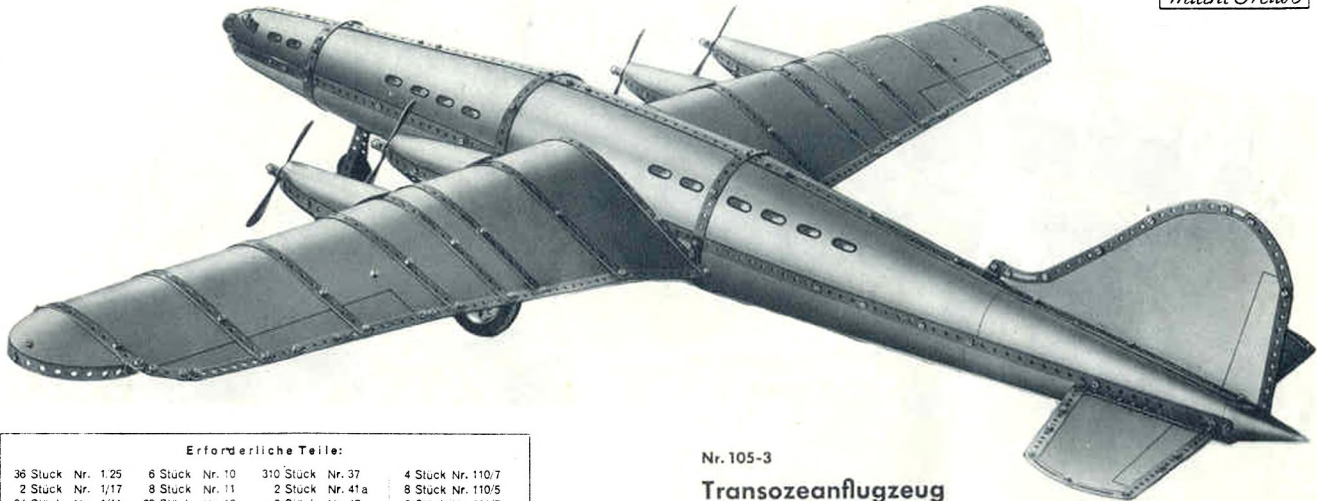
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CONTRIBUTIONS. If possible please type these, single spaced, on one side of the page only, within a width of 6 $\frac{3}{4}$ " (170mm).

Mit **MARKLIN**-Metallbaukasten Nr.105 (104+104A) gebaut



Nr.105-3
Transoceanflugzeug

Spannweite 70 Meter
Höhe 15 Meter
Rumpflänge 53 Meter
Gesamtwicht bei Höchstbelastung etwa 130 Tonnen
Höchstgeschwindigkeit 500 Kilometer in der Stunde

Erforderliche Teile:					
36 Stück Nr. 1/25	6 Stück Nr. 10	310 Stück Nr. 37	4 Stück Nr. 110/7		
2 Stück Nr. 1/17	8 Stück Nr. 11	2 Stück Nr. 41a	8 Stück Nr. 110/5		
34 Stück Nr. 1/11	23 Stück Nr. 12	2 Stück Nr. 47	2 Stück Nr. 111/7		
12 Stück Nr. 1/9	1 Stück Nr. 13/30	21 Stück Nr. 59	2 Stück Nr. 111/5		
10 Stück Nr. 1/7	4 Stück Nr. 13/9	2 Stück Nr. 60/9	4 Stück Nr. 209/21aN		
2 Stück Nr. 1/5	1 Stück Nr. 13/5	2 Stück Nr. 60/7	1 Stück Nr. 209/22N		
2 Stück Nr. 1/4	1 Stück Nr. 13/3	8 Stück Nr. 60/5	31 Stück Nr. 180		
2 Stück Nr. 1/3	4 Stück Nr. 21a	3 Stück Nr. 66/9,5	2 Stück Nr. 41a		
13 Stück Nr. 8/25	2 Stück Nr. 22	1 Stück Nr. 88			
2 Stück Nr. 8/17	5 Stück Nr. 23	2 Stück Nr. 94			
12 Stück Nr. 8/11	1 Stück Nr. 24	2 Stück Nr. 96			

Im geräumigen Flugzeugrumpf befinden sich: Pilotenstand, Navigationsraum und der Raum für den Kapitän. Dann folgen die Wasch- und Toiletten-Kabine, ein komfortabler Aufenthaltsraum mit Bar, eine Küche, ein großer Speisesaal und ein zweiter Aufenthaltsraum, in dem nachts die Passagiere in bequemen Betten schlafen können. Die Fracht- und Gepäckräume, sowie die Unterkunft für die Flugzeugbesatzung sind in den Rumpfboden untergebracht. Dieses Riesenflugzeug wird für Langstreckenflüge über die Ozeane eingesetzt. Flugzeit: LONDON—NEW YORK etwa 15 STUNDEN.

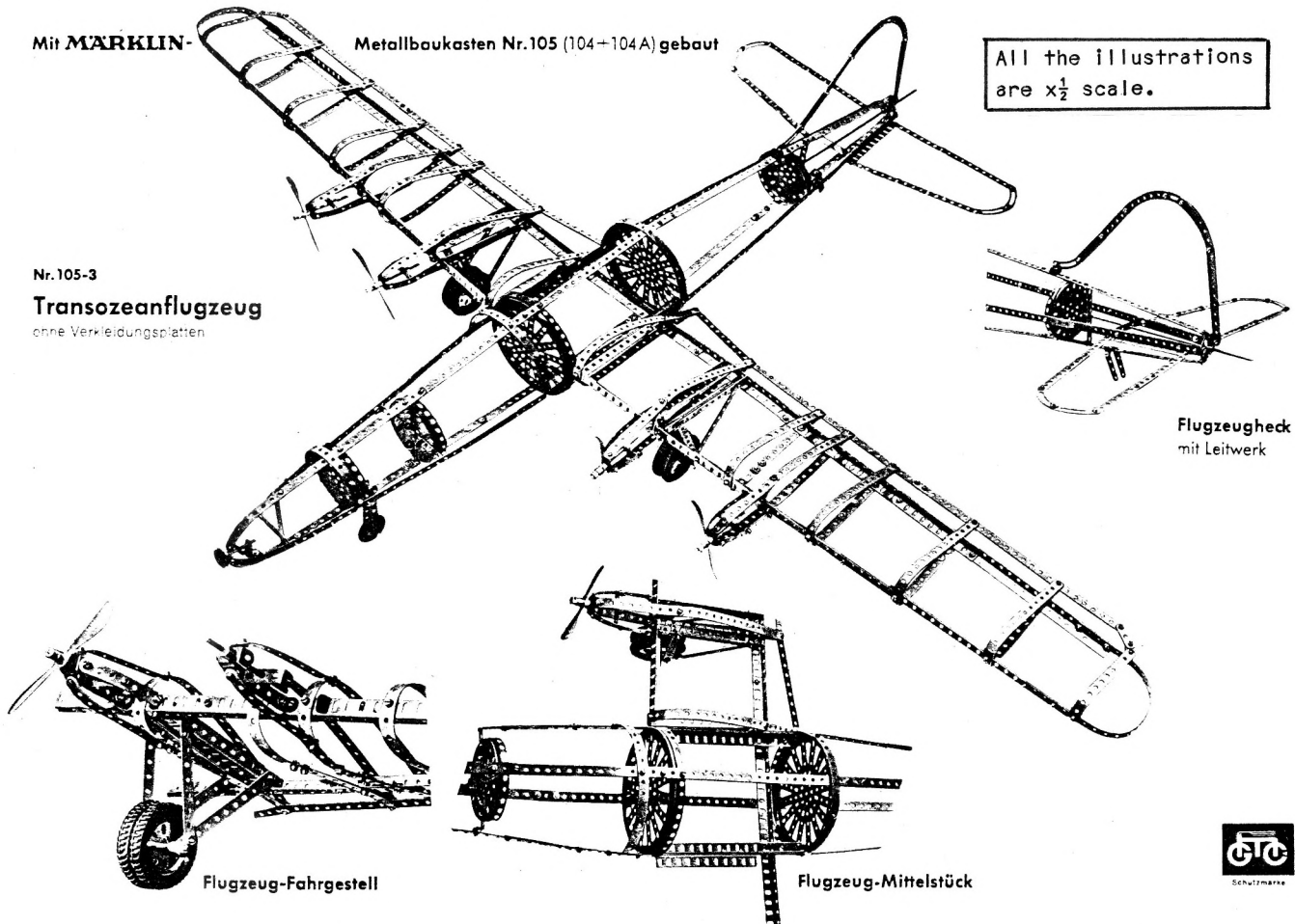
Verkleidungsplatten Nr. 180 (31 Stück) sowie 2 Propeller Nr. 41a sind im Baukasten Nr. 105 nicht enthalten und müssen hinzugekauft werden.

Alle Abbildungen sind so deutlich und leicht verständlich gehalten, daß beim Bauen keine großen Schwierigkeiten entstehen. Die Modelle sehen oft komplizierter aus, als sie tatsächlich sind.

Mit **MARKLIN**-Metallbaukasten Nr.105 (104+104A) gebaut

All the illustrations are $\times \frac{1}{2}$ scale.

Nr.105-3
Transoceanflugzeug
ohne Verkleidungsplatten



Flugzeugheck mit Leitwerk

Flugzeug-Fahrgestell

Flugzeug-Mittelstück



This model is shown in a 1947 Manual 71z (Ref: AN 1047 b) which introduces the new sets 99 to 105 and the new Flexible Plates. The skin of the Airliner requires 31 of PN 180, a Flexible Plate, Unperforated, and said in a later Parts List in English, to measure $12\frac{1}{4} \times 5\frac{3}{8}$ ". It is explained that none of these are included in Set 105 and in fact the part is not mentioned elsewhere in the manual, including the list of Flexible Plates shown as new parts at the beginning of it. There are no instructions (I think) on how to make the model (it merely says that all will be clear from the illustrations, and that the model looks more complicated than it really is), and there is no mention of how to shape or make holes in PN 180, although it was presumably of aluminium so not too difficult to work.