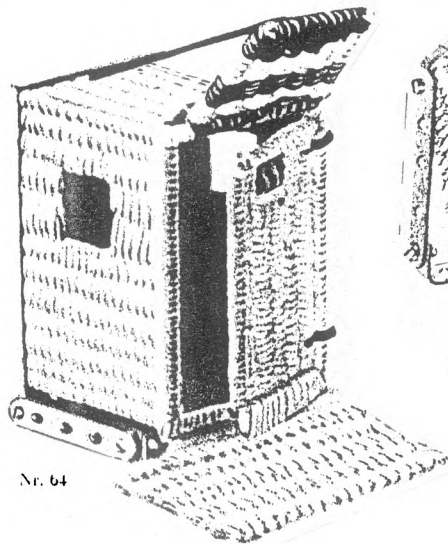


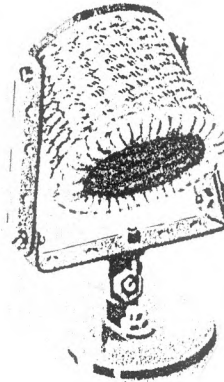
EDITORIAL The article on Walther's STABIL in this Issue speaks for itself, but nonetheless I want to thank Werner Sticht for all the work and care that I know has gone into assembling the history of this important system. Thanks are also due to all who made available their own material: without it there would have been many more gaps in the story. STABIL was the first major system to appear after MECHANICS MADE EASY, and although it obviously borrowed Hornby's notion of equispaced holes, the use of threaded rods as axles had many advantages at a time when MME wheels were held, a little inse-

curely, by the rather fragile tongued clips of the day. Later on STABIL was, as far as I know, the only toy system to include shafts of up to an inch in diameter, running in ball bearings. If anyone has experience of using these unusual parts, I'd be most interested to have details.

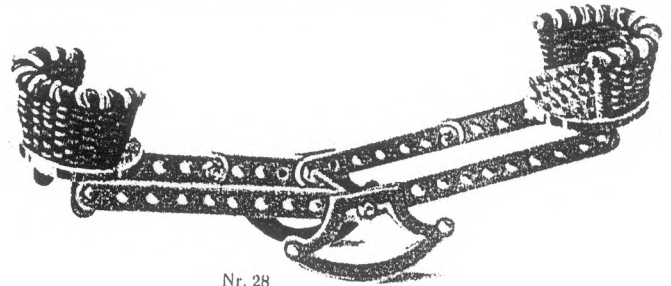
After my remarks in OSN 12 about damage to envelopes in the post, one or two subscribers have written to me that their Newsletters have arrived somewhat the worse for wear. If any of your copies have suffered thus, please mention it when you next write.



Nr. 64



Nr. 35



Nr. 28

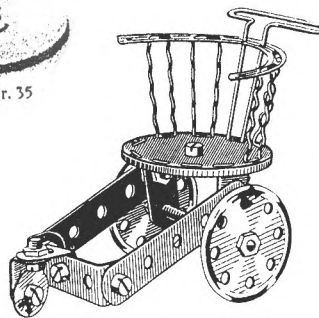
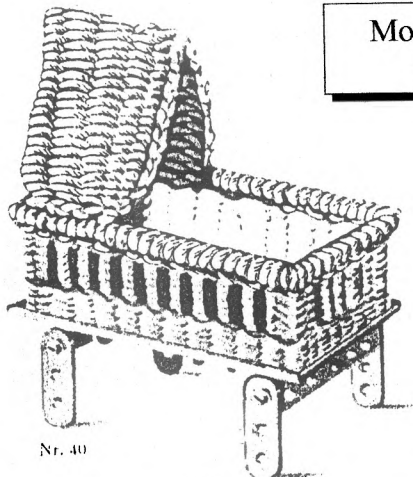


Abb. 15 a



Modelle aus STABILA Nr. 2

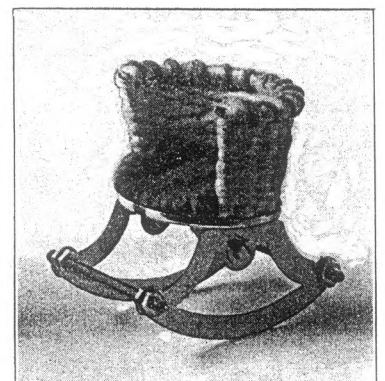
More details of STABILA
are given on p343.



Nr. 40

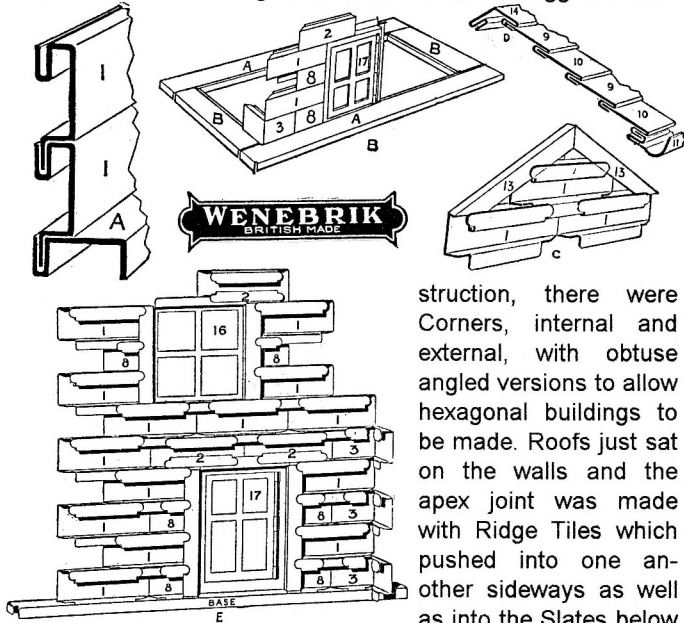


Nr. 61



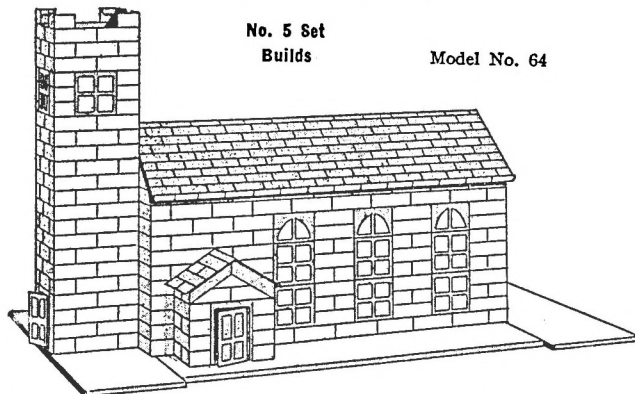
WENEBRIK In the manual it says to pronounce it as Weeny Brick. This quite well known, in the UK anyway, pre-war architectural system was made in Birmingham by William Bailey (Birmingham) Ltd., the firm that also made KLIPTIKO. By oversight I suppose, there's no MCS entry for it, but now courtesy of Geoff Wright and David Hobson, I have here copies of a manual, the 1915 patent (No.382), and a beautiful colour copy of the lid of a Set No.0, black with a large label in full colour, with 2 boys and a girl in old-fashioned clothes showing off the WENEBRIK buildings they've made, against a backdrop of red roses and a country village. Thanks also to Malcolm Hanson for additional information. 6 sets, 0 to 5, plus linking sets were sold, and the largest contained 1168 parts including 28 Windows and 4 Doors.

There were 27 parts in all including 8 different size Bases of up to 13¼" long. All the parts were made of thin pressed tinplate and basically a tongue on the bottom of each was a push fit into a channel formed at the top of the element below, as in the illustrations below. Apart from Bricks and Slates, and half lengths of them to allow staggered con-



struction, there were Corners, internal and external, with obtuse angled versions to allow hexagonal buildings to be made. Roofs just sat on the walls and the apex joint was made with Ridge Tiles which pushed into one another sideways as well as into the Slates below

- all the other parts had no horizontal connection. Gutters could be fitted to the bottom of the roofs. Gables were made from standard Bricks and the little triangles left at the edges were covered by a (so called) Cornice. The 2 types of Window were pierced (and it was suggested that small pieces of lace could be fixed behind them); Doors were hinged to a frame and had 4 panels pressed into them. The colour scheme was red Bricks, green Windows, Doors and Slates, and gold lacquered Bases. Greyish Slates are also known. The finish was applied to only one side of the parts and has a metallic look, particularly the gold and red.



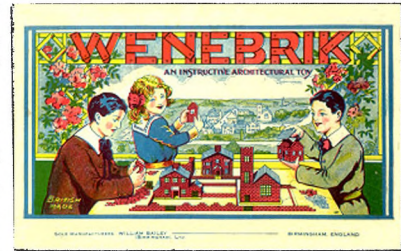
The manual described later was for all the sets and showed 70 models, 20 for Set 1 and 10 each for the others. Its cover is similar to the label on the box but another style is

in black and white with a WENEBRIK village on it. A fair range of models is shown including what looks like (the models aren't named) a small pigsty. One limitation is that the parts don't allow roofs to join at right angles (for 'L' shaped houses for example), and flat or hip roofs aren't possible either. The standard Brick measures 1½x½" so a 2-storey house would stand some 6-7" high to the top of the gable. The models look quite well when built but are difficult to make if the parts are deformed at all.

The parts in the Patent differ little from the actual ones. The main thing is that the Gutters are attached to the walls rather than to the roof (Fig.6). The Hexagonal Corners are not shown as such but it's said that 'the corner bricks may be bent to any other angle to admit of forming octagonal, hexagonal, or other shaped buildings, or for making bay windows'. One part that as far as is known was never produced is a Corner Pillar (Fig.16), which 'may be employed in lieu of the corner bricks'.

There's nothing in the Manual to indicate its date. WENEBRIK is said to have been first marketed in 1915 and Sets 0-5 were still listed in a 1931/32 Army & Navy catalogue. Baileys stopped making toys in 1935. As far as is known no changes were made to the parts, or the models in the manual, during its lifespan.

SUMMARY OF MANUAL •Name: WENEBRIK •Details of maker: William Bailey (Birmingham) Ltd., Birmingham. England. •No dates/ref nos: •Page size: 206x130mm deep. •No. of pages: 40 inc covers. •Language: English. •Printing: Colour cover, with line drgs inside. •Page Nos. of Parts List & highest PN: 3-4,19 + A to H. •Page No. of Set Contents & highest PN: 39,19 + A to H. •Sets covered: 0-5. •No. of models for each set: 10,20,10,10,10,10. •Model No., Page No. of first & last model of each set (no names): 0: 1,7; 10,10. 1: 11,10; 30,16. 2: 31,17; 40,20. 3: 41,21; 50,24. 4: 51,25; 60,28. 5: 61,29; 70,38.



And ARQUITECTURA METALING Jeannot Buteux

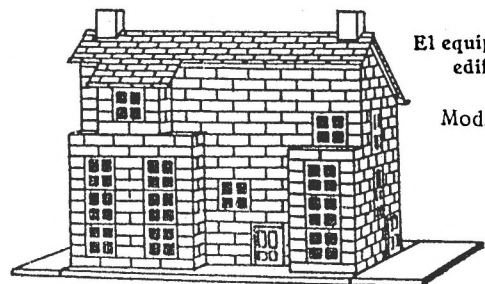
ARQUITECTURA METALING

Este manual ilustrado consta de 70 modelos distintos que pueden ser construidos con la Arquitectura Metaling. Estos no son más que una indicación o instrucción de como se edifica con este sistema. Sentirá un detalle fascinador proyectando un nuevo modelo de los construtores que puede edificar con un equipo Arquitectura Metaling. No es necesario ninguna herramienta y sin dificultad ni peligro levantará edificación el joven aficionado.

Los modelos Arquitectura Metaling, son verdaderos edificios en miniatura construidos con corrección escala y con efectos de color innovadores. Contiene cada equipo cierto número de piezas bellas, jebes, planas y acanaladas, cornisas, ventanas, puertas y bastidores, completamente listos para ejecutar la construcción.

PAQUETE ESPAÑOL
UNICOS FABRICANTES:
METALING BARCELONA
ESPAÑA

kindly sent details of this Spanish system from the Constructorama archive. It seems to be identical to WENEBRIK - there are the same Set Nos.,



the parts look the same, with the same PNs, there are the same number of models in the Manual, and the 2 models that Jeannot sent are both in the WENEBRIK Manual, although the Model No. of the one shown above isn't the same. The illustrations of the models are identical except that the window panes are black instead of white. The colours of the parts are noted as red, blue, gold and green with a metallic look to them; again the colouring is only on one side, with the other shiny metal.

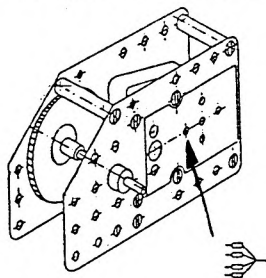
ARQUITECTURA is thought to have been produced in

the 1930s and on the cover of the manual it says that it is patented in Spain, and that Metaling of Barcelona are the sole manufacturer. 7 foreign patents are claimed on the WENEBRIK box lid but not a Spanish one, though it's said that others have been applied for. Metaling of course used to make MECCANO under licence (and later marketed their own clone) - no doubt Baileys also licensed Metaling, the 1915 patent would have run out in 1931 but not the copyright on the manual.

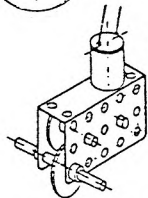
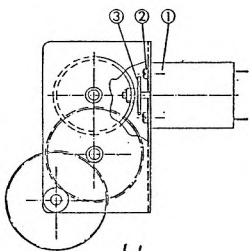
STOKYS UPDATE The following is based on material kindly sent by Werner Sticht and Josep Bernal, and follows on from the notes in 11/291.

The range of sets for 1994 continues as before but with the addition of a new special set, SM 05, to make a Tractor. It isn't illustrated but is the same price as the Tipping Lorry.

Elektromotor



EM 10



GM 01 GM 10

The only 20v motor shown is the EM10 (below) which is the same power as those replaced but has different sideplates. The basic 3-6v battery motor is now listed as BM 01, and as BM 10 with Battery Holder and Cable. Its speed is given as 3000-6000rpm and the output power as 1,4 W. It is also available fitted with a gearbox (opposite), in two versions, GM 01 with 2 stage reduction, and GM 10 (mentioned in OSN 11) with three. The first stage is the motor pinion driving a (plastic?) contrate. Standard gears are used in the later reductions. The quoted rpm are 250 and 50 respectively. It is said that the output shaft can be used as the back axle of the Auto Set models and that this gives a speed of 10-30 cm/sec, say up to 1mph. There is also listed a remote control unit for vehicles; no details are given but the price of Fr.189 would indicate something more sophisticated than a switch or rheostat on the end of a cable.

Stokys also have a first (I think) in having for sale, at Fr.29.80, a Hard Hat like the boys in their ads wear.

The Illustrated Parts List shows a few changes. The 'Z' section Girders G41-46 are replaced by 'L' Girders G51-56 (2*1 holes), although illustrations of both types are shown.

R51, which was a Cone Pulley, is now a single 35mm Pulley. Two new Double Gears are introduced, Z15 with 11/66 teeth, and Z16 of 11/40 - they aren't illustrated but if they are the same style as the ones in the Geared Motor, the Grub Screw is between the gear and the pinion. Finally the 'F' Plugs and Sockets are no longer listed, nor are one or two of the obsolete $\frac{5}{32}$ " BSW threaded parts.

Werner included some copies of models from the Auto Sets manual and it's clear from the Parts Lists for them that the notes on the wheels in these Sets given in 8/174 were wrong. Set 1 contains the Wheels with the wide, thin Tyres, R62 (47mm o/d), and Set 2 has as well 35mm Pulleys R06 and 54mm dia Tyres R08. In passing I wonder what the difference is between R06 and the new 35mm Pulley R51. A Sports Car from Set 2 is shown opposite, it has proper

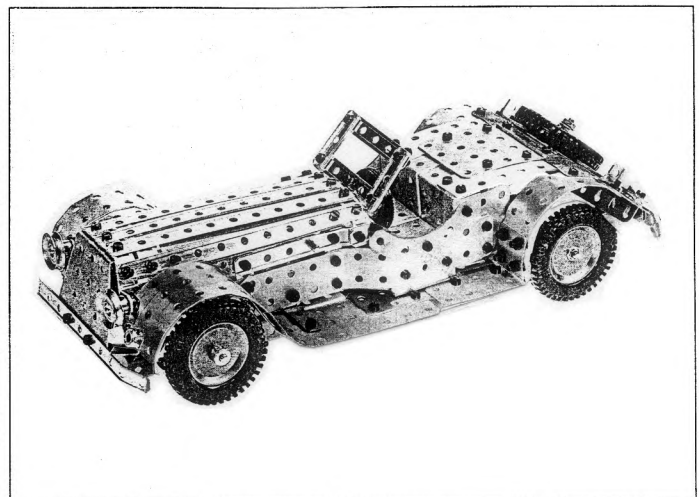
steering but no other mechanical functions.

Werner also sent some notes on the history of Stokys and on the parts. For the former I'll mention those points which weren't covered by the notes in 7/167. During the war the use of brass was prohibited and when some was used despite the ban, the authorities found out, even though nickel plating was supposed to hide the evidence, and Gebr. Stockmann were in hot water. The change of name from Stokys Eiko AG to Stokys AG took place in April 1987 and the company moved to Grossmatte 7, 6014 Littau. It shares a building with Fema AG who make electrical motors and brakes, and both firms probably have the same owner. The head of Stokys is now Ernst Bösch and the board includes Jolanda and Angela Bösch (who are I believe his daughters). Stokys phone number will change on 4 November 1995 to 041 2504159, Fax 041 2504158. Pierre Gauthier AG, mention in OSN 11 is a toy merchant and not otherwise connected with Stokys.

On the parts Werner notes that a big advantage of most of them being of alloy, is that crane jibs and the like are relatively light. To minimise friction and to avoid excessive wear, Nylon Strips (K42/43) are provided as bearings. Axles are 4mm and have a polished look with properly finished ends. Gears are accurately made and don't fit MECCANO Axles. In about 1980 the Gears Z05 and Z07 were changed from 64 and 50 teeth to 66 and 52, thus giving integer ratios with their 11 and 26 tooth Pinions. The current Z07 no longer has the 8 peripheral holes of the original. Gears have usually been made of brass but at different times some, such as the Helicals and Worm, were of aluminium alloy. Following the change to the M4 thread, the bosses had a silvery finish to distinguish them from the $\frac{5}{32}$ BSW brass ones (see 7/166), but now some bosses are brass, tapped M4. The new Double Gear Z15 has a 2cm long boss fitted to the Z05 disc, with the 11t pinion formed in its end, and the double tapping for the Grub Screw is between the gear and the pinion.

OLD-TIMER

Modell 1009



Gebaut aus Auto 2

METALLICO from MEHANO in SLOVENIA The name Mehano may ring a bell with MCS owners, there's a Yugoslavian system in it called MEHANO TEHNIKA which looks a more or less straight copy of MECCANO. In MCS the name of the manufacturer is given as 'T.M.' but now from the same town, Izola, in Slovenia, a company called Mehano has produced a new range of sets called METALLICO, again with a MECCANO look to them. David Hobson found some on sale at an English toy fair early this year and kindly lent me the No.4 set that he bought there.

THE SETS The following are shown on the back page of one of the manuals in the No.4 set:

- 6 START Sets Nos. 01-06, which look as if they are intended to make one model each, respectively a Buggy [133 parts], Biplane [184], Bulldozer [173], Tractor [170], Lorry [125], and Helicopter [165].
- 6 TALENT Sets Nos. 1-6, with 196, 288, 360, 470, 560, 635 parts. A selection of models is shown on the lid of each box and they increase in size and complexity for each set.
- 2 EXPERT Sets Nos. 10 and 20, containing 886 and 1072 parts. Two models, larger again, are shown on each box.

The No.4 comes in a glossy blue, end opening, cardboard box, 15¾x11¾x2", printed in full colour. The top face has a red banner along the top for the name, with large photos of 4 models under it. The bottom face has photos of 4 models from each of the TALENT sets, and the manufacturer's name, address and phone numbers - 3866662-121; telex 341-36; fax 3866662-983. On one side are the addresses of the French, Italian and Dutch agents. Some of the text on the box is in English only but elsewhere for things like the minimum recommended age, up to 9 languages are used, including French, German, Italian, Dutch, Spanish and Greek. A block of expanded polystyrene fits inside the box, with recesses in it for the parts.

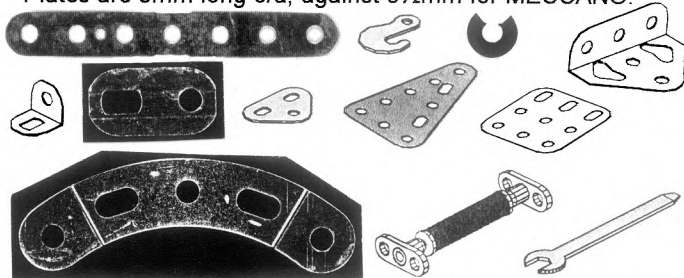
THE PARTS DATA (in mm) Strip (11-hole): •Hole pitch/dia, 12.7/4.3 •width, 12.3; •thickness, 1.22; •ends semi-radiused, R=7.3. Strip (7-hole): •Hole pitch/dia, 12.7/4.3; •width, 12.5; •thickness, .81; •ends fully radiused. Boss: •o/d, 9.97; •i/d, 4.08; •aluminium; •double tapped M5. Thread: M4 except in bosses. Axle Dia: 3.94 to 3.99. DP (Mod): 42.5 (.6). Nut: sq., 6.9 A/F; Bolt: flattened roundhead with Allen recess, 6.4 dia: both are BZP on steel.

The parts in the No.4 mostly look like MECCANO, with the exceptions listed below. Some of them are shown opposite. No names or PNs are given for the METALLICO parts and so MECCANO ones will be used.

- Strips are of two sorts, the 9 and 4-hole are thick like the 11h described above and have been cut from a continuous length; the 3, 5 and 7h are thinner pressings and have slight central indentations on each side. The 7h also has a small 2.2mm hole between the main holes 2 and 3. The 1x5x1 DAS has this small hole in the corresponding position. On p4 of the MCS MEHANO TEHNIKA entry, which seems to show a range of parts for an electrical set, the same hole can be seen in the 1x5x1 DAS, PN 18.
- The Curved Strip looks rather like #90a but the slots are longer (8mm), and the radius is very near that of #89a, so 4 don't make a circle.
- 1x1h Brackets (#10,12,12c) have flats at each end and 'BRAL' shaped slotted holes. The diagonal side of the 1" Corner Bracket is not concave and its two slotted holes allow other parts to be bolted along it. The Trunnion has unusual shaped cutouts.
- The aluminium bosses are peened over at 4 points. Use of the M5 Grub Screw allows one Allen key to fit both them and the standard Bolts. Collars are 6½mm wide and are similar to bosses. Axles have slightly chamfered ends and are 5, 6, 9 and 11.5cm in length; diameters vary slightly from one length to another.
- The 25mm Pulleys (#22,22a) are steel and the #22a has

a short boss about 4mm long o/a. #23 is of aluminium, 15mm dia. For all, the width of the groove is 4mm. A thin black plastic Tyre fits the 25mm Pulleys. The Bush Wheel (#24) is steel and 36mm diameter. Road Wheels are 48mm dia black plastic push-on, with no backs and 5 'spokes' moulded into the front face. A smaller tyred wheel is used in some of the START models.

- The gears (#26,27a,32) are moulded from red plastic on aluminium bosses and have a slightly finer pitch than MECCANO. The Pinion is 14mm o/d with 21 teeth and a 4½mm face; the Gear Wheel is 39mm, with 64 teeth and 6 holes in its face; the Worm is 24mm long o/a with a standard boss at one end and a 1½mm long 'boss' at the other.
- The 3v Motor looks very like the current MO but at the back are 2 assembly screws and 2 sockets for the plugs on the flex from the Battery Box. The latter is black plastic and has a build in red switch for forward and reverse, spring loaded to a centre off position. It takes 2 R20 ('D') batteries and has the name MEHANO moulded into it, the only part with any identification on it.
- The 4 lengths of Bolt are 5, 9, 12 and 21mm u/h. Washers are 10.1 and 19.1mm dia. The black plastic Axle Clips are the disc type, 9.3mm dia by 2.8mm thick. Cord is white braided nylon. The Hook is flat and its tip won't go through a standard hole.
- One end of one Spanner is flat and angled, the other straight and cranked. The second is flat and straight with a crude screwdriver point at its other end. But there are no screwdriver slots in the Set.
- The Spring Struts have a ball jointed, 2-hole foot at each end. They are made of red plastic with black springs, and are 53mm long with a travel of 10mm. They can't be dismantled.
- The 3x3h Perf Plate (#74) has one row of slotted holes. The 3x5h Triangular Flexible Plate (#221) has a hole and 2 slots along its diagonal side. All the rectangular Flexible Plates have a centre hole and slotted end holes: they are rather thicker than usual at .016", and the triangular ones are .021". The slotted holes in the flanges of the Flanged Plates are 8mm long o/a, against 6½mm for MECCANO.



Parts in the No.4 which have not yet been mentioned and which look very like MECCANO are, by PN, 9,9d,11, 11a,12a,45,48,51,53,103f,125,188,189,190,193,193a,194, 194a,214, 222.

Colours that haven't already been mentioned are a rich yellow for the Trunnions, and the Flanged, Semi-Circular and Triangular Flexible Plates; white for the rectangular Flexible and 3x3h Perforated Plates; dark blue for the Plastic Flexible Plates; and BZP for all other parts.

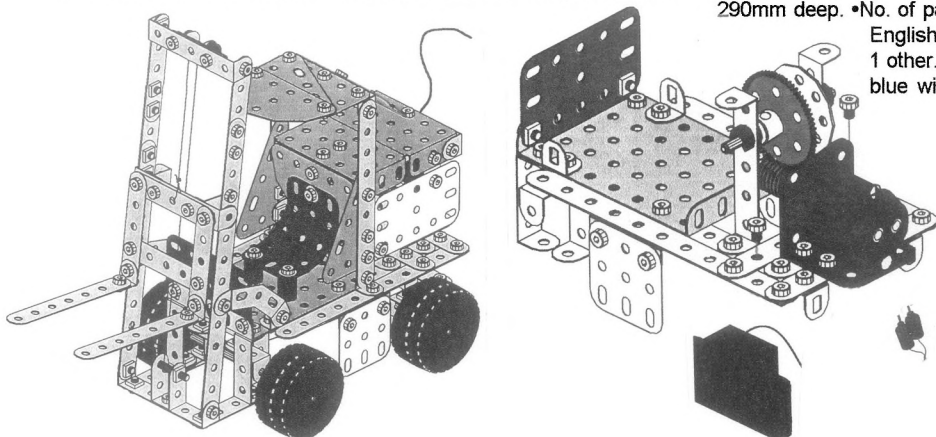
The parts seem accurately made and are well finished except that the BZP is rather dull in places on some of the parts.

THE No.4 SET, ITS MANUALS AND MODELS At an asking price of £16 the No.4 is obviously very good value for money. In terms of parts it has more than a (1991) MECCANO No.5 and although the make up of the sets is different and some of the larger parts (Pulleys, Strips and Plates), and useful parts such as the Rod/Strip Connectors, are missing from the METALLICO. There is instead a wider variety of useful small Plates and Brackets, and half a dozen Girders up to 11h long.

Folded in half and packed in a recess in the bottom

of the polystyrene packaging were four A4 size manuals, one for each of the Sets 1 to 4. The format of all of the covers is similar and each has the reference number 'Art. C 014' on it. There's no text or even name associated with any of the models but the wording on the cover is in up to seven of the languages already mentioned, and at the back of the No.1 manual there's a page introducing the range of sets available, in no less than ten languages. The now normal computer generated step by step instructions are provided for the models, with large, clear, colour illustrations. The only slight oddity is that the software/printer used has produced curves as a series of straight lines.

Each manual contains 4 models plus photos of 2 more. Most are vehicles of one sort or another though the photos include a Crane, a Lifting Bridge, a Helicopter and a Windmill. I don't recognise any of them from elsewhere and most look reasonable though having the parts in 4 colours gives a hotchpotch effect to my eyes. Mechanically all are simple with no steering, and for the vehicles the motor usually drives one axle through the Worm mating with the Pinion or Gear. The same ratio is used for a Digger and a Racing Car. None of the models use the Spring Struts even though they are featured on the No.4 Manual's cover. The No.4 Fork Lift Truck is shown below, the drive may not show



clearly and consists of a Worm on the motor shaft driving the Gear Wheel above it.

THE LARGER SETS The manuals only show the parts and contents of the set they are for, so all there is to go on is the photos of the models for the other sets on the box and manuals. The #5 and 6 models are larger and look rather more interesting but some have a somewhat square look to them. None of them seem to have steering. There are 2 Motors in both of these sets and the same Controller body is used but with an extra switch for the second motor. 8 Road Wheels, 25h Strips, Flat Trunnions, and a 3" Pulley can be seen.



EXPERT 10

The models shown for the EXPERT sets look much more attractive and all are tracked, a Bulldozer, Digger, Shovel and a Crane. The track looks similar to MECCANO but is shown as red in colour. No other 'new' parts can be seen but the illustrations are quite small. The cover of the #10 box is shown bottom left.

THE 02 START SET Since writing this piece, and again thanks to David, I have become the proud owner of a #02 START Set, the little Biplane. The box measures 8*6*2" and the packaging is similar to the #4.

The parts are as already described except that 4h Flat Girders, and 2h A/Gs are included; also black Plastic Rings to fit the 15mm Pulleys - these are not the smaller tyred wheels mentioned earlier. 2h and 7h Flat Girders can be seen on some of the other START models that are shown on the back of the box.

The Corner Brackets for the Biplane are yellow instead of BZP, and a few of the normally zinc parts used in the other START models on the box are also yellow.

The Model Leaflet shows large, clear, step by step instructions in colour, and the only problem I found was that the 5mm Bolts, though very neat, are too short to join 3 or 4 parts together.

SUMMARY OF MANUAL •Name: Metallica. •Details of maker: Mehano, 66310 Izola, Slovenia. •Dates &/or Ref. Nos: Art. C 014 on front cover; C 014 Z01AE/9493 on back cover. •Page size: 211x 290mm deep. •No. of pages: 24 inc covers, unnumbered. •Language: English, French, German, Dutch, Italian, Spanish and 1 other. •Printing: Full colour. Cover has photos and is blue with red band at top. •Page Nos. of Illustrated Parts & Set Content: 2,3 [no PNs]. •Set



covered: #4. •No. of models: 4. •Name, Page No of first & last model: Mechanical Shovel,4; Fork Lift Truck,19. [no model names or nos.] •Other notes: photos of 2 other models on p23, & sets 01-20 on p24.

NOTE Details of the Set 1, 2 & 3 Manuals are given below, in that order, where they differ from the above.

•Ref. Nos: Z04AB/9378. Z01AC/9377.Z04AD/9490 •No. of pages: 20.20.20. •Page Nos. of Ill Parts List & Set Contents: 2.2.2-3. •Sets covered: 1.2.3. •No. of models: 4 + 2 photos for each set. •Name, Page No. of first & last model of each set: Mobile Crane,3; F.1 Racing Car,14. Fork Lift Truck,3; Tow Truck, 16. 2-Seat Open Car,4; F.1 Racing Car,16. •Other notes: the intro on p19 of #1 is in 10 languages.

QUERIES 19. The Editor would be grateful for a copy of the Set Contents of the PHILIPS No.1250 Compact Mechanical Engineer Outfit if anyone has it.

20. Jeannot Buteux has a German manual which is only identified by 'Metall Baukasten' (Metal Building Set) on its cover, and the logo opposite, with the name 'Dresden' in it. Does anyone recognise it?



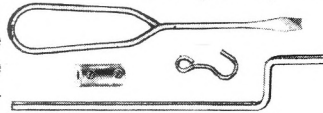
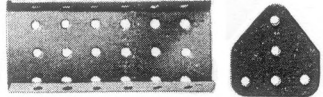
21. Don Redmond asks where the name ÉCÉPÉ (the French system described in 12/314) came from.

NEW SYSTEM: CONSTRUKIT John Evans came across the manual and parts from a No.1 'Junior Set', and kindly let me examine them. It's a small system with 47 different parts, most of them with a MECCANO look to them. The main points of difference are that the Strips are red and the Plates green, and there are a few unusual parts. These include 24-hole Strips and A/Gs, a 3*6h Flanged Plate (but see below), and Trunnions with no cutouts. There are two slogans on the manual cover - 'Equal to the best - better than the rest', and 'The ideal Set for Dad and his Lad'. It's also said that the parts are 'interchangeable with other first class sets'. CONSTRUKIT was made in Birmingham by Ancharlco Ltd. of Wheeleys Lane. No indication of date is given but soon after WW2 is likely.

THE PARTS DATA (in mm) **Strip** (11-hole): •Hole pitch /dia, 12.7/4.2; •width, 12.9; •thickness, 1.09 (over thick paint); •ends 7.5r. **Boss**: •o/d, 9.5; •i/d, 4.17; •brass; •single tapped. **Thread**: 4BA but 5/32 BSW in boss. **Axle Dia**: 3.86. **DP (Mod)**: NA. **Nut**: hex 6.4 A/F, nickelled brass. **Bolt**: roundhead 6.1 dia, light alloy.

In what follows about the parts, and where they differ from their MECCANO counterparts, the latter are referred to by their PN prefixed by 'M':

- 3,5,6,9,11,15,17,24-hole Strips. Also a 1*5*1 DAS and a Curved Strips similar to M90.
- Red 11 and 24h A/Gs, .039" thick. The corner radii vary from quite small to the MECCANO pattern. Holes are 4.1mm dia and slotted holes are 9mm o/a in length.
- 3 Flanged Plates: 11*5h with flanges on the long sides, described as 11x7-hole; and two not seen - one listed as 7x5h but shown (see below) as 6 holes long, though it looks about 3½" overall; and a Sector Plate shown just like M54, that is 9 holes long, but described as 10x5x7, implying that it's 10 holes in length. The 11*5 is .038" thick, with small radiused corners, and the holes in it are 4.0mm dia.
- 5*5h (fully perforated) and Semi-circular Plates.
- No Trunnions have been seen but are shown grey in the manual. Flat Trunnions are red and .040" thick, with 3.9mm holes. Angle Brackets have 2 round holes and large radius ends; they are nickel plated. Other parts not seen are grey Double Brackets, and Stepped Bent Strips (M44), and red 2*2h Angle Brackets.
- The one Pulley in the Set is 30½mm in dia. and is aluminium with a brass boss and Grub Screw. Its centre is belled out over a dia. of 17mm to a width approaching the width of the throat (nearly 6mm). It is grey in the manual, as is a similar looking Pulley without boss, and an 8h Bush Wheel. The Pulley is also shown fitted with 2 sizes of (smooth looking) Tyres, dark grey in colour and scaling at about 40 and 50mm o/d. The 40mm dia. balloon type Road Wheel is also shown as dark grey but the actual ones are light blue with brass 'eyelet' bushes (4.2 to 4.3mm i/d).
- The Nuts are the commercial machined type, 3.6mm deep; the 2 lengths of Bolt are ¼" and ⅜" u/h. The 2" and 4" Axle Rods seen have sheared ends and are very loose in the bosses. 3,5,6,8" Axles, and Crank Handles (below) are included in the larger sets.
- Spring Clips are listed for the No.1 Set but I didn't notice any; 'Brass Collars' are included in the larger outfits. The Cord is red.
- That leaves the unusual 4¾" dia. Propeller (above), made of flat .035" alloy; the nickel Hook (above), of 14g wire and 1⅛" o/a; and, not seen, a 'Coupling Brass' (above, no cross bores are apparent), and Rubber Bands.
- The Spanner is painted black and at .041" is much thinner than M34. It has square jaws despite the hex Nuts, and is a sloppy fit on them. The Screwdriver in the manual is shown opposite but the nickelled one seen was nearer to M36 in shape, and made from the same size wire, though it's longer at about 130mm overall.
- The parts are quite well made and the finish is reason-



able for this type of set; the paint colours are a medium green and a light to medium red.

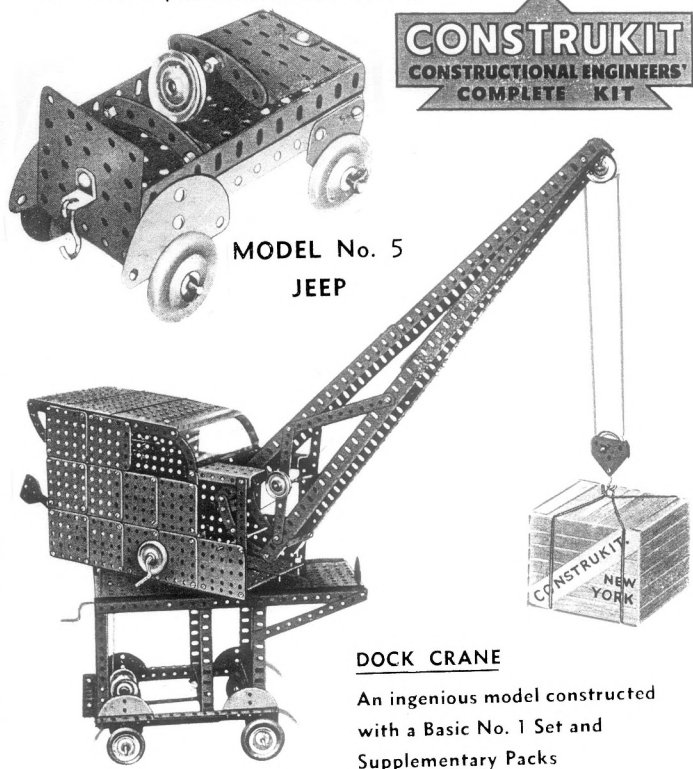
- One oddity is that the PNs run from 1 to 69 but Nos.40-61 aren't used.

THE SETS The contents of Sets No. 1, 2 and 3 are given in the manual. The main parts in the No.1 are 2 each of the A/Gs, 10 Strips from 5 to 24h, 2 Curved Strips, 1 large Flanged and 2 each of the flat Plates, 4 Flat trunnions, 4 Road Wheels, a Pulley, a Propeller, and 30 N&B. All the parts are in the No.2 except the Large Tyre, and extra parts include 20 Strips, 3 Flanged Plates and 2 Pulleys with Tyres. There are no extra N&B but the No.3 contains a miserly 15 more, plus 4 more A/G, 22 more Strips, another Propeller, 8 extra Tyred or Road Wheels, etc.

As well as the sets, 6 Packs of parts, A to F were available and their contents are listed on the inside back cover of the manual. Each contained a rather random assortment of between 15 and 30 parts plus some N&B in 3 of them.

THE MANUAL Details are given below. Noteworthy are the very colourful covers - the front and back are identical, the large full colour illustrations of the models, and that 3 of the 12 inside pages are blank squared paper 'For the Young Engineer's own Models'. One Young Engineer drew a 'plane on one page with a swastika on the fuselage so that probably points to ownership fairly soon after the war.

Only 12 models for the No.1 Set are shown and they are quite simple though with the 24h long parts, somewhat larger than is usual for such models. The Jeep below is one of the smaller ones but shows many of the parts. One larger model (below) is in the Manual to draw attention to the Packs of parts mentioned above.



MODEL No. 5
JEEP

DOCK CRANE

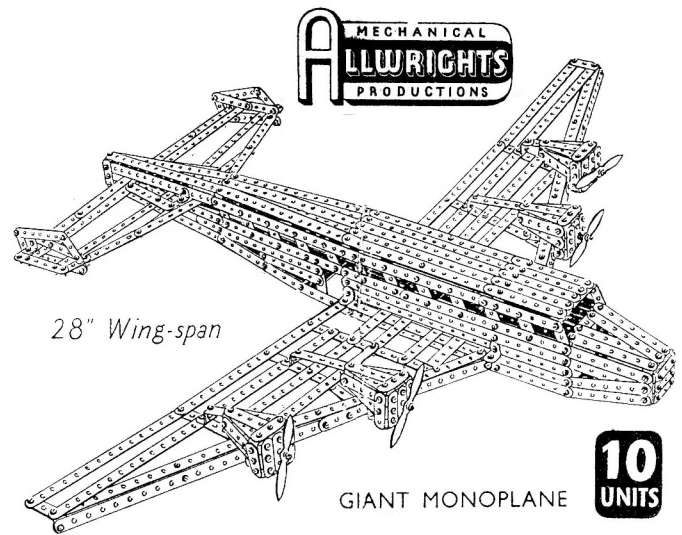
An ingenious model constructed with a Basic No. 1 Set and Supplementary Packs

SUMMARY OF MANUAL •Name: CONSTRUKIT •Details of maker: Ancharlco Ltd, "Construkit" Works, Wheeleys Lane, Birmingham, 15. •Dates &/or Ref Nos: none. •Page size: 206*162mm deep. •No. of pages: 12 plus covers. •Language: English. •Printing: all in colour. Multicolour cover with yellow model. •Page Nos. of Parts List/ Illustrations & highest PN: IFC/1,69. •Page No. of Set Contents & highest PN: IFC,69 [repeated on p2 for Set #1]. •Sets covered: Junior No.1. •No. of models: 12. •Name, Model No., Page No. of first & last model: SACK TRUCK,1,3; MINESWEEPER,12, 8. •Other notes: pp9-11 are blank squared paper; details of Packs of parts A-F are on IRC; a crane on p12 is for Set 1 plus Supplementary Packs; the front and rear covers are identical.



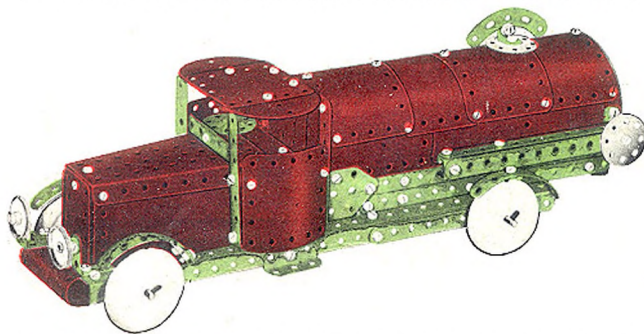
ALLWRIGHTS MECHANICAL PRODUCTIONS Recently John Evans showed me some aluminium parts which were identical to those in the CONSTRUCT Set described in 7/146. With them was a Card (7½*5¾") showing models under the name 'Allwrights Mechanical Constructions', the firm who made CONSTRUCT. Apart from not using that name, another difference was that the models needed a particular number of 'Units' to make them. The 8 simple models on one side of the Card, rather like the CONSTRUCT ones, though generally using more parts, required 1 Unit, while the three on the reverse needed up to 10 for the Giant Monoplane opposite. The Card has a blank space at the bottom with staple holes in it, and it's possible that the parts were contained in a bag attached there.

The Giant Monoplane reminds me of the prewar Dinky Junkers Ju 90, and another model called a Pick-A-Back Aircraft looks like a simplified version of another Dinky of that time, the Short 'Mayo' composite aircraft. Both aircraft were of some interest in 1939 but I don't remember either being in the news postwar. So possibly the ALLWRIGHT Units date from prewar and came before CONSTRUCT. An-



other indication of that is that none of the 'Unit' models show the DAS and 6-hole Wheel Disc contained in CONSTRUCT.

NEW SYSTEM: UMAKIT This was the name on the lid of a small set which I came across recently, and I suppose that the intended pronunciation is 'You make it'. There was no manual with the outfit but 4 models are shown on the



box lid label, including the Tanker below. They seemed familiar and the one shown here, and a Travelling Crane, are identical to the two shown in MCS/FB for another small UK system, CONSTRUCTO (2). The other two, a Tower Truck and a Light Army Tank, are also in the CONSTRUCTO manual which Geoff Davison kindly copied to me. There's no indication of set number on the UMAKIT but it doesn't contain nearly enough parts to make any of the models on the lid. The CONSTRUCTO manual only contains models for Sets 3-5 so it isn't sure whether any of the CONSTRUCTO sets equate to the UMAKIT, but presumably there must have been larger UMAKIT sets with enough parts to make the models on the lid.

The set is packed in a red box measuring 11*9*1¼" and the parts are clipped to a beige card by (mostly) shallow 'U' shaped clips, 1" or ½" long by ⅛" wide. The parts in Geoff's CONSTRUCTO set are attached in the same way. The lid has a large label in colour on a white ground with the panel below in its centre. Neither DENTON CLAFF nor the slogan are mentioned in the CONSTRUCTO manual or in its MCS entry.

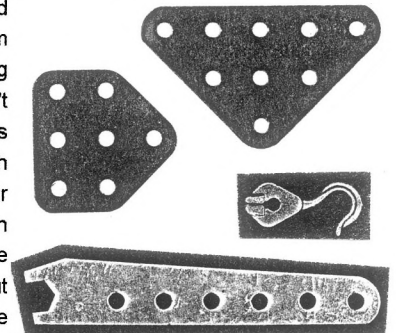
The parts are for the most part like MECCANO but major differences are the 7 hole style Trunnions and the unusual Spanner shown below. Spacing is 12.7mm and the holes are mostly 4.0mm dia though those in the 11h Strips are 4.3mm. Notes on the parts and differences from



MECCANO pattern follow. In curly brackets are the number of parts found in the set. A few parts are obviously missing, probably two 11h or four 5h Strips, and possibly a Screw-driver or other parts to use 3 unoccupied holes in the backing card. There weren't any N&B etc though the tin for them was in place.

- Strips have 11, 5 and 2 holes (instead of Flat Brackets) and have near fully radiused ends. {2,2,4}. There are 1*5*1 DAS {2} and type 90a Curved Strips {2}.
- The 5*11h Flanged Plate has flanges only on its longer sides and its corners are slightly rounded.
- Angle Brackets {4} have 2 round holes and are made from the 2h Strips. There are 2 each of Trunnions and Flat Trunnions.
- The Road Wheels {2} are the tinfoil balloon type, 40mm dia, with thin brass bushes. They run easily on the one 4" Axle Rod, 3.94mm dia, bright, with sheared ends.
- The 2h Strips and the A/Bs are nickel plated. Other Strips are painted green except the red Curved Strips. The Flanged Plate and Flat Trunnions are also red but the Trunnions are green. On the lid the Flat trunnions and the Curved Strips are green. The red paint is a dull medium red and the green a bright medium shade. Wheels are painted grey and the Spanner looks tin plated. All parts are quite well finished with slight burr on some edges.

There was an unusual Hook (below) loose in the box. It's a zinc casting, bright plated, with a hole in the top to take the cord. A Nine Hole Gusset is listed as a CONSTRUCTO part and the dealer who had the UMAKIT also had separately, a couple of them (opposite), with two matching 5h Strips. There doesn't seem room for the Gussets in the set and compared with the other set parts, their green doesn't quite match and their holes at 3.9mm are very slightly smaller. But Geoff tells me that they are identical to the ones in his CONSTRUCTO set.



There is nothing to date the set but the models remind one of those in MECCANO manuals from the 1937-53 period.

AMERICAN MODEL BUILDER MANUALS/MOTORS

I misled myself over some of the dates of the manuals mentioned in OSN 11 by relying too much on the copyright dates on certain of them. Now thanks to Messrs. Bernal, Bisset, Drury, Redmond and Symonds, more has come to light on manuals, their dates and the motors advertised in them. Where available Summaries will be given but details which are the same as those in 11/280 won't be repeated. The correct dates for manuals given below are underlined to avoid confusion with those in OSN 11.

The '1912' of 11/278 should have been '1913': included in the complete manual are details of a competition closing in April, 1914. There are ads for the No.200 and 300 motors but not the 325; the No.350 Counter Shaft is also shown.

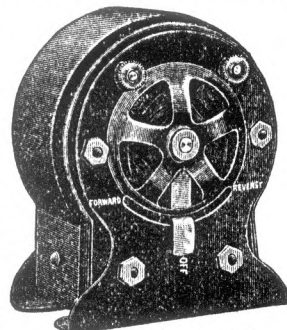
SUMMARY OF MANUAL •Dates: © 1913 on FC & p1; contest closing date, 4/14. •Page Nos. of Parts List & highest PN: 76,77,62. •Page No. of Set Contents: 79. •Sets covered: 1-7. •No. of models for each set: 20,10,11,13,9,7,10. •Name, Model No., Page No. of first & last model of each set: 1: Revolving Crane,1,3; Windmill,20,9. 2: Revolving See Saw,40,10; Endless Rope Railway,49,13. 3: Revolving Scoop,60,14; Lawn Swing,70,19. 4: Power Cable Railway,80,20; Auto Moving Van,92,30. 5: Rotary Traveling Crane,100,31; Suspension Bridge,108,39. 6: Bascule Bridge,120,40; R. R. Semaphore,126,50. 7: Eiffel Tower,140,51; Cylinder Press,149,68. •Other notes: no slogans on page bottoms. Constructions, Simple Bracing to Gear Train, are shown on pp70-75.

The incomplete Supplementary '1913' manual (11/278) probably came between the '1913' above and the main '1914' issue described below. From its ads it could have preceded the '1913' but as all the models in it are in the '1914', I'll call it the '1913/S'. This manual shows the AMB-style Pawl for the first time, as opposed to the MECCANO pattern.

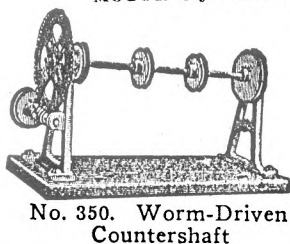
The main '1914' is the '1914' in OSN 11, but please note a mistake in its Summary - there should be 13 Set 4 models and not 3. This is the first manual in which Sets 0 and 0½ are mentioned although a reference to them in the missing pages of the '1913/S' is possible. In addition to the main manual, a 20-page one for Set 1 is also known from 1914.

A complete example of the 'early 1915' (11/279) is now available and it is another Supplementary edition 'to be used in connection with 1914 manual'. So it will be called '1914/S'. From the 4/16 competition closing date it was probably issued in 1915. The new 1915 parts, including the ribbed Flanged Plates, are shown for the first time in this manual.

The motors in it are Nos.100, 150 and 325. The 100 cost \$1 and runs from 1 or 2 dry cells or a transformer; it is 3 1/8" high with a 1 3/8" dia, 3-pole armature. The 150 (\$1.50), opposite is identical except that a Fwd/Off/Rev switch is built into its base. It was recommended that both should be used with the No.350 Countershaft, and this now has a first stage worm reduction using what appears to be a standard 2 1/4" Gear (#73). The 110v No.325 motor continues but the price has reduced to \$10.



MOTOR Style No. 150

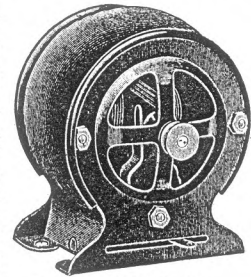


No. 350. Worm-Driven Countershaft

SUMMARY OF MANUAL •Name: Supplementary Book of Instructions. •Dates: to be used with 1914 manual; 4/16 comp. closing date. •No of pages: 48 inc covers. •Printing: FC black & red/orange on white paper; inside black line drawings. •Page Nos. of Parts List & highest PN: 42,43,79. •No Set Contents. •Sets covered: 1-7. •No of models for each set: 128,48,33,43,15,7,7. •Name, Model No., Page No. of first & last model of each set: 1: Ladder,46,3; Platform Derrick,173,11. 2: Deep Well Pump,174,12; Hulett Ore-Unloader,221,16. 3: Lamp, 239,17; Counter Scales,271,20. 4: Barge Dredge,272,21; Zeppelin, 314,27. 5: Punch Press,322,28; Battleship,336,31. 6: Electric Railway, 346,32; Stationary Engine,352,35. 7: Library Lamp,364,36; Old Dutch Windmill,370,41. •Other notes: ribbed Flanged Plates shown.

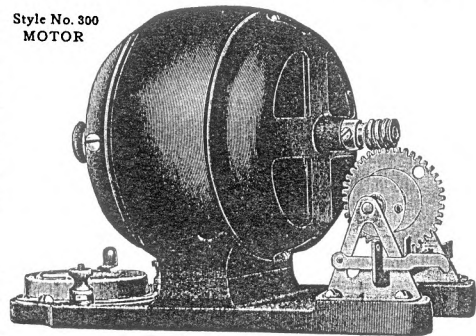
The main '1915' manual has the same motors as the '1914/S' and the same models as the '1916' (see below). Neither the '1915' nor the '1916' were mentioned in OSN 11.

The '1916' is dated from the competition closing date of 4/17 given in it. It is the first manual in which Outfits 11, 12 and 13 are mentioned. The motors advertised in it are the Nos. 150, 200, 225, 250, and 300. The 150 (opposite) now has a slightly different casing with 4 cooling vents on the end instead of 5, and the slot for the switch lever is straight rather than curved. It is said to be 3 1/8" high and 2 1/4" over shaft, to weigh 1lb and to be finished in black enamel.



Style No. 150 MOTOR

The 200/300 motors differ considerably from the ones shown in 11/279. The 200 and 225 look similar to the #300 shown below but the 200 doesn't have the worm reduction gearing at the end. It has a 3-pole laminated armature, a cast iron base, and a black enamel finish; it weighs 2lb, is 3 3/4" high and 3 1/4" over shaft. It can be run 'from 1 or 2 dry cells but operates best on 6v and can stand 12v'. The 225 'Two Speed Motor' is said to have a windlass on its output shaft and a lever for shifting gear, which I suppose means disengaging the worm wheel. It is claimed that it will lift 50lb.

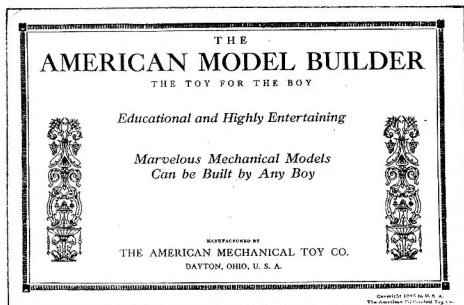


Style No. 300 MOTOR

The 250 is more powerful with a 6-pole rotor, like the earlier #300 perhaps. It is 4 1/4" high, 4" over shaft and weighs 3lb. Voltages are as for the 200 but it will 'stand 14v'. The 300 is the same motor but with the worm gearing, and will lift 75lb. Prices of this range run from \$2 for the 200 to \$3 for the 300.

SUMMARY OF MANUAL •Dates: © 1913 (FC); © 1914 & 1915 (p1); comp. closing date 4/17. •Printing: models are black line drawings on white paper. •Page Nos. of Parts List & highest PN: 78-79,79. •Page No. of Set Contents: 77. •No. of models for each set: 173,59,39,43,22,16,18. •Name, Model No., Page No. of first & last model of each set: 1: A (letter),no no.,3; Platform Derrick,173,18. 2: Deep Well Pump,174,19; Endless Rope Railway,232,25. 3: Revolving Wheel,233,26; Counter Scales,271,31. 4: Barge Dredge,272,32; Zeppelin,314,40. 5: Coal Elevator,315,41; Battleship,336,46. 6: Mountain Cable Railroad, 337,47; Stationary Engine,352,56. 7: Monorail,353, 57; Old Dutch Windmill,370,73. •Notes: patents: Canada 29/7/13; U.S. applied for.

Finally the manual noted as 'late 1915' in OSN 11, the one



with the Universal Plate replacing the Flanged Sector Plate in the Parts List/Set Contents. It can't be dated positively at present. From its models, the

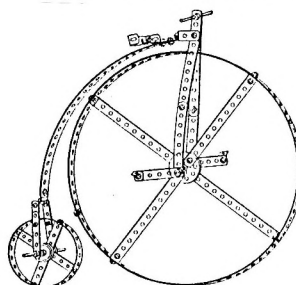
motors advertised in it (100, 150, 325), and the competition closing date of 4/16 it would appear to be the '1915', but of course the inclusion of the new version of PN 33 would put it after the '1916'. Don mentioned that the pages (77- 80) showing the new Parts, Contents and Outfits are replacements 'tipped onto the stubs of the original pages', and the cover (above) is different. No doubt the explanation is that old manuals were being used up and the competition date got overlooked. It doesn't of course establish the exact date and I'll call this manual '1917+'.

Since the above was written Kendrick Bisset and Josep Bernal have sent several interesting items. From the former details of two smaller manuals for the No.1 outfit, which from the competition closing dates in them are from 1914 and 1915. They are as might be expected in terms of models, ads, etc. The first, I'll call it '1914/1', has 20 pages plus covers and shows all the No.1 models that are in the main '1914' manual already described, plus a few from the larger sets on pages 12-15. The second, '1915/1', has 24 pages plus covers and has the 173 No.1 models from the '1915', plus some larger models on p19. The parts shown on p23 are said to be 'entirely new and are only included in the 1915 American Model Builder outfits.'

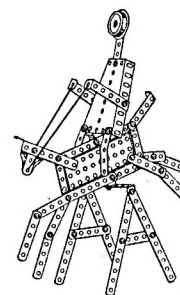
Kendrick also sent an AMB catalogue that was posted out in November 1913. It provides confirmation that the No.0 set hadn't been introduced at that time. The 200 and 300 motors are shown, and the Countershaft 350, also the No.400 Transformer which isn't listed in the '1913' manual. Some emphasis is placed on AMB being 'the only building set on the market that has brass collars attached to all the wheels', although MECCANO parts would probably have had tapped bosses by that time. To be pedantic, the AMB claim wasn't true anyway since their '1/2" Pulley Wheel' didn't have a boss.

Josep sent another Supplementary manual which probably dates from the second half of 1916. The winners of the 1916 contest are given and the next contest was to close in 4/17. So it's '1916/S', and the ads for motors and sets are as in the main 1916 manual. Of the 155 who won prizes in the competition, all had addresses in the U.S. except for one in Vancouver and one in Montevideo. The models are nothing special, except perhaps for some sporting figures,

OLD-FASHIONED BICYCLE

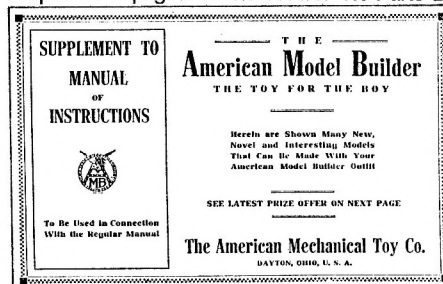


HURDLE JUMPER



including the 6 baseballers (if that's the right word) at the bottom of the page. I rather like the Hurdle Jumper and Penny-farthing above. Details of the manual follow:

SUMMARY OF MANUAL. •Dates: © 1915 on IFC; 1916 comp. winners given; next comp. closing date, 4/17. •Page size: 258*165mm deep. •No. of pages: 16 inc covers. •No Parts List/Set Contents. •Sets covered: 1-6. •No. of models for each set: 17, 10, 11, 5, 3, 2. •Name, Page No. of first & last model for each set:



1: LOCOMOTIVE,3; ANIMAL TRAP,4. 2: HURDLE JUMPER,5; FIELDER,5. 3: HEAD BALANCER, 6; FENCERS,7. 4: DOUBLE ACTING PUMP,8; ARMORED MOTOR CAR,8. 5: CLOCK,9; GRIST MILL,10. 6: GRAIN SEPARATOR, 11; ICE MACHINE,11. [no model Nos.] •Other notes: details from photocopy. Prize winners on p14, testimonials on p15.

5: FIELDER,5. 3: HEAD BALANCER, 6; FENCERS,7. 4: DOUBLE ACTING PUMP,8; ARMORED MOTOR CAR,8. 5: CLOCK,9; GRIST MILL,10. 6: GRAIN SEPARATOR, 11; ICE MACHINE,11. [no model Nos.] •Other notes: details from photocopy. Prize winners on p14, testimonials on p15.

And EL CONSTRUCTOR AMERICANO DE MODELOS MECANICOS

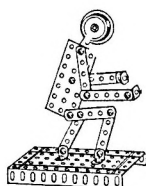
Josep also sent copies of some pages from an AMB manual in Spanish which he suggests may have been for the South American market.

All the inside pages correspond to the '1913' American edition, including the List of Parts (1-62), Motors (1-62), Motors 200, 300, and #350 Counter Shaft. The

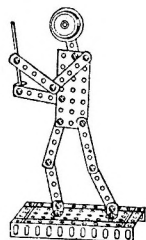


cover (above, x.25) is completely different though, and rather elegant with the name in gold on a pinky-beige ground, edged in yellow and black. In addition he sent some identical edging, but in red, that he noticed glued onto like Ascher's bound up manuals (see 11/278). They included a page from an early manual, so perhaps the design used for AMB covers before the '1913' (which had the father, son and Inclined Railway on it) was similar to the Spanish one.

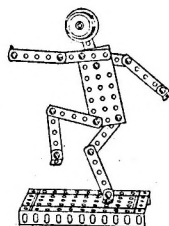
CATCHER



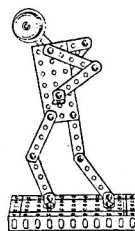
BATTER



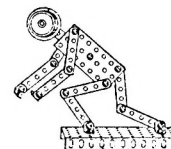
PITCHER



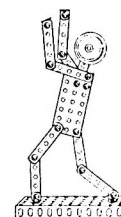
UMPIRE



SHORT STOP

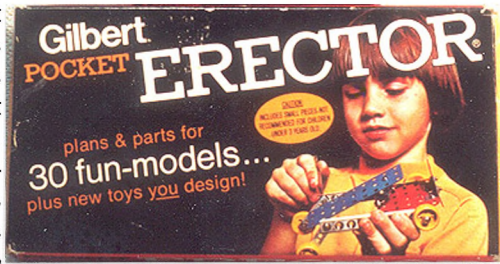


FIELDER

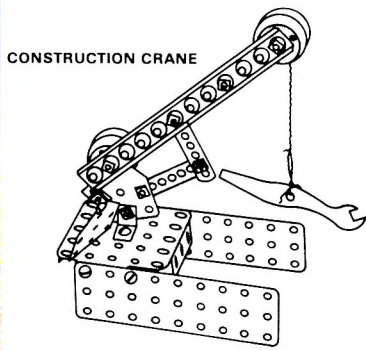
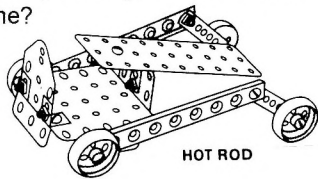


All Models shown on this page can be made with The American Model Builder Outfit No. 2 or No. 12, or with No. 1 and No. 1 1/2 Combined, or with No. 11 and No. 1 1/2 Combined. HALF THE FUN IS BUILDING THE MODELS—THE OTHER HALF IS OPERATING THEM WHEN COMPLETED.

POCKET ERECTOR Early in the 1970s, after the Pocket MECCANO Set had been out for a while (since 1971), I happened to see a Pocket ERECTOR on sale in Washington and bought one as a souvenir, thinking that for once Liverpool had come up with a marketing idea first. I assumed at the time that the Pocket ERECTOR was a recent product but it now appears that it dates back to at least 1973. Richard Symonds has come across two Sets, one



box (above) is labelled **Gilbert Pocket ERECTOR** and is from 'Gilbert Industries Inc., a subsidiary of Gabriel Industries Inc.' and the copyright date is 1973. The other (below) is called **Gabriel Pocket ERECTOR**, and has the same company names; it's identical to the one I bought, both marked Copyright 1977. So was the 1973 version the first Pocket ERECTOR? And more generally, when did Gabriel cease to use the Gilbert name?



Both Sets were in the same size boxes, about 5*2½*1", but the boy and the model on the front were different. The Instruction Leaflet found in both boxes bore the Gabriel name with no mention of Gilbert, but it's not absolutely certain that the one in the Gilbert box was original. From the models on the boxes it is likely that the same 30 models could be made from both Sets. Two are shown above.

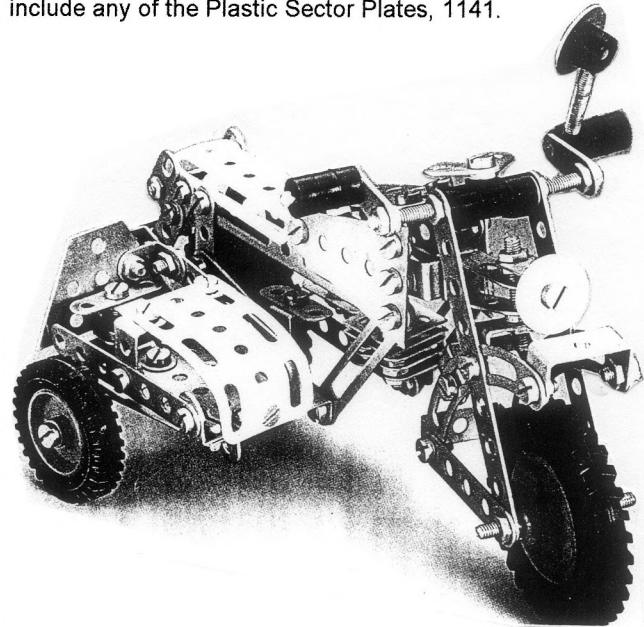
Below the contents of my set: all the parts except the Wheels are standard Gabriel and unless stated are BZP.

- 4 Wheels [#P-30382; yellow plastic; 1 1/16" dia; the 4 peripheral holes won't take a standard Screw.]
- 2 off, 7 Hole Strips [#G; holes at 1/4" pitch.]
- 2 off, 9 Hole Girders [#34; holes at 1/2" pitch.]
- 1 off, 5*5 Hole Flanged Plate [#45; red.]
- 2 off, 3*9 Hole Base Plate [#ME; one side blue, cream the other.]
- 2 Car Trucks, Flat [#49; red Flat Trunnions.]
- 1 Double 45° Strip [#24; 2*1*2 holes but length as #G]
- 4 Right Angles [#P-1; Angle Bracket, slots in both arms.]
- 1 Screw, 7/8" [#S-62] • 4 Screws, 1/2" [#S-52]
- 14 Screws, 1/4" [#S-51] • 20 Nuts, 8-32 [#N-21]
- 1 Wrench [#PM491; combined spanner/screwdriver.]

The Right Angles have near fully radiused ends whereas those in a regular Gabriel Set bought in the early 1970s had the standard Gilbert square corners. The length of the arms and the slots in them are identical to the square pattern. Did Gabriel change over completely to rounded ends at some point, and if so, when?

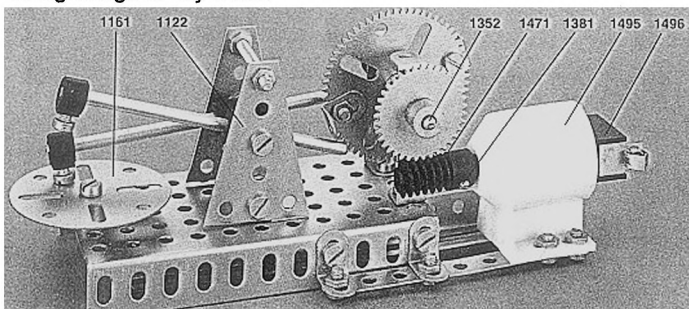
CONSTRUCTION: Sets 03, 04, 05 A list of the current CONSTRUCTION sets was given in 11/293 and now thanks to Josep Bernal and Chas. Shrubsole, I have details of the Instruction Leaflets from the above Outfits.

The 03 is the largest basic set and compared to the previous equivalent C03 outfit there are 60 fewer parts. Some have disappeared completely including all the Gears, the 20 and 25-hole Strips, the 30 and 50mm Disks, the Universal and Rod Couplings, the 60mm Pulley, and the large Pulley with Tyre (#1303). Otherwise there are small reductions across the board but a few extra N&B are included. The other plus is 19 Plastic Flexible Plates, although that's not as many as used to be in the C06 add-on set, and doesn't include any of the Plastic Sector Plates, 1141.



Instead of the 64 page Manual that used to be packed with the C03, there's now a 4 panel fold out A4 Leaflet, similar to those that are included in the 'theme' sets. Detailed step by step instructions are given for only one model, the rather nice Motorcycle and Sidecar (above) that used to be Model M22 in the old Manual. In addition there are photos of 3 other earlier models, one each of a Lorry and two types of Trailer, although the tipping mechanism and (I think) the steering have disappeared from the Lorry.

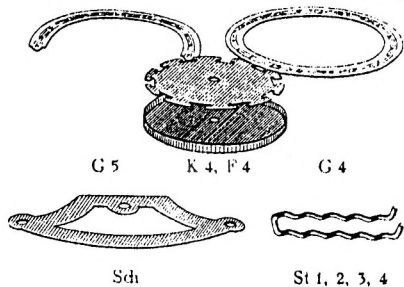
The 04, ex-C04, includes Gears and a Motor, and the contents haven't changed. It used to be an add-on outfit and a number of models and mechanisms for it, some needing a basic set as well, were shown in the Manual mentioned above. Now it stands on its own with a similar Leaflet to the 03 one, with instructions for one model, a rather simple Trip Hammer (below). Photos are also included of 5 drives, including the use of bevels in a reversing mechanism and a differential. Both the latter were in the earlier Manual but, as now, no application was shown for them. In a still earlier Manual, perhaps from the late 1950s, the diff is shown built into a chassis, a much better way of doing things to my mind.



The Crane Set, 05 used to be C14 and neither its con-

STABILA This set is mentioned in the history of STABIL elsewhere in this issue and these notes are based on material kindly sent by Jeannot Buteux, from the Construtorama archive, and help from Werner Sticht. The models mentioned are all shown on the front cover. Walther & Co., who of course made STABIL, came up with a number of innovations but STABILA must surely have been the most unusual - a construction toy intended solely for girls, with models consisting of frameworks of metal parts, filled in where necessary by brightly coloured strands of wool.

There were 43 different parts, of which 14 were standard Strips, DAS, Threaded Rods, N&B, etc. Many of the others were Bases and Frames like those shown opposite, and there were also square, oval and rectangular versions of them. The Frames had small holes in them at standard pitch to take the crinkly Wire Supports (below), that often formed the sides of models, and around which the wool was woven, rather like wickerwork. There were also special 6-hole Strips and A/Gs with normal holes at the ends but small ones in between. The Wire Supports were supplied in 4 sizes from 36 to 85mm long and their bent ends could be held by being clamped between the upper and lower parts of a Base. This can be seen in the Wheel Chair, which also shows a Wire Handle and the 36mm Wheels which were not the standard STABIL Wheel Discs. The Rockers, below, were used in the See-saw and as the sides of the under-frame of the Pram, with the axles going through the end holes, as well as for chairs. A 3.5v Bulb and Holder were included and used in a Table Lamp.

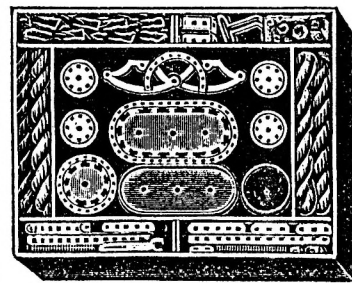


Apart from some copper wire and a few brass parts, the metal parts were all nickel plated.

Two outfits were listed, Nos.1 & 2, the latter with some 160 parts, including 24 Nuts and 14 Bolts. In the illustration of the No.1 above right, the hanks of

wool can be seen at the sides. Each set had a manual

nically produced in colour, with a good selection of models ranging from the Cot to what looks like a wool covered Garden Shed. Some of the text is charming (or perhaps a touch sickly, at least in English) - for the Rocking Chair it translates as: 'A rocking chair gives a lot of fun and your dolly will also be happy if you make one. It's so easy to build that we need only show you a picture. Don't forget to lay a lace cover on it. The rockers are attached to the base using a 3*1 DAS.' There is much emphasis on dolls and their trappings.



STABILA Nr. 1 für Mädchen

By contrast the cover of the #1 manual (below) shows a yacht, seaplane and speedboat with, on the shore, an elegant looking young lady tinkering under the bonnet of a powerful car. At the bottom is the slogan 'Engineering for Girls in Sport and Work'. The image the cover conveys hardly seems to fit with the woolly prams and invalid carriages inside, ingenious though these may have been.



It is believed that the STABILA sets came onto the market in 1933, and as far as is known didn't reappear after WW2.

tents or Leaflet have changed at all, apart from the 'eitech' logo on the front of the latter.

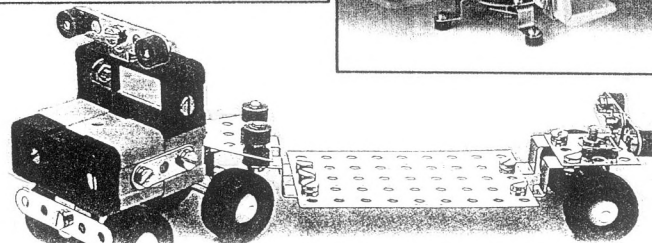
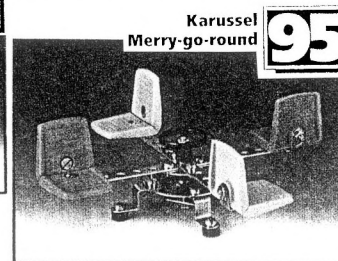
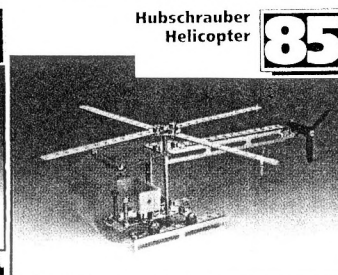
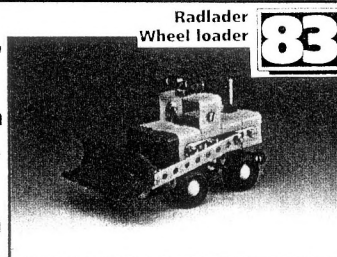
[In OSN 4 I advertised the 64-page Manual referred to above, and a few remain if anyone coming new to CONSTRUCTION is interested. Price £0.75 plus postage - they weigh about 250g each.]

And the START-BOX Range These were listed in 11/293 and Geoff Davison recently bought the Low Loader, No.84, in Germany, for the equivalent of £7. The shopkeeper said that Eitech were still in existence but that he hadn't sold many sets.

Geoff kindly send copies of both sides of the box and the Instruction Leaflet. The former shows small pictures of all the START-BOX models and to clarify the question marks in OSN 11, No.81 is an Articulated Lorry, and No.83 a wheeled Shovel Loader although the English name on the box is 'Wheel loader'. Four of the models are shown opposite. They may not be very clear - the Helicopter has plates curved around to form the nose, and the Racing Car looks as if it has working steering.

The models use a mix of metal and plastic parts, and most of them look like those in earlier sets, although I don't recognise the shovel in No.83, which is shown in blue. The Leaflet gives clear step by step illustrations but doesn't use, I'm glad to say, exploded diagrams. The finished Low Loader is shown above - the front ends of all the various trucks look rather similar.

Chas. also mentioned some special parts in a No.94



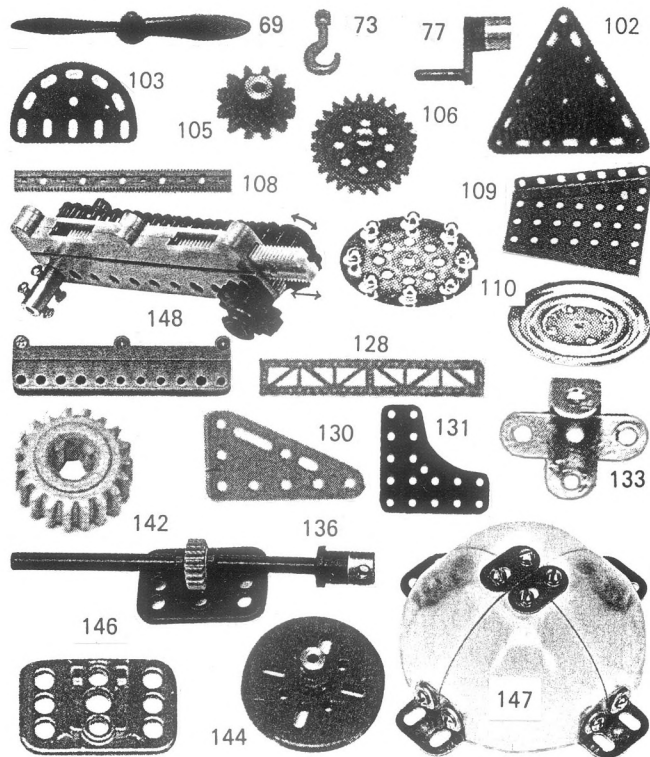
Startbox - a 45mm Axle, a 12mm Bolt, and 2-piece push-on Wheel, black with white hubs.

NEW FROM JE-IL (JEP) The Korean JEP Sets 1 to 5 were described in OSN 6 and 7, and at the beginning of this year they were still available in South Korea. In addition, new parts, some rather interesting, and a No.6 Set have been added to the range. First though the name - JEP was the name on an English language leaflet advertising Sets 1-5, but since then the same system has been included in MCS Part 5 under the name JIEL. A Korean friend of my daughter kindly translated the cover of the manual shown in 6/159: the top left word in large letters means 'Box of Science', and elsewhere are details of the maker, JE-IL Jeng-Mil Industrial Ltd., A-2 Bu Rak, Chang Won Industrial Centre, Chang Won-ST, Kyeong Nam. Tel: (in recent manuals) 858- 9301~3; Fax: 858-9305. There's also a Seoul office, Tel: (0551) 61-0719; Fax: (0551) 84-7141. The MCS entry came from Jeannot Buteux in France, so maybe JE-IL got changed to JIEL somewhere along the line, or maybe that's how the Korean would be rendered into French. For simplicity I'm going to stay with JEP though there's nothing to say that the No.6 has ever been sold under that name.

The new information has come from three current manuals for Sets 1-3, 5, and 6. A Mr. Eric Wright sent them from Korea to Geoff Wright, who kindly lent them to me for this account.

PARTS There's a List of Parts in each manual, in Korean, with a small colour photo, often rather indistinct, of each part. The 100 different parts that were in the earlier No.5 Outfit continue but the following are shown in new colours:
Grey (gy): Strips, DAS, A/Gs and the Channel Bearing.
Red (r): 5x5, 5x7h Flexible Plates, Slotted & Curved Strips, 3x3 Perf. Plate, Flat Trunnion, and 2x2h Corner Bracket.
Blue (be): 3x5, 3x11, 5x11h Flexible Plates.
Green (gn): Flanged Plates, 5x11h Perf. Plate.
Yellow (y): Flat Girders.

There are over 40 new parts, excluding what seem to be carrying baskets, one for each set. In the descriptions below all dimensions are approximate; abbreviations for colours are as above plus bk for black. PNs are shown in square brackets for the parts illustrated below.



Strips etc: 25h Strip (gy); 2h A/G (gy); 25h (single) Braced Girder [128](y). The latter is 4 holes deep and the thick end and centre pillars each have those 4 holes plus one in the

middle, like the current MECCANO #6a.

Plates: 3x5h Perf. (gn); 5x5h Transparent; 3x5h Triangular [130](y); Triangular with 7h sides [102](r); 5x5h Gusset [131](dark gn); semicircular with slotted holes [103](be); 7 hole long Flanged Sector Plate [109](gn).

Gears: 5½" Rack Strip [108](y); Rack Housing [148](gy); combined 1½" Gear-½" Pinion (black with brass boss); combined 1½" Pulley-½" Pinion (red with brass boss). All these parts, apart from the bosses, may be plastic. The Rack has teeth along the top and bottom face. Some of the holes along the base of the Rack Housing are large ones for the 'splined' parts listed next.

'Splined' Parts: 9cm Shaft [136] with brass socket end to take a standard shaft; 5cm Shaft, plain; ½" Pulley (bk); combined 1½" Gear-½" Pinion (bk); ½" 19t Pinion [142](y); 1" 12t Sprocket (bk); Bearing Plate for Shaft [146](r). All the parts except the Shafts may be plastic and no bosses or means of locking them on the Shafts can be seen. Apart from the 19t Pinion and the Bearing Plate, they can all be seen in the Gear Clutch Unit below. The Shafts look as if they are about ¼" o/d and have 4 grooves with the base diameter that of a standard Axle Rod. This means that the parts with the 'splined' bores may also run on standard Axles. It may not be clear from the illustration but the Bearing Plate has 2 lugs normal to its surface with holes to journal the Splined Shaft.

Gear Clutch

Unit (gy/bk).

Input is into the socket on the rear 9cm Shaft; output is onto one or both of the 5cm Shafts at the front, as selected.

Each carries a Pulley, Sprocket, and Gear-Pinion. No doubt each lever moves a pinion, which can't be seen, into mesh with the Gear on the front Shaft.

Sprockets: Wide toothed, 12 [105] and 25t [106] (red with brass bosses); ½" wide black Chain, probably plastic but finer pitch than MECCANO. The 2 Sprocket Wheels are also shown used as gears meshing at 3h centres, so they are probably Mod. 2.

Fittings: Slide Piece (brass boss); Coupling, 2 parallel bores tapped right through (brass); detachable Crank Handle [77].

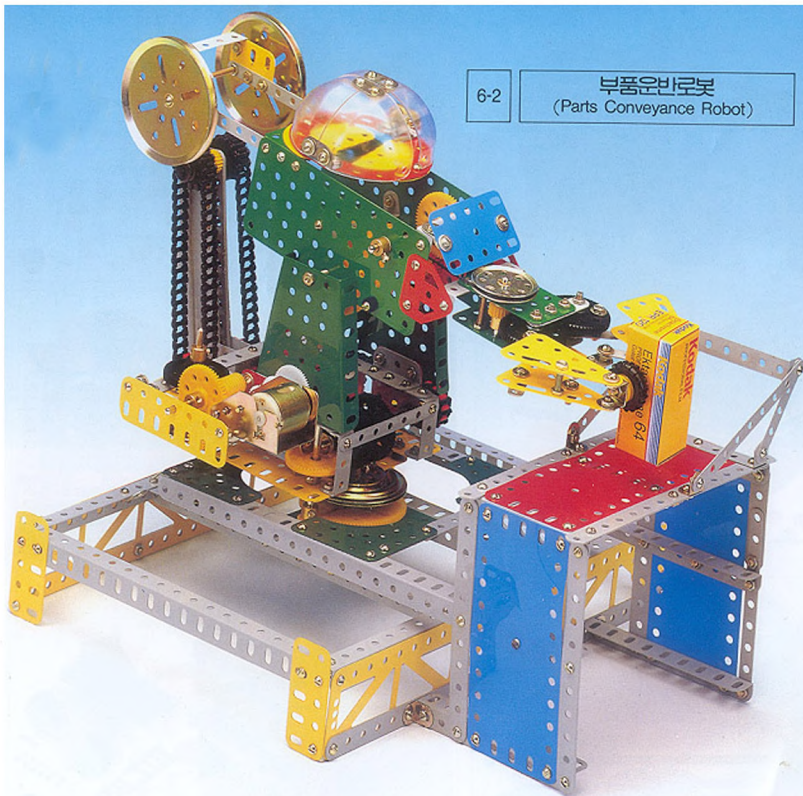
Misc: black Tyre?; 2½" dia Ball Bearing (iridescent) [110]; Steering Bracket [133](gy); Double Pulley [144](3"-½", red with brass boss); black Spacer; transparent ¼ hemisphere [147]; 4" 2-bladed Propeller [69](bk); Hook [73](be).

SETS On the back cover of the Manual is a list of all the sets: Nos. 1, 2, 3, the Army Outfit, the 3 to 5 linking set, and No.6. Prices go from ₩ 28000 for the No.1 to 83000 (£70) for the No.6. Incidentally it says on the cover that if you order more than 10 sets they can be sent to you directly.

The Manuals gives the contents of the No.3, the 3-5, and the No.6. The No.3 now contains 3 extra Axles and one extra Pinion, plus some of the new parts, among which a Rack, Chain and 4 Sprockets, a Hook, Propeller and Crank Handle, and 2 each of Flanged Sector Plates, Slide Pieces, 7h Triangular Plates, and slotted Semicircular Plates. These additions carry forward into the No.5 of course, and as well there are 2 more Axles, 4 more Sprockets and more Chain, another Rack, a Coupling and the Ball Bearing.

The No.6 has an extra 30 or so miscellaneous parts from the earlier range - Brackets, DAS, Collar, etc, etc - plus another 60 N&B, making over 320 in total. Then 24 of the new parts such as Strips, Braced Girders, Plates, etc, plus 5 of





the new combined gears/pulleys, the Gear Clutch Unit, and all the splined parts, including 22 sliding Pulleys, Sprockets and Gears.

MODELS There are 5 new No.1 models, one of which replaces the Guillotine, and 4 extra for both Outfits 2 and 3. Some small changes have been made to a few of the existing models and 2 or 3 more No.2 models now incorporate the Motor included in the Set. The new models make use of the new parts included in the different sets. All the illustrations are new and show the new colours. The step by step photos are still rather small but are clearer than before, those for the new models are in colour.

It's a similar story for the No.5 models with improved clarity, though still not good enough for the more complex models, and 4 new models to show the new parts in action.

There are only 4 models in the No.6 manual (against 22 in the No.5), and the presentation is as already described. The Parts Conveyance Robot is shown above and the Boom Crane can be seen on the manual cover opposite. The others are a Broadcasting Car, with rotating antennae, and a Space Aircraft. As in all the manuals the names of the models are given in English as well as Korean, the only other English words in the No.6 manual are 'Gear Clutch'.

All these models use the 'Crane' motor and the Geared Motor to power several movements, with numerous pulley, chain and gear drives. Individually each is straightforward but in total they give each model a quite complex look. The Gear Clutch and Rack Units are only used in the Crane but the Ball Bearing is in all of them. The models look quite well but, as for the those in the smaller set, they are spoilt a little for me by the patchwork look that all the different colours of the parts gives to them.

SUMMARY OF MANUAL #Name: JE-IL. #Details of maker: JE-IL Jeng-Mil Industrial Ltd., A-2 Bu Rak, Chang Won Industrial Centre, Chang Won-ST, Kyeong Nam. South Korea. #Dates &/or Ref Nos: none. #Page size: 297x179mm deep. #No. of pages: 52 inc covers, no page nos. #Language: Korean with model names also in English. #Printing: colour, plus some B&W (step by step), photos. Model on cover is as before but in new colours, on grey ground. #Page Nos. of Parts List/Set Contents, & highest PN: 2-3,119. #Sets covered: Nos.1-3. #No of models: 39,14,14. #Name, Model No., Page No. of first & last model: 1: Scales,1-1,5; Helicopter,1-35,13. 2: Forklift Truck,2-1,14; Crane Car, 2-14,25. 3: Jeep,3-1,27; Duplicator,3-14,50. #Other notes: the name of the maker has been translated from the Korean.

SUMMARY OF MANUAL [Details which are as above are not repeated] #No. of pages: 88 inc covers, no page nos. #Page Nos. of Parts List/Set Contents, & highest PN: 2-3, 120. #Sets covered: No.5. #No of models: 22. #Name, Model No., Page No. of first & last model: Racing Car,1,7; Numerical Control Milling,22,85. #Other notes: this manual is for the 3-5 linking set and only the parts/contents of this set are shown.

SUMMARY OF MANUAL. #No of pages: 24 inc covers, no page nos. #Printing: colour photos throughout. Cover has yellow ground. #Page Nos. of Parts List/Set Contents, & highest PN: 2-5, 149. #Sets covered: No.6. #No of models: 4. #Name, Model No., Page No. of first & last model: Broadcasting Car,6-1-8; Boom Crane,6-4,20.



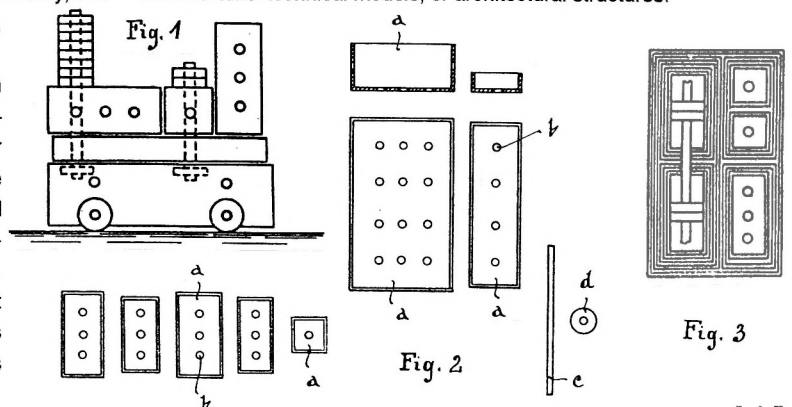
The MATCHBOX SET Patent

From the notes on these little sets in OSN 6 (pp130-1) and later letters, it was clear that they date back to before WW2, but neither the exact date nor the country of origin were known for sure. Now David Hobson has found the relevant UK patent, No. 378259, which was granted in August 1932. It is in the name of Max Schmid of 80a Fürtherstrasse, Nürnberg, Germany, and the date of the original German patent was November 9, 1931 - its number isn't known.

The title of the Patent is 'Screwless Metal Construction Sets' and the main claims were that: (i) The main constructional parts would be hollow rectangular, square, or other shaped bodies, a, of sheet metal or the like, open at one side, and pierced with holes, b. (ii) The parts would be held together by discs, d, of any suitable material, held by friction on pins (c) which would pass through the holes (b). (iii) The relative dimensions of the parts would be such that they could be 'accommodated by being placed the ones into the others in the cover of a match box or the like'. As

per Fig.3. (iv) The largest part could serve as a drawer for the other parts within the sleeve.

The object was to provide a simpler and cheaper constructional set suitable for a small child to use, and which also might 'be employed as a gift and advertisement'. The parts could be used to make both 'rigid and movable' technical models, or architectural structures.



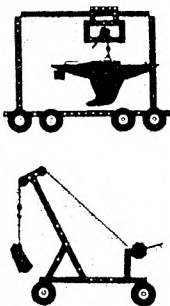
TECHMASTER What is known of this small American system appeared in the *Southern California Meccano and Erector Club Newsletter* back in 1987 but was never included in MCS. The details were originally provided by Joel Perlin and came from 4 pages of an incomplete manual; I am grateful to Anton Calleia, Secretary of the SCM&EC for permission to use them here.

TECHMASTER

CREATIVE · CONSTRUCTIVE · EDUCATIONAL

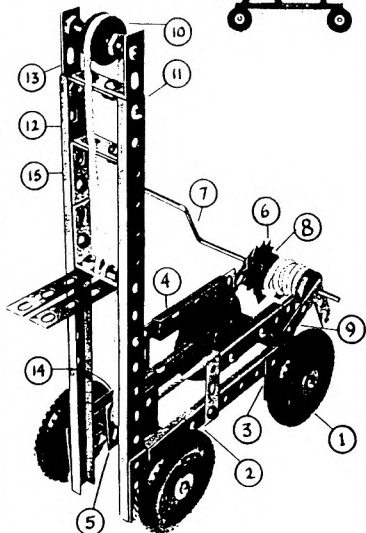
TECHMASTER was made by the Techmaster Educational Toy Company, Chartley, Mass., U.S.A., and was distributed by the Geo. Borgfeld Corp., New York City, N.Y. The Tier Lift model below is stated to be 'Made from Techmaster Sets 1, 2 & 3' but nothing is known of the sets themselves or whether that was the complete range.

The cover of the Manual shows various models including cranes, a tractor/trailer unit, and a yacht transporter/launcher. A young and an older boy are shown on it building a model. All the models are fairly simple and look as if they could be made with the parts used in the Tier Lift, and those illustrated in the 'Instructions', some of which are shown below.

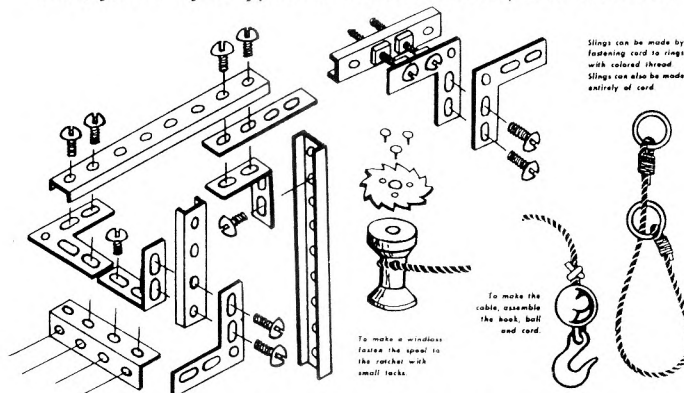


NO	NUMBER OF PIECES	NAME OF PART
16		SCREWS-NUTS-WASHERS
15	2	8" CHANNEL
14	1	MEDIUM SHEAVE
13	8	STRAIGHT TIE PLATE
12	1	CABLE
11	8	ANGLE TIE PLATE
10	1	LARGE SHEAVE
9	1	1" CHANNEL
8	1	1" ANGLE (PAWL)
7	1	HANDLE
6	1	WINDLASS & RACHET
5	6	SQUARE TIE PLATE
4	2	2" CHANNEL
3	10	CORNER TIE PLATE
2	2	4" CHANNEL
1	4	WHEEL

TIER LIFT
Made from Techmaster Sets 1, 2 & 3



The main point of interest is the use of shallow channel girders, up to 16 holes long, as the main structural members, joined by 3 types of 4-hole brackets, and also their



use in allowing other 'strip' parts to slide in them. The Spool, which is used as a winding drum, is probably wooden because the Ratchet has to be fastened to it with small tacks. No axles are mentioned and the wheels appear to run on long bolts locknuttred to the chassis.

Some 2 dozen different parts can be identified as follows,

MECCANO in the U.S.A. On Gilbert MECCANO, Don Redmond notes that the 3" Pulleys in his 1930 #110 Set are red and have MECCANO bosses, but Gilbert would have used ERECTOR bosses for new production as the various parts that he acquired from the NJ factory went out of stock.

Kendrick Bisset mentions the parts in a **No.4a outfit** belonging to John Drury. The Strips, DAS, etc are tin plated, other parts are red and green, and some have been painted over nickel plating, (the Architrave on one side only).

Also he has a **0-40 Manual, ©1929** PR O-112925, and the last page confirms that the models for Sets 10-70 models correspond to those for the previous Sets 0-6; the models for the new 0 Set were the old 00 up to No.472, and the new No.5 allowed all the earlier 00 models (through No.496) to be built. The models in the Manual retain their original numbering and each page has at the top 'See last page of this Manual for list of models built with your outfit.' To further help anyone still confused, the cover is stamped 'THIS OUTFIT BUILDS ALL MODELS UP TO PAGE 110', and that page has the last of the previous No.2 models, so no doubt this 0-40 manual was packed with a No.30 Outfit.

Roger Baker sent some details of a **U.S. Edition Manual, Copyright 1913** by Meccano Ltd. The illustrations and instructions in it appear to be identical to the UK No.14. The lettering on the cover is brown instead of blue and there's the additional text: 'TRADE MARK 83171 PATENTED JANUARY 16TH 1906. AMERICAN AGENTS: THE EMBOSING COMPANY, ALBANY, N.Y. MECCANO LIMITED, LIVERPOOL. PRICE 25 CENTS.'

Prices in the ads are in dollars of course and compared to the UK prices the exchange rate is generally between 2/6 and 3/- (12½-15p) to \$1, against the official rate of £1=\$4.76 (\$1=21p).

A blue flier in the U.S. Manual advertises the No.1 and No.2 Meccano motors, and the address on it is: THE MECCANO COMPANY (INC), MASONIC HALL, 71 WEST 23RD ST., AND 46 WEST 24TH ST., NEW YORK.

The sets that came with this Manual seem to be the same as the equivalent English ones except for a sticker (over the note about patents) on the lid, which reads: PATENTED IN UNITED STATES 17TH JANUARY 1908. [I haven't been able to check yet whether '1908' is a slip of Roger's (or Meccano's) pen - there is a list of all the Meccano U.S. patents in MJ 19/524 and the first after 1906 is in 1912.]

with MECCANO-style names in square brackets:

- 1", 2", 4" and 8" Channels.
- 1", 2", and 4" Angles [A/Gs].
- 4-h Angle, Corner & Straight [Flat] Tie Plates [Brackets].
- Square Tie Plate (probably 2*2 holes).
- Large and Medium Sheaves [Pulleys, which look about 1" and ½" dia].
- Road Wheel.
- Handle [Crank Handle]; Spool; Ratchet.
- Screws, longer Screws, Nuts and Washers; Cable [Cord]; Hook (& Ball for); Ring.

What else? All parts are shown with square corners. The hole spacing is probably ½" if the lengths given for the parts are overall. There's nothing to say if the parts were steel or aluminium, or how they were finished.

So, some slightly unusual parts and brackets which probably allowed quite rigid structures. MASTERBUILDER used rather similar looking Channels but didn't provide such good brackets for joining them, and I don't recall parts sliding in them.

BRAL No.9 SET MODELS In 8/191 it was noted that the contents of the No.7 Outfit seemed to have decreased compared with years ago, and that the models in the No.7 Manual were rather disappointing. Last year Eric Sinton kindly sent a copy of the models in a recent No.9 Manual (the parts have the new 4-figure PNs), and I have now, thanks to Gwen Higginson, been able to compare them with those in an earlier Manual dating from the late 1960s perhaps, (details below).

There are about the same number of No.9 models in each but there the comparison ends. Of the 15 models in the recent manual, 1 was an earlier No.5 model, 7 earlier No.6 models, 2 earlier No.7 models, and 1, the Tortoise (see 7/142) was from the earlier No.9. That leaves 4 others and they aren't in the same class as most of the old models, although one, the Tractor featured on the current Parts Leaflet, does have proper steering.

So no doubt the contents of the current largest BRAL Outfit has been much reduced, but just when the change(s) occurred isn't clear. Perhaps it was when the sets were renumbered for 1992 and the No.9 became #2243, but the No.7 in OSN 8 appears to have been bought before that.

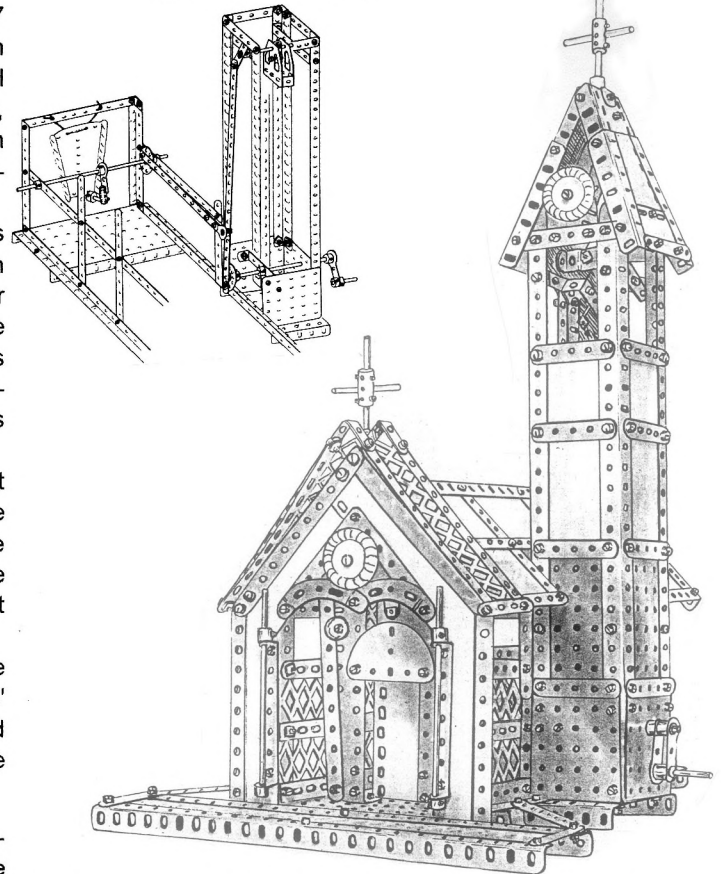
The 'old' manual is rather quirky with erratic page numbering, and there are #9 models in it although it has '8' on its cover. But it contains a good selection of models and many of them are quite original. Three that took my eye are reproduced here, somewhat reduced in size.

SUMMARY OF MANUAL. •Name: IL COSTUTTORE BRAL 8 •Details of maker: Roberto Braglia, Milano. •Dates/Ref Nos: none. •Page size: 244x165mm deep. •No. of pages: 132 (1-112+97-104+121-132)+ covers. •Language: Italian, German, French (most model names Italian only); also English intro. •Printing: cover & pp 97-104+121-132 in colour. Other models B&W line drawings with some shading. Cover red with white letters. •No Parts List or Set Contents. •Sets covered: 2-9. •No. of models for each set: 6,12,13,16,28,24,17,18. •Name, Model No. (mostly none), Page No. of first & last model of each set: 2: SEGGIOLINO CON LEGGIO,41,9 (stool with music stand); SCHERMITARE, 40, 11 (fencer). 3: TRAPANO,66,12 (drill press); PEZZI OCCORRENTI,77,17 (mail bag hanger). 4: MACCHINA A VAPORE,18 (steam engine); SEGA A NASTRO,24 (band saw). 5:MAGLIO A DOPPIO EFFETTO,25 (double-action trip hammer); MITRAGLIATRICE 'BREDA',34 ('Breda' machine gun). 6: TRAM ELETTRICO, 35 (single-deck tram); GIASTRA,54 (merry-go-round). 7: BILANCIA AUTOMATICA,55 (automatic scale); GRU PER EDILIZIA,78

SI COSTRUISCONO CON LA SCATOLA N. 8 OPPURE 7 E 7/A

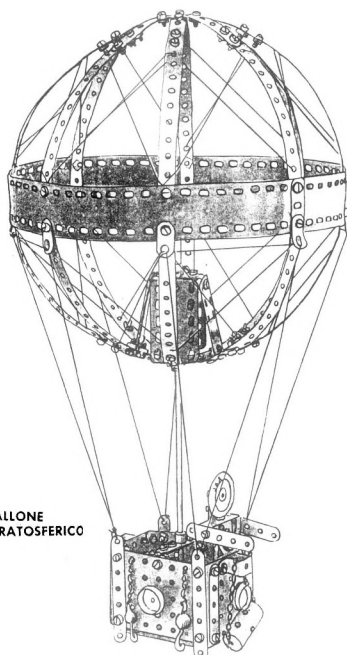
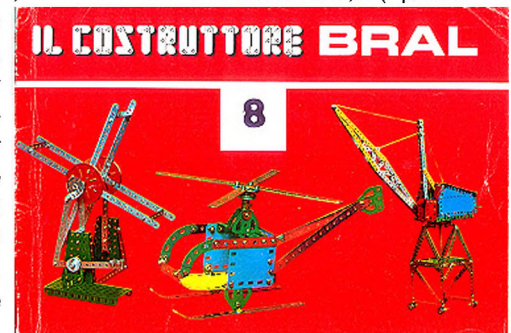
On construit avec la boîte N. 8 ou 7 et 7/A

Metal - Baukasten 8 - 7 - 7/A

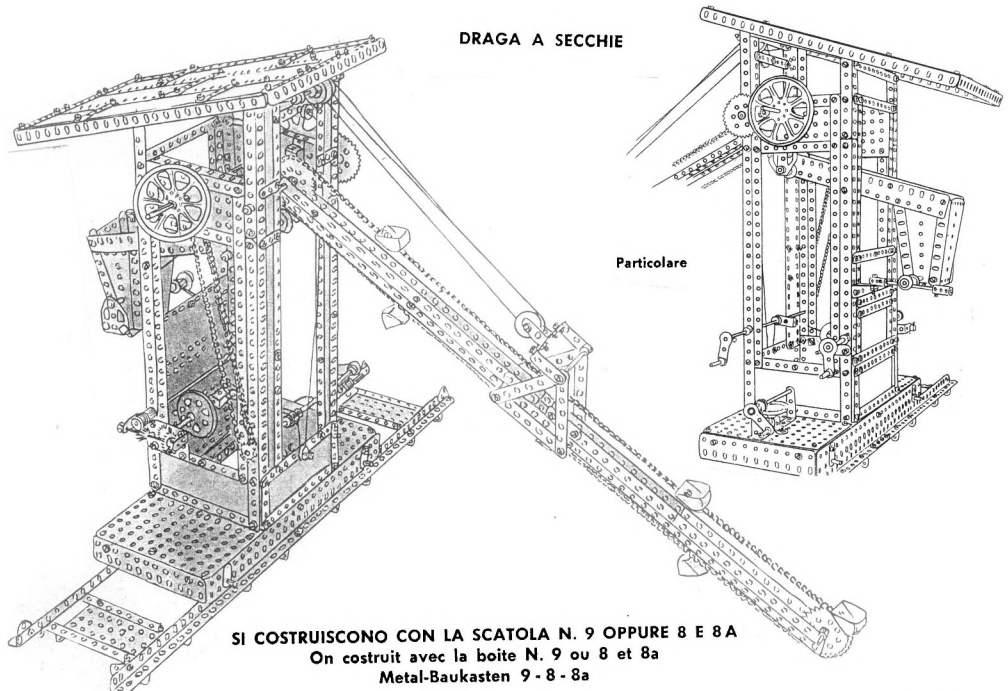


(builder's crane). 8: CARRO ARMATO,79 (tank); GRU A PONTO,95 (travelling gantry crane). 9:GRANDE PIEGATRICE A MOTORE,96 (? press or bending machine);

CARRO ARMATO, 130 (tank). •Other notes: 3 extra unnamed #8 motor driven models are on pp101-103, and 2 using ELETTRO BRAL on p131. Also 'BRAL' made from Strips on p8.



PALLONE STRATOSFERICO



DRAGA A SECCHIE

Particolare

SI COSTRUISCONO CON LA SCATOLA N. 9 OPPURE 8 E 8A
On construit avec la boîte N. 9 ou 8 et 8a
Metal-Baukasten 9 - 8 - 8a

Some Notes on the History of STABIL

by Werner Sticht

Introduction Leaving aside the ANKER Bridge Construction Set, Walther's metal construction sets were the first in Germany. Their main system, called STABIL, was very popular, and the name 'STABIL-Baukasten' became a synonym for every MCS in Germany. You could even say that STABIL was *the* German MCS, at least for a long period. Looking at STABIL, the influence of MECCANO is evident with very nearly the same size flat strips and hole spacing (12.5mm instead of 12.7), and some parts are direct copies of their MECCANO equivalents.

But there is a fundamental difference in that Walthers used screwed rods as axles, so allowing wheels and gears to be attached to them without the complexity of tapped bosses or (fragile) tongued clips. Other significant Walther developments were their patented gears, powerful clockwork motors, the 'Gewichtsmotor' (motor driven by a weight) which could be constructed with STABIL parts, and the introduction of the first gears in plastic in 1938. Also their 'Erfinderbaukästen' (Inventor's Outfits) which contained large rolled shafts running in ball-bearings, and single teeth to make gearwheels with any number of teeth. These parts were unique to Walther & Co., and they had three patents on them.

Another STABIL feature was that the outfits contained some wooden parts, a feat across from the wooden construction sets which Walthers also made.

The manuals were technically oriented and even more than with Frank Hornby, stress was laid on the use of the correct and exact technical language. STABIL was planned for junior engineers, a characteristic which was not so evident with the other German MCS.

Most of the dates given below have come from the manuals, listed at the end, that I've been able to consult, and may therefore be in error by a year or so in some cases, depending on the gap between one manual and the next. Another important source of material has been two Bank Reports on the company, kindly sent by Ansgar Henze.

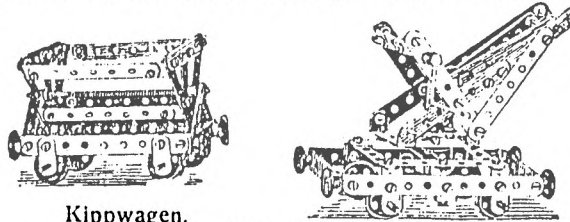
The Outfits and their Numbering STABIL outfits were numbered from 46 to 58. Standard outfits were No.49 to the largest, No.55; 56 to 58 were used for the Erfinderbaukästen. These were to be intended as additions to the standard sets and the smallest, No.56, was to be used with Outfits 49 to 51; No.57 with 50 to 52; and No.58 with 52 to 55. There were also conversion outfits 46a, 48a to 54a, 56a, and 57a. They converted an existing outfit to the next larger one except that the No.46a converted a No.46 or a No.47 to a No.48.

Sets 46 to 48 were introduced in the 1930s as very small outfits and each had a special manual to itself. Nos.46 and 47 have already been discussed in OSN (11/272), so will not be mentioned further. Only No.48 survived WW2 and continued until the end in 1972.

The numbering scheme for the outfits is somewhat unusual as explained in OSN 11. It may have arisen from a desire to have numbers for sets and parts that did not conflict, but certainly in the early days some numbers were used for both STABIL parts and non-STABIL sets. A 1914 price list shows, in numerical order, and leaving out linking sets and variations due to packaging in card or wooden boxes, the following:

- RECORD Sets 00-4 (all wooden parts).
- INGENIEUR Sets 8-11 (No.11 was described in 7/164, and from this List it is now certain that these sets and STABIL were both made by the same firm.)
- MASCHINEN Sets 30/1 and 30/3 (mostly wooden parts).
- STABIL Sets 49-56 (the largest, No.56, is said to be 'in preparation' and it isn't known whether it ever appeared - it is not of course the smallest of the Erfinderkästen, which were introduced in the 1920s).

- STABIL Railway Wagon Sets 59-63 (Eisenbahnwagenbau. Full details of these 'theme' sets are not available but it appears that (at least in large measure) standard STABIL parts were used. The different outfits allowed from 2 to 9 wagons to be made at the same time and it is stated that instructions were also provided to allow other types of models to be made. Two of the Wagons are shown below.



Kippwagen.

Wagen mit dreh- u. kippbarem Krahn.

- RECORD Sets 200-203 (all wooden parts).

Parts numbered from 1 to at least 35a were listed in an early STABIL manual for sets 50-52, probably dating from well before 1914. (This manual provides most of the available information on the early days, and will be referred to as the 'c1910' manual.)

Before WW1 one ARTS ET MÉTIERS outfit (see 'STABIL in other Countries' later) was numbered 81 and was nearly the same as the INGENIEUR No.11 set.

In 1925 the wooden RECORD wooden outfits were totally revised with sets numbered from 100 to 106.

The History of Walther & Co. and the Development of STABIL This outline in chronological order is based on the facts I've been able to find. More detailed information on the parts and manuals is given later.

1903 This is believed to be the year in which the firm Walther was founded by Franz Walther, who was previously in the wood trade. Other sources give 1905 but the 1903 date was from the Industrie und Handelskammer (Chamber of Industry and Commerce) in Berlin. A patent No.153854 from 4th June 1903, in the name of Walter Walther of Berlin, describes a wooden constructional toy, with steel brackets, to build houses. Franz's son was called Walter but there is at present nothing to show that the Walter of this patent was connected with the firm Walthers.

1904 On the 16th June 1904, Franz's wife Emma, née Metzel, applied successfully for five 'Gebrauchsmuster' (DRGM for short - a registered design, not a patent), Nos.248934 to 248938. These were the first of the 9 DRGMs mentioned in an advertisement in 1929. The Berlin Patent Office informed me that all details of those old registered designs have been lost and only their titles can be found in the German 'Patentblatt' (a periodical listing of patents, etc.). They covered the following metal parts, using MECCANO names: perforated strips (and probably plates); a double bent strip; a double bracket or double angle strip; a reversed angle bracket; and angle girders. Other relevant DRGMs are No.253288 and 289896 from 1905/1906, but I don't have details yet.

1906 1906 to 1956 are the dates given on the cover of the 50 year jubilee manual. I was told that 1906 was not quite correct when I visited the Walther offices in 1968. In 1929 they had held a jubilee model competition, thus indicating 1904, and in an advertisement at the end of 1930, it was said that they'd had 25 years of experience, and that they had been the first in the field in Germany. My guess is that they began making some wooden constructional outfits or possibly the INGENIEUR in 1904, and STABIL was first marketed in 1906.

1910 The business was not doing too well and ownership was put into Emma's name.

STABIL and INGENIEUR was being sold abroad but the name Walther was apparently not good for sales in some

countries, and so the Walther family decided (before 1910) to register 11 different names, probably in 11 different countries - but this last point is not sure. The only ones known are ARTS ET MÉTIERS for use in France and its colonies, and DEN LILLE INGENIØR for Denmark.

1917 Franz re-entered the business as a partner and on 3rd April 1917, Walther & Co. was first registered as a partnership company in the 'Handelsregister' (commercial register) of the 'Amtsgericht' (district court) in Berlin-Charlottenburg. The founders of the company were named as Franz and Emma Walther from Berlin-Neukölln. The object of the company was the production of toys to keep children fully involved and occupied. The business premises were in Grünauer Straße 8.

1914-21 Brass was in short supply and some parts were changed to zinc die-castings or made up from steel parts. Some steel parts, normally nickelled, were left unplated or chemically darkened.

1921 The name STABIL, together with a slogan, was registered as a trade-mark, see below. The slogan reads, 'Boys' finest toy, is and stays Stabil', and in German it rhymes.

Stabil Des Knaben schönstes Spiel
Das ist und bleibt Stabil **Stabil-Baukasten**

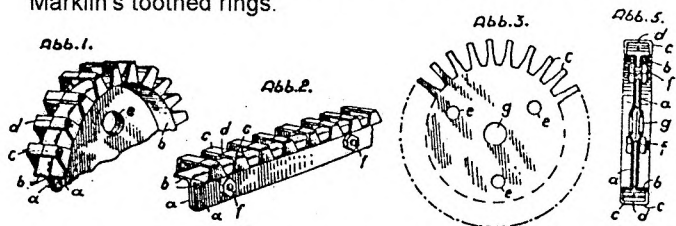
1922 Many important new parts were introduced and the set contents were radically changed to meet the competition from the newly launched MÄRKLIN sets and parts.

1924 Three 1924 patents related to parts used in the Erfinderbaukästen of 1925. Two showed the use of teeth which could be located in suitable slots in special strips and formed rings, to allow gears, contrates, bevels and racks to be made, and the other concerned rolled shafts that could be used as axles, rollers, pillars, supports, and the like, and means of attaching circular parts to them. This opened up the possibility of allowing heavier axles to be used in models, for added realism or to take high loads. Full details will be given in a later issue.

1925 The Erfinderbaukästen Nos.57 and 58 were introduced and included a number of new parts in addition to the patented parts mentioned above. Later a No.56 outfit was added. A new numbering scheme was started for the manual models.

The firm's premises were moved to Zeughofstraße 3.

1926 Patent No.451952 was granted to Franz Walther of Berlin: this was for a method of making the cheap large-toothed gearwheels that were needed to compete with Märklin's toothed rings.



Gear wheels were made of two identical halves, each of which was punched from sheet metal (Abb.3), and then 'half-teeth' were formed and the two halves were rivetted together (Abb.1 and 5). Abb.2 shows a rack strip which was never produced. The equivalent English and French patents are Nos. 279315 and 634285.

1927-33 New parts continued to be introduced including Tyres in 1930-32

In 1928 some 50 people were employed and the turnover was approximately one million Marks; by 1930 this had risen to 1.5 million and the workforce had increased to 150 seasonally. In this period the Walthers' son Walter was helping in the business.

In 1930 land at Harzerstraße 60-63 in Berlin SO was purchased and a new factory of 200m² was built there.

1933 Emma and Franz Walther died and Walter became

exclusive owner of the company. On the related official papers his profession was given as architect.

The No.48 outfit was introduced between 1931 and 1935, probably in 1933, also STABILA (for girls) and the KNIRPS motor and outfits.

1938 The 1926 patented gears were replaced by similar sized ones moulded in Bakelite. At about this time some other parts were made of aluminium alloy.

1943 On the 22th November Walther's premises were totally destroyed by bombing and orders could no longer be filled.

1950 Outfits 48,48M,49-52,49a-51a were available again and in 1951 outfits 49M,50M,53 and 52a,53a. The Erfinderbaukästen were never reintroduced, nor the large sets Nos.54 and 55, but as well as the complementary set 53a, the No.54a was listed later.

4 sizes of plastic flexible plates were introduced, probably at about this time, perhaps to match Märklin's postwar aluminium ones. As in the prewar years after 1933, there were relatively few new parts postwar.

1956 The manual for outfits 49-52 was revised and a proportion of new models included.

1957 Walther & Co. became a partnership company again, as Torsten Walther entered the business as partner.

1963 Walter Walther died. Ella Walther, née Kristenson, entered the company as partner, although she was not empowered to represent the company legally.

1966 Ella Walther died. Torsten Walther became the exclusive owner.

1970 Production ceased.

1972 The sale of STABIL outfits ceased. Many parts for the smaller sets were on sale in the Berlin flea-markets.

1991 The firm was officially closed.

Post WW2 manuals show the address of Walther & Co. as 'Harzerstraße 60-63'; there was also an address of 'Ermanstraße 5' at this time, which was where production took place. In Harzerstraße there was only a sales office at the end of the 1960's. In the pre-WW2 manuals you can find 'Berlin SO 33' or 'Berlin SO 36', and I suppose that 'SO 33' or 'SO 36' were postal codes at that time.

Dating Outfits by using the Manuals The c1910 manual and a 'Railway Wagon' manual with the same style cover, do not carry any date or edition references.

The next known editions, from after 1920 until June 1925, have the year (sometimes also the month) and the number of the 'Auflage' (edition) printed on the front cover; after that the references are on the back cover. The year given is probably the year the manual was printed. Therefore the manuals are the main tool for dating an outfit or for documenting the state of the STABIL system. But obviously an outfit need not have been sold in the same year as the manual was printed. For instance a No.49 outfit bought in 1957 had a manual with a date of 1955.

There were two manuals for the standard outfits, one for Nos.49 to 52 (50-52 very early on before Set 49 was introduced), and another for Nos.53 to 55. In the 49-52 manual an introduction to the STABIL system was given, signed by Franz Walther, or by Walther & Co. from the mid 30's. The next pages show basic constructions like fixing strips together, joining rods, how to construct bearings, transfer of movement by cord using pulleys or gears, etc.

Next the illustrated parts which were generally kept up to date and sometimes show interesting developments, and changes to the parts which were abandoned later. Sometimes though newly developed parts that were added to the system were not included in the illustrations in the same year.

After that you may find advertisements for motors and explanations of the outfits. In many pre-WW2 manuals the winners of last year's model competition were given.

Next is the table of set contents and these were always

up to date - in 1925, a correction sheet was even pasted over part of the contents to show the correct state of the outfits.

The models for outfits 49 to 52 take up most of the rest of the manual, but at the end were two pages about technical drawing with a slogan 'Durch STABIL zum Ingenieur' which can be translated as 'Become an engineer with STABIL'.

The 53-55 manual was simply a continuation of the 49-52 manual, showing only the models for these larger outfits, with no illustrated parts or set contents. In 1962 a No.52a accessory outfit was given to me which contained a 53-55 manual printed in 1940, and in fact I have never found anyone who knows of a 53-55 manual with a print date later than 1940. It seems that Walther & Co. must have printed such an enormous quantity in 1940 that even in the 1970s lots of them still remained. So this manual is no guide to the STABIL system after 1940.

The 'illustrated parts' in the different manuals allows the age of parts to be found. Only one or two manuals are available from before 1920 but some notes on the parts from this period are given later.

If you only have a manual without covers, you have to do some detective work to date it from the models or the advertisements. Comparisons with other manuals can give a good idea and sometimes there is a date given in relation to the model competitions.

Another clue is the model nos. In 1925 a new, much revised, manual for the 49-52 outfits was issued which used a new numbering scheme for the models: 1 to 199 were dedicated to models for the 49 outfit, 201 to 299 for the No.50, 301 to 399 for 51, and 401 to 499 for the 52 outfit. Not all the numbers were used of course and for example the 52 outfit models went up to 440. Later on the 49-52 manuals for 1928 and 1929 were nearly the same, as were those for 1930 and 1931.

The numbering in the 1925 53-55 manual did not follow on; the 1925 edition was a reprint of the 1924 but with different covers. A pointer for 53-55 models is that the models in manuals from 1924 on were mainly competition winners and were shown as such. This arose from the changes in 1922, which meant that many new models were needed for the new sets, and competitions were held every year for the rest of the 20s.

Many changes were made to the models in the 49-52 manuals after 1930 and the new parts could be seen in many, but not all, of them. But there were few changes to the 53-55 models, and the 1940 Edition is quite similar to that of 1931.

The c1910 manual measured about 210*150mm; later from 1920 or earlier, those for the standard outfits (and for the Erfinderbaukästen) were 230*160mm to 238*163mm in size, depending on the period: all had landscape format.

Some Special Manuals Special manuals were issued for the small outfits, 48 and below. The front cover of the No.48 manual differs totally from the covers of the main manuals. On the inside front cover is the set contents with illustrations of the parts, and on the back cover a picture of the No.49 outfit, and an advertisement for the KNIRPS C/W motor. The only changes that were ever made, even through to the 1970's, were occasional ones to the front cover or the advertisements on the back.

To save money, a shortened version of the 49-52 manual was put in the No.49 outfit showing only the 49 outfit models, plus just a few larger ones to make boys eager to build them with a larger set. The oldest manual of this sort which I have seen was from 1931, and it was still listed in the set contents of a 1966 49-52 manual.

In 1967 Walther & Co. issued a manual for outfits 49 to 51. I saw it once when I visited their Berlin offices in 1968 but I remember little about it.

For the Erfinderbaukästen Nos.56 to 58 an extra manual was issued. It is very rare. The first edition in June 1925

was for sets 57 and 58. The model nos. followed the 1925 49-52 method and were in the range 601 to 750, but actually only 19 models were shown. For the 1926 model competition it was suggested that the use of parts from their Erfinderbaukästen would give the best chance of winning a prize.

The Manual Covers

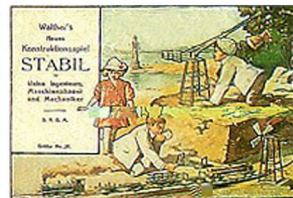
The c1910 manual (opposite) had no illustrations on its cover.

The 1914 Price List shows the illustration below (3 children playing with a Crane, Windmill and other models), on the box lids. Later the manuals and the box lid illustrations were usually similar so perhaps the manuals at that time had such covers.

In the 1920s and afterwards the 49-52 manuals, the 53-55 manuals, and the 56-58 manuals all had a colourful picture on the front cover. On the rear cover of the standard manuals was a list of the numbers of models that could be built with the different sets. On the inner covers you can find contemporary advertisements. Until 1924, an elegant, delicately coloured picture on the front cover showed a girl and two boys in sailor suits admiring a STABIL log saw model. It was illustrated in 7/157. Dieter Müller told me about a Danish manual showing this picture which was printed in 1927. In Germany the colour picture on the front cover of the manuals was changed in 1925 to the one opposite showing 2 boys, a No.55 set model crane, a railway bridge, and a ship on a blue carpet. The ship is constructed with parts of the, at that time, newly introduced Erfinderbaukästen. The background of the picture is yellow.

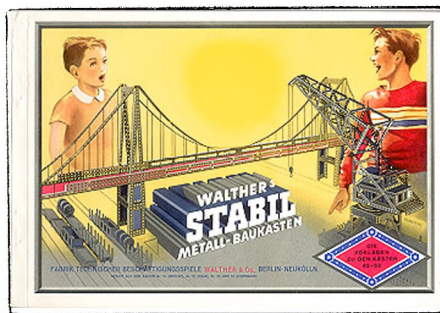
I have seen the next cover (opposite) on manuals printed in 1929 and 1931. Three boys are around a table with a STABIL loco and crane on it. The border and the models are blue; the wall in the background is brown and the tabletop light yellow.

The cover (below) of the manuals in the mid 30's and 40's (and for the 49-52 manuals from 1930) was that shown in STABIL(A) of MCS(FB). It shows 2 boys with a No.55 dockyard crane, a train, and a No.54 aeroplane. There are some variations in background colours. The first version had dark red and black panels and was also used as the box lid label. The second vari-



ant had light red, blue and bright yellow panels and was used from 1936 (or perhaps before) and in the 40's. The third type was like the second except that the face of the left boy was changed to a better looking one.

The last cover (below) showed 2 boys, and models of a large suspension bridge and on the right a floating crane. Below the bridge the text 'Walther's STABIL Metall-baukasten' is written in deeply shadowed letters. The main background colour is light yellow. My oldest cover of this style is from 1955 and it was still in use in 1968. It is shown in MCS(NZ), and in MCS(FB) as STABIL(B). MCS(FB) STABIL(C) shows the same cover with a 50 year jubilee sign above the bridge. This cover was used from 1955 until the mid 60's.



Generally over the years the label on lids of the cardboard boxes showed the same picture as the front cover of the then current manual. However the pre 1924 cover continued to be used on some boxes for several years after 1924.

STABIL in Countries outside Germany I asked Jeannot Buteux (Constructorama) for help, and he gave me much of the information that follows. L'INGENIEUR WALTHER appeared quite early in France, perhaps in 1908, but as explained earlier the name was changed and ARTS ET MÉTIERS was being sold in France from about 1910. But STABIL was on sale in France too, the 'Samaritaine' sold ARTS ET MÉTIERS whereas 'B.H.V.' sold STABIL, both in 1912. Three systems were sold under the name ARTS ET MÉTIERS: STABIL as Série 1; RECORD as Série 2; and WALTHER'S INGENIEUR as Série 3. Série 1 was available in 4 or 6 outfits depending on the outlet; and Séries 2 and 3, in 2 or 3 outfits each. A French collector has a Série 1 manual which is a direct copy of the STABIL manual of the same period. ARTS ET MÉTIERS disappeared with the beginning of WW1.

Jeannot sent me a picture of an ARTS ET MÉTIERS outfit No.81 with a list of contents. It is nearly the same as the No.11 WALTHER'S INGENIEUR set detailed in OSN 7, just a few parts have been added. The label on the box lid shows two boys and a toy train on an ARTS ET MÉTIERS bridge. Opposite is the name panel from it.



STABIL under the name DEN LILLE INGENIØR was sold in Denmark by 'Illum', a large toy outlet. The manual for outfits 49-52 was in Danish but carried no date. Three Danish manuals are detailed in OSN 7/157. First a 53-55 STABIL manual from 1921 in Danish has the contemporary STABIL cover picture (the girl and the two boys). The second with the names 'Illum' and DEN LILLE INGENIØR, is a 49-52 manual which I date as 1922 comparing it with STABIL manuals. Its cover is shown in OSN 7. The third manual with the red cover can't be dated accurately but is from before 1920. Jeannot Buteux told me that only outfits 49 to 53 were sold in Denmark and that there was only a Danish manual for sets 49 to 52 - this was probably true before WW1. I believe that Thorngreen, another large toy merchant in Denmark, sold STABIL in the 1910s and 20s.

A STABIL manual in Dutch, 20th edition from 1924, was at first sight the same as a German one of the same edition and date, except for the different language. But the German

version has more models, and more pages, and the advertisements on the inner covers show some differences. There were motors advertised in the Dutch manual that were most probably no longer listed in Germany at that time.

STABIL manuals are also known in English (49-52, 1931), in Spanish (49-52, 20th Edition, 1921), and for the Belgium market from 1932.

Notes on the Parts and Sets

The lifespan of STABIL can be divided into 4 periods. The first was the years up to about 1921 when, until after WW1, there was no serious competition from comparable toys. But after the war Märklin, who had bought all the rights belonging to Meccano from the German government in 1917, provided a serious challenge and this led to the next period, 1922 to 1933, in which considerable changes were made to the sets and many new parts introduced.

The death of Emma and Franz in 1933 was the start of a rather quiet period with relatively few innovations. In particular as far as is known Walthers did not offer any electrical, aeroplane, or vehicle constructional sets when Märklin launched theirs. Also not many new models were added to the manuals. The final phase from 1956 saw few new parts but some new models for the smaller sets, followed by little change until the end in 1972.

The First Period, 1906-21 Much has yet to be discovered about the early years. The oldest reference is the c1910 manual, and the thick wooden base (Sockel) in the Crane shown in A.B.Ibanez's ARTS ET MÉTIERS contribution in MCS, is a part which is listed in this manual but was later dropped. It is similar to the INGENIEUR part shown in OSN 7, but rather larger. In my 1920 manual the base of this crane is made up of two 11*5 hole flanged plates.

The parts shown in MCS Part 5 for DEN LILLE INGENIØR are probably from a little before 1920 but only those for outfits through No.52 are shown. The other information I have come from a lot I got at a flea-market which contained a No.51 outfit with an incomplete 49-52 manual, plus sets 51a, 52a and 53a with two 53-55 manuals. The No.51 outfit was in a wooden box of 355*223*36mm whose sliding lid had the label with the two boys and the girl admiring the logsaw. But there was no date on it, just the price of 100.-, and this extraordinary high price was the only hint I had to date the outfit. After WW1 there was tremendous inflation in Germany which began in 1921, first slowly, but by 1923 it was explosive and a loaf of bread cost billions of Marks. Currency reform stopped the inflation in December 1923. From price lists from the inflation years and from stamp collector's lists, I concluded that the No.51 outfit was sold between October and December 1921. The 49-52 manual has no covers but I think that it is most probably from 1920. The first remaining page is the set contents, and it was totally different from the later ones I had seen.

The 53-55 manuals were from 1924 and 1925 and their inner pages are identical, only the covers are different. But to my surprise the models in these manuals could not be constructed with the contents of the outfits listed in the 49-52 manual from the wooden box.

I counted all the parts and I came to the conclusion that the outfits No.51 and No.51a were in accordance with to the contents of the '1920' manual, whereas the outfits No.52a and No.53a corresponded to the later ones.

Comparisons with other manuals led me to the conclusion that the change in the system probably took place in 1922. The 53-55 manual from 1924 shows prize models from a competition which incorporate parts from the later period, and a 1921 53-55 manual shows only models that could be made with the earlier outfits.

The changes made to the STABIL system in 1922 were enormous. Many new parts were introduced, and the sets

changed totally. As an example take a No.52 outfit. Before 1922 it contained no 25-hole strips and no angle girders; after the change there were 8 25-hole strips, 2 10-hole, and 8 25-hole angle girders.

I see some similarities between the early STABIL system and the present MECCANO outfits. There were many small outfits and the models of the larger ones were only a little larger and a bit more detailed. The models of the No.50 outfits were rudimentary, the No.51 outfit allowed more detailed models with a typical height or width of 11 holes. For the No.52 outfit that became 15 holes, and only with the No.53 outfit was a length of 25 holes reached. The existence of the 15-hole strip and a remarkable quantity of 7-hole strips in STABIL outfits allowed good and detailed models to be made with the medium size sets, though of smaller dimensions. The use of shorter strips also kept the price of the sets down.

In the first period only threaded rods were used as axles and this gave some advantages. You can fasten any part to a threaded rod, no crank or collar are necessary, and the wheels need no tapped bosses or MME-style clips. Disadvantages are the poor running of threaded rods in strips and wear under heavy loads. Another disadvantage is the time it takes to roll all the necessary nuts along a rod particularly if there are several parts on it. But STABIL boys quickly invented techniques to at least partially overcome this problem, e.g. rolling the nut on the rod over the floor like a wheel. The problem of wear was solved by the introduction of a long bearing (PN 17) for the Gewichtsmotor.

In what follows you will find a short description of the different STABIL parts. If not otherwise mentioned they remained available, unchanged, through the 1960s. I'll use MECCANO-like words for naming the parts: word by word translation of the original German names would sound a bit odd, a perforated strip is called a 'Flacheisen' which is flat-iron in English, a threaded rod is a 'wave', etc. Some notes on early parts are given at the end of this section.

The **strips** (2 to 25 holes long) were 12,3mm wide and 0.9mm thick. There were also **double strips** two holes wide (24.6mm), and unlike Meccano, they had no elongated holes. In this period they were 10 and 25 holes long. The **angle girders** were similar to Meccano but with less rounded corners. They were only available in lengths of 25, 15, and 10 holes. The STABIL **angle bracket** was merely a 1-hole long angle girder, not the normal smaller type. 5*11 and 5*7 hole **flanged plates** had their centres punched out, giving square cornered 3*7 and 3*3 **perforated plates**. This allowed more flexibility in making models and gave them a more interesting look.

The **nuts and bolts** had the MECCANO $\frac{5}{32}$ " thread and the bolts were probably domeheaded in this period. Their total lengths (i.e. shaft plus head) were 10,12,15,20,30mm, but only the 20 and 30 mm were listed as separate parts. Nuts were hexagonal with a distance across flats of about 7.6mm (Märklin used 8mm). The **threaded rods** were made from bare steel and they were in lengths of 25,50,90,120,150,175,250mm. Later they had pyramid shaped, conical, or normal square ends, but I am not sure about the first period. Later on rods of different lengths in one set could have different shaped ends.

The **26mm pulley**, No.5, had 4 hollow rivets joining the two sides. Their centres were bulged out and there was no boss.

Parts No.6 to 16 look as if they have come from WALTHER'S INGENIEUR. No.6, the bent **wire crank** is made from very hard steel. No.7 is a brass (untapped) **roller**, like a washer but about 5mm wide. In this period, No.8 was simply a little **cylinder** of 12mm length with a groove in the middle. Wobbling was impossible and longitudinal forces could be applied to the groove. It was used in a heavy duty bearing with a ring made from strips rolling over four of

them. This was the usual practice before the large STABIL ball-bearing No.46 was introduced.

No.9 was a thick 19mm dia **cheek piece** (a thick washer with a cone on one side), total width 7mm. A No.7 could be put between two of them to make a small winding drum. Part No.9 was also used when fastening wheels on the rods to avoid wobble. At first, and especially during the war, the nuts had burrs and were domed as a result of being punched from sheet steel, and it was not always easy to fix a part exactly perpendicular to its axle. Quality improved in the mid 20's and the problem disappeared.

The **fan** No.13, dia 77mm, and the **circular saw** No.14, dia 55mm, were always included in STABIL outfits. Parts 15 and 15a were **wooden pulleys**, the original large round parts of this period, with diameters of 47mm and 80mm. PN 16, the **circular saw table**, was also of wood, with dimensions of 67*119*4mm.

Parts 22 (the **flanged wheel**) and 23 (the **bush wheel**) had a boss (not tapped) to allow wobblefree running when loose on a rod. The flanged wheel had a pulley groove and the boss was inside the flange. The bush wheel was of 1.5mm steel and was very strong and rigid.

Part 24 (the **bevel gear**) had 22 teeth and a diameter of 23mm. Part 25 was a **pinion** 6mm wide with 20 teeth; 25a was a **gearwheel** of 2.6mm face, with 60 teeth and 4 peripheral holes; and 25b was the same thickness with 100 teeth. None of these had bosses in this period.

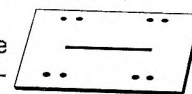
Part 26, the **windmill sail**, could also be used as a propeller or fan blade, and later in this period a hole was added at each outer corner. It was completely redesigned at the beginning of the next period. Part 27 was a flat spring **click** that was used with a pinion. It was not a real ratchet, as the pinion could be turned in both directions. Part 28 was a **piston rod** of 145mm, threaded 20mm on both ends, and with a smooth middle part of only 3.4mm diameter. Part 30 is described as a **dredger shovel** but had many other uses. In its named role it could be sewed on to the Part 33, the **conveyor belt**. This last was textile belting, 1100* 55mm: an example known from the mid 20s is white but in the 60s it was light blue. Parts 31 was a **wooden cylinder** used with the conveyor-belt, 17mm long; PN 31a was identical but with a centre groove; and 31b was 50mm long. All were 29mm diameter.

Part 32, a **contrate**, had 54 teeth and an untapped boss. Part 35 was an 86mm dia **circular plate** without boss, 0.8mm thick; 35a a 38mm **wheel disc**. The **coupling** for threaded rods (Part 36) of this period was cylindrical, cut back at each end to take a spanner. Part 37 was a **Z-formed strip** with only one hole, called a 'Förderhaken', which can be translated as conveyor-hook - it was always in the larger outfits, but the I've only found 2 models in a 1921 manual in which it was used - one of them is shown at the top of the next page.

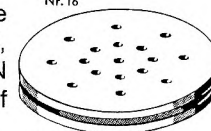
Part 38 was a flat, S-form **wire hook**. Part 39 was a **wooden dowel**, length 50mm and 4mm diameter which could be pushed into strips as rungs of a ladder, with the top and bottom spaced by threaded rods. The **Wire Stay**, Part 40 was a loop of 1.5mm steel wire joined in the middle of one side by a sleeve; it's 64mm long and is in effect a



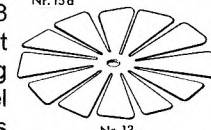
Nr. 9.



Nr. 16



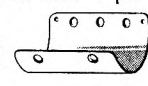
Nr. 15a



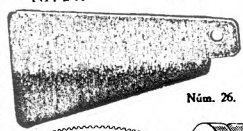
Nr. 13



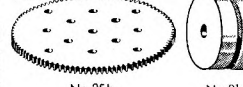
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Nr. 30



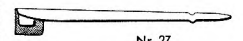
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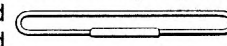
Nr. 25b



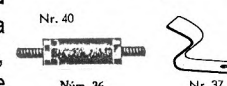
Nr. 31a



Nr. 27



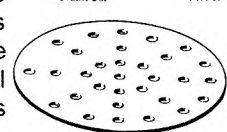
Nr. 40



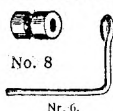
Num. 36.



Nr. 37

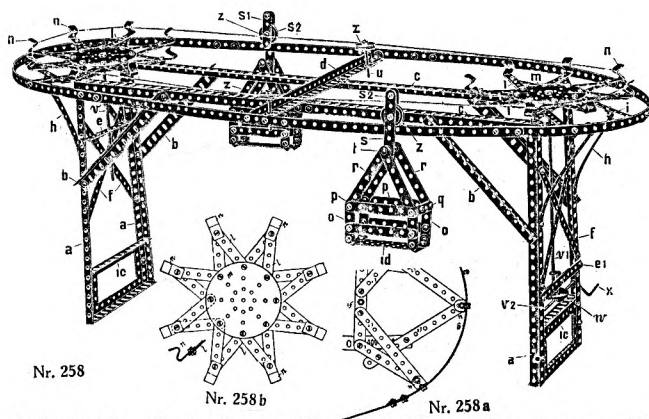


Nr. 35



No. 8

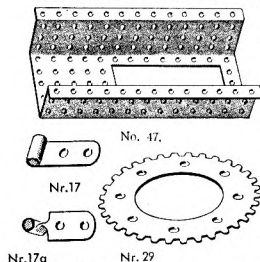
Nr. 6.



slotted strip. Illustrations of it never showed the sleeve until 1956 but it was always fitted to the real parts. Among its many uses the stay can act as a guide for a sliding rod, as in the 1950's No.49 set model opposite.

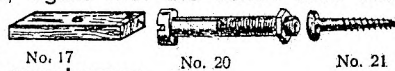
The **single bent strip**, Part 41, is similar to the Meccano 102 but was not made from a 5-hole strip: the distance between the sides is 10mm and the overall length is 33mm.

The following parts existed at the end of the first period, but were not included in outfits - they were introduced with the Gewichtsmotor in 1921 or before that. Parts 17 and 17a were **special bearings** for the threaded rods; Part 29 was a **sprocket ring** with 34 teeth; part 35b, a 62mm **circular plate**; and Part 42, **sprocket chain**. Part 47 was the **special base** for the Gewichtsmotor. STABIL sprocket chain had 17 links per 100mm.



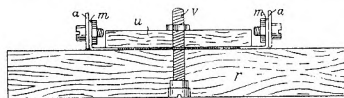
All the steel parts were nickel plated; gears and fittings were made of brass. However during WW1 and into the early 20s brass was in short supply or unobtainable, and all brass parts were replaced by die-cast parts of similar size, or they were made up from sheet steel. In my outfit, parts 7 and 9 were each made from two formed pieces of steel. To give them a brass-like finish, they were shellacked. Also the parts that would normally have been nickelled had a grey metallic finish. The nuts were punched from 2mm sheet steel and showed awful burrs and were slightly domed. This poor quality was only temporary and the parts of my 52a and 53a outfits were to the normal standard with brass in use again, although the problem with the nuts was not solved completely until later in the 20s.

Most of the parts described above, except those introduced late on, are thought to have been available well before 1914. There were in addition at that time certain parts that were no longer listed by 1920. Parts 17, 17a, 17b, were wooden clamping **beams** (Spannbrett), all 11mm thick with a single central hole in each, and 50*20, 65*33 and 80*20mm in plan. Part 18 was a wooden **plate**, 85*85mm and again 11mm thick with one central hole. Part 19 was a 120*120mm **baseplate**, again with the centre hole but thicker at 17mm. Part 20 was a **special bolt** with nut; Part 21 was a **woodscrew**.



The baseplate is the part used in the ARTS ET MÉTIERS Crane mentioned earlier. It was included in sets together with metal flanged plates in the c1910 manual but probably initially only this wooden base was included in the system.

The drawing below is taken from the same manual as the Crane, and shows a beam, u, being used to clamp angle brackets in place on the baseplate, r, by means of the special bolt, v. In other models the base was bolted to the baseplate and strips were attached to opposite edges of it with woodscrews.



Two other early parts that disappeared were No.28, a smooth **guide rod** for the die in a stamping machine which looks over 120mm long, and No.29, a **tup block** (Fallklotz). After these parts became obsolete all their PNs were used later for other parts.

Most of the illustrations of parts from the early years of this period look just like those of later parts. One exception is the **86mm circular plate** which has only the centre and outer 8 holes. Some 26mm pulleys, flanged wheels and a bush wheel found in a small collection of various STABIL parts are thought to be earlier than those described above. They are all turned from solid brass and have similar dimensions to the more modern parts except that the holes in the pulley are large enough to allow a rod to pass through, the outer rim of the pulley groove on the flanged wheel is slightly smaller in diameter than the inner, and the face of the bush wheel is over 3mm thick. In the late 10s/early 20s the 26mm pulley (opposite) had a boss, untapped and 7mm long, and no holes in the face.



Nr. 5.

Although a number of INGENIEUR-style parts were carried across into STABIL, the following, some of which were at least as useful, never were: 5,6,9,11h A/Gs; 5*3 and 5*4h Plates; the 3*2h DAS; the 2*1h Angle Bracket; and the 6h long Girder Bracket.

The Second Period, 1922-33 - a time of flourishing developments

In 1917 all rights belonging to the Meccano company before WW1 were bought by Märklin from the German government and after the war Märklin began selling sets which were based on the 1914 MECCANO outfits. With only a few changes, MECCANO parts up to No.64 were used but Märklin added some new parts in about 1920, or even before. Noteworthy were the flanged round plates with a pulley groove formed into their flanges. No.66 (now 10395) had a diameter of 95mm, and No.67 (now 10365) was 65mm. As an example, a MÄRKLIN No.3 outfit had 4 of No.67 and two No.66. Another new part, No.68 (now 11095), was the Large Ring of 195mm diameter which was included in the largest outfit. And as with MECCANO, even quite small MÄRKLIN outfits contained 25-hole strips.

Walthers had to compete against these MÄRKLIN outfits, and only a revolutionary change of the STABIL system would suffice. So parts were added to the outfits until they were comparable to the MÄRKLIN sets. But adding parts was not enough, new parts were needed that were similar to or better than the new MÄRKLIN ones. This was a great challenge but soon they had more new parts than Märklin. At the end, in 1922, a STABIL No.52 outfit compared favourably with a MÄRKLIN No.3.

The main new parts in 1922 were the flanged rings 21 and 21a. Strips or circular plates could be used to give a centre hole but as the circular plates could also be used separately as large wheels, this made the STABIL outfits more flexible in use than those of their competitors. The large ball bearing No.46 was also introduced in 1922, and was an equally well planned part. It could be said that it was a logical development of the large MÄRKLIN ring.

The Erfinderbaukästen included a collection of many new and interesting parts, which were, and are, unique in the world of MCS. In fact these outfits are very rare, and so they probably did not sell very well. Details of the Erfinderbaukästen will be given in a later article.

After their introduction in 1926 the patented spur gears

made from sheet steel were included in even the smallest outfit, No.49. They were needed to compete with Märklin's toothed rings, which could be put on the flanges of their flanged round plates. Also some Erfinderbaukästen parts, e.g. the tapped collar and the smooth axle rods found a place in the larger standard outfits. A tyre for the small flanged ring, 21a, was introduced in 1930, and in 1932 three other tyres appeared. They had the name STABIL moulded into their sidewalls, the only parts apart from Spanners, to carry any identification.

From a 1933 German magazine article on the toys of that year, **STABILA** was described as a new outfit for girls with steel parts and wool of different colours, which would probably become popular; and the **KNIRPS motor** (see OSN 11) was also mentioned as a powerful little clockwork motor which in a self-contained tractor model could climb an incline of 30°. Part 5c of the **KNIRPS outfit** can be seen in one of the illustrations and from that we can guess that the KNIRPS outfits, as well as the motor, were introduced in 1933.

It is remarkable that in 1929 Märklin introduced their coloured parts, which were much more attractive than their old black ones, but Walther & Co. kept their nickelled parts until the end. Only some special parts were coloured such as red sideplates for the electric motor, and later the plastic plates.

Going on now to details of the new or modified STABIL parts in the second period. The 10-hole long **double strip** was lengthened to 11 holes. The **reverse angle bracket**, No.2a (with no elongated hole), the 20mm wide **double bracket**, 2b, and the **double bent strip**, 2c, were nearly identical to their MÄRKLIN equivalents, but the **flat bracket**, 2e, with a length of 27mm was longer than the corresponding MÄRKLIN or MECCANO part. It is just a 'flat' angle bracket. The 2*2 hole **corner bracket**, Part 2d, was similar to Meccano's 133a but with a sharp inside corner. The **hinge**, 2f, had elongated holes with a minimum spacing of 12.5mm.

The **bolts** were now cheeseheaded, and the **long nut** 3d was added as a short coupling for threaded rods. Part 5a was a newly introduced **37mm pulley**. Diameters of from 36 to 39mm are given in different manuals but I know of only those of 36 and 37mm. Bolts could pass through its 4 rivet holes. A **37mm split pulley** (5b) was listed from 1930: it was made of brass (nickelled in the 1960s) and when bolted together gripped the shaft. Thus it could be mounted on a shaft in situ - sometimes a great time saver when using threaded rods as axles, but why this particular part was thought necessary isn't clear. It wasn't included in any outfits.

Part No.7a, the **tapped collar**, was an Erfinderbaukästen part which was included in the standard outfits in the late 20's. Another interesting part from about the same time was the **double arm crank**, 7b. The boss was attached to a raised central area so that the part could be bolted directly over the centre bulge of the pulley 5a without the need to use washers. There was a slotted hole in each arm and the overall length was 31mm.

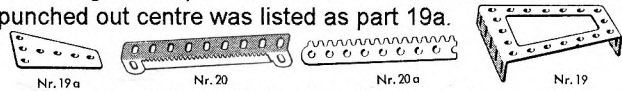
The groove in the **grooved cylinder** No.8 was made much broader. In the mid 20's the part had a total length of 14mm, but after the end of the 20's it was reduced to 10mm. The 14mm diameter **pulley** 8a, came with the Knirps motor in 1933. It can be seen in the Stabilobil in 11/273. The **cheek piece** No.9 lost its cone at the end of the 20s and became a washer of 17mm diameter by 2mm thick. It was always made of brass.

A **screwdriver with a wooden handle** (11a) was added in 1930 and was included in outfits 52 upwards.

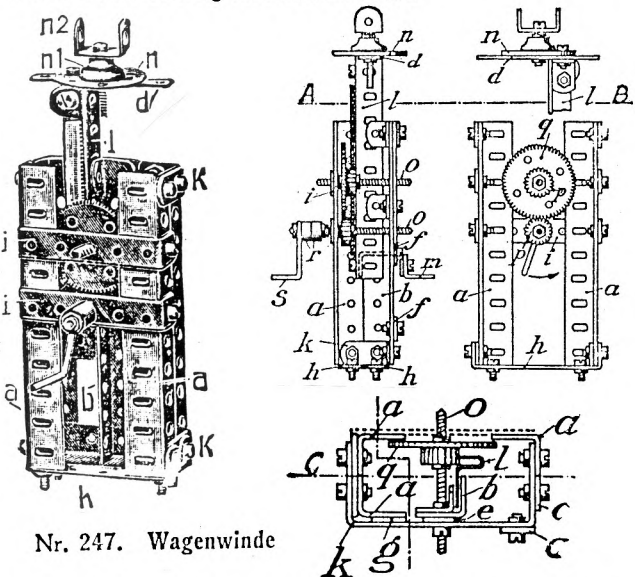
The **double angle strips**, 18 (5*1 hole), 18a (5*2) and 18b (3*1), were similar to the MECCANO pattern except

that there were elongated holes in the lugs of 18 and 18b. The latter was introduced in 1932.

The **sector plate**, Part 19, was not as rigid as the MÄRKLIN or MECCANO pattern but was more versatile with flanges at top or bottom rather than on the sides. The punched out centre was listed as part 19a.



The **rack strip** 20 had a length of 9 holes and was for use with the fine toothed brass gears. In some models it was used instead of an angle girder. I only know one model where this part was used as a real rack strip - it is the part 'l' in the jack, model 247, from the 1924 53-55 manual (below). It is not in any of the 1940 manual models so its usage might be unknown to those who got their outfit in the 50s or 60s. **Rack strip** 20a was for the '1926' gear wheels, it was 11 holes long and had 24 teeth.

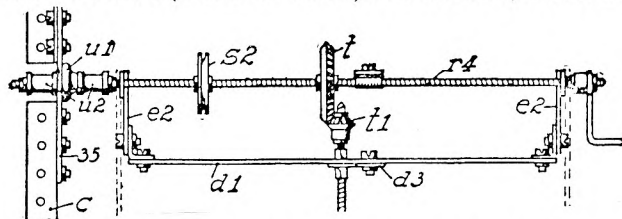


Nr. 247. Wagenwinde

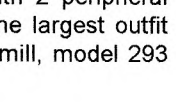
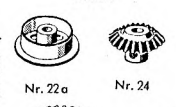
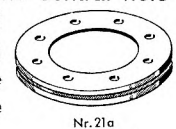
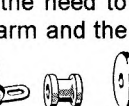
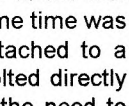
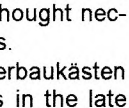
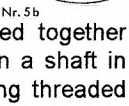
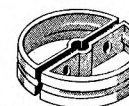
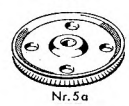
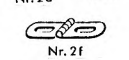
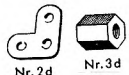
Parts 21 and 21a were the **flanged rings** of 90 and 65mm diameter. Like the MÄRKLIN parts they had a pulley groove in their flange, but the depth of the flange was 8mm against the MÄRKLIN 14mm. As usual with STABIL, the inner part was punched out and simply bolting flat strips across on the inside allowed spoked wheels to be represented. The **narrow strips** 81 and 81a could be used. Or if solid wheels were wanted the faceplates 35 or 35b could be bolted inside. An additional advantage of the central hole was that they could be fastened to the rolled shafts in the Erfinderbaukästen. Although **tyres** were available from 1930, they were not included in the sets except for 4 (for the smaller ring) in the largest outfit, No.55.

The thickness of the **bush wheel** was decreased to 1mm. A small **25mm flanged wheel**, 22a, was introduced for outfits 54 and 55. New **bevel gears** were 24a (35 teeth shown in its illustration) and 24b (12 teeth), the small one having a tapped boss.

In 1930 the larger one was redesigned with 2 peripheral holes and a boss. They were included in the largest outfit and were used ('t' and 't1' below) in a windmill, model 293

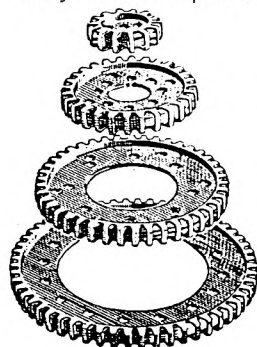


of my 1924 53-55 manual. The original bevel, No.24, was given a tapped boss in 1931, and the **20t pinion** (25) had been given one in 1930 - these additions of course were to allow the parts to be used on the smooth axle rods. All

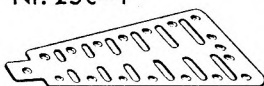


bosses were single tapped. A 14t **pinion without boss** 25g was used with the Knirps motor (1933) and is shown in Abb.5a in 11/273.

The **patented spur gears** 25c to 25f were added in 1926. They were cheap to manufacture but the teeth could easily be deformed, and there was considerable play in the mesh. The gears had 14, 28, 42 and 56 teeth, allowing ratios of 1:2, 1:3, 1:4. They could also be used as bevel gears. The axles of two 25c had to be 2 holes (25mm) apart, and so on. Again the large centre hole allowed them to be used with the Erfinderbaukästen shafts.



Nr. 25c-f



Nr. 26

Part 26, the **windmill sail**, was one of the first parts changed in the second period. Its shape was altered slightly and the pattern of holes and slots punched in it, at half the standard spacing lengths, gave much greater versatility. It was 4 holes wide at the tip and 8 holes long.

The **pawl** 27a was similar but not quite identical to Märklin's or the early MECCANO pattern. It was nickel plated and its length overall was about 55mm, 1mm or so shorter than the (black) MÄRKLIN. Another **piston rod**, 28a, 200mm long, was added and included in the No.54 and 55 outfits.

The new small **sprocket wheel** 29a had 17 teeth and 4 peripheral holes. It had no boss and like the larger one was 1mm thick. Both parts had a small hole in the face which could be used to attach a cord. 4 holes were added to the face of the **contrate** in 1930. The **worm** 32a was made of brass and originally had no boss: one was added in 1930.

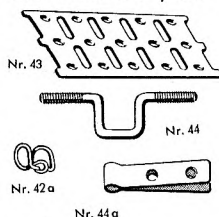
The **tension spring** 34 first had a length of 50mm, later 37mm. Its diameter was 3mm. 34a and 34b were 200 and 400mm lengths of **spring cord**, 2mm dia. One end was tapered so it could be put into the other end to form a loop. 34c was a 55mm long **flexible drive** and threaded rods could be screwed into its ends. It was only suitable for light loads and was not comparable with the MECCANO 175.

As already mentioned the new 62mm dia **circular plate** 35b could be used with the flanged ring 21a, but also found uses as a wheel, or boiler end, or hub for a large wheel, etc. Parts 35a (**wheel disc**) and 35b were reduced to be .5mm thick, but No.35 remained at 1mm. Part 36 the **coupling** for threaded rods was now in the form of a long nut, 20mm in length. Part 36a, a **coupling for smooth rods**, had 2 single tappings and could only be used as a coupling: it wasn't included in the outfits. The new **threaded hook** 38a became the standard hook. The length of the **wire stay** 40 was changed to 70mm, and 40a, 117mm long, was added. At the end of the 20's it was reduced to 110mm. 40b was a **clamp** to allow other parts to be bolted to the wire stays.



Part 42a was a **special sprocket chain link** with extended ends shaped to allow a rod to be 'carried' in them. Their shape is not obvious from the illustration but can be seen in the auxiliary view on p8 of OSN 1. The ends could be bent slightly to take a bolt, which allowed other parts to be attached to the chain. You can easily make such a part from the wire of a paperclip.

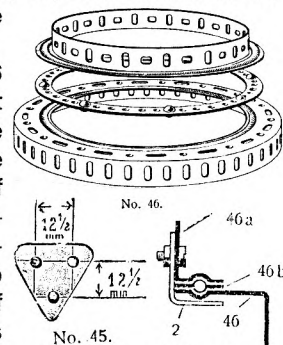
Parts 43-43c were thin **slotted plates**, 3 holes wide and 5,11,15,25 holes long. 2 slots were punched between all the rows of holes. This part was widely used as a plate, girder web, railing, cover, etc, and could easily be curved or bent.



The **crankshaft** 44 was 50mm long with a throw of

25mm. 12.5mm at each end was threaded. Part 44a, a **connecting rod** could be prised apart to slip it over the crank. The small **triangular plate**, 45, looks similar to the MECCANO 77, but the holes are not equilaterally spaced.

The **large ball bearing** No.46 was perhaps the best and most ingenious STABIL part. All the parts, even the ball cage, were made of thick metal. It was self centring and for a large crane security against tipping was possible by bolting angle brackets to the vertically elongated holes of the upper ring. From the models in the manuals I guess the outer diameter of the lower flanged ring to be 187mm (15 holes) and the inner diameter of the upper flanged ring, 136mm (11 holes). The upper and lower rings could of course be used separately in many applications. The part was quite expensive, in 1930 it cost RM6.50, against RM5 for a No.49 outfit and RM10 for a No.50.

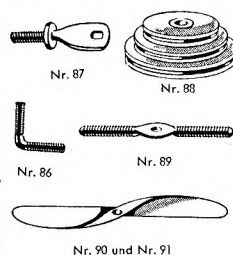


Paper sheets, plain and representing brickwork, roof tiles, and roof slates (48a-d) were available but weren't at this stage in any of the sets.

The Erfinderbaukästen **smooth axle rods** Nos.60-60d (50,90,120,150,250mm long) were included in the larger sets in the late 20s. I only know these from the 1960s and then the ends were guillotined.

The **tyres** already mentioned were Nos.84, for the smaller flanged ring, in 1930; and in 1932, 84a for the flanged wheel 22 and larger pulley 5, 84b for the smaller pulley 5, and 84c for the large flanged ring 21. Until after WW2 only 4 of 84 were included in set 55.

Other parts from 1930 were No.85, a **7-hole strip** with elongated end holes (an unformed 5h DAS); No.86, a **threaded angle rod** (15*15mm), which was used as a lever or handle; and a **handrail support**, No.87. And from 1932, a **cone pulley**, 88 (25/31/37mm dia.); and a **threaded bearing support**, 89. 1933 saw **propellers** 90 and 91, 100 and 140mm dia. Only No.85 was included in the outfits.



The Third Period, 1934-55 - relative quiet After the death of Emma and Franz Walther in 1933, Walter Walther became exclusive owner of the firm Walther & Co. It was a well run company at that time and had made steady progress up to 1933.

I don't have full information about the STABIL system from 1931 to 1955 and unless otherwise stated what follows is based on manuals from 1936 and 1955. Changes to the models in the 49-52 manuals from 1929 to 1936 were minimal, about 10% of new models for outfits 49 and 50, and 2 new models for outfit 51. The new models either incorporated the Knirps motor or tyres 84b, and may have been added as early as 1933. The main changes were to the covers and the advertisements.

There were no new models in the manuals from 1936 to 1955. After WW2 only minor changes were made, such as those made necessary because the Erfinderbaukästen sets and most of the parts were no longer available. In a 1936 manual it was said that in 1937 the famous STABIL model competitions would be held again but the 53-55 manual printed in 1940 shows only models from competitions held in 1930 or before. So it is likely that it was a reprint of a manual from the end of the second period. There were certainly no competitions after WW2.

Were there changes to the parts or outfits? Two of interest were noted in a journal printed in 1938. Walther & Co. had introduced moulded Bakelite gears, and some parts

which were formerly of brass or nicked steel, were now made from aluminium alloy. Also there was a note in a manual from 1941 saying that in all probability some parts that had been brass or nickelled steel would be made of aluminium alloy or plastic, but that the shape, dimensions and usability of the parts would be the same, and that their toughness would meet all requirements. I can't believe that using aluminium alloy was a success, it was done prewar merely as a gesture to the self-sufficiency policy of that time, and during the war no doubt because of material shortages. I've never seen any alu parts, or found any in outfits from after WW2. But the gears 25c to 25f in Bakelite were certainly a real success, they were rigid, meshed well and could transmit ample power. They looked good in cranes, and in other models of machinery that used large gears. Another significant introduction was a range of light blue plastic plates, but exactly when isn't known.

There were virtually no changes to the outfits in this period, and, all in all, it is possible that Walter Walther didn't have the interest, or perhaps he didn't have the time, to continue to develop the STABIL system, and maintain the high standing it had attained. When Märklin introduced new types of constructional sets he didn't respond as Franz and Emma might have.

After the war the Erfinderbaukästen were not reintroduced, nor were the 54 and 55 outfits but the complementary outfits 53a and 54a were still available. The No.48 was the smallest outfit.

The known changes in detail were as follows. At some time after WW2 the bolt head was changed to a tapered cheesehead shape similar to that used by Märklin. A 55mm threaded rod, 4e, was shown in 1936 but was no longer listed in 1955. The 1938 gears 25c to 25f were moulded from dark yellow Bakelite and had the same number of teeth as before. A 110mm long crankshaft, 44b, first seen in a 1936 manual, had the same throw as the shorter one and was threaded for 30mm at each end. After the war 4 tyres 84b for the small pulleys (5) were included in all outfits and 4 of 84a (for the flanged wheels 22)

were included in sets 51 and above. In 1955 a spider for a Cardan joint was listed (86a), to be used with 2 single bent strips, No.41. The light blue flexible plastic plates, 95-95c, had 3*5, 5*5, 5*7 and 5*11 holes, all of them slotted lengthwise, and were probably added to the sets at some point after WW2. The 1955 manual shows changes to the paper sheets - 148c represented block masonry and 148d roof tiles.

The Fourth Period, 1956-72 - a last try The period after WW2 was not advantageous for Walther & Co. Their best market had been in north and east Germany, around Berlin, to the south-east to Breslau (today named Wroclaw), and to the north-east to Königsberg (today Kaliningrad). These last regions were no longer part of Germany and the rest of eastern Germany became the GDR. So the only market was in West Germany or elsewhere in the west.

But in 1956 a new 49-52 manual was produced. Most models were taken from the previous period: for outfits 49 to 51 less than 30% were new, and for No.52 about 50%. The new models were mostly attractive and modern looking, like the clockwork powered Robot opposite, but

they were only shown as a drawing with some limited explanatory text. The clear technical language in the description of the components that was used for the old models was not given for the new ones. So you can clearly distinguish which models came from the past, most from the second (!) period, and which were new. However the drawings for the old models had been replaced by better ones and parts that had been introduced or changed in the 1930s were seen in the new drawings for the first time. For example the tyres, the Bakelite gears, and the more recently introduced plastic flexible plates. The manuals from 1956 until 1965 all show the same models. The 50 year jubilee sign '1906 to 1956' was printed on the cover until the mid 60s; after that it wasn't used but the models remained unchanged. In 1967 and later, a manual for outfits 49 to 51 was issued.

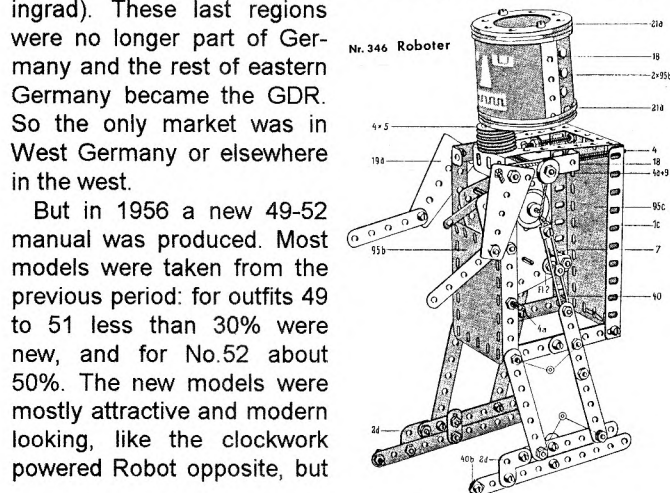
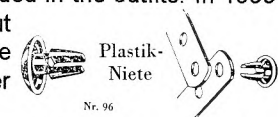
The 1940 edition 53-55 manual continued to be used until the firm closed.

With the change to the 49-52 manual in 1956, a few parts were added to the system or were changed. Part 4a, the 90mm threaded rod, was lengthened to 100mm. The grub screw 7c was introduced. The spring cord 34b (400mm long) was withdrawn and 2 of the 200mm 34a were put in the large outfits instead. In 1957 the plastic plates became available in green, yellow and red as well as blue, and the first battery driven small electric motor was launched. From before 1955 until the mid 60's, Parts 148, the paper sheets coloured as brickwork, etc, which had been available since the 30's as extra parts, were included in the outfits. In 1965 a plastic rivet was introduced but had been withdrawn by 1968. The handrail support was no longer available in 1968.

In this period, all the pulleys 5 to 5c, the double arm crank 7b, the flanged wheel 22, and the worm 32a, were made of steel rather than the brass used up to then, and were nickel plated. I don't know about the bevel gears as I have seen none from this period. Parts 7, 7a, 8, 9, 25, 25a, 25b, and 32 were still brass.

So a rather sad end perhaps to a once proud system. They did try though - Meccano and Steel Tec have only recently caught up with the STABIL-boy idea (opposite), taken from a 1969 leaflet.

This is all I know about Walther & Co., and about STABIL - any additional information or comments would be very welcome.



Sources and Acknowledgements I own 49-52 manuals from 1920?, 1929, 1936, 1955, 1957, 1961. I also got info from 1921, 1924, 1925, 1931, 1938, 1941, 1966 manuals. My 53-55 manuals are from 1924, 1925, 1940, and I saw a 1921 one. I also have a copy of the 'Erfinderbaukästen' manual, 1. Auflage (first printing) from June 1925, and some details from the 'c1910' manual.

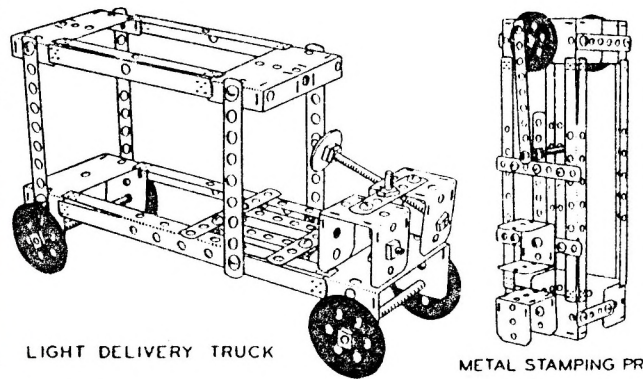
Thanks are due to all who helped me with manuals, information, etc., including Josep Bernal, Jeannot Buteux, Jean Estève, Ulrich Glage, Ansgar Henze, Tony Knowles and Dieter Müller.

[Details of the Erfinderbaukästen and STABIL motors will appear in due course. After that Extra MCS Sheets will be prepared. Particulars of STABIL are given elsewhere in this Issue.]



SKIPPER TOY Since the piece on MORECRAFT in 11/290, Richard Symonds has sent some details of an outfit called SKIPPER TOY made by the Morecraft Corporation of Branford, Connecticut, and with a Copyright date of 1938 on the box lid and Model Leaflet.

The box measures about 10x9x1" and the lid has a red and white chequer pattern all over it, with B&W photos of 5 models and the name (opposite) superimposed. All the parts are shown in the MCS MODERN-MORECRAFT entry, and the main ones can be seen in the Set below. Apart from the 4 blue Pierced Discs PD-12 ('Half Pulleys'), there are 6 red Connectors (small flanged plates), 8 Angle Members in three sizes up to 5¼" long, and about 10 Strips of 4 to 9 holes. Angles and Strips are nickel plated, and the holes in the Strips (and the Discs) are at 1/3" pitch. The SKIPPER Leaflet doesn't contain a Parts List, and no PNs are shown.

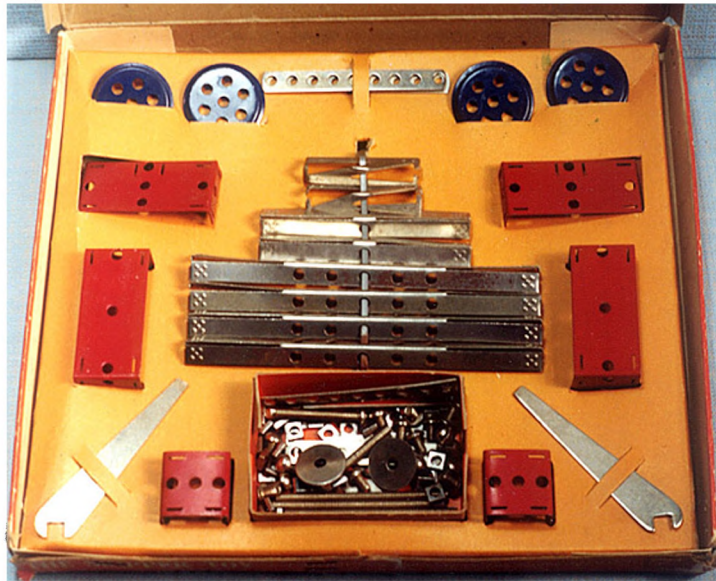


LIGHT DELIVERY TRUCK

METAL STAMPING PRESS

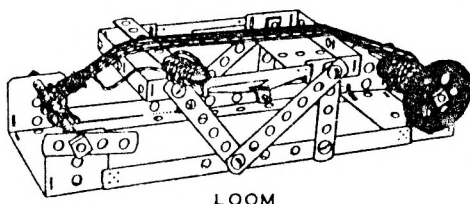
manuals, and incidentally, shows a Connector which isn't actually included in the SKIPPER Set.

A SKIPPER TOY set is listed as the smallest set of the MODERN-MORECRAFT range (from the Morecraft Corp.), but since there is no mention of MODERN-MORECRAFT on this SKIPPER TOY set, and since it is different in character to the larger outfits, I am regarding it as a separate product.



The make-up of the Set is different to that of the larger 1946 MORECRAFT set described in OSN 11. The large Base Plate isn't included but there are more of the small flanged plates; and there are fewer Angles (and their end Connectors) but more Strips, and N&B to use with them. Screwed rods are used as axles with the Discs nutted to them, back to back when a Pulley is needed.

Bill Penn, Chief Engineer, signed the introduction to the Model Leaflet, and to an invitation to join a 'boy's engineering club'. He also offered help if any trouble is found in making the 50 models shown, but they look fairly straightforward despite there being only a small line drawing of each. They also look much better models than the small ones in the MORECRAFT manuals: in appearance and also



LOOM

because the greater use of Strips means fewer unbraced Angles. And there's even a Loom. No other size of SKIPPER TOY outfit is mentioned, nor are MORECRAFT sets though they were presumably being made alongside the SKIPPER. The only visible connection, apart from the manufacturer and the Patent No.2042353, is the 'Boltless Joint', and the illustration of how to use it is common to the SKIPPER Leaflet and to the MORECRAFT

MORECRAFT HISTORY This Set helps to date the various happenings a little more precisely, and so does a photo (also from Richard) of a MODERN-MORECRAFT box lid which has a Copyright date of 1937, and came from the Morecraft Corp. of Branford. In order then:

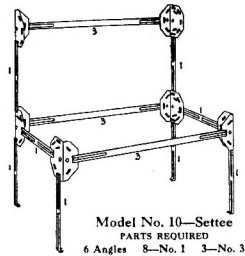
- MECCANO-MORECRAFT from The Meccano Company of America, 1932 to 1935. 7 sets are shown in MCS: B, Beginner's; C, Craftsman; D, Designer; DS, Designer Special; E, Engineer; F, Fellow; G, Graduate.
- MODERN-MORECRAFT from The Skipper Toy Co. of Branford, Connecticut, 1935 to 1937. A 1937 Manual has a Parts List identical to that in MCS for MECCANO-MORECRAFT; 2 sets are shown in it, the Beginner and Craftsman. Apart from the name, the Manual's cover is the same as the Meccano one.
- MODERN-MORECRAFT from the Morecraft Corporation of Branford and later, New London, Conn., 1937 to at least 1946. The 1937 Branford box referred to above is the only prewar dated item. The 1946 Manual is from New London and gives the range of sets as: the Skipper Toy, Craftsman, Designer, Designer Special, and Engineer. It contains the revised Parts List and, given that many of the parts in the 1938 SKIPPER TOY Set are in it, but not in the earlier Meccano/Skipper Lists, it seems probable that the changes were introduced when the Morecraft Corp. took over. But note the reported Skipper Toy 1/3" pitch Strips in 11/290.

STEEL TEC in the UK David Hobson kindly gave me a page from the Autumn/Winter Argos catalogue and one item is a 'PETER PAN STEEL TEC HARLEY-DAVIDSON POWER SET'. The description says: 'Build 3 super realistic motorised Harley-Davidson motorcycles (individually). Contains 545 pieces, including 4 tools, motor unit and spring suspension. Also includes Power Wrench with 30 tools, screws and nuts. Interchangeable head and forward and reverse direction. Requires 2 x AA batteries (order 1 of 980/1949 at £1.65 pair). For ages 8 years or over. £39.99.'

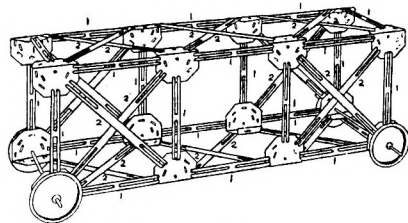
The illustration contains an 'Exclusive to Argos' label and a slightly luridly coloured box lid. The name on it is 'HARLEY-DAVIDSON POWER PACK' with no mention of 'Peter Pan', and the Power Wrench is shown as well as 2 motorcycles. The #301 Set mentioned in 12/322 also contained 545 parts but no Power Wrench as far as I know.

BILDAL This is a small 1930s American system which was included in MCS Part 5. There are no N&B, the parts just clip together, it's rather like a simplified version of MORECRAFT. These notes are based on material from Richard Symonds - photos of a No.1 set and a copy of its manual - and information that appeared in the *Southern California Meccano & Erector Newsletter* in 1989, contributed by Steve Riddlebaugh, who had found a No.2 outfit.

The main parts can be seen in the models below. The forked ends of the Strips were turned up at right angles at their extreme ends, and these were sprung into connectors called Angles, which had a series of slots around their outside edge. They also had a round hole in each face which could take an Axle, and Wheels were free on it, held by Spring Washers, that look, from the illustration, to be the sort that are practically impossible to remove.

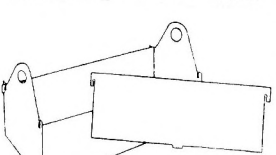


Model No. 10—Settee
PARTS REQUIRED
6—Angles 8—No. 1 3—No. 3



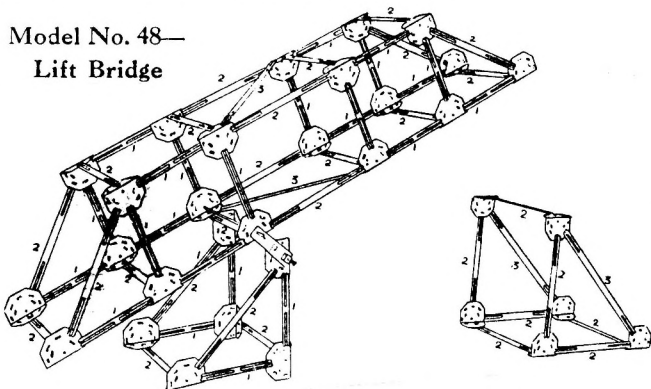
Model No. 20—Box Car

There were a few other parts. The Clamp was used, as far as I can see, to hold 2 Angles together back to back, when it was needed to do so. The ERECTOR-pattern Lock Collars were mainly used either side of an Angle to clamp against it and 'lock' it to a shaft. Their Set Screw was the only threaded part in the system. The Tilting Link can be seen in the Lift Bridge below, and the Axle through the bottom end hole, and the pressed out nib in the slot in the Angle, locate it relative to the latter, and then the other end hole can be used for the Axle about which the bridge rotates. Finally a Weight Box or Carriage which was intended to hold ballast, for example on the Lift Bridge, or to be used as a car on the Ferris Wheel shown in MCS.



WEIGHT BOX OR CARRIAGE

Model No. 48—
Lift Bridge



The No.1 set is in a box measuring about 13*11" and its green lid has the same large lifting bridge and two boys on it that are on the manual cover shown in MCS. It also has BILDAL No.1 and, in very small print 'U.S. Patent No.' followed by 7 figures which may start with 171 or 121, but none of them are clear enough to be sure. The parts are mounted on red card.

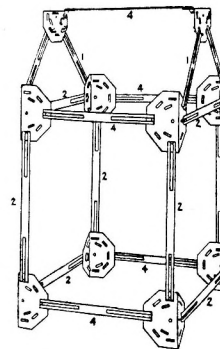
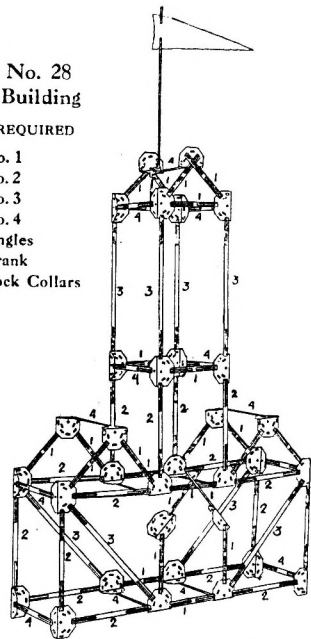
The manual cover isn't the one in MCS - the entry there came from Steve so presumably that one was from the No.2 outfit. Richard's looks like a full colour photo of two boys and a smaller girl playing on a living room floor with a toy train running through a BILDAL girder bridge. Inside are 49 models including the 3 shown in MCS. There's quite a good range for this type of set but many don't have the cross bracing which would be needed to make them rigid.

The House below was given as an illustration of how the bare bones could be clad in card etc, held it was suggested by 'paper clasps'. No Set Nos. are mentioned anywhere but only models Nos.1-19 and 5 later ones could have been made with the 32 Strips and 12 Angles in the No.1 set.

Model No. 28
Office Building

PARTS REQUIRED

- 24—No. 1
- 16—No. 2
- 8—No. 3
- 15—No. 4
- 32—Angles
- 1—Crank
- 2—Lock Collars



Model No. 14—
House

Now some comments on parts in Richard's set:

- The 32 Strips are 3/8" wide and the 4 different lengths look like the illustrations except that there's a centre hole in all but the shortest.
- The 12 Angles scale at 2" wide and like the Strips are quite thick.
- The 4 Wheels are about 2 1/4" dia and have a brushed brass finish rather than bright green paint mentioned in the Parts List. Axles are 1/8" dia and the 2 lengths in the Set scale at about 7 1/2 and 9 1/4", while the Crank Handle is some 9" overall. Only one Axle is shown in the Parts List.
- The Tilting Link is about 3" long by 3/4" wide.
- The sheet metal parts all look as if they have a brightish grey galvanised finish. There isn't a Weight Box in the Set but it is said in the Manual to be painted red.

The company that made BILDAL still exists and is now the Bettcher Manufacturing Corp. of 16000 Commerce Park Drive, Brookpark, OH 44142. Over the years they have made many products but the only constructional toy was BILDAL for about two years, probably in the early '30s.

SUMMARY OF MANUAL •Name: BILDAL •Details of maker: The Bettcher Stamping & Mfg. Company, 3100 West 61st St., Cleveland, Ohio. •Dates &/or Ref Nos: none. •Page size: approx. 200*150mm deep. •No. of pages: 20 (un-numbered) inc covers. •Language: English. •Printing: coloured cover, line drgs of models. •Page Nos. of Parts List: 4,5 [no PNs except Strips 1-4] •No Set Contents. •Sets covered: not stated. •No. of models: 49. •Name, Model No., Page No. of first & last model: Roof Truss,1,6. Airplane,49,18. •Other notes: 'H.W. Graves, Licensor - Patents Pending' on p3.



SMALL ADS

- WANTED: Structator sets, parts, manuals. Also, wood, paper, or glass sets from a Werkstatte, Exhibition, the Bauhaus, or prior to 1870. Arlan Coffman, 1223 Wilshire Blvd. Ste 275, Santa Monica CA 90403, USA.
- WANTED: info - history - background - unusual engineering applications of Märklin Gear Rings. Peter Page, 418 Tuttle Hill, Nuneaton, CV10 0HR. Tel: 01203 346480.

NEW SYSTEM: WALU-METALL Werner Sticht came across a basic set (Grundkasten) recently and kindly sent a photo of it, notes on the parts, and copies of the only 4 pages of the manual that have survived. On the box lid are details of the maker, Walter Lucas, Berlin-Britz, Sieversufer 42, and a date, 11.46. No set number is shown and the manual refers to a single outfit, so probably this was the only basic set. But under WALU-METALL on the lid is 'Aufbau- und Ergänzungs- Kasten', so there may well have been add-on or supplementary sets.



WALU-METALL

The cardboard box measures about 15*12" and the lid is brown, edged with red, and the large white label has red and green lettering. The box is sub-divided by card trays to take the various pieces.

The steel the parts are made of is rather soft and has a galvanised finish (like that on buckets). The pitch of the holes is 15mm and they are 4.2mm diameter. For no apparent reason both M4 and M3 N&B and Threaded Rods are included in the Set. There aren't any normal Axles and Pulleys are nutted to the Threaded Rods.

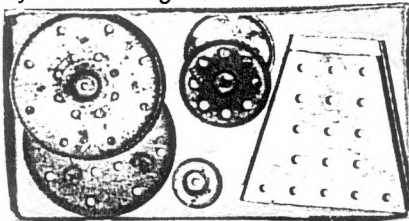
Details follow of the 35 different parts, with the probable number of each, estimated from those used in the models, in curly brackets. Parts are MECCANO-style unless stated.

- Strips are .8mm thick and 15mm wide, with semi-radiused ends. Lengths are 2,3,5,7,9,11,15,25h {8,3,8,10,4,8,2,4}. 1*3, 1*5 and 1*7 DAS have STABIL-like elongated end holes {2,4,1}. The Single Bent Strips {2} are 10mm across and 47mm long.

- Bracketry consists of Angle Brackets {12}; Double Brackets {2}; and 2*2h STABIL pattern Corner Brackets with the sharp inside corner {4}.

- The 9*5h Flanged Plate {1} is flanged along its long sides, and the Flanged Sector Plates {2} are normal width and hole pattern but only 5 holes long. All these Plates are made of .8mm steel and all holes are round.

- There are 25, 45 and 75mm dia Pulleys, all made of 2 discs spot welded together, and 3, 4 & 5mm wide respectively {4,4,2}. Sometimes the discs are misaligned by up to 1/2mm at the centre



hole. No bosses are used but the disc centres are bulged out. There aren't any holes in the face of the smallest Pulley but the 45mm has 8, and the largest, 2 circles of 8.

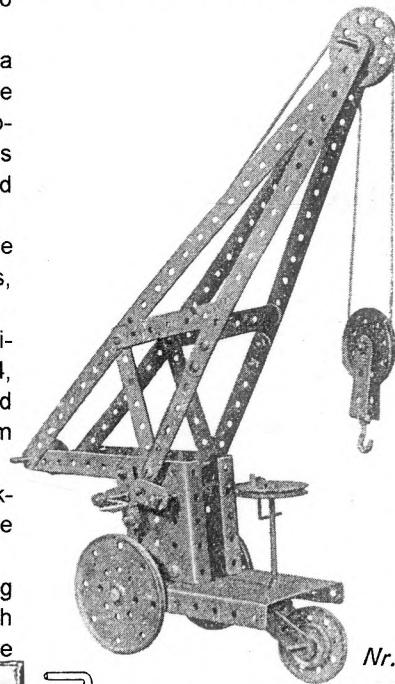
- The M4 Bolts have a hex head and are 14mm long u/h with 10mm threaded; the Nuts are also hexagonal and are made of aluminium alloy. M3 Nuts are also alloy but are square, the Bolts are of brass and domeheaded. About 60 N&B are needed for the models.

- The M4 Threaded Rods are 25,55,85,115,145mm long {0,2,2,2,1}; the M3, 25 and 85mm. Even with the number of parts remaining in the set the M3 Rods wouldn't actually be needed for the 4 models in the surviving manual pages and one wonders if the M3 parts could have been added by a previous proud owner.

- Other parts are a STABIL type wire Crank Handle {2}, a Hook with a threaded shank {1}, and 2 flat Spanners, open

at one end and ringed at the other, which in the photo look too big for any of the Nuts. Also a smaller, cranked one, open at both ends.

The manual is 197*143mm landscape and the pages left (3-6) show models Nr.1 to 4 - a Windmill, a Tower, a Mobile Crane (opposite), and a Fire Escape Ladder. All fair models for this type of set and the halftone of each, plus line drawings of details, would make building them quite straightforward.



Nr. 3 **Universal-Drehkran**

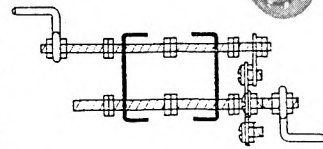


Abb. 3 a ist ein Schnitt durch das Windenhaus und zeigt, wie die Spindeln mit den Kurbeln verschraubt sind. Die Spindel zum Heben und Senken des Auslegers hat auf der rechten Seite eine Sperrvorrichtung.

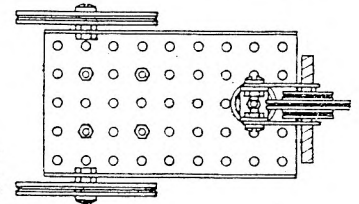


Abb. 3 b zeigt die Ansicht von unten

THAT WAS A GOOD IDEA I remember thinking when I wrote about STOKYS CITY (9/231) that it was surprising that no one had previously thought of the notion of making model buildings from suitable panels joined by brackets. Well someone had of course, a M. Jean-Baptiste-Clément Castelin, from the Seine region of France, who took out a (French) patent No.634909 in December 1927, some 20 or so years before the CITY sets appeared. But was there an earlier French system on these lines?

The claim was for square, rectangular and triangular panels, of metal or other material, which would be joined by flat or suitably angled brackets (Figs.10 & 11) using N&B. The relative dimensions of the various wall and roof panels were expressed in terms of the length of the side of the basic square wall element. That's Fig.1 and the sloping roof panels are Figs.8 & 9.

Each panel was to have whatever holes were needed at the edge and elsewhere, and the finish was to be different on the two sides - plain colour and timber framing were given as examples. Windows, dormers, etc were to be separate items bolted on.

The arms of the brackets were shown as 1/12 of the height of the basic wall element so if they were 10*10mm the wall height of a bungalow would have been 120mm, say 4 1/2".

I am indebted to David Hobson for giving me a copy of this interesting patent.

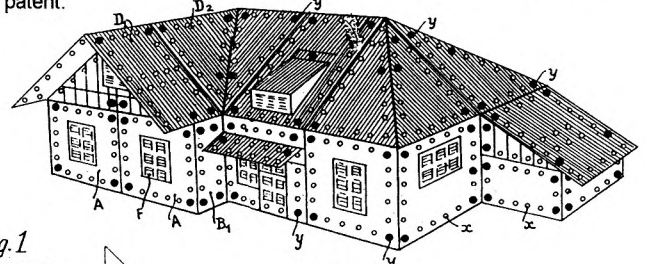


Fig.1

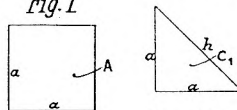


Fig.8

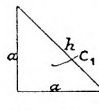
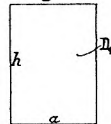


Fig.9

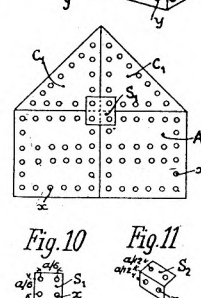
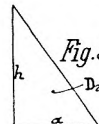


Fig.10

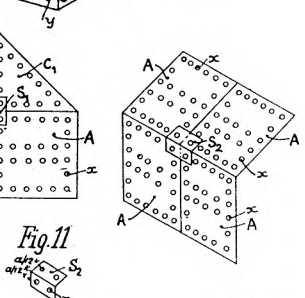


Fig.11

ITEMS FROM LETTERS

1. Numerous points of interest from Jeannot Buteux. • A Swedish set called **LEKSAKSSAMLARMARKNAD** that he saw at a Toy Fair in Helsingborg, Sweden.

• An unknown **aluminium system** with an unusual pattern of Braced Girders, but unfortunately too expensive to buy.

• A plastic set called **TEX** but also, according to one source, a metal set with the same name.

• An early 1916 version of the French **CONSTRUCTOR** system with parts similar to those in MCS but black, and up to twice the size.

• **DELOUTAX**, another translation of the Japanese name for DELTAX/DERUTAXE, see 11/288.

• Another recently discovered Scandinavian system, **DVS INGENIØR**.

• A manual for Danish **TEKNO** dated 1931, which is several years before previously known dates. [TEKNO has TRIX-style parts but a much larger range including more gears and circular parts. The Manual's date is only just after the original German Patent of September 1930 and it would be of interest to know the range of parts in the 1931 Manual.]

• News of a new Dutch set called **MECHATRONICA**. It seems to be intended for industrial use and is composed of a selection of TEMSI red and green parts, including the Temsi version of the 6-speed Richard motor, plus special parts, probably mostly electr(on?)ic. Shown in the brochure is an automatic beer pump which fills a glass placed on a stand in the machine. [The ultimate exhibition model?] The Set costs f 295 (plus tax) and the address of the manufacturer is BTC-Metaal, Postbus 2600, 3430 Nieuwegein, Fax 03402-53188. [I understand that this Outfit has been on sale for 2 or 3 years but is no longer available.]

• **Temsi** (11/292) has licensed production to various firms including **ESCHO-PLAST**.

• On **A.W.S.** (11/294), it appeared in about 1947 and one set known was marked by its purchaser as being bought at Baden-Baden in Sept 1952. [The reason I think the Manual in OSN 11 was from the 1930s is that the highest prize mentioned in it was parts to the value of RM5 - a sum that would have bought a MÄRKLIN No.0 set, say, in the 30s, but very little, I suppose, postwar.]

• Other colours for some **ÉCÉPÉ** and **MÉCANIC** parts (12/314) were tried, green for example and grey Wheels. The brackets around the Sets E and D bis mean that they were not available until towards the end of the **ÉCÉPÉ** period.

• On **MECHANIKUS** (12/321), a **HELLER-MÉCANICUS** set was bought [new?] in Belgium in about 1980 and enquiries made it clear that it was not connected with the French toy firm Heller. A town Schmalkalden was mentioned several times in the Manual and it turned out that it was in what was East Germany.

• **BURGSTÄDTER** (12/324) has also been sold under the names **PLASTICART** and **PLASTIKART**.

• A bridge made from the **LILIENTHAL** parts (11/295) is on display at the Deutsches Museum in Munich.

• **TUBA** was also made in Berlin and it appears to be the same as the UK version shown in MCS. The Plates were available in gold, yellow, green, red, and blue, and were also sold as special kits.

• Two different versions are known of **FIX**, **HOHA**, **GLOBUS** and **IMPERATOR**.

• On **METEOR** (12/302), its period was from the 1930s to at least the 1950s, and a nickel finish was used before painted parts were introduced. Parts from a 1950s set were brass plated.

• On **MIGNON** (10/262), one Angle Girder has been found which is made of steel, nickel plated.

• There were actually 10 'Groupes' in **MULTIMOTEUR** (12/304), the 10th being 'Traction Électrique'. Each Groupe is composed of several sets with a total number of between 70 and 100. From Groupe P (Prospection), sets P6, P8, P11, P12, and P13 are known but there were others, though not all were necessarily on sale at the same time. There was only one manual with the P13. Other examples are the '1^{er} Cycle' with 25 sets from C10 to C34, and 'Mécanique' from M80 to M99. Members of Constructorama possess many sets, some 20 manuals, and in particular the 6th edition (undated) of the 'documentation général'.

• **COZZONE** (12/313) was mentioned in a Dutch book, and the date given for a set shown in it was 1952.

• A **Märklin** catalogue of display models for dealers, some of which are 3 or 4m long.

• And a couple more new names, **MAKKO** and a German system called **FERROX**.

2. From Richard Symonds. • The ad (below) showing a photo of the box lid (or manual cover) of a second-hand **GILBERT RIDE-IT ERECTOR** set. That's a new name to me. The main illustration is of a fairly modern looking boy in the driving seat of a Jeep type vehicle. The only printing on it that I can read is 'First Life Size Erector' and 'Build any of 5 different vehicles you actually ride and steer'. Apart from the Jeep, the 4 other vehicles are probably shown in the white circles, but only one, a 3-Wheel Scooter, can be clearly seen.



• A photo of some yellow and green parts that were all in one lot from a Toy Fair. Some are **THE ENGINEER**, see 12/328, and others seem compatible, including a 47.5mm dia Pulley with no holes in its face, a small Dredger Scoop, and a Flat Trunnion with 7 holes, 2 of them elongated (opposite). Some of the other parts might be for a road grader or snow plough, and are painted the same green and have the same hole size. Finally a canvas belt, 2" wide and 36" long with 10 nickeled Scoops, 1" by 2" wide, clipped to it, and some wooden rollers, 1" dia x 2¹/₈" long, with Axles, 4"x³/₁₆" dia through them.

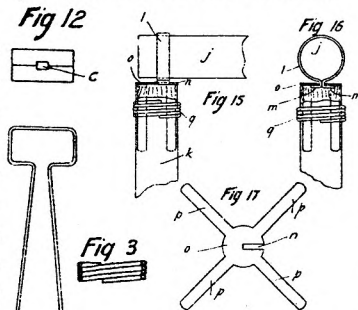


• A copy of an American fortnightly advertising paper called **Toy Shop**. Over 200 pages full of small ads but only 6 classified for OS, including 3 wanted and 2 for current spares, and I didn't spot any OS in a quick look at the dealers' lists. Full details on request.

3. David Hobson sent one or two items on **Gilbert** in the UK. The 1921 GPO London Trades Directory lists The A. C. Gilbert Co. as a manufacturer of Gilbert toys, and scientific and educational toys, at 125 High Holborn, WC1. In a local South London paper (The Blackheath Guide and District Advertiser), Gilbert toys and **ERECTOR** were prominent for the first time in the 1921 pre-Xmas ads. They included: • Dubois of Lewisham who advertised various sets from 7/6, and the No.6 'includes a powerful motor which will operate any **ERECTOR** model'; also '**The New Wheel Toy**' which made 12 models, 32/6 [see 8/198]. • John H. Bailey of Blackheath had, as well as the full range of **MECCANO** and **PRIMUS** outfits, **Gilbert sets**, including the Hydraulic and Pressure Set, the Light Set, the Gilbert Air-Kraft, Mysto Magic, etc. Mr. Bailey also announced, 'I have procured at low price a number of the Gilbert Machine Guns (B654). These I am offering at the absurdly low price of 5/11 each. These Machine Guns have a steel barrel and fire a wooden

bullet 30 yards.' He added, as if to appease parents, 'Fine for practicing in the garden.' However, the Gilbert Nurses Outfit was not available here - presumably British lads just had to be more resilient than their peers in the U.S.A.

David has also tracked down the French patent for **AJUSTO** (12/315): it turned out to be No.750927 and not the number on the Manual, which had nothing to do with toys. The date of application was 17 February 1933 and it was in the name of Robert Tassel, resident of Eure (to the east of Paris). Of the various clips shown in OSN 12, only types A and B are shown, but an alternative form of A is included (Fig. 3), and also clips to unite various sections other than semi-circular, rectangular for example (Fig.12). A method of joining solid rods is also given (Figs.15-17) - one rod is held in the clip l, which engages in the slot in the thin metal cap o, whose arms are bent down over the other rod and are held by the spring clip q.



And as a footnote, the TUPO ball and socket joints (12/307) reminded David of a 1927 patent No.302303, classified under 'constructional toys, figures'. The claim is 'A model of chocolate representing a human or animal figure comprising two or more parts resting one upon the other without positive engagement, the contacting surfaces being shaped so as to establish a ball and socket joint. The moulded parts may be hollow and weighted at the base by an extra thickness of chocolate.' In David's words, a very rare and short-life construction system.



4. Josep Bernal sent a copy of the cover of a 1921 **STABIL** Manual for Sets 49-52 in Spanish. It is basically the then normal STABIL standard with the righthand panel like the DEN LILLE INGENIØR one in 7/157 and on the left, „Stabil“ and the text details in Spanish.

5. John Hanby wrote that he had recently acquired a **JUNEERO Engineer's Set** (see 8/178, 9/216) and that it is almost certain that it was originally bought at Xmas 1940. The metal Discs in it were 2.50" and 1.75" dia, different to the postwar ones described in OSN 8, and those in my Engineers' Set were different again at 2.13" and 1.68". All were the same thickness.

6. Don Redmond has discovered that at least from 1936 to sometime in the 1960s, the major occupant of the address given for **THE ENGINEER** (12/328) was Armstrong Bros., machinists (Armstrong Bros. Engineering from about 1945 on). He also notes that the Screwdriver shown may have been a commercial, bought in item, and is similar to the AMERICAN MODEL BUILDER one, and to those supplied with White sewing machines ca.1919.

He also noted a new OS name, **AIMANTO**, Lot No.21 in a Jean Estève Objets list.

In a later letter Don wrote that in the *Canadian Encyclopedia* under *Toys*, it is said that the **Manual Construction Co.** and the **Reliance Toy Co.** both made steel construction sets. Reliance is one of the big firms in Canadian toys but so far no details about Manual are available. For STRUCTOMODE the same article gives the dates 1920-29 under Canadian Toys Ltd. [A Canadian Toys manual has a Price List dated 1918 in it. The maker shown in another manual is Structomode Ltd., again of Hamilton, and fewer

sets are listed, 00 to 3 against 0 to 6 plus 1M and 2M - the prices of corresponding sets are higher, \$6 for a #3 against \$4. The Little Hustler motor and the distinctive Braced Girders are no longer in the Parts List although the manual cover shows some of the latter but with MECCANO cutouts. The right-hand boy on the cover is wearing a jumper with a 'diced band' around the bottom, instead of that rather fancy jacket (see MCS). The Windmill Sail shown is also MECCANO-like with an arm, 6 bumps and rectangular holes, instead of the round holes in the Canadian Toys manual. Mainly because of the jumper I'm inclined to think that Structomode Ltd. came after Canadian Toys.]



7. Roger Baker bought a German set called **MECANIC** recently with parts that seem the same as those for the German MEKANIK in MCS. [In MCS Part 5 there's a Swedish MECANIC which is virtually the same as their MEKANIK - does anyone know anything of the change from 'Cs' to 'Ks' or vice-versa?]

8. Kendrick Bisset wrote that he has been told that the **MODELIT** Motor No.10 (12/327) was a Weeden product with the nameplate changed; also that he remembers seeing an ad for a motor similar to the one in the Loom (12/332), and it may have been a 'Little Hustler'.

On differences between similar parts from different systems he has found that the small hole for cord in old **MECCANO** Crank Handles is 1½" from the end, while **AMB** holes are 1½" from the bend.

9. Keith Cameron wonders at the number and variety of Other Systems, and the originality of some, but notes that the survivors, like BRAL, TEMSI and MÄRKLIN, are all cousins of MECCANO, and share its greater adaptability and appeal.

He also comments on the difficulties of making sense of the various 'Groupes', Outfits and 'Albums' within MULTIMOTEUR (12/304), and hopes that someone who knows the system will kindly explain all. [Jeannot Buteux's comments above are a great help and perhaps later he will be able to give more details, for example the meaning of the titles of the different Groupes, and their scope.]

10. On **JUNIOR MECHANIC** (12/327), Al Sternagle wrote that he has a smaller #101 set in a 11½*8¼" box, and thinks that it dates from the 1950s. As with the 201 there were no tools or manual with it, but 6 models are shown on the lid. The thread is 5-40 with the same length Bolts as in the 201, and the Nuts are 5/16" A/F and 1/16" thick. The thread on the end of the Crank Handle is 11/16" long.

11. Tony Matthewman, in reply to a question, said that **TRIX** Angle Girders were not introduced until after WW2, and that Continental ones were, and are, steel, and not aluminium as in the UK. He also mentioned that a German mail order house called Quelle has for several years sold 3 of the current TRIX sets under the name **QUELLE GOOD PLAY**, but 'TRIX' is also on the box lids in small letters.

CORRECTION On **Gilbert MECCANO**, several readers wrote to point out that the disc and vee of the 1" Pulley shown towards the bottom of 12/319 are formed, perhaps spun, from one piece and not two as shown. Also Kendrick Bisset added that the Pulley was at one time a standard ERECTOR part.

WOOD AND PLASTIC SYSTEMS

• **BUILD-OVER** From Kendrick Bisset. The Groves-Van Allen Company who made this wooden set (11/298) were listed in Portland in 1924 and 1925.

• **K'NEX** From David Martin, Geoff Davison, and David Hobson. This plastic system was launched in the U.S. in 1993 and is now beginning to appear in other countries, it was in Woolworths before last Xmas for instance. It consists of rods or strips that push into multiway connecting pieces, with provision for wheels etc, - 23 parts in all. It was reviewed in several UK national papers and one reader subsequently wrote to the Observer that a virtually identical product called (he thought) BILDIT, was on the market 30 years ago; and another recalled TINKERTOY from 1929 as using the same principle.

And from Josep Bernal, a huge colour leaflet that he found in Harrods. On one side are all the many outfits, up to the 'Giant Set' with 1800 parts, and models ranging from a Jeep to a Guitar; and on the other, large 'space' models, and more sets including a Roller Coaster with over 2400 parts.

• From Tony Rednall. **BUILDERIFIC** A set in a similar box to that of the 168 part set mentioned in 11/299, was on sale in Belgium last Xmas, but it only contained 118 parts and costs 250BF, about £5. [The UK set was still in the Winter 1994 *Index* catalogue]

Two other Xmas catalogue sets from Belgium, both with natural colour wooden parts and coloured N&B, wheels, etc, probably plastic. **CONSTRUCTOR** has 130 parts for 899BF. 'Inter Play' is printed on the box, and the wording is in German and Flemish. The words on the **KIDS AT WORK** box (120 parts for 698BF) are in English, and 'from MYKIDS' can be seen as well N&B, a hammer and a pair of pliers. The Strips have a small notch in both edges between each pair of holes.

• From Josep Bernal. A **BRIO MEC** catalogue with a more extensive, and probably later, range of these Swedish sets than given in MCS Part 5. 6 main sets are illustrated, MEC1 to MEC6, plus 14 selections of parts, all called MEC+. Catalogue Nos. are given, from 34311 to 34782. Over 50 different parts are included in the largest outfit, including gear rings which appear to slip onto pulleys.

Geoff Wright gave me another catalogue which shows sets which are different again. There are 22 in all including 4 START outfits, Sets Nos. 1 to 5, and a 'Deluxe Set' with 564 parts. The others are either selections of parts or theme sets to make vehicles, bridges, etc. Catalogue Nos. are between 34210 and 34616. Of the 67 different parts shown many look the same as those above - the others include a 15" square plastic Base Plate and 2 sizes of plastic gears instead of the gear rings.

• Don Redmond sent ads showing the **GIRDER AND PANEL** set mentioned in 11/298. It is being made in Toronto by Irwin Toy and seems to be a revival of the system made by Kenner in perhaps the 1960-70s period. The girders are shown blue and the panels grey, and the parts snap together. A K-Mart ad shows the French name as well, **POUTRE ET PANNEAU**, and the 298 piece set (at \$26.99) is called CITY SCAPE (EDIFICE URBAIN); a similar size set from Toys"R"Us is \$39.99.

He also mentioned **plastic sets**, apparently new, that seem to be copies of the new **MECCANO JUNIOR**, even to bolts with triangular socket heads.

Another newly discovered Canadian wooden system from Don, the **FLINTWOOD** Construction Sets Nos.1, 2 and 3. They were made by Flintwood Ltd. of Toronto, which was listed in 1945 as makers of wooden toys and novelties, with A.W.Flint as president, at 704-706, 60 Front St. W. Perhaps these sets date from 1940 to '45 when there was a

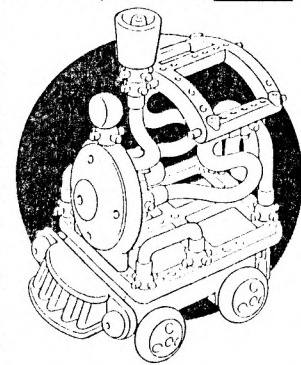
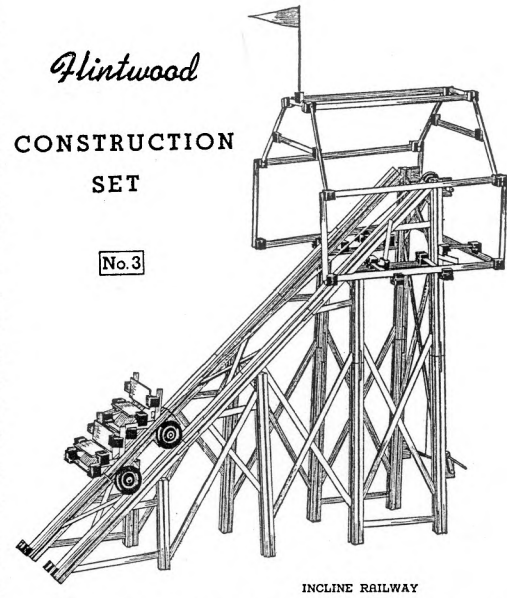
wartime ban on metal toys. On the cover of the manual is 'Designed in Canada' and 'Patent Pending'; and on the box lid, 'Made in Canada'. The 15 or so different parts push together, with 3 lengths of 17mm square bars up to 304mm long, grooved on all sides to take

2.5*9mm section strips. As well as these parts in natural wood there are small connecting blocks dyed black; slats 32*72mm; red 39mm dia pulleys; green 25mm dia wheels (not shown in the manual); and 3mm wooden axles. One of the No.3 models is shown above. More details of this system available on request.

• Richard Symond's son visited China recently and failing to find any metal sets, brought back a rather nice **plastic toy**. It isn't really an OS in that only one model can be made from it, but it took my fancy as an example of the **Tricky-Track** type of model that Keith Cameron built some years ago. The loco has a geared motor unit built into its base with space there for batteries, and it pulls two similarly styled wagons. The train runs along a plastic tube 'track' and pegs under the loco and wagons engage either side of it. Various 'obstacles' are provided including one of those bridges which closes as the train goes over it, and the track also runs under said bridge to provide the crossover in the figure of eight track. The parts are held together by pegs pushing into holes but the end fittings on the tubes probably have to be glued on.

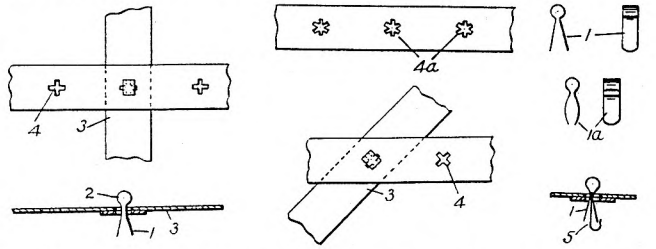
• Following on from the mention of **FASTECH** in 10/266, Chas Shrubsole lent me a manual which shows models for two sets, the **TECHNICIAN** and the **JOURNEYMAN**. He also found parts in a job lot which aren't in the manual and these may be from a larger (MASTER?) set. The holes in the parts are $\frac{3}{16}$ " dia at $\frac{1}{2}$ " pitch. On the box is Irwin Toys Ltd., 43 Hanna Ave., Toronto M6K 1X6. Made and printed in Canada under licence from Schaper Mfg. Co., 1982, a division of Kusan Inc.

Looking at the manual it seemed familiar and it turned out that Geoff Wright had shown me an identical system called **BOLT 'N BUILD**, which was on sale in the UK a few years ago. Despite the name the same 'rivets' are used to join the parts and the manuals are more or less identical except that two extra models are included for the larger B'NB set. The UK outfits are referred to as the MARK 1 and MARK 2, and on the manual's back cover is 'Made in U.S.A. and England by Action Games and toys Ltd., Henley-on-Thames, Oxon. Manufactured under licence from the Schaper Mfg. Co., Minneapolis, U.S.A. © Schaper Mfg. Co. 1982.'



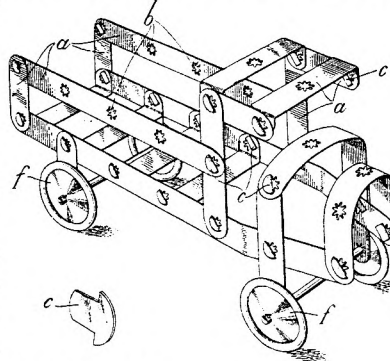
MYSTERY PART No.25

From Jeannot Buteux, a rubbing of a 4-hole Strip of polished steel with 8-point star shaped holes. I've never heard of any parts like that but David Hobson has found 3 patents which feature them. The earliest, No.5810 from 1915, was in the name of Reuben



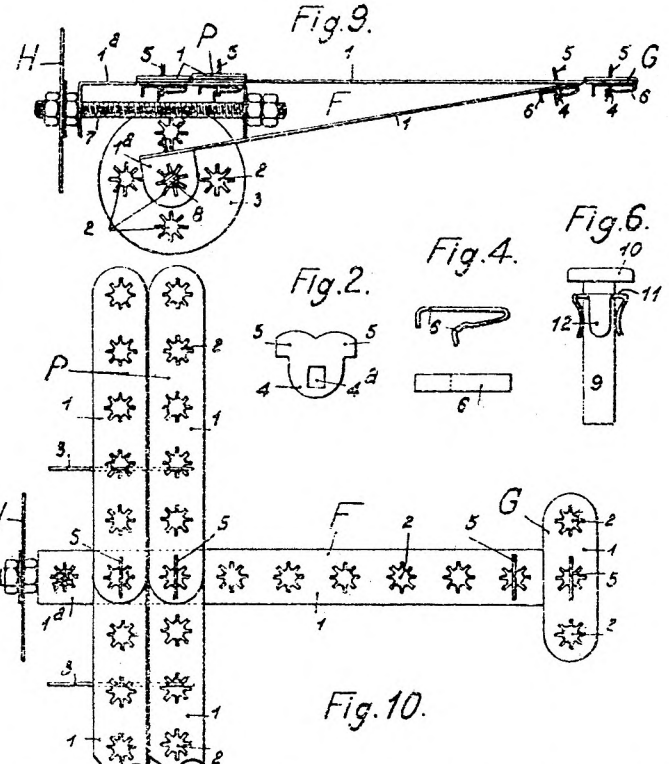
Wineberg of Walsall and shows parts with 4 or 6-point star holes held together with spring clips, which can be wedged (5) to hold them more securely.

The second (below) was from Martin Greenwald of Twickenham, No. 167244 of 1920, and mentions 4, 6 and 8- point holes. The parts are held together with flat 'rivets' made of soft brass (c), which are bent over on both sides after insertion to form a 'U'.



The possibility of square holes is also mentioned with presumably, the rivet fitting across the diagonal.

The third was a 1932 French patent No. 736852, for Amédée Sagnier from the Seine département. 8-point holes are used and again flat metal 'rivets' (top right, Fig.2) pass through the holes to join the parts, but with a spring clip (Fig.4) through the aperture 4 to hold each in place. An alternative is a normal round rivet held by a different spring

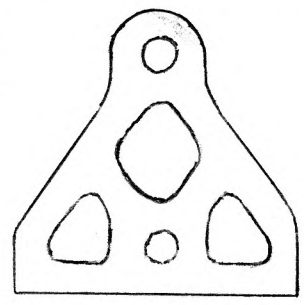


clip (Fig.6), but this is mainly intended to be used as a stub axle, as in 8 of Fig.9.

In all the patents it is envisaged that the locking device will be wide enough to fully enter the points of the stars and thus the parts can be held positively at various angles to one another, depending on how many points there are in the stars.

MYSTERY PART No.26

Another from Jeannot, the Trunnion opposite is made of nickel plated steel and has 3 round holes in its base.



EXTRA MCS SHEETS The Sheets listed below are available at 15p per Sheet plus postage. That makes £3.75 + post for all 25 Sheets. There aren't many MCS Amendments this time so they will be included in List No.3 to be issued next April.

- ARQUITECTURA: X1.1,2,3/4,5 [2 Sheets]
- CONSTRUKIT: X1.1,2,3/6,4,5,7 [3 Sheets]

- JEP: X2.2b,3/4/6e-h,5a/7a [3 Sheets]
- METALLICO: X1.1,2,3/6,4-a,5,7 [4 Sheets]
- SKIPPER TOY: X1.1,2,3/6,5 [2 Sheets]
- STABILA: X1.1,2,3/4/6,5/7 [2 Sheets]
- TECHMASTER: X1.1,2/5,4 [2 Sheets]
- UMAKIT: X1.1,2/5,3/4/6 [2 Sheets]
- WALU-METALL: X1.1,2,3/4/6,5 [2 Sheets]
- WENEBRIK: X1.1,2,3/4,5,6 [3 Sheets]

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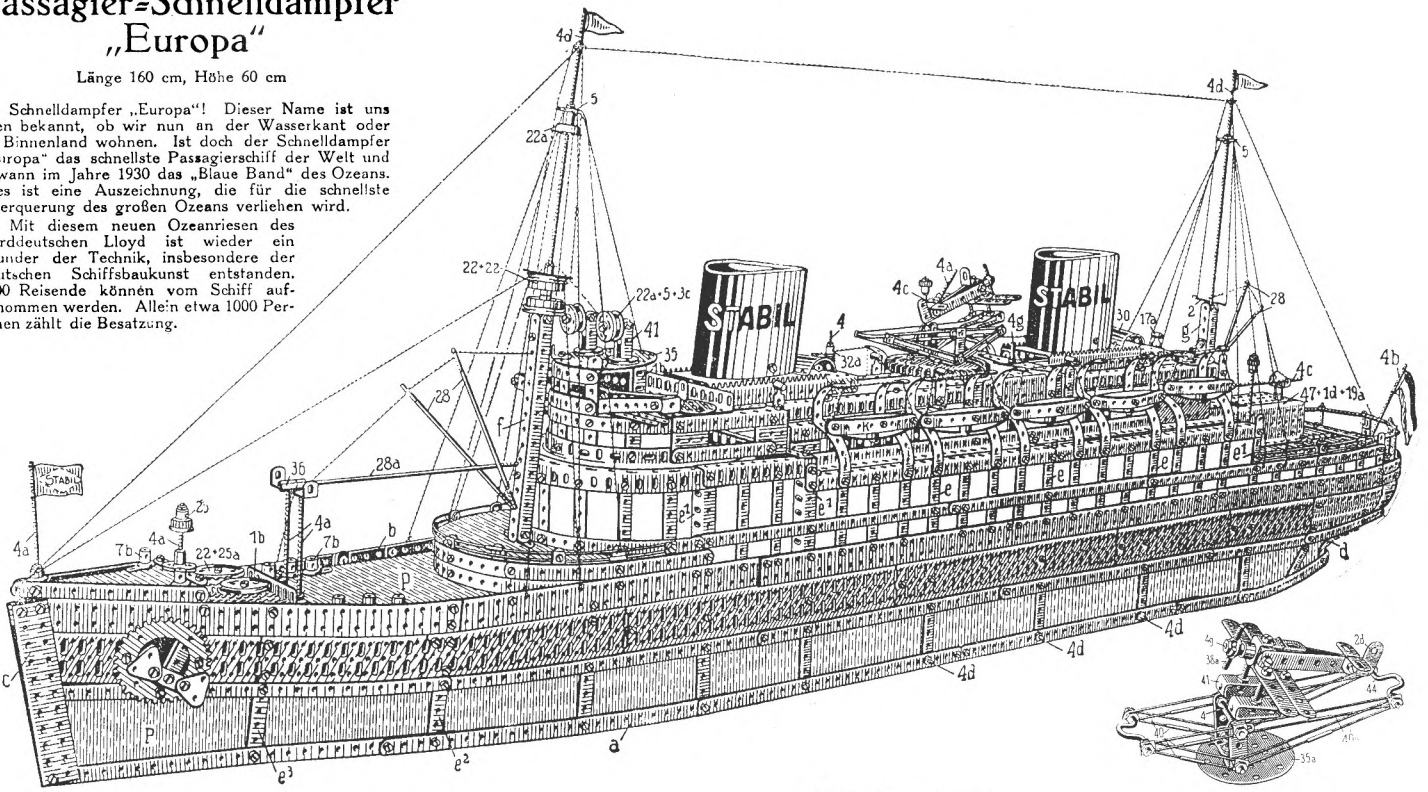
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Passagier-Schnelldampfer „Europa“

Länge 160 cm, Höhe 60 cm

Schnelldampfer „Europa“! Dieser Name ist uns allen bekannt, ob wir nun an der Wasserkant oder im Binnenland wohnen. Ist doch der Schnelldampfer „Europa“ das schnellste Passagierschiff der Welt und gewann im Jahre 1930 das „Blaue Band“ des Ozeans. Dies ist eine Auszeichnung, die für die schnellste Überquerung des großen Ozeans verliehen wird.

Mit diesem neuen Ozeanriesen des Norddeutschen Lloyd ist wieder ein Wunder der Technik, insbesondere der deutschen Schiffsbaukunst entstanden. 2200 Reisende können vom Schiff aufgenommen werden. Allein etwa 1000 Personen zählt die Besatzung.

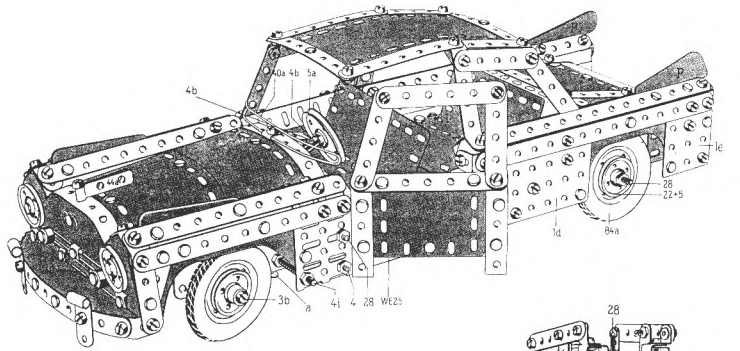


Nr. 423 Personenkraftwagen

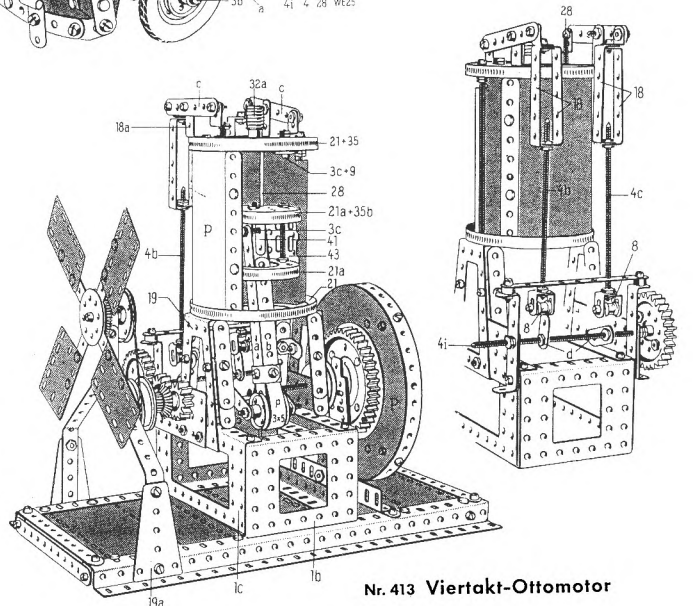
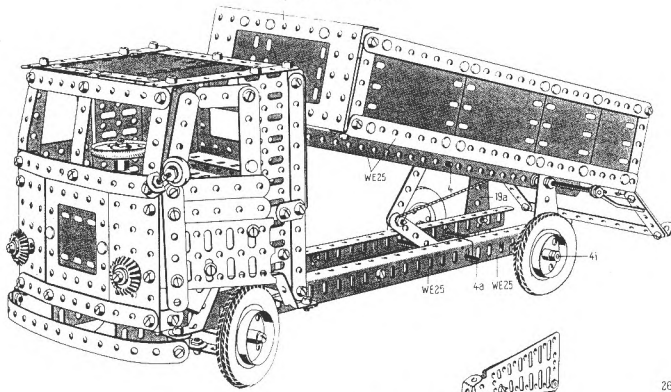
Abb. 714a Katalaufleger

Walther's „STABIL“

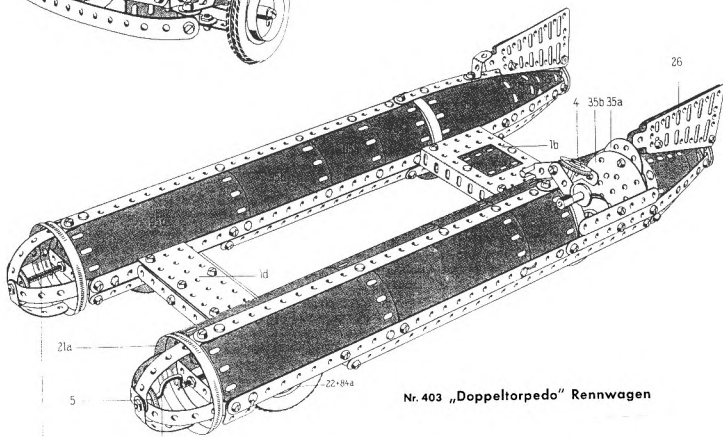
The Liner above is from a 1940 manual; the other models were in the last manual issued in 1956. See p348 for more on STABIL.



Nr. 414 Kippplaster



Nr. 413 Viertakt-Ottomotor



Nr. 403 „Doppelpetpeda“ Rennwagen

Um für Rekordfahrten eine möglichst günstige Stromlinienform zu bekommen, hat man diese Wagenform konstruiert. Wir haben hier bewußt keine Zeichnung der Lenkorgane zugefügt. Seht Euch bei anderen Modellen die verschiedenen Bauweisen an und dann entwickelt selbst einmal für dieses Modell die Lenkung.

Teile zum Schnittmodell Viertakt-Ottomotor:

- 1 Kurbelwelle 4a + Fl. 3 L. lg. + 4 + Fl. 3 L. lg. + 4a
- 2 Gegengewichte Nr. 2d
- 1 Pleuelstange a 2 Fl. 11 L. lg. b 2 - 7 -
- 1 Pleuellager 3 - Nr. 5 (verkleidet)
- 1 Pleuelbolzenlager Nr. 41
- 1 Pleuelbolzen - 3c
- 1 Pleuelbolzen - 2 - 21a + 35b + 43 + 4 + 44
- 1 Zylinder 2 - 21 + 35 + 2 - 4b + 2 Fl. 9 L. lg.
- 1 Zylinder Nr. 32a
- 1 Zylinder Nr. 32a
- 1 Ventile 3c + 9
- 2 Pleuelhebel c Fl. 6 L. lg.
- 1 Pleuelhebel Nr. 18a
- 1 Pleuelhebel 4b + 2 x 18 + 8
- 2 Pleuelhebel 41
- 2 Nocken d Fl. 2 L. lg.
- 1 Nockentrieb 2 Nr. 25c + 25d

Beim Bau des Motors ist darauf zu achten, daß die Nocken die Ventile im richtigen Augenblick öffnen.

	Einlaßventil	Auslaßventil
1 Ansaugen	auf	zu
2 Verdichten	zu	zu
3 Arbeitstakt	zu	zu
4 Auspuffen	zu	auf

Wenn nach dem Verdichten der Kolben seinen oberen Totpunkt erreicht hat, wird durch die Zündkerze die Verbrennung des angesaugten und verdichteten Luft-Gasgemisches eingeleitet. Die Nockenwelle dreht sich mit der halben Drehzahl der Pleuelwelle. Um die Pleuelwelle nicht zu dünn erscheinen zu lassen, sind einige nicht erforderliche Teile daraufgesteckt. Damit der Kolben bei dem Schnittmodell vorne nicht herausfallen kann, wird er durch 2 Stangen Nr. 28 gehalten.