

EDITORIAL I'm very sad to have to write that Frank Beadle died in February. He had not enjoyed good health for several years but maintained his many interests, including 'Other Systems', until quite recently. He will be remembered among us for his yeoman work, with Don Blakeborough, in collecting together the material for Metal Construction Systems, Parts 1 to 5 – a mammoth achievement - and for continuing to make copies of them available to newcomers to our pastime. And personally, I shall remember him for his engaging personality, and for the help and encouragement he gave me when I was

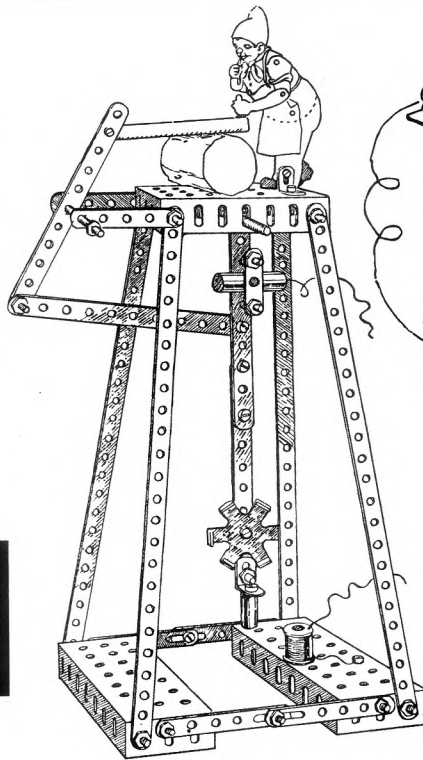
starting this Newsletter.

A number of readers have asked for more on the non-MECCANO parts now being produced around the world by various companies & individuals. There are quite a few such sources, including some which don't last very long, and many pages would be needed to give full details. To test reactions, some brief notes on 5 suppliers appear on pages 776-7 of this Issue. Comments would be welcome on whether space should be given to this aspect in future, and if so which suppliers are of interest, and how much detail should be included.

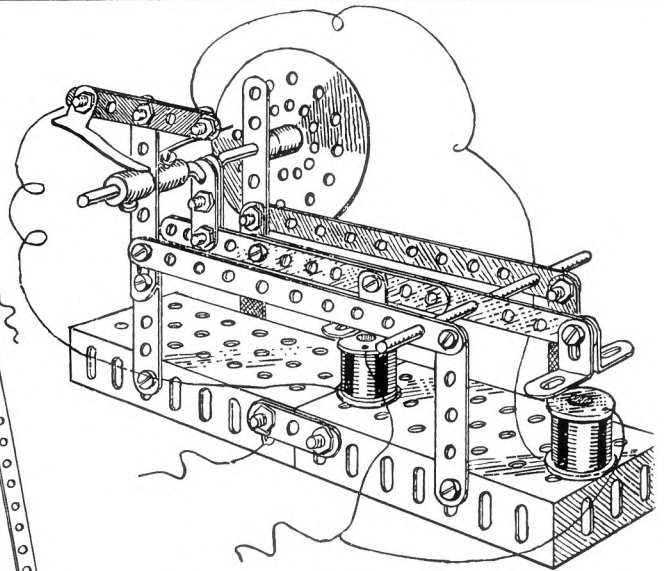
Electric



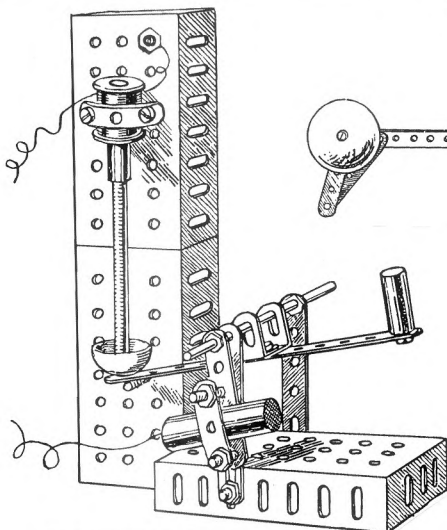
THESE MODELS ARE FROM THE SET WITH THE MERCURY SWITCH: MORE OVERLEAF



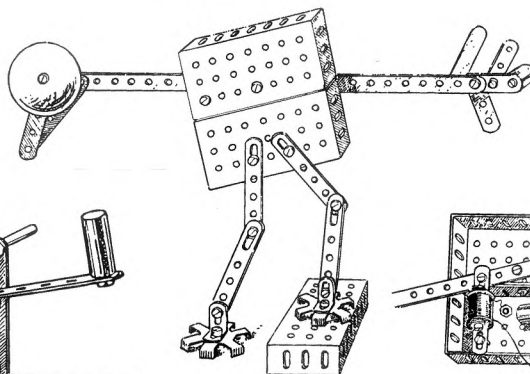
48. Modell. Bewegliche Figur



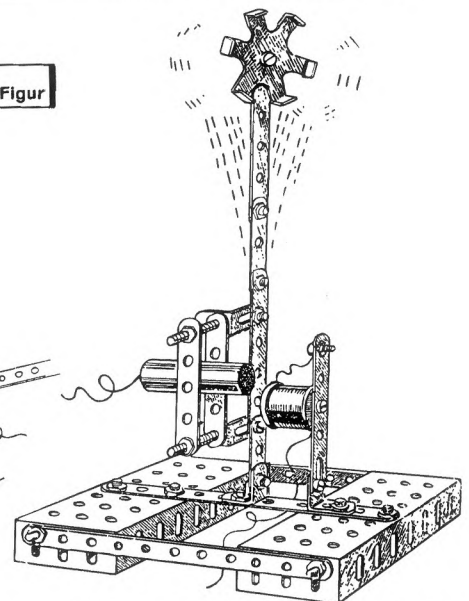
65. Modell. Legende Dampfmaschine mit 2 Spulen



53. Modell. Wagnerscher Hammer



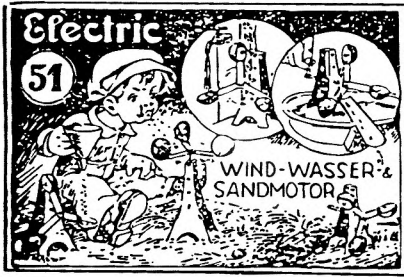
52. Modell. Pickender Goldfaser



47. Modell. Metronom

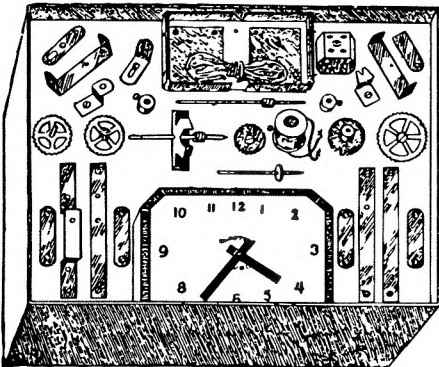
ELECTRIC Further to the notes in 24/694 some interesting items have been discovered by Jürgen Kahlfeldt, and Thomas Morzinck & Werner Sticht have passed them on, with some translations & notes. Thank you to all.

First a 2 page extract from the **1933 catalogue** of a Dresden wholesaler, Krupte & Oestreicher, showing 8 ELECTRIC products. First are Sets 1, 2, & 3, & the 80-page manual for the No.1 - they are as described in OSN 24.



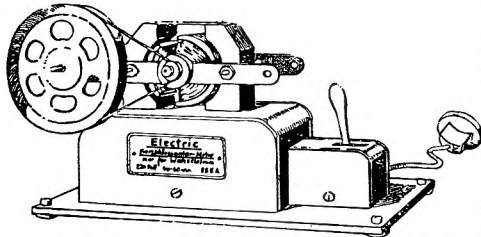
Then there is a **Set 51** which 'has 29 newly designed parts for the construction of more than 20 models driven by wind, water or sand'. The box is 185*125*25mm, and the label left is in 3 colours. It shows a 3-bucket rotor mounted on a pylon that looks rather like a miniature Eiffel Tower in shape.

Next the Synchronous Clock **Set No.301** that was mentioned in OSN 24.



Its box is 335*250*105mm, and the finished clock measures 210*115*95mm. It works off 3 to 5 volts at 50 c/s, from a bell transformer for instance. The box lid is as in OSN 24, while the layout of the set is shown left.

The mains **Motors 401-404** described in 24/696 are listed, with a clearer illustration, left.



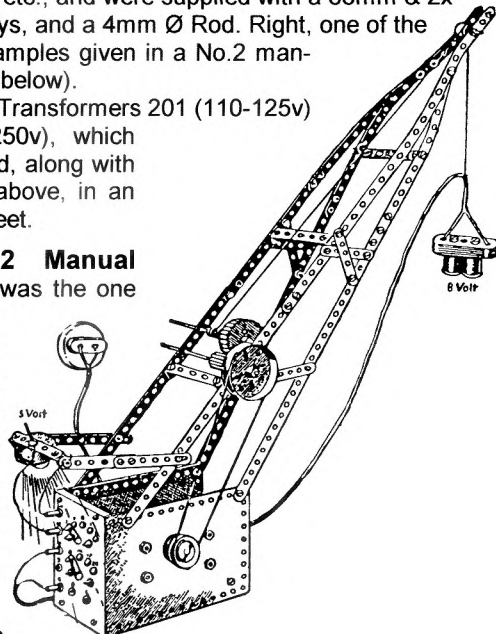
Its size is given as 210*95*100mm, and the speed of the armature shaft as 2600 rpm. Another type of

Motor, not known hitherto is the mains **Electric-Trafo-Motor**. There are 6 versions, **Nos.101 - 106**: 101/102 are for 110-125/220-250v, and are rated at 10 watts; 103/104 & 105/106 are 25 & 45 watt versions for the same voltage ranges. All are 165mm long & 110mm high, but the width is 65, 75, & 90mm for the 3 different powers. All incorporate a transformer to provide voltages of 1 - 24v for lighting, running trains, etc., and were supplied with a 53mm & 2x 10mm Ø Pulleys, and a 4mm Ø Rod. Right, one of the application examples given in a No.2 manual (described below).

Finally the Transformers 201 (110-125v) & 202 (220-250v), which will be included, along with all the items above, in an Extra MCS Sheet.

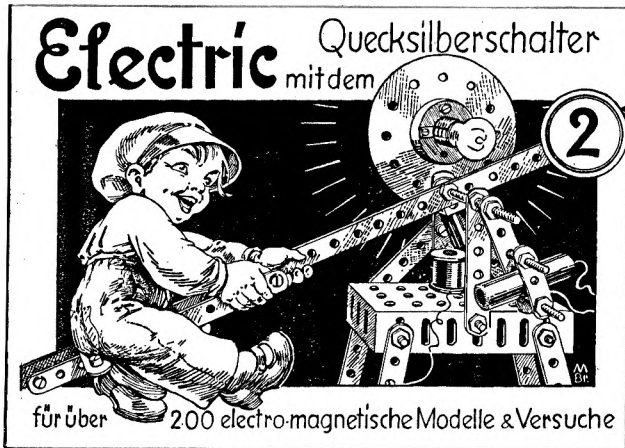
The No.2 Manual

The No.2 Set was the one with the Mercury Switch & the set contents are listed in the Manual. The total of 134 parts include all in the No.1 set, with more in some



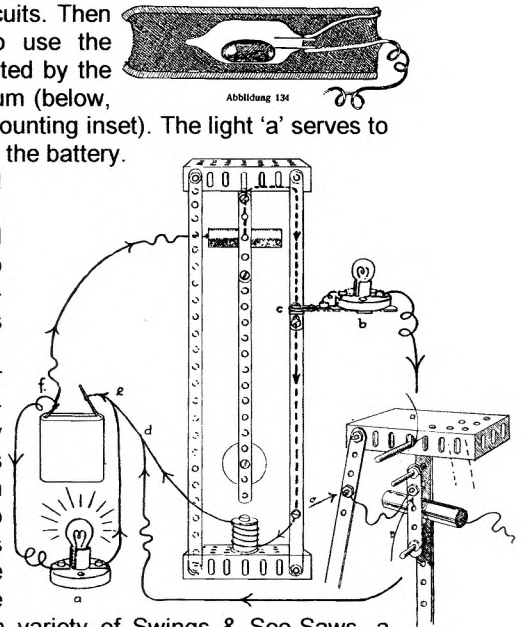
cases, 3 Bases & 2 Coils for example, plus 9 new parts. As well as the Switch the latter include 4 each of 11 & 25h Strips, a smooth Axle & a Crankshaft, a 5h Ø Disc with Boss, a Bulb Holder, and an Isolierschlauch (Insulating Tube?). Apart from this Tube, the parts can be seen in the models below.

The manual has 64 pages, about 20½*15cm, plus covers, and the front is shown below. The pages go from 81

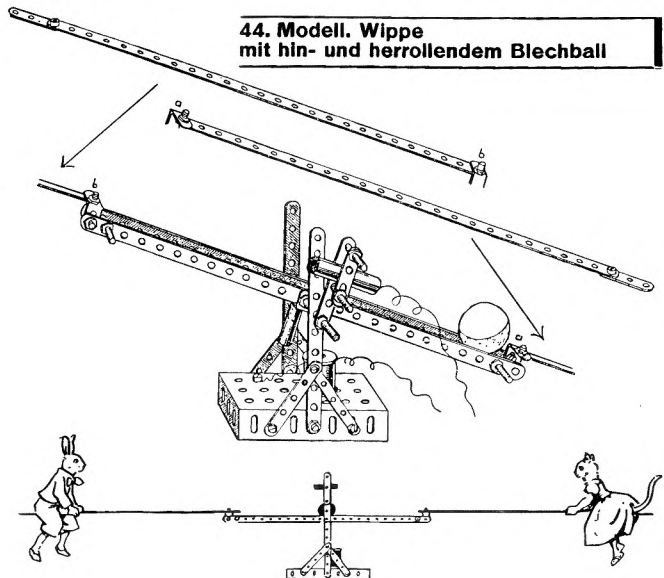


to 141, after 2 without numbers. The last page in the No.1 manual was 80. The first 10 pages contain the Set Contents, an explanation of mercury switches, with the diagram below, and basic electrical circuits. Then pp88-95 show how to use the Mercury Switch, illustrated by the application to a pendulum (below, right, with the Switch mounting inset). The light 'a' serves to show that there is life in the battery.

Next is the model section, on pp 95-132, from No.41, Schaukel (Swing) on p96, to Nos.74-78, Puppenstubenlämpchen (Doll's House Lamps) on p132. For each there is one or more good-size drawings, with explanatory text. Most of the models use the Mercury Switch to control the current to a Coil. An example is shown below with more on the front cover. The other models include a variety of Swings & See-Saws, a dancing Doll, and an Electric Gong. Those without the Switch include Motors, a Morse Set using Lamps, an Electric Buzzer, and 'imitation' Steam Engines. One of the latter is on the front cover.



44. Modell. Wippe mit hin- und herrollendem Blechball



In summary, an unusual set, with a good selection of interesting models from it, and with a touch of humour about some of them.

The last pages in the Manual are given over to ads for certain of the items in the 1933 catalogue: the Electric-Trafo-Motor; the Transformer; the No.3 Outfit; the Synchronous Clock; and the 400 series Motors.

No date or maker is mentioned anywhere in the Manual. For the No.1 manual in OSN 24 it should have been said that it has 'Copyright 1932 by Böhmert, Hoffmann & Co., Meißen i. Sa.' on p80.

Going back to the STABIL-ELECTRIC manuals, the No. 1 seems to correspond to the ELECTRIC No.1 with 40 models in each. The ELECTRIC No.2 has 38 models against 78 models in the STABIL No.2, and this may indicate that the latter (if it was ever published) included the No.1 models along with those from the No.2 ELECTRIC. The higher price of the STABIL No.2 supports this notion.

The final item is a **pale blue manual cover** similar in design to the one half way down the first column of 24/696, but without the logo top right, & with 'EDUARD HOFFMANN' at top left. Perhaps this indicates that at some point the firm belonged solely to Hoffmann, but if so it isn't clear how that would fit into the sequence of owners given on p696.

A PINIT Manual The cover from a PINIT manual was mentioned in 25/745 and now David Hobson has kindly lent me a manual, described below, with this style of cover. It was found with the remains of a No.2 Outfit, and has models for Sets 1 & 2, with a few for Nos.3 & 4. No mention is made of a No.0 Outfit.

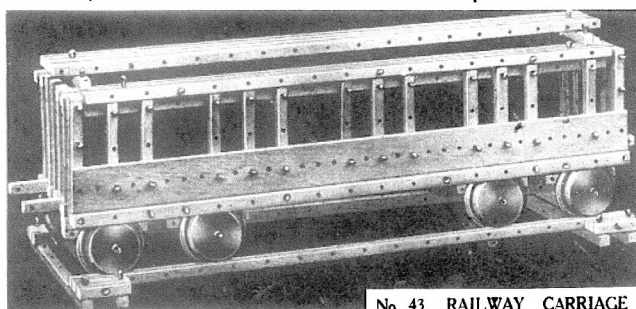
SUMMARY OF MANUAL •Name: PINIT •Details of maker: Pinit Ltd., Old Palace Yard, Richmond Surrey. •Dates &/or Ref Nos: none. •Page size: 250*154mm deep. •No. of pages: 16+covers. •Language: English. •Printing: cover black on white with pale green-grey panels; photos or line drawings of models on a black ground. •Page Nos. of Parts List (no PNs): Strips & Pins are shown on p8; other parts are listed on C3. •Page Nos. of Set Contents: C3. •Sets covered: 1,2. •No. of models for each set: 31,8. •Name, Model No., Page No. of first & last model of each set: 1: DECK CHAIR,1,2; WEIGHING SCALES,31,10. 2: HALL STAND,32,11; ARTESIAN WELL,39, 14. •Other notes: •No Set No. is given for Models 30 & 31. •Also shown on PP14-15 are Models 39A-42, EDDYSTONE LIGHTHOUSE to WINDMILL, for Set 3; & 43, BIG CRANE for Set 4. •Without Set No. are 43-44, RAILWAY CARRIAGE & RAILWAY CROSSING BRIDGE, on p16; & a WORKING MODEL OF A [railway] SIGNAL on C3. •The printer on C4 is Johnson Riddle & Co. Ltd., London SE 1.

The Railway Carriage on p16 is shown below.

As stated in OSN 25 the cover is the same as, or similar to, the one in MCS, but the remaining MCS pages are not from this manual. The models common to both have the same Model Nos. but the MCS models go up to No.62. (This is also true of the models on the No.0 Model Sheet of OSN 25, with the highest in that case being No.56.)

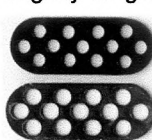
Mentioned several times in the Manual is a 'Pen Art Illustration Book', price 2/6, which included, for example, 'about 100 articles' that could be made with the No.1 Outfit, and 'all the advanced models'.

From the Set Contents in the Manual, the No.1 Set comprised 113 Strips of various lengths; 112 Pins, 4 each of 1" Discs & 1" Flanged Wheels; & a Hook, Propeller, & Stitched Material. The No.2 had: 184 Strips 5/32" square, 10 1/4" square, & 24 3/32 x 5/8"; 288 Pins; the No.1 Wheels plus 2x 1 1/2" Disc Wheels; a Hook; 5 Propellers; 3 pieces of Stitched Material; and a Dome & Tail Piece for the Biplane.



No. 43. RAILWAY CARRIAGE

RODOPI That is the transliterated name of a Bulgarian system with TRIX-style parts. It is included in MCS, and now David Hobson has kindly lent me a set he has found. No manual was with it but most of the parts are probably still present. Although at a glance the parts look like TRIX there are some differences. The Strips are the same width but are slightly longer, with a hole pitch of 8.0mm, against 7.8 for



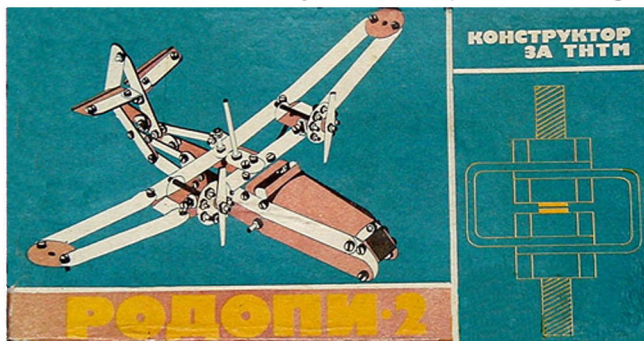
TRIX. The holes themselves are also larger, to take the M4 N&B used. Comparable TRIX & RODOPI Strips are shown left, half scale.

The other noticeable difference is that most of the Bulgarian parts are nicely nickel plated.

A label on the underside of the box carries the year 1977, the name V.Petleshkov, and the town of Bratisgovo. Thus it seems that the Set was made by the firm that made MLADOST (see 25/720), & also (from MCS) the MERKUR-like MUSALA. In fact the logo on the lid (right) is identical to the MUSALA one, & the MLADOST design is very similar. MCS gives the RODOPI's maker as 'Popem', and this name is on the lid's apron followed by Bratisgovo, so perhaps it was the name of the company at the time.



The Set The box is 31 1/2*16 1/2*2 1/2cm, and the lid, below, is blue with the name in yellow and the Flying Boat white & brown. The model is also on the manual cover in MCS, and both have a '2' after RODOPI. The parts are housed in a thin, pale blue-green formed plastic moulding.



The Parts • DATA (in mm) Strip: (13 centre holes): •Hole pitch/dia, 8.0/4.2 mean; •width, 15.2; •thickness, .80; •fully radiused ends. Thread: M4. Nut: hex 6.9 A/F; Bolt: RH 6.7 dia, or CH 7.0 dia; both nicked steel.

The parts are generally well made & finished, but some of the Strips are dished from manufacture, and many of the holes in the Discs are off centre. Holes are from 4.1 to 4.3mm but most are 4.2mm.

The parts found are as follows, with the quantities in curly brackets: • 5,9,13,17,26h Strips {3,4,3,4,2}. The 26h (why 26?) are painted olive green, the only parts in the Set not nicked. (MCS/NZ gave the colour of the parts as green; /FB as nickel.) • The **DAS**, **Double Bracket**, & **A/B** are made from 7,5 & 3h 'strips', as in TRIX {4,3,3}. • The **8h Disc** is 29mm Ø and the **Plain Disc**, 16mm. {7,5}. Another Plain Disc is shown in MCS but the only possible equivalent in this set was a single black rubber disc, 25mm Ø, 2 1/2mm thick, with a centre hole. It is actually glued to thin sheet of rubber, roughly trimmed to the same diameter, and with no centre hole. There is a space in the box for a disc of that size but why a rubber part? • **Screwed Rods**, 49-51mm long {9}. MCS has 55mm, & also a 27mm size not found. • **N&B**. The Nuts {64} are machined, 3.3mm thick. The 2 types of Bolt mentioned above are both 8mm u/h (6mm in MCS) {25 RH, 13 CH}. • The **Washer** is 10mm Ø {6}. • The **Screwdriver** is 117mm o/a – the blade is chemically blackened, and the blue plastic handle has Cyrillic letters moulded into it. • The one **Spanner** found is neither of the TRIX types in MCS; instead it is



75mm o/a (see left), with square jaws 6.0 & 7.2mm wide, neither of which fit

the Nuts. • The **Hook**, above left, 20mm long by 10mm wide, is not the German TRIX pattern of MCS.

The Hook looks like the MUSALA part and the Spanner might be too. There is space in the box for the MCS-type Hook & Spanners, so perhaps the parts in the Set were factory substitutes, or did the parts from a MUSALA & a RODOPI set get mixed up at some point?

TOY TOWN – one of the smallest systems ever

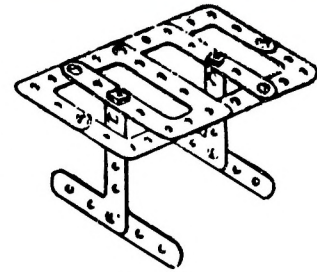
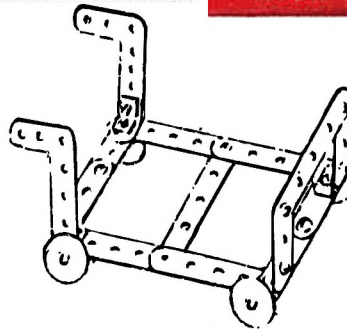
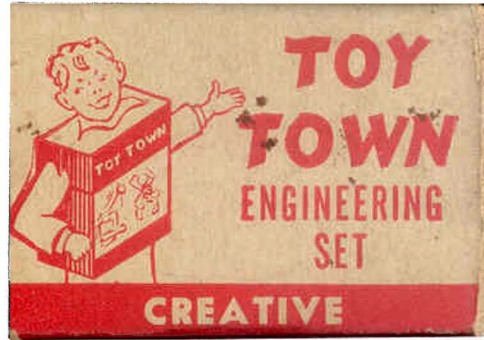
The box is a little larger than the 'Matchbox' ones, & the parts, with 3/8" pitch holes, aren't as small as some, but with only 3 different parts, plus a Nut & a Bolt, Australian TOY TOWN must be the smallest system in that respect. There seems to have been just the one outfit and an example is now to hand, with well over half of the parts present - the model sheet is missing but Jack Little has since written that it is as shown in MCS, 7*4 3/4" in size and printed in blue on both sides. Incidentally the name on it is TOYTOWN, all one word.

The **box** opens at the ends and measures 65*45*25mm. It is buff, printed in red, and the top & bottom faces are shown at the top of the page. On the sides are 'INSTRUCTIVE' & 'EDUCATIONAL'.

The main **parts** can be seen in the models: a 3*5h 'L' Strip; an A/B with a round hole in each 11mm long lug; and a 16mm Disc. **DATA** (in mm) Strip (3*5h 'L' Strip): •Hole pitch/dia, 9.5 (3/8")/3.4 •width, 9.7; •thickness, .65; •ends fully radiused. Thread: 1/8" BSW. Nut: hex 6.3 A/F; Bolt: roundhead 5.5 dia; both nicked steel. (Nuts in another Set are square.)

The parts are all well made and nickel plated. At 1/4" u/h the Bolt is just long enough to be locknuttled onto a part with a Discs free to rotate. There were no Tools in the Set – on the Model Leaflet it says, 'Use a screwdriver, or the end of one of the strips is a good substitute'.

The **Contents** are 16 'L' Strips, 8 A/Bs, 4 Discs, 16



LUGGAGE TROLLEY

- 9 "L" Shaped Strips
- 8 R.A. Brackets
- 4 Wheels
- 16 Screws and Nuts

TABLE

- 11 "L" Shaped Strips
- 2 R.A. Brackets
- Wheels
- 12 Screws and Bolts

N&B - so not too much should be expected of the **models**, but those above can at least be said to be brave tries.

Details of the maker are given below; MCS gives the period as 'About 1940 to 1950'.

More TOY TOWN Soon after writing the above a letter from Jack Little mentioned TOY TOWN parts similar to EZY-BILT, and he subsequently very kindly sent details of all that is known of the system. The little set described above was a 'special', quite distinct from the main TOY TOWN range of three small 'Engineering Sets' with 'normal' parts.

TOY TOWN was made by J.B.Morgan & Sons, manufacturing engineers, of 17 Guildford Lane, Melbourne, and 70 Sydney Road, Coburg (not to be confused with R.K.Morgan who made BETTAFIT). It is known that government permission to start (or restart?) production was given to J.B.Morgan in January 1945, and in October of that year the *Retail Trade Journal* noted that the wholesaler J.H Morris was distributing a TOY TOWN engineering set.

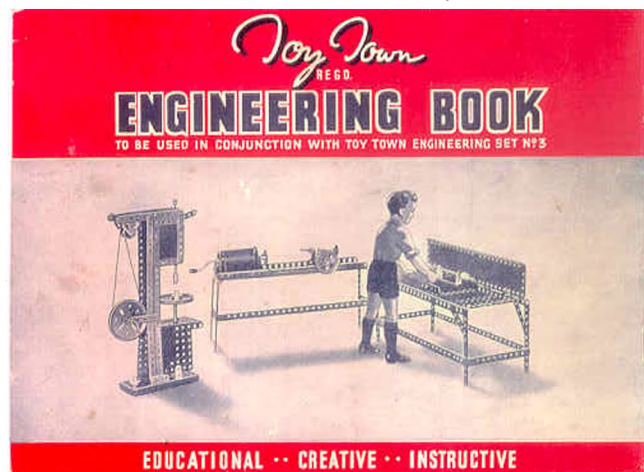
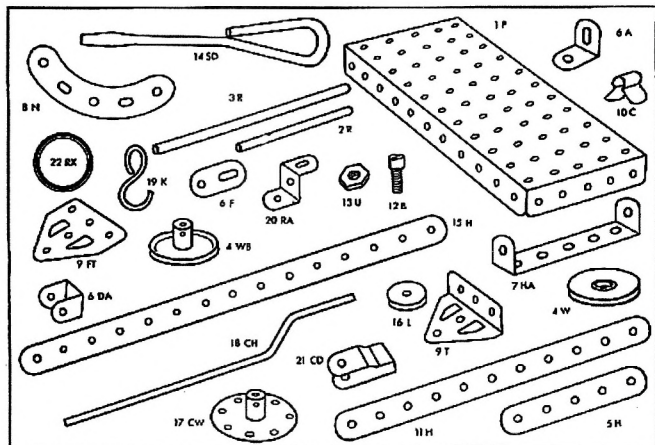
The 26 parts in the system are shown below, taken from the No.3 manual - #22 RX is a black Rubber Tyre (possibly a Ring). With a few exceptions the parts are almost identical to EZY-BILT (see 22/636). Jack noted that the Flanged Plate doesn't have the EZY-BILT cross slot & that its bends have a slight radius; also that the Pulleys are 1 1/16" Ø with no indentation at the base of the flange, and the Bush Wheel & Fixed Pulley have longer than usual bosses. The Flanged Plate, Bush Wheel, & 1" Loose Pulley are painted a lightish

red; the Strips, DAS, & Trunnions, dark green; and the Brackets & Fixed Pulley are zinc plated. The Small Pulley is brass. Some other parts, including various Plates, and 2" & 3" Pulleys, can be seen in the B&W photos of Machine Tool models on the box lid & manual covers (see below).

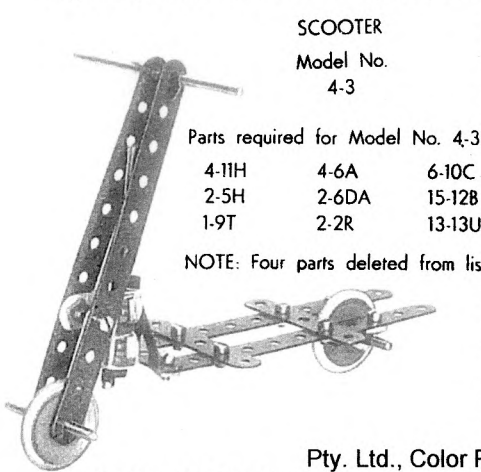
The TOY TOWN Engineering Sets are numbered 1, 2 & 3. They are packed in cardboard boxes with the parts strung on 2 cards in each outfit. (It is suggested in the manual seen that the stringing cord should be used in the models until restrictions were relaxed, when a Hank would be included in the set.) The lid is covered by a label similar to the manual cover shown below, but with 'ENGINEERING SET' below 'Toy Town', and the Set No. in a circle top right. The No.3 box measures 10*9*1 1/2", and the N&B, and small parts, are in a card box, 2*2 1/2" marked 'Toy Town Components'.

The set contents are almost the same as those in the EZY-BILT Sets 1-3 of the day, including two 15h Strips in the No.3. The sets are progressive apart from the 4 Loose Pulleys in the No.1 changing to 2 plus 2 Fixed in the No.2 (with another 2 Fixed, and 4 Tyres, in the No.3. The No.1 has 12 N&B, rising to 30 in the No.3. The full inventory for each set will be included in the MCS Extra Sheets.

There is a manual for each set with similar covers to the No.3 below. It measures 7*9 1/2", and is printed in black &



white over a grey centre with red panels top & bottom. The first of its 6 pages gives General, & Particular Advice, and then the Illustrated Parts and the Set Contents occupy a page each. Finally 13 models from 1-3 (Swing) to 13-3, with a good photo of each and a list of parts for all except 3-13.



SCOOTER

Model No.
4-3

Parts required for Model No. 4-3

4-11H	4-6A	6-10C
2-5H	2-6DA	15-12B
1-9T	2-2R	13-13U

NOTE: Four parts deleted from list.

But to keep the TOY TOWN lad on his toes, a note by model 3-3 says 'As from this Model on, various parts have been deleted from lists in accordance with engineering principles' [!]. One of the models is shown left. The printer is given on the back cover as Chas. Steel & Co.

Pty. Ltd., Color Printers, Melbourne.

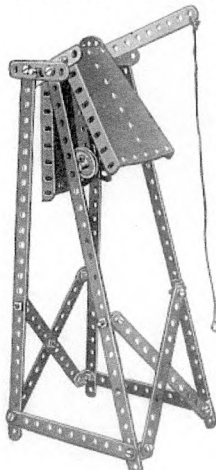
The No. 1 & No.2 manuals are smaller at 6*7" deep, and in each the introduction is followed by a page with the Set Contents under the illustration of the parts in the Set. Photos of 6 models are shown in the No.1 manual, and 12 in the No.2, not numbered but provided with parts lists.

MORE from AUSTRALIA The following notes from Jack Little, and the photocopies he kindly sent, add to those in 19/540 & 22/636. On the general scene: 'As most of the parts from EZY-BILT (1936-41), TOY TOWN, BILD-A-KIT (see below), & CONSTRUCTO are very similar, and as all originated in Melbourne, one or two engineering companies could have made all the parts. Some companies had their own workshops, and those that are known for sure are EZY-BILT in Adelaide (from 1944), BETTAFIT in Melbourne, and BUZ & MODEL-IT in Sydney. All these companies were also making other products at the same time.'

BETTAFIT & YOUNG ENGINEER'S SET The name BETTAFIT is also found spelt BETTA-FIT. No known BET sets had the Flanged Plate with a slot. The 'U' Piece in both BET & YES manuals (shown in 22/639) is only found in YES outfits; in BET it is the normal 5-hole part. YES, 1937-42, was probably not made in-house. By Dec. 1944 Janda Trading had been authorised to start production but had not yet done so. (By that date R.K.Morgan had been granted a permit to make BETTAFIT.) From 1947 to 1950 an engineering & die casting company was involved; in 1950 Robilt Engineers took over the parts, assembled some sets, painted unpainted pieces, and sold them off as job lots. BETTAFIT is thought to have continued into the 1950s.

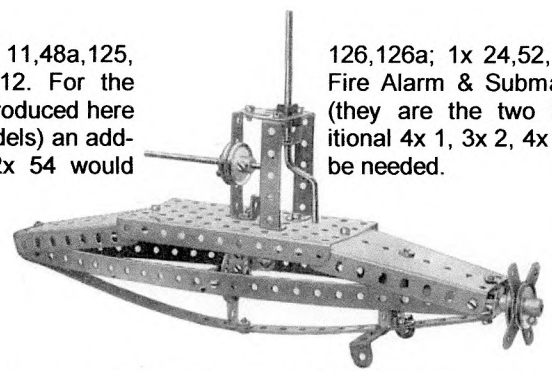
'New' System: **BILD-A-KIT** A Model Sheet is known for this system and a tin accessory box. The Sheet is headed

BILD-A-KIT Construction Sets



& the only indication of the maker is Box 2662, G.P.O., Melbourne, at the end. Sets 1, 3, & 5 were advertised in an early post-WW2 wholesaler's catalogue at almost the same price as the equivalent EZY-BILT sets. The Model Sheet, 4 sides 10*13", has 138 models, with no reference to any particular set. The models have no names or numbers and there is a half-tone for each - identical to those in late 1920s MECCANO manuals, with most from the 00 or 0 pages, but with a couple of No.1's, all mixed up together. The main parts that can be seen in the 0/00 ones are 4x 2,5,22,90a;

2x 11,48a,125, 8x 12. For the reproduced here



126,126a; 1x 24,52, and Fire Alarm & Submarine (they are the two No.1 itional 4x 1, 3x 2, 4x 48a, be needed.

There was a No.4 Australian BUILD-A-KIT mentioned in 7/170 - the same system, I wonder.

CONSTRUCTO Another small MECCANO-like system, known only by its Model Leaflet (as used in MCS). But it was printed by 'Reporter' (a local newspaper) Print of Box Hill, a Melbourne suburb, so no doubt it was a Melbourne system.

HANDY SET Another 'new' system or just a set from one of the Australian manufacturers? The only evidence for this Set is a Model Sheet 9 7/8*12 7/8", printed on one side only. The name (below) is at the top with underneath, 'This set *The Better Toy for Boys!* has been produced for boys

HANDY SET

to take with them on holidays or anywhere desired.' Then a possible clue to the maker: 'This set can be used together with all other 'Bettabilt' sets. So is BETTABILT another Australian system yet to be discovered? Or was Bettabilt a name intended to bring BETTAFIT or EZY-BILT to mind, without actually using either name? Two other possible clues. First, the Set Contents are given on the Sheet and the PN's are the same as BETTAFIT, so did the copywriter get confused and put Bettabilt instead of Bettafit? Secondly, the slogan above the name - 'The Better Toy for Boys!' - but I don't remember it from anywhere else.

The contents of the Set are given on the Model Sheet: using MECCANO PN's, 1x 36,52; 2x 2,12,16,22a,48a,90a, 126; 4x 5; 6x 35,37. The parts in the models look just like MECCANO except that the Trunnions are the 7-hole type and the 1" Loose Pulleys have no face holes. The 5*11h Flanged Plate is flanged all round and has the 1/2" cross slot in some models but not in others. The ends of the Curved Strip are blurry in most of the models but in at least one, the Chair below, they appear to be stepped.



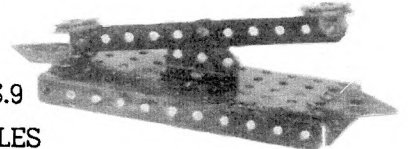
The 15 simple models shown, apparently original, go from H.S.1 GARDEN SEAT to H.S.15 MOTOR LAUNCH, with a half-tone of each. Several need more than the 6 N&B in the Set, and some like the Scales below include Flat Trunnions - two in that case plus an ordinary one.

H.S.2

CHAIR

H.S.9

SCALES



MODEL-IT The range of sets are as given in MCS. Possible dates are 1944 to around 1955.

MYSTERY PART No.45 More from Don about the 1 1/2" Gear with the square centre hole for the boss. The disc is almost identical in diameter, and has the same tooth form, as a MECCANO 56t Gear with a similar, thin disc. Two of the 'square' ones have now been found in an American No.5X MECCANO set from c1920, and so it seems possible that the part was a wartime Meccano expedient, with the square hole for fear that a zinc boss would slip under load. As far as is known no 1 1/2" Gears with any sort of zinc boss have ever been found in the UK, so how such parts got to be in an American set remains to be explained.

MÉCAVION

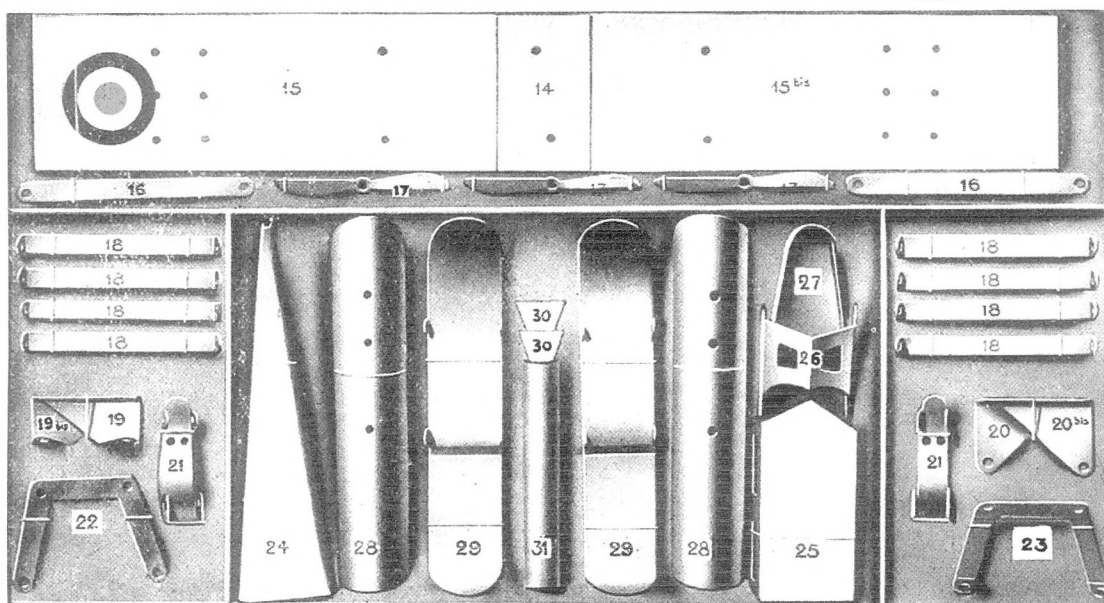
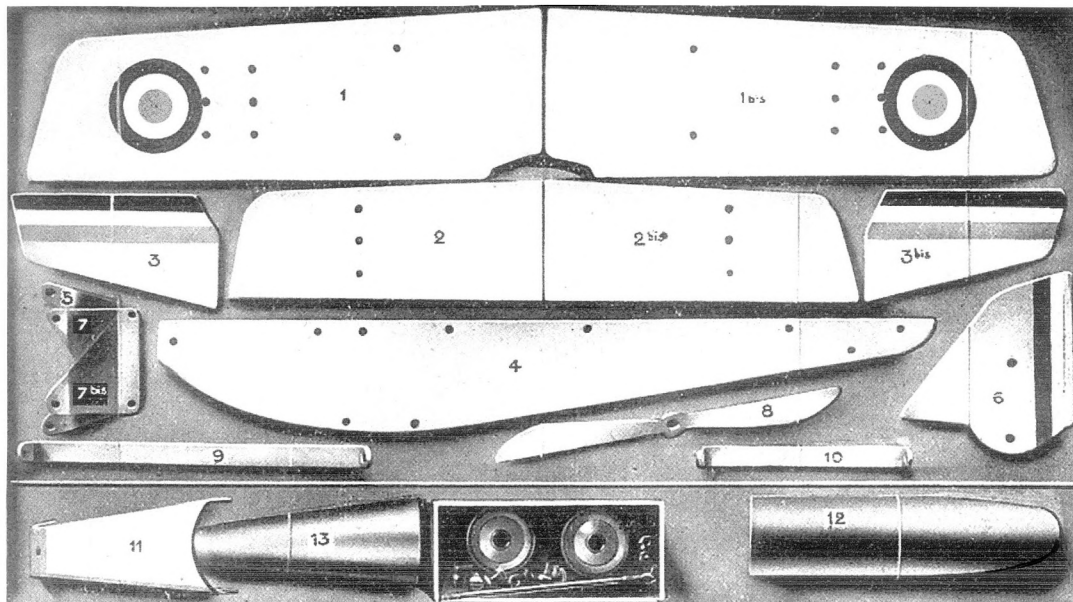
This French aero system is in MCS but only some of the parts are shown. This account is based on: • a manual that Philip Woodcock very kindly sent; • a small lot of parts; • a 'Standard' set, incomplete but with manual, and some additional parts, all kindly lent by David Hobson. None of the material tells anything about the maker, or even where the system was made. Dates too are uncertain: MCS gives 1930 but 1928 has also been mentioned.

The SETS An ad in MCS labelled '1930' shows 2 outfits, a Standard & an add-on Complémentaire. Opposite are the illustrations of them from the manuals. A 'Coffret de luxe' is also mentioned in the manuals, and had all the parts from the aforesaid 2 sets plus a Motor Unit. This Unit was sold separately as well.

The other MCS ad is from 1934 & lists 12 sets: '000 Baby; 000 bis Baby complet.; 00 Baby complet.; 0 Baby; 1 Standard; 1 bis complet.; 2 bis complet.; 3 complet.; 4 moteur; 5 standard moteur; 6 standard compl.; 7 standard complet moteur.' Presumably 'complet.' is 'complémentaire' abbreviated. Some of the prices in the ad can be seen and the '1 Standard' cost Fr50, the same as the Standard in the first ad. '3' is probably the Complémentaire of the first ad, again at Fr50, with the 1 bis & 2 bis intermediate add-on sets. 4 is the Motor Unit at Fr30, & 5 would be the 1 with Motor; the 6 the 1+3; and the 7 the 6 plus Motor, that is the earlier Coffret de luxe. It cost Fr130. In the Baby series the No.000 cost Fr23 & the No.0 Fr35. It's hard to see how the No.1 could be reduced in scope to create these sets, so, at a wild guess, perhaps a range of different, smaller parts was used in them.

By way of comparison a MECCANO No.1 Aero Set, very broadly equivalent to the MÉCAVION Standard, cost Fr65 in 1931.

The lid of David's Standard set is shown below. It is 23*43cm, about the size given for the two boxes in the first



ad, and is an imitation dark brown leather on the outside & light blue within. The large, colourful label is blue with yellow rays and a silver plane, plus boys & models against red wallpaper in the bottom corners. The slogan across the top is 'L'Avenir est dans les Cieux' – The Future is in the Sky. A yellow label on one side of the lid gives the set's name and says that 7 models can be made from it. The depth of the box is 4½cm and the parts all sit on false floors: 2cm high for parts #11-13, and the box for small parts in the middle; 3½cm high for the card to which the other parts #1-12 are strung.

The Set shown in MCS is a No.1 Standard and, compared with the above, all the major parts 1-13 can be seen, but differently arranged. Small parts are in a box of about the same size, 90*38mm, but it is a rich blue with an 'ACCESSOIRES MÉCAVION' label on the lid. The main box lid is red and the label, in blue, white & red, is much smaller & simpler. It has MÉCAVION at the top, Constructions Aéronautiques at the bottom, and clouds & a Biplane in between. The Instructions, for 7 models, are inside the lid.

The PARTS Holes are 3.6mm at variable spacing. The thread is M3.5. Dimensions given below are overall unless otherwise stated. Struts are 8mm wide; the lengths given for them are between bends for those with angled ends, and between end hole centres for flat ones. Handed parts have 'bis' after their PN. The numbered parts, #1-13, in the Standard Set are as follows.

- The **Wings** #1 & 2, a pair of each in the Set, are 203 & 126mm long, and are flanged at their inner ends. Neither

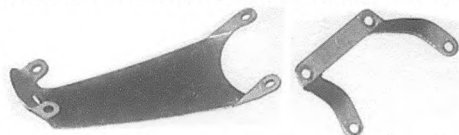
MODÈLE 5

Avion de chasse

Monoplan parasol (1)



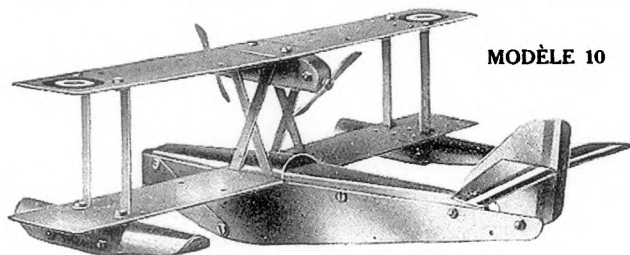
they nor the tail surfaces have any chordwise curvature. • The **Tailplane**, 3, 80mm long, also has an inboard attachment flange, triangular with 1 hole. • The **Fuselage Side**, 4, is 309mm long. • In Model 5, above, the Wings are bolted together through their flanges and joined to the fuselage by a **Centre U-Strut**, 5, below, at each side, also bolted to the



flanges. • The **Fin**, 6, is 72mm long, with an upper hole to provide an alternative position for the Tailplanes. • The triangular **U/C (Undercarriage) Leg**, 7, is 42mm long; the **Propeller**, 8, 140mm diameter, the **Wing Stay**, 9, 127mm long, and the **Interplane Z-Strut**, 10, 75mm. • The Fuselage Sides are joined by the **Front Top**, 12, the **Rear Top**, 13, & the **Nose Underside**, 11, (above, left). The Propeller is attached to the upturned nose section of #11, and the part is bolted to the Sides by the lugs at the back and on the nose. #12 is 125mm long, with the flanges on each side cutback at the front to clear the N&B in #11's nose lugs. #13 is 112mm long, flanged along each side.

Other parts in the Standard set are: • The **U/C Wheel**, a loose pulley, 25mm Ø, with eyelet centre, and fitted with a white rubber ring. • The **Axle**, 3.50mm Ø, 86mm long with the ends threaded M3.5 over 12mm. • **N&B**. The hex Nuts, 6.0mm A/F, & the 6.0mm Ø fillister Bolts, 6mm u/h, are both nicked steel. • A wooden round handled **Screwdriver**, 11½cm long with a 5½cm blade, was found in the Set, and the flat nickel **Spanner** left, 62mm overall, in one lot of parts.

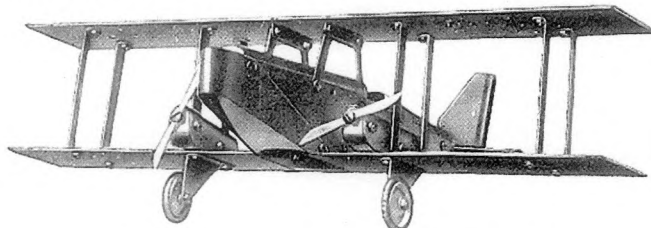
The numbered parts in the Complémentaire set, 14-31, are described below. Items not seen are starred. • Two pairs of rectangular **Wings**, 15 & 15 bis, 180mm long, again flanged inboard. • A wing **Centre Section***, 14, used in the top wing of a Biplane. • 4 flat **Struts**, 16, 85mm long, used as cross bracing between the Floats, and to support an Engine Nacelle above the fuselage, as in Model 10 below.



Hydravion, type "GRAND RAID"

Biplan bi-moteur à moteurs en tandem

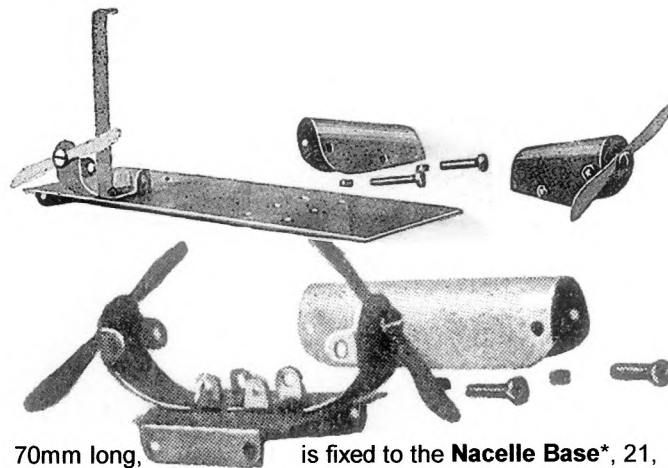
'Grand Raid' by the way means long range. • The shallow U-shaped **Interplane Struts**, 18, 76mm long, are used with the Wings 15, as in Model 9 below. • The **Small Nacelle**, 30,



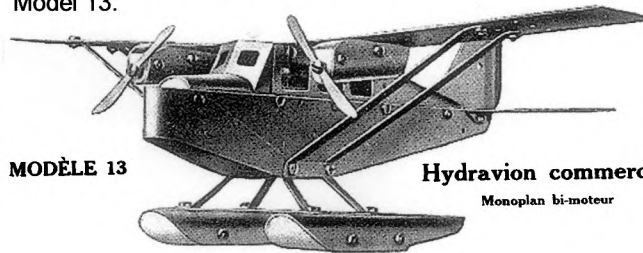
MODÈLE 9

Avion de bombardement

Biplan bi-moteur à moteurs latéraux



70mm long, is fixed to the **Nacelle Base***, 21, as above, top. • The **Large Nacelle**, 30, 92mm long, sits on two of the Nacelle Bases, one at each end, (above), bolted here to the wing Centre Section. • The **Support Bracket**, 19, is used to support an Engine Nacelle clear above a Wing, or, bolted to the bottom of a fuselage side, as a horizontal U/C leg. It is the U/C Leg, 7, but formed into a shallow 'U'. • The **Wing U/C Leg**, 20, (see Model 9) is the U/C Leg but flat apart from the 90° flange at the top. • The 3 small **Propellers**, 17, are 70mm diameter. • The **Flat Centre U-Strut**, 22, is bolted to the flanges of the Wing & Centre Section, as in Model 9. • The **Float Strut**, 23, is made from PN 22 but angled top & bottom, and is used to attach the Float to the fuselage, as in Model 13 below. • The **Float*** is assembled from a Base, 29, & a Body, 28, as shown under Model 13.



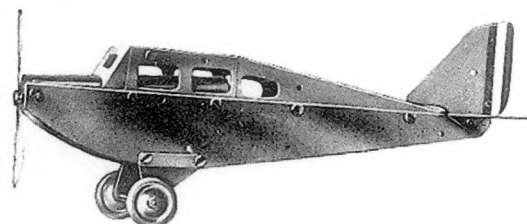
MODÈLE 13

Hydravion commercial

Monoplan bi-moteur



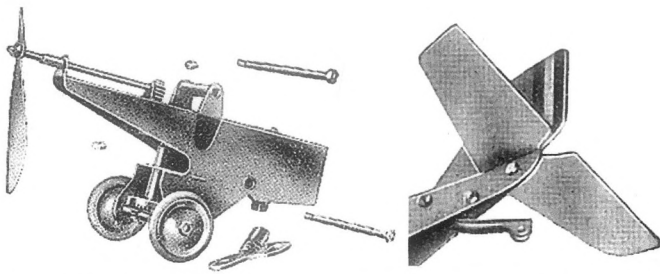
There are 4 extra fuselage parts. • The **Nose Extension***, 27, wraps around the normal nose, as in Model 9, leaving a forward cockpit, but with no floor, by the look of it. • The **Cabin Front** 26, bolts to the **Cabin**, 25, which in turn is bolted over the existing Front Top Fuselage, as in the fuselage E below, with the Top Fuselage showing through



the windows. The cabin is continued backwards by the **Cabin Rear Fuselage**, 25, which replaces the Rear Top Fuselage. It can also be bolted to the Sides with the front lowered, as in Model 10, but I'm not sure what the discontinuity this leaves is meant to represent.

Other parts are a **Short Axle*** for use with the Wing U/C Leg, and 3 **Studs**, 18, 21*, & 36mm long, each 3.5mm Ø rod threaded at each end (like the Axle). They are used instead of long bolts in assembling parts like the Float & Nacelles.

The clockwork **Motor Unit*** is shown overleaf, with contrate drives to the Prop & Wheels. It fits inside the standard fuselage, held by the two long Studs. Also shown is an **Adjustable Tail Wheel** that was supplied with the Motor – it is a U-section arm 44mm long, which has a 13mm Ø,



thin wheel at one end and a Bolt allowing adjustment in azimuth at the other. This holds it fast against a 20mm long shoe above it, which is bolted inside the fuselage and holds the nut for the adjustment bolt fast between its sides. All the parts are brass steel.

COLOURS The parts are painted silver, with red & blue areas in some cases. One lot has all the parts silver but with French roundels on the top of the Wings #1, and 2 of the 4 Wings, #15. The Fin & top of the Tail have French flashes as in the manual photos. (These flashes are on all the known parts and define where the rudder & elevators might be.) Other Wing parts have red on the top of all the wings behind a diagonal from the inboard leading edge to the trailing edge (as in MCS), and sometimes a roundel is added on the silver part of the top wings. A decorated Fuselage Side is red, with the nose & a long, lengthwise teardrop flash silver – on the other side blue replaces the red. A Fuselage Rear Top has a blue top. In lots with these red or blue parts the Propellers and Wheels are red. In one such some of the Struts & U/C Legs are nicked instead of the normal silver paint.

The parts in the MCS set are given as buff, red, & white.

The MANUALS The one with David's set has 32 pages, 186*132mm deep, plus covers. The latter are grey,



and plain except for the black words on the front (left) and the printer 'IMPRIMERIE H.PONTAUT – COSNE –' on the back. After an Intro on pp1-2 there are 2 pages about the parts of full-size aircraft and a little on how they fly, with mention

of the role of the elevator & rudder, but not the ailerons. Pages 5 & 6 have the photos of the Sets shown earlier, and 7-12 show Assemblies A – L, from Fuselage to Groupe Moteur (the Large Nacelle). Then come Models 1-7 for the Standard Set, from Avion de tourisme on p13, to Avion de bombardement on p19, and Models 8-19 using the Complémentaire set, from Avion type 'Grand Raid' on p20, to Hydravion torpilleur on p31. p32 is blank. There is a reasonable photo, a parts list, & brief building instructions, for each model. With one or two exceptions the models are interesting looking and credible. The open cockpit looks rather stark and it's perhaps surprising that no Pilot was supplied. The parts seen are well made and fit together neatly, except that there is a small gap between the back of the Cabin Rear Fuselage and the tailplane.

Philip's manual is similar but probably slightly later. The covers are brown and the printer (on p32 with his logo on C4) is A.Waton, St. Etienne. Pages 1-6 are the same but p7 now has a photo of the parts in the Coffret de luxe. Then the Assemblies & Models 1-14 are the same except that different photos are used in some cases and minor changes have been made to 2 models. The earlier Model 15 (a low wing, 3 engine Seaplane) is omitted and thereafter (pp28-31) the Models 15-18 are the previous 16-19. p32 shows the Motor Unit, mentioned but not shown in the earlier version, and how to fit it, and the Adjustable Tail Wheel. The model photos in this edition are clearer than in the first one.

As already mentioned the Instructions for the MCS Standard Set are inside the lid. Not all the detail can be seen but if they contain any general instructions they are much

abbreviated. Most of the space is devoted to the 7 models shown, each with a picture and a few lines of print under it. Only 5 of the models can be seen at all clearly and they seem to be those from the manuals above.

QUESTION Why did none of the makers of Aero sets include items such as (imitation) bombs & machine guns? It would have increased their 'play value' and even a simple release mechanism for bombs could have been included.

SNIPPETS The items in this and all later 'Snippets', are based on pictures culled from eBay, unless stated otherwise.

CONSTRUMECANICO This name is in my Database but with no details except that it is Mexican (and that's in some doubt because I can't now trace where the information came from). But the box lid below proves the name, and from the U-09 Set No., there may have been a number of outfits. The whole lid is in colour with the Crane on a green table, and a



brown-grey wall behind. The models has silver Strips, and probably A/Gs, with red Flanged Plates including a Sector Plate at the back, and blue Flexible Plates. 'METAL BUILDING SET' can be seen on the lid's apron, and the bottom of the box is blue.

A BOYCRAFT SET The metal box below may well be a red herring. It is light blue and has a red label inside the lid with the name, and U.S.A. in small letters under it. To the left are 2 boys standing by a bench which has a vice on its foremost corner, and they are examining a something which can't be seen clearly but doesn't really look as if it's made from the parts in the box. The latter appear to be ERECTOR and are silver, perhaps aluminium, in colour, apart from a red Trunnion, a brass 1" Pulley, and the red/yellow little House. In another view some pages from a manual, almost certainly ERECTOR, can be seen to the left of the box.

I understand that Boycraft made a range of toys but I've no reference to ERECTOR being sold under that name. Probably at some point the empty box was found to be a convenient receptacle for some homeless ERECTOR parts.



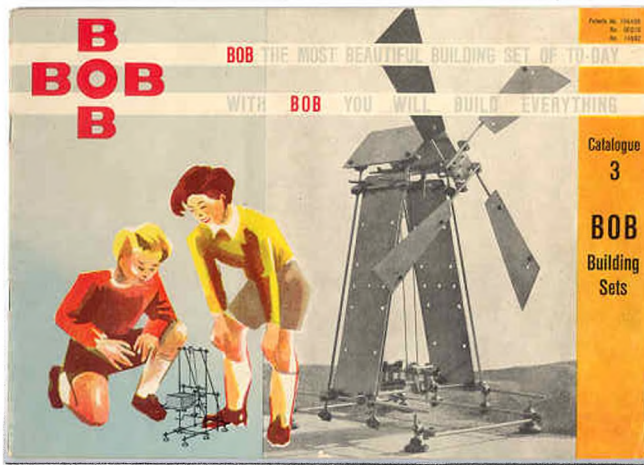
Two Swiss BOB Outfits

Some brief notes on Swiss BOB were given in 6/121, and now Peter Kessler has very generously sent over a No.2 Set, and David Hobson has kindly lent me a No.5. The latter is the largest in the range, & is unusual in being an English language version. Both sets are substantially complete but the No.2 is without its manual. Before going into details, two firms involved in Swiss BOB are given in *Baukästen*. In the 1950s it was Fraba of Geneva, and they were succeeded, possibly following a take-over, and still in the 1950s, by Papyria AG of Zürich. Both names are on the box lid of the No.2, and on those of the Nos.2 & 3 discussed in OSN 6, but the No.5 has only Papyria.

The pale green **No.2 box** is 310*235*21mm; the grey **No.5**, 300*425*22mm. Each lid has a 33*21cm label, similar to the No.3 of OSN 6 except for the B&W model - a Railway Signal for the No.2, & a Windmill for the No.5, like the one on the manual cover above. (Since OSN 6 I've discovered that the model on the No.3 is a Drawbridge.) The No.5 label is in English of course, and has in fact been stuck over another, in French & German no doubt. The Item No. on the No.2 is 907 (as on the OSN 6 lid), and on the No.5 it is 910. The **Set Contents** are pasted inside the lids and the No.5 includes 185 Rods, 47 Plates, & 130 Joints. I'd be grateful for copies of the Contents of Nos. 1, 3, & 4 if anyone has them, to make up a page for MCS.

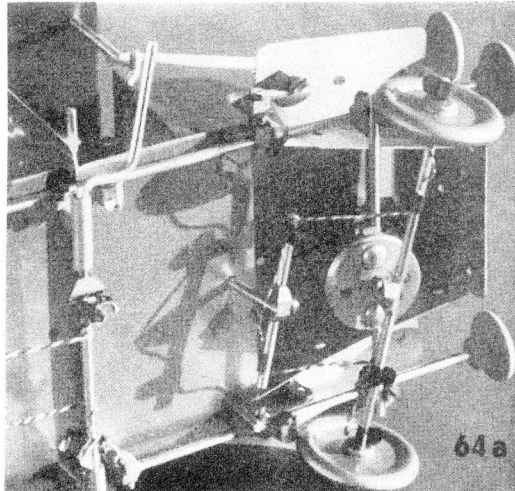
The **layout of the Sets** looks just like the illustrations in OSN 6. In the No.2 the Rods & small parts are in clear packets, stapled to a red backing card, while the Plates & Wheels are clipped to it. The No.5 box is subdivided by light green card trays, and as found the parts were loose in them.

In the notes on the **parts** below some comparisons are made with the UK parts described in 9/233. • **Rods** are aluminium, 2.95mm Ø. • The **Plates** are as shown in MCS with 3.1mm holes at a basic pitch of 40mm. They are .5mm thick and are anodised a yellowy-green. The two largest are 95*135mm & 55*214mm, while the Circular Plate is 93mm Ø. None are the same as the UK ones, and the latter, in plain aluminium, look rather less attractive. • The **Wheels** are virtually the size shown in MCS, and are a nice running fit on the Rods, with a bore of about 3.05mm. The 35mm **Road Wheel** is a symmetrical casting; the **Pulleys** are turned and differ in detail from the UK parts. The large one is 28mm Ø and #53 is recessed on one face only; one of the two 18mm Pulleys is the only part with a boss - 7.0mm Ø, single-tapped to take the M3 Screw used in the Joint. All are a little thicker than the comparable UK parts. • The **Joint** is just

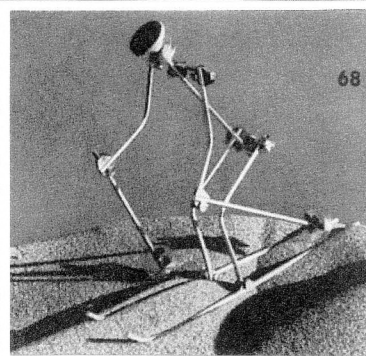


tapped M3. All the bores in these parts are too large to grip the Rods. • The **Spring Clip & Rivet** are similar to the UK parts. The **Crank Handles** are 110 & 165mm o/a with near 90° bends and 25mm handles. The 21mm Ø **Foot**, #43, is wood, nicely turned & varnished, and is a push fit on the Rods. The remnants of **Cord** left in the No.5 are blue.

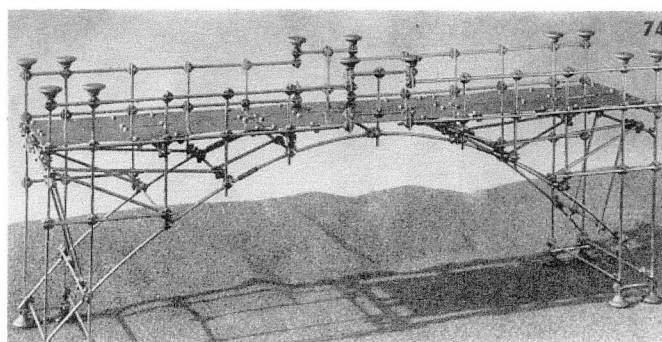
The **manual** with the No.5 has 20 pages 287*204mm, plus covers, and contains 82 models. For each is a B&W photo, with extra views of the larger models, and a Table of the parts needed for all the models is given on p20 & the inside back cover. There is a lot of shadow in many of the photos and constructional details are often far from clear. Models for Sets 1-5 are included in no particular order, but



The Set No. is given in the Table. The first model is 1, Fork, on p2, and the last 81, Aircraft, on p18. (No.82 is the Windmill on the cover, and is listed as such in the Table.) The models are the usual style for a system of this type, perhaps a little above average, and somewhat improved by the Plates. The Road Wheels & Feet can be seen in the view of a Tipping Lorry's centre pivot steering left. One or two models are novel like the Skier below left, and some are fairly ambitious - a 3-stage Fire Escape for instance, and a Transporter Bridge with a trolley that has another trolley running on top of it. The upper one has the gondola attached to it, and runs along at twice the speed of the lower one. It's all done by Pulleys, but why? The Bridge below is rather nice I thought. It needs extra Joints not in the No.5, as do all the large models, 100 in this case, and 300 for the Transporter Bridge.



This manual has 'Catalogue 3' on the cover and so perhaps there were others, earlier editions maybe. (The one with the No.3 Set in OSN 6 had Katalog 3 on its cover, and the pages I have from it are the same as in this one, apart from the language.) Also on the front are 3 Patent Nos: 194488, 90216, 14982. On the back cover is 'PAPYRIA LTD. ZÜRICH (Switzerland)', and 'Photos: E.A.Heiniger, Zurich'. One other small point, the manual with the No.3 doesn't have the 2 light horizontal bands which are at the top of the cover of this manual, and on all the boxes.



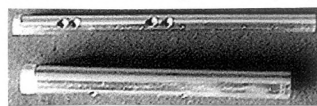
Photos from Italy The notes below are based on photos that Umberto Delaini has kindly sent of sets in his collection, the first German, the rest Italian.

ALPHA Kanonen-Baukasten This is **Set K** of ALPHA [2] in MCS, the 1930s German 12mm pitch system, mentioned in 17/476. BK gives the dates as 1931-33 but it may have continued longer than that. The **box** is red with white partitions and scales at 23*38cm. The small parts are in a little blue box, with a white label printed in red with the ALPHA star and stamped 'K' in purple. The lid label below is blue on white, and features the model shown in MCS part 5.



Some of the **parts** in the Set are still wrapped in tissue – notes on the others follow. The dimensions given have been scaled; all bosses are brass. • The **Flanged Plates**, #36 & 39, are red, with MÄRKLIN pattern tops, as in MCS. • The Bakelite **Wheel #40** looks just like the illustration (left) in MCS. It is 60mm Ø, or a little larger, with a brass boss, and is a dark colour, perhaps with a slight mottle. • The **Bush Wheel & 25mm Fast Pulley** are red.

• The **Fine-toothed Gears**, #86 & 88, are brass. From the dimensions given in MCS they are probably Mod. .65. The larger one has an unpierced disc, not the 4 spokes shown in OSN 17. (The 5-spoke Gear shown in the illustration of the No.3 outfit in MCS scales at about 55mm Ø and might therefore have 84t. It isn't shown in the Illustrated Parts but there is no PN 87.) • The **Coarse-toothed Gears**, #70 & 71, have 16 & 32 teeth, giving a Mod. of 1.5, and they look nickel plated. • The **Gun Barrels** are brass, probably tubes. The white end that can be seen at the left end of each in the view below might be a plug to give a centre hole, or the end of a full length bushing. (I think it says on the label that rubber Shells were used, but there is no indication of size.) One Barrel is about 15½cm long by 1cm Ø, and the other, the one in the model in MCS, is 13 by 1½cm - it has 2 cross holes which can just be seen at the bottom of the photo. • Left the wooden-



handled **Screwdriver**, 18cm o/a. A **leaflet** with the set has the Illustrated Parts as in MCS, and another (model?) leaflet or manual, headed "Alpha Modelle", has photos of 2 models on the front, the one in MCS and one similar to the OSN 17 model, but with 25mm Pulleys as wheels at the corners of the Flanged Plate.

FALCO This is the system mentioned in 5/83, with parts like ASSEMBLO, etc. The photo in the next column is of the linking set **No.0 bis**, with the parts strung to a yellow card by white cord flecked with red. They are red & green and the red Pulleys have a thin Rubber Ring on them. The Rods are in a blue packet, and on 3 sides of the Large Square is what might be a U-shaped Rod. The **box** itself is red and the lid has just the small label right, in red,

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white & black, and the set number in a small white circle bottom right. The 'Brevettato' at the bottom of the label means patented.

With the Set is a **leaflet** in Italian advertising the range of FALCO sets. It is headed FALCO Toys, with

underneath '1937 prices have increased by %'. At the bottom is the maker: Ing.Falco & C., Torino, Via Rossini, 25 (or maybe 26). The constructional sets cost from L.14 to L.1950, and 15 models of buildings & vehicles are shown, with red, green, white, and perhaps grey or silver parts. The illustrations are too small to reproduce, or to see much detail, but generally the models look interesting with for example a Tipping Lorry, & a large Delivery Van. There is also what looks like a small box 'A.B.C.', at L.8.

Two **other FALCO sets** are shown. An Aero outfit (Scatola Aeroplano) at L.35, with the model below in red & green, with white wings.

The second is a Scatola Paesaggio (Scenery

Set) at L.70, and the illustration shown for it (right), is a small Church surrounded by green fields & trees.



Costruzioni FALCO Scatola AEROPLANO L. 35



Costruzioni FALCO Scatola Paesaggio L. 70

ELET Also on the FALCO Leaflet is ELET, with sets from L.5 to L.40, and 3 models are shown. ELET was mentioned in 15/426 as the same, or similar to the German ELECTRIC (see 24/694). All that can be seen clearly in the models is that the Flanged Plate certainly looks like the distinctive ELECTRIC pattern. This Plate and some Strips look grey, a Coil green, & what might be a Bell & a Ball, red. Underneath the ELET name is 'Costruzioni MECCANO ELETTERICHE'. Had Meccano's long arm not reached Torino in 1937?

ITALMECC The name was mentioned in 23/658, and this account is based on a **No.0 set**, packed in a wooden box, with red/green parts generally like MECCANO, but with a touch of MÄRKLIN here & there. The pitch of the holes isn't known exactly, but the scaled dimensions given below assume it is ½".

The **box**, of plain unpolished wood, is about 14" square, with partitions inside, as below. The lid label, 9*7", is yellow





with two boys in a white circle making a large but simple grey colour Crane. It is shown left. The name is white on red, and the set number is stamped in the red circle top right. The parts are mostly clipped to

yellow cards, with the N&B, etc in a dark blue tin with 'Italmec' on it in white.

The **Contents** are very similar to those in a MECCANO No.0 of the late 1920s, plus Tyres & a Flanged Sector Plate. Most of the parts may be visible in the open box but all are mentioned below. K before a MECCANO PN indicates MÄRKLIN pattern. • The 5 & 11h **Strips**; **Curved Strips**, like M90a; & **Brackets** (M10,K11,M12,K125, & a deep M102 seen within the lower Curved Strips) are all a bright mid to light green. The **DAS** looks dark in colour, nickel or chemical black perhaps. • The tops of the **Flanged Plates** are like K52 & K54, the flanges can't be seen. They are light red, as are the **Trunnions**. • The **Bush Wheel & 1" Fast Pulley** are blue, and the latter looks as if they may be cast, with radial raised 'spokes' on the boss side. The **Tyres** are black, and fat like MÄRKLIN. The small **Loose Pulley** (in the middle of the Trunnions) looks gold and about 1/2" o.d. • The **Axles** are under the Flanged Plate and can't be seen clearly. The **Crank Handle** is 6 1/4" o/a. • The flat **Wire Hook** looks brass, and the **Cord** is red. • The nickel wire **Screwdriver** is over 5 1/2" long, and the **Spanner**, black probably, is the MÄRKLIN type.

The **manual cover** is about the same size as the lid label, and is similar in design, but the large circle is blue instead of white. Outside the small circle top right is 'n.', & inside 00-0.

LETRIXMEC The name of this electrical set was mentioned in 9/227 and it is from the same OPSET stable as the METALMEC system described there. The set below is a



No.1 and it is in a blue **box** with the parts in a yellow moulded tray. The lid has a large label identical to, and about the same size as the 25*18cm manual cover at the top of the next column. It has an orange/yellow power station (chemical plant ?) superimposed on scenes in natural colour including a Lockheed Constellation fitted with wingtip tanks.

The **parts** that can be seen are: • A nickel 5*11h **Flanged Plate** with extra small & large (about 10mm) holes. • A nickel **Bell**, with coil & striker on a dark base. • 2 black formers wound with thick wire (red on one, green on the other), which might be **Coils or Connecting Wire**. • 2 each of **Bulbs**; round, dark **Bulb Holders**; silvery **Reflectors** (probably incorporating bulb holders); & **Push Switches**. • 2x 9h **Strips** & a **Trunnion**. These, the **Spanner**, & the

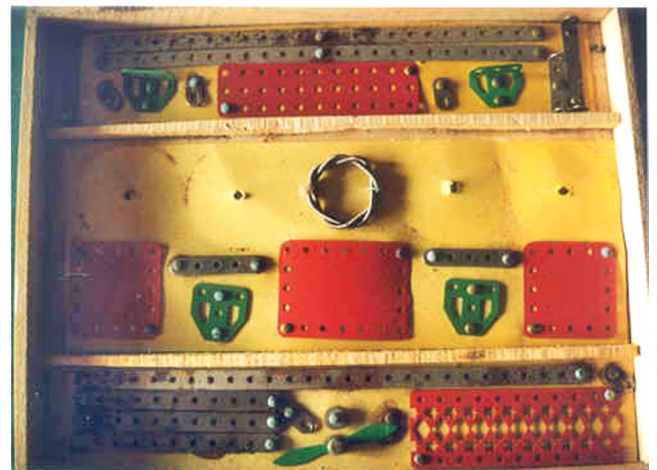


wire **Screwdriver**, match the METALMEC parts except that in the photo they all appear black instead of nickel. • **Pliers** & the part with 2 curved arms and what looks like a bulb holder at its apex – a **Continuity Tester** perhaps.

STAR The name was mentioned in 23/658 and Umberto's set is middle sized, packed in a wooden box. Most of the parts have a MECCANO look to them, but with some exceptions, the most notable being the unusual Braced Girder with diamond- & star-shaped holes in it. The pitch of the holes isn't known exactly, but the scaled dimensions given below assume it is 1/2". The **box** is about 12*15", polished on the outside with the (torn) label below covering about a third of the lid. It has 2 (1950ish) boys building a quite large Gantry with a slewing Crane on top, against a yellow backdrop.



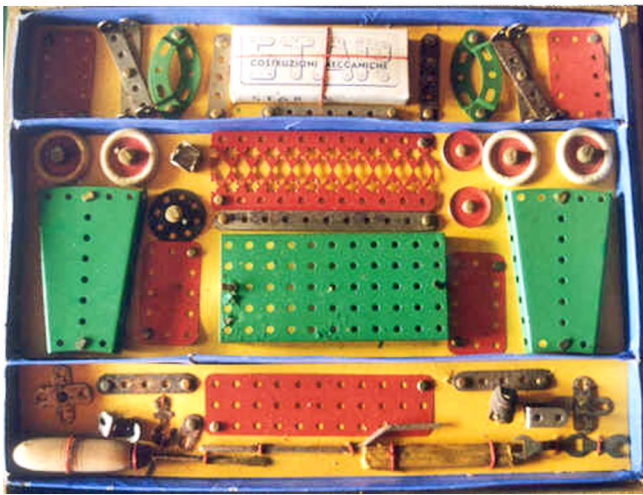
At the bottom is a red name panel with a white circle for the Set No. - but the number, if there is one, is too faint to be seen. The model's colours are correct but the box on the table is blue and its label has a different Crane on its lid. The parts are clipped, or tied in a few cases, to yellow backing cards. There are 3 in the bottom of the box between wood partitions (below), and the other 3 are in a blue card tray,



shown overleaf. The N&B, etc are in a white box with STAR on it in blue.

Now for the **parts**. Strip parts, Brackets, & Tools look to be nickel plated; Flanged Plates, the Curved Strip, Trunnions, & the Propeller are a bright mid-green; the other Plates, the Braced Girder, & the 1" Pulleys are a lightish red. The Bush Wheel & Hook look black.

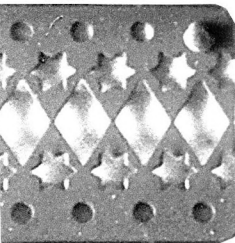
The parts mentioned below can be seen in the original photos and the notes about them that follow may help if



N&B look like brass and are in a small red box – the Nuts are hexagonal, nearly as small as M37c, and the Bolts, with neat cheeseheads, are in 2 lengths, quite short & (from MCS) 9.5mm. The **Spring Clip**, believed to be VULCANO, is like M35 but with sharp, square corners.

Colours The Plate is a medium red; the Strips & Trunnions, a dark green; and the Brackets nickel. The Hank of Cord is very dark, black or dark green perhaps.

details are lost in photocopying. All holes are round unless otherwise stated; the bosses look brass. • 3,5,7,11, & 25h **Strips** – the 3h has one end hole elongated. • 1*3*1h & 1*5*1h **DAS**. • 4x **Curved Strips** like M90a but with longer slots and joggled nearer to their ends. • **Brackets** similar to M10,11,11a, & 12. **Trunnions** (2 & 2 Flat) have BRAL-style flat tops. • A 5*11h **Flanged Plate** with flanges (unseen) on the long sides. 2 **Flanged Sector Plates** with a centre row of 8 holes. The flanges probably have slotted holes. • 2x 3*11h **Perforated Plates**. • 2x 11h **Braced Girders**, 2" deep, with diamond holes along the centre, and 6-pointed star holes between them, above & below (as left). • **Flexible Plates**: 3*5h, 5*5h, & 5*7h, with no centre holes. • 1" **Pulleys**. The 4 with Boss are fitted with white Rubber Rings; the 2x Loose have no face holes. A (probable) 1/2" **Pulley** can be seen under the Prop. • The **Bush Wheel** is like M24. • The **Propeller** is about 3 1/4" o/a, and has a small silvery spinner. • The **Axes** (in a bundle to the left of the Spanner) are 3 1/2" long; the **Crank Handle** scales at nearly 6" long o/a, but the shaft is less than 3 3/4". • The **Hook** (above the Screwdriver) looks like the flat MÄRKLIN pattern. • The **Spanner** is similar to M34; the **Screwdriver** has a wooden handle. • Below the 5*7h Plate is what may be **Spring Cord**, and on either side of it are spaces where 4x 3" **Pulleys or Wheels** once were.



SNIPPETS: New System: VERSOR The name in the corner of the lid & manual (below) is shown more clearly bottom left. All that was said of this set is that it was 'from the east'. The lid & manual have blue backgrounds with the corner triangle yellow. The parts that can be seen in the Set are: • **Strips** with 2,3,5,6 &/or 7, & 9 holes; **DAS** 3,5,7h long; 2 types of **Formed Strips**, one semi-circular, one with 2 sharp bends; & various **Brackets**. All these parts have a bright finish. • An orange **Flanged Plate**, 5*9h. • 3 sizes of **Pulley** (or other round parts), with some red & some yellow in each size, and black **Tyres** on the largest. • A red **Loaded Hook**, with a cylindrical centre. • **Axes** & a **Crank Handle**. Dark little parts, perhaps **Axle Stops**. • Bright **N&B**, 2 single-ended **Spanners**, & a green handled **Screwdriver**.



VULCANO This small system with some 30 mostly MECCANO-like parts, is included in MCS. The sets are Nos.1-3 and Umberto's outfit is a **No.1a**. The lid, below, has a label similar to the manual cover in MCS. The **box** is red and the label beige, with a black haired boy, and red & yellow words in a black haired panel at the bottom. The parts are clipped to a plain fawn card and the **contents** are the difference between those of Nos.1 & 2 given in MCS. (The main parts are 4 each of M5 & M90a, 2x M126, 1x M51.)

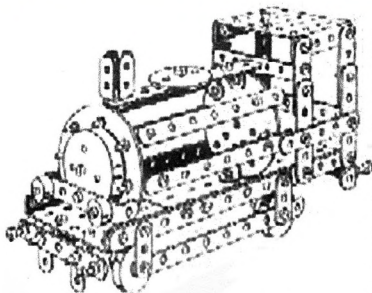
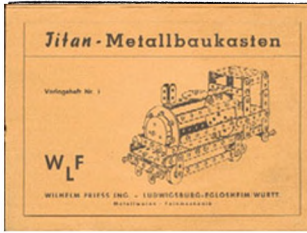
The **parts** look like MECCANO except the 3*5h **Flanged Plate**, which is flanged on its long sides. Some, if not all the parts are stamped VULCANO. Other points. The

New System: KOMEb The Motor & Battery Box on the lid below are clearly MERKUR, see OSN 17/485. The word KOMEb sounds somewhat East European to me & if so could the letters in the name be Cyrillic? There is wording in several languages under the name but the only words that can be clearly seen are ELEKTRO & MOTOREM. The lid is green & white with the name white on blue.



TITAN Some brief notes on this interesting German system with 10mm hole spacing, appeared in 15/419, and now thanks to Thomas Morzinck some more details can be given.

Phase 1 TITAN was introduced in 1948 or a little after, and was made by Wilhelm Friess of Ludwigsburg-Eglosheim (just north of Stuttgart). There were 5 outfits plus 4 linking sets, and the lid & manual cover from a No.1 are shown below. The lid, on the right, is fawn & black, printed in red & black; the cover is orange with black printing. A set from this time is shown on p222 of *Baukästen* and it can be seen that the parts are a dull grey colour. *Eisenzeit* speaks of well finished parts made from 1mm zinc coated steel.



A Piccolo outfit is also mentioned in *Baukästen*, from about 1950. The range of parts in this phase isn't known, but may have been comparatively limited. 4-figure PNs were used at the time. Some parts were modified later – in the Loco on the Cover for instance (left), the 2 face holes in the

3h Ø Pulley were increased to 8. Other parts seem to have been dropped, the Bracket used in the funnel for example.

Phase 2 The company moved to Schwäbisch Hall (50km N-E of Stuttgart) in 1952, and became Titan GmbH in 1956. Production ceased in 1960 (the 1970 in *Baukästen* may be a misprint), but the company produces model railway transformers to this day. Just when the coloured parts were introduced isn't clear, nor when the full range of parts became available, but a manual similar to the one used for the MCS entry is believed to date from after 1956. It shows 103 parts numbered from 1-103, 2 more than in MCS,



Nr.91 Schraubenzieher klein

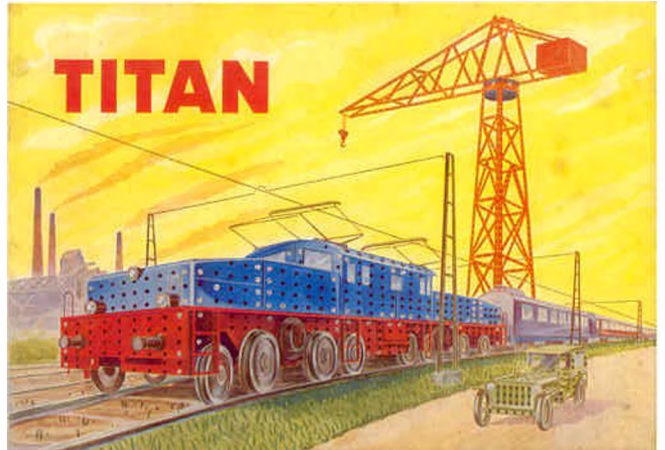
the extra ones being a Small Screwdriver #91 (left) and a 40cm long Spring Cord, #84. The 9 sets at the time were Nos.50-54, with linking sets 50A-53A. The introduction to the Manual also speaks of an electrical outfit in preparation, and mentions a TITAN Motor with transformer. The No.54 is quite large with 38 A/Gs, 27 Plates, 20 Gears, & about 340 N&B. A No.53A is shown below. The N&B box, top left, is red with TITAN in blue. Box lids labels were like the manual cover shown later.



The Strips & Brackets have a black metallic finish, while the Double Strips (bottom centre), A/Gs, & Faceplate (to right & left of the parts box, are painted green. The Flanged Disc Pulleys (a 77mm Ø one is under the large Sprocket), and, probably, the (118mm Ø) Flanged Circular Plate, are

blue. As seen in photos of sets the Flanged Plates are red & the Flat Plates blue, but it's possible that some at least may be red one side & blue the other. The Bush Wheel (37mm Ø) & Wheel Flange for it, #63, are red (2 of each are under the Plates top right). The 18mm Pulley, and all the Gears & Sprockets, look silver. The 32mm Pulley is red in one set and silver in another.

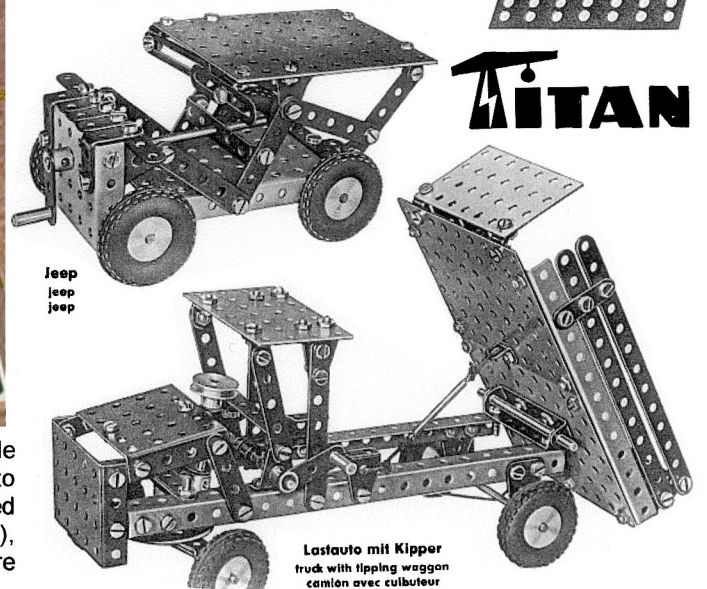
SUMMARY OF MANUAL •Name: TITAN. •Details of maker: Titan GmbH, Ludwigsburg/Wurt. •No dates or Ref Nos. •Page size: A4. •No. of pages: C1-4, 3-12+6a,6b, 2 unnumbered. •Language: German, + model names in English & French. •Printing: colour cover (below), ½-tone models in B&W. •Page Nos. of Illustrated Parts List & highest PN: 11-12,101. •Page Nos. of Set Contents & highest PN: 2 unnumbered pages,103. •Sets covered: 50,51. •No. of models for each set: 15,8. •Name, Page No. of first & last model of each set [no Model Nos.]: 50: Sackkarre,3; Bandsäge,6a. 51: Dreiradlieferwagen, 6b; Sportflugzeug,10. •Other notes: details from photocopy; it's possible that pp1-2 are missing. A No.52 Turmkran is shown on C3



The Loco on the cover above has red & blue parts, some of which involve a certain artistic licence. The sky is yellow with the name & Crane orange. The models in the Manual are nothing special, but they are of course for the two smallest sets. The two Cranes in MCS and the two models below are among the best. The 2 Sprockets in the No.51 are only used together once, in the Drehkran in MCS, where they mesh at right angles.

With its good range of structural & circular parts, plus 9 Gears & 5 Sprockets, TITAN can be regarded as a 'serious' system. But there are some flaws, the main one being that there are no elongated holes in any parts, apart from a 5cm Strip (right) slotted over its whole length. There are also the 3 parts below it, with holes at 5mm pitch in one direction, but useful as they may be, the lack of slots in the A/Gs & A/Bs is a big drawback. An unusual feature in a system of this size is the 4 Pinions with 12, 15, 17, & 18 teeth (to mesh with a Worm, and 38 & 45t Gears), but it isn't known how usefully these are employed in the models for the large sets.

Gebaut mit TITAN Metallbaukasten Nr. 50



Jeep jeep jeep

Lastauto mit Kipper truck with tipping wagon camion avec culbuteur

More on KITSPOCK This MECCANO compatible Brazilian system was described in 14/374 and now Edmundo Veiga has kindly sent photocopies of the manuals for the 5 sets produced.

The PARTS The manual for the No.1 outfit has the Set Contents of all the sets and a page of Illustrated Parts. Using MECCANO PNs the latter comprise: 1,2,3,5,6,6a,10,11,11a, 12,12c,15b,16,17,18a,19s,20a,22,22a,23,23a,24,26,27a, 27c,27f,34c,35,36,36b,37b(RH),37c,38d,40,48,48a,51,52, 53a,54(8h),57c,69a,90a,111,111a,111d,125,126,126a,142c, 155,176,186,186a,187? push-on Road Wheel (the narrow type, but wide ones are shown on the models, see 14/375), 188,189,190,191,192,193,193a,193c,194,194a,199, 200,212,212a,213,214,215,221, & the parts for the M0 Motor (shown with one mounting flange but in the models it has two). About 80 parts, with PNs 1 - 94, and more or less the range needed for a 1970s MECCANO No.5. The main differences, apart from the Motor, are that KITSPOCK has the 3 Gears, and the 3 & 4h Strips, but no 3" Pulley.

The SETS are progressive and the contents of linking sets 1C - 4C are shown. Apart from the Gears, short Strips, & 3" Pulley, the No.5 is very similar to Meccano's No.5, but the smaller sets don't correspond so closely. The differences increase as the sets get smaller and the No.1 is quite distinct with 4 Road Wheels and more parts in most departments (40 N&B against 24), but no Flanged Plate. The Motor is included in the No.2 and the Gears in the No.4, except that the Multipurpose Gears are only in the No.5.

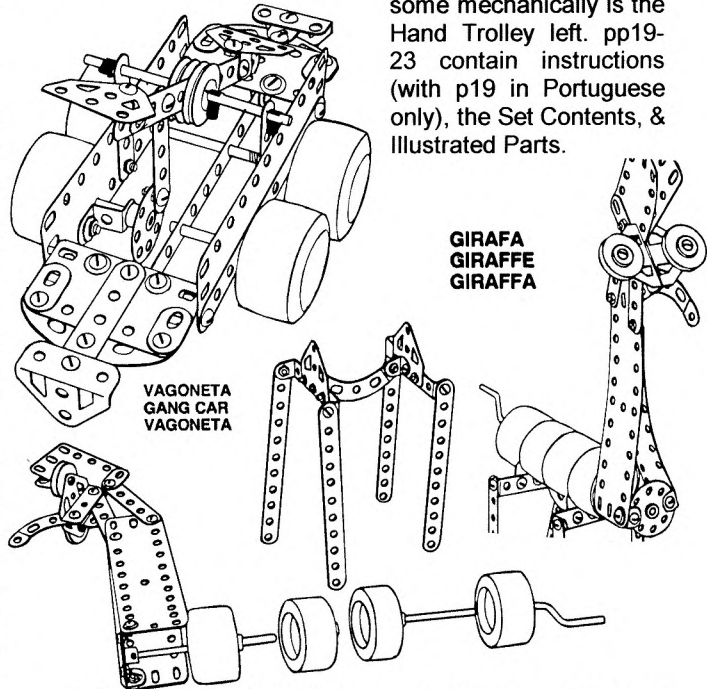
The numbers of parts in the sets correspond, plus or minus a few, to those in the OSN 14 leaflets but whether the sets are exactly the same isn't clear. Not all the models on the lids can be seen clearly but most of those for Sets 1, 2 & 3 are in the manuals; several on the No.4 & 5 lids appear not to be, and two on the No.5 lid are in the No.4 manual and one from the No.4 lid is in the No.5 manual. As will be seen the No.5 manual models are unusual in being exact copies from 1970s MECCANO manuals.

The MANUALS All are in B&W with line drawings of the models; and all have the same page size, about 16*21½cm, with front covers similar in style to the No.4 below. All the back covers have 'Spock Industrial Ltda - R.Acopiara, 203 - CEP 05083 - São Paulo - SP - Tel.: (011) 261-2229' at the bottom, and all have models on them except the

No.1 which is blank. Nos.1-5 have 24, 16, 16, 12, & 40 pages respectively, all including covers. The text is in Portuguese, English, & Spanish. The models fall into 3 groups: unnamed models with no parts list, often quite simple and illustrated by a single view (many look as if they might be copies of BRAL, and in some KITSPOCK parts would need to be substituted for those shown); named models with parts lists, and one or more drawings of intermediate stages of construction (these seem to be original KITSPOCK designs); and exact copies of 1970s MECCANO models but reduced to B&W line drawings and with the PNs changed.

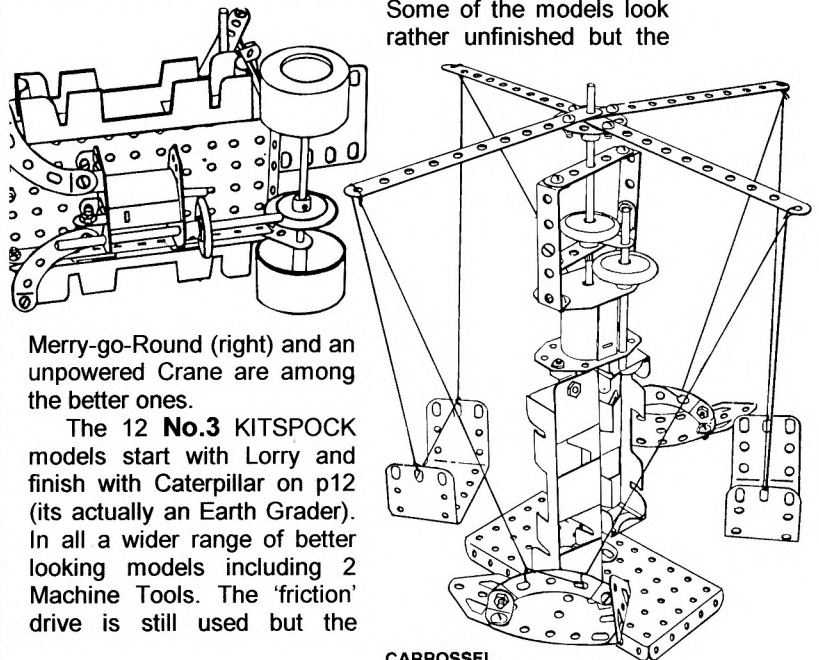
The **No.1** has 18 'KITSPOCK' models on pp1-12, from Racing Car to Airplane, then 12 'BRAL' models on pp13-18, from (my names) Rocking Chair to 4-Wheel Trailer. All the models are simple of course but some of the KITSPOCK ones are unusual, like the Giraffe below. The most venture-

some mechanically is the Hand Trolley left. pp19-23 contain instructions (with p19 in Portuguese only), the Set Contents, & Illustrated Parts.



No.2 has 12 KITSPOCK & then 12 BRAL models. They go from Racing Car on p1 to Fly on p12, and Scales on p13 to 3-Wheel Truck on p16. The Motor is fitted to most of the KITSPOCK models and the two Battery Boxes are usually built into them, sometimes as structural members. The drive from the Motor is normally to the Wheels through 2 stages of reduction, each by the friction of a shaft against a Rubber Ring, as below. I wonder how well it worked in practice.

Some of the models look rather unfinished but the

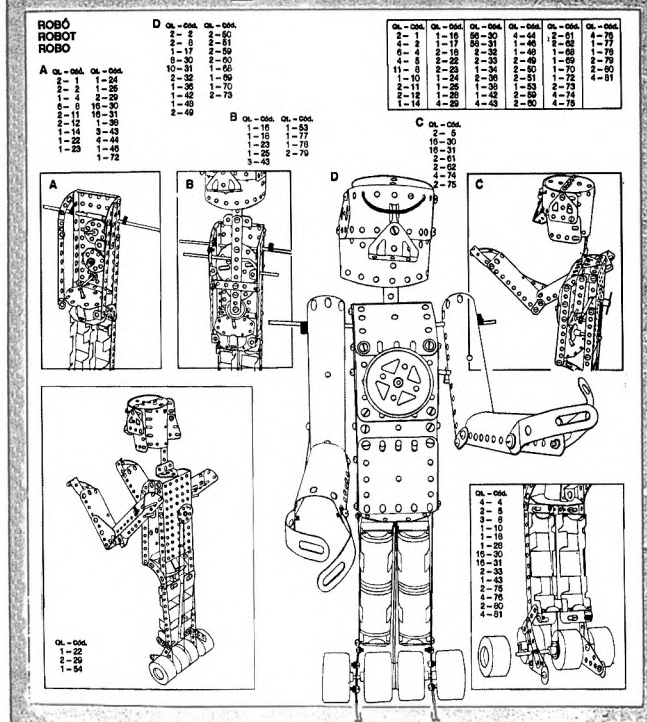


Merry-go-Round (right) and an unpowered Crane are among the better ones.

The 12 **No.3** KITSPOCK models start with Lorry and finish with Caterpillar on p12 (its actually an Earth Grader). In all a wider range of better looking models including 2 Machine Tools. The 'friction' drive is still used but the

CARROSSEL MERRY-GO-ROUND TIOVIVO

kitspock 4

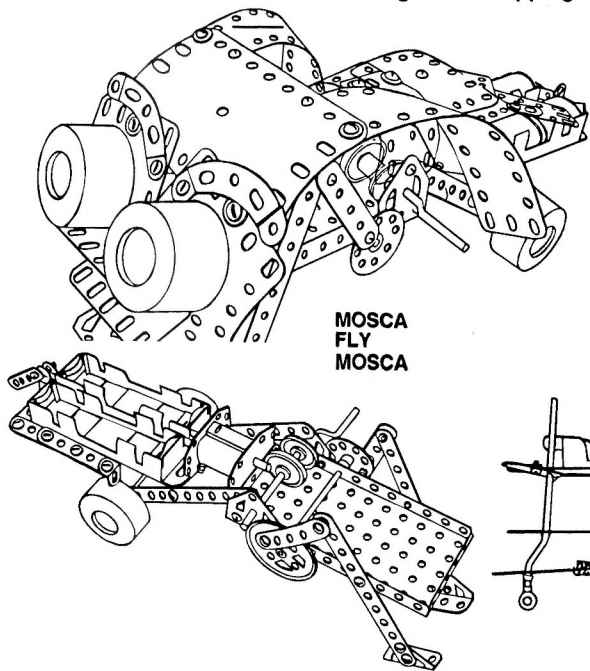


second stage is replaced by a Band drive to a 2" Pulley, as in the Fly below. 10 BRAL models follow, from a Loading Shovel on p13 to a Portable Crane on p16.

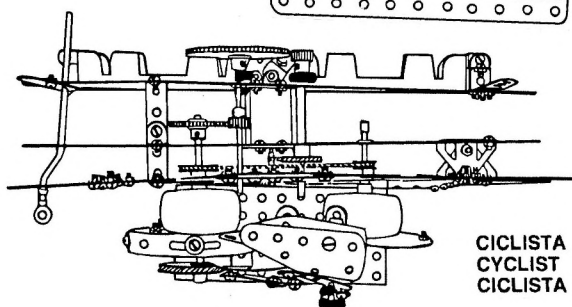
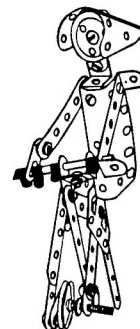
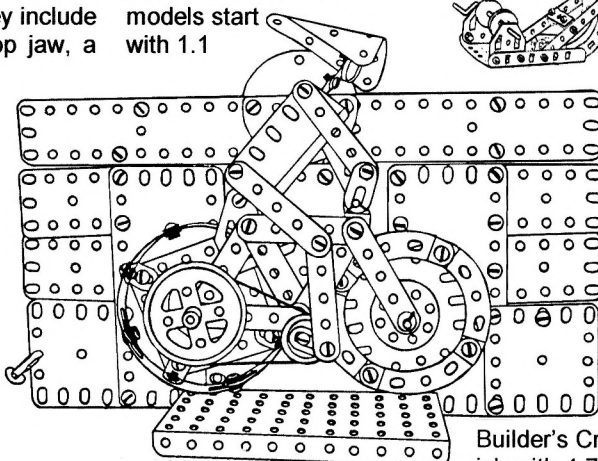
Only 12 KITSPOCK models are shown in the **No.4**, from Robot to Crane. The Gears are used in most, usually after a first 'friction' reduction. This is the case for the Robot on the cover with the final drive by Cord from a shaft at the back of the body to a Pulley between the centre Road Wheels. Most of the other models are interesting and original; they include a Crocodile which moves along with snapping top jaw, a

Gondola, and the Cyclist below with a geared drive to the back wheel and thereafter the crank is back driven from it by a Band (with a mountain climbing ratio). The front wheel also has a cord drive (from a 1" on the crank Axle to a 1/2" Pulley).

The **No.5** has 2 BRAL models on the first, & on the last page (Machine Gun to the model right— I'm not sure what it is). The other 46 MECCANO models start with 1.1



MOSCA
FLY
MOSCA



CICLISTA
CYCLIST
CICLISTA

Builder's Crane on p2 & finish with 4.7 Loading Shovel on p39. Their format has already been explained and they are models from the 1970s MECCANO manuals: 2.1 to 5.7 omitting those that are motor driven. It's nice to see them again, one can forget just how good the small MECCANO models of this period were.

FOOTNOTE More recently Edmundo has received photos from a friend, Carlos Granja, of the lid & manual cover from a KITSPOCK set, and kindly passed them on. The lid is shown below: it is blue with the name in yellow and under it 'SÉRIE 200' in red. The slogan at the bottom in white, 'O CONSTRUTOR MECÂNICO' (The Mechanical Builder), was also used in the leaflets described in OSN 14. The main Crane has silver (or light grey Strips), with Plates, & AVGs (probably), in yellow. Its load though includes a red Flanged Plate, and some of the parts in the box on the floor are red & green. The inset models of a Triplane, a Tractor, & a detail from a Helicopter, show Plates, Trunnions, & a 2" Pulley in red; silvery Strips & 1" Pulley; a yellow Bush Wheel; and a black Propeller. The 2" Pulley is fitted with a black Tyre, a part not seen in any of the other KITSPOCK material.

The manual cover is almost the same as the lid, but without the yellow circle top left, and with the name in white. Also the inset Tractor model is replaced by a Helicopter.

'Série 200' is presumably the set number but there is nothing anywhere to indicate whether this outfit and its manual came before or after the OSN 14 sets, and the 1-5 manual described above. None of the models in either of the latter are similar to those on the lid or manual cover.



SNIPPET: STUDIO Most of a manual cover is shown right. It is pale blue with brown panels, and a boy in a blue shirt is building a model which looks like a Crane made of Strips. An open box of parts with the manual and was described as an electrical outfit. It contained 2 parts which could be Coils wound with cotton-covered wire, lots of dark grey looking parts (Strips, Brackets, Discs, & a Flanged Plate with centre cutout), and various others including a TRIX Pulley Disc & a TECNIC Quadrant. So a mixed bag and not very useful until other evidence comes to light. A reference to a STUDIO ELEKTRIK is known but with no details, so whether it is this system, or related to it, remains to be seen. *Baukästen* mentions a STUDIO made by an East German firm called Sonni in 1976 but from David Hobson's *Building Toy List*, it had wooden parts.



SMALL ADS

For Sale. Unused, complete **F.A.C. X.1 Universal Construction Kit**, in its original wooden box with 2 handbooks, parts lists, etc. Cost in excess of £125 in 1958 (over 10 weeks wages for me). Buyer to arrange collection. Price £300 or offer. A truly first class bargain. Phone John Jackson, 0208 689 0195.

For Sale. **Set No. 1 Wenebrik.** If interested please contact Ken McCracken, 41 Wemyss St., Sault Ste. Marie, ONTARIO, CANADA; email: rmccracken@hotmail.com. tel: 705-945-5264.

TEKNO This is about the Danish TEKNO that generally looks like TRIX. Most of the dozen or so known copies of TRIX are simple systems with even fewer parts than the real thing, but there are three Danish systems in MCS which go well beyond TRIX, although none have the latter's electrical parts. One is TEKNO and the others, ABRA & TEKNIK, will be discussed briefly at the end of this account.

REFERENCES & HISTORY Not much is known of TEKNO before WW2 but it is said to date from 1931 (13/360). Its existence pre-WW2 is confirmed by a model in the '1950' manual (see below) labelled as a prize-winner in a 1939 competition. The post-war phase is mainly based on some parts and 3 manuals which were owned by the late Neils Gottlob. The first manual has 1950 written on the cover; the second, later judging by the new Bevels advertised in it, has 1960 written on it, and a PR of '8 60'; and the third is much more modern looking and the Bevels, and a few other parts not in the earlier editions, are included in the Parts List. For ease of reference I'll call it '1970' – TEKNO is said to have continued into the 1970s. The parts to hand include all in the 1950 manual but not the 1960 Bevels, nor the new parts in the 1970 manual.

The other material mentioned has been contributed by David Hobson & Richard Symonds, to whom many thanks.

The company is given in the 1950 manual as Dansk Legetøjs-Industri, Rentemestervej 47, København NV. The same address is given in the 1960 edition but the only name used is Tekno – the telephone number has been added: Tlf. TAGA 8001. No mention of the maker is made in the 1970 manual but the name on the cover has changed from TEKNO followed by INGENIØRSÆT in small letters, to TEKNO INGENIØR. Another firm is seen on the headed paper of a typed circular – ALGREMA-TEKNO A/S, Hedevej 1, 9800 Hjørring, Telefon (08) 92 53 00. It is undated but gives the contents of certain TEKNO INGENIØR sets, and the Bevel Gears are in one of them.

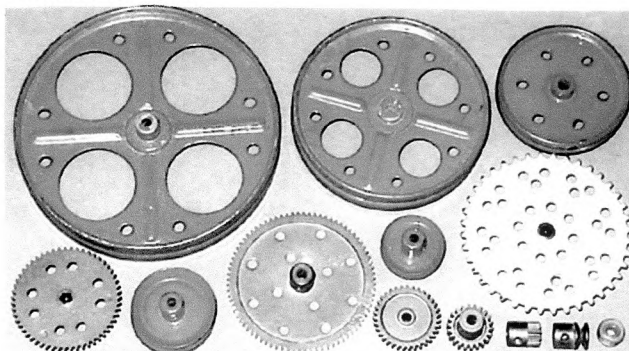
The PARTS • **DATA** (in mm) **Strip** (17-hole*): •Hole pitch/dia, 7.86/3.6 •width, 14.6; •thickness, 1.02; •ends near fully radiused. **Boss**: •o/d, 9.0; •i/d, 3.6; •material, see below; •double tapped. **Thread**: 3.5x.8mm (prewar TRIX). **Axle Dia**: 3.45. **DP (Mod)**: As TRIX, & 36.3(.7). **Nut**: hex, 7.0 A/F, brass; **Bolt**: tapered CH, 6.0 dia, brass steel.

*the number of holes in the centre row for Strip parts; for A/Gs the number in the row next to the bend will be quoted.

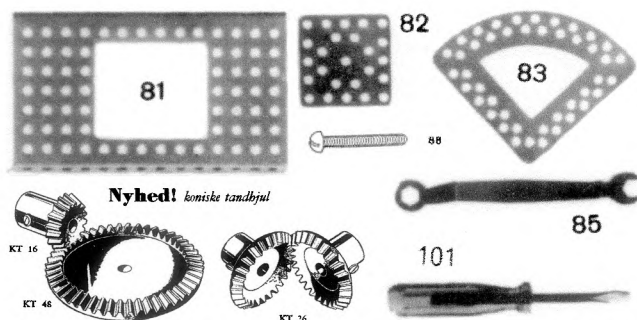
Except as mentioned the **colour scheme** is a mid, mossy shade of green for Strips, A/Gs, & Brackets, with Plates, Discs, Pulleys, & Hook orange. Among the parts to hand are a few Strips in a dark, late 1920s MECCANO green, and 2 Discs in a mid red (between the 1950s & '60s MECCANO shades) – an earlier colour scheme perhaps.

The parts are well made, but as with TRIX the **hole pitch** varies a little in the different parts, from 7.84 to 7.88 in this case (TRIX spacing is nominally 7.80mm but from 7.75 to 7.84 have been found). Also, again as in TRIX, many of the holes are nearer 3.7mm than 3.6. **Compared to TRIX** the steel used for many of the parts appears slightly thicker, and some parts are, typically, 1mm against .9, but often it is the paint on the TEKNO parts that gives the impression of greater thickness. Apart from that, and the slightly longer hole pitch, both unnoticeable at a glance, there are some differences among the parts common to the two systems (all the UK parts except the 11 electrical parts, plus the German large Pulley Disc): • **Strips, DAS, & Brackets** are slightly below 15mm wide, against slightly above for TRIX (for example 14.6 v. 15.2), and TEKNO ends are not quite fully rounded. • The **DAS** are typically 1mm longer o/a. • The arms of the **A/Gs** are only 15mm wide and have only 2 rows of holes in each. The lengths are different too with 4, 17, 33, & 49h, against 9, 18, & 27h for TRIX. • The **Flanged Plate** has no stiffening groove on the top across each end. (It, and the A/Gs, are steel of course, rather than the UK aluminium.) • The small TEKNO **Pulley Disc** is slightly larger, 36½mm Ø

against 35¾mm. The large TEKNO Pulley Disc is 50½mm. (Though described in the manuals as 30 & 50mm Ø, the **Wheel Discs** are, as in TRIX, 29 & 49mm Ø.) • The **TRIX-style Gears** are the same except for the 40t (shown below) which has a different hole pattern, and lacks the 30 oblong cutouts to allow a right-angle drive with 3:1 ratio. The discs are steel, & the bosses brass, nickelled all over except the 40t which is painted silver. • The peening of **TEKNO bosses** is distinctive with the first 1mm or so of the bore formed into a 5-sided indentation. Some TRIX bosses are similar but with 6 sides. • The nickel plated, steel wire **Worm** has an extra turn (making 5) and is 30mm long against 23. And at 9mm o.d. it is ½mm less in diameter. • The **Threaded Coupling** is 7mm A/F, like the Nuts, and is brass: some are plain, some nickelled. • A 125mm **Axle with Screwed Ends** replaces the 120mm Screwed Rod. • The **Large Tyre** has TEKNO 50 three times on each sidewall and is about the same size as the UK TRIX 49. The **Small Tyre** has TEKNO 35 instead, and at 58mm o.d. is 2mm large than the TRIX 35's to hand. • The **Nut** is machined brass, 2mm thick (machined Nuts are well worthwhile, they ensure that Screwed Rods will be at 90° when nutted to other parts). The **Bolt** has a neat head 2½mm deep, and is 7-7½mm u/h. • The **Spanner**, painted orange, has, sadly, no holes in its arm (the perforated TRIX Spanner, as a narrow strip, is a very useful part, both structurally and, with its head removed, to make neat linkages). It has slightly wider jaws to accommodate the 7mm Nuts, and is about the same length, but the top of the head is fatter and the arm over 1mm wider. • The 10mm, 16mm, and (12mm) **Eccentric Washers** are as in TRIX but are nickel plated. Likewise the 1 & 2h deep **Double Brackets**.



Now for the **parts special to TEKNO**, mainly Pulleys & Gears, but some structural parts as well. • A **33h Strip** (nearly twice as long as the (17h) longest UK part). • **DAS** with 5 & 13 complete holes along the base (to go with the standard 1, 3, & 7h ones). • **Axles** (smooth) 87 & 125mm long, and a **Crank Handle** 120mm o/a with a 16mm handle. • A **Collar** & a proper **Coupling**, like M63, with the holes at standard pitch. Both are nickelled brass, 9mm Ø, and double-tapped; they vary a little in length – Collars are 7 or 8mm, and Coupling between 22½ & 23mm. • The **5 Gears** above, with conventional teeth: 5mm face width Pinions with 11 & 22t, and 35, 55, & 80t Gear Wheels, 2mm wide. All are zinc alloy die castings with, except for the 11t Pinion, a shallow recess extending nearly out to the teeth on one side (the boss side except for the 35t). The Pinions and 35t Gear have integral bosses; the larger Gears have peened-in brass bosses. The finish is gold paint all over. All can mesh using the holes in 2 adjacent rows. • **Pulleys** (above). The 9½mm (all diameters are o.d.) Loose & Fast Pulleys are about 4½mm wide and the Fast has an integral 9mm Ø boss. Both are nickelled brass. The others, 24, 31, 50, 75, & 100mm are made from steel pressings held together by the boss, and spot welds in the 3 larger ones. The vees of the 24 & 31mm are 5 & 7mm wide, and their brass bosses stand out by 5mm on the peened side. The halves of the larger ones are flanged around the outside at 90° with an oblique corner to form a vee when the two halves are joined. The outer edge of the flange is turned over inwards to give a rim some

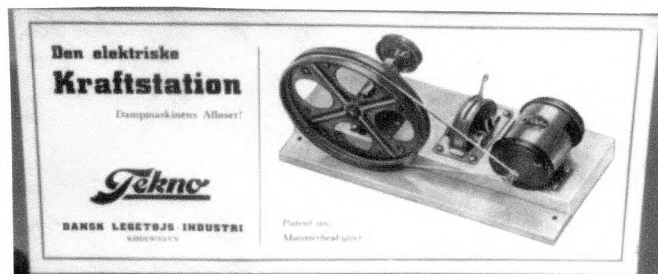


2½mm thick. The overall widths are about 10½, 12½, & 14 mm, with vees 3, 3½, & 4mm wide. The boss of the 50mm is brass like those of the 24 & 31mm versions, but those of the 75 & 100mm are zinc, with an integral 18mm flange on one side of the pressings, and peened over an 18mm washer on the other. • **Plates** (above). A modified **Flanged Plate** with a centre 5*6h cutout. A **5*5h Plate** with centre holes to match the 30mm Disc. A **Quadrant**, 4 of which suitably overlapped form a circle 110mm o.d. • The **Tools** above, not seen, replace the TRIX-type Spanner in the 1970 manual. A Skruetrækker is also listed but not illustrated. • **Bolts**. The **Set Screw** is similar to the standard Bolt but is 4mm u/h. A **Long Bolt** (above, not seen) is listed, and illustrated for the first time, with a round head, in the 1970 manual. • The **Bevels** (above) look similar, apart from not having face holes in the largest, to the MECCANO ones, and have the same number of teeth, 16, 26, & 48. • **35 & 50mm Road Wheels** are also listed - each is made up from standard parts, a Tyre on a hub made from a pair of Pulley Discs joined by 4 N&B. • A **Reversing Switch**, with centre off position, described later, & a coil, not seen, of Elektrisk Ledning (**Connecting Wire** for the Motor no doubt).

So, some 35 new parts to add to the basic 40, and mostly very useful. The Coupling is a very valuable addition but no Crank, Bush Wheel, or Face Plate is provided to use with the Axles. The Gears could substitute but the hole patterns in the large ones (80t & 40t TRIX-type) are not entirely satisfactory. Both are based on the holes in the Wheel Discs, & that raises the question of why their radii are 10 & 20mm. It may not perhaps matter for the 30mm Disc but it means that Strips cannot be attached radially to the 50mm using 2 N&B (the 40t Gear is better in this respect because of the extra outer holes). The 10/20mm spacing came from TRIX of course and ideas on why these non-standard pcd's were used in the first place would be welcome. In TEKNO even the 5*5h Plate has a ring of holes at 10mm radius in its centre instead of the seemingly more useful full perforation at standard pitch. Other quibbles: an A/G between the 4 & 17h would be useful, & though the large holes in the 75 & 100mm Pulleys look attractive, face holes which would allow 6 or 8 equi-spaced Strips to be attached radially would be more useful. They are useful parts though, serving as pulleys, flywheels, flanged discs, & even wheels. In that last role, the 50mm Tyre can be fitted to the 50mm Pulley. Finally it would perhaps have been more useful to have had a Curved Strip instead of the Quadrant.

Plating is suggested on the centre pages of the 1970 manual (see end of this article). The words read 'Templates for Covering Sheets. Make the outlines and cut out in cardboard.' A few models are shown fitted with such parts.

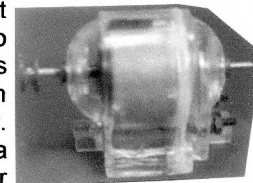
The MOTORS The Motor included in the Sets is the 4-8v **#50**, identical to the TRIX #2051 shown at Fig.1 in 4/52. Its base in orange and the magnet green. It is advertised in the **1950** manual along with the fully enclosed, 4.5-8v **#66** Motor shown below. An example to hand has an orange body



46mm Ø, & 50mm long. Also shown the **#67 Reversing Switch**, as on the back of the Tank on p768. The ones seen are orange, with the sides made of brown insulating board. Also advertised is a set to make a **Kraftstation**, (Power Station), and the one known is packed in a blue box with the B&W label above. The actual Motor in this outfit is an orange **#66** as described above, but on the label the ends fit over the body. The other parts in the outfit are standard except the green Base and the black Bearing Block.

The Motors **#50** & **66**, and the Switch **67**, are again advertised in the **1960** manual but instead of the Kraftstation on the back cover there is a Motor, **#701**, 6-8v a.c., along with 11 small, non-constructional machine tool models using non-standard parts, from **#702** Transmission, to **#713** Vandsten (Grindstone).

None of those is mentioned in the **1970** manual but the back cover gives details of 12 small d.c. motors, with shaft diameters from 2.0 to 2.8mm. The 6 in the 'A' range go from A 150 to A 5, and in the 'B' from B 15 to B 65. 3 are illustrated including the **Nr.65** in the last column, the only one with means to drive a model. The B 65 in the list is stated to be 39mm high & 54.5mm long, and to take .64 amps at 6v. Another Nr.65 is known (right) with a different, transparent body. It is for 3-12v and is 33mm long, 32mm high, with a body 26mm in diameter.



The SETS There were 6 sets, Nos.40-45 with linking sets 40a-42a, and 44a-44c. No inventories are given in the 1950 or 1960 manuals and what follows is from the 1970 edition. Sets 40 to 43 are progressively larger. **Set 44** is identical to No.43 except that it contains a TRIX-type Motor. No.44c converts a 44 into 45, and a 44a plus a 44b make a No.44c. The Set Contents from the 1970 manual are given in MCS, but if the Set Nos. are hard to read, they are 40 to 43 along the top row, and 44a, 44b, 44c, 44, 45 along the bottom.

The **No.40** is the same as the UK Unit A; the **No.41** is Units A+B; and the **No.42** is A+B+C except that it has only 2x 50mm Discs. The **No.43** is the No.42 plus a Gear Unit G, and 2 each of 33h Strips, 7h DAS, & Collars The main extra parts in the **No.45** are: 2 x 49h A/Gs, & 4 each of the other lengths; 2 each of the Axles & Crank Handle; a Coupling; 1 each of all the new Gears; 2x 26t Bevels & 1 each of the 16 & 48t; a Reversing Switch; 4 of the 10mm Loose Pulleys, and 1 each of all the other Pulleys; a Flanged Plate with Cutout; 2x the 5*5h Plate; 4 Quadrants; and 4x 35mm Road Wheels. The set contains only 56 Bolts & 84 Nuts. The only parts not included in it are the 13h DAS, the 50mm Pulley Disc, the Long Bolt, the Connecting Wire, and the 50mm Tyre or Road Wheel.

The 35mm Road Wheels in Set 45 provide the only Tyres in any of the 1970 sets and are only needed for one No.45 model. In the 1950 & 1960 manuals they are also needed for a model from a No.44 Set - or from 'a No.43 plus a Motor & 4 Road Wheels', so the 44 wasn't just a 43 + Motor at that time.

The typed circular mentioned earlier gives the contents of Sets 42, 43, & 44. The first two are as in the 1970 manual but the 44 is nearly as big as the 1970 No.45. It lacks a few structural parts, 20 N&B, the Motor & Switch, and has 2 each 35 & 50mm Road Wheels instead of 4x 35mm. At a guess this came after the 1970 manual but it is unclear

whether any other sets were available at the time.



No.43 set, is shown above, with the name in red, a boy in a blue shirt, and a Train crossing a Bridge, both blue-grey, on a yellow ground. The box itself is black with the parts, in the colours already described, on a yellowish card. The manual cover is like that of the 1950 manual, shown later.

A No.42 set is in a cardboard box with an imitation wood finish. Its label (below) is half red, half yellow, with a man & boy looking at a manual. It is similar in layout to the 1970 manual cover, shown later, but no model is visible on the right. The parts are as before, but the 1970 Spanner can be seen - it is cranked at both ends, deeply at the ring end, and looks nickel plated. The Screwdriver is missing.



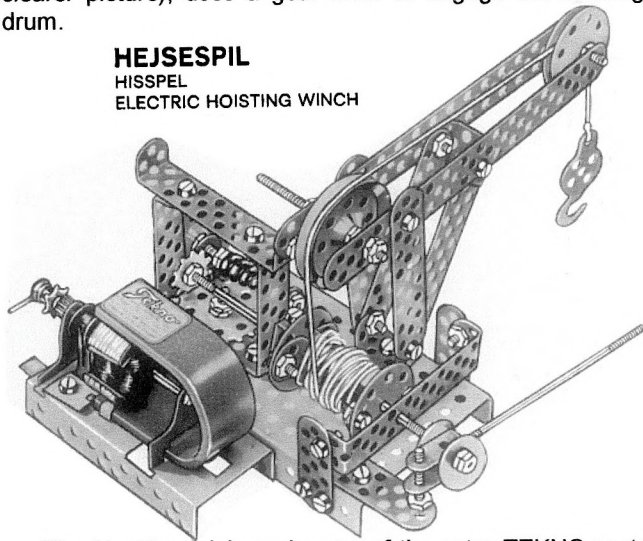
The MANUALS The 1950 & 1960 manuals have the same models on the same pages so differences will be noted in the Other Notes of the Summary below. Also in those Notes, details of an in-between edition.

'1950' MANUAL Summary •Name: TEKNO INGENIØRSÆT
 •Details of maker: Dansk Legetøjs-Industri, Rentemestervej 47, København NV. •Dates &/or Ref Nos: none. •Page size: 225*149mm. •No. of pages: 56+covers. •Language: Danish. •Printing: line drawings of small, ½-tones of larger models; colour cover with model on yellow-orange board & boy in blue shirt. •Page Nos. of Parts List & highest PN: 1,93. •No Set Contents. •Sets covered: 40-45. •No. of models for each set: 38,15,4,8,6,9 (+3 'Super-models'). •Name, Page No. of first & last model of each set (no Model Nos.): 40: figure '1',6; Jernbanesignal,10. 41: Maskinhammer,11; Løbekran,19. 42: Brevvægt,20; Dampmaskine, 23. 43: Pendulsav,24; Bevægelig projektor,31. 44: Hejsespil,30; Pendulsav,38. 45: Vippe-karussel,39; Kraftig løbekran,50-51. Super-models: Kædestemmer,52-53; Krigstank,55-56. •Other notes: •Set 43 & 44 models overlap. •pp3-5 show basic constructions. •Below the '1960' cover; the letters in 'INGENIØRSÆT' in the 1950 version have serifs. •Otherwise the 1950 & 1960 manuals are the same except that in the 1960 the maker's name is TEKNO; the new Bevels are on C2; the 701 Motor & machine tools 702-713 are on C4 instead of the Kraftstation set; '8 60' is added to the printer's name, 'EILER EILERTSEN. KØBENHAVN' (on C3 in 1950, & C4 in 1960). •Another manual between the 1950 & 1960 has INGENIØRSÆT with serifs; TEKNO as maker; no Bevels; items 700-713, & the printer, without a date, on C4.



Most if not all of the models for Sets 40-43 are in prewar TRIX manuals, and in many cases the illustrations are identical. There are words of explanation for the larger ones but unlike TRIX, no Parts List, and sometimes an extra view in the TRIX manual has been omitted. The No.44 models I'm not so sure about: most look typically TRIX but I haven't found any of them in the Books 1, 2, & 3 to hand. One, shown below (actually from the 1970 manual because it is a clearer picture), uses a gear lever to engage the hoisting drum.

HEJSESPIL
 HISSPEL
 ELECTRIC HOISTING WINCH



The No.45 models make use of the extra TEKNO parts and include a couple of Cranes, a Horizontal Steam Engine, and a Roundabout. All seem quite fair models, particularly given the limited number of parts in the Set, but its hard to work out their finer points without being able to read the constructional notes.

The Supermodels are much better. The first is a Kædestemmer, which is translated in the 1970 manual as a Chain Caulking Tool. It's pedal operated but beyond that I'll not commit myself. The next is the nice Threshing Machine which is shown in its improved 1970 form on p780. The third is a rather ungainly looking Tank, with less features than the 1970 version discussed below, notably it has only one Motor driving both tracks.

'1970' MANUAL Summary •Name: TEKNO INGENIØR.
 •Details of maker: none. •Dates &/or Ref Nos: none. •Page size: 245*173mm. •No. of pages: 69 inc covers. •Language: Danish, Swedish, English. •Printing: ½-tones of models; red/yellow cover (below) with white names, & green/red Crane. •Page Nos. of Parts List & highest PN: 2,103. •Page Nos. of Set Contents & highest PN: 67,103. •Sets covered: 40-45. •No. of models for each set: 41,15,3,8,4,9, (+9 Supermodels). •Name, Page No. of first & last model of each set (no Model Nos.): 40: letter 'T',5; Fire-escape,8. 41: MACHINE-GUN,9; BALANCE,15. 42: LATHE,16; STEAM ENGINE,18. 43: PENDULSAV,19; SEARCH LIGHT,25. 44: ELECTRIC HOISTING WINCH,26; PENDULSAV,29. 45: STEAM ENGINE,30; TRAVELLING CRANE,42-43. Supermodels: CHAIN CAULKING TOOL,44-45; TITAN CRANE,60-66. •Other notes: •The names of parts on C2, & some of the text on C4 are in Danish only. •Basic constructions are on pp3-4; ads for motors A 150 to B 65 on p68; the printer is given on p67: Tilrettelægning: Art Service – Tryk: Art Print Offset. •A manual for Sets 40-42 has 20 pages inc covers with pp3-18 identical & the same covers but in B&W.



The No.40-44 models are either the same as earlier ones, or similar with a few improvements. Constructional notes are no longer provided but the photos are larger, clearer, and more views are given in some instances. The only significant loss is the No.44 Chassis which had linkage steering, and a worm drive at the back axle. The No.45 models are unchanged.

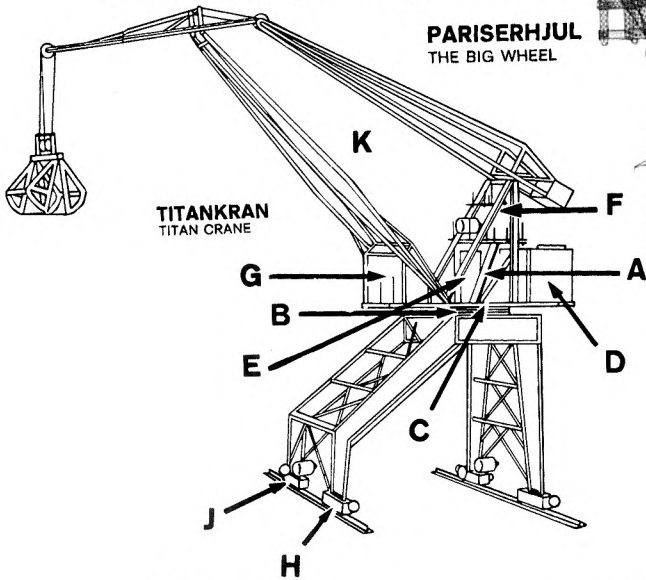
Some of the 9 Supermodels are shown below, overleaf, & on p780. I couldn't resist making the Threshing Machine and it is full of life with 7 rotating/sliding/jiggling elements driven from the input Pulley by various bands & chains. The Tank now has a Motor driving each track, but through one of the small idler sprockets, with the Chain held down onto it by a 2h Double Bracket. The Motors are controlled by Switches at the back, and hand wheels operate the main gun in azimuth & elevation. Points of interest in the other models follow. The Big Wheel is about 30" diameter, and has a Chain drive to the (rather inadequate looking) central Axle. The Dragline's jib is also about 30" long and inside the cab are 3 Motors driving winches. The Motors are controlled by Reversing Switches operated by rods coming out through the back of the cab. Slewing is from a hand wheel and the roller bearing has Pulleys running between the rims of two Large Pulleys. The tower of the Construction Crane is some 2ft high and at the base are a slewing Motor, with Switches which control it, and the Motor at the back of the slewing platform. The latter seems to be geared to both the hoisting & luffing winches at the same time. In another model not illustrated, a Jib Crane on a Gantry, the winches for the hoisting motion and control of the grab are driven from one Motor, but either can be selected via a gear change lever.

Finally the huge Titan Crane, as on the manual cover, with, to give an idea of its size, the platform standing over 20" high. The cover was reproduced in colour at about 3/4-full size, in CQ49. It is shown here diagrammatically, with the letters denoting the various views given in the instructions. They occupy 6 pages and even so it would be difficult to build the model from then. 6 Motors are used: 1 each on 2 of the travelling bogies, with a band & 2 geared stages of reduction

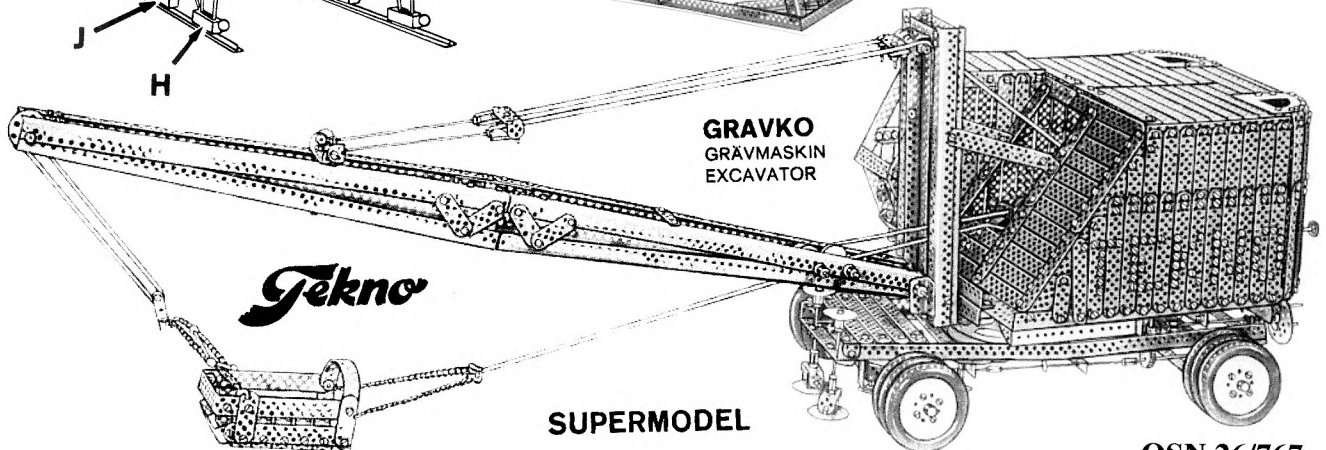
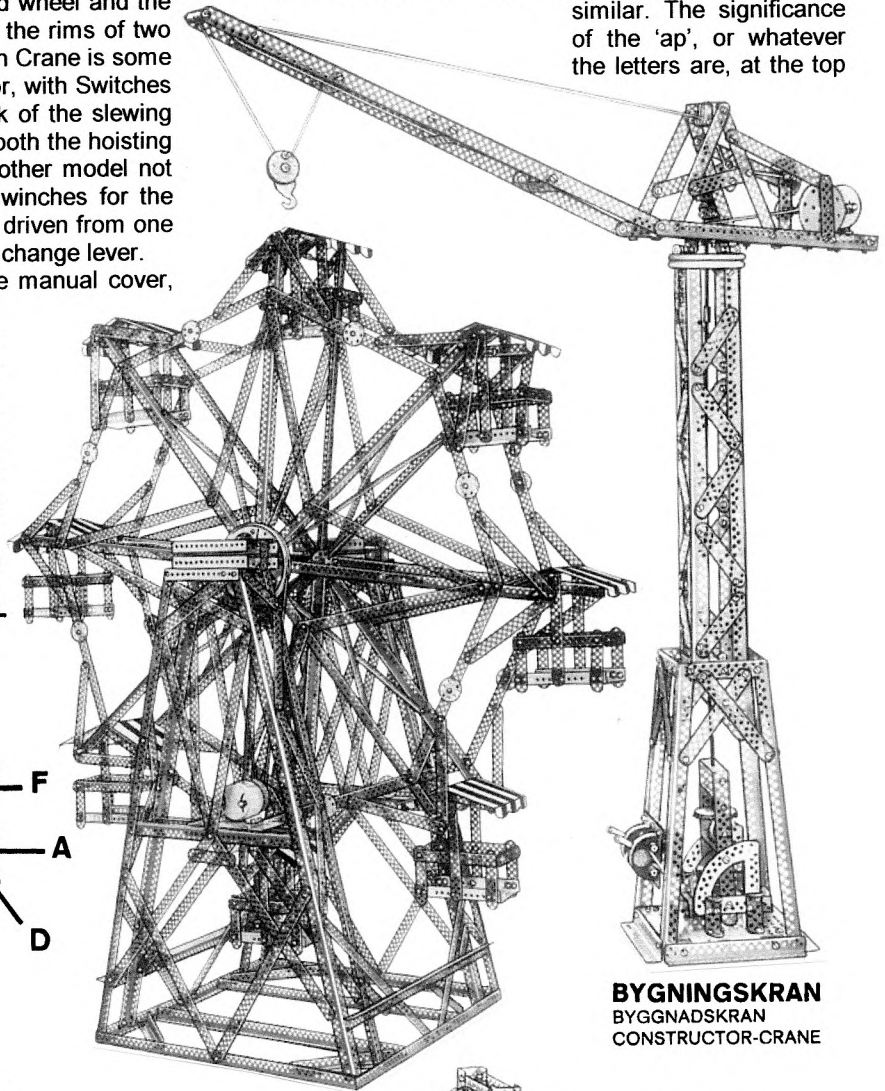
to the 2 travelling Pulleys in each of the bogies; a luffing Motor with gearing to a linkage to the jib; 1 each for the hoisting & grab winches; and one for slewing, with geared drives to 4 Pinions equi-spaced around a Gear Wheel. In this case the slewing ring is about 8" Ø and is made of 2 layers of Strips curved to suit. 4 Pulleys running on it take all the weight, and they are configured 2 ahead & 2 aft, with less than 60° between each pair. The Motors are controlled by 5 Switches in the forward cab. Current passes through 10 slip rings, with a pair between each Switch and each Motor (or 2 Motors in the case of the travel). The slip rings are a stack of 30mm Wheel Discs and with metal brushes rubbing on their edges. Nothing is said of these, or of the insulating parts which would clearly be needed.

TEKNIK All that is known of this system is the MCS entry, and from the Illustrated Parts shown it looks to be the same, or very similar, to TEKNO. The parts are said to be green strips & orange plates. The manual cover with a boy's face covering most of the left half of it, is completely different to the TEKNO ones, but the style of the name (above) is quite similar. The significance of the 'ap', or whatever the letters are, at the top

Teknik

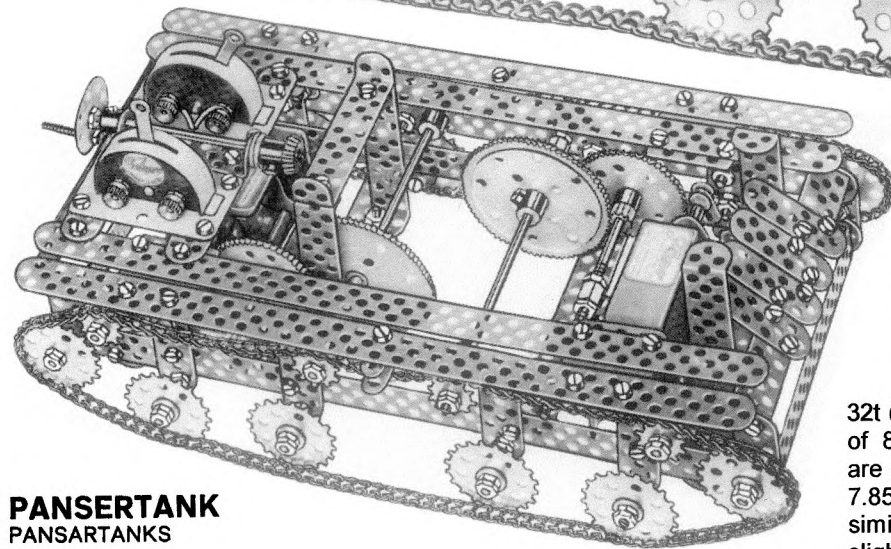
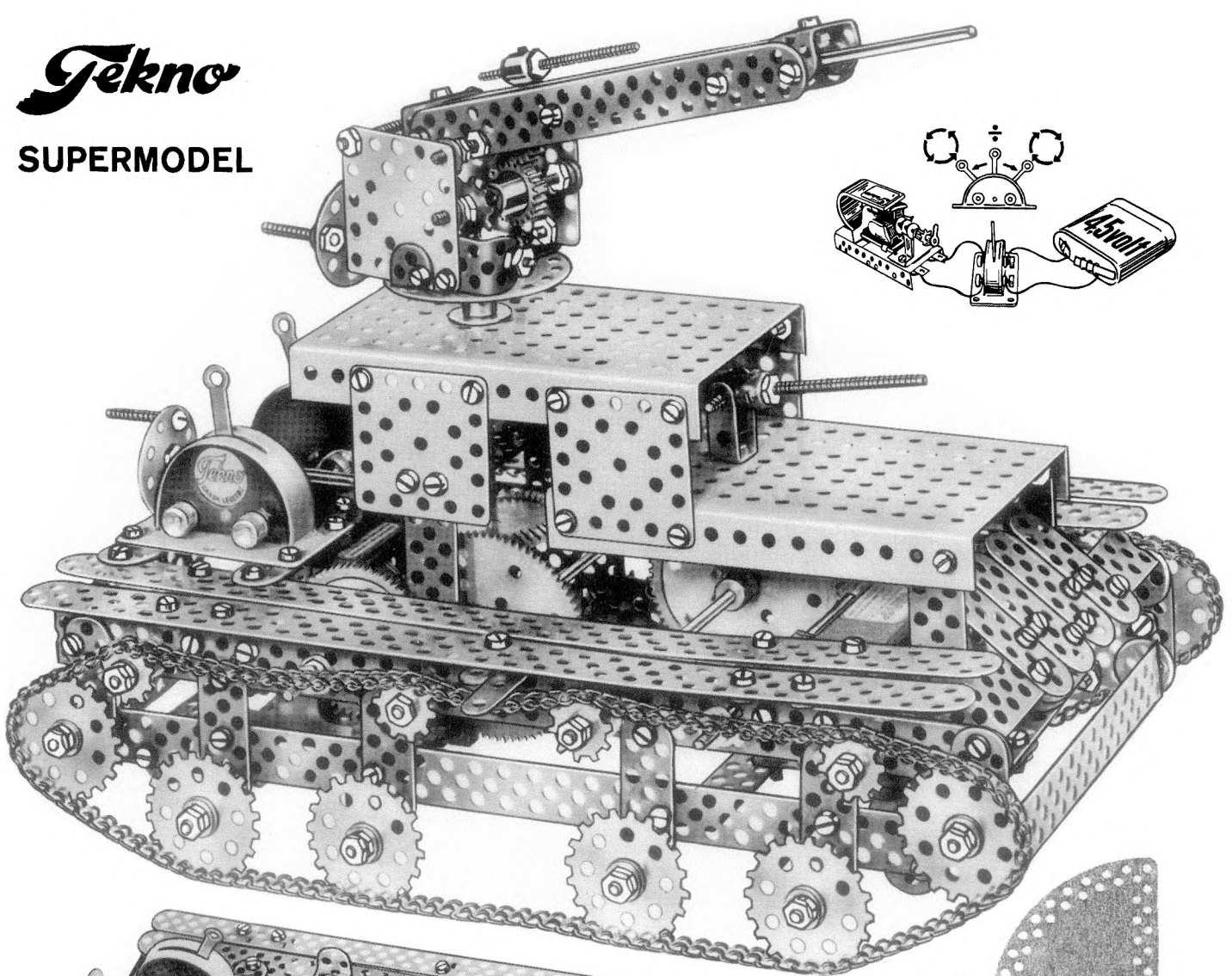


PARISERHJUL
THE BIG WHEEL



Tekno

SUPERMODEL



PANSERTANK PANSARTANKS TANK

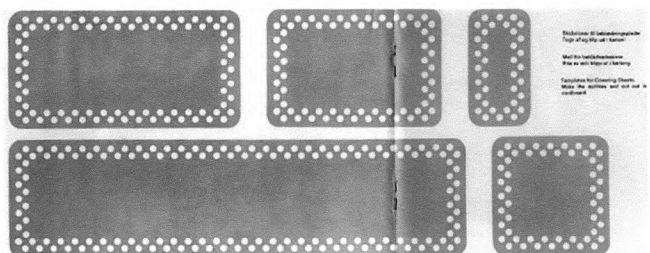
isn't known, but if they are a company's initials they don't match any of the known TEKNO firms. The Illustrated Parts is in the style of the 1950 & 1960 manuals but with revisions to include the later parts such as the Bevels & Road Wheels. The model page, including the page number, is identical to a page in the 1970 manual except for the name of the system.

ABRA This system is also in MCS, with just the manual cover and the Illustrated Parts shown. Colours are given as zinc plate & dark blue, and as a date '? up to the 1980s'. The range of parts isn't nearly as large as for TEKNO, 45 against about 100, and the main non-TRIX parts are a 31h Strip; 2 extra A/Gs, 5h & 50h long (judging by the Chair-O-Planes model in MCS the A/Gs may have a row of holes along the bend as well as 3 rows in each flange); a longer DAS; a 17*8h Flanged Plate, longer than its TRIX/TEKNO counter-

part & with staggered holes in the top; and the two Plates right (with the rather better pattern of the centre holes in the 5*5h Plate). The 3 Gears look as if they may have the characteristic TRIX teeth, but fewer of them – 8, 16 & 32. The face holes differ too with only 4 in the 16t, while the 32t (right) has just 2 rings of 8 holes. ABRA holes are given as 3.6mm Ø at 7.85mm pitch, so very similar to TEKNO and slightly further apart than the nominal TRIX spacing.

FOOTNOTES On the question of electrical parts, I notice a reference in my Database to **TEKNO-ELEKTRO**, 'analogous to TRIX electrical sets', but I've no details of it.

The illustration of the suggested homemade cardboard **Plating**, mentioned earlier, is shown below.



More on Norwegian TEKNO Some notes about this system, as it was around 1964-70, appeared in 5/102, and now more has emerged, thanks to Alf Jacob Munthe. He had some TEKNO as a boy, c1950, and the big surprise is that, at least then, the parts were unpainted aluminium. Alf sent copies of various items including, from about 1950, a Price List, and the covers & Illustrated Parts from a manual. However as will be explained, the range of parts in the Manual's Illustrated Parts is most likely to date from before those in the Price List, and to avoid confusion I'll call the Manual '1940s' & the Price List '1950s'.

The Sets The first reference Alf has to TEKNO is a



1935 ad from a shop called Ingwald Nielsen in Oslo. Four outfits were listed: 00-2, plus linking sets OA & 1A. The box shown has a label similar to the 1940s Manual cover left, but with the set number in the ball the crane is carrying. The

1940s Manual has the earlier sets plus a No.3, & a 2A, and the 1950s List has in addition, an 'X' accessory set.

The Parts 140 items are included in the 1940s Illustrated Parts. They have MECCANO PNs and go to #166. Most of the basic parts from the pre-WW2 MECCANO range up to #166 are included, among them all the A/Gs except the 37 & 49h; all the Flat & Braced Girders; and the cylindrical parts 162-164. Absent are: all the Gears except the 1/2" Pinion, the 1 1/2" Gear, & the Worm; the large circular parts; most brassware except the Collar & Coupling; and many of the 'engineering' parts. None of the 'loom' & 'railway' parts are present but included are the Woodscrew #68, the Weights 66 & 67, and the Ship's Funnel 138a.

It is thought that the set contents up to this time followed those of the equivalent MECCANO outfits from the late 1920s or early 1930s, and this may in part explain the TEKNO range of parts. For instance the 'boiler' parts, and the Swivel & End Bearings, were in Meccano's No.3. The Ship's Funnel is another such part and it is interesting that it was included in Meccano's No.3 Set in 1927-30, but not thereafter. An indication of TEKNO's start date perhaps.

The 1950s Price List has only 82 parts including four not in the 1940s Illustrated Parts: the Large, Medium, & Small Rubber Wheels (Gummihjul), and a Miniaturhjul, perhaps #178 in the 1960s. They have been added to the bottom of the Price List, without PNs.

With only one or two exceptions, and apart from the unnumbered parts, the range of parts in the Price List are just those needed for the MECCANO 1931-34 No.3. (The Ship's Funnel is not in the List and was the only part dropped from the MECCANO No.3 in 1931.) The exceptions are that the List contains the Crankshaft, and the Pawl & Ratchet Wheel, none of which were needed for the No.3, but doesn't have the Pivot Bolt, #147b, which was needed.

By 1964, as can be seen in OSN 5, the number of parts had increased to 124. Some of the 'missing' ones had been reinstated, mainly Strips, A/Gs, Flat & Braced Girders, and Axles. The new parts included the Wheel Disc 24a, and the 20 with PNs above #166, many of which are illustrated in OSN 5. Most are reasonable additions to increase the potential of the system – the most novel is the 32*15cm Perforated Plate, #186, which was made of soft aluminium and was meant to be cut to the required size with ordinary scissors.

The X Set In fact the Perforated Plate #186 must have been introduced much earlier because it was the main item in the X Set of about 1950. Initially 2 were included, but a third was added when the Scissors that were originally in the outfit, were omitted. Other parts were some 2 dozen N&B, and 33 useful parts including Strips, A/Gs, Brackets, Axles,

and 2 of the small Rubber Wheels.

Material About 1950 the parts were made from aluminium, and bosses were zinc. It isn't known for sure whether steel was used at other times, but probably it was earlier because on the '1950' Price List is 'Kjøp den nye TEKNO i aluminium med gummihjul.' with the last words bold as shown. I think this means 'Buy the new aluminium TEKNO with rubber wheels'. The Flanged Plate bought around 1970 as TEKNO, together with the OSN 5 manual, was steel painted red but was not marked in any way to prove it was TEKNO. Against a change to steel by that time, the parts in the models on the colour covers of the OSN 5 manual are all a light grey. In any case it's probable that the 32*15cm Plate would have remained aluminium.

The page size of the 1940s Manual is 185*260mm, and on the back cover is the printer, Johan Solberg Trykk, Oslo.

A WISDOM/MEKANIK Set A hybrid WISDOM/MECHANIC set was noted in 25/739, and now David Hobson has kindly lent me another he has found. But this time it is a No.2, and destined for Sweden. The box is 24*31 1/2*2cm in the usual WISDOM style, with a see-through lid. On its dark red border is WISDOM & SAGESSE as before, and on the black sides are '2' in a circle and K. MM 192. The style of the parts tray is as in OSN 25, and the parts and their colour scheme also correspond except that in this case the 5h Strips are still nickel. The contents are as in MCS (with the 1/2" plastic Pulley but no 5/8" Fixed Pulley nor 2 1/4" small diameter Rods).

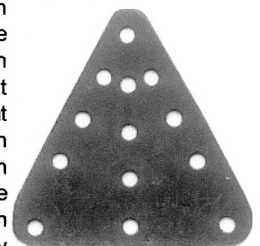
The Model Leaflet is in the MECHANIC style and has the OSN 25 maker & copyright date, but the name on the front is MEKANIK LÅDA (Låda means building set), with 'BYGG- OCH KONSTRUKTION SYSTEM' between the 2 words. The top half is shown below, and also has NO.06-312 on it. The only other text, the names of the models, is in English. I shall note the system as MEKANIK LÅDA to avoid confusion with all the other MEKANIKS.

With a few minor changes, the 20 models are as in an old 'red/green' leaflet, except that the THREE WHEEL TRUCK now has 4 Wheels & is called a TAREE WHEEL TRUCK.



QUERY 27 The part below right, 1/2-fullsize, was found in a mixed lot. It is painted red, with 4.1mm Ø holes at 12.7mm pitch, except that the top vertical pair are at 13mm, & the pitch of the bottom corner holes is about 51.5mm. The only similar shape that came to mind was the South African MAAKEETS #35 Univ. Construction Trunnion, which in MCS is said to have 4.2mm holes at 12.7mm pitch. It's been said that MAAKEETS parts weren't very well made so perhaps that explains the differences, but if anyone has any MAAKEETS some details would be very welcome, or is there a similar part in another system? None of the other pieces in the lot seemed to be MAAKEETS.

By chance a few days after finding the part I discovered two similar in the bottom of a box of unknowns. The hole spacings are identical but the holes are 4.3mm and the finish is BZP. The outside shape has slipped down slightly in relation to the holes so there is about 1mm more metal under the bottom holes and correspondingly less above the apex hole. Two phases for MAAKEETS were noted in 14/367, and in one of the parts on the cover of a manual are shown red & green. It would be a great & happy coincidence if my red part was from one period and the BZP ones from the other.



ERECTOR in 1981 - 86 David Hobson kindly lent me a manual covering Sets 200, 375, 500, & 750, the main outfits of the period, and the first to include an appreciable percentage of plastic parts. They were originally sold by Gabriel Industries of Hagerstown, by then a Division of CBS Inc., but they bore the Ideal name from 1983 onwards, another company belonging to CBS.

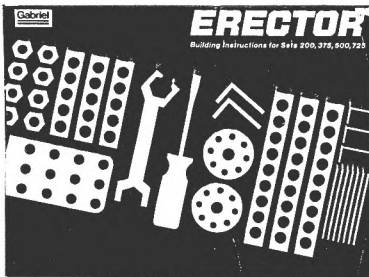
They contained some 60 different parts, with about 40 metal, all from the previous period, though some differed in colour, and 20 plastic, including several large mouldings.

1986 wasn't quite the end of the American ERECTOR period (that's to say before Meccano bought the ERECTOR name, see 3/31), because Ideal, who had been owned by View-Master since 1986 launched 4 new military/space sets in 1987. They had still fewer metal parts and still more of plastic, and they only survived through 1988.

The MANUAL It has the cover shown below in dark blue, and 40 American letter size pages plus the covers. The illustrations are B&W line drawings with the large, coloured plastic parts shown in solid colour. There's also a small, murky, colour photo at the start of the step-by-step instructions for each model, and good colour photos of the sets and some models on the inside back cover.

SUMMARY OF MANUAL

•Name: ERECTOR •Details of maker: Gabriel Industries, a division of CBS Inc. •Dates/Ref Nos: M8763 on BC, © MCMLXXXI. •Page size: 280*214mm deep. •No. of pages: 44 inc covers (the IFC is #1). •Language: English. •Printing: Blue cover. Models are line drawings with some solid colour, & a small colour photo. •No Parts List or Set Contents.



•Sets covered: Nos.200,375,500,750. •No. of models for each set: 4,4, 4,4. •Name, Page No. of first/last model of each set [no Model Nos.]: 200: DUMPTRUCK,8; DEEP SPACE RADAR STATION,13. 375: SONIC BLASTER,15; TOWER CRANE,19. 500: ALL-TERRAIN LASER CANNON,21; MOBILE CARRIER,27. 750: RADAR TANK,29; CARGO TRANSPORT,39. •Other notes: the models for the different sets are given on p1.

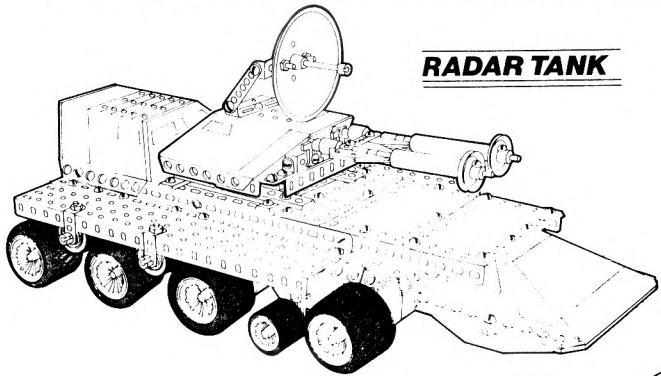
The PARTS Most can be seen in the models below. These notes are based on parts from UK sets (more about those later), which I suppose were imported from America. Most of the metal parts, including Strips, Girders, A/Gs, the 6½" Braced Girder, & Brackets, have the usual BZP finish, but the Trunnion & the Flanged Plates, including the 5*21h with one flange, are painted black. The N&B are metallic black, and while the Bolt head is the usual round ERECTOR pattern (but slightly larger at 7.5mm Ø), the Nuts are large and hexagonal, 8.5mm A/F. There's a cast zinc 2-ended Wrench, with ERECTOR along one side, to fit them.

Onto the plastic parts. The 3*9h & 5*9h Plates, which used to be metal, are now a fairly thick but quite flexible black plastic, with a slightly grainy surface. One large part is a white Chassis, 5*8" with ¼" deep sides. It is full of holes and slots, and on the inside are moulded clips to hold the Motor(s) and red Axle Supports. There's also a smaller, 5*4" version of this. The other two main parts are orange Cabs which need the stickers supplied to make them look like, and when turned upside down, and without the stickers, they look like, and are used as, scoops. They can fit together to form a top and bottom, or one can be used to extend the other. Each has, on either side, a row of holes in a ½" wide flange which is attached by a full-length plastic hinge. Thus the flange can be horizontal, vertical, or at an angle to fit the bevelled edge of the Chassis. The manual says the hinge is 'quite strong' and so it is.

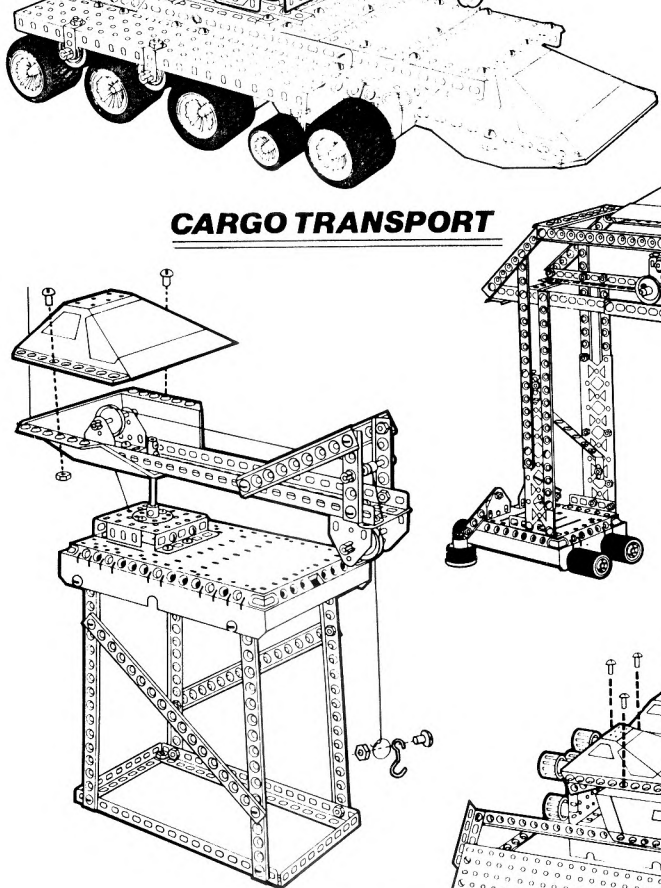
There are 2 sizes of grey plastic Wheel, each with a black Tyre. Each Wheel has an inner & outer half which push together, and then both push onto the normal Gabriel D-section Axle. The main trim parts are a yellow Radar Dish and a Hydraulic Ram in 2 halves which snap together.

The grey Motor (below) is fully enclosed, with the holes in the top & bottom flanges opened out to the edges. These allow it to snap into the Chassis or to be bolted on. A normal Axle can pass right through from side to side, and as it

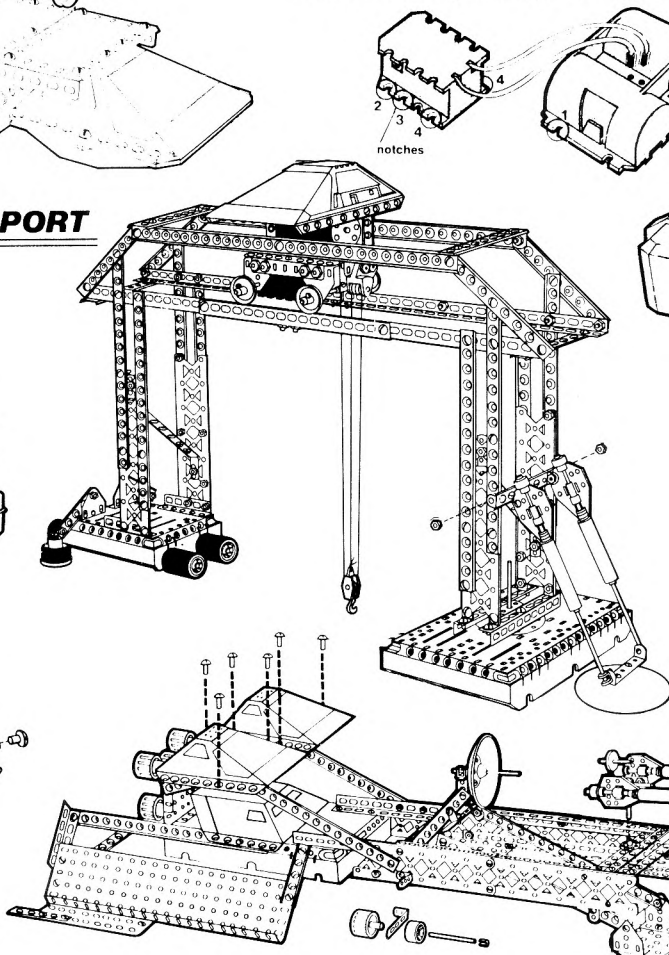
RADAR TANK



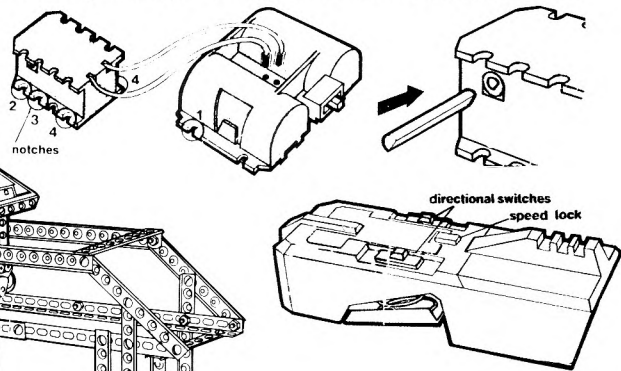
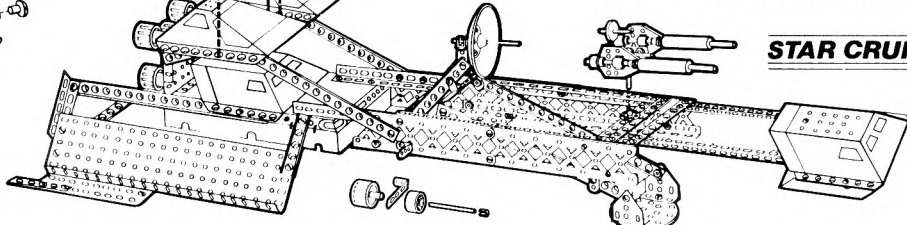
CARGO TRANSPORT



TOWER CRANE



STAR CRUISER



generally carries the Wheels, the Motor must have some built-in gearing. There's no Motor in the #200: in the #375 power comes from 2 'D' cells in the grey Battery Box with switch (above left) that can be built in to the Chassis. The remaining sets have 2 Motors

controlled by a yellow remote Controller (below the Motor drive shaft inset). It takes 3 cells and has a forward/reverse switch for each Motor, a squeeze-action lever underneath to control the speed, and another switch on top that can lock both Motors on full power.

The MODELS 4 of the models are shown on the opposite page. Many in the manual are the spaceship/vehicle type, the Radar Tank (with imaginary tracks), & Star Cruiser for example, or futuristic looking Cranes, Shovels, etc. The large plastic Cab parts give the latter a rather unreal look. Outside those models is a quite smart looking Helicopter and the Gantry Crane called a Cargo Transport: it's a fair model with 2 motors on the crab, one to move it along and the other to do the hoisting. I don't know what the Wheels on the small Chassis on the left do.

There are no mechanical features in any of the models other than a Motor directly connected to a wheel or winding shaft. And several models that should be powered aren't, like the Radar Dish and the Helicopter rotors.

The models are quite easy to make provided one has read the 7 pages of instructions at the start of the manual. Admittedly they mostly consist of over large illustrations, but I had to check carefully how to clip the Axle Supports and the Motor/Battery Box into the Chassis.

SPARE PARTS Along with the manual was an Order Form for parts that could be obtained by sending to Ideal (CBS Toys), P.O. Box 933, Madison Square Station, New York, NY 10159. At the bottom is '© 1984, 1982 CBS Toys, A Division of CBS Inc.', and '2L-1757-00B0'. 3 Kits of parts were offered, for Girders, Axles & Wheels, & N&B, at \$5.50, \$3, & \$3.50, plus a shipping charge of \$3 minimum to \$4 maximum. There was also an offer to repair or replace Remote Control Units/Motors for only a shipping charge of \$5/\$3.50.

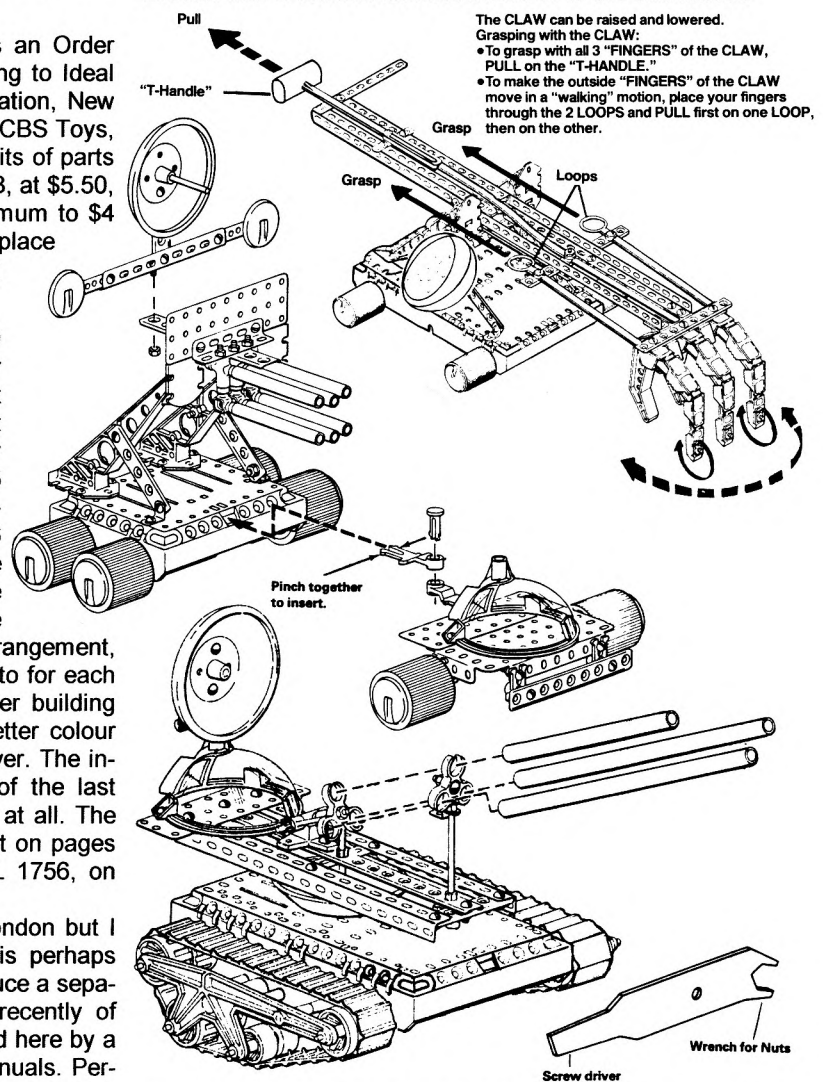
The UK SETS & MANUAL The 200 to 750 Sets were sold in the UK for a while but whether they are identical to those sold in America isn't known. Certainly the manual in them is different and the name on it is the Ideal Toy Company Ltd., Headley Road East, Woodley, Berks RG5 4SG. It has much brighter mid-blue covers showing nearly all the different parts in colour, and 36 A4 pages including covers. The models are the same, and their names except that the first one is TIPPER TRUCK instead of DUMPTRUCK. The illustrations are also similar but with some rearrangement, reductions of size, a B&W instead of colour photo for each model, and the omission of some of the simpler building steps. The only colour is in the covers, with better colour pictures of all the models on the inside front cover. The inside back cover has the final building steps of the last model, and unfortunately the sets aren't shown at all. The models noted in the U.S. Manual Summary start on pages 7,13,14,18,20,26,28,34. There's a reference, 2L 1756, on the back cover, but no date anywhere.

I remember seeing these sets for sale in London but I don't think they were widely available, and it is perhaps surprising that it was thought worthwhile to produce a separate edition of the manual for the UK. More recently of course a fair range of STEEL TEC sets were sold here by a UK agent in UK-peculiar boxes and with UK manuals. Perhaps it's something to do with import duties, but I don't know what.

The UK SPECIALIZED MODEL SETS It was noted in 8/203 that as well as the 200-750 sets, at least 3 single model outfits were available from Ideal at Woodley, and again courtesy of David, I've been able to examine the Leaflets from them. They are headed with the Ideal logo, and the name of the model followed by 'Specialized Model Set'. Each is a sheet folded to A4 size and has on it '© 1983 CBS Toys, A Division of CBS Inc.', plus 2 reference numbers:

32202 & 2L 1759 for the Bi-Tread Defence Tank; 32204 & 2L 2181 for the Mega-Claw Excavator; 32205 & 2L 2182 for the Alien Terrain Patrol. So from the numbering perhaps there are others in the series. The 3 featured models are shown below; an alternative version of the Tank, & 2 of the Patrol are included in the Leaflets but they aren't much different. None of the sets contains a motor and it is suggested that the models be pushed along. Some of the plastic parts are those used in the 200-750 models but some are different, the Side Frames of the Tank for instance and the Dome, and the parts of the claw. The Fingers incorporate plastic hinges and their operation is explained in the note by the model. The Wrench (shown below) is different too. Some parts which may have come from these Sets include black Large & Small Chassis, orange Legs (the tapered girder used in the 4-Wheel Patrol unit), and yellow Fingers & operating Links.

These single model sets are not mentioned in *Discovering Late Erector* (see 15/425) but presumably there were U.S. equivalents. I've read that a 2nd edition of McKusick's book has more detail on the later phases. Some of the new Specialized Model parts were included in the 1987/88 View-Master Ideal sets, and a Tank shown in *Discovering Late Erector* has a tracked chassis identical to the one below.



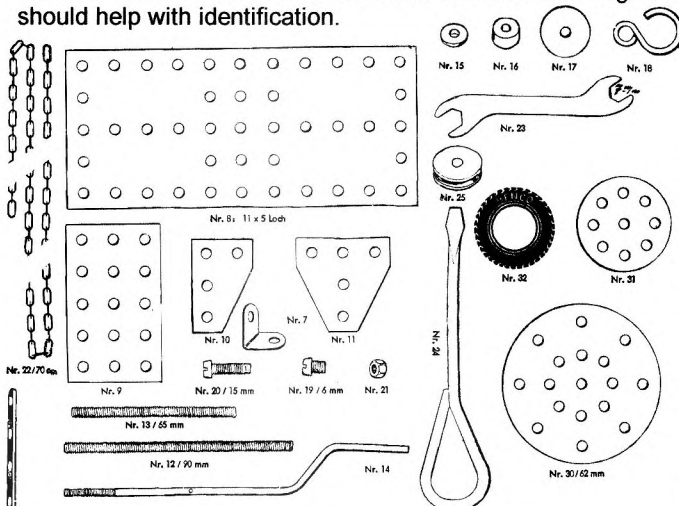
The MAXX STEEL ROBOT SET This Set is mentioned in *Discovering Late Erector* as being available from 1984 to 1986, but as far as is known it was never sold here. The Robot is perhaps 15" high, and is a framework of metal Girders clad in special plastic Panels, built onto a Large Chassis fitted with Wheels. The Panels are largely black & grey, with some orange & multi-colour parts. The 2 Motors & Controller from the 500/750 sets are used. At the end of one arm is a pincer claw, and an electromagnetised Bush Wheel is fitted to the end of the other.

BENCO This quite small German system from the 1950s, with 4.2mm holes at 12.5mm pitch, has one or two slightly unusual features. Of the 6 sets, 4 (0,A-C) are comparatively small, then D is a large one, and E is a mechanisms outfit. Of the 70 different parts 26, including all 7 Gears, are only in Set E. The Gears have very coarse teeth and Screwed Rods are used as axles. BENCO was made by Berthold Neumann & Co. GmbH of Essen (Velbert from 1960) - the earliest set known is thought to be from 1950 and the system may have continued into the early 1960s. The parts & set contents are shown in MCS but more details are now available from photos of various sets, notes on a Set D, complete except for the manual, and a Spanish edition manual. My thanks to Thomas Morzinck & Jacques Pitrat for the material they sent.

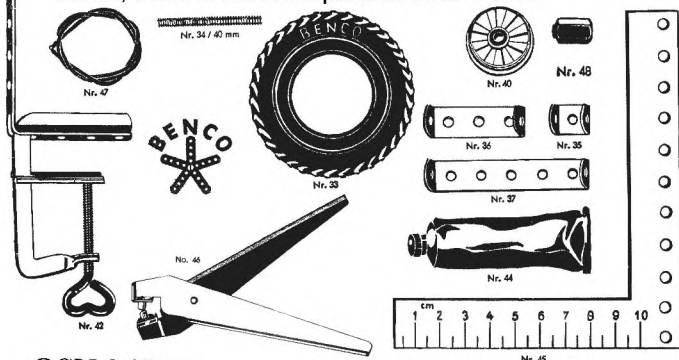
Phases To try to simplify matters reference will be made to the phases below, believed to be in chronological order. All manuals are similar in size, about 14*30cm, in landscape format, until the end of the last phase.

- **'1950'**. The one set known from this year has a relatively small box with a light blue top. It is nearly covered by a yellow label with a Bridge model, similar in size & design to the manual cover.
- **'blue box'**. The one known set still has a small box but with a dark blue top. Its label is the same blue with an Airship model, and is again similar to the manual cover.
- **'motorway'**. The boxes are red & larger, with a full colour label showing a motorway scene. Manual covers are as 'blue box' though one is mainly black rather than dark blue.
- **'stylised'**. Similar red boxes and label but the latter has stylised rather than realistic artwork. Some manuals have the Airship cover but others are in portrait format, as in MCS.
- A **'Spanish'** edition manual is also referred to; it has a different cover (shown later) and is from the 'motorway' or 'stylised' phases, perhaps soon after Set E was introduced.

The Parts All the parts are shown in MCS but no names are given and the use of a few of them isn't entirely clear. The parts in **Sets 0-B** are 6 Strips (3,5,7,9,11,25h) and those below. The Tyre #32 fits the Pulley #25 (about 20mm Ø). The Crank Handle is in Sets A & B and, even with its threaded end, is an unusual part in a system using Screwed Rods as axles. The small transverse hole through it should help with identification.

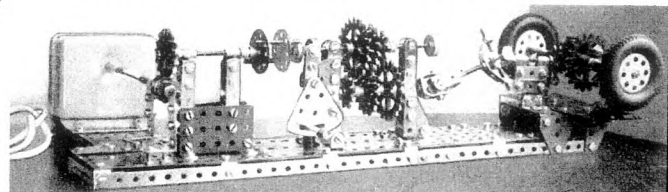
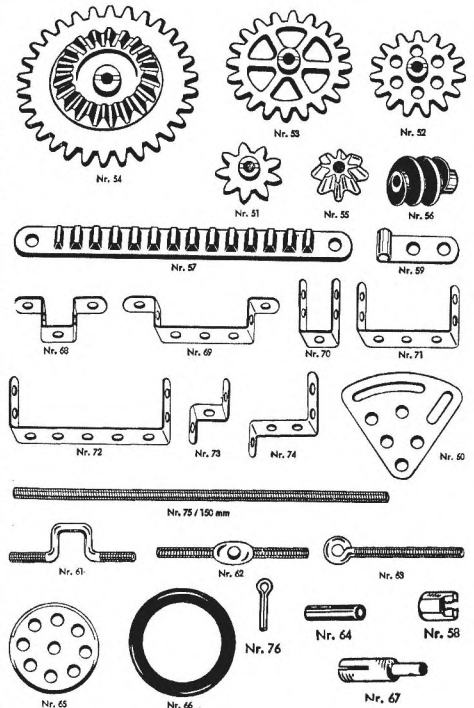


Below, most of the extra parts in **Sets C & D**.



Not shown are 15 & 21h Strips, and the Zelluloidfolien #43. The latter was available in Sheets 17*30cm & 27*35cm, in 4 colours, red, blue, yellow, & green, and was no doubt plastic rather than celluloid. It was used to cover the framework of models after being cut to shape, and perforated with the pliers-type Hand Punch (#46) supplied. Pieces could be joined using the (Tube of) Adhesive, #44, and the Tube in the Set D has a 'Planatol' label on it. #40 is a Flanged Wheel which scales at 28mm Ø and has 8 embossed spokes on its face. The Clamp #42 is intended to be used to attach models & Motors to a table top. It is in 2 parts, with the arm of the clamp passing through the slot in the right-angle strip. The example in Set D has the usual type of conical end to the screw, rather than the oblong part shown. The Square #45 is to help in making parts from the Plastic Sheet. #47 is Spring Cord. #48 is a Threaded Coupling used to join the Screwed Rods. The Large Tyre #33 fits between a pair of Wheel Discs #31.

The extra parts in **Set E** are shown right: none of them has been seen. The Gears may be Mod.2.5, the largest scales at 75mm Ø. #58 might be the male half of a Dog Clutch to engage in what may be grooved ends of the Gear bosses. #59, and perhaps 62 & 63, provide longer bearings for the Screwed Rods used as axles. #65 is a Pulley Disc and a pair fit the (Rubber) Ring #66. The curved slot in the Quadrant Plate #60 is used as a guide for a (gear?) lever in the Car Transmission model below. #67 might screw onto a Threaded Rod to provide a smooth end. The dot near the bottom



of its spigot might be a small hole for the Split Pin #76, but there are 10 of the latter in the Set & only one of #76. MCS suggests that it might be a Rod & Strip Connector but there are no other smooth rods apart from the handle end of the Crank Handle. In the same vein MCS has #64 as a Rod Connector.

Colours All parts seen are nickel plated apart from: the black 5*11h Plate; the red 3*5h Plate & Wheel Disc; the green Flat Trunnion & Corner Bracket; the blue Circular Plate #30; and the Pulley #25, which looks to be aluminium. A 'motorway' set in *Baukästen* (p221) has a silver Wheel Disc, as well as the right number of red ones, so it may be a 'foreigner'. The nickel parts in it look the light colour of the Pulley #25, and it also has some Cord with a red & white twist, but no Cord is listed or otherwise known. One '1950' Set A has the parts as above but in another the 3*5h Plate is nickel (or similar), and the Wheel Discs are black. Also the 5*11h Plate in the latter Set has one instead of three rows of 5 holes in the centre - this pattern is shown in some manual models.

Sets A Set 0 existed at some point and its contents are

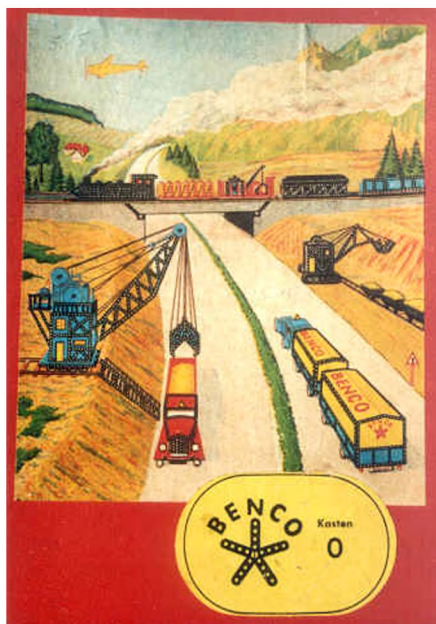
given in the 'Spanish' manual. It had 84 parts including 14 Strips (3 to 11h); a 5*11h Plate; 2 each Flat Trunnions, Corner Brackets, small Pulleys & Tyres; a Wheel Disc; & 25 N&B. The MCS entry and a Leaflet, both probably from the later 'stylised' phase, make no mention of Set 0. **Sets 0-B & D** were progressive, though with no linking outfits, and D was much larger than B (758 parts including 250 N&B, against 282/80). **C** was an accessory set for the smaller sets and its 162 parts included Large Tyres, Wheel Discs to form hubs for them, Flanged Wheels, a TRILL (see later) Motor. **Set E** had 248 parts including Strips, Brackets, and all the 'new' parts from #51 onwards, with 2 each of the 20t Gear, Worm, & Rack Strip, and 1 each of the other Gears. The only pages from the manual that are available are those in MCS, but it is described in the 'Spanish' manual as a complementary set to allow models with Gears to be made. The Car Transmission is shown as an example, with a gearbox & differential driven by an electric motor (reproduced on MCS p5, though the diff isn't shown in the /NZ edition). It would have needed many more Gears than those in Set E.

Boxes & Manual Covers Photos of the '1950' 'A' set show the manual cover below left, yellow with an orange panel at the bottom, and the Bridge in dark blue. The box label is very similar and about the same size, and it covers most of the lightish blue box top.



The 'blue box' manual cover, above right, has a large dark blue (or in one case black) panel with a white Zepplin on it, and smaller light yellow (or white) & orange/red panels. The box label is very similar to the manual cover in size & design; the box top is the same blue as the label and only a little bigger.

The first type of red box from the 'motorway' phase is the Set B in BK, and is nearly twice as deep (in plan) as the 'blue box'. The label is similar to the one below left, in full colour with a train going over the bridge and mountains in the background. The parts are on blue & yellow cards, within card partitions of the same colours. The manual with this set is the one with the main panel black.



Boxes, thought to be later, are larger, but with the same type of label, as on the No.0 left - its parts are strung to a yellow card. A Set B box from this time is 50% deeper than the Set B above; most of the parts are strung to a yellow card, but the two 5*11h Plates & some 5h Strips are on a separate red card. A Set D with the same type of label is in a red wooden box, 444*297*63mm, with a sliding lid. It has 2 layers of parts, with

most in the bottom, within wooden partitioning, and the rest clipped to a green card which sits on top of the partitions. The MCS Set Contents shows 2 Clamps in the Set but only one was found and there is no obvious place for a second. Also it contains 2 Motors, a TRILL & a TRELLE, which is as given in the Spanish manual, whereas only a TRILL is listed

in the later MCS Set Contents. A B&W photo of a Set E in the Spanish manual shows it with a Motorway label and the parts in 2 layers, strung to 2 main cards in the bottom with another on top.

The 'stylised' label from a Set B is shown below, with corner covered by part of a manual. It is printed in solid colours with the motorway & other elements on a green ground, and the name in yellow on the top, black panel. The box is the same size as the 'motorway' one and again most of the parts are strung to a yellow card, but arranged differently, and just the 5*11h Plates are on a separate red card. A 'C' with the same label has again most of the parts on a yellow card. Only part of its yellow manual cover can be seen but it is enough to recognise that it is of similar size & design to the one for Set E in MCS, in portrait format. The 'E' one is about 15*21cm in size and has 7 or 8 small vehicles, probably not models, around a central Benco logo.



Manuals The only one to hand is a 'Spanish' edition, and it is a little odd in some ways. Its black on pale yellow & red cover (below) is 300*138mm, and is in Spanish, but the

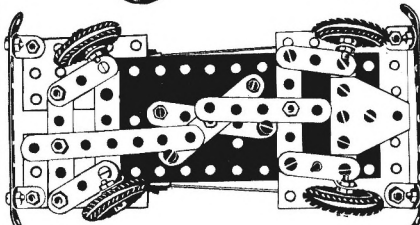
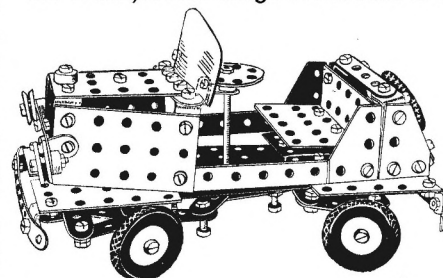


Intro, on the first two of the 36 pages inside, is in German, and the rest is in German/English/French/Spanish/Italian. The Illustrated Parts, to #48, are on pp3-4; the Set Contents, of Sets 0-D, are on p5; and Set E is advertised on p35. The cover says that the Manual is for Sets C & D, but none of the 66 (unnumbered) models in it has any indication of which set is needed, and those on the first pages are quite small.

The inside covers are blank and there is a photo of 2 boys building a Roller Coaster 'supermodel' on the back cover. A photo of a flat, partitioned dealers display box 'L' is shown on p36 - 'for your toy-man selling Benco component parts'.

On the age of this manual, the Set E lid shown in it has a 'motorway' label, so it must be from that phase or later, and its format puts it before the 'stylised' 'portrait' manuals.

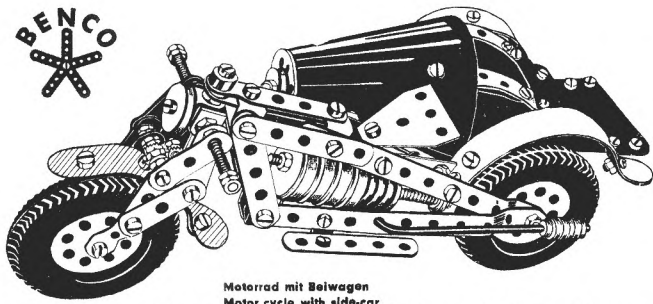
A good line drawing & a Parts List is provided for each model, with an extra view in a few cases, but not all the hidden details are easy to imagine in some of the larger models. The first model is a Swing (Schaukel) on p6, and the last, on p34, Steam Engine with TRILL (Dampfmaschine mit TRILL). A fair range of models is shown & on the whole



they are reasonably attractive, but with few mechanical features beyond some cord drives, and transmission at 90° by friction between 2 Discs. The Patrol Car left though has steering on both the front and rear wheels, connected by an unusual link-

Überfallwagen mit Vierradlenkung
Patrol car with four-wheel drive
Voiture de police avec commande à quatre pignons
Cocheguardia de asaltos con gobierno sobre las cuatro ruedas
Camioncino d'assalto con guida a quattro ruote

BENCO



Motorrad mit Beiwagen
Motor cycle with side-car
Motocyclette avec siège de côté
Motocicleta con sidecar
Motocicletta con side-car

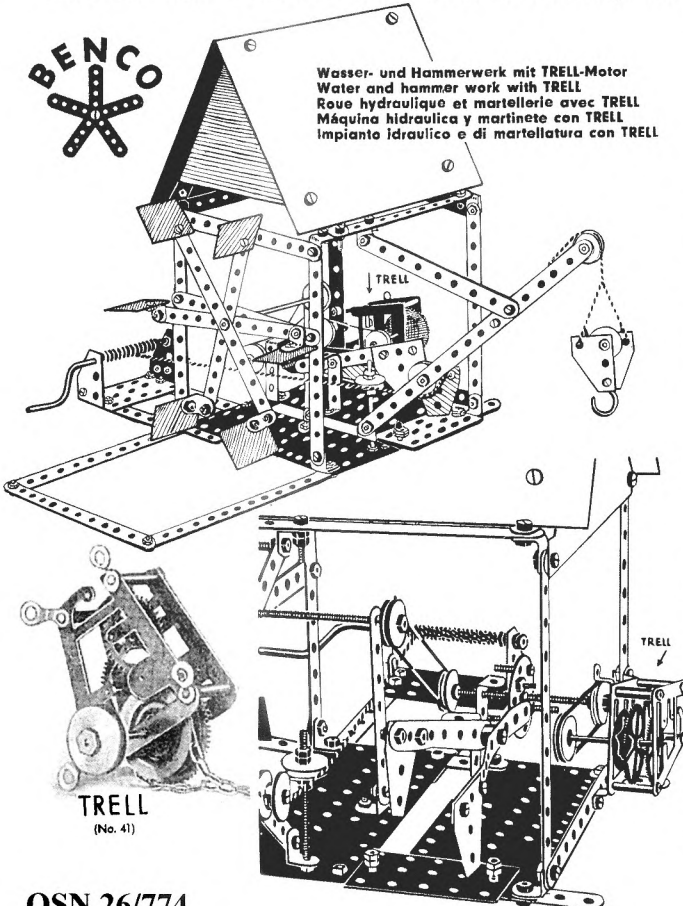
age. The Motor- perhaps one of the models in appearance, with Plastic Sheet used for the sidecar & mudguards. The cylinder is made from 4 Flanged Wheels. A number of the models use parts cut from the Plastic Sheeting but no patterns are given for them. The two other models shown here illustrate the use of the Motors.

Other manuals. The '1950' manual has Kasten A on its cover, and the 'blue box' one has Kasten B. All the others have either 'A & B', or 'C & D'. In terms of the models, all that can be said is that the one page that can be seen of the A-B manual with the 'motorway' Set B, has the same models as one page of the Spanish manual, and the open page of the manual shown with the 'motorway' Set E in the Spanish manual is again similar to another Spanish page.

Motors 4 Motors are described on p17 of the Spanish manual. **TRELL** (below, PN 41) is weight driven with the weights (unspecified) attached to the chain. It is quite small, about 4½cm across the base. **STABIL** of course had a Weight Motor at one time (see 15/407) but it was much larger, made from standard parts, and it seems to have disappeared in the 1920s. In the Watermill below the drive from the **TRELL** is taken from the pulley on the lowest shaft, the one with the sprocket for the chain. There seems to be 3 stages of step-up gearing from this shaft, no doubt to some form of governor. The **TRELL** in the Set D differs in detail. The nickelled sideplates have no cutouts and it has only 2 stages of step-up gearing to a bladed governor shaft. The output/sprocket shaft has a threaded end to allow a Pulley to be nutted to it, but curiously it is only 3mm Ø so special nuts are needed, & with no special pulley provided, it is difficult to centre one with a standard 4mm bore satisfactorily. No

BENCO

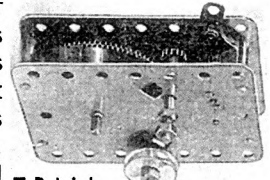
Wasser- und Hammerwerk mit TRELL-Motor
Water and hammer work with TRELL
Roue hydraulique et martellerie avec TRELL
Máquina hidráulica y martinete con TRELL
impianto Idravlico e di martellatura con TRELL



TRELL
(No. 41)

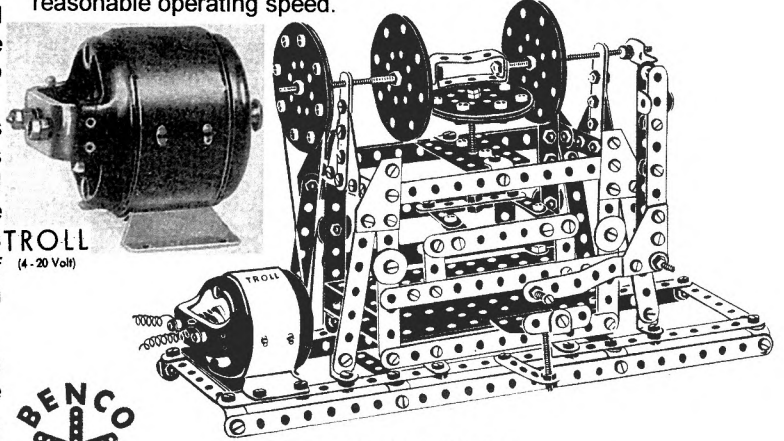
weights to attach to the chain were included in the Set.

TRILL, #41a, right, is a Spring Motor with sideplates about 9*6cm - the holes in them differ slightly in the various illustrations but the Motor in the D set has nickelled sideplates with 7*5 holes around the edges. It has a brake, forward & reverse, and 2 threaded output shafts running at different speeds.



TRILL
(No. 41a)

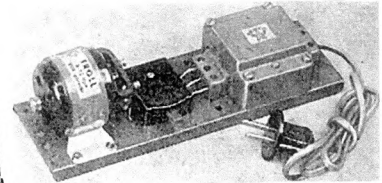
TROLL (below) is a 4-20V AC/DC, with mounting holes spanning 7*3 holes. No mention is made of any internal gearing and a direct drive would give the Press below a reasonable operating speed.



TROLL
(4-20 Volt)

Schwere Friktionspresse mit TROLL-Motor
Heavy friction press with TROLL
Presse à friction avec moteur TROLL
Presse de fricción con TROLL
Pressa a frizione con TROLL

TROLL+
TRAFO



The item above is **TROLL+TRAFO**, with a TROLL Motor & a transformer (110 or 220V) mounted on a long flanged plate, with a switch between them that allows 8 or 12V to the Motor.

The electric motor with the rectangular casing used to drive the Car Transmission model is quite different - perhaps it is a fourth Motor, **TRULL**, which is mentioned in *BK*, but without any details. From the lead shown it might run from the mains.

SNIPPET: SEYMOUR AIRPLANE FACTORY

This name can be seen at the top of the sheet below, & underneath are building instructions for 'Model No.1 Spirit of St. Louis'. This sheet was with a made up model and instructions for a number of others on separate sheets. They all look just like METALCRAFT (see 24/688), & were probably from the equivalent of a No.810 Set. The 'Seymour' outfit may have been a promotional item for the company, but I haven't so far been able to trace a firm of that name.



All the Sheets are printed red on white & it isn't clear if they were originally separate or pages from a manual. Instructions for 25 models were provided, as for Set 810.

CLIRO This was a small UK aluminium system from the late 1940s, in which frameworks were made from Rods joined by Clips, with one Plate to provide infill. The notes below are based on a small lot of parts with a No.1 Model Sheet, and the remains of a No.1 Outfit. Thanks to David Hobson for lending me the Set, & a copy of the relevant patent; also to Jack Little for sending the corresponding Australian patent. The MCS entry shows nearly three-quarters of the Model Sheet, and a list of most of the parts.

History. Patent No.614246 was granted to John Lee Schofield of 3 Eyre Street Hill, London, E.C.1 in Dec. 1948, following his application in May 1946. The similar Australian patent, 137941, was accepted in 1950. The only known ad for CLIRO was from Schofield & Schofield, 3 Eyre St. Hill, London, E.C.1, in the Nov. 1949 G&T. 3 sets are mentioned in it but only examples of the No.1 have ever been found.

The No.1 Set. The plain card box measures $7 \times 8 \times \frac{5}{8}$ " & the lid is covered by a superb solid colour label, in rich red, blue & yellow. It is a colour version of the ad picture above, but with 'CLIRO No. 1' printed ten times around it on a $\frac{1}{2}$ " wide grey border. The N&B are in a card box $2 \times 1 \frac{1}{2} \times \frac{3}{8}$ ", with a yellow label, but none of the other packaging has survived.

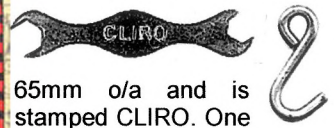
The Parts. All, except as stated, are aluminium. • The **Rods** are $\frac{5}{32}$ " \varnothing , $\frac{1}{8}$ ", $2 \frac{3}{4}$ ", $4 \frac{1}{2}$ ", & 8" long, with sheared ends. There are also 3 preformed rods: an Oblong, $4 \frac{3}{8} \times 1 \frac{9}{16}$ " o/a, with a butted break in one long side; a 'U', probably about $1 \frac{9}{16}$ " wide & high; and a Crank Handle, not seen, but shown in the models with square bends.

• The **Clips** (right) clamp the Rods at 45 & 90°, and their sideplates, held together by a N&B, are pressed from 16g (.064") sheet, flat but with each angled edge slightly curved to locate one side of the Rod. The other side the Rod sits against a pressed through pip in the 90° Clip, and the sloping side of a pressed through 'mound' around the hole in the 45° type. Both types are shown in the Patent, together with the two variations right. Fig.2 has a long pip, though why this is better isn't explained, and Fig.5 shows 2 parts of different design being used together. In these 2 pips locate each Rod, and in the example shown, the split edge compensates for the part's increased length.

• The **Plate**, of thin, .017", aluminium, painted red, is $4 \frac{1}{2} \times 1 \frac{1}{8}$ " with $\frac{1}{4}$ " chamfers on each corner. These are to allow the part to fit between the sideplates of the Clips, at each corner of a suitably sized rectangular frame, without fouling the shanks of the Bolts. In other models Plates are held by bending their ends around Rods, or by wedging them over & under alternate cross Rods &/or the edges of Clips. The Patent says rather loosely that 'plates, strips, or boards can be gripped in the clips, or one part only of a clip may be used secured to a strip, board, or the like so as to secure a rod or tube to the strip, board, or the like.' It would seem that to use only one part of the Clip, the plate, strip, or board would need to have a corresponding hole, but no plates, etc are actually shown in the Patent. • A $1 \frac{1}{2}$ " long, commercial steel $\frac{5}{32}$ " **Split Pin**, bore 4.3mm, held in a Clip, is used to provide a bearing for Rods & the Crank Handle. • The **Wheel** is the tinplate balloon type, about 1" \varnothing & $\frac{5}{16}$ " wide, painted red. The centre hole, about



3.5mm, is not large enough to accept a Rod, & so Long Bolts are used as axles. • The $\frac{1}{8}$ " BSW, commercial N&B are plain steel. The square Nut is 6.4mm A/F (hex ones are shown on the Model Sheet); Bolts are $\frac{3}{8}$ " & 1" u/h, with 5.6mm round heads. • The nickel plated steel **Spanner** below is



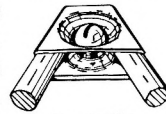
65mm o/a and is stamped CLIRO. One of its hex end openings is 6.7mm wide and the other 8.0mm. • The **Hook** (above)

is made from the Rod material & is 40mm o/a. • **Other Parts.** MCS mentions orange Cord. No Screwdriver is known, and the Pulleys that can be seen in the models on the lid are not used in any on the No.1 Model Sheet.

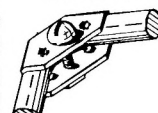
The **Model Sheet** is $19 \frac{3}{4} \times 14 \frac{3}{4}$ ", folded into 4, and is printed on one side only in blue & white. It has a single, good, white on blue photo of 12 models, from CRANE to RAKE, with a few words of advice under each. The box lid label gives a fair idea of the models, except that the actual Wheels are smaller than those shown, and the Crane & Cable Car need more parts than those used in the No.1 models. (At a rough count the part count of the latter include 4,4,3,2,2 of the Rods, $\frac{7}{8}$ " to 8", plus 2 of the 'U', & 1 of the Oblong; 14 & 2 of the 90 & 45° Clips; 2 Plates; 4 Wheels; & 4 Split Pins).

In the Roundabout below and one other model, rubber bands are used to transmit drive from the Crank Handle to a Rod. Split Pins are used as bearings for the Crank Handle and the vertical Rod.

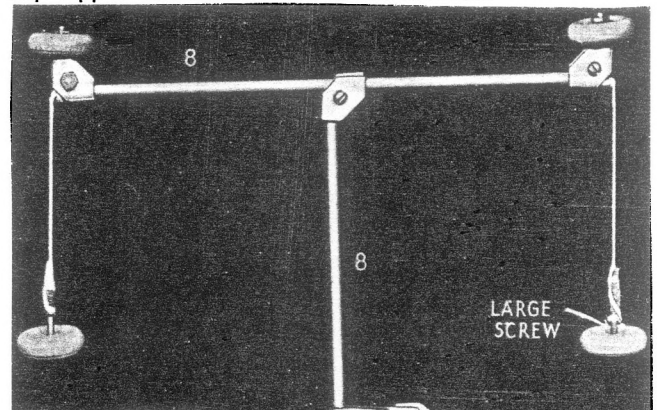
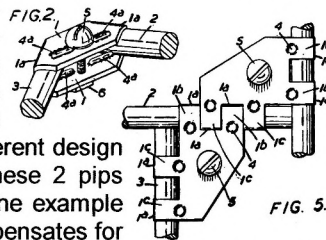
David had enough parts to make the Handcart on the lid. The parts seem to be accurately made and the Clips, though somewhat fiddly to use, hold the Rods securely, once the N&B has been well tightened. The body & handle were surprisingly rigid, and the single vertical Split Pin supporting the Wheel withstood a fair force at the axle end before the Clip slipped about the bottom horizontal Rod.



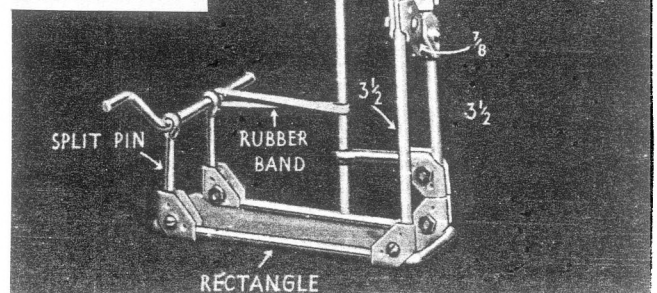
No. 45 Clip.



No. 90 Clip.



ROUNABOUT



RECTANGLE

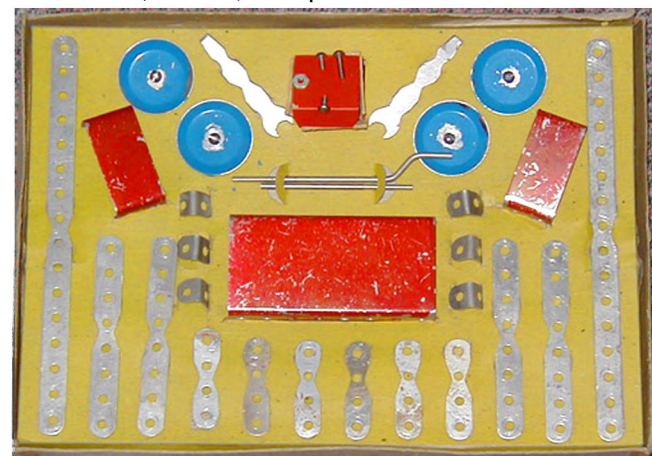
This is an easy model to build and you will be very pleased at the way it works. When putting on the clips at each end of the long rod which carries the wheels use the long screws. The wheels are held in place by the nuts. Use the large screws also for the wheels on the end of the strings.

'New' System: DURALUMINUM CONSTRUCTION SET

When the not very inspiring JUNIOR MECHANIC came along (see 18/522) I never expected to see the like again, but first there was ENGINEERO in 25/724, and now this similar system, made in Canada by "PAX" Mfg. Co., Toronto. (Duraluminium, often abbreviated to Dural, was a brand name widely used here in the 1940s as a general name for aluminium alloy, and no doubt Duraluminium likewise in Canada.) The set to hand has been used but seems complete, and has No.10 on the top & sides of the lid; the contents are nearly the same as those of the J M No.101 & ENG'O No.1. Unlike the latter it has a manual, with 31 models in it, against 16 for the No.101 in the J M manual, and 20 on the ENG'O No.1 box.

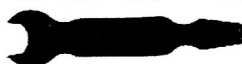


The SET The DURALUMINUM box measures 12¼*8¾*1", a fraction more than for ENG'O, and the colourful lid (above) is red, purple & dark turquoise. On its sides are JEU DE CONSTRUCTION NO.10 & CONSTRUCTION SET NO.10. The parts are attached to a mustard card (below) by the same means as in J M/ENG'O, with the N&B in a little red box. But the layout of the pieces is different and 3 extra parts are included, an Axle, & 2 Span'drivers.

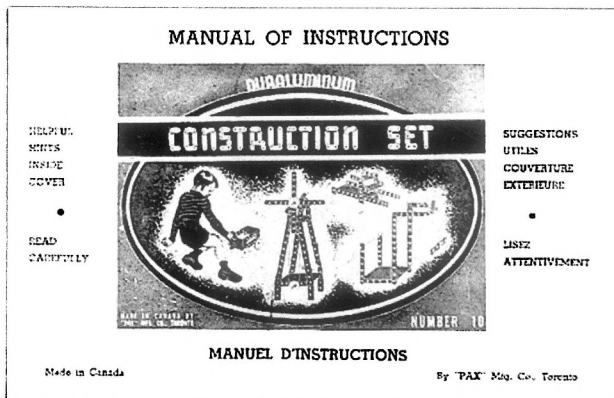


The PARTS • DATA (in mm) Strip (8-hole): •Hole pitch/dia, 12.7/4.7 •width, 13.1; •thickness, .95; •ends near fully radiused. Thread: 6-32. Axle Dia: 3.17. Nut: hex 7.9 A/F, dull grey treated steel; Bolt: roundhead 6.3 dia; nickelled steel.

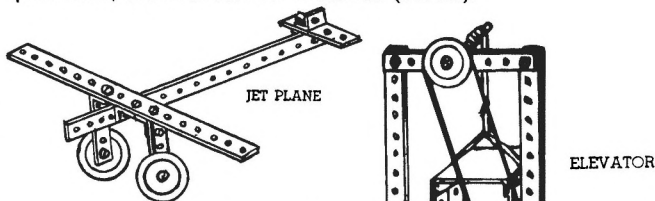
Compared to J M the **holes**, at 4.7mm, are much larger, more like ENG'O, and the Strips a little wider. The 3.4mm Ø N&B are larger than in either. Other points: • The **Strips** have rounded ends like ENG'O, often perfectly radiused but sometimes with a sharp corner on one side. In many the row of holes is a little off centre. • The **Flanged Plates** are 1" & 4" long by 2.0" wide o/a, with flanges .6" deep. The metal is about 1mm thick, and they are painted red all over. • The **Pulley Disc** is painted a medium blue on both sides; it is 38mm o.d. with a centre flat area of 28mm Ø, both about 1mm more than J M. The dishing is also greater, about 4mm against 3mm. • The **Crank Handle** is 4.4" long o/a with a ¾" handle offset ½". The **Axle** is 3" long. Both are aluminum and both are threaded over 1" at one end. • The **Span'driver** (right) is nickelled



steel, 2½" o/a, the only non-aluminum part, apart from the N&B. • Found in the set were 17 Nuts, 13 Bolts ¼", & 4x ½" u/h. The **Nut** is pressed, 2.7mm thick.



The MANUAL Including covers it has 8 beige pages, 210*131mm, all printed in blue. The centre panel of the cover (above) is the same design as the lid. All the text is in English & French except that the model names are only in English. The Intro & building tips are on p2 in English and p8 in French. The models go from KITCHEN STOOL on p3 to BAGGAGE CART on p7. The ones common to J M & ENG'O have the same names & drawings, except that the shading used in some of the J M ones is absent. The new models are simple ones like the JET PLANE below. The inclusion of an Axle in the Set makes one or two of the models more plausible, the Elevator for instance (below).



REMARKS 3 of the models on the box lid & manual cover are recognisable as models in the manual, though in some cases non-standard lengths of Strip are used in them, artistic licence no doubt. The Windmill however, a No.201 J M model, isn't in the manual and can't be made from the parts in the set, so perhaps there was a larger DURALUMINUM outfit.

The parts in the present set match Mystery Parts No.23 (11/283) well except for the slightly larger holes in the Flanged Plates.

PARTS, Parts, parts Below brief details of some known sources of non-MECCANO parts and what, in general terms, is available. As explained in this Issue's Editorial more detail could be provided but it would take considerable space.

ARIES INCORPORATION Their product name is TOY KRAFT and their sets were reviewed in 22/627. Now only 2, different, sets are listed on their web site, but a large range of parts are also available.

The sets are the Entech Basic (#1601) with 102 parts & the Entech No.1 with 237. Instructions for 10 simple models are provided for the Basic, and they are shown with mostly blue & yellow parts. The No.1 (#1602) has a black Motor & 3 white Gears, and the examples on the site of the 17 claimed models have red, yellow, & green parts.

The parts are listed but without illustrations. Most are marked Mc, no doubt indicating MECCANO pattern, but some, including all Plates, are Mk (MÄRKLIN), and a few, probably original designs, are designated En. It's not always easy to guess what the part is from the name used but the Flat Trunnion in the MR MECHANIC Stamping Mill on

22/625 may be one of the En parts.

Most parts are available in several different finishes; many can be had painted red, yellow, green, or blue, or in nickel or BZP.

Contact. Address: Aries Incorporation, 37 Bombay Talkies Compound, Malad (W), Mumbai 400 064, India. Tel: +91 22 8445227 & 8821195. Enmail: inquiry@toy-kraft.com. Web: www.toy-kraft.com/toy_home.html.

I couldn't find any details about ordering on the site and the 'Order' button didn't work.

ASHOK BANERJEE Ashok has over 700 parts available, mostly MECCANO replicas, but with many variations in terms of size. For instance there are 5 Circular Strips from 2½" to 7½" Ø, and the same range of Narrow Circular Strips. Or how about a 9" long Boiler. Other 'add-ons' include a large selection of narrow parts, amongst which, and very useful, all the MECCANO Curved Strips.

Completely outside the MECCANO system are a range of Large-Toothed Gears, and 5/16" Axles with other parts to match, including Sprockets.

The parts are easy to identify by their names but none are illustrated. No doubt all the replicas are to MECCANO pattern, but it would be interesting to see the details of the non-standard ones.

Again many finishes are available, including some gold plated parts to order.

Contact. Address: Ashok Banerjee, P.O. Box 4149, Navrangpura, Ahmedabad 380 009, India. Tel: +91 79 6752974, 6921736/4921. Email: ashok.k.b@vsnl.com. Web: http://members.tripod.com/Ashok_Banerjee/Meccanoville/Welcome.htm.

The prices quoted for parts include delivery by airmail, and the minimum order is £50. Payment cannot be by credit card but may be made by cheque in Sterling to a UK address, with comparable arrangements for other countries.

MECAREP MECAREP is Mike Dennis & he kindly sent his 2001 catalogue - 22 pages packed with goodies for the MECCANO builder, though many of them could be used with other systems. Some of the parts are for specific published models, & parts are also made to order. In most cases the parts are made from scratch but sometimes customers' parts are modified. 'Repair & reconditioning' is also available.

The following will give a flavour of what is on offer: • Kits of parts for use with the Swiss mini-motors, including rams with motor & lead screw inside long Sleeve Pieces. • Heavy duty parts based on 6mm or 5/16" Ø Axles, & M6 Lead Screws. • A ½" square Bearing Block, & 3/8" square-section Couplings. • Pulleys modified to make them into Flanged Wheels. • Parts for use with 3/32" Ø Rod, with & without threaded ends. • Spun aluminium Flanged Rings from 3½" to 10" Ø. • ¼" Roller Chain and Delrin Sprockets. • Delrin Gears with any number of teeth. • 16 & 20 DP Gears.

Contact. Address: Mike Dennis, 102 Broadstairs Road, Broadstairs, Kent, CT10 2RU. Tel: 01843 864624. Visitors are welcome by prior arrangement.

No minimum order size. Postage: UK £1, but free for orders above £20; overseas at cost.

Mike's 2002 catalogue is now available. 11 printed pages against a 13*9" self-addressed envelope plus £1, or for overseas, £1 coin or 3 US\$.

METALLUS Contact details and a little on the range of parts was given in 24/709. Since then many parts have been added including a variety of Slotted Strips, L- & U-section A/Gs, more Plates & Flexible Plates (steel, not the MÄRKLIN aluminium), extra N&B, a wider range of Gears, and, the last addition in July 2001, Caterpillar Track. Some parts are now available in a chemical black finish as well as in the red, green, & blue enamel. Several powerful LV Motors are listed, together with a Power Supply, and a Control Unit (#9000-20), which among other things, allows 4 Motors to be controlled from a PC.

The firm has also bought the remaining TEMSI parts,

sets & materials, some 35000kg they say, and most of the parts, and some of the sets are available.

3 METALLUS sets are now being sold, packed in mahogany boxes, and a few TEMSI parts are included in them. They are called the Bonn, Bremen, & Berlin and contain 461, 1116, & 2462 parts, including about 300, 750, & 1700 NBW. As manuals, only the small & large TEMSI ones are in the sets.

The postage for a catalogue is given as DM3 so I suppose there is one, but I couldn't find any mention of it on their web site. Any quantity of parts can be bought but the minimum delivery charge is DM22.50. Cash is accepted but not credit cards. Dave Taylor sells a limited range of METALLUS parts.

I'm grateful to Josep Bernal & Karst Quast for the hard copies from the METALLUS web site that they sent me.

M.W. MODELS As well as all available MECCANO factory parts, MW have reproductions of many obsolete items and a good range of useful add-on parts. A few that have caught my eye are 7 & 70t Gears to mesh at 1" centres; 2 Curved Strips, with 8 making circles of 17 & 25h Ø; and Sleeve Pieces up to 4½" long.

Contact. Address: M.W. Models, 4 Greys Road, Henley-on-Thames, RG9 1RY. Tel/Fax: 01491 572436/571175. Web: www.mwmodels-meccano.co.uk.

Lists free on request. Payment by credit cards accepted. Postage on parts - UK: orders over/under £10, free/£1; overseas: air mail at cost (but no VAT payable on orders from outside EEC).

SNIPPETS: KONSTRUKTOR [13] Some notes on this small Russian system appeared in 21/597, and the box lid below left is from a set which appears to be the identical except that the parts are black, probably chemically treated. Even the Tools are black but the threaded parts look to be zinc. Other points of similarity: the illustration of the Steps on the lid is the same as the manual model shown in MCS, and the Manual cover is identical to the MCS one.



The lid is red with a sage green 'nut' in the middle, and the name & Steps are white. The logo top left is shown larger below - with a little imagination it could be three kids holding aloft, from left to right, a pair of pliers, a spanner, and a screwdriver. The box is 7¼*9¼*1½", and is divided into 6 sections by card partitions. The Cord is white.

An ENGINEERO No.2 Set The post-WW2 ENGINEERO No.1 Outfit, analogous to the JUNIOR MECHANIC No.101, was described in 25/724, and now an ENGINEERO No.2 has appeared, similar to the J M No.201 (see 12/327). The No.2 lid has the same design & colouring as the No.1 but with 'No.2' under the name, and the parts are held to a greyish backing card in the same way as in J M. All the Pulley Discs are missing from the Set but the rest of the parts correspond to the contents of the J M 201 except that there are 2 extra 8h Strips. The layout of the parts is like the 201 except that the 8h Strips (3 each side) and the two 1" long Flanged Plates, are all turned through 90°. The colours of the parts are as in the No.1 Outfit.

Correction The transliterated name BOENNAYA in 25/717 & 718 should read VOENNAYA (my thanks to Don Redmond). This set in question is no doubt similar to the one mentioned in 24/714, though some details are not identical.

ITEMS FROM LETTERS

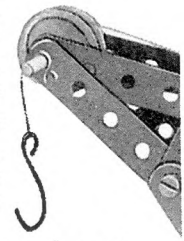
1. From Thomas Morzinck. • On the **ANKER Metal Parts** (25/730) The set with the 1897 parts offered by Richter in that year cost (a very expensive) 60 Marks. One year later it was deleted. Tobias Mey mentioned in his book *Zum Bauspiel*, that the Keller brothers - former employees in Richter's factory - sold their own Bridge Set from 1897 using preformed metal parts. In their advertising literature the Keller brothers called Richter's 1895 Bridge Set 'a screwed idea'. ('eine verschraubte Idee' in German). [The Keller Set may be even earlier. A UK patent No.5781 in the names of Georg & Paul Keller is dated 1890, and the parts in it (owned by David Hobson) correspond to those believed to be from a Set which was awarded a prize at a London exhibition in 1891, and also to those in a photo of a Bridge made from the 1897 Set above. The main elements are Straight & Curved T-section Girders, joined by Flat Strips which push into the double wall web of the Girders to represent uprights & bracing. A George Wetzel sales list sent by Don Redmond has an illustration of a Keller Bridge Set called **DIAMOND BRIDGE BUILDER**, with 4 children ('one Chinese, one American Indian, one white, & one Ethiopian') looking at a Church made from blocks, and a Bridge with block piers and a span of the metal parts.]

• Tobias mentioned that the early **DUX** parts (c1938) look like the Julius Weiss parts from 1892.

2. From Don Redmond. • More on **NECOBO**. The parts mentioned in 24/714 were from a lot which are probably a large part of an early No.4 Set, plus some later parts, and some which may or may not be NECOBO. The manual with them covers Set 0-4 and its parts list goes up to only PN 99, so is earlier than either of the MCS lists, and fits between the 1st & 2nd manuals described in 4/57. The 11 & 25h Strips have large-radius ends but there are also 11h, and 3 & 5h, with half-round ends. There are 2 sets of 1" Pulleys: 3 have red painted steel discs and very fine (small, round) peening on the brass boss; the other 4 have aluminium discs and steel boss with very deep conical peening. The aluminium Pulleys had a set of fat white soft Rubber Rings of 5mm circular form, 35mm o.d. The red ones had black rubber Tyres with a tread of 5 circumferential raised lines & radial raised bars on one sidewall. There was also one Tyre about 7mm thick, 38mm o.d., with NECOBO in raised lettering on one side. The aluminium Pulleys are suspect since there were also red Loose Pulleys. All the Gears are Mod.1 and the 60t is the early unperforated type. The Flanged & Triangular Plates, and the Face Plate are red. The Flexible Plates are aluminium painted dark blue. Under a red & ivory daub of enamel the Windows (#126) seem to have been painted silver. Strips, A/Gs, & Railings are dark green, darker than the early MECCANO dark shade. The red is quite light, between Meccano's light & medium. The parts have a surprising range of thickness. 25h Strips are 1.38mm; 11h Strips 1.0mm; Railings .84mm; 5*4h Triangular Plates 1.18mm; Windows .81mm; but Trunnions are only .67mm. Two types of Collar were found, both tapped 5/32" BSW. One is 10mm Ø, 7mm thick, double-tapped, and the other 8.5mm Ø, 6.5mm thick, & single-tapped. Two later parts are the Cone Pulley, #176, machined from brass with a concave rear (boss) face, and the Eccentric, #180, which has a brass arm/loop held between two red steel discs by a brass boss and a matching brass stub, both peened with a very deep, conical bottomed recess. [A small lot of later Strips, Girders, & Trunnions (up to PN 195C but none more than 9h long) are also the very dark green - the Girders are about .8mm thick, the Strips 1.05mm, and the Trunnions

.85mm.]

In a later letter Don pointed out that the Hook #90 hasn't been seen, and isn't illustrated in any parts list, but in the manual models is shown as the wire type right. Also it seems likely that the Faceplate #83 with the 2 rings of 8 holes (see 24/714) is an early part because the 6cm Disc, #82 (a Faceplate without a boss), appears thus in several of the manual models. Later, as shown in 4/59, both had the pattern with radial slots.



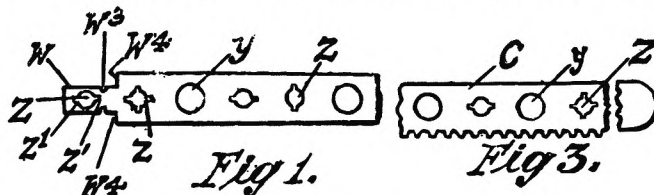
• On **STEEL ENGINEERING** (see 23/666), the wings of the formed Collar, X37, are near circular in shape, as opposed to the ERECTOR rectangle.

• In response to a question to Don about **WISDOM** (to include also CONSTRUCT-O-STEEL & CONSTRUCTION MODELS), he wrote that there are two patterns of slotted holes in Trunnions & 5*11h Flanged Plates. Most have rounded ends but some have large-radius 'BRAL' ends. The length o/a is 6.4mm for both. All the slots in known examples of the other sizes of Flanged Plates have rounded ends. Note that the Flat Trunnion is not made from the same blank as the Trunnion, and has no slotted holes. On colours, the 5*11h Flanged Plate is known in light, medium, & dark* blue, and medium, & dark* red; the Trunnion in medium, & dark* blue, and in two shades of dark red*. The asterisks denote a lacquered finish, with a metallic look.

3. From Tim Edwards. On Chinese **MECHANIX** (see 24/710), there is also a 001 Set with 68 parts, price £3.50. [A 002 Set with 108 parts has also now been seen.]

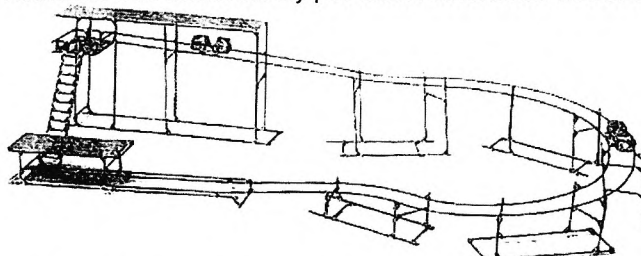
4. Josep Bernal wrote that **BRAL** is no longer being made. [The BRAL web site, www.bralsystem.com has just a home page with 'stiamo ritornando' on it - we will return? Let's hope so.]

5. From Jack Little. • On the **Day patent** (22/637), Jack sent a copy of the original Australian patent (No.6000/22, accepted 27th Nov. 1922), with added changes to the figures arising from an Application for Amendment on 5th August, 1924. The text is similar to the UK version but not identical and the original figures differ too in detail. Fig.1 below shows



a different pattern of holes for example, and the Strip in Fig.3 has a serrated edge & rounded end. The purpose of these features isn't explained. The changes made to the figures in 1924 took the form of overwriting some with a large cross and writing Cancelled & 18/11/24 alongside. 3 of the 4 cancellations are of the parts shown in Figs.8, 9, & the righthand end of Fig.4, in OSN 22. The parts in question are made in the same way as the EZY-BILT Clips (22/636) but whether that had a bearing on the matter isn't known. The fourth change was to delete the slitted end of the Fig.2 Strip, though similar ends with a slit with centre hole remain unaltered.

• Also from Jack, the cutting below from the Nov. 1947 *Sportsgoods, Toy & Canvas "Retailer"*, which confirms that CLIRO (described elsewhere in this Issue) was sold in Australia. It is: unfortunately p31 hasn't been found and so it



A Scenic Railway made from the Schofield Model Building Set. Further details of this set appear on Page 31.

isn't certain what the system was called in Australia.

6. On **THE CONSTRUCTIONEER** (see 9/206), Orion DreamDancer wrote that the B-135 single-bend Bases in his oldest #8 set have no groove and are one hole longer than those with the groove that were in a newer #8. Also, it seems that all the Bases get thinner with time, through the 'old' & 'new' #8's to the thinnest in a #12. Of these three sets only the old #8 has the older style Eccentric with just the 6 holes. On N&B, the old #8 has Phillips Screws & hex Nuts, the newer #8 has slotted Screws with both square & hex Nuts, and the #12 has slotted Screws & hex Nuts. All the Screws have rounded heads and the quantities of N&B found seem to indicate that they were probably originally in the sets concerned. The larger Tire in the newer #8 set has grooves around the outer edge; all the rest of the Tires, large & small, are just rings. All the sets came with manuals: the old #8 is a © 1947; the other two are © 1948. The latter have the part count by the models, and show A/G's & the newer type of Motor/gearbox with the enclosed gears.

7. From Werner Sticht. Ansgar Henze has had the good fortune to find a **WALTHER'S INGENIEUR** set, and kindly passed some details for OSN. The Set is in 'unplayed with' condition, though without a manual, and has no set number anywhere on it. The box is wooden, about 30cm square, with a sliding lid, and quite deep to accommodate a small model, which was included, ready-made, from some of the parts in the Set. The box has 2 wooden partitions and most of the parts are strung to 3 pale green cards. The label, 26*17cm, on the top of the lid has the name with 5 models underneath. All these are in the manual that was with the No.12 set described in 19/550 (but possibly it was from a No.10 outfit). Another label on the underside of the lid has the set contents with illustrations of most of the parts.

The contents of the Set do not relate well to those of Sets 11 (see 7/164) & 12, in that though there are fewer different parts, there are more of some types, particularly the metal ones. For example the Set has 40 A/Gs against 22 in the No.11, and 11 Perf. Plates against 6. Among the parts are 2 Hanger Strips & a Wire Crank Handle, parts which are needed for models in the manual with the No.12 set (they can be seen in OSN 19), but which were not listed in the Set Contents of the No.12. They are included and illustrated in this set's Contents, and for this reason it may be later than the 11 & 12.

As well as there being fewer types of wooden parts,

The OSN Web Site: www.OSNL.freeserve.co.uk
Colour pictures of some of the illustrations in OSN 2-11 & 17-26 are now included, and also lists of contents for Nos.1-26.

several have different dimensions. The main differences are that the Base is 75mm square instead of 120*80mm, and one Plate is 35*25mm instead of 35mm square. For the metal parts the most noticeable thing is that there are no Strips or A/Gs longer than 7 holes. Also 6 Screwed Rods with 25 Nuts are included against only one, with 5 Nuts, in Nos. 11 & 12.

A few of the wooden parts are unpainted; the others are variously red, dark blue, dark green, brown, or black. The metal parts are bright nickel plated on one side and black on the other.

Werner added that the metal parts in the No.12 of OSN 19 have the same nickel/black finish, and that the House Wall Panels in that set have a red brick finish, with a cutout in one as a doorway and a white oblong on another as a window, with the window frame outlined in black.

8. More from Don Redmond. • On the absence of the name **Hudson** from the 'Hudson' manuals (25/737), perhaps there is a misunderstanding about the word 'Hudson'. It is the designation of the 4-6-4 locomotive type, which is known in the UK as the Baltic. The 'Hudson' name was probably used by the New York Central Railroad because its main line from New York ran along the Hudson River to Albany (and thence westward).

• And in reply to a query about **KONSTRUKTOR VOENNAYA TEKNIKA** (25/718), the maker's name is actually ЧЭАЗ which transliterates to CHEAZ. [The address in Cheboksary is: I. Yakovleva Avenue, 5.]

Baukästen This excellent book (see 21/601) has been remaindered and at the time of writing (end of February) the hardback edition was available from www.zweitausendeins.de at DM 24 + postage (DM 16 for UK, and the same if 2 copies are ordered at the same time). Thanks to Thomas Morzinck for this information. The site is German of course but has an English language option. Payment can be made by credit card. The copy I bought didn't have the errata slip in it that was in the original, but it only has 10 items on it and I can copy it for anyone who needs it.

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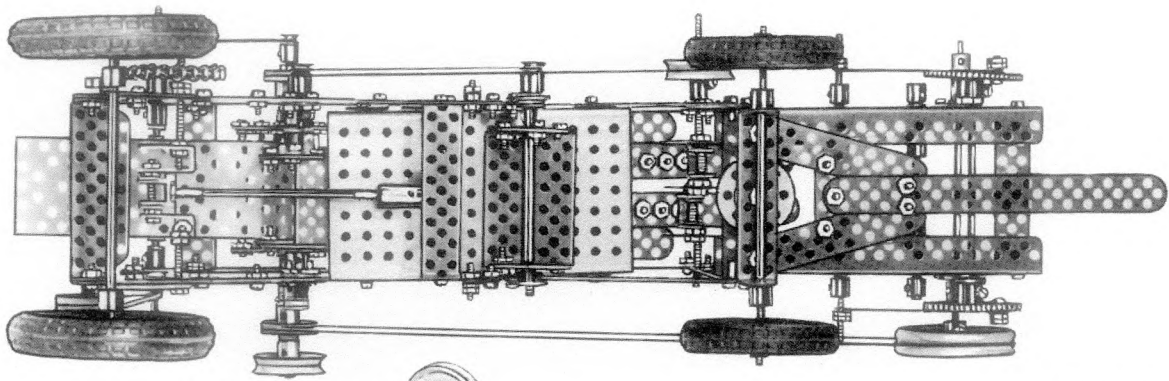
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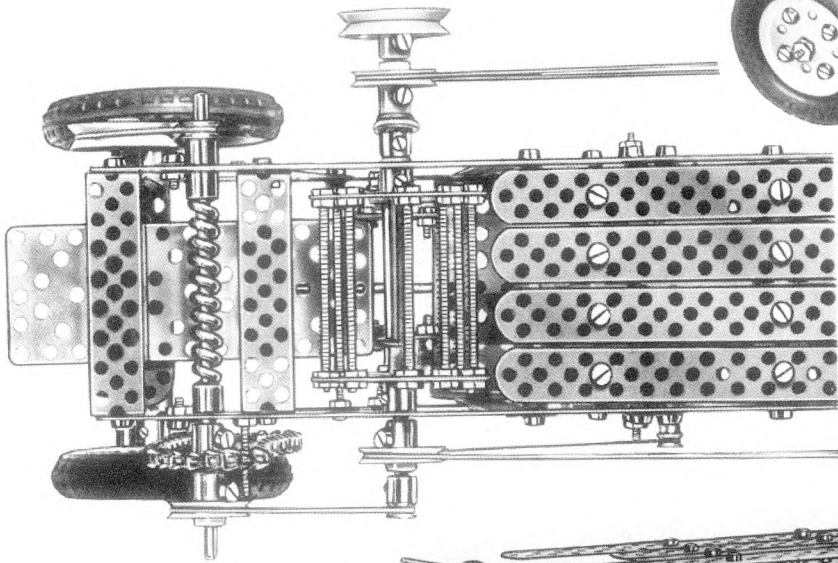
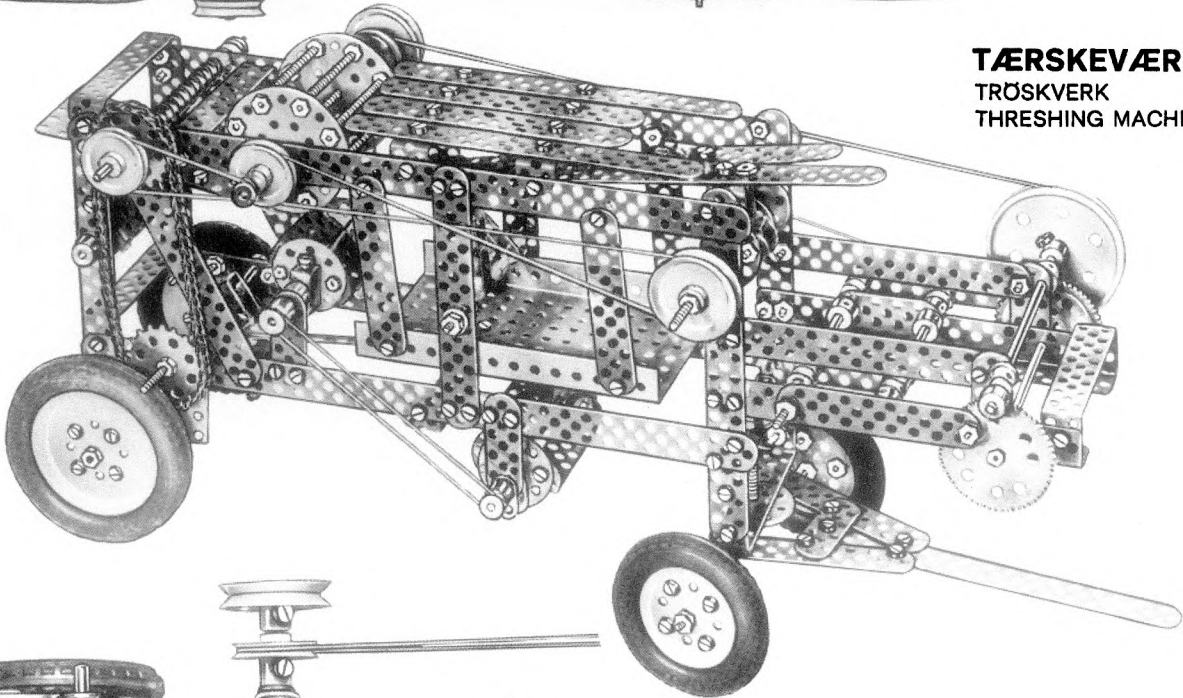
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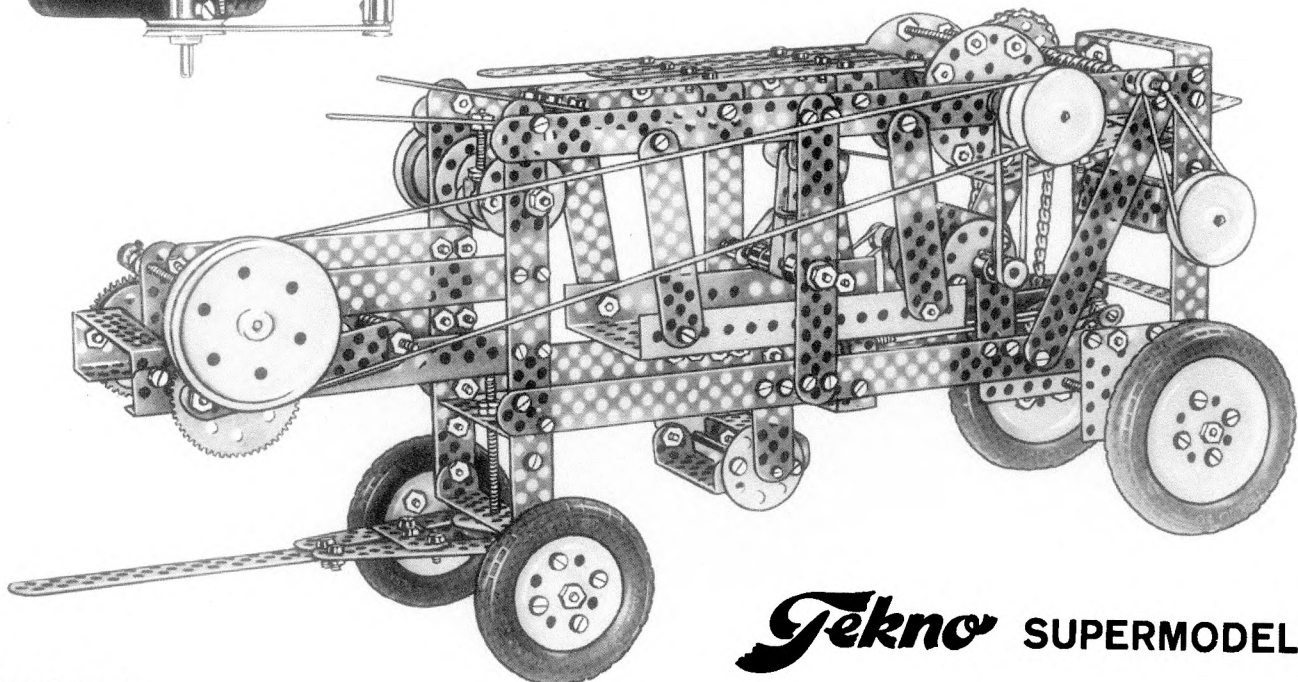
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