17

OTHER SYSTEMS NEWSLETTER

OSN 17 OCTOBER 1997

Editor Tony Knowles
7 Potters Way
Laverstock
Salisbury
SP1 1PY
England

EDITORIAL Tony Matthewman has very kindly sent me 35 examples of a TRIX Leaflet, and has asked me to pass one on to any reader who is interested. It is a sheet 275* 150mm, folded into three and the address on it is 310 Summer Lane, Birmingham. It lists the contents of the 23 EXTRA-PAKS of parts that were then available, and in addition there's a photo of all the TRIX parts, building instructions for a Windmill Pump, an ad for the Permag 2051 Electric Motor, and a list of 4 sets of blue-prints, for models that needed EXTRA-PAK parts to supplement those from the standard Sets. So first come first served, though I'll reserve an appropriate number for overseas readers. Postage will be payable unless you are content to wait and receive the Leaflet with your next Newsletter.

Another large batch of Extra MCS Sheets this time, many of them for the small German systems from OSN 15. From the next Issue the number should return to normal.

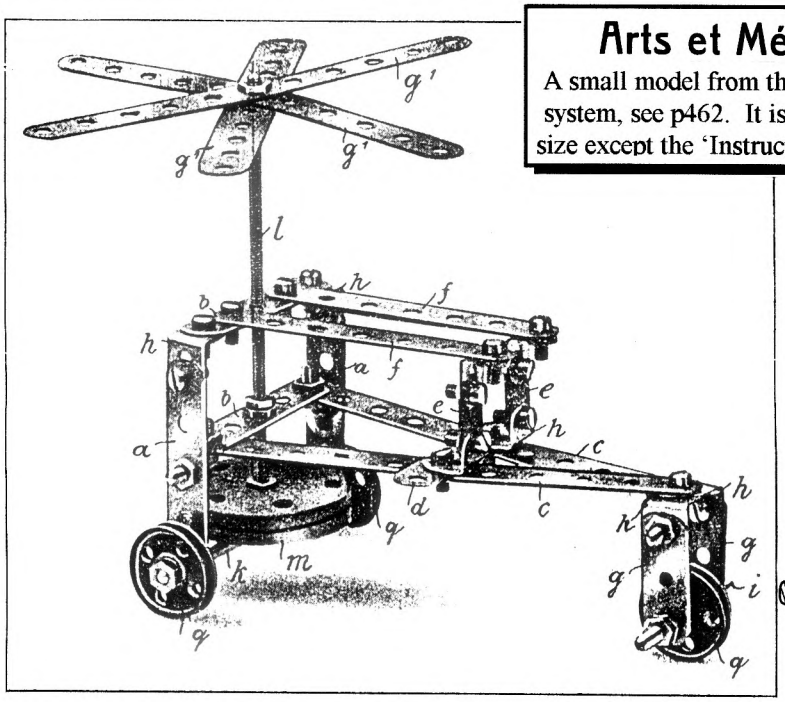
One or two readers have asked if I intend to revise the MCS Index to include all the Extra MCS Sheets. The answer is that although such an update would be useful, I doubt if I will be able to find the time to do it myself. If anyone else produces one and wishes to make it available to others, I would be glad to give details in OSN. As a purely alphabetical list of OS I use my Database, but that's not the whole story of course.

No. 35. Roue à vent horizontale sur roues.

(Construite avec les matériaux de la boîte No. 51 ou des boîtes No. 50 et 50a).

Arts et Métiers

A small model from this pre-WW1 system, see p462. It is the original size except the 'Instruction' at 70%.



Instruction pour la construction de la Roue à vent horizontale sur roues.

L'image et les dessins auxiliaeres expliquant suffisamment le montage, une description pour l'assemblage de ce modèle nous parait superflu.

La fig. 1 sert de norme pour le montage de la partie postérieure A remarquer, que l'arbre vertical l ne doit pas reposer sur l'essieu k; la pression que l'arbre vertical l, exerce vers le bas, doit être transmis au rouleau de friction n, moyennant le plateau de friction n, qui fait tourner le dit rouleau et par conséquent, les ailes, lorsque la machine entière est en marche. La fig 2 montre, comment on construit la fourche; dans laquelle tourne la roue de devant q, moyennant 2 cornières de jonction et les paliers g.

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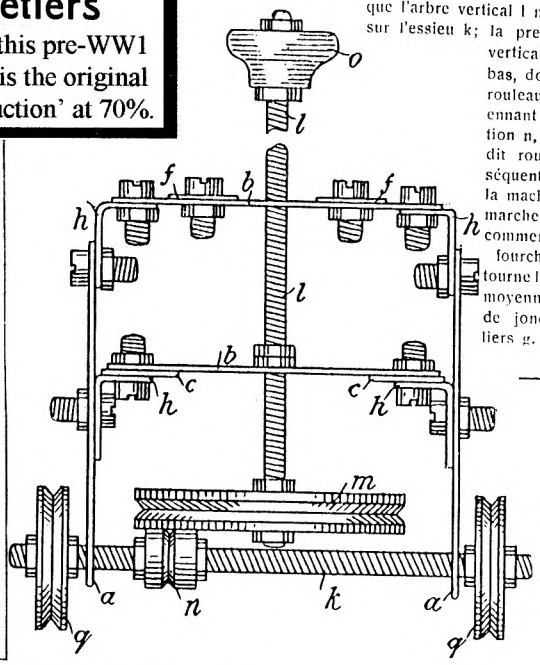


fig 1

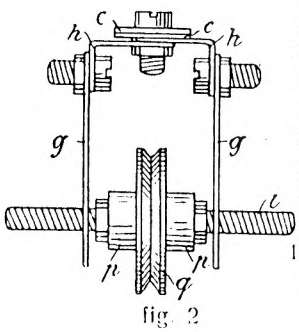


fig. 2

Spécification des pièces.

2	montants sur roue a	fer plat	5 trous
2	traverses b	„ „	5 „
2	supports c	„ „	11 „
1	support transversal d	„ „	5 „
2	montants de milieu e	„ „	2 „
2	tirants f	„ „	7 „
2	paliers g	„ „	3 „
3	ailes g'	„ „	11 „
10	cornières de jonction h		
1	essieu de devand avec 2 écrous i	tige filetée 50 mm	
1	essieu arrière avec 6 écrous k	tige filetée 90 mm	
1	arbre vertical avec 6 écrous l	„ „ 120 „	
1	plateau de friction m		
1	rouleau de friction n		
1	disque de serrage o		
2	bagues d'arrêt p		
3	roues q		
21	vis et écrous		

ARTS ET MÉTIERS Série 1 As explained in the review of STABIL in 13/351, ARTS ET MÉTIERS was the name used by Walthers in France for their constructional sets prior to WW1; and the Série 1 outfits were equivalent to STABIL, with the same Set Nos. More details of this period are now available from photocopies of two A&M manuals that Josep Bernal has kindly sent, and some further information from Werner Sticht.

The design on the cover of the first (above) is similar to STABIL manuals of the period except that usually the outfits covered are shown at the top. In this one the only indication is the Set No. (49 to 53) given after each of the models. There's no indication of date or any references, nor mention of the manufacturer. Neither is there a Parts List or Set Contents: outfits at that time usually had a label inside the lid showing the parts in the Set, and their quantity.

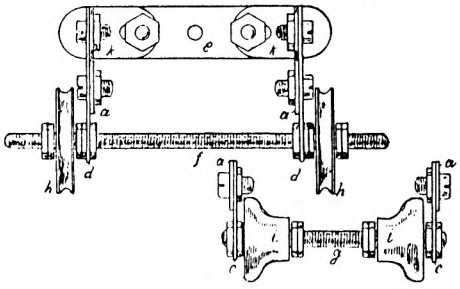
The presentation of the models is as shown in MCS with a good halftone of each, engineering drawings of details as necessary, a list of parts with many called by the appropriate engineering term as well as by the official A&M name, and text to explain the construction.

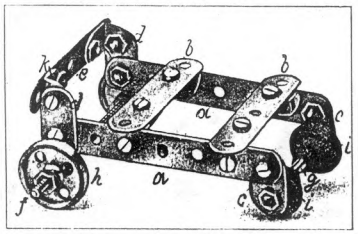
The whole Manual is as originally bound but there is a discontinuity in the page numbering. First there are pp1-44 with Models 1-47 for Sets 49-52, but the numbers of 44, 46 & 47 are on little labels stuck over the original ones. Then come pp37-50, with Models 48-54 for Set 53, all on labels changing the numbers. But someone forgot to stick a label over the original '38' on the last of 3 pages for Model 54, so the last 7 models may have been 32-38 originally.

Perhaps the earlier models had been revised and the page numbers of the 53 models got forgotten, although, as will be explained, they may be later than the smaller ones. There's no obvious reason for the labels over the Model Nos. of the last three No.52 models.

The Crane shown in MCS is one of the Set 52 models in Josep's Manual, though there's no indication of overlabelling in the MCS illustration.

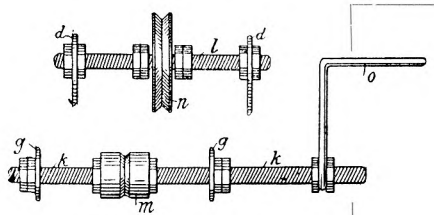
Sets 49 & 50 didn't include any parts to act as a base, and nor were there any DAS, so the models, quite small of course, are simply made from Strips joined by Angle Brackets, as in Nos.7 & 17 below. Notice the cross sections of the Grooved Cylinder 8, and the Cheek Piece 9, which show their early form.





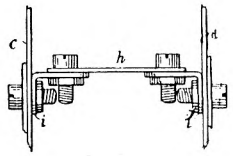
No. 7. Diable.

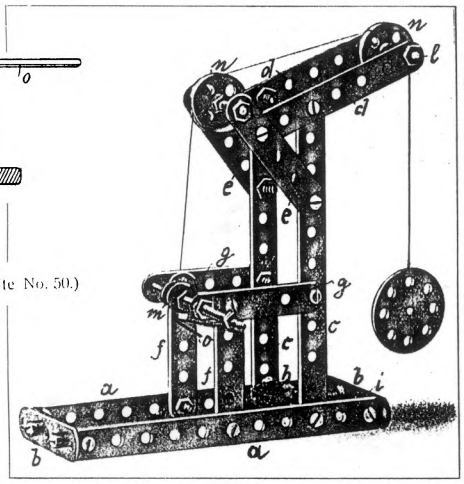
Construit avec les pièces de la boîte No. 49.

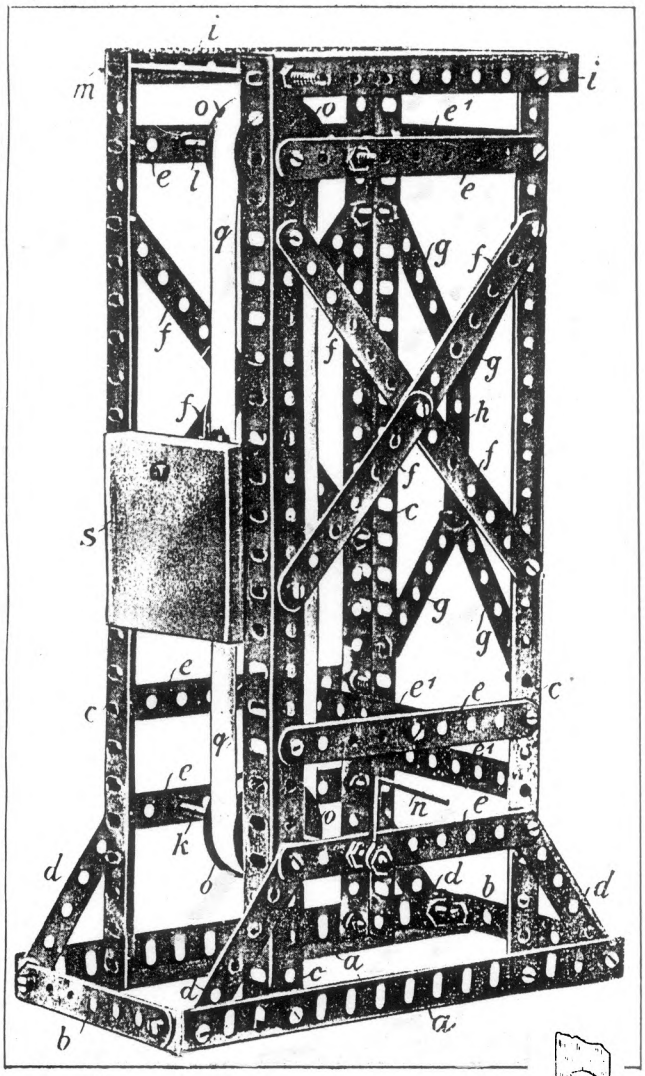


No. 17. Grue fixe.

(Construite avec les matériaux de la boîte No. 50.)

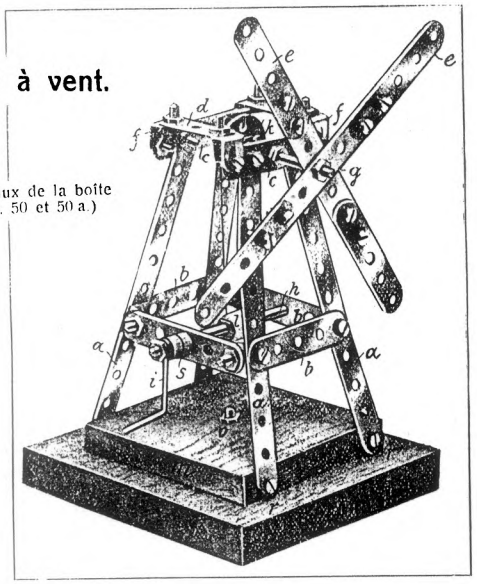






No. 31. Moulin à vent.

(Construit avec les matériaux de la boîte No. 51 ou les boîtes No. 50 et 50 a.)



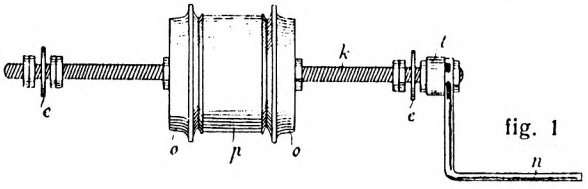


fig. 1

fig. 2

No. 48. Marteau-pilon. (Construit à l'aide de la boîte No. 53 ou des boîtes 52 et 52 a).

Set 51 contained some of the wooden Base Parts (17-21, see 13/353) and they are used in several models. Sometimes other parts are clamped on as shown in 13/353 but in other cases Woodscrews are used in various positions, as in the Windmill on the facing page. There's no indication of predrilled holes for them. Other parts in the Set were a Fan, a Saw Blade and a Wooden Pulley but they are only used in one or two models. The Pulley, No.15, is shown in its then standard form with 6 holes in its face, and can be seen in the model on the front cover of this Issue.

The main extra parts in the No.52 were Flanged & Grooved Wheels, Windmill Sails, a pair of Bevels, and a Pinion to use as a ratchet wheel with the Click No.27. The Wooden Bases are again used as necessary.

In the 53 models however no wooden or other Base Parts are shown, and A/Gs with cross Strips joined by Angle Brackets are generally used. Were these models designed before the Wooden Bases were introduced? Or did they come after the Wooden bases were dropped but before Flanged Plates were introduced? Or was it simply that this Set contained A/Gs and they were more practicable for the larger No.53 models? Other parts seen in them are the Wooden Cylinders 31 & 31b, the Dredger Shovel 30, the Conveyor Belt 33, and Contrate 32. Also shown is the Tup Block 31 in Model 48 (opposite), an early wooden part, later discontinued. It was grooved to slide between the A/Gs and was raised by Angle Brackets that seem to be sewn to Tape that is much narrower than the Conveyor Belt - it may have been PN 34 at the time.

SUMMARY OF MANUAL •Name: Arts et Métiers. •Details of maker, Dates, Ref Nos: none. •Page size: 244*164mm deep. •No. of pages: 58 + covers. •Language: French. •Printing: halftones of models with line drawings of details. •No Parts List or Set Contents. •Sets covered: 49,50,51,52,53. •No. of models for each set: 16,11,12,8,7. •Name, Model No., Page No. of first & last model of each set: 49: Echelle,1,3; Mât pour drapeau,16,10. 50: Grue fixe,17,11; Wagon de chemin de fer à ranchers,27,21. 51: Palan,28,21; Roue à vent horizontale,39,32. 52: Chariot basculant,40,33; Chariot de montage,53, 46-47. 53: Marteau-pilon,48,37; Wagon de chemin de fer avec grue pivotante, 54,48-50. •Other notes: details from photocopy; pages are numbered 1-44, then 37-50; Model Nos.44,46-54 are on labels stuck over the existing numbers, but 'No.38' on p50 hasn't been altered.

Nouvelles illustrations de modèles

comme supplément du carnet

„Arts et Métiers".

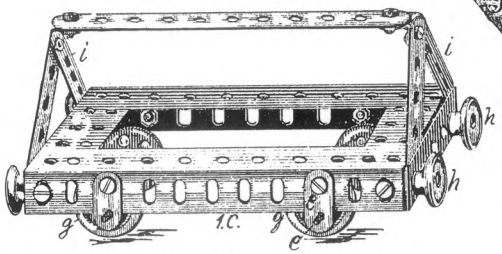
The second manual is a 16 page supplement with the unusual cover design shown opposite. The presentation of the models is the same except that no engineering sketches are included, and only a line drawing is given for the last 5 models, all Railway Wagons. The models are for Sets 49 & 50, but not the same Sets 49 & 50 as before. The 34 No.49 models have a similar general look but there were now 4 Pulleys instead of 2, and an 8h Wheel Disc, which allow models more akin to the earlier No.50's. [The Wheel Disc is shown as the load in Crane No.17 opposite, but isn't shown in any other models in that Manual.]

But the biggest change is in the No.50 models where all but 2 of the 14 include a 5*11h Flanged Plate, no doubt a recent introduction at that time, and most also use its 'centre' 7*3h Flat Plate. 4 of them are Trucks from the Railway Wagon Sets (see 13/348) but there's a note about the No.50 Set only contained 2 of the 4 Cheek Pieces that were used as buffers.

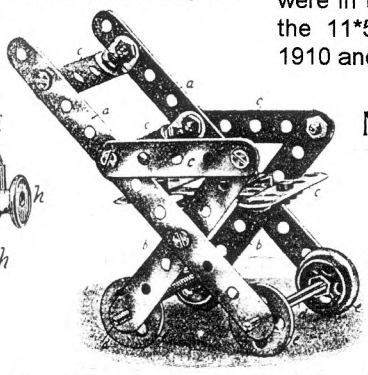
A few of the models are shown below. The Wheels on Wagons 244-248 look like small Flanged Wheels rather than Pulleys, and so do those on the on the Push Chair below. Two other points - the numbering of the models starts at No.201, and the linking set 49a is mentioned whereas in the first manual only 50a to 52a are referred to.

SUMMARY OF MANUAL •Name: "Arts et Métiers" Nouvelle illustrations de modèles. •Maker, Dates, Ref Nos: none. •Page size: 240*164mm deep. •No. of pages: 16 + covers. •Language: French. •Printing: as before, except line drgs of last 5 models. •No Parts List or Set Contents. •Sets covered: 49,50. •No. of models for each set: 34,14. •Name, Model No., Page No. of first & last model of each set: 49: Martellerie,201,2; Tricycle à moteur,234,11. 50: Echelle sur roues avec plate forme,235,12; one of Quatre wagons de chemin de fer,248,16. •Other notes: also from a photocopy.

ENDNOTE On dates, an A&M manual for Sets 49-52 is known which contains the same models for those sets as Josep's 49-53, and is believed to date from about 1910. 1914 STABIL sets certainly contained the extra parts that were in the No.49 & 50 models in the Supplement, and so the 11*5h Flanged Plate was probably introduced after 1910 and before 1914.



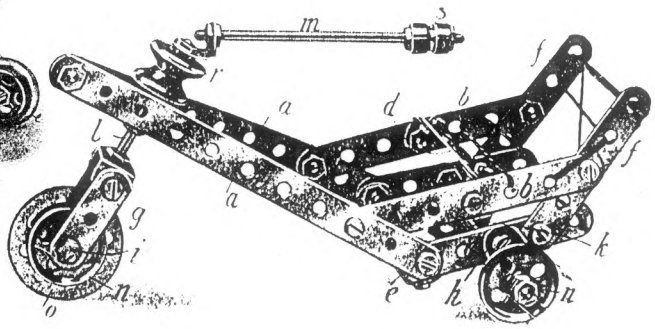
No. 246.



No. 207. Fauteuil roulant

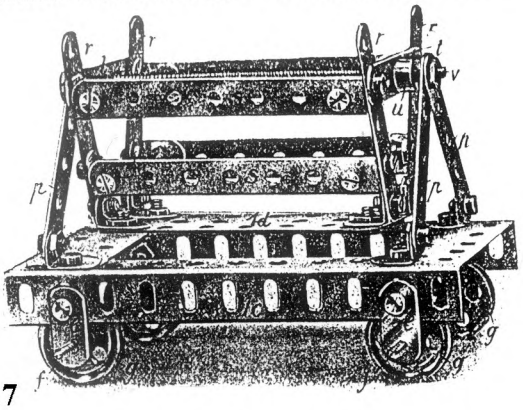
à construire à l'aide de la boîte No 49.

No. 234. Tricycle à moteur à construire à l'aide de la boîte No. 49.

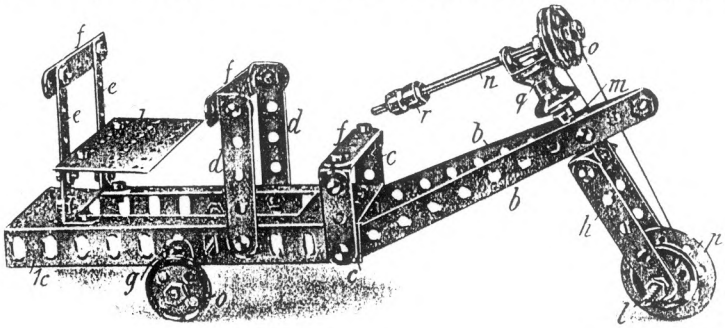


No. 238. Wagon de chemin de fer (basculant)

à construire à l'aide de la boîte No 50 ou des boîtes No 49 et 49a



No. 237. Tricycle automobile à construire avec les pièces de la boîte No. 50 ou des boîtes No. 49 et 49a



VOGUE, PALIKIT, and PIONEER VOGUE and PALIKIT (VOG, PAL for short) parts and sets are not really very exciting, but they turn up fairly regularly here in the UK, particularly VOG, which is also I understand well known in Canada. Both systems are in MCS and the object in writing this is to describe the parts, and the differences between them; to try to sketch in some of the history of the two systems; and to relate PIONEER (also in MCS) to them. Some notes on METALCRAFT, which is very similar to PIONEER, appeared in 15/421.

HISTORY VOG probably appeared in the late 1940s and at first there was only one set. No example of it is known but in early manuals it is referred to as the 'standard' set, and it was probably identical to the later No.2. The final range of parts is shown in these manuals except the Flanged & Flexible Plates, and the rubber-tyred Wheels, 26R. None of these parts were ever included in the No.2.

The first definite reference is an ad in the May 1950 G&T, from Vogue Playthings Ltd., Egerton Road, Melton Mowbray, Leicestershire, which says that sets are 'Now available in 3 sizes'. There are Illustrations of the sets and all the main parts, including the Wheel 26R, and all the Plates, can be seen. The sets' layouts are identical to known outfits. At this time Strips and A/Gs were a rich dark green and Plates a medium red.

In the manuals with these 3 sets they are usually referred to as Nos.1, 2, & 3, with sometimes the names Junior, Intermediate & Senior added. However the 2 examples of the No.2 I've seen both have (Standard) after the number on the box lid.

The next, and last, ad in G&T was from the Vogue Manufacturing Co. Ltd., in January 1952. Sets were mentioned but without any details, and the distributors were Vogue Playthings Ltd. & Thermold Ltd., both of the Egerton Road address. All VOGUE manuals have 'Made in England by Vogue Playthings Ltd., Egerton Road, etc, on the back cover.

At some stage a larger No.5 (Major) set was introduced. The packaging of the one example known is similar to the other sets and the green paint used is the same shade, but the red is lighter, identical in fact to that of the red metal parts in PAL sets.

It is supposed that the VOG range was dropped and replaced by the PAL sets. PAL was made by Cascelloid of Abbey Lane, Leicester and according to *British Tin Toys*, Vogue Playthings was a subsidiary of Caselloid (which was founded by A.E.Pallett). The main differences are: the change from chamfered corners on Strips, A/Gs & Brackets, to rounded ones; the change to a much lighter shade of (pea) green paint (together with the lighter red); the use of a light red plastic for some parts; and the packaging of later PAL sets, with the parts in moulded plastic trays instead of being strung to cards;

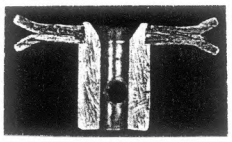
The 4 PAL sets bore the same numbers, 1,2,3,5, and the same names except that the No.5 was now the Super. There were some changes to the contents of Nos.1-3, fairly minor except that a Flanged Plate was added to the No.2, and to the No.1, but in that case it replaced 2 each of 11h A/Gs and 5*5h Plates. New models were introduced for the No.1 but those for the other sets were just redrawn to show the minor differences in the PAL parts. One new No.5 model was added to the 4 VOG ones.

The date PAL was introduced isn't known but perhaps it was around the time that MECCANO's colours were lightened in the mid 1950s. *Tin Toys* says that VOG was being made in 1955. MCS has PAL continuing on into the 1960s, and the Meccanoman's Guide says production ceased in 1964. (It also gives Cascelloid's address as Owen Street, Coalville, Leicestershire.)

The Actual PARTS The main differences between VOG and PAL parts have already been mentioned - the chamfered corners on the Strips, Brackets, & A/Gs; and the paint colours. Other differences are noted in the summary of the parts below. These are the parts that are commonly found and some of them can be seen in the METALCRAFT Illustrated Parts in 14/393.

DATA (in mm) Strip (11-hole): •Hole pitch/dia, 12.7/3.9 •width, 12.7; •thickness, .95; •ends - see above. Boss: (brass) •o/d, 9.6; •i/d, 3.92; •double tapped. Thread: 4BA. Axle Dia: 3.66. DP (Mod): NA. Nut: hex or sq, 7.8 A/F; Bolt: roundhead 6.4 dia; both brass plated steel.

• 25,11,9,7, & 5-hole Strips. 1*3*1 and 1*2*1 DAS. 17,11,7, & 5-hole A/Gs with round holes in both flanges. The Angle Bracket has elongated holes, 6½mm o/a, in both arms. All these parts are green. In VOG all have corners chamfered at 45°; the PAL rounded corners are generally near fully radiused, but larger radii are found on 25h Strips, some Angle Brackets, and some A/Gs.



• Green 4-hole Bush Wheels, and for VOG, green 1" Pulleys - steel in both cases with brass Bosses. The ends of all bosses are spun over leaving that end of the bore tapered, as in the cross section shown. Three lengths of boss are found. The protruding part on many dark green Pulleys is about 11mm long, but others and the PAL Bush Wheel, are shorter at about 8mm. VOG Bush Wheels are in between at 9-10mm. The PAL 1" Pulley is red plastic and is a push fit on the Axles. The boss tapers outwards (8½ to 7½mm) and is slit across near the face so that Axles are gripped only by its outer portion.

• 5*10h Flanged Plates, flanged on the longer sides, and 8-hole long Flanged Sector Plates with 3 rows of holes and straight, parallel ends. Both these parts have elongated holes (6½mm) in their flanges. Other rigid Plates are a 5*5h Perforated Plate, a 5*3h Semi-circular Plate, and a triangular Flat Trunnion. The 3 sizes of Flexible Plate are, 5*5h, 10*5h, and 10*3h. All their holes are round and the only 'centre' holes are 2 in the 10*3h size. All these parts have near fully rounded corners and all are red.

The PAL Semi-circular Plate with the 45° radial slots (right), and the Flat Trunnion, are red moulded plastic.

• Red painted balloon tinplate 1¾" Ø Road Wheels are found in the smaller sets. VOG ones are often flat on one side with the tyre shape impressed only into the opposite face. Others have the same 'tyre' shape on both sides, but sometimes with a raised flat area of about ⅝" Ø around the centre hole on one side. The larger outfits contain rubber-tyred Wheels. The VOG type consists of two 1" Ø formed discs, similar to but not the same as those used for the Pulley, with a fat 1½" o.d. black rubber ring between. The discs are loose on a brass sleeve but the tyre holds them tight against a 3mm wide shoulder at one end and a spun end at the other, formed like the boss shown earlier. The PAL Wheel is the standard 1" red plastic Pulley with a black, treaded rubber Tyre on it: it has MADE IN ENGLAND moulded into one side and is about 40mm diameter.

• The Crank Handle, the Axles (2,3,4,5¼" with square sheared ends), the Span'driver, and the Hook are black, sometimes painted and sometimes with a metallic look. VOG Hooks are some 42mm o/a but PAL only 24mm. All the Pulleys and Wheels, except the push-on 1" Pulley are a very loose fit on the Axles.

• VOG Collars are 5/16" Ø by 9½mm long, double tapped about 4mm from one end. PAL are similar but only 8mm long. Two types of Spring Clips are found, black ones like Meccano's #35 and bright wire ones. The VOG pattern wire type is as shown for METALCRAFT; the PAL one is similar but with longer ends bent parallel to one another (opposite). Ordinary and wire Clips are usually found in the same set. PAL Nuts are square, VOG are sometimes square but more often hexagonal - both are the commercial pressed sort, 5/16" A/F and about 2¼mm thick.

Other PARTS A number of other variations have been

found that appear to be VOG or PAL:

- A medium red 5*5h Plate with small (1/8") corner radii. Several Semi-circular Plates with an extra hole either side as described in 15/421. They correspond to the bottom of the slots in the PAL part.
- Several 2-round hole Angle Brackets, and 2 & 3h DAS, all with angled corners and a black metallic finish. A PAL looking Angle Bracket but with round holes.
- Several Axles and Crank Handles with a bright finish.
- Several nickel plated Bush Wheels. Several all brass 1" Pulleys, and other steel ones in nickel, red, or black metallic. All have the characteristic brass boss but with a slightly wider 'V' (4½-5mm) than the normal green ones (4-4½mm).

Not all the parts above are necessarily VOG or PAL, some may be from PIONEER or METALCRAFT. A possible red herring is BILT-E-ZE, another small UK system with parts, including Strips with angled corners, that looks distinctly similar on paper. But the holes at 4.1mm are larger, and the bosses are single tapped and have more normal peening. The parts are much less well made and finished, and the green paint is a medium shade, darker than PAL and lighter than VOG. It's also worth mentioning that VOG and PAL parts are quite often found with their holes opened out, no doubt to make them compatible with MECCANO.

As pure speculation, the nickel and all brass parts may date from the early days, and then the black steel parts may have appeared around 1951-52, at the time of the Korean war, due to material shortages in those years. Some of the known sets include finishes that don't entirely support that sequence of events, but in some cases there are doubts about whether all the parts in them are the originals. The only sets I'm absolutely sure of are a VOG No.5 and a PAL No.5. The VOG has green Pulleys (with long bosses), a green Bush Wheel, green double slotted Angle Brackets, square Nuts, and black painted Axles, Crank Handle, Hook & Span'drivers. The PAL has the parts in a formed plastic tray and they include a green Bush Wheel, green double slotted Angle Brackets, square Nuts, and metallic black Axles, Crank Handle, Hook & Span'drivers.

PARTS in the Manuals There are one or two points of interest in the parts illustrated in the manuals.

In the early VOG manuals the 5*5h Perf. Plate is shown with chamfered corners, and the Angle Bracket with 2 round holes. No Plates with angled corners are known.

All manuals except early VOG ones show colour illustrations of the parts on their back covers, but in fact the shades of red and green shown are not true, and those for PAL are nearer VOG, and vice-versa.

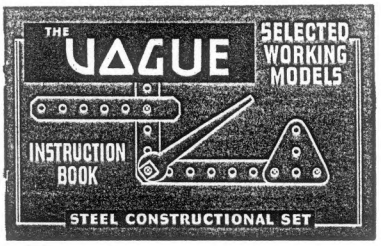
VOG manuals depict the Bush Wheel and 1" Pulley as brass coloured (actually yellow, like the N&B), and the one hole in the Angle Bracket that can be seen is round. I have numerous Brass Pulleys but have never seen a brass Bush Wheel. (No Brackets with 1 round and 1 elongated holes are known.)

The parts in PAL manuals are as the actual ones already described except that all the Strips, A/Gs and Brackets are shown with the Vogue-style corners. MCS/FB indicates that light green Strips with angled ends are the norm but I haven't come across any. I once thought I had but I believe now that they are BILT-E-ZE.

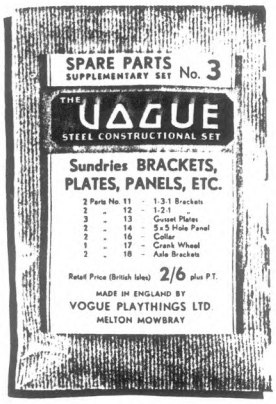
SETS There are photos of the VOG Nos.1,2 & 3 outfits in the manuals and the No.5 is similar except that there are 3 layers of parts. All are packed in red boxes, with large full colour labels on the lids showing the scene that's on the manual cover in MCS. The No.5 box measures 19*12*2". The parts are strung on bright yellow cards with red cord. Sets 1-3 in the manual correspond closely to actual sets except that the No.2 has 2 boxes for N&B and small parts, and they are glued over the vacant square spaces on the upper card. A complete No.3 hasn't been seen but it's possible that the squares there may be cut out to show the parts underneath. That is the case for the top card of the No.5, and it has a smaller centre cutout too.

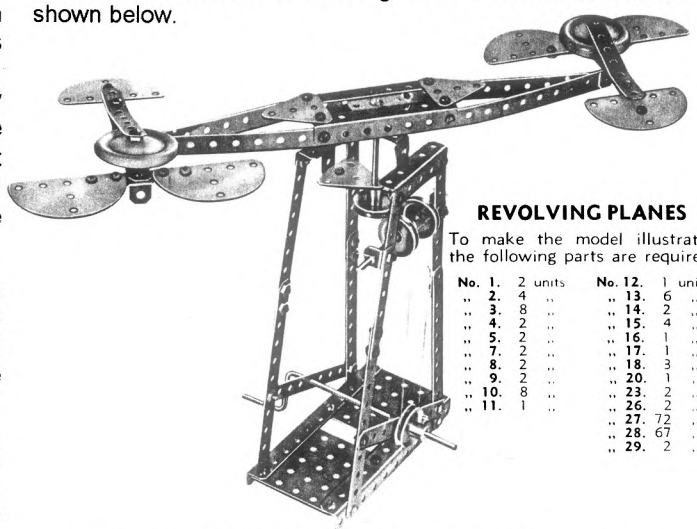
PAL sets are in duller red boxes, again with a label similar to the manual cover. The parts in early PAL sets were strung to yellow cards, often with layouts similar or identical to VOG. Then moulded plastic trays were used with coloured-headed drawing pins to hold the parts in place. They were much more closely packed than the strung ones and the boxes were thinner with only one tray even in the No.5. The No.1 box measures about 13*8" and the No.5, 19*12" - the same size as the VOG No.5 but only 1" deep.

MANUALS Two early VOG manuals are known. One, I'll call it the 'blue' manual, has only 8 unnumbered pages plus covers, and is a little smaller than later ones. Its front cover (below) is blue and black, and the 7 'Selected Working Models' in it are all No.2 models later on - first is Tipper Truck and last, Wind Driven Water Pump. The parts are shown on the inside covers as white line drawings on a blue ground. All are there except the Flanged and Flexible Plates, and the Wheel 26R. The back cover has a panel with the maker's name and address on it.



The second, which I'll call the 'red' manual, has 20 standard size pages, plus covers, and unlike later manuals, the text at the top and bottom of each page is printed in red. There's the normal full colour front cover but instead of the parts in colour, the back has a panel similar to the one on the blue manual. The parts are on p20 and the IBC, with again the 'blue' presentation. As in the 'blue' one, no Set Contents are given, but the contents of the Supplementary Spare Parts Sets 1-5 are given on p19 (see p6b of MCS/FB) - these aren't in the 'blue' manual but are on a separate Leaflet that was with it. A photo of Supplementary pack No.3 (opposite) is on p18 of the 'red' manual, and doesn't appear in the 'blue' or later manuals. All 27 models shown are for the Standard Set but the first 12 are smaller ones and they are not the same as the No.1 models in the later manuals. The larger models include all the later No.2 models and 2 of the 4 extra are above average for VOG models. One is shown below.





REVOLVING PLANES

To make the model illustrated the following parts are required:

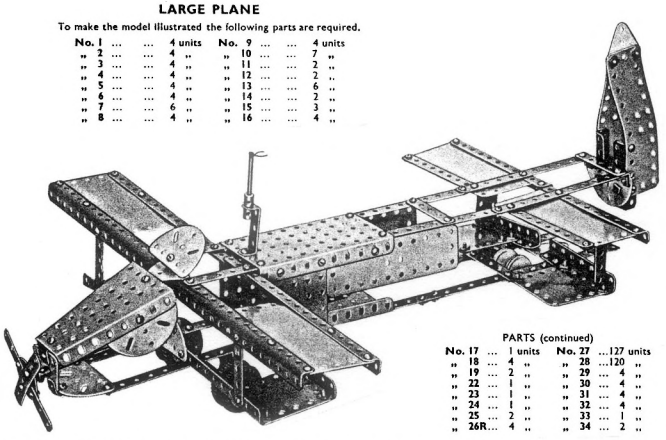
No. 1.	2	units	No. 12.	1	units
,, 2.	4	,,	,, 13.	6	,,
,, 3.	8	,,	,, 14.	2	,,
,, 4.	2	,,	,, 15.	4	,,
,, 5.	2	,,	,, 16.	1	,,
,, 7.	2	,,	,, 17.	1	,,
,, 8.	2	,,	,, 18.	3	,,
,, 9.	2	,,	,, 20.	1	,,
,, 10.	8	,,	,, 23.	2	,,
,, 11.	1	,,	,, 26.	2	,,
			,, 27.	72	,,
			,, 28.	67	,,
			,, 29.	2	,,

It isn't certain that the 'red' manual came after the 'blue', it's possible that the latter was a cut down, utility version

that had to be produced for some reason. But the 'blue' probably came first because, unlike the 'red', it has no Parts Required List for any of the models, although there is ample room beside each.

Details of later manuals are given at the end. All later VOG manuals have the same format and layout and the 2 different versions I've seen are for the No.2 set, with 1-2 set models, and for the No.3, with 1-3 models. With the No.5 Set was a No.3 manual with a 'No.5 Set' sticker on the cover, plus 4 separate 'Supplementary Pages' with the Set Contents and 4 models. [In passing, the lid of the No.5 box has the same No.5 Set sticker followed by '(MAJOR)' printed on the lid. So what does the sticker cover? Was the set originally to be called the No.4?]

All the PAL manuals have the same format and layout - the 'No.2 Set' one has Nos.1 & 2 models, and the 'No.3 & 5 Set' has 1-3 plus No.5 models. As in the VOG manuals there is just one good photo of each model. It has already been mentioned that only the No.1 models and one No.5 were new. With a few exceptions none of the models are anything more than adequate and many are rather ugly. The unusual No.5 Large Plane below is perhaps one of the worst, and hardly epitomised the jet age. There is no mention of the 5 Supplementary Sets of parts in any PAL manuals, or elsewhere.

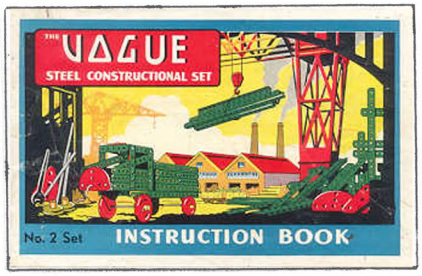


VOGUE & PALIKIT Abroad VOG in Canada has already been mentioned. Two Leaflets were found with the manuals in the No.5 VOG, one in Dutch and the other in French. They are both translations of the Intro that's on the inside front cover of VOG manuals, except that they say that replacement parts are available but with no mention of them being sold in sets. At the bottom of each is Vogue Playthings Ltd., Abbey Road, Leicester - the PAL address. Two Leaflets were also found in a PAL 'No.3 & 5 Set' manual. One in French is the same as the VOG one except the name of the firm is Cascelloid. Replacement parts are again said to be available, the only known mention of PAL separate parts. The other Leaflet in Dutch gives on one side a similar Intro (but with no mention of replacement parts), and the Contents of Sets 1-3 & 5; and on the reverse are the names of the models for those Sets.

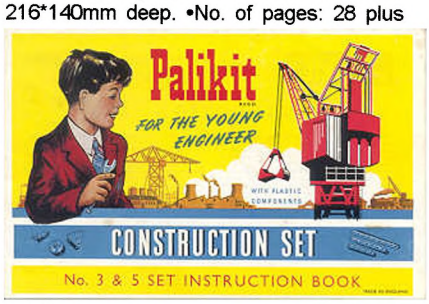
ENDWORD VOG/PAL parts were quite well made and finished (except for the black paint on Axles etc.), but the range of parts available and their design left something to be desired. For example, the lack of slotted holes in the Flexible Plates and, more particularly, in the A/Gs, make them difficult to use in any but the simplest of models. Another oddity is the rubber-tyred Wheels in the larger sets which are smaller than the balloon type in the smaller outfits, and look out of proportion on the models to which they're fitted.

But quite a lot of VOG/PAL must have been sold, so what was the attraction? It may have been the attractive layout of the parts in the generously sized boxes. Despite having more of it than I know what to do with, I still find sets in good order hard to resist. Or was it the price? There's 50/- (£2.50) pencilled onto the VOG No.5 box, and that seems about right against 12/6 & 27/6 for Sets 1 & 2 in a 1952 *Eagle* ad. The nearest MECCANO set would be a No.4 which had (a much better range of) 140 major parts against 110 in the VOG, but only 90 N&B against 168. The No.4 was 42/6 in 1956 and 48/- in 1960, and an extra 72 N&B would have cost 4/6. To sell at 50/- the VOG Set probably needed to be called a No.5 rather than a No.4.

SUMMARY OF MANUAL. •Name: VOGUE No.3 Set Instruction Book. •Details of maker: Vogue Playthings Ltd., Egerton Road, Melton Mowbray, Leicestershire. • No dates or Ref Nos. •Page size: 223* 141mm deep. •No. of pages: 24 plus covers. •Language: English. •Printing: photos of the models; colour front cover inc r/g models, turquoise frame; parts in colour on back cover. •Page No. of Illustrated Parts & highest PN: back cover, 34. •Page No. of Set Contents & highest PN: 1, 34. •Sets covered: 1 (Junior), 2 (Intermediate) ,3 (Senior). •No. of models for each set: 14,10,8. •Name, Page No. of first & last model of each set (no Model Nos.): 1: MONOPLANE,2; SWING BOAT,8. 2: SCOOTER,9; EXTENDING AND ADJUSTABLE FIRE ESCAPE, 16. 3: LONG WHEEL BASE LORRY WITH STEERING,17; WINDMILL,24. •Other notes: contents of Supplementary Spare Parts Sets 1-5 on IBC. The No.2 Set manual is identical except that pp16-24 are omitted. The No.3 manual was found in a No.5 Set with a No.5 Set sticker on the cover, together with a 4 page Leaflet headed SUPPLEMENTARY PAGES for VOGUE No.5 SET. It gave the No.5 Set Contents and 4 models from LARGE BREAKDOWN LORRY AND TRAILER to LARGE CRANE.



SUMMARY OF MANUAL. •Name: PALIKIT No.3 & 5 Set Instruction Book. •Details of maker: Caselloid, Abbey Lane, Leicester. •No dates or Ref Nos: •Page size: 216*140mm deep. •No. of pages: 28 plus covers. •Language: English. •Printing: photos of models; colour cover with red crane on yellow ground; parts in colour on back cover. •Page No. of Illustrated Parts & highest PN: back cover, 34. •Page No. of Set Contents & highest PN: 1,34. •Sets covered: 1 (Junior), 2 (Intermediate), 3 (Senior), 5 (Super). •No. of models for each set: 12,10,8,5. •Name, Page No. of first & last model of each set (no Model Nos.): 1: MAN ON SKIS,2; SACK BARROW,8. 2: SCOOTER,9; EXTENDING AND ADJUSTABLE FIRE ESCAPE,16. 3: LARGE CRANE,17; WINDMILL,24. 5: LARGE BREAKDOWN LORRY AND TRAILER, 25; OCEAN LINER,IBC. •Other notes: A No.2 Manual with similar front cover, has the same No.1 & 2 models on the same pages, with the No.5 OCEAN LINER on the IBC. Both Manuals have 'WITH PLASTIC COMPONENTS' on the front cover.



PIONEER Only one size of PIONEER set was made, and although there are obviously more, and different types of, parts in the one known set than there should be, all of them, with one exception, match known VOG parts exactly. This together with the strong similarities between the VOG and PIONEER manuals, and the style of their covers and box lid labels, make it 99.9% sure that PIONEER was made by Vogue/Cascelloid. It is said in *Tin Toys* that 'The [PIONEER] construction set is illustrated in a 1950s Lines Bros catalogue with the 'Frog' trademark of the International Model Aircraft company a subsidiary of Lines Bros.' So it seems likely that the set was specially produced for the one customer.

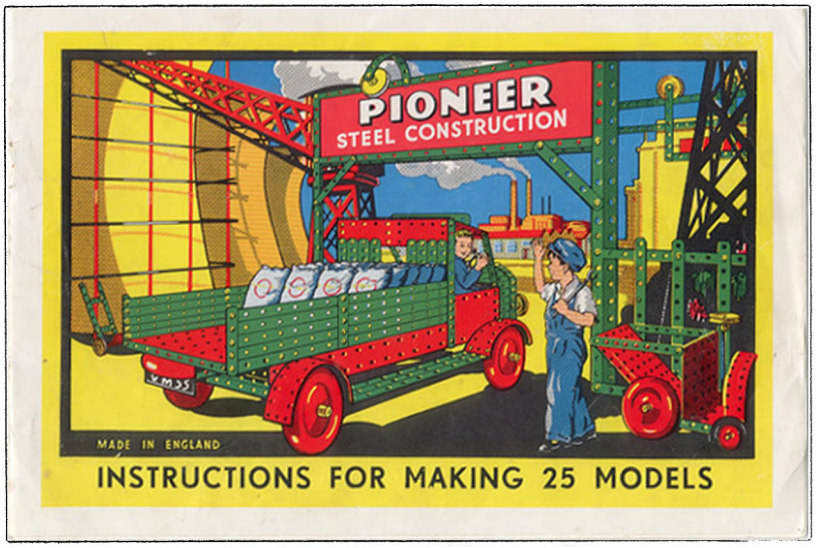
Most of the parts in the known Set are in the dark green, light red colours of the VOG No.5 already discussed and this points to it having appeared towards the end of the VOG era. Other evidence to support this comes from the Manual. The Illustrated Parts on the back of it are exactly

like those on VOG manuals but the Nut is the (square) PAL shape, and Angle Bracket has 2 slotted holes. None of the models are in VOG manuals but 4 appear as PAL No.1 models.

The contents of the Set isn't given in the Manual but judging by the parts needed for the models, the Set lies between PAL Sets Nos.1 and 2. (PAL rather than VOG because a Flanged Plate is included.) The box is red and is large (about 19*12") in relation to the likely number of parts in the Set; it has a large label similar to the cover of the Manual. The parts were originally strung onto a single yellow card. The cardboard box for small parts is green and yellow and as for VOG/PAL is labelled Sundry Parts. The Axles, Crank Handle, Hook, and Span'driver in the Set are painted black (though there are more Axles than there should be), and the (green) Angle Brackets are double slotted.

The Manual contains 25 models and some of them are rather better looking than the small VOG/PAL ones. The more elaborate models on the cover (above, right) need several parts, including Flexible Plates, that are not listed as PIONEER parts.

The part in the Set that isn't VOG pattern is the Semi-circular Plate with 2 extra holes that was shown in 15/421. This one is a slightly darker shade than most of the other red parts, which included one ordinary Semi-circular Plate. So probably it wasn't a PIONEER part.



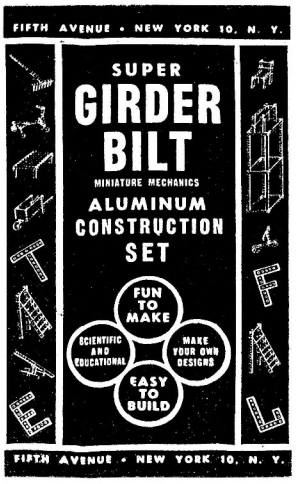
SUMMARY OF MANUAL •Name: PIONEER // STEEL CONSTRUCTION // INSTRUCTIONS FOR MAKING 25 MODELS •No details of maker, dates or Ref Nos. •Page size: 221*141mm deep. •No. of pages: 16 inc covers. •Language: English. •Printing: photos of models; colour cover with models in foreground as above; parts in colour on back cover. •Page No. of Illustrated Parts & highest PN: 16,21. •No Set Contents. •Sets covered: not stated. •No. of models: 25. •Name, Page No. of first & last model (no Model Nos): BOARD & EASEL,3; AEROPLANE,15.

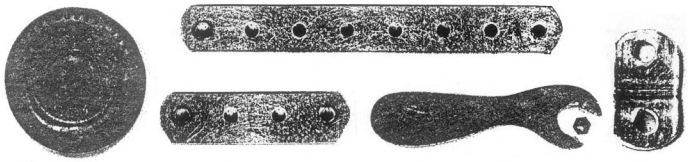
THANK YOU Most of the material used in this article has come from Alan Cox, Richard Gilbert, Malcolm Hanson, David Hobson, and Richard Symonds.

GIRDER BILT This was a small American system with aluminium parts that probably had a brief life soon after WW2. It is in MCS but without much on the parts, and Kendrick Bisset has now kindly sent details of a set that he came across.

It is in a tubular container, about 3" Ø and 10" high, and each of the 2 identical panels of the red, white and blue label (opposite x¼) has on it: SUPER GIRDER BILT ¦ MINIATURE MECHANICS ¦ ALUMINUM CONSTRUCTION SET. In MCS the name GIRDER BILT is hyphenated, and the outfit there isn't described as SUPER. 14 small models are shown between the panels, and around the bottom is the name of the maker - Play Items, Inc., 200 Fifth Avenue, New York 10, N. Y. - as in MCS. The top is tinplate and fits over the tube.

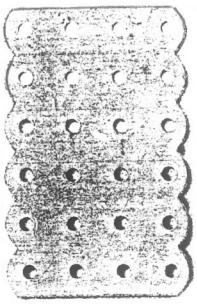
Below are some notes on the parts and photocopies of typical ones. The quantities found in the (not quite complete) set are given in curly brackets.





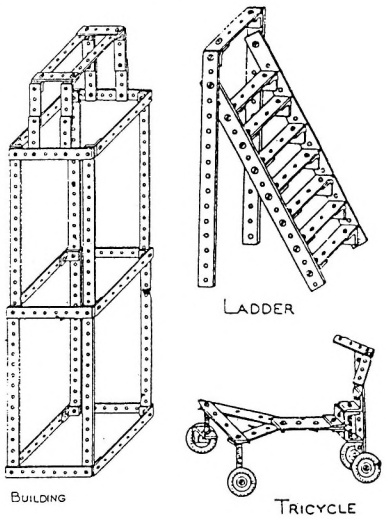
• **DATA** (in mm) STRIP: •hole pitch/dia, 12.7/3.5-3.6; •width, 12.9; •ends, semi-radiused. BOSS: no bosses, hole in Wheel 3.15 Ø. THREAD: 3-48 ANC. AXLE DIA: no Axles, the Bolts (2.5mm Ø) are used. DP (Mod): N/A. NUT: hex 4.7 A/F; BOLT: pan head, 4.8 Ø; both blackened steel.

• 4,8 & 16h Girders [Strips] {13,16,8}. The rounding of the ends is rather irregular, with even a sharp splinter left on some. • Angle Bends [Brackets] with a round hole in each lug - the illustration above is of one flattened out {13}. • 1½" Ø black hard rubber Wheels {3}. • Nuts and 3 lengths of Bolt: 7/16" pan headed, ½" roundheaded, and ¾" with fillister heads {21,23,1,3}. These seem rather small in diameter but from the marks on the Strips they may have been original. On the other hand the 2½" long Spanners {2} with jaws about 5/16" wide are far too big for the Nuts. 4-40 might have been more suitable size, but perhaps the smaller ones were all that were available at the time. In MCS the lengths of the Bolts are given as ¼, ½ & 1".



• Finally the 4*6h Plate (opposite) which looks as if it is 6 Strips that haven't been sheared apart. It isn't used in any of the models on the box.

There was no Model Leaflet with the Set and although they are identical in style and general appearance, none of the models on the Tube are any of those in MCS. However all of them, except the Letters E, F & L, are shown in another MCS system, ALUMINUM CONSTRUCTION SET (ACS), and 2 of the other ACS models are among the GIRDER BILT models in MCS. Clearly the 2 systems were related in some way - the same unusual name for Angle Bracket is used in each for example. ACS was made by Roberts Enterprises, 70-60 Broadway, Jackson Heights, N.Y. None of the models have any Plates in them and they all show Strips with square ends. Whether rounded ends (and the Plate if it wasn't a 'mistake') were features only of the 'Super' GIRDER BILT set is a matter of conjecture. Another odd thing is that the Letters mentioned above included Strips 3,5 & 7h long.



The models on the Tube won't copy clearly so those opposite are from the ACS entry in MCS, but they are identical to the Super GIRDER BILT ones.

Introducing MINIATUR It is likely that Walther & Co. (who made STABIL of course), ceased selling WALTHER'S INGENIEUR (see 7/164) after 1914, and replaced it by an entirely new system called MINIATUR. The exact date of introduction isn't known but the Manual is Copyright 1915. There were 2 outfits, Nos.20 & 21, plus a linking set, 20a, with 25 different parts in all. Their general size is about the same as the INGENIEUR ones, but the range is very different, with all but one made of metal. Also and of major importance, they were now joined by N&B. It isn't sure either when MINIATUR was dropped, the only other available reference to it is a price list of the sets, manual and parts, dated 20.9.20., in a 1919 STABIL manual. It may not have survived much beyond that but it's hard to tell because no other MINIATUR advertising is known and it seems to have been hardly mentioned at all in STABIL manuals & leaflets.

Thanks are due to Sven-Ulrich Glage, Thomas Morzinck, and Werner Sticht for the material used in this account: photos and some details of a No.21 Set, near complete but without a manual; notes on another, probably earlier, No.21 Set, and a copy of its manual; and copies from the 1919 STABIL manual.

The PARTS are described below - all the main ones can be seen in the models opposite. Except for the Pulley and the Strip, dimensions have been obtained by scaling and are therefore approximate.

• **DATA** (in mm) STRIP: •hole pitch/dia, 10.0/3.5 approx; •width, 9.5; •5½ end radius (typical). THREAD: about 3.5mm Ø. NUT: hex 6.0 A/F; BOLT: cheese-head 5.5 Ø.

• A 9*7h Flanged Plate with a centre 5*3h cutout, flanged outside on the longer sides and inside on the shorter ones. A similar 11*5h part with a 7*3h cutout. Both are shown with slotted holes in the outside flanges but round holes in the inner ones. The centre 'waste' gives 3*3 and 5*3h Perforated Plates. Some of these have square corners, like STABIL parts, but some are rounded, obviously as a separate operation and not uniformly.

• A 5/3*7h Flanged Sector Plate, flanged (with slotted holes) on the top and bottom, STABIL-style, and a 3/1*4h centre cutout, giving a small Flat Sector Plate. In both Sets this part has slightly rounded corners - in one the corners of the centre hole in the Flanged Plate are correspondingly concave, but in another they are sharp.

• Strips 11,7,5 & 3h long, and a 1*5*1 DAS with slotted holes in the 12mm long lugs. A 1*1 Angle Bracket with arms 9 & 12mm long, and a round hole in the first and a slotted hole, about 6½mm o/a, in the other.

• A 22mm Ø Loose Pulley. In one set it has no holes in its face but in the later one it has 3 like an M22a. An 8h Wheel Disc. 20, 60 & 80mm Threaded Rods with slightly pointed ends. STABIL-type Wire Crank and Wire Stay (58mm o/a).

• A Single-ended Spanner, 65mm o/a, and a wire Screwdriver. The Screwdriver in the later Set is 80mm o/a and looks much shorter than the one shown in the Manual. An actual Spanner, and both the 'manual' and short Screwdrivers are shown under the Crane.

• Special parts: the 12-bladed Fan, 77mm Ø, the Circular Saw Blade, 50mm Ø, and the wooden Saw Table, 98*40mm. The Fan & Saw, photos of actual parts, are again under the Crane.

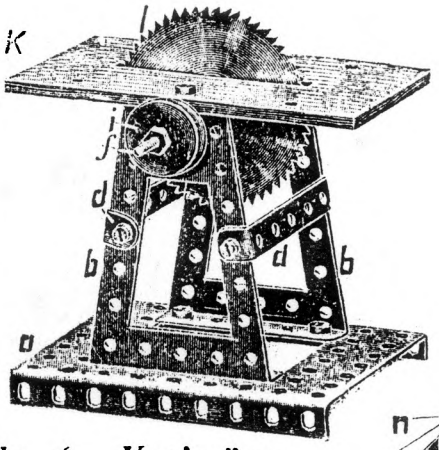
• The manual models show the parts as above with one or two exceptions. A wire Hook is fitted to 2 Cranes, and as well as plain Pulleys, and '3-hole' ones in one model, 4-holers are shown in 2 others. Other parts are used as the loads on Cranes but they look like standard STABIL.

• In a photo of the later Set the Saw Blade and the Screwdriver look bright, perhaps nickel plated, and the Pulleys have a dull brass appearance; all the other metal parts appear to have a dull grey metallic finish.

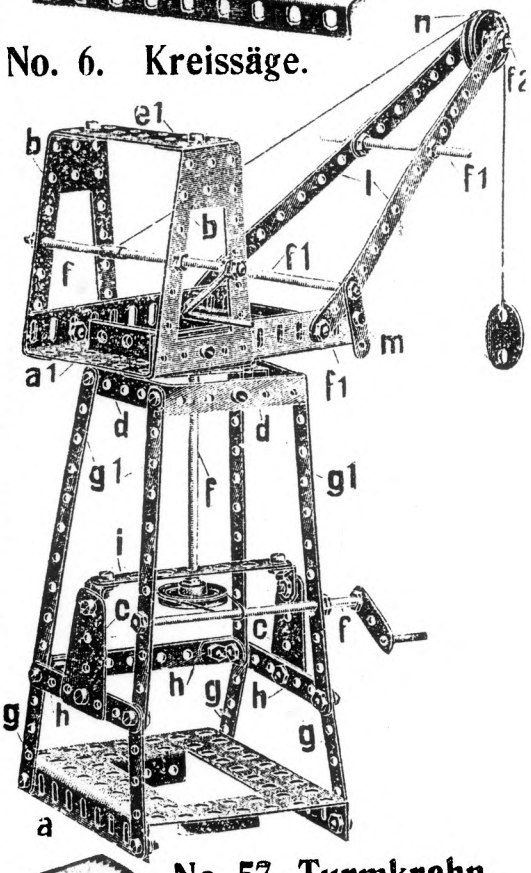
The SETS The No.21 was packed in a black box, about 27½*19½cm, with a rather plain B&W label on the lid (opposite). On the earlier Set the label is similar but as wording only 'Walther's Miniatur' in the diagonal, and 'No.21' at the bottom. The inside of the box is divided into four by card partitions and the parts are strung onto black backing cards. On the presentation as a whole, the words dignified and dull come to mind.

The No.21 is really quite a small outfit, the main parts being 4 Flanged Plates and their 'centre' Plates, 20 Strips and 4 DAS, 4 Pulleys and 2 Wheel Discs, and 1 each of the Saw, Saw Table and Fan. In all 64 parts plus 32 N&B, and an extra 35 Nuts, needed because of the use of Threaded Rods as axles. The No.20 has a total of 40 parts (plus N&B), including all the different types except the 11*5h Flanged Plate, its centre, and the 20mm Threaded Rod. It only has 2 Pulleys and 1 Wheel Disc.

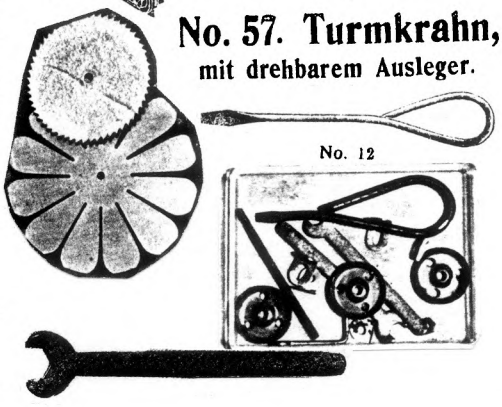
The MODELS The same Manual was included in both Sets, and its 16 pages contain 40 No.20 models and another 27 for the No.21. The cover

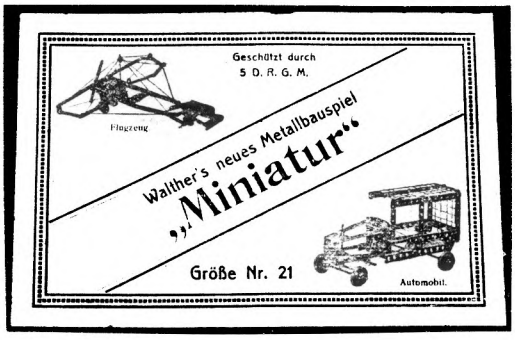


No. 6. Kreissäge.



No. 57. Turmkrahn,
mit drehbarem Ausleger.






Vorlageheft zu Kasten No. 20 u. 21.

Walther's neues Metall-Bauspiel

„MINIATUR"

für kleine Ingenieure, Maschinenbauer und Mechaniker

Technisch richtige Vorlagen und Zeichnungen
Technisch richtige Bezeichnungen der einzelnen Bauteile
Fachmännisch ausgearbeitete Beschreibungen

Für Kinder leicht verständlich und höchst interessant

5 D. R. G. M. Nachdruck verboten. 5 D. R. G. M.

(above) is in the usual STABIL-style before multi-coloured ones were introduced, and the models are shown in the usual Walther way of the period, with a line drawing of each, and a list of parts which are often called by their real engineering names rather than by the names of the parts. The good range of models - vehicles, aeroplanes, hand trucks, windmills, saws, etc - are quite like the contemporary small STABIL models. For both the use of the Flanged Plates with centre cutouts gives the models an attractive appearance. The Fan, Saw, and Saw Table, though no doubt adding to the allure of the Outfits, are not used in that many models: the Fan in 5, the Saw in 3, and the Table in only one. At about that time these parts were in the next size up STABIL sets, but later they were only included in middle size and larger outfits.

SUMMARY OF MANUAL •Name: "MINIATUR" •Details of maker/ Dates &/or Ref Nos: Copyright 1915 by Walther & Co., Berlin S.O.36, Grünauerstr. 8. •Page size: 233*151mm deep. •No. of pages: 16 plus covers. •Language: German. •Printing: shaded line drawings of models. •Page No. of Illustrated Parts/Set Contents, & highest PN: 16,12. •Sets covered: Nos.20,21. •No. of models for each set: 40,27. •Name, Model No., Page No. of 1st & last model of each set: 20: Flugzeug,1,2; Kastenkarren,40,8. 21: Trommelmaschine,41,9; Kippwagen,67,15. •Other notes: details from a photocopy with the back cover missing or blank.

Similarities with, and Notes on, WALTHER'S INGENIEUR & ARTS ET MÉTIERS, Série 3

It will be recalled (13/351) that Série 3 A&M was WI under another name. It has been suggested that surplus parts from one or both of them may have been used in MINIATUR. Apart from the Fan the only parts that might be common appear to be the Strips. I've no details of the MIN Fan, but the WI Strip described in OSN 7 differs from the MIN part in both width, hole size and pitch, and possibly finish. (Note though that on remeasuring the WI holes, they are generally nearer 2.9mm than the 3.0 given before.)

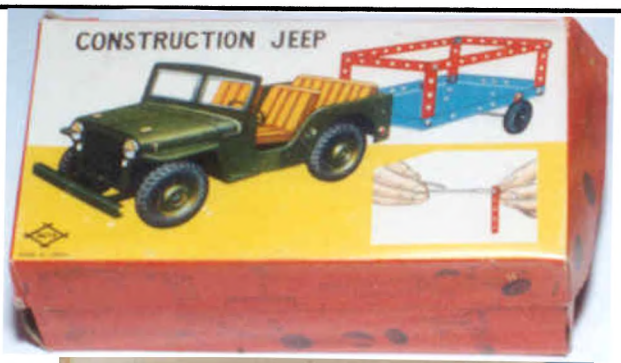
Jeannot Buteux kindly sent some information about A&M Strips. They aren't very well made in that the hole size varies from 2.7 to 2.8mm, the pitch from 10.0 and 10.3, and the width from 7.9 to 8.1mm. Their thickness at .5mm is as the WI one, but the finish is very bright nickel plating, the quality of which varied from time to time.

And while on A&M, Jeannot also sent (from *Constructorama*) a sheet showing the Contents of Set No.81, the equivalent of the WI No.11 in OSN 7. They are the same except that the A&M Set has no 210mm Runtstab or 215mm stehende Welle, but does have an extra one each of the wooden Kreissägetisch, Tischplatte, & Hockerplatte; plus 2x7h A/Gs, a STABIL-style Wire Crank Handle, 2 Chaises 3 Pointes en Fer (the blurry illustrations are shown opposite), and a Pont de Milieu, long 9 trous (not pictured). None of these additional parts can be seen in the models in the WI manual and I don't know the purpose of the last three. No doubt the A&M manual would explain all, and it contains Models 1 to 26, against only 10 (unnumbered) in the OSN 7 WI one. Presumably the latter was earlier than the A&M one. (For reference the first model in the WI manual is Kreisssäge, and the last, Ständers für Windrad.)

Another CONSTRUCTION JEEP Outfit One Set called CONSTRUCTION JEEP is included in MCS, and some notes on the parts were given in 14/373. Also mentioned there were some similar parts and a different, square-cornered Flanged Plate. Now thanks to Sven-Ulrich Glage, these are identified as being from a different CONSTRUCTION JEEP (CJP2), this time with a Jeep packed in the Set. Sven sent me the following account of it.

"As you can see from the photos (right), my Set includes a small, blue tinplate Jeep with the name CONSTRUCTION JEEP in front of the windscreen. It measures 19*9*9cm and has a friction motor.

This Set has a curious history. It was from a container that was on a merchant ship which was stuck in the Suez Canal from 1967 to 1976. So the Set dates from the mid-1960s. The container's contents were mainly tinplate toys that were sold during the 1980s at [German] toy markets.



The box measures 20.5*10.8*8.5cm, with a folding lid, and the parts are clipped onto the drop down side and a folding panel attached to it. On the lid is the DAIYA logo (right), the name on the CONSTRUCTION TRUCK set reviewed in OSN 14. There is no leaflet with the Set but 21 line drawings of models on the sides of the box and the lid. On the bottom is a more detailed illustration of the Trailer. [There are 13 models on the OSN 14 CJP Leaflet and all but one are on the box, with minor changes to suit the different parts. The other 8 are similar simple models, with the simplest an Axle with a Wheel at each end. None of the models for either set are named.]

DAIYA

MADE IN JAPAN

The blue Flanged Plate is 100*60mm, .55mm thick, with 2.9mm holes. Strips, DAS and Brackets are as described in OSN 14: all are red and holes are 3.1mm. There's no Towing Bracket but one Strip is bent 4*1 to act as a substitute. Road Wheels are the same but the small Pulley is also made of black rubber and has 8 moulded spokes and no brass centre. The Axle is 95mm long, 2.8mm Ø, with no thread but 2 small push-on Rubber Collars. There is a Screwdriver but no Spanner, and the Crank Handle is 110mm. The N&B are nickel plated with square Nuts, 6mm A/F. There is one longer Bolt that is used as an axle for the Pulley." [In case it's not clear in the photo the Set contains 2 each of the 3 & 10h Strips, 2*1h Brackets, and 1*6*1 DAS; and 4x5h Strips.]

SPEDICON This system, based on aluminium Rods and blue Plates, was mentioned in 16/457, and David Hobson has now sent copies of the manual (kindly supplied by Alan Farnell), and of the relevant Patent. What follows has been taken from them and may not be exactly right, particularly about dimensions, and which holes in the Rods and Fittings are tapped and which aren't. The Fig. numbers of the illustrations are from the Patent.

The manual contains a Price List of all the 31 parts, and drawings of all but Nos.29-31, which are 2 Grub Screws (3/16 & 3/8" long) and a Key, probably an Allen key to use with them. The main parts are 7 lengths of Rod of perhaps 1/4" Ø, from 7" to 1/4", and 13 Plates, from 9*6" to 1½" square, plus 3" & 1½" Triangular Plates, (Nos.12 & 13). All but the 3 shortest Rods (Nos.18,19,20) have 5 cross bores along their length, with 2 tapped ones at right angles to each other at each end, and a central plain one, see Fig.2 from the Patent. Each end is bored and tapped into the outside crossbore, or for the very short ones perhaps they are threaded right through. The thread scales at about 1/8" Ø. 2 typical Plates, 1½*3" & 1½*4½". are shown opposite - the holes scale at 1/8" or a little more and their pattern varies from Plate to Plate, spaced, from scaling, at anything from .2 to 2.6".

The Grub Screws can be used to join the Tubes end to end, side by side, or at 90° to one another. To join them at an angle Threaded Knuckles, No.25, are used. (Plain Knuckles are also listed under the same PN.) Plates can be attached to the Rods using the Grubs and round serrated Nuts (26), or with Screws (27), which have round heads similar to the Nuts. 3/8" Cubes (Fig.6) can be used to join the Plates at right angles, and a Link (No.28) to join them edge to edge.

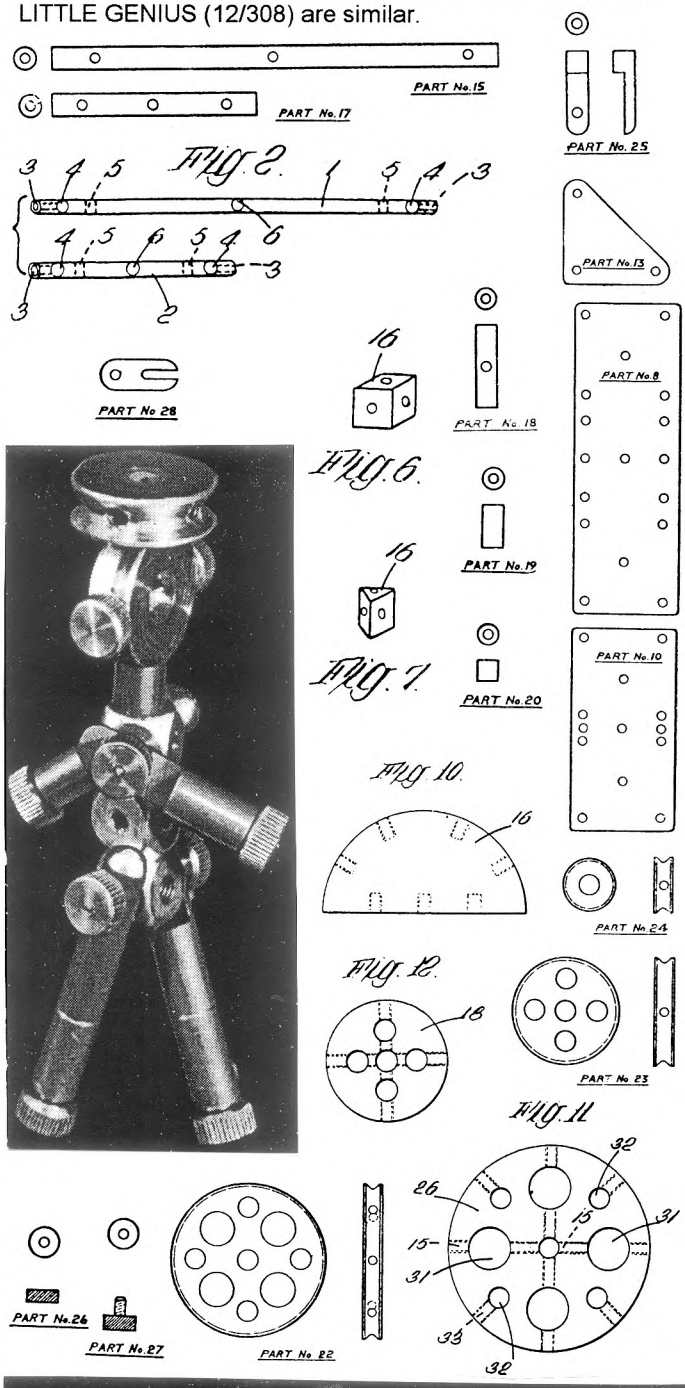
3 sizes of Pulley are listed, of 3/4, 1½ & 2¼" Ø (Nos.22-24, Figs.11,12). They run on the Rods and have 4, or 8 for the largest, tapped radial holes to take Grub Screws. The large holes in the 2¼" are said to be lightening holes. A bearing for a Rod used as an axle can be a Cube, which has one large diameter bore to suit, or a 3/4" Pulley held to a Plate by a Screw into one the tapped holes.

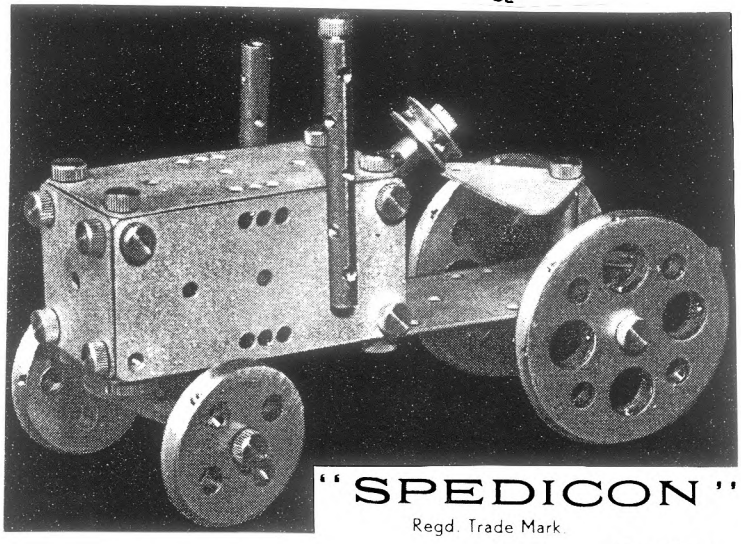
2 other parts are shown in the Patent (Figs.7 & 10), but aren't in the List of Parts.

There is one photo each of 10 models, with no titles or parts lists, nor any indication of whether they could be made from a particular set. In fact there is no mention of sets at all except that additional parts could be bought to 'extend your kit'. The models range from a simple Table and Chair, through an Excavator and a Funicular Railway, to a Tower Bridge over 30" long, with a Ship passing through it and a Twin-engined Aeroplane above. All are very simple mechanically and although the front axle of some of the vehicles appears to be pivoted at its centre, it doesn't look as if its movement is linked to the steering wheel.

The Patent is No.589328, in the name of Wilfred Thomas Valentine Reed of 19 Gresham Gardens, Golders Green, London, N.W.11, and the Application Date was March 1945. The 'claims' in it relate to the use of the tapped holes in joining the parts together, and the radial tapping of the wheels. Speed of construction is mentioned though it isn't one of the claims, and no doubt that was why the serrated-edged Nuts & Bolts were provided. But it might be thought that the ordinary sort would be easier to get really tight and would have been cheaper to make.

Most of the SPEDICON parts must have been expensive to produce but if it appeared soon after the war, this may not have mattered at first, with the general shortage of toys at that time. Comparing prices with MECCANO (in 1949), for parts that served roughly the same purpose, they were generally higher by anything from 50 to 200%. The extremes were a SPEDICON Nut that cost 2d against a MECCANO one at about ¼d, and the 3/4" Pulley which was the same price as a No.22. So SPEDICON probably didn't last for very long. The Price List gives the manufacturers as Spedicon (Williamson-Pinney Ltd.), and the distributors as Chertsey Industries, both of the address given in OSN 16. I don't recall a system directly comparable to SPEDICON, although one or two of the features of the recent Indian LITTLE GENIUS (12/308) are similar.





MECHANIC, from CHINA This development of WISDOM was mentioned in 16/458, and Roger Baker has since brought 2 sets back from Kuwait, a No.192 for me (thank you very much Roger) and a No.196. David Hobson kindly passed me photos of the latter so I can give some details of that as well.

The main changes compared to WISDOM (see 10/238) are the range of sets, and the Strips which are now painted instead of being nickel. The quality of the parts isn't quite as good - there's © 1993 UPRIGHT MANUFACTURERS INC on the back of the 192 Model Leaflet.

The PARTS The design of all the parts seen is as before, and that includes nearly all those used in the WISDOM Sets except the C/W Motor. The pitch of the holes is still 12.5mm of course, and the slightly quirky features are still there - the additional 2.6mm Axles and Road Wheels that push onto them, the extra long bosses, and the Crank Handle with the handle part that isn't quite parallel to the shaft.

The only differences are that the Plastic Plates are white instead of yellow, and all Strips, including the Curved and Formed ones, and DAS, are painted a medium blue. I wonder if it's the same shade as that used for the MECOTECH Strips (11/284).

And having said that the design hasn't changed I now notice that the new DAS are 2mm wider than the old ones, and are the same width between lugs as the MECOTECH ones. Were there ever nickel DAS with 63mm between the lugs?

As in later WISDOM Sets crosshead Bolts are included, but, as before, with an ordinary Screwdriver. (The Bolt head diameter at 6.2mm is smaller than seen before, but WISDOM sizes vary considerably.)

The quality of the parts has noticeably deteriorated in some respects. The bore of the bosses is oversize, anything from 4.3 to 4.5mm; slight burr can be felt around some of the holes and edges, and on some of the Axle ends; the flanges of the Sector Plate are bent at nowhere near 90°, and one is at a different angle to the other; and on some Strips the blue paint is slightly chipped off in places. The red metallic paint on the Flanged Plates and Trunnions is still good and so is the nickel plating on the Brackets, Wheels, etc, except for a quite rusty Flat Bracket. (And I've only 3½ Flat Brackets instead of 4.)

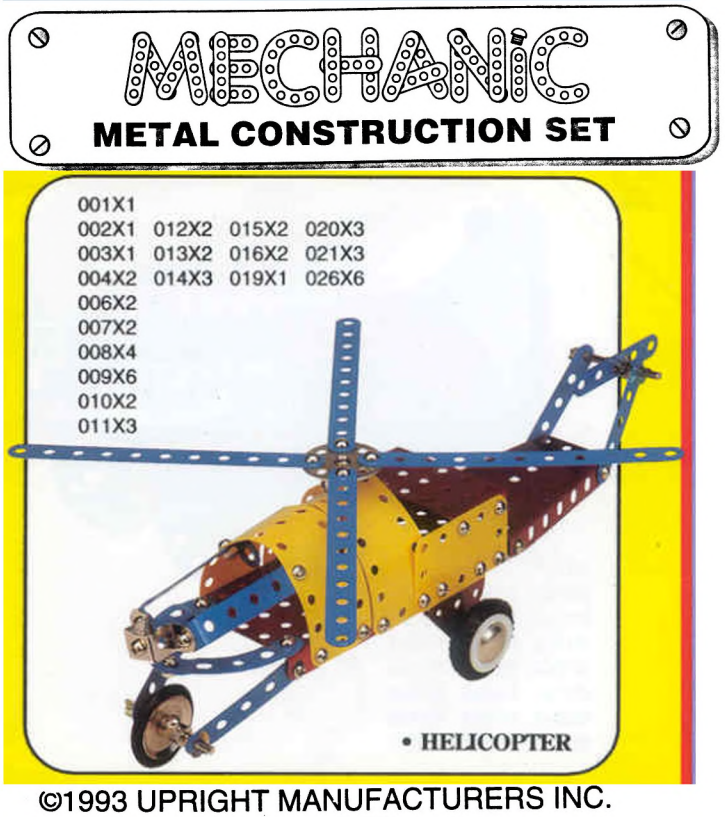
The SETS The WISDOM range was 5 sets, 0-4, which were more or less progressive, plus the non-progressive No.5 with the C/W Motor, and the No.6 with the Cab and Friction Motor. There are 9 known MECHANIC sets with 3 small sets about the size of the 192, 3 bigger sets, and 3 larger still, similar in size to the 196. In each group the 3 sets, although about the same size, each have a different range of parts. There are no Set Nos. but a small Item No. appears in one corner of the boxes - at a guess they run from 190 to 198.

The content of the 192 is identical with the WISDOM No.2. (In MCS X1.4a/6a, the version with the ½" Pulley but not the ⅝", and with no 2¼" Axles. In my Set there are 44 Bolts and 43 Nuts.) The 196 corresponds to the WISDOM No.6, certainly all the different parts are present, including the 2x1⅛" Rubber-tyred Wheels, and for the parts that can be seen the quantities correspond. See later for comments on the Set Contents given in the Instruction Leaflet.

The boxes open at the ends and are yellow with a large colour picture of one of the models from the Set on the top, and one each of all the parts in the Set to one side and below it. These parts are also on the bottom together with several other manual models. The 192 box measures 12½*9¾*1¼". On both the boxes the Flexible Plates are shown in the old yellow colour. The parts fit tightly into the recesses of a clear plastic moulded tray, and indents in the matching cover (with 'UPRIGHT' pressed into it) holds them in place.

The MODELS The 192 Instruction Leaflet is a single full colour sheet, folded over to give a page size of 193*277mm deep. The background is yellow, like the box, but edged with violet & red, and the main model on the front is the Bulldozer on the box. The cover has '192' on it, each of the other pages a '2', and on the back, '© 1993 UPRIGHT MANUFACTURERS INC' again. The cover also shows the various parts in the Set and the quantity of each. 20 models are featured with a single photo & a List of Parts for each. 2 are on the cover and 6 on each of the other pages, and again the Flexible Plates are shown yellow. The models are old favourites, and one CONSTRUCTION MODELS Leaflet, (with red and green parts in the models) has the same 20 models, though the photos have been retaken and one or two very minor changes made. Compare the Helicopter below with the one shown in 10/239. The models aren't numbered but each is named, in English only, though the (limited) text on the box is in also in German, French, Spanish, Dutch and Swedish.

From photos of the front and back of it, the 196 Leaflet looks to be similar. Apart from '196' on the front & '6' on the back, there's only one model on the cover, the same Tipping Truck (my name) as on the box, and 3 models on the back page (including the Tanker below). Again the Contents of the Set are shown on the cover and the quantities of a few of the parts don't agree with the reported Contents of the WISDOM No.6, with fewer 3 & 5h Strips, & N&B, for example. Another instance is the two 1" Pulleys & Rubber Rings listed against the 4 in the No.6, and against the 4 needed in at least one of the 196 models. I haven't a No.6 WISDOM manual to see if any of the models are new or have been redesigned.

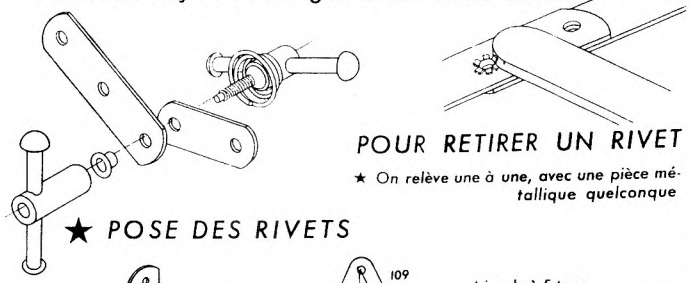


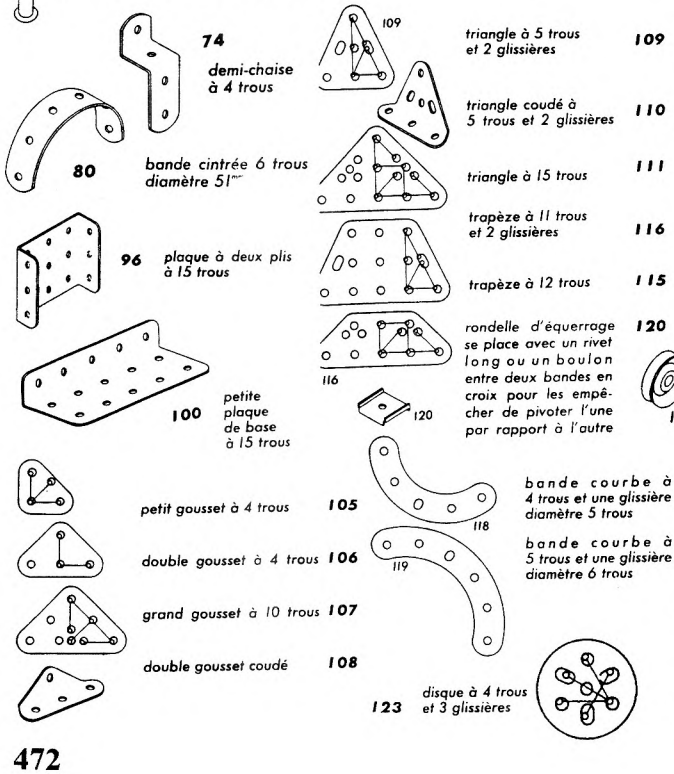
MAC et NICK This French system is in MCS but no models are included and although photocopies of a few parts are shown, it's not obvious what many of the others are like. And it turns out that there are many other parts, and some sets, that aren't mentioned. Originally this piece was based on some sample parts that Jeannot Buteux was good enough to send over, and some others that Ernst Leuthold kindly lent me, together with a large Sheet showing 8 models, and the Leaflet that was used for the MCS entry. But after drafting it a comprehensive article by Jeannot appeared in Nos.55 & 56 of the French *Club des Amis du Meccano* (CAM) magazine, and so I've now drawn on that too, and, with the kind permission of its Editor, reproduced some of the illustrations in it. In what follows an asterisk indicates that the part is illustrated below.

None of the literature to hand carries any reference to the manufacturer or any indication of date, but it is known that M&N was made from the late 1940s until probably sometime in the 60s. (*Eisenzeit* says from about 1947 to 1970), in the town of Muzy (Eure-et-Loir), though the company's offices were in Paris.

To set the scene, the main parts used in the basic Sets (Nos.1-4) were thin, wide, flexible steel Strips with 4.2mm holes 17mm apart, and a selection of other parts, usually aluminium, including a few Plates, and some Brackets and Pulleys. That accounts for some 50 parts but in all there were probably over 100. About 75 are shown in the CAM article, and the rest are just mentioned in M&N literature - Springs, Screwed Rods, Tyres, Motors, etc., but with no illustrations or details.

A few N&B were provided in the Sets but the main method of fastening was 4mm Ø aluminium eyelet rivets, which it was claimed, could be put in and taken out more quickly and easily then N&B. A tool, PN 167* was used for insertion but to remove a Rivet its peened over tail had to be lifted using a Strip or whatever, see below. It's not clear whether the Rivets were meant to be reusable, though I suspect not - there were many more in the Sets than were needed for any of the designs on the Model Sheet.





The PARTS • DATA (in mm) STRIP (2-20h): •hole pitch/dia, 17.0/4.2; •width, 15.6; thickness, .52; •end radius 8.7. BOSS: none seen. THREAD: 1/8" BSW. AXLE DIA: 4 & 4.15 reported. DP (Mod): N/A. NUT: hex 6 A/F; BOLT: roundhead 5½ Ø; both approximate.

Notes on the parts follow. Unless otherwise stated all, apart from straight Strips, are aluminium, and all holes are round.

• #1 is a **Washer**.

• #2,3,4,5,6,7,8,9,10,12,15,20 are **Strips** with that number of holes; then there are longer Strips up to #50 with 50 holes (over 33" long), but only #35 is known for sure. #51 & #53 are Strips, length unspecified, made of blued steel and transparent mica respectively. #56 is a Strip with 1 round and 1 slotted hole; #57 is a 3 hole Strip with the end hole slotted; and #58 is as #57 but with both end holes slotted.

• #61 & #62 are #56 & 57 formed into **Angle Brackets** with the bend between the slotted hole and the hole next to it. #65, 66, & 67 are 1*1, 1*2, & 2*2 Angle Brackets. #71 & 72 are 1*1*1 and 2*1*2 Double Brackets. #73 & 74* are 1*1*1 and 1*1*2 Reverse Angle Brackets. #75 is a Double Bent Strip, and #76 & 77 are 1*2*1 and 1*3*1 **DAS**.

• #80* & 81 are 6 & 7h **Formed Strips** (51 & 68mm diameter).

• #86, 87 & 88 are 2*2, 3*3 & 3*5h **Perforated Plates**. #91 & 96* are #86 & 88 bent to form a 2h **A/G** (the only one) and a 3*3h **Flanged Plate**. #100* is #88 bent to give one lengthwise flange, and #101 is a similar shape but made from a 4*7h plate.

• The various **Corner Brackets** and **Trunnions** #105*-111* are all shown below. #106* is also known, as shown in MCS, with an extra hole on each 40mm side, just below the apex, at 17mm centres from the bottom corner hole.

• #115* & 116* are **Trapezoidal Plates**.

• #118 & 119* are 5 & 6h **Curved Strips** with the third hole slotted radially.

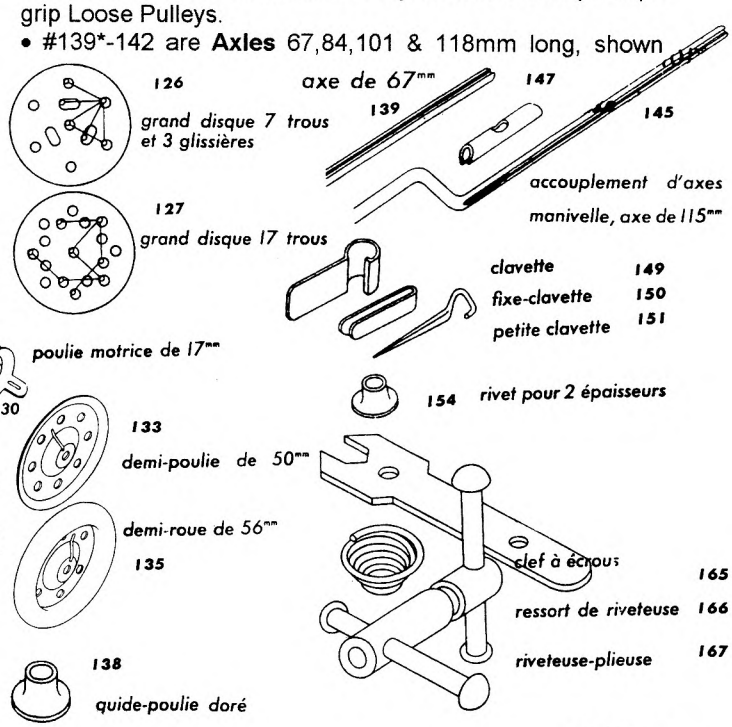
• #120* is a **Strip Lock**.

• #122 & 124 are 6h & 8h **Discs**; #123* looks like #122 but with alternate holes slotted. #126* & 127* appear to be larger Discs.

• #129 & 130* are similar 17mm Ø **Pulleys** but 130 has a driving arm. #131 & 133* are **Half Pulleys** (like TRIX) of 33 & 50mm Ø with 6 & 8 holes in their faces respectively. #133 has a 10*1mm radial driving slot and 131 is shown with a similar one but the two examples I have don't have this slot. #135* is a **Half Road Wheel**, again shown with a slot.

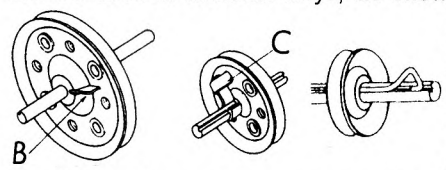
• #138* is a 'guide-poulie doré' - brass plated perhaps. It seems to be used as an **Axle Stop** to locate and perhaps grip Loose Pulleys.

• #139*-142 are **Axles** 67,84,101 & 118mm long, shown



with a narrow longitudinal slot, but some were not grooved at all. #145* is a 115mm **Crank Handle**.

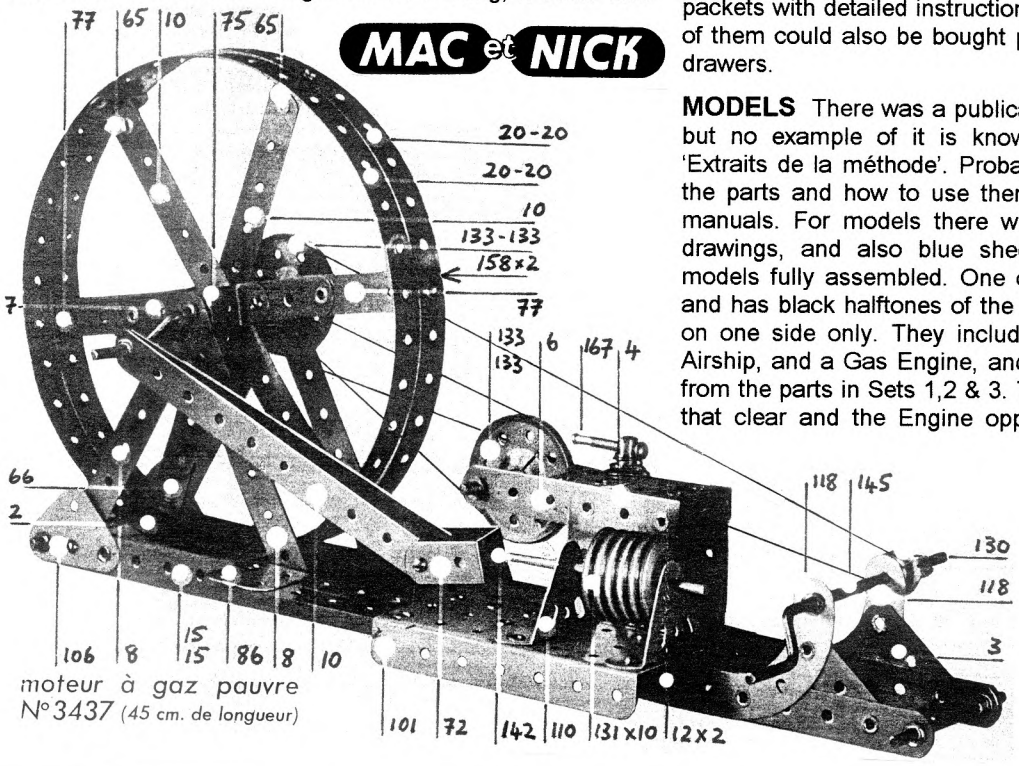
• #147 is an **Axle Coupling**. #149*, 150*, & 151* are **Spring Clips** used to lock Wheels/Pulleys onto Axles. They can be used in different ways, as shown below. One way uses the Clip 149 ('B'), and when there is no slot in the face the U-Clip 150 ('C') as well. Alternatively the Small Clip 151 can be used for any Wheel/Pulley.

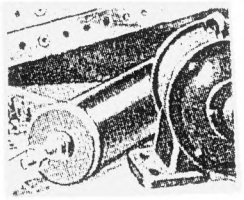


• #154* & 155 are **Rivets** to join 2 & 3 thicknesses of material, and one of them, probably the longer one, is about 3½mm long o/a, with a head diameter of 6.8mm. The shanks of some of Rivets seen have crinkly ends. Of the handful available all are aluminium except for one brass one in Jeannot's parts. With it is a 13mm Ø steel washer, brass plated, with a circumferential ridge impressed in its face near the outside - this might be the **Washer** #1, but what looks like a Washer in MCS is much smaller in diameter.

• #156 is a **Nut**, and #157-159 are **Bolts** (shown with cheeseheads), 5, 10 & 20mm long. #165* is a **Spanner**. No screwdriver was provided, instead it was suggested that the end of a Strip be used.

• #166* is a **Spring** for the **Riveting Tool**, and #167* the Tool itself. As well as being used for riveting, it could also be used to clamp a Strip between 2 other Strips, at 90° to them, so that a bend between 2 holes could be made in the first one.





• Shown opposite are what look like a small Motor and half a larger one, taken from one of the *CAM* illustrations.

• The parts seem to be quite well made and the slight burr around a few of the holes isn't sharp. The corners of most of the Plates and Brackets are fully radiused, or nearly so, but the rounding on a few, though of the same radius, isn't so deep. The steel parts aren't treated in any way and are often somewhat rusty when found; some of the plain aluminium ones look anodised, and in the later years red, green, blue and yellow anodised parts were produced. As far as is known no parts were ever painted.

The SETS MCS gives the contents of Sets 1 to 4. #1 was the basic outfit with the Tool in it; #2 was an add-on set; #3 & 4 contained mainly extra long and extra short parts respectively. Each set had Rivets (80 in Nos.1 & 2, 100 in Nos.3 & 4), and 8 or less N&B. A Set 5 for Pulleys & Plates was available later, and a #6 for special parts, but their contents aren't known in detail.

As well as these there were theme sets Nos.1-4, including a Loco, a Roundabout, and (#4) a Twin-Engined Combat Aircraft. Individually these were packed in long packets with detailed instructions, but various combinations of them could also be bought packed in boxes with sliding drawers.

MODELS There was a publication 'La méthode complète' but no example of it is known, only a brochure called 'Extraits de la méthode'. Probably both were mainly about the parts and how to use then, rather than being normal manuals. For models there were plans with step-by-step drawings, and also blue sheets showing (fairly simple) models fully assembled. One of these measures 21½*17" and has black halftones of the models on the blue ground, on one side only. They include a Suspension Bridge, an Airship, and a Gas Engine, and any of them can be made from the parts in Sets 1,2 & 3. The detail in the photos isn't that clear and the Engine opposite has copied the best. Most of the models look quite attractive, on paper at least, and they are quite large too - a Submarine is just the longest at 87cm. Mechanically they're quite simple with cord drives on the working models, but the wheels on a Fighter do fold up under the wings (by hand).

QUERIES 23. On the question of red/ivory MÄRKLIN Flexible Plates (15/402, 16/431), Thomas Morzinck, writing from Germany, points out that all the colour pictures inside the 1947 manual show blue/silver Flexible Plates - only the picture, seemingly a painting, that was used for the cover, and box lids, shows red and green (!) Plates. There are other anomalies in the painting, and he feels that red Plates probably never existed.

On the aluminium parts in the 1949 No.103 Outfit, Werner Sticht wrote that from the beginning of WW2 until the beginning of the 1950s, Flanged Wheels, Gears, Pinions, & Worms were commonly made of aluminium, and even Strips were sometimes of that material.

Werner also mentioned that the changes of PN (see 16/454) are not new but seem to have occurred in 1982. He has a 1981 #14902 manual for the E3 Set which shows the old numbers, and a 1982 #14900 for Sets A, B, C in which the new ones are used. As far as he can tell the changes don't reflect any changes to the parts, except for the Small Bevel. On the other hand Part 10860, the Large Bevel, has been changed (as seen in the m100 Set) but the PN remains the same. It is now turned from solid brass instead of having a boss riveted on, and the cone angle of the teeth is greater than 45°. It's still double tapped. The Small Bevel is no longer cone-shaped but matches the design of the large one, with a tooth face of only about 3mm, against the former 6mm.

And on the Coupling (#11718/9), the cross tappings in the 1960s were at 90° to one another, but in examples from the 1980s that angle can be anything up to 10° out. Those in his m100 Set are not as bad.

Don Redmond too has some blue Flexible Plates which are untreated aluminium on the other side, but their date isn't known. He also has 11*5 & 7*5h Flanged Plates in bright nickel plate and asks if such a finish is unusual.

More on METEOR Following the description of Clive Weston's Set in 12/302, Sven-Ulrich Glage sent the following notes.

Dating the System 'I find it hard to believe that METEOR dates from prewar. Austria was under German control before WW2 and I doubt if Märklin would have agreed to any competitor copying their manuals in any way whatsoever.

I think it much more likely that METEOR was marketed shortly after the war when there would have been little fear of copyright problems from a company in a Germany that was under allied control.

My Sets Of the basic sets I have Nos.1,1a,2a & 3a, and all of them are packed in the same green boxes with red interiors noted in OSN12. Apart from those mentioned below the parts are the same as Clive's, but notice that there are no coloured parts in my Sets at all.

- The Circular Flanged Plate, and Pulley #21, are nickel plated. Pulley #22 is brass plated on both sides with an aluminium boss.
- Flanged Plates including the Sector Plate are natural aluminium.
- There are no Flexible Plates in the Sets (nor in the Parts List in the manual).
- All Gears are aluminium except the Contrates which are brass plated steel with aluminium bosses.
- Flat and Angle Brackets are steel with the same brown finish as the Washer.
- Curved Strips are nickel plated.

The manual has 80 pages plus covers and is the 'Fourth Revised Edition'. The first and last models are No.1 Transmission, & No.416 Friktions-Spindelpresse. The Parts List ends at No.153a, and there are no ads for other sets.' [This then would be earlier than Clive's and covers Sets 1-4 in one double-size volume. The first and last model names and numbers correspond.]

The ZUSATZKASTEN FÜR AUTOBAU [This section is based on notes from Sven, a photo of his set, and a copy of its manual.]

This was a theme set with enough parts, if I've understood correctly, to build the Tipping Lorry shown on the manual cover, and then 3 more elaborate commercial vehicles could be made using additional parts from one of the basic sets. The Set's packaging is as above, and the Manual is in the same general style as Clive's except that all the illustrations are photos, including the one on the front cover. The Set's number, 101, is on the box lid but isn't mentioned anywhere in the Manual.

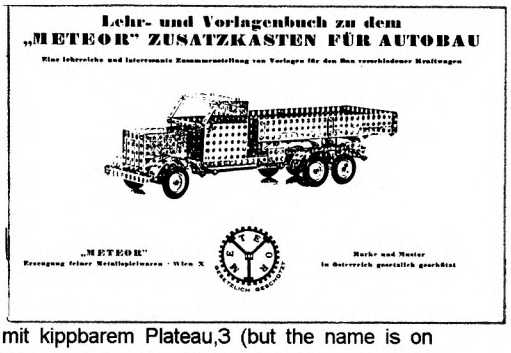
The models as far as I know don't owe anything to Märklin, and look to me quite good although the Wheels are perhaps rather small. The chassis, together with the cab and bonnet, is used for all the models, and is straightforward with no springing, and no mechanical features except the steering. The latter is a simple 4-bar chain type but without Ackermann geometry. The Tipping Lorry below is some 13" long and as can be seen is made of Strips, Girders, and various fully Perforated Plates. There seems to be no tipping gear though the illustrations, at least when copied, aren't that clear, and there's a lot of text which no doubt explains all. The Set includes some standard parts that aren't in Sets 1-4 and some special parts. The former include 3,5 & 8h A/Gs, 5,7,8,11 & 25h Flat Girders, & the 8cm Crank Handle. The latter are all modified standard parts and will be described because there are no individual illustrations of them.

• 305/g. 5h Strip with the ends angled. • 337l. 12mm Bolt. • 344. A Bracket, perhaps the 4*1h one in Clive's set. • 353d. The cab roof. A 9*5h Perf. Plate with one outer, long row of holes angled at 30°. • 353g. For the bonnet - the same Plate with one shorter side bent at 90°. • 108/16. 16h Flat Girder. • 308/3g. A formed 3h Flat Girder. [Sven's Set also contains formed 5 and 11h Flat Girders for the mudguards.] •209/21. Tyre with 70556 moulded into the side. • 363. Distance Piece, perhaps based on the Coupling. • 391v, 393r. Front and rear Fenders, made from 11 & 5h Flat Girders.

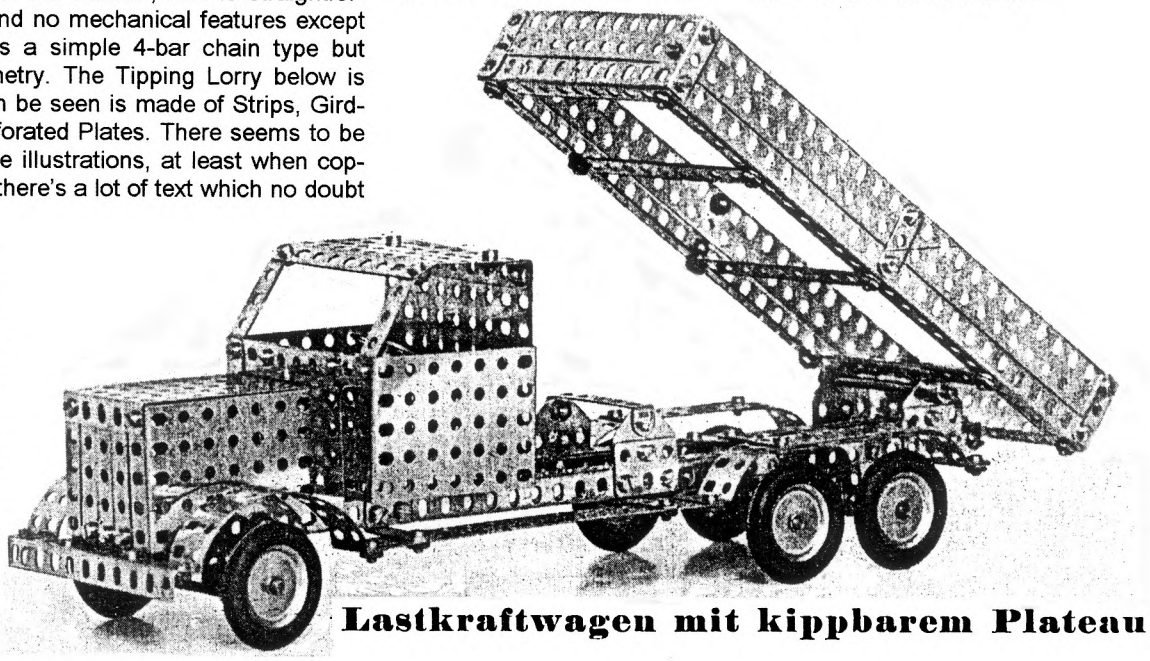
All the parts in the Set have the same finish as those in the basic sets except that the A/Gs are not plated.

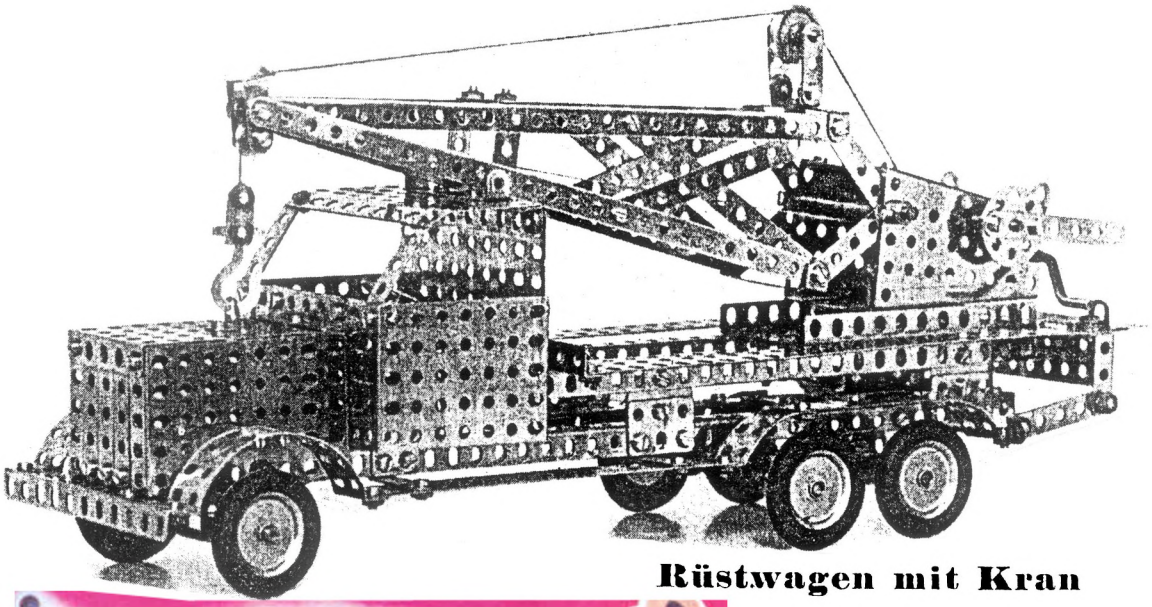
3 more models are shown in the manual: the Lorry Mounted Crane, opposite, which needs parts from a No.1 Set, a Bus using a No.2, and with a No.3 a Fire Engine with a 4-stage ladder.

SUMMARY OF MANUAL •Name: Lehr- und Vorlagenbuch zu dem "METEOR" ZUSATZKASTEN FÜR AUTOBAU. •Details of maker: METEOR, Wien X. •No dates/Ref Nos: •Page size: 247*163mm deep. •No. of pages: 16 inc covers. •Language: German. •Printing: all B&W inc cover, with photos of models. •Page No. of Parts List/Contents & highest PN: 16,391r. •Sets covered: 1 (#101 on box but not manual). •No. of models: 1+3 with extra parts. •Name, Page No. of first & last model [no Model Nos.]: Lastkraftwagen mit kippbarem Plateau,3 (but the name is on p6). Feuerwehrauto mit Margirusleiter,11. •Other notes: none.


Lehr- und Vorlagenbuch zu dem
„METEOR" ZUSATZKASTEN FÜR AUTOBAU

A Later Set 'On display at the EZ Exhibition at Nürnberg was a later No.1 Set, believed to date from the 1950s. The box is blue with the main parts fastened to an orange card with bifurcated paper clips. It has a colourful label on the lid with a boy and (opposite) models of a Tractor and Trailer, a Mobile Crane, and a Tank Loco, all of which make extensive use of blue Flexible Plates. Apart from these, the red parts that can be seen in the Set are an 11*5h Flanged Plate, 2 Flanged Sector Plates, and 4 #22 Pulleys with black Tyres. There are also 2 #67 Flanged Pulleys fitted with black rubber Tyres.' [Sven sent a colour photo of the set and to me the models on the lid look quite attractive and much more realistic than any of the models in Clive's manuals. Apart from the coloured parts, Strips, Brackets, and the #67 Pulleys look to be nickel plated; the small Pulleys may be red on one side and nickel on the other. Several different rich blue Flexible Plates can be seen but the


Lastkraftwagen mit kippbarem Plateau



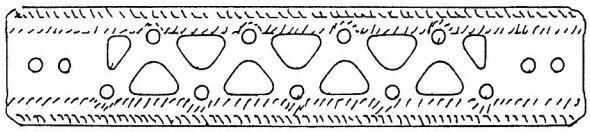
Rüstwagen mit Kran

exact sizes aren't clear. One of the largest looks to be 11 holes long by 5 or 6 wide, and one of the smallest is 5 holes long and 4 wide, but perforated only along the 5h sides, plus a centre hole in the shorter sides. No slotted holes can be seen. The Set may not be complete but broadly the main parts correspond to the Contents of the No.1 as given in Clive's manual, except of course for all the Flexible Plates and Tyres. One oddity, the Hank of Cord appears to be mottled red and white.]

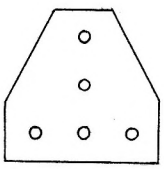
The KOMET Motor This was illustrated in OSN 12 and from photos Sven sent it looks as if it's made from steel pressings, painted red except for the nickel top and side cover plate. The rotor shaft comes through both end plates, and there's probably a 1-stage reduction gear to the output shaft, which is journaled in the long boss on the front plate, and has a small aluminium pulley pressed onto it. The brush holders are on the back plate, with a KOMET transfer above them.

MYSTERY PARTS No.5 Following 14/390 Richard Symonds kindly sent me one of the green 5*15h Plates which had come to him from New Zealand. The spacing of the holes is very slightly irregular and the nominal pitch may have been ⅜" (9.53mm). I may have made a mistake in giving the hole diameter as 3.8mm - those in this Plate are 3.5mm, which agrees with the size given in 3/47.

MYSTERY PART No.32 Don Redmond sent a sketch of the part (shown below at half scale), 4 of which were found by Normand St-Aubin of Quebec. It is nickel plated, slightly wider than the early ERECTOR Girders, with broader edge ribs, and at .023" thick, much heavier.



MYSTERY PARTS No.33 Geoff Davison found some aluminium parts in a mixed lot he bought, which was mainly MECCANO X. They comprise Strips with 11,5,3 & 2 holes (though the 2h ones look as if they may have been cut from a longer Strip); two 5*11h Flanged Plates, flanged on the long sides; Flat Trunnions (opposite at ½-scale); a 1⅛" Ø Pulley; and two 1" Discs (like M38d).



All holes are round at ½" pitch, and all corners sharp. One strange thing, one 5h Strips is stamped 'Meccano made in England' in much the same style as Binns Road parts.

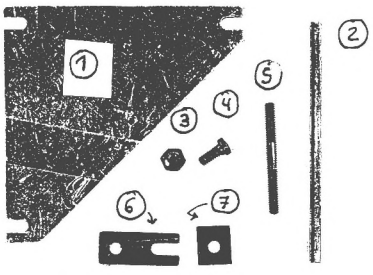
MYSTERY PARTS No.34 The following were in a batch of parts found by David Hobson: • A 4*8h Flanged Plate, fully perforated with flanges on all sides. • A green 3*8h Perforated Plate, 1⅝*3¹⁵⁄₁₆" overall (so there is nearly ¼" of metal on the long sides outside the holes). • Green 4,8 & 12h Strips, 10 to 20 thou over ½" wide. • Red 1" Ø Discs.

The parts are sturdily made - the Flanged Plate of .033" steel, & the rest are .050" thick. All holes are round, 3.9mm Ø by 12.7mm pitch. Corners are fully radiused except for the square ones on the flanges of the Flanged Plate. The red is a medium-dark shade, but the green is slightly lighter than medium, rather like that of PREMIER Strips.

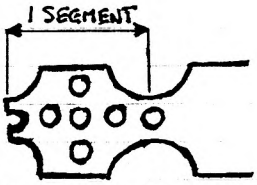
The holes in the 12h Strips are all off centre by 1mm but otherwise the parts are accurately made. They look a bit rough though because they are all slightly dished, the paintwork is rather rough, and the amount of metal outside the outer holes of the Strips and Perforated Plate varies from being nearly equal, to 5mm at one end and 2½ at the other.

In another lot of parts from a different source there were 2 each of the Flanged Plates and the 8h Strips. The Plates were a slightly lighter red and the Strips a slightly darker green.

MYSTERY PARTS No.35 Jeannot Buteux sent the photocopies of the parts below, shown here at ½-scale. The Plate, is bare aluminium, .5mm thick. Some of the 4mm square section Rods (2) are aluminium and some brass. The other parts are steel, brass plated. The holes in the Brackets (6) & (7) are 3.05mm diameter. Part (5) is a Threaded Rod.



More on GERMAN SYSTEMS Following the notes in 15/412, Jeannot Buteux, Sven-Ulrich Glage and Don Redmond have been good enough to sent comments, additional information, and the names of yet more German systems. For reference purposes the initials JB, SG or DR after each contribution indicates its origin. [The illustrations from Jeannot are courtesy of the *Constructorama* archive.]



• The form of **AKRON** parts is as sketched opposite, and some contain as many as 17 segments. (JB)

• An early 1930s commercial catalogue lists 5 main **ALPHA** sets (ALPHA [2] in MCS) and 4 linking sets. No set numbers are given, only catalogue references, but No.2 can be seen on the one set illustrated. It's the middle sized of the 5 main sets and it's the same as the No.2 in MCS, and with the same numbers of parts. So it's likely that the main sets listed are Nos.00, 0, 1, 2 & 3.

Also included is a Kanonen-Baukasten with 227 parts in a box 34*18cm. A model is shown (right) and with a geared drive for elevation at least, it is more sophisticated than the 1930s STABIL Kanonen models. (SG)

• Is **AUTO-CONSTRUKTOR** (15/412) a printing error? [Probably yes, it is spelt that way in *Eisenzeit*, p177, but if it's the same as the Dutch AUTO-CONSTRUCTEUR, which seems likely, the name on the pages still in German in the Dutch manual is AUTO-CONSTRUCTOR.] (JB)

• **BURGER** has 4.1mm diameter holes at 12.5mm pitch, Bolts are M4 with hex Nuts, and Axles are 4mm Ø. The parts are painted red, blue, green & cream, and are poorly finished. (SG)

• The lid from a photo of a small **DER KLEINE INGENIEUR** Outfit is shown opposite, and the parts in the box include various Strips, an 8-hole Wheel Disc, a STABIL-pattern Flanged Sector Plate, and 2 of what appear to be Screwdrivers, with large tapering wooden handles. (JB)

• On **DORANDO**. Unlike INGÉNIO (16/430) for example, the metal frame is on the inside and is hidden in the finished model. (JB)

• The initials **F.D.K.K.** stand for FÜR DEN KLEINE KONSTRUKTEUR. (JB)

• There was a connection between **INDUSTRIE** and **PHANTASIE** (15/417) in that the models in the manuals owned by *Constuctorama* are identical: the PHANTASIE Crane in 15/417 is Model 33 on p10, and the same model, but reversed right to left, is in the INDUSTRIE manual, again on p10, but it is No.24. Also the parts in it are held together by snap fasteners. Those are the only differences as far as the manuals are concerned, but the parts in the 2 systems aren't compatible, with a different hole size and pitch. [N&B are shown for INDUSTRIE in MCS and snap fasteners were used in an earlier period] (JB)

• **KONSTRUX** is larger than stated in OSN 15 and there were 5 sets called MIKROS, DEUTERON, MEGA, MAKROS, REX - Greek or Latin names all relating to size in some way. (JB)

• The French patent (No.707915) for **MAFELL** (15/415) was granted in 1930. A model is shown at the top of the next column. (JB)

• **MECANIC/MEKANIK.** The change of name occurred in 1949 when the system was still being made by Dörken & Mankel. (The company still exists under the name Dorma and is now a leading manufacturer of door closing systems.) According to information from the firm, production of constructional toys ceased in the mid 50s [a catalogue from 1957 is known] because of problems of distribution in the toy market. A manufacturer has to be listed by VEDES, the powerful organisation of German toy retailers, to be able to sell products nationwide. D&M, (and also the firm who made MIGNON) were apparently not on good terms with VEDES. As a matter of interest it is said that VEDES played an important role in the confiscation of Meccano's rights during WW1 and their sale to Märklin.

Sven continued that he has some 25 MECANIC/MEKANIK sets in his collection but not one made by Adrian & Rode, and so he would like to know more about their period. In a mid 50s Leaflet a new Gears Set is shown but was it ever introduced? The parts were included in Parts Lists (see 3/33) but he has never seen any of them. (SG)

• **MIKRONO, ROSETTA, & PYTHAGORAS** were different names for the same system, and their parts may be wooden, but this isn't sure yet. (JB)

• On **MÖWE** (15/416) the original firm would have been Möninghoff & Weiß, the brand name coming from the first 2 letters of each. (DR)

Sven's **MÖWE** set is packed in a nickel plated box with a sliding lid and hazardous sharp edges. It measures 28.5* 8.3*2.3cm and the lettering on it is stamped into the metal. Holes are 4.3mm Ø at 13.0mm pitch, and the Bolts are M4 with (unusually for German systems) square Nuts. Strips, Plates and Brackets are nickel plated steel of various thicknesses around 1mm. Pulleys have a brown finish like thin brass plating. [Sven kindly sent an 8h Strip and it is 13.2mm wide by 1.18mm thick, with 4.4mm Ø holes. Its end radius is 7mm. And in a photo of the Set can be seen a 12*5h Perforated Plate, the Flat Sector Plate mentioned in OSN 15 (with straight ends and all holes parallel to them), and 2 of the STABIL-type Flanged Pulley Discs. The manual has landscape pages almost the size of the box, against the near A5 size of the page the model in OSN 15 was taken from.] (SG)

• The EMB4 **PLASTICON** set includes a motor and other electrical parts, with some plastic parts, and others of nickel plated steel. (JB)

• The parts shown in a photo of a **RECORD** Set include some short Strips and Brackets with semi-radiused ends,

an 8-hole Wheel Disc, and the 2 Spanners with square tails shown below (enlarged), along with the top of the box lid (opposite). (JB)

• The parts in the **SACHSENMEISTER** theme sets (15/418) have only very limited compatibility with the ordinary parts. (JB)

• The parts in a photo of a **SCHWERKA** Set include the Windmill Sails illustrated in OSN 15, though they don't look black. (JB)

• On **TECHNOFIX** the parts are steel, brass plated, the holes are 3.5mm Ø, and the arms shown in Fig.5 can pivot independently. (JB)

• On **WEMA**, Nebenzweig is not a town, it means 'sideline' and thus constructional toys were only a sideline activity for the firm Eberspächer from 1946 to 1948. (They made and still make, heaters for cars.) (SG)

• The early 30s catalogue that listed ALPHA also includes **ZICK-ZACK** with as an illustration the box below. The WK logo (by Nr.) shows it to be from the Wilhelm Krauss period, and the main thing is the unusual hole pattern in the Strips. 3 sets are listed with 40, 80 and 147 parts. The largest one cost 18 Marks a dozen, against 66 a dozen for the ALPHA set with 150 parts, so it would have been aimed at the cheap end of the market. (SG)

The 'NEW' GERMAN NAMES

• **ANDERS**, blue and orange parts without many holes in them, and so not very adaptable. (JB)

• **BAUE SELBST**, from the 1930s with special parts for Cranes. (SG)

• **BOSCH**, MECCANO-type parts, painted black. A photo shows a wooden box with a sliding lid. The label on it is similar to the manual cover reproduced opposite. (JB)

• **COMBINATOR**, 1930, parts to make buildings. (JB)

• **CONRAD**, wooden parts but metal Brackets, Axles, and Wheels. (JB)

• **DUX Railway Sets**. (SG)

• **FRI-DIE**, a simple system with red and blue painted steel parts, and holes spaced at markedly more than ½". [It is probable that this is the FRI-BIE of 11/291; other mistakes in that list: KOHLER should be KOBLER, and WESFALIA, WESTFALIA.] (JB)

• **GECO**, preceded CONRAD and is identical to it. (JB)

• **GESCHA**, a simple system from the late 1940s, with an unusual hole alignment. (SG)

• **HEIKO**, MECCANO-type parts but only a limited number of simple ones. (JB)

• **INGENIO**, pierced or perforated sheet steel parts painted white, red or black, which slot one into the other to make Dolls' Furniture, parts of Buildings, and also Trains. (JB)

• **KOSMOS MASCHINEN**, from the 1930s, with semi-specialised parts to make machines. [Perhaps from makers of TECHNOFIX?] (JB)

• **MAGNETO**, heavy steel parts, with Wheels & Axles. (JB)

• **METALLIX**, from the 1950s, with MECCANO-style steel and natural aluminium parts. (JB)

• **RIAG Modelbau**, another simple system from the late 40s, with a hole pattern like that of ZICK-ZACK above. (SG)

• **ROCO**, possibly from the 1950s, & based on Rods. (JB)

• **UNSERE TAKTSTRASSE**, an East German theme set to make 2 different Tractors with mainly special parts. (SG)

• **WERNER'S Metallbaukasten**, an early postwar copy of TRIX. (SG)

An EGB-ELEKTRO Outfit Well actually most of the parts from one that Richard Symonds came across last year in Canada (for $5). He kindly sent a photo of the parts and as examples, a 3h Strip and a N&B. The Set is thought to be from the 1950s and is shown in MCS as ELEKTRO-BAUKASTEN. EGB was the name of the East German maker from Leipzig, and as well as this EM (Electro-Magnetism) Set, 3 others are noted in MCS - the M (Magnetism), RE (Static Electricity), and CE (Electro-Chemistry) - but no details are given.

The main parts of the EM Set are 2 8*14h Flanged Plates, various Strips and special Brackets, a ready-wound Coil and motor Armature, a Horseshoe and 2 Cylindrical Magnets, and a Bell. All the parts are shown in MCS but the following details can now be added.

• **DATA** (in mm) STRIP (3-hole): •hole pitch/dia, 10.0/4.2; •width, 10.0; thickness, .86; •ends fully radiused. [No bosses] THREAD: M3 [No Axles or Gears] NUT: hex 5.6 A/F; BOLT: tapered cheesehead 5.0 Ø; both nickeled steel.

• The **Flanged Plate** is moulded from dark brown plastic and has no holes in the flanges. The holes in the top look much smaller than those in the Strips.

• The 3 & 9h **Strips** are aluminium and have little material outside the end holes, so the 3h one is less than 28mm o/a. The 6h Strips look to be dark brown plastic.

• The **Trunnion** appears to be aluminium, and the long centre slot looks much longer than in the MCS illustration.

• Most of the other **Brackets** look as if they are nickel but some may be aluminium.

• The base and switch handle of the **Switch** #8 look to be red fibre, and the fittings, nickel.

• The **Coil** is about 20mm wide and its top and bottom are brown plastic. The **Armature** is about 10cm long o/a.

• The top contact part of #12 (**Contact Strip**?), and the **Brushes** #18 are copper.

• The **N&B** are in a flat square box that may be made of brown plastic. It's about 4*4cm with a hinged lid, and may be a substitute for the #21 shown in MCS. In Richard's parts the **Container** #22 (with Iron Filings in it I think) is a clear phial with stopper.

• The flat **Plates** #29 & 30 are red - plastic no doubt.

• The **Pointers** #31 & 32 are about 6cm long. #31 looks at first glance like light yellowy-brown wood, but is probably plastic; #32 is aluminium.

• Part 33 (**Nägel**, but I can't think of a suitable English word), looks aluminium, and is some 5cm long with a small hole in the 10mm long by 5mm wide spade end.

• The **Bell** is nickel and about 8cm diameter.

• What may be #35 (**Disc**?) is black and about 2cm Ø. **Axle** #36 is a brass looking Threaded Rod, 5cm long.

• There are 4 lots of **Wire** on the card former of #41, and the wording on it is Kupferdraht 0,10mm Ø; Kupferdraht 0,30mm Ø; Eisendraht 0,30mm Ø; Heizdraht 0,12mm Ø.

• The **Bolts** are 6mm u/h, and 2 longer ones can be seen, one 15 and the other 18mm long. Their (neat) heads are 2.0mm deep. The (machined) **Nuts** are 2.3mm thick.

• There are 2 identical nickel **Spanners** which look like the one in MCS and are about 8cm long. The **Screwdriver** is perhaps 16cm o/a and has a long, round wooden handle.

Richard wrote that parts 13,14,15,19,20,27 & 40 are missing from the Set, and I can't see 23,26,38,39 & 42-46 either.

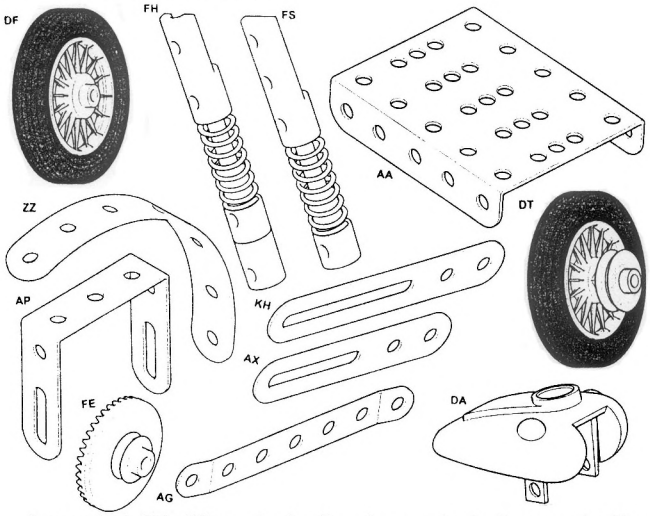
3 STEEL TEC HARLEY-DAVIDSON SETS David Hobson kindly lent me his **UK #950712 Outfit** (OSN 14/385), the one with 545 parts, a motor, and a manual showing the WW2 Cycle, the Electra Glide, and the Café Racer.

The box measures 18½*12*2" and opens at the ends. It's in the usual STEEL TEC black style with full colour photos of the 3 bikes on the front, and small photos of the models from all the UK sets listed in OSN 14 on the back, except that there's no mention of #950992, Starship Enterprise. The Set No. is only shown in the small print, along with the other details given in the last para of 14/385.

The parts are housed in recesses in an expanded foam block, with most of the steel ones in a black plastic box with STEEL TEC moulded into the lid and pegs in the base for the Strips and small Plates. Some of the steel parts, but by no means all, are stamped STEEL TEC; none of the plastic ones are marked.

34 different steel parts are included, apart from Axles and N&B, and 17 of them are not in MCS. Some of the more unusual ones are shown below - others are: 2h A/G, 1" Triangular Plate, a soft Compression Spring (GS) which is ¾" long and nearly ¼" od, RH & LH Handlebars bent up from Axle Rod material, 3,4,5,6,7h NS, and a narrow 1*3*1 DAS. The NS are slightly wider than the MECCANO variety, .360" against .344"; but their ends are similar, fully radiused but not about the centre of the end hole. The holes at 4.2mm Ø, are about the same. All the metal parts are BZP except the Flanged Plate, AA, which is painted black.

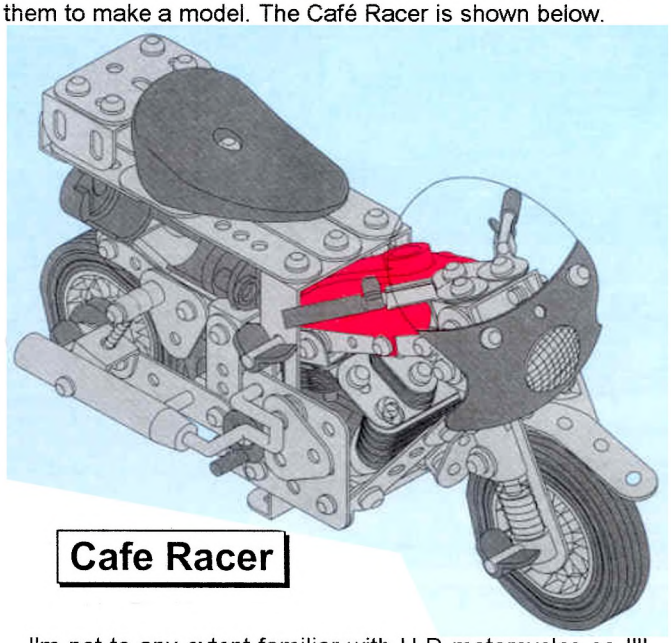
Of the parts below: the slots in AP,AX,KH are ½,1,1½" long; AG is a 7h NS with slightly angled ends; ZZ is formed from a standard 7h Strip.



I counted 37 different plastic pieces, including parts like the Petrol Tanks, Saddles, Panniers, Exhaust parts, Front Fairings and Screens; and functional parts such as a Pinion, Contrate, Spoked Wheels, Front Forks, and various Spacers. All of them, and the metal parts, will be shown in an Extra MCS Sheet - a few points of interest follow:

- Both the Contrate and Pinion are black with brass bosses. The latter is as before with 19 teeth; the Contrate has 50 teeth and no holes in its face - its boss is on the 'inside' and the tubular brass core is extended on the outside with a separate ½" pulley moulded onto it.
- The Wheels are bright plastic with black Tyres and there's an integral black ¾" pulley on one side of the Rear Wheel.
- There are two different sprung Front Forks, both consisting of two plastic parts which slide in one another, with a (metal) Spring in between. These parts, & those for the Exhausts, have a bright finish which matches the BZP - other plastic parts, apart from those mentioned below, are black.
- All three Petrol Tanks are the same apart from their colour - red for the Racer, khaki for WW2, and black for the Glide. The Fairings are different (the WW2 one is khaki), and so are the Screens. The WW2 also has reddish brown Panniers and a Holster with a Rifle Butt sticking out of it.

The manual is A4 size with 28 unnumbered pages including the covers. The front is rather similar to the box; on the back cover are the same names etc as on the box, plus 'Part No.222222748'. On the inside front cover are drawings of the 3 bikes, followed by 4 pages showing all the parts. The various lengths of the Bolts and Axles are colour coded, and this allows the right ones to be readily apparent in the step-by-step instructions for each model that follow. They look good of their type but I haven't actually used them to make a model. The Café Racer is shown below.



I'm not to any extent familiar with H-D motorcycles so I'll assume that the proportions of the models are about right, although to me the wheels look rather small, at least for the WW2 machine, and the position of the motor only allows the top of the rear cylinder to be modelled. The drive to the rear wheel is the Pinion on the (standard black) motor driving the Contrate, and then by a Rubber Band to the pulley on the Rear Wheel. The batteries in the (standard) Holder can be seen under the Saddle of the Racer - on the other models they are partly hidden by the Panniers.

All the models need about 100 N&B and each has a similar basic layout. Apart from the different plastic parts already mentioned, the Racer has a sprung rear frame and the WW2 engine has a different layout to the others. David made up the Electra Glide and at first glance it's an impressive model. Some 10" long, it weighs getting on for 2lb, and the plastic parts don't look out of place. In some there are unused holes, with Bolts screwed into several of them, and there are even four imitation Bolt heads moulded into the cover of the Luggage Case - all this helps to give a uniform look to the metal and plastic parts. I should add though that several readers have written that they dislike the use of so much plastic, and certainly not many of the plastic parts would be of much use in other types of models.

On closer inspection there are some poor features. The batteries at the back, even when partly hidden, look out of place, as do the plastic Spring Clips at each end of the Wheel Axles. Worst though are the mudguards on the Glide - the Formed Strips used on the WW2 and the Racer are replaced by Curved Strips for the sides with no top surface except the 2 or 3 Double Brackets that join the sides. It looks particularly bad at the front. Structurally the Glide is quite solid except for the Exhaust Pipes which aren't properly fixed at either end, and tend to fall off.

Toby Haffter kindly sent me the Manuals from 2 outfits

which were bought in America, a 301 and a 201, and Eric Sinton also sent a 201 Parts List, identical to Toby's. The **No.301** models are those already described, and the parts have the same PNs with one or two exceptions. The main one is that the different parts of the Wheels are listed separately with the Tyres as DU and the Pulley on the rear wheel as DX - its square section boss pushes into the wheel hub.

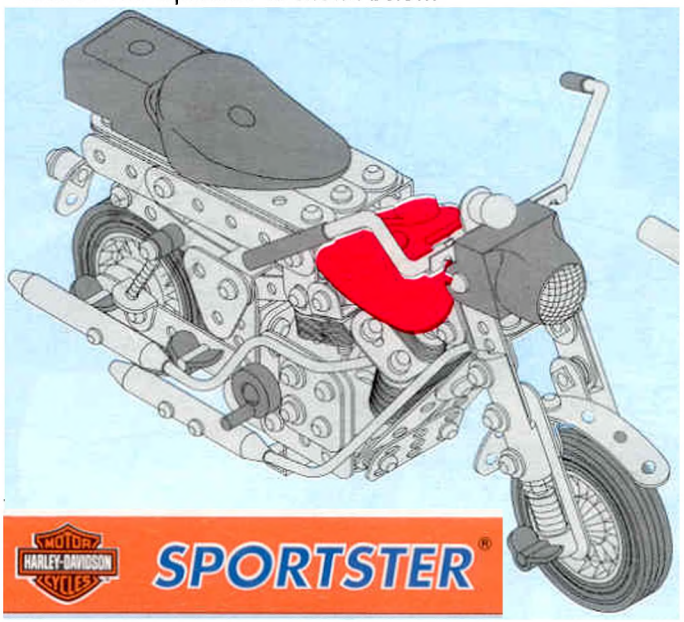
The 32 page manual is the (normal STEEL TEC) American 11*8½" size and has a completely different layout and different illustrations. Drawings of the 3 bikes are shown on the front cover, similar to those on the inside cover of the UK manual but in two of them a reverse image of the other side of the bike is shown. Also on the cover, 'Item #7091' and '586 Parts'. I had counted up the number of parts shown as needed for the UK models and it came to 562, but it was a long job and I haven't done it again for the #301, though it ought to be the same. The step-by-step instructions show the models being built in an entirely different sequence, and most of the written instructions come from the 'Steel Tec boy', who doesn't appear at all in the UK version. The Bolts and Axles aren't colour coded but the ones being used at each stage are shown full size. The rear cover is ⅛" spaced graph paper and is headed Work Sheet. At the bottom are '© 1994 Remco Toys, Inc. NY, NY 10010' and '5/12/94 Item #7091'.

[Since writing the above I have seen, courtesy of Robin Throp, a #301 set that was purchased in Australia. The box is generally as would be expected with 'Item #7091', '© 1993' on it, but interestingly '545 Parts'. The cover of the Manual, © 1993, also has '545 Parts' on it - otherwise it looks identical at a glance, but in fact the reverse side of the Café Racer is shown. It has 28 pages, 4 fewer than in Toby's Manual, but the missing pages probably cover similar ground to a separate 4 page *Helpful Hints Manual* which was also included in the Australian Set. It has 5/11/94 on the back and so may have been produced to answer queries that had arisen from the 1993 Manual.]

The **No.201** is basically a simplified version of the 301, without the Motor, Panniers, and Front Screens. It has 75 types of part against over 90 in the 301, and those common to both, the vast majority, have the same PNs. The different metal parts are a 2*1h Angle Bracket and a 1.7" Axle, and the new plastic ones are a Pillion Seat, a Badge, and different shaped Handlebars, Exhaust Pipes and Silencers - no less than 5 of the latter. The 301 Motor is replaced by a Bracket, EW, plastic probably, which is in effect the 2 mounting flanges of the Motor. The Petrol Tanks are shown red, blue and black, and all the other parts are black or bright as before.

The Manual's 28 pages are the same size as the 301's, and the style is similar. Again the cover has drawings of 3 bikes on a pale blue ground, with '#7090" and '430 Parts'. Some of the step-by-step illustrations show a 301 assembly stage but though the drawings are similar they are never exactly the same. On difference is that, apart from the model names, the wording, mostly on one page of general instructions, is in 7 languages including Dutch and Portuguese. The Steel Tec boy is included in the step-by-step illustrations but he doesn't make any of the useful remarks that are in the 301 Manual. Both sides of the back cover are blank except for '© 1993 Remco Toys, Inc. NY, NY 10010'.

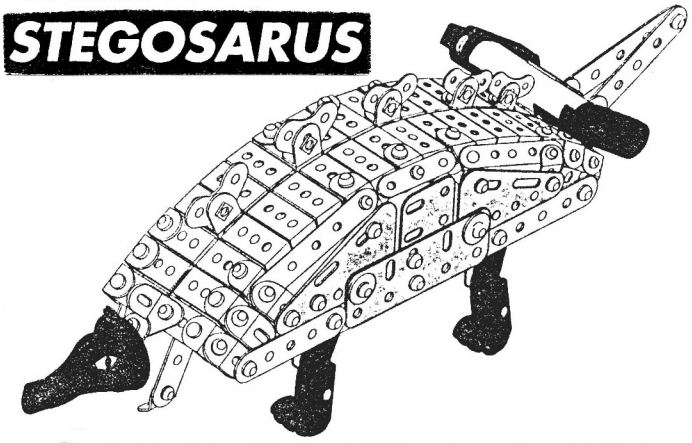
The 3 motorcycles are called '1930's Style', 'Sportster', and '1960's Style Racer'. Their general layout is like the 301 models with the Bracket replacing the Motor, and the Contrate and Band drive to the Rear Wheel still included. No attempt has been made to fill the space that was the body of the Motor and so there's a void where a crankcase should have been, and the cylinders are left hanging in space. The rear one, at least in the illustrations, looks particularly odd. The rear springing is fitted to all but the '1930's'. The 'Sportster' is shown below.



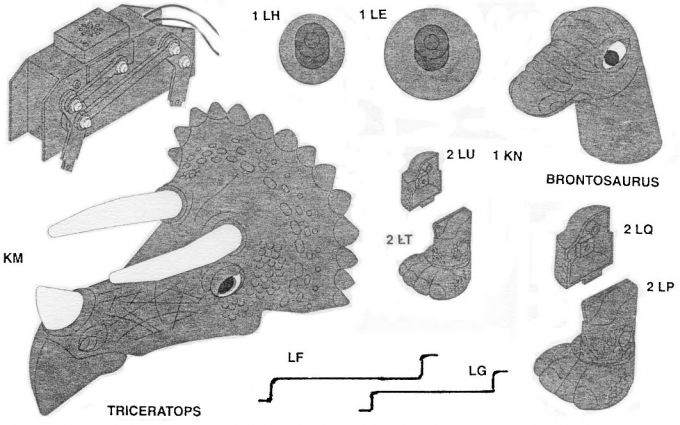
And some OTHER STEEL TEC SETS

David Fellows was good enough to lend me the manuals from 2 sets bought in America in the Spring of 1995.

The first, Item **#7092**, is from **Set #404** & the 3 models in the manual are shown on its cover under the names **BRONTOSAURUS, TRICERATOPS STEGOSARUS.** The latter is shown below. In general the manual is very similar to the 301 one already mentioned but it has 20 pages and there's no date on it. With it though is the 4-page Helpful Hints, with the 5/11/94 date on the back cover. There's also a correction slip which replaces Step 3 for 2 of the models.



The set is claimed to have 399 parts and unusually for STEEL TEC, the quantity of most of the parts is given before the PN in the Illustrated Parts. The metal parts are mainly Strips and lots of Brackets, with about 110 N&B.



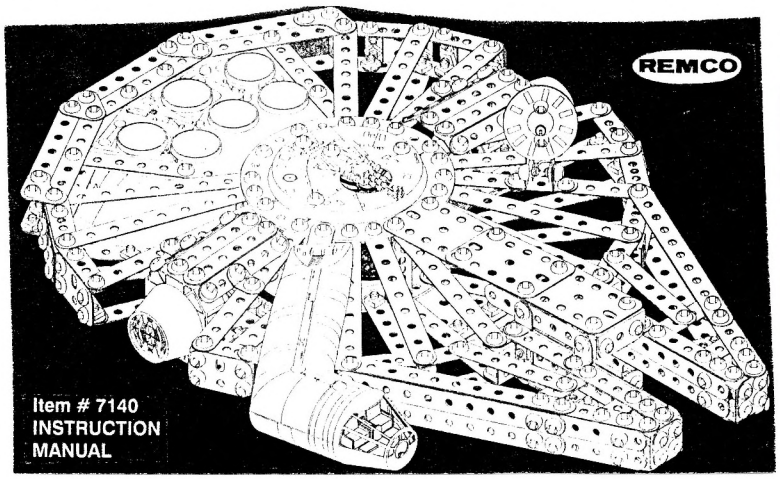
Unusual parts are pairs of formed Leg Wires, LF,LG, and

the 5h long Triangular Plate shown in 14/393. The latter, and 5 & 3h long Flat Girders, are painted orange; all the other parts are BZP. Plastic parts are all shown black and the main ones are 3 Heads with white trim; Bossed Discs (or they may be Pulleys), LE,LH; 4 different types of Feet, each in 2 parts (2 types are shown); a Motor/Gearbox Unit; and a Battery Pack with a switch which takes 3xAA cells.

All the models are basically similar - a body shell is made first and then the Motor Unit is fixed inside, held by 4 Self-tapping Screws. Linkages from the output shaft of the Motor cause 4 arms (legs) to oscillate and to each a 2-part Foot is attached. A plastic pin in one half of it engages a hole in the arm so the Foot is free to rotate, but its movement is controlled by a Leg Wire which hooks into the Foot at one end and the Motor Unit at the other. The tail of the beast is bolted on and the Head pushes onto the boss of a Bossed Disc, which is bolted to the end of a short or long neck structure. On each model the Battery Box is rather oddly positioned on top at the back.

The models look very like those in the Walking Dinosaur Set (12/322), and both sets are marked as containing 399 parts. However the ad for the earlier set mentioned 2xAA batteries, against the 3 needed in this No.404.

The second manual, **#7140**, is from is the STEEL TEC STAR WARS ¦ Mega Sized ¦ **MILLENNIUM FALCON** Set. The page size is as before but it is thicker with 32 pages, and the construction of the one model in it (below)



extends over 52 assembly steps. On the back cover is © 1995 and MARCH 31, 1995.

The number of parts is given as 1064, and they are mostly metal 3-11h Strips, Brackets, some 2 & 3h Flat Girders and 3*5h Plates, and 350+ N&B. The 20 or so plastic parts are mainly detailed mouldings, some of them quite large. The only one that might be useful in its own right is a Circular Strip with 24 holes that look as if they are ½" apart. But it's unlikely that its pcd (of 3½ to 4") is an exact number of hole pitches. The metal parts are mostly BZP but a 3*5h Plate that David sent is painted silver. Also although its hole pattern is that of a Flexible Plate, at 32 thou thick it is very rigid. The plastic parts are a fawn shade with the exception of blue glazing panels.

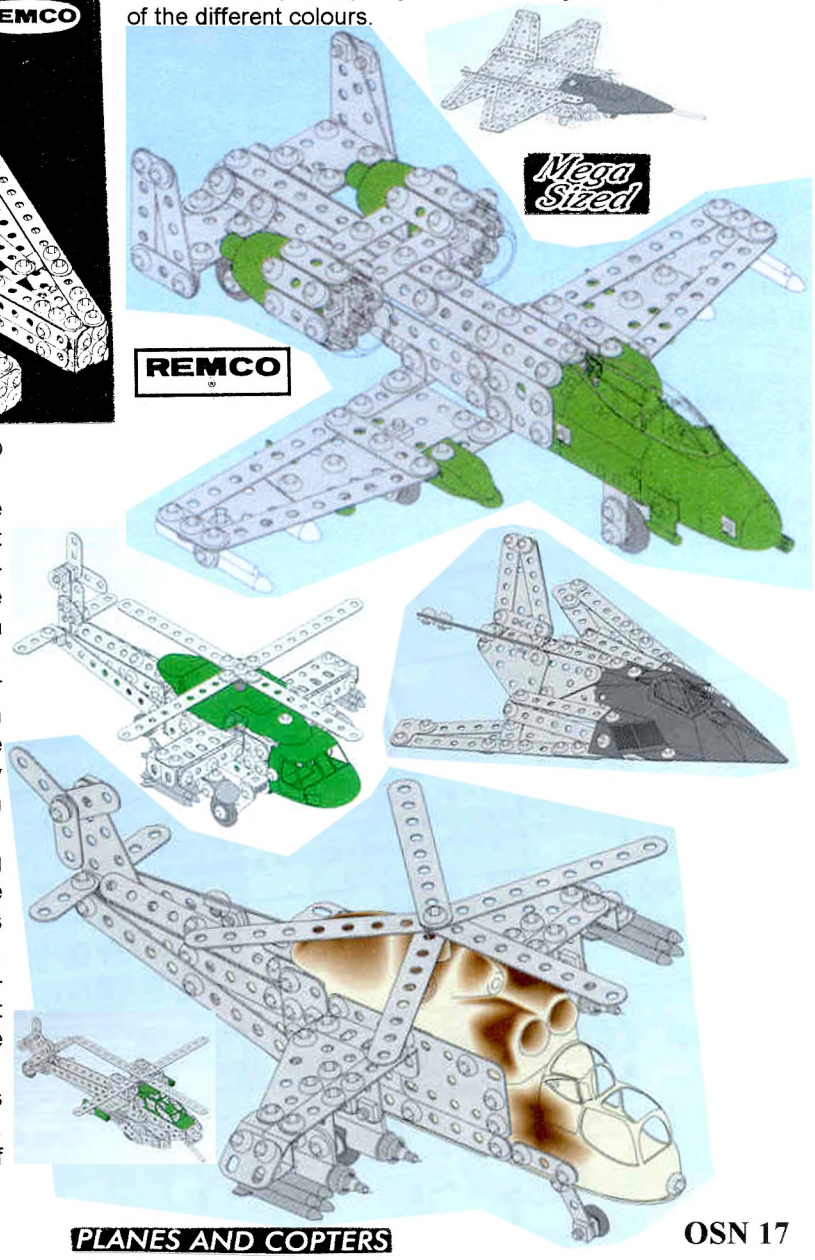
The model is some 18" long and is made by building outwards from 2 of the Circular Strips, one spaced above the other, in the centre, with most of the plastic panels bolted on afterwards. There are no moving parts, or lights, and the only colour is from the handful of blue transparencies. The model sits on a stand made of Strips, but it's flat and only an inch or so high, so the fully detailed underside isn't immediately seen.

David wrote 'that the quality of the parts in both Sets is excellent, and the zinc plating very bright with no 'shadows'. At $35 and $70 they are very good value but the design of the models is uninspiring.'

Now for 3 sets that I've been able to look over thanks to Robin again and John Thorpe. First another Mega Sized outfit bought in America, this time Item **#7130 PLANES AND COPTERS,** with 564 parts and © 1994 on the box. Most of the lid of the black box is taken up with a colour photo showing all 6 models in the manual, with the A-10 Thunderbolt actual size. Inside the parts are packed in a foam block with most of the metal ones in the usual black plastic box.

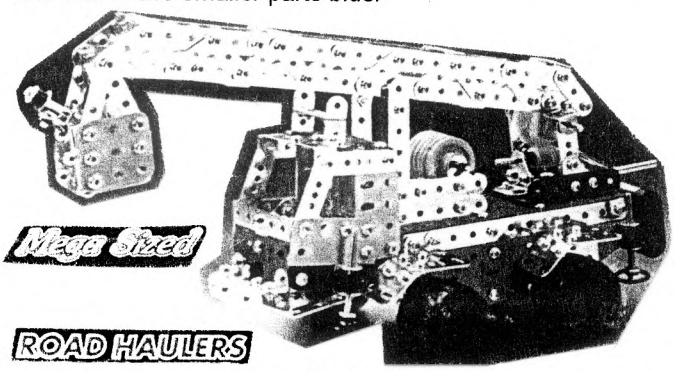
The metal parts are all BZP and consist of a selection of Strips, short Girders, Brackets and small Plates. One part I don't remember from earlier sets is a 2-hole long A/G. Then there are around 40 plastic mouldings, black or olive brown, which form the front fuselage/cabin sections, or model weapons, fairings and other trim.

Apart from the A-10, the other fixed wing aircraft are the YF-22 and the Stealth fighter; the helicopters are the Apache, the Blackhawk, and a USSR Gunship. The longest model is about 15" and all the helicopter rotors are 9½" diameter. The only moving parts are the u/c wheels and the rotors, and there's no interconnection between the main and tail rotors on the helicopters. The only point of interest in the construction of the models is that the bottoms of the helicopter fuselages are plastic mouldings which carry upright pockets for Nuts to sit in, and so can be attached last with Bolts from the outside. The plastic parts help to give realistic lines but I don't think they blend at well with the BZP parts, partly but not wholly because of the different colours.

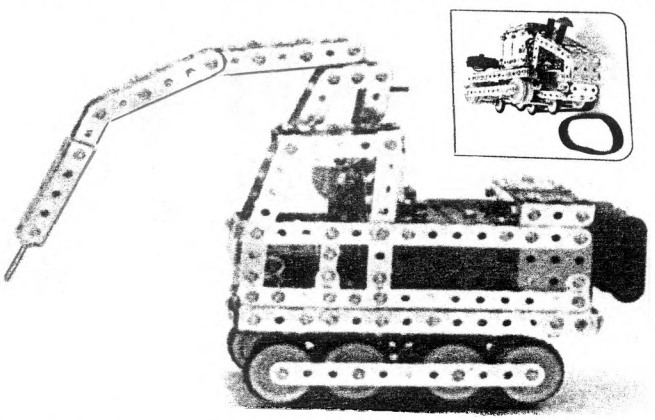


The 48 page Manual has the usual presentation and page size. It has #7130 and illustrations of all 6 models on the front cover front, and © 1995 and July 15 1995 on the back. Josep Bernal kindly sent a complete copy of his manual which has been a great help in writing the notes above. It is a different edition, though with the same Item No., and has the name of the sets on the front cover in 7 languages, and on the back: © 1995 & JULY 10 1995.

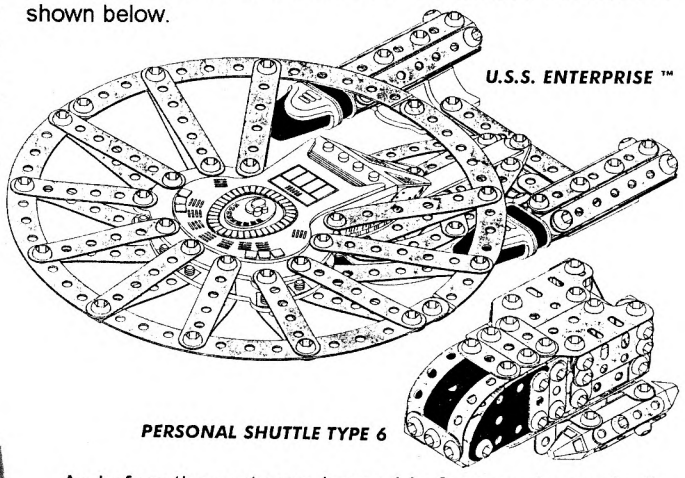
Yet another Mega Sized set from the U.S.A. is **ROAD HAULERS**. On the black box: 999 parts, © 1994, **#7028**, 45 models, and a large colour photo of the 15" long Rescue Vehicle below. As before the parts are in a foam block, and include metal parts in 2 of the usual black plastic storage boxes, a Motor, a 3xAA Battery Box, 6 of the black push-on Road Wheels, the Flanged Plate AA shown earlier among the Harley-Davidson parts, and a few that I'd not come across before:- • Rubber Tracks; • 17h A/Gs with all round holes; • a 5*6h Flanged Plate flanged on the 5h sides; • yellow plastic Pulleys of about 1¼" Ø that the Tracks run on. There is also a yellow 1½" Gear Wheel with 5/16" square, integral bosses on either side - these engage in the square plastic blocks that may just be visible in the model below, under the back of the ladder, and perhaps they act as a cam to raise and lower it. The Worm that drives the Gear is mounted on a Crank Handle with a short shank, another new part. The Strips, etc are BZP, the Plates red or yellow, and one or two smaller parts blue.



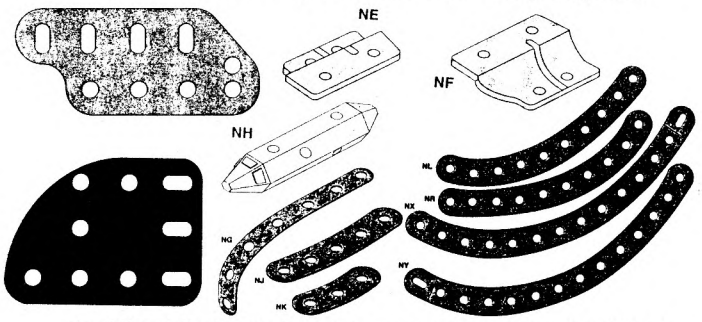
There are 2 manuals in the Set, both the standard STEEL TEC size. The largest has 84 pages and is marked Road Haulers, Item #7028, with © 1995, and July 10, 1995 on the back. 11 models appear on the cover, mostly smallish vehicles but with simple helicopter and light aircraft models among them, and 3 rather larger vehicles, akin to and including the Rescue Vehicle. The second manual has 28 pages with just 'Illustration Manual' and Item #7028A on the front, and the same year and date on the back cover. The models are of a different character, no larger but with a rather more complex look to them. 6 are shown on the cover including 2 that might be machine tools, a Fork Lift Truck, and a Mobile Crane. 3 are fitted with Tracks, but it doesn't look as if they are driven, and 2 of the 3 appear to run on small wheels under the models. One of the tracked models is shown below, and in the inset another in which the small wheels underneath may be visible. In all this manual contains 27 models, with the first a Mobile Cannon, and the last a Snow Plough. There is no step-by-step presentation of the models, just one or more colour photos of each.



Finally a UK set, the **#950992** that was mentioned in 14/385. It came from Toys-R-Us and the lid is very jazzy with the model emitting trails of light against a star speckled black background. The names on the box are **STAR TREK ¦ U.S.S. ENTERPRISE ¦ NCC-1701-D**, plus 'Battery Powered Lights & Realistic Electronic Sounds', 410 Parts, and © 1994 Paramount Pictures, 1993-95 Steel Tec. The model looks similar to the one in 12/323, and the 20 page manual has 405 & Item #7094 on the front cover, and 05/31/94 on the back. Again my thanks to Josep for copying the complete manual to me. Also thanks to Gordon Finch for some notes on his set. The manual models are shown below.

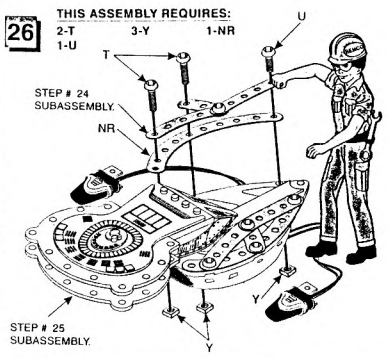


As before the parts are housed in foam and one plastic box. Most of the metal parts, Strips, Brackets, etc, are old favourites but there are quite a few new ones, including no less than 6 patterns of Curved Strip (below). Two, 3 & 5 holes long, are quite large radius, and then there are two with 10, and two with 14 holes. The curvature of these four varies along their length, and both pairs are almost a mirror image of each other. The main difference is that though both 14h Strips have a slotted cranked hole at one end, it is at the sharply curved end of one and at the shallow end of the other. Other new parts, all for the Shuttle, are a 9h NS, a formed 7h NS, and the modified Flexible Plate and Flat Girder shown below. All metal parts are BZP excepting the black Flexible Plates (but probably they are plastic). There are only 4 plastic mouldings, all light grey. The main one is the large Body moulding which forms the centre and rear of the model - it has a lidded compartment for the 3xAA batteries which power the 2 Sound/Light Units. These are permanently wired to the Body, and are operated by the row of 4 buttons at the back of the top 'deck', each of which gives a different sound, but none of them makes the lights flash. The others mouldings (below) are the Side Pods of the Shuttle, and the Mounting Brackets of the 'warp engines'.



4 of the 14h Curved Strips are used to make the 52h elliptical outer ring, and the others are bolted on to the top

face of the rear of the Body to 'decorate' or possibly stiffen it (opposite). The model looks quite well when made up, with the plastic body largely 'disappearing' under the Strip work, but it is rather colourless with only the red Light Units standing out. It would look much better seen against a dark background, as it is shown on the box lid.



Sets on sale at Xmas 1996

Some UK sets were mentioned in 16/448. Richard Symonds sent cuttings from Canada showing the following. #SK Sets at $7; #1 ($13); #202 ($20 & $23); #3 ($24); Star Wars, Mega Sized, X-Wing Fighter, 538 parts ($50) [In an earlier ad, see 14/385, a different set had 450 parts but with what looks to be the same model on the box lid.]; a Mega Sized Set with 118? parts (probably a Vehicle Set with 1182 parts); Star Wars, Mega Sized, Millennium Falcon, 1063 parts; Mega Sized, Helicopters and Planes.

Josep Bernal wrote that the #301 Harley-Davidson Set and some of the Mega Outfits were in Spanish toy shops.

The MÄRKLIN CAR CHASSIS

Both Reg White and Frank Beadle kindly sent me photocopies of the C95 Car Chassis manual, which I think Reg had been lucky enough to acquire. It's the English edition, with a PR of O 08 33 m on p1, and there are 28 pages about 24*16cm deep, plus covers. On the front is a boy, the bare Chassis (below), and said Chassis fitted with the 3 bodies that were originally available (also below). The Chassis and each Body was supplied as a separate set and although the name on the Manual is CAR CONSTRUCTION SETS, detailed instructions are not given for assembling the Bodies, only for building the Chassis, and mounting the C/W Motor, which was available as an extra.

The Manual contains 3 chapters. The first is the story of the motor car in 5 pages, then 6 on 'technical points', mainly a full explanation of the 4-stroke cycle (often called the Otto Cycle here but that name isn't mentioned), and finally 11 pages of step-by-step instructions for the Chassis. The English is generally good although the choice of words is sometimes peculiar.

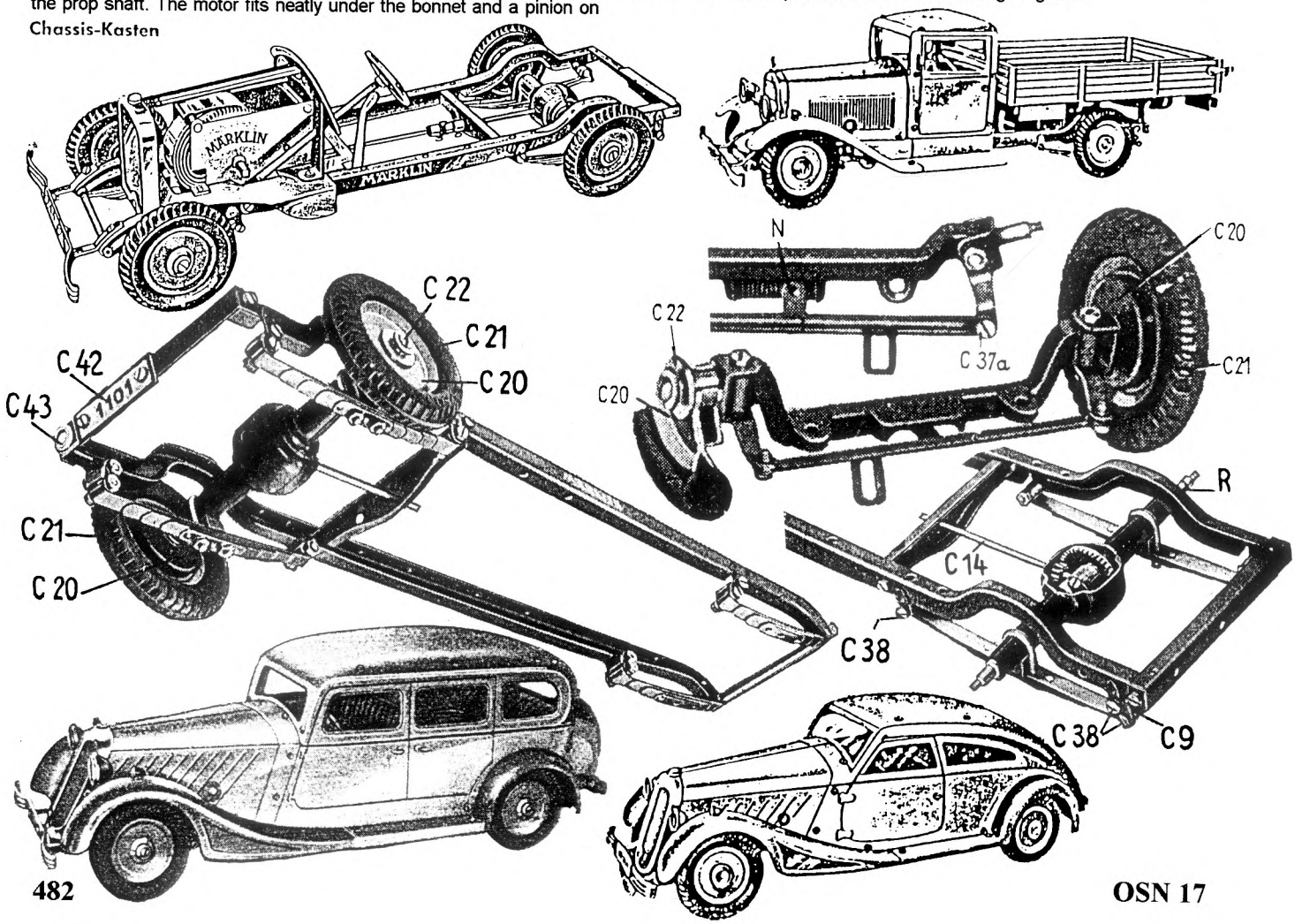
The Chassis is made from 48 different parts, all special except possibly the 32 N&B, and assembly looks fairly straightforward. As well as a Screwdriver and non-standard Spanner, a tubular Box Spanner and Drift (called a Seeker) were provided. On the technicalities, the spring shackles appear to pivot, and the steering gear looks quite realistic though it's very direct with the cranked end of the steering column engaging in a slot on the track rod. The back axle imitation diff casing houses a pinion and contrate, and only one rear wheel is driven, with the other loose on the axle. There are no brakes, and only one UJ for the prop shaft. The motor fits neatly under the bonnet and a pinion on the end of the prop shaft meshes with a contrate on the motor's final shaft, between the sideplates. The on/off lever is extended into the driving compartment and is shaped to make it look like a brake lever. Unfortunately the position of the winding spigot means that there has to be a hole in the side of the bonnet for the key to go through.

Included in the Manual are illustrations of all the sets then available, the Chassis, Stream Line Body, Pullman-Limousine Body, and Motor Truck Body (Nos.1101C, 1103St, 1104P, 1105L). Each body is made up from about 20 types of parts, including the appropriate seats.

In a 1934 Price List (O 0434r), 2 other bodies were included, a Racing Car (1107R), and an Armoured Car (1108G). There was also the Racing Car packed with the Chassis as 1101/07R, and a Lighting Set (1110B). The MCS entry was taken from a 1937 manual and doesn't include the Pullman-Limo, but has 2 new sets, a Petrol Truck (1106T), and a Mercedes Racing Car Set (1133R & 1133AI, the letters denoting the colour - red or aluminium). The 1133 was quite independent of the 1101 Chassis, and the Outfit included a (different) Motor and all the parts for the chassis and bodywork: a replica set was sold around 1990 (see 2/16) and a detailed review of it appeared in CQ21. A 1939 No.71A manual (AN 1039 i) shows all the 1937 sets above.

The Chassis, Motor, and the Truck, Stream Line, & Racing Car Bodies were available after the war, and so was the Mercedes Racing Car. They are shown in MCS/FB, extracted from a 1949 manual. They were all advertised in a 1952 manual but the Mercedes wasn't mentioned in a 1953 English edition. None appear in my next manual, from 1959. I've found no postwar reference to the Lighting Set.

Chassis-Kasten

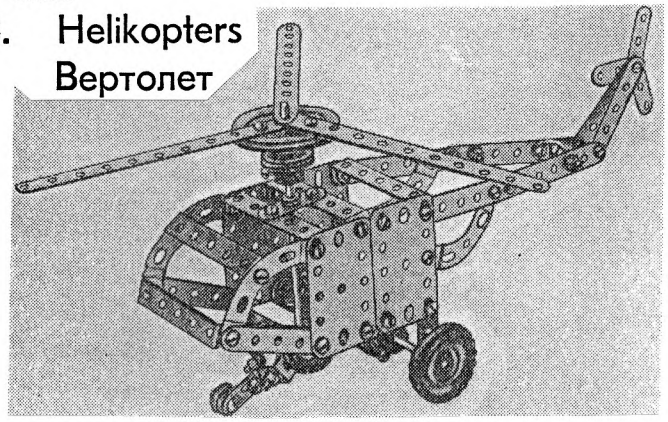


MEHANISKAIS KONSTRUKTORS 'SKOLENS' 2 & 3

Remember METALLIRAKENNUSSARJA (MJA) in 11/281, the No.200 set that was packed in a plastic box with the name MEHANISKAIS KONSTRUKTORS 2 'SKOLNIEKS' (MKS2) moulded into it? David Hobson was good enough to lend me a virtually identical set, in the same orange box, but with a different outer card sleeve which has the Russian name on the front and the Latvian name on the sides, except that 'SKOLENS' is used instead of 'SKOLNIEKS'. SKOLNIEKS means pupil or schoolboy (3/44) and SKOLENS is no doubt a related word - the same Russian word is used in both cases and means student. The Manual includes numbers that probably indicate dates in 1989, and 1990 is rubber stamped on the back of the sleeve.

The contents of the sets are the same, also the parts, though the Curved Strips and Brackets have normal plating and not the brown finish mentioned in OSN 11.

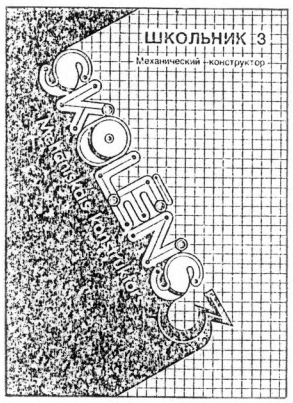
The Manual, summarised below, is the same style as the ELEKTROMEHANISKAIS KONSTRUKTORS (EMK) one in MCS. One of the 15 simple models in it one is shown below. None of them are those on the MJA Leaflet, which, as will appear, are actually #3 set models. The Crane on the MJA sleeve (see 11/281) is in this manual but along with one other model, still can't be made with the #2 set, because 4x50mm Pulleys are needed against the 2x50mm plus 2x75mm in the set. In fact 4 are shown in some parts around a model on the sleeve, along with 2 (red) 75mm ones.



SUMMARY OF MANUAL •Name: MEHANISKAIS KONSTRUKTORS 'SKOLENS' 2. •Details of maker: may be given (in Russian) on p31. •Dates &/or Ref Nos: 03.04.89 & 15.05.89 on p31. •Page size: 145* 214mm deep. •No. of pages: 32 + covers. •Language: Russian & Latvian. •Printing: models are halftone; bands & print on cover are in pink, blue, black. •Page Nos. of Parts List & highest PN: 8-11,94. •Page Nos. of Set Contents & highest PN: 6-7, 94. •Sets covered: No.2. •No. of models: 15. •Name, Model/Page No. of first & last model: Panoramas ritenis,1/13; Tornis, 15/30. •Other notes: names above are the Latvian ones; p12 shows the layout of the box, and has been pasted over a different version but with the same parts.

No.3 OUTFIT Richard Symonds kindly sent details of a No.3 SKOLENS set (MKS3) which he had come across secondhand, somewhat incomplete and without the box, but with the Instructions. Where they are common the parts are the same as those in MKS2 and ELEKTROMEHANISKAIS KONSTRUKTORS (EMK), described in 8/188, but MKS2 & 3 are not progressive.

The Instructions are again in Russian and Latvian. Three MKS sets are mentioned in the Intro to this outfit, Nos.1, 2 & 3, and I think it says that they are linked to school classes 1-x, 2-x and 3-5-x respectively. The cover shown top right gives more emphasis to the Latvian name and the PR mentions Riga. It also contains what may be a date: 12.11.87.



The 'illustrated parts' that aren't in EMK are shown below. The actual parts appear from photos to be identical to EMK, and the notes in OSN 8 describe most of them. Other points are (with prefix 'M' for the nearest MECCANO PN):

- New parts not illustrated are #31 (M12a), 107 (M111a).
- The 12t Pinion and 38t Gear (PNs 101/102) seem to be as in EMK (with 4 holes in the face of the Gear and not the 8 shown), but in EMK they were PN 26/88. The change may have been because although the number of teeth in the OSN 8 parts and manual are as above, those for the same EMK PNs in MCS are 20/63. I hadn't noticed that before, and it would mean that the gears were originally Mod .6, instead of Mod 1.0.
- The shape of the actual Bevel (PN 103, o.d. 24.6mm) is much nearer to the pattern of the smaller MÄRKLIN one than the one shown here. #105 is a plastic Worm of 21mm ∅ and about 5 turns deep; #104 is a 31t, 33mm ∅, genuine Worm Wheel. Both are white, like all the Gears, and the actual #104 has 4 holes in its face, like the Gear Wheel.
- For both EMK and MKS3 there are 2 Triangular Plates, 3*5h & 4*5h. The Hook, #89 is red plastic.

4. Опора угловая 2 шт.
4. Lenķveida balsts 2 gab.

103. Колесо зубчатое коническое 2 шт.
103. Zobrats, koniskais 2 gab.

101. Колесо зубчатое цилиндрическое 12 зубьев 1 шт.
101. Zobrats (12-zobu, cilindriskais) 1 gab.

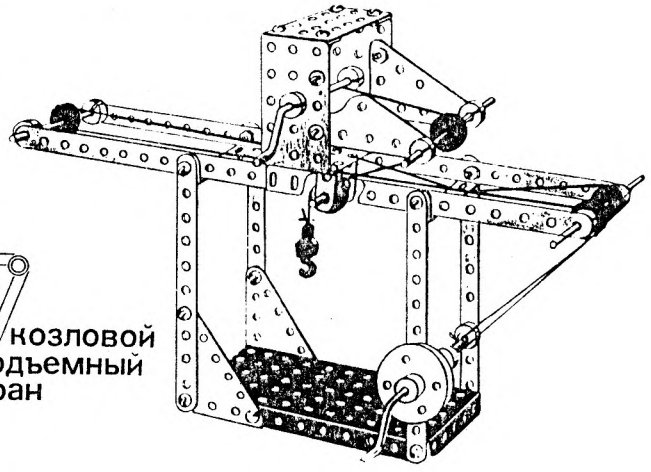
104. Колесо зубчатое червячное 1 шт.
104. Zobrats, gliemežveida 1 gab.

102. Колесо зубчатое цилиндрическое 38 зубьев 1 шт.
102. Zobrats (38-zobu, cilindriskais) 1 gab.

105. Червяк цилиндрический 1 шт.
105. Gliemezis, cilindriskais 1 gab.

The Contents of the Set are given in the Illustrated Parts and will be included in an Extra MCS Sheet. It is a quite small Outfit with 50 N&B (against 60 in MKS2), some 40 Strips and DAS, 8 Flexible and 6 Flanged Plates, Tyres for 4x25mm and 2x50mm Pulleys, 2 Bevels and 1 each of the other Gears. There are none of the Angle and Braced Girders which were in EMK.

Instructions for 14 models, each in colour on a separate 200*140mm sheet, are housed in a wallet-style cover. Also included are an Introduction and the Illustrated Parts, with on the inside of the cover, a sketch of the layout of the parts in the box. Richard sent copies of four of the models, all small and straightforward, like the one below, and all of them were shown on the MJA Model Sheet. One was the model shown in OSN 8.



7 Козловой подъемный кран

MERKUR, OLD and NEW David Hobson kindly lent me an old No.3 Outfit that he has recently acquired. The box measures 8½*12½*¾" and is black with a large full colour label on the lid. On it are a boy, a Floating Crane, a Loco with Tender & 2 Wagons, and the Crane that is also shown on the manual cover (right). The inside of the box is yellow, with card Trays forming internal partitions. There's a blue 2¼" square tin for the N&B etc, and its cover has a quartered geometrical pattern in yellow and a blue which isn't quite the same shade as the base. Inside the box lid is a label in Czech which seems to be explaining how to make a #1 into a #5 with linking sets 1B to 4B. The manual also mentions Sets 5B and 6, but not the 6B and 7 of later manuals. That these didn't exist at the time is borne out by the following parts not being in the Illustrated Parts: 7h Curved Strip, No.26A; 2*5*2h DAS, 31A; 3*3 & 5*5 Corner Brackets, 37,37A; 34 & 119t Gears, 46A,47A; Bevel, 56; Contrate, 57; Axles, 62A,63,64, 65; and the MECCANO pattern Screwdriver, 80A. None of these were needed for the No.6 but all except 2 of the Axles were in the No.7.

This Set must have been earlier than the parts with the brown Strips described in 9/214, because the latter included 7h Curved Strips. The only brown part in this Set is the little Screwdriver, No.80.

The parts in David's Set are identical in shape to those of later sets, but many types of part, such as Gears and large Pulleys, are not included in the No.3. The colour scheme is generally similar too - Strips are a red-orange, brackets are black metallic, Plates are blue, and the only Trunnion left is green. The blue and green aren't exactly the same shades as those of later parts but are quite close. The main difference is that a number of parts are made from lacquered brass instead of the later aluminium or steel. Brass parts in this Set are the 13mm Loose Pulley, Collars, the 22mm Pulley, and the Bush Wheel. The N&B are also brass with machined Nuts (later pressed), and Bolts with slightly smaller heads, typically 5.6mm Ø.

Details of the manual are given at the end. The cover has the name of the company as Inventor so (from *Eisenzeit*) that dates it from before nationalisation in 1950. In passing, Werner Sticht has translated the whole EZ MERKUR section for me, and it also says that the Inventor company developed from a blacksmith's business, which was founded in 1920 by Jaroslav Vance. Sets with the MERKUR name were first produced in 1930 but before that there had been an Inventor's Outfit: no details of it are known except that its parts were not joined by N&B. Current MERKUR literature claims 'more than 70 years of tradition'.

Returning to the Manual, the illustrations of the parts are exactly as those in the small manual described in 9/210. I think, though I haven't checked every one, that the models are all in the later manual (and it has many more besides). The illustrations are identical with a few minor changes but the order of the models is different and the Model Nos., which don't correspond to the ones in the OSN 9 manual, are out of order in places. Compared to later manuals the contents given for the #6 Set are the same but the #1 has a few less parts, notably 2 instead of 4x23mm Pulleys.

There were a few 'extra' parts in the Set, and a couple worth noting are a green steel Bush Wheel with a brass boss, and an orange Double Hook, No.96.

SUMMARY OF MANUAL •Name: MERKUR •Details of maker: 'INVENTOR', POLICE N. MET. •Dates &/or Ref Nos: none. •Page size: 231*149mm deep. •No. of pages: 28 unnumbered. •Language: Czech. •Printing: B&W inc cover; line drawings of models. •Page Nos. of Illustrated Parts List & highest PN: 4-6,98A. •Page Nos. of Set Contents & highest PN: 27,99. •Sets covered: 1,2,3. •No. of models for each set: 19,17,22. •Name, Model No., Page No. of first & last model of each set: 1: Kolo štetí,46,8; Koza na rezání dreva,20,10. 2: Vetrník,52,11; Návestní terc,120,15. 3: Vuz zebrinový,102,16; Kovár,128,22. •Other notes: (i) 11 models for Sets 4,5,6, from Motocykl,151 to Auto sklápecí,253, are shown on pp22-26. (ii) The outside back cover, p28, is blank. (iii) Many of the accents over letters in the Czech names have had to be omitted.

The Current Range & a New Motor/Gears Set In June my daughter went for a holiday in the Czech Republic, with strict instructions from Dad to watch out for second-hand lots of VASEK, METROPOL, etc. No such luck of course but she did (sensible girl) bring me back as a souvenir, a MERKUR Motor/Gears Set 2.1, which I'd never seen or heard of before, and a leaflet showing the current range of outfits.

The Leaflet contains the following:

- 8 one model sets 01 to 08, all of which are small railway locos or wagons. In order, a Tank Loco, a 6-wheel Loco, a Tender for it, a Cattle Truck, a Crane Truck, an Open Wagon, a Bolster Wagon, and a Tank Wagon. Nos.02, 05 & 08 are shown on the facing page. All run on the same small, yellow wheels, which may be 22mm Pulleys, or possibly special Flanged Wheels. The parts are in the usual colours and the only obvious non-standard item is the tank body on the Tank Wagon.
- Next in price are 5 *mini* blister packs with parts for a Light Aircraft (Trempik), a Delta Wing Jet (Deltaplan), a Helicopter (Vrtulník), a Buggy (Buggy Skoda), and a Windmill (Mlyn). The English names are mine. These are the Sets mentioned in 9/214, and they contain 110, 142, 202, 136, & 115 parts respectively. The Windmill is a rather a basic model, but the others are quite realistic looking, partly because many of the parts are in non-standard colours. The colour schemes for the 5 are red/yellow, red/blue, red/green, red, & red/green, except that the Bush Wheel, where used, is always yellow. The Buggy is are shown here.
- Then there are another 2 (unnamed) one-model boxed sets, 010 to build a Formula 1 Racing Car (206 parts), and 011 for a Motorcycle (230 parts). They appear to be made from standard parts and are again realistic looking models (opposite), even though few, if any, of the parts are in non-standard colours.
- Finally Outfits 3,4,5,6 & 7. The No.3 has 218 parts, weighs 1.04kg, and the model featured is a rather crude Tipping Truck, some 20cm long. The No.4 (602 parts in 2 layers, 2.86kg) shows a much better Truck which must be nearly 30cm long and appears to have proper steering. The No.5 has 733 parts in 3 layers (3.87kg) and the model is a tracked Digger, 60cm+ long, with a bucket wheel to do the digging. The 828 parts in the No.6 (opposite) are packed in 2 layers but with 2 trays in each - weight 4.6kg. The models are a tracked Crane lifting a Jeep. The No.7 has the same layout of trays for the 1124 parts (4.45kg). The model is the Fire Engine shown for the TECC No.7 in 12/320, and the sets weigh about the same. None of the other TECC sets

seem to correspond to these MERKUR ones. Clearly the sets are no longer progressive. No non-standard colour parts can be seen.

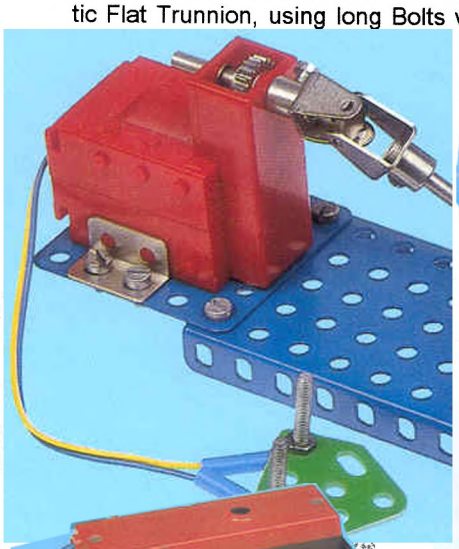
The name 'CROSS' is shown on the front and back of the Leaflet several times, and is prominently shown on most of the set lids. It is no doubt the name of the company that now makes MERKUR. Under it on the back is a name 'Ing. Jaromir Kriz' (perhaps the proprietor - Ing. probably indicates a qualified engineer), and the address, Nádrazni 289, at the same town as before, 549 54 Police nad Metuji. The phone/fax is (0042) 0447 94166/94450. The other, limited wording is in Czech/German/English/Spanish/French.

Absent from the Leaflet and therefore probably quite new is the **Motor/Gears Set**. Its parts are housed in a pale yellow translucent moulded plastic tray with a clear push down lid. This packaging sits in a card outer tray which slides into a sleeve measuring 9.7*6.9*1.4". On top of it the Motor and Battery Box are shown in colour on a blue ground, and on the bottom, Sets 3-7, as on the Leaflet.

The set cost the equivalent of £7 and the contents are as follows:

- The Geared Motor (below) is as shown in all the illustrations, but the top of the actual gearbox is rounded over and fully enclosed. The case is orange plastic except for a red inner face to the gearbox extension; it measures 50mm overall, excluding the (standard diameter) shaft, by 30mm wide, by 53mm high. The method of mounting it is unusual - two 2h long A/Gs are bolted to the model with their round holes engaging the LEGO-like studs that are provided on the sides and top and bottom of the motor casing. The terminals at the ends of the leads are shown bolted to a plastic Flat Trunnion, using long Bolts which receive the push-on clips on the Battery Box leads. With the specified 4.5v, the no-load output speed is about 170rpm, and the torque feels adequate for small and medium size models. There are probably 3 pinion/gear reduction stages and each can't be much more than 3:1, which would give a motor speed of around 5000rpm. If the motor is of modern design that's perhaps rather low, and the rated voltage conservative.
- The Battery Box (below the Motor) takes 3 C cells and is in 3 parts, with a red bottom, a black top, and a black inner housing for a cell at 90° to the others. Top left on the front side is a black spring loaded switch for forward and reverse; a similar switch on the back face isn't used.
- A 17t Pinion and a Worm (BZP); a 34t Gear (painted yellow); a 50t Gear and 2 15mm o.d., 25t Bevels, (black plastic with nickel bosses); a 50t Contrate (painted blue).
- A Coupling (nickel); 2 Universals (see below & 9/215, BZP, 39mm o/a); a 100mm Driving Band (black rubber, about 3mm wide, perhaps #2309); a flat Screwdriver, #1080, and Spanner, #1085 (BZP). 2x2h A/Gs (BZP).
- All parts that aren't plastic are made of steel including all bosses; their design is unchanged though I don't recall a 2h A/G from before. The parts are well made though the paintwork and BZP aren't quite perfect, and the Screwdriver doesn't fit the Grub Screws and some of the Set Screws. What a pity that BZP is replacing the much richer looking (and more durable) nickel plating.

The Leaflet with the Set is a single sheet, 15*42cm, folded in two. The cover is similar to the sleeve and 5 mechanisms are shown on the other pages, including a Differential. All need extra constructional parts of course and most need more Gears than are in the 2.1 Outfit. So is there a larger Gears Set, a 2.2 perhaps? As on the Leaflet, and the sleeve, the wording is in 5 languages.



MIGNON - the Ansatzmutter and other Parts Sven-Ulrich Glage has kindly sent a few MIGNON parts including an Ansatzmutter, the purpose of which was debated in 11/298. First the run of the mill parts. A Plate, #178, .42mm thick, anodised yellow, and a plain aluminium 3h Flat Girder, .99mm thick, both look like their illustrations in MCS, with BRAL-shaped elongated holes, 4mm long o/a. 3 different Strips range from 5.97 to 6.25mm in width, and are from 1.05 to 1.16mm thick. The N&B are nickel plated brass - the Nuts are machined, 4.5mm A/F and 1.6mm thick; Bolts have cheeseheads 4.0mm Ø by 1mm deep, and the lengths in the Parts List include the heads. The thread (including the Motor N&B) is not M2.5 as suggested in OSN 10. The o.d. varies from 2.51 to 2.57mm and the pitch is .45mm - from 7/169 it may well be a Löwenherz thread. The Washer, #145, is aluminium, 8.1mm Ø. The parts seen are well made except that all the holes in one Strip are slightly offset from the centreline.

A steel A/G was mentioned in 13/360, and Sven wrote that he has an early, unboxed No.1 Set in which all Strips, DAS, A/Gs, and Brackets are made of nickel plated steel. One of the parts he sent, a 5h Strip, was nickeled, but the base material is brass, not steel. Its width & thickness are within the range given above for aluminium Strips.

The Ansatzmutter is made of brass, but not nickel plated, and it looks just like the illustration in 10/263, a Shouldered Nut in fact. The nut part is 4.50mm A/F and 1.53mm thick, and the extension is 3.07mm Ø and 1.09mm deep. The only use I can see for it is to provide a pivot for a Strip, and as such it would be a worthwhile part in any comprehensive system, particularly where the standard Bolts are considerably smaller than the holes, as is the case with MIGNON.

In the manual model in which it is used (#18 for Set 3), it appears to secure a long Bolt to the structure, head inside, and the extension outwards of course. Then locknuts are used to retain the Strip in place on the extension with suitable end float. It would be more elegant, and save a Nut, if the Bolt were turned around (head outwards) and locked to the structure by the Ansatzmutter on the outside, extension outwards, and an ordinary Nut on the inside.

Notes on THE ANCHOR ENGINEER John Hanby kindly lent me samples of all the different parts that were in the remains of a Set he came across, and also its Manual which is complete except for a missing back cover. Thanks also to David Hobson for information on the ads in G&T, and on the patents, and to Jeannot Buteux for 2 copies from the related ANKER METALL manual (see 10/260).

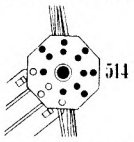
THE ANCHOR ENGINEER is the UK name for Richter's IMPERATOR, and is listed as just ANCHOR in MCS. In fact it was called LITTLE ANCHOR ENGINEER in the first G&T ad for it in August 1914, then ANCHOR ENGINEERING in the next one, in April 1922, and finally THE ANCHOR ENGINEER in ads from June 1923 to the last one in G&T, in December 1924. All were from W Seelig, of 19 Fore St., London EC, pre-WW1, and 23 White St., Moorfields, EC2, afterwards. Seelig was also the agent for Anchor Blocks and continued to advertise those after 1924 - presumably the agency for THE ANCHOR ENGINEER had passed to Bassett-Lowke, see 10/260. EZ gives the dates for production of IMPERATOR as 1913 to c1926.

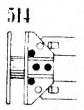
One of the surprising things about the parts that isn't apparent from anything in MCS, or from the Manual, is that the Axles have a flat on them, and a special Axle Clip is used to lock the Pulleys thereonto.

The parts from John are described below. The Stays and Hubs were illustrated in 10/260 - the other illustrations are from the drawings of models in the Manual:

• 501-506. Stays with lengths overall of 52,79,92,116,140, 170mm. They are made from 2 strips of springy steel, 5.0mm wide by .53mm thick, riveted together at 2 or 3 points depending on the length. The 2 nibs at each end of each strip are about 1½mm square and some 3½mm apart - the outer one is the shaped end of the strip bent over and the inner is pressed out leaving a corresponding hole.

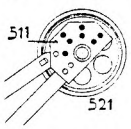
• The 4 Hubs shown in OSN 10 (called Plates in MCS), are from top to bottom Nos.513,514,511,512. The bottom ones are '2D' and have 2 identical steel plates (.85mm thick) spaced about 4mm apart and peened onto the ends of a centre brass tube. Its bore is 3.7mm, and it provides a bearing for the Axles. The nibs on the Stay normally engage of course in any set of 2 top and 2 bottom radial holes (1.7mm Ø) in the Hub, but in suitably braced structures Stays can leave Hubs at any required angle with only the outer nibs engaged in the Hub's outer holes. The top pair of Hubs are '3D' with extra lugs normal to the top face as shown below for 514. The black holes are the ones not being used in that particular model.



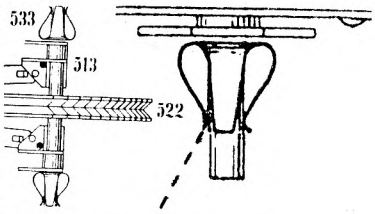


On 513 a full octagonal plate, as used in 512 and the bottom of 514, is bent to form the top of the 2D part and the 3D back lug. All the other 3D lugs in 513 and 514 are pierced flat parts with small tabs that go through extra 1.7mm holes in their mating parts, and are then riveted over, giving a rigid assembly. The holes in the 3D lugs allow Stays to be attached normal to the 2D plane, and at 45°, by clipping Stays between any of the pairs of parallel lugs.

• Nos.521 & 522 are Pulleys (see 10/237) with a 3.6mm Ø centre hole. The larger 60mm Ø one has 6x6mm spokes, and the rim is 7mm wide; No.521 is 35mm Ø with a 6½mm wide rim, and has 4x4mm spokes, leaving cutouts rather like M20a (though in one model in the manual 6 large circular holes are shown instead, as shown opposite). Both Pulleys are made from 2 discs with belled out centres, riveted together at the centre of alternate spokes. White rubber Tyres - actually just rings with a scarf joint in them like M142 - fit onto the Pulleys. As they are now, hardened on the rims, their o.d. are 67 and 42mm.



• Axles 535-537 are 60,140,180mm long. There is also a 235mm one which may be #543. The diameter of the 4 seen varies from 3.43mm to 3.53mm. Ends are square but usually with a slight taper over the last millimetre. The flat is about 2½mm wide leaving about 3.0mm from it to the outside. The only remaining Axle Clip in the parts looks like the ones shown in the Manual (opposite) except that one of the 4 arms is extended as shown dotted in the enlarged view. The hole is D-shaped to fit the Axle. When the extension is pushed down onto the flat of the Axle a Pulley (or Hub) can be pushed over it and is held fast, though slightly out of true. The Clip is 11mm long, plus the 8mm extension which tapers in width from 2.5 to 1.6mm. All the Clips shown in the Manual are labelled 533 but whether they all had the extended arm isn't known. If so they would look rather unsightly in many cases.

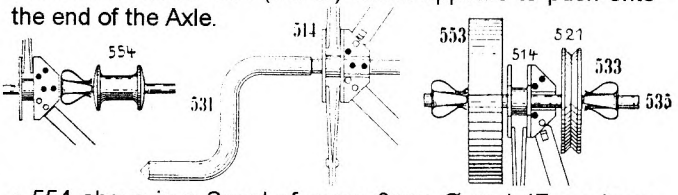


• 559 is a steel Propeller Blade 95mm long by 45mm wide, tapering to 10mm, with a springy Stay-like root riveted on, so it can be held in a Hub. The ones in the Set are flat but they are shown cambered in the models.

• Many of the parts are too rusty to be sure what the original finish was - of the others some could have been the black mentioned in MCS for ANCHOR, but most look as if they were the polished steel given for IMPERATOR.

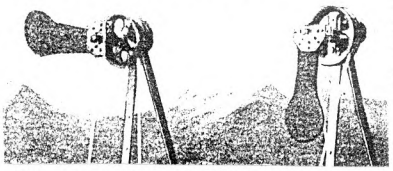
The parts described below haven't been seen but are used in the models in the Manual, and their dimensions have been scaled from the drawings.

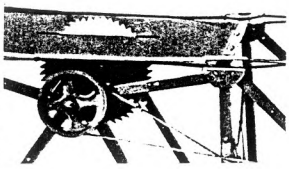
• A Crank Handle 531 (below) which appears to push onto the end of the Axle.



• 554 above is a Spool of some 8mm Ø and 17mm long. 553 is a Flywheel or Flat Pulley of 55mm Ø. The only view in the Manual is the one above.

• Of the 31 PNs given in OSN 10 for IMPERATOR, the ones above account for 21 plus the Tyres if they had separate numbers. Other possible parts shown in the models are a Signal Arm and a Circular Saw Blade (below), and various fill-in panels, though these may have been for the modeller to devise. The largest set sold by Bassett-Lowke was the No.2, and perhaps the 'missing' parts were included in the IMPERATOR No.3.





The 52 page (plus covers) Manual measures 288*200mm deep, and the cover (at the top of the next page) is similar to the IMPERATOR one in MCS Part 5, except for the slogan 'Modern Engineering in Miniature', and under Richter's name, 'Manufacturers of Anchor Stone Building Blocks / Rudolstadt i. Thür. (Germany)'. Again at bottom left is '0A,I,II.', which may mean that the manual was packed in those sets. In that case there would have been a separate manual for the No.0 Set. Bottom centre is the code 'Nr.1 229 E1', against 'Nr.1 145 Int.1' on the MCS IMPERATOR cover. The numbers might signify September 1922 and May 1914; E1 the first English version, and Int.1 the first international edition, perhaps multi-lingual; but I can't think of a convincing explanation for the Nr.1.

52 models are shown which agrees with the number claimed for the No.2 Set in the Bassett-Lowke ad in MCS. There is a reasonable variety including various items of Domestic Furniture, Cranes, Wagons, Bridges, a Signal Gantry, a Car, and a Monoplane. None have names, but most have a Figure No. Many have an interesting appear-

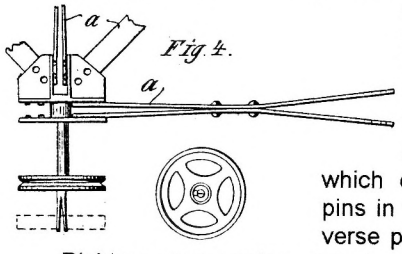
ance, at least on paper, particularly when photographed, as is often the case, against attractive backgrounds. All are essentially fairly straightforward frameworks, often triangulated.

There is a good photo of every model, sometimes elaborately framed and filling a whole page, and accompanied, in most cases, by another page of engineering drawings. These are clear enough for those used to that sort of thing but might be rather puzzling at first for children and even non-technical dads. No general advice or guidance is given, nor a list of parts, nor any indication of set contents, nor which models can be made with which sets. One model is shown on the back cover of this Issue.

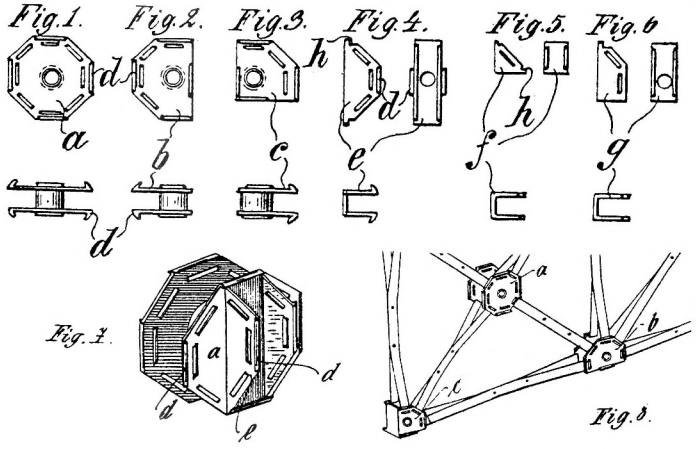
Some of the PNs in the Manual are in a different, bolder typeface to the majority. An example is the Flywheel, 553, in Fig 16 on p15. Perhaps this indicates that at some point changes were made to the parts or the models.

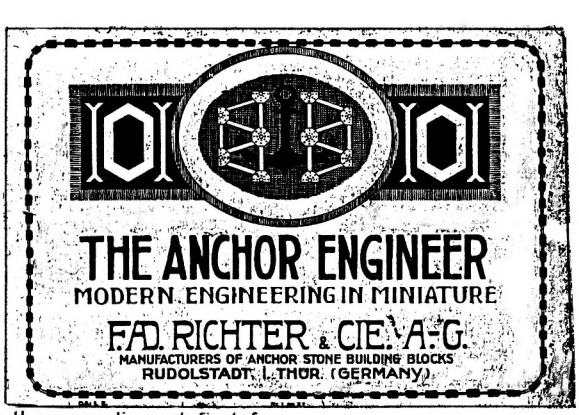
The question that always comes to mind for systems of this sort is whether the models are rigid enough. John wrote, "The fixings are perfectly rigid, in fact this is the only constructional toy of this nature that I have ever come across that is effective. I remember KLIPTIKO in the late 1920s which was very frustrating, and had an in-built capacity to collapse under its own weight."

Finally there are some points of interest in the patents relating to IMPERATOR. There are 2 British ones and both will have German equivalents. The first No.3646 of 12 Feb. 1913 has a Convention Date of 16 Feb. 1912, and is in the name of Franz Hendrichs, a Chief Engineer of Charlottenburg. (One of the 'bridge' patentees mentioned in 10/261 was a Franz Hendrichs of Solingen.) The Stays and Hubs shown are essentially like IMPERATOR except that there are pairs of holes at the ends of the Stays which engage with corresponding pins in the Hubs. No doubt the reverse pattern actually produced by Richters was easier and cheaper to make. Fig.4 above shows what seems to be an Axle with a split end.



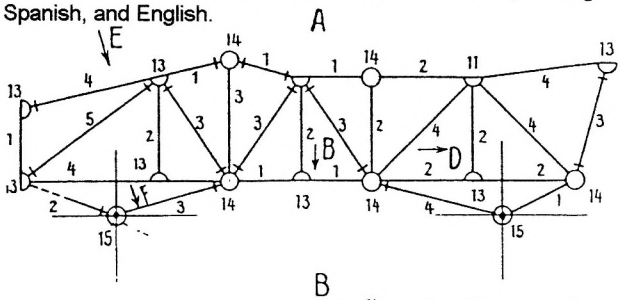
The second, No.5832 of 7 March 1914 (Convention Date 8 march 1913) is to F.Ad.Richter & Cie of Rudolstadt, and shows a similar system but with 2 changes. The ends of the Stays are simply bent over and engage in slots in the Hubs, and various Hub configurations can be built up by adding certain combinations of the parts in Figs.4-6 to the basic types of Hubs 1-3. The additions are held by the tongues 'h' engaging in the lips 'd'. Fig.7 shows Fig.4 fitted to Fig.1, and Fig.8 shows Stays engaged in a Hubs 1-3. As far as is known no parts similar to those of this patent were ever produced.

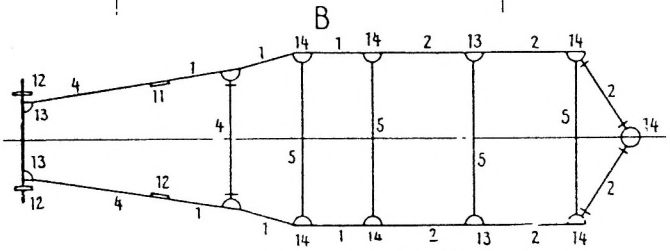


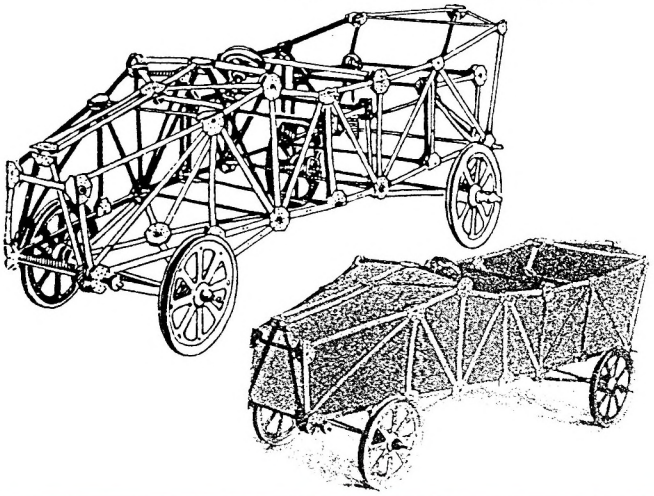


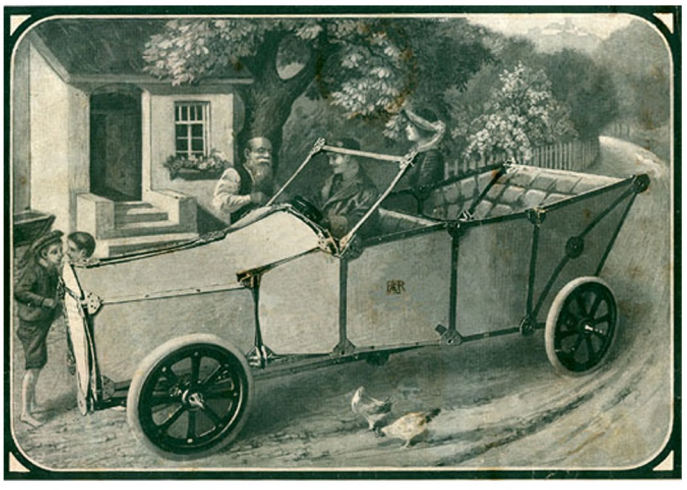
ANKER METALL Jeannot sent

copies of the cover (above) of the No.3 Outfit Manual and a page from it showing the Car below. The page size is about 20*14cm. The Car is in the ANCHOR manual (but without any detailed drawings, though these may possibly be on the missing back cover), but the ANKER presentation is very different with 7 layouts of the framework (2 are shown below), plus an isometric, and a plain photo of the finished vehicle instead of one of an 'improved' model against an idyllic backdrop (at foot of column). There is text with the ANKER model in German, Portuguese, Spanish, and English.









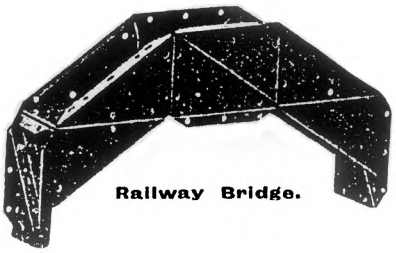
New System (in 1921) - TRI-SECTOR David Hobson came across ads for this rather unusual small system in some 1921 issues of *The Toy and Fancy Goods Trader* (T&FGT) monthly, and kindly sent details, together with a copy of the relevant Patent.

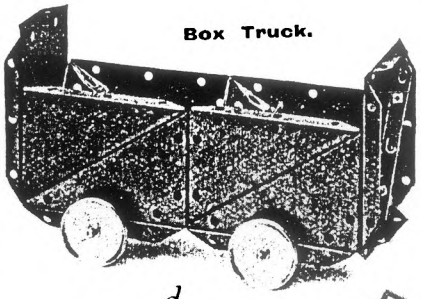
The only set mentioned in the ads is the No.1, and 2 of the models that could be made from it are shown opposite, plus Figs.2 & 4 from the Patent. The only structural parts are right & lefthand versions of a Flanged Triangular Plate, and in the models they look similar to Fig.4 except that there are 2 holes in the face along the short side, and the holes in the flange along the hypotenuse are not equispaced: the middle 3 have the same pitch as those on the other flanges, and the outer 2 something like half that spacing. From the dimensions given in one of the ads, the sides measure about 2½, 3¾ & 4½", and the basic hole spacing may be 1¼".

Other parts that can be seen are Pulleys of about ¾ & 1½" Ø, both with tapped bosses; a Collar, 2 lengths of Axle to suit the 2 sides of the Triangles; and a Crank Handle; The Set opposite also contains Nuts, probably square, and Bolts, probably cheeseheaded, and a few other small parts that can't be identified, though one may be a Wire Hook. (The Collars in Fig.2, the end view of a Drilling Machine, are shown shouldered.) The lid has British Made on it, along with a selection of models including an Aeroplane, a long Bridge, and various items of Railway Equipment.

The Application Date of the Patent, 154042, was October 1919, and the claim was in the name of The Holbran Engineering Co. Ltd., the maker of TRI-SECTOR, and its Manager, Algernon Feltham Morgan, both of the Shelsley Works, Bilston Road, Wolverhampton. It mentions that the building pieces could be other than triangular in shape and should preferably be made from tinned plate.

The first mention of TRI-SECTOR in T&FGT was in February 1921 and then there were regular ads until the autumn. After that nothing.





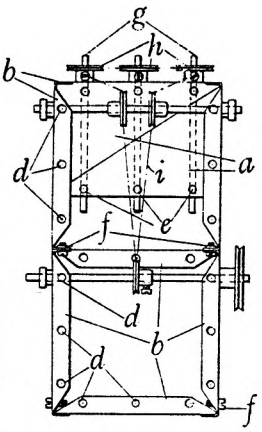


Fig.2

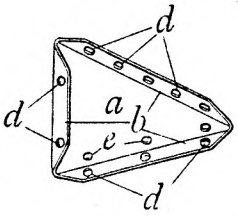


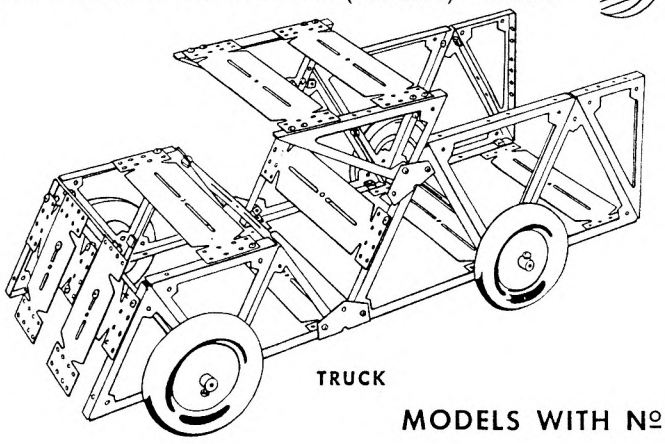
Fig.4

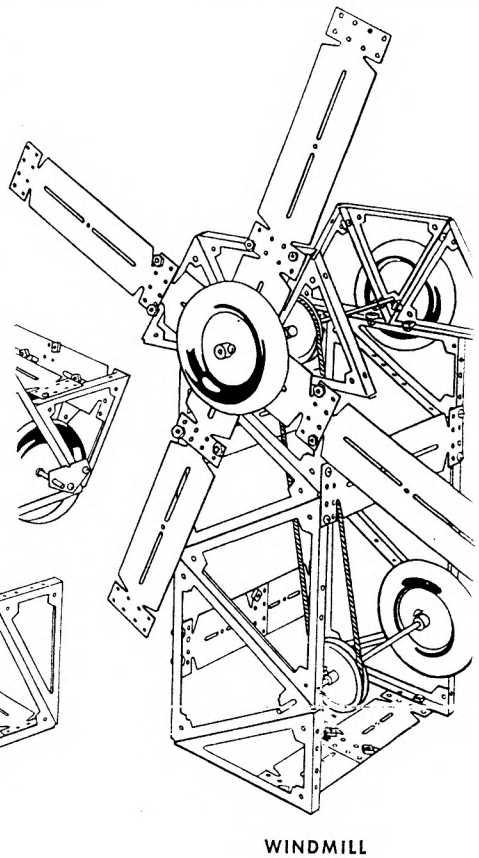
New 1950s System - TRIANGLE Jeannot Buteux/*Constructorama* kindly sent a copy of what appears to be a page from a manual belonging to this American system, and noted that it was from the 1950s; it shows 4 models that could be made from a No.1 Set.

Most of the parts can be seen in the models and inset opposite:- 2 sizes of Flanged Equilateral Triangular Frames; a Flanged Right-Angled Triangular Frame; 2 lengths of Cross Plate (the shorter one has only one centre slot and two of them are bolted across the front of the Truck); a Trunnion; what looks like a small Triangular Plate (in the inset); a Pulley; a Road Wheel; & an Axle. Roundheaded Bolts are shown and most Nuts are square but a few are hex.

As can be seen the structural parts are assembled by bolting through the holes in the flanges of the Frames. The only holes in their faces are at the corners, and even then there isn't one in the acute corner of the Right-Angled Frame. There's no indication of size but from the diameter of the bosses the Wheels are probably at least 2½ or 3" Ø.

The idea of making structures by combining triangles wasn't a new one of course, and METALLO TRIGON had used it before WW1 (see 5/90) - there 6 Triangles were used, but with no flanges on them. Flanges are the obvious way of joining such parts, witness TRI-SECTOR above & (see 16/449) STEEL WORKER of the late 1920s. The latter is quite similar in concept to TRIANGLE, again with 3 Frames, though they are much larger, and meant for a different type of model.

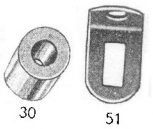




MODELS WITH Nº 1 TRIANGLE SET

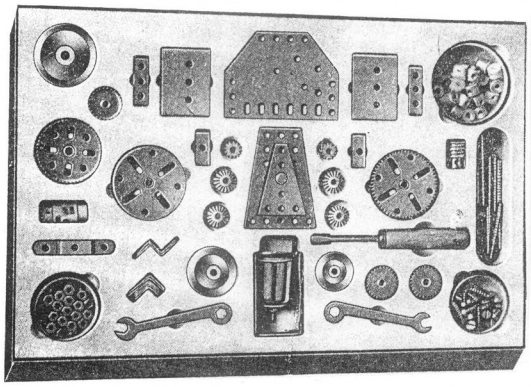
An Early CONSTRUCTION Manual In 8/181 a KONSTRUKTION (KNN) set was described in which most of the parts were identical to the later CONSTRUCTION (CNN), and differed in several respects from those shown for KNN in MCS. David Hobson recently showed me a CNN manual for Set 01 in which the sets advertised in the back are still labelled KNN, and which therefore no doubt dates from soon after KNN became CNN.

4 sets are shown, 01, 02, 03, & 04. The first 3 are basic sets that equate more or less to the later 100, 110 & 120, covered in MCS, but no linking sets are mentioned, nor any equivalent of the KNN 03a extension set. The 01 has 40 more parts than the 146 in No.100, including 2 extra Pulleys & Tyres, extra Strips and N&B, but without the Curved & Slotted Strips and the 50mm Disc. One part not listed in later literature is the Distance Piece No.30, opposite, and the 1hole/1slot Angle Bracket (No.51) as illustrated is like those found in the OSN 8 KNN set with a rectangular elongated hole. The slots shown in both arms of the other type (No.56) have the normal rounded ends.


30 51

The contents of the larger sets aren't given, nor are their parts listed or illustrated separately but many can be seen in the photos of the KNN labelled sets in the Manual. These of course are not necessarily the same as actual CNN outfits but 01 corresponds as far as can be seen. No.02 has all the expected parts except the Curved Strips, but plus the 3*3h Trapezoidal Plate. There are no Curved Strips in the No.3 either and the other difference is in the Gears. These appear to be of the type listed under the KNN Gears set in MCS/FB, and consist of a Pinion (13t, 12mm Ø), a Worm, (2 Gear Wheels (26 & 60t, 24 & 50mm Ø), 2 Small Contrates (26t, 22mm Ø), 1 Large Contrate (60t, 50mm Ø, with 4 round & 4 elongated holes in the face), and 2 Bevels (19t, 15mm Ø). With the possible exception of the Pinion and Worm, all of these differ from the later CNN range, in which, apart from the different number of teeth, the Contrates were dropped and a new large Bevel introduced.

The Gears Set 04 (below) corresponds broadly to the later No.200, but the contents varied considerably in detail.

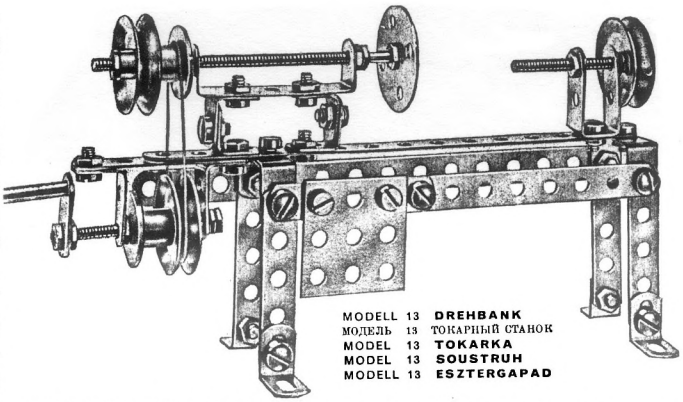


The main differences were in the Gears, as already explained, and in the use of the special gearbox Side Plates, joined at the ends by the small Flanged Plates which can be seen on either side of the Side Plates in the Set. Less obviously a different selection of Strips, Brackets and Pulleys was included. The contents are probably similar to those of the KNN set in MCS and the method of holding the Motor in a metal strip Frame looks the same. It can't be seen if the KNN Dog Clutch (like M144) was included.

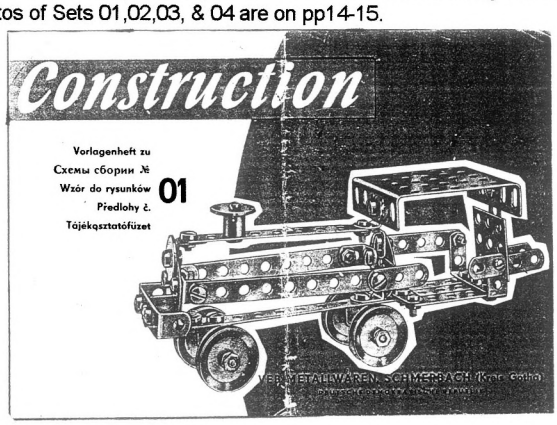
The parts in the sets shown look to be packed in formed plastic trays, whereas those in the 02 Set of OSN 8 were held by cardboard partitioning. The 03 Set parts were in one layer and not the two of the later No.120.

The PNs used are not the MCS ones for CNN or for KNN, but are based on the MCS KNN ones with for example 2,2a,2b,2c,2d replaced by 20,21-24.

20 models are shown for the Set, many more than in later editions, with one large ½-tone and a PL for each. On the whole, like the Lathe at the top of the next column, they are rather ordinary - a few were used subsequently and a couple more were included in a more developed form for the 110 Outfit.

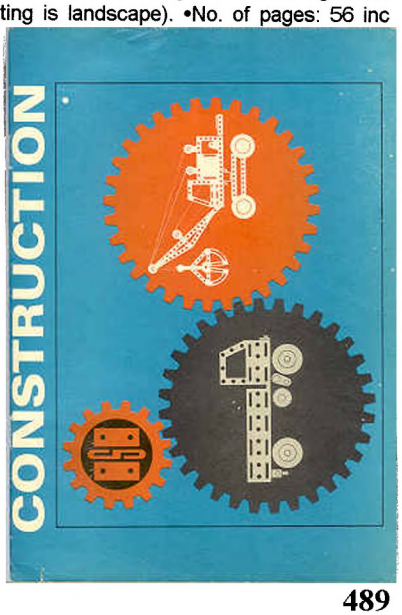


SUMMARY OF MANUAL •Name: **Construction 01** •Details of maker: VEB METALLWAREN, SCHMERBACH (Kreis Gotha), DDR. •Dates &/or Ref Nos: Re 085/67 V/6/17-10 on BC. •Page size: 296*205mm deep. •No. of pages: 16 unnumbered. •Language: German, Russian, Polish, Czech, Hungarian. •Printing: ½-tones on blue or yellow/white pages; cover (below) blue/yellow with red flash. •Page No. of Illustrated Parts & highest PN: 13,93. •Page No. of Set Contents & highest PN: 16,93. •Sets covered: 01. •No. of models: 20. •Name, Model No., Page No. of first & last model: EISENBAHNLORE,1,3; BRIEFWAAGE,20,12. •Other notes: the parts on p13 & the Set Contents are only for Set 01. Photos of Sets 01,02,03, & 04 are on pp14-15.



While writing about CNN some details on a Manual and some parts from the next period will be recorded. The original material in MCS came from it, and at that time the basic Sets, as already mentioned, were Nos.100,110 & 120, with linking Sets 101 & 111, the Gears Outfit 200, and the No.300 Accessory Set which contained mainly the new Plastic Flexible Plates. First the Manual, which was included in all the basic sets, and shows models for the 3 basic outfits and others that need one or more additional sets as well. The larger models are better with some mechanical detail and 3 are shown driven by the Motor. It is stated to run at a nominal 2400 rpm on 4.5v. The Chassis in 7/172 shows many of the mechanical parts.

SUMMARY OF MANUAL •Name: **CONSTRUCTION** •Details of maker: none. •Dates &/or Ref Nos: V/4/ 59- Ag 47/78/71. •Page size: 206*295mm deep (but printing is landscape). •No. of pages: 56 inc covers. •Language: German, English, French, Spanish, Dutch. •Printing: ½-tones of models; cover blue with orange/B&W. •Page Nos. of Illustrated Parts/Set Contents & highest PN: 48-51,1554. •Sets covered: 100, 110, 120, 120+others. •No. of models for each set: 7, 6, 6, 6. •Name, Model No., Page No. of first & last model of each set: 100: Desk, M1, 10; Letter balance, M7,11. 110: Windmill, M8, 12; Drilling machine, M13, 14. 120: Steel saw, M14, 15; Hay-tedder, M22, 24-25. 120+: Eccentric press,



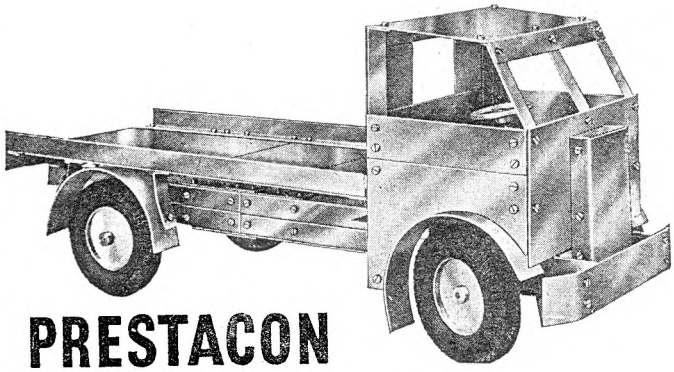
M17,18-19; Ferris wheel with motor drive,M30,46-47. •Other notes: basic constructions G1-23 on pp4-9; pp35-41 have notes on the Motor & Gears; the sets are shown on pp52-55 & packets of parts 310-315 on the back cover.

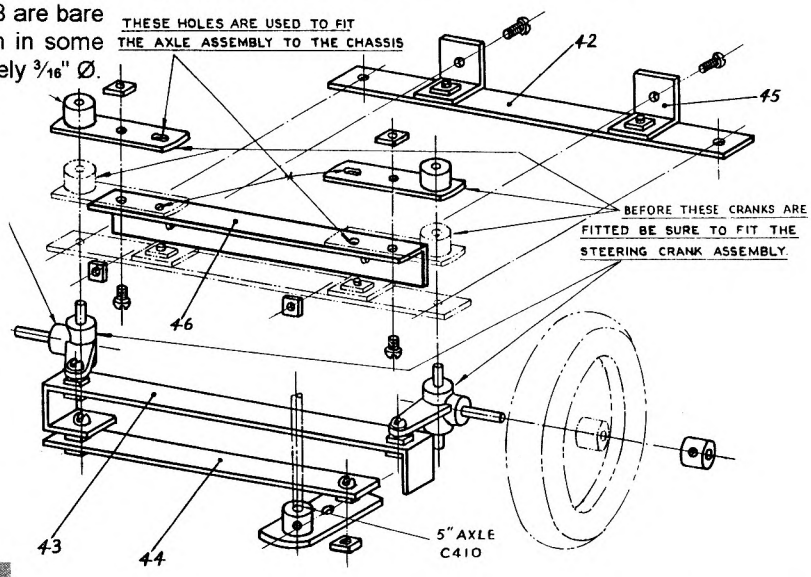
The parts in this phase are in most cases very similar to later ones found in the C series of sets, C01, C02, etc., and some notes on them were given in 1/4. A couple of other points - originally the Pawl had no lifting tab at the sharp end, and the bend at the flanges of the Flanged Plates was quite rounded, up to 4mm radius on the outside in some cases. The plating often had a different appearance too, with Strips looking smoother but the Flanged Plates duller with a very fine granular surface. The colour(s) of the Plastic Flexible Plates at the time isn't known, but in the C sets they were bright red, bright yellow, a slightly dull blue, and a translucent pinky-red. It was potluck what colours were in each box. One Plate, 1145, is described as 'neutral' but this means there were no holes in it - it's size isn't given in MCS and it's shown with square corners, but later at any rate it was the same size as the 12*6h No.1136, with the corners fully radiused, like those of all the other Flexible Plates except the Sector Plate, 1141.

Some notes on CMM manufacturers/dates were given in 15/412 and so the /67 part of the early manual's PR might indicate 1967, and the /71 of the one above might mean 1971. There's no indication of the maker in the second except the logo in the small gearwheel on the cover, and the 'S' its centre perhaps points to Schmerbach. In its Introduction it is said that new parts & sets have been introduced.

PRESTACON Roger Baker owns a 6 Wheeled Lorry Kit No.66 and he recently kindly answered some questions arising from the notes in 9/217.

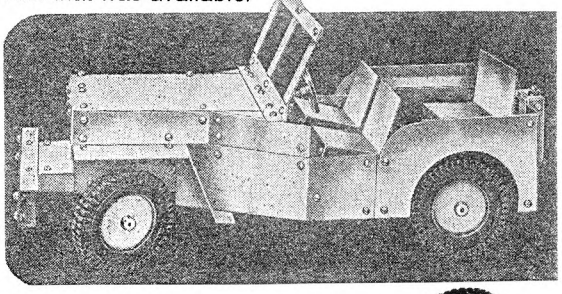
First about the parts. The Crank, C.14, has the standard ⅜" brass boss but the strip part is steel (with a dull metallic finish), ½" wide by 1½" long o/a, with large (over 1") radiused ends. The Steering Wheel, C.124, is a fine aluminium casting of a typical 1950s design, with a narrow rim, horn push in the hub, and 3 sprung steel triple bar spokes. The Steering Crank, C.151, is again cast aluminium alloy with a pressed in steel stub axle. The blank Strips and A/Gs are made from polished aluminium [and no doubt the Lattice Girders but these haven't yet been seen]. The N&B are bare steel with ¼" square Nuts (though hex are shown in some models), & Bolts with domed heads of approximately 3/16" Ø.

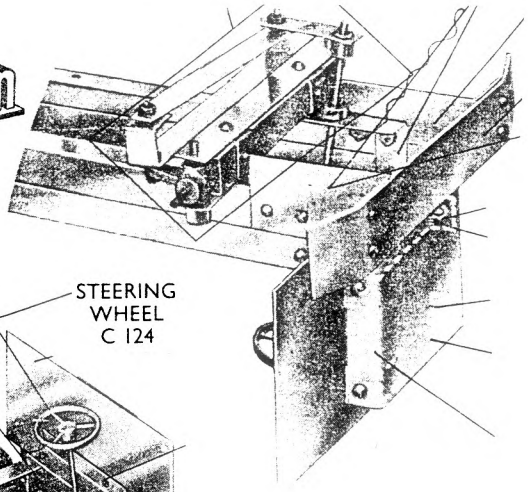


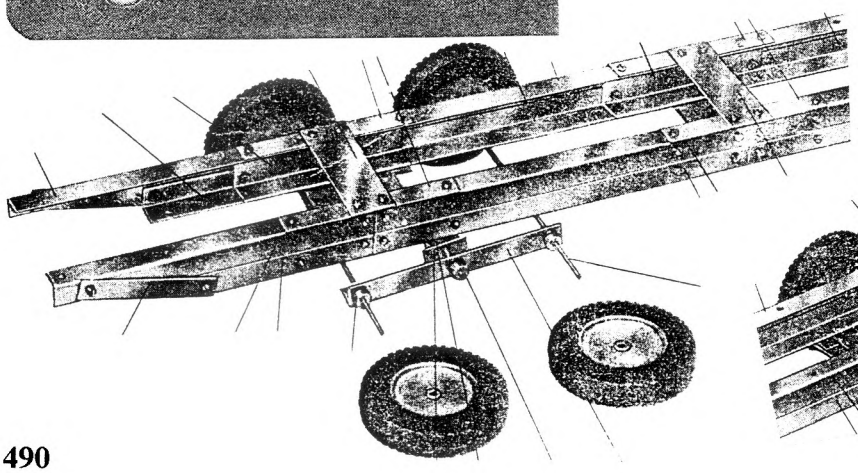


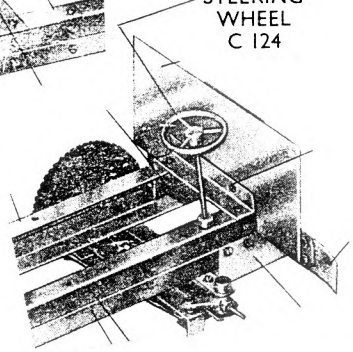
The picture of the 26" long 6-Wheeler won't reproduce but in general appearance it's similar to the 17" 4-Wheeler above. Details of the steering are shown under it, and with the Steering Wheel mounted directly on the top on the near vertical 5" Axle, C410, steering is of the 'super-direct' variety. The only other mechanical feature is the pivoted arms which carry the Axles for the rear Wheels (below) The Instructions run to 20 A4 sides of diagrams plus detailed text on making the parts and their assembly. 200 N&B are included in the Outfit. I wonder if any of the PRESTACON models used any of the range of Gears that were part of the system.

The 15½" Jeep below is another of the vehicle Kits that was available.









Corrections • Jeannot Buteux has pointed out that for the second time (!) I got the name of MAYKO wrong, see MAKKO/MAYCO in 15/427. But I did get it right in 16/447. • In the 3rd para of 'A Russian Baby' (16/435), the '5*10h Flanged Plate' should read '5*11h Flanged Plate'.• At the top of the 2nd column of 15/420 the 'red or blue' colour of the painted ZICK-ZACK parts should read 'green or blue'.

ITEMS FROM LETTERS

1. From Don Redmond: • John's Photo & Hobby, 2188 Danforth Ave., Toronto, Ontario, M4C 1K3, tel/fax: 416-421-1850/7441, stocks **TEMSI** sets and parts. • Parts which may be **CASTLE BUILDER** have a hole pitch of 12.77mm±. • In a large lot of **AMERICAN MODEL BUILDER** parts there were two types of N&B: the normal ones, plus 3mm thick, ⅜" square Nuts, and Bolts with 7mm Ø heads, both brass. And AMB Sprocket Chain has 13 links in 4". • The lower **STERLING** Screwdriver in 16/430 looks like the bought-in commercial item that is found with post-WW1 White sewing machines, and in other sets as well, including AMERICAN MODEL BUILDER. • A **BRAL** 400 Set has deceptive packaging: it is in a carton 18*14*2" but the indentations for the parts are contained within 12¾*9*1½", so 34% of the volume of the carton. [I hadn't any record of a BRAL 400 Set and Don has now sent me more details. It's a small outfit from the current 'BRES' period, but before 1994, and it's based on 4 1" Pulleys/Tyres and a 5*11h Flanged Plate. I'll include more about it in a later Issue.]

2. From Jeannot Buteux: • From 15/413, there is also a Danish **EIFFEL** which is compatible with MECCANO and the parts are marked EIFFEL. [Could this be the EIFEL mentioned in 16/458?] • The French **ASSEMBLO** patent (see 15/420) was No.720276 and was granted on 3 Dec. 1931. • **FALCO** [1] (15/426] was a MECCANO-type system with very colourful parts. • On **RODOPI** (see 16/458), it is confirmed that Bratsighovo is in Bulgaria.

Some new names: • **ARMA**, Czechoslovakian from 1955. • **CONSTRUCTAM**, French, perhaps from the 1950s. • **E.B.S.**, new theme sets from The Czech Republic introduced in 1996, with large, heavy, steel parts, nickel plated. • **LA CONSTRUCTION MÉTALLIQUE**, a French architectural system with 60 different Flanged Plates as the main parts, each of which was available chromed, or painted in 10 different colours. • French **MA TOUR CONSTRUIT**, from the 1930s, with light steel parts. • French **TECHNIC**, 1939, with nickel plated steel parts but wooden Wheels.

3. In some French TRIX literature that Jean Estève kindly lent me the **BTB PENDULE ÉLECTRIQUE** (see 15/427) is included in a 1935 catalogue, price fr.59, and isn't among the new lines for that year, but it isn't in a list and brochure from 1938.

4. On **PREMIER** (16/457), David Fellows wrote that his brother received a set at Xmas 1955, and he remembers the Flanged Plates which were of a heavier gauge than contemporary MECCANO, and were finished in mid-blue semi-gloss enamel, similar to the current French colour.

5. From Keith Cameron on the **STABIL** article in OSN 14. 'Those Inventor's Outfits are extraordinarily advanced for their day, including the very early attempt to introduce heavy axles. But like so many innovations, these STABIL items have passed into oblivion almost unnoticed, perhaps due to failure to correct imperfections in the original design. I still think that the single metal teeth assembled in a metal strip around a hub was a brilliant idea - surely something should have come from it.'

6. From Kendrick Bisset. The **STRUCTO** Bridge (16/459) was the result of a marketing agreement between Structo, of Freeport, Illinois, and American Flyer of Chicago (before Gilbert bought the firm), which was formalized in 1922. AF advertised Structo non-constructional vehicles (trucks, autos) with AF trains, and acted as Structo's distributor. The 'constructional' Bridge is shown as an accessory in a (reproduction) 1918/19 AF catalog, and this would have been before Structo ceased producing their standard constructional outfits (see 15/424).

7. From Josep Bernal on a point about the production of **MECCANO** in Spain by Exin around 1970. Their last address (now closed) was Exin-Lines Bros. S.A., Roger de Flor 86, Barcelona 13. Later production was transferred to Mexico using the same machinery. The thread used for both the Spanish and Mexican parts was M4.

EXTRA MCS SHEETS The Sheets listed here are available at 15p per Sheet plus postage. That makes £7.95 for all 53 Sheets.

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FIX: X1.1,2,4/5 [2]
FRYDAGH: X1.1,2/5 [1]
GLOBUS Der Kleine Ingenieur: X1.1,2/5 [1]
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MEHANISKAIS KONSTRUKTORS 'SKOLENS': X1.1,2,5,3/4,3a/4a/6-3c/4c/6b/4d [4]
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SPEDICON: X1.1,2/3,4,5 [2]
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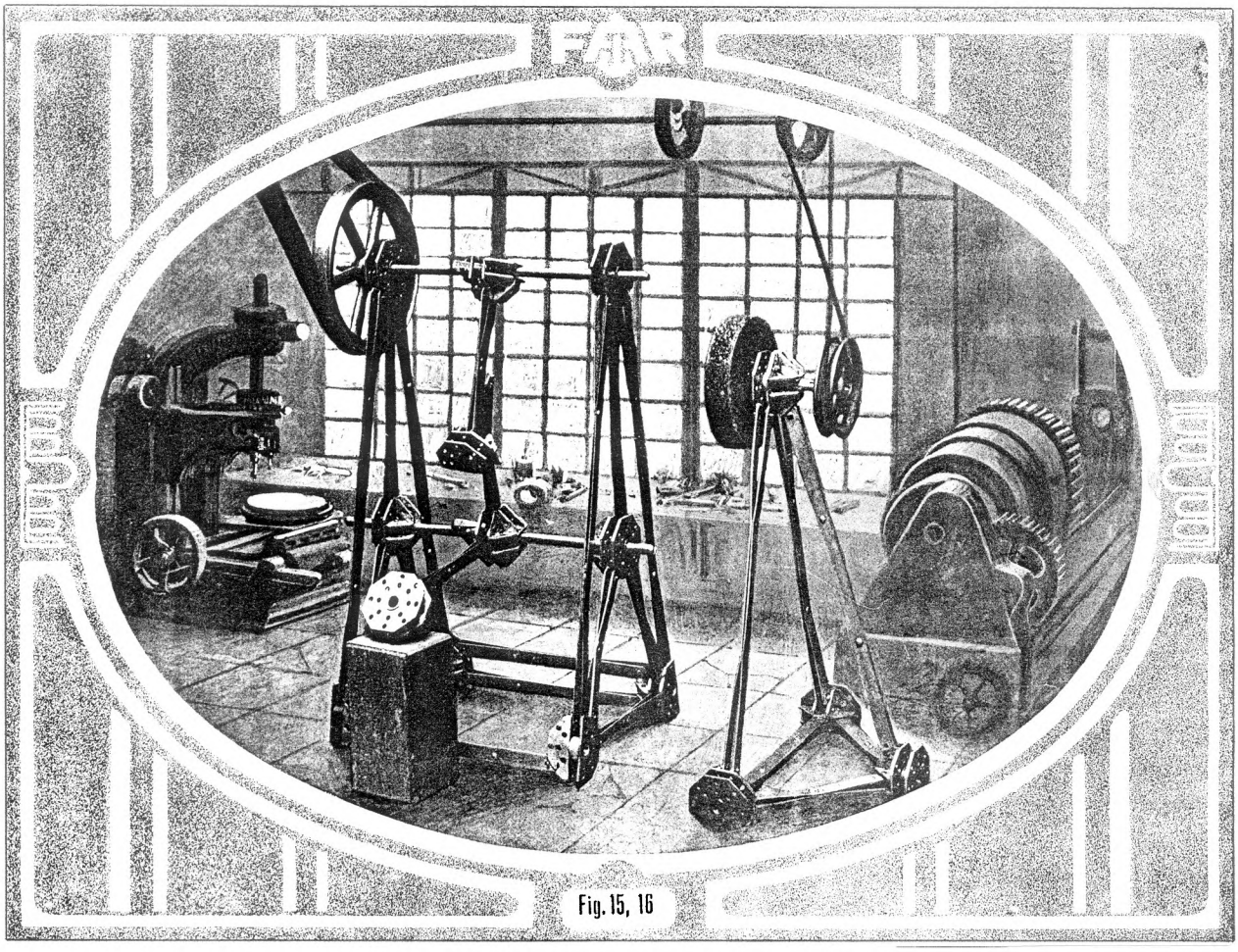
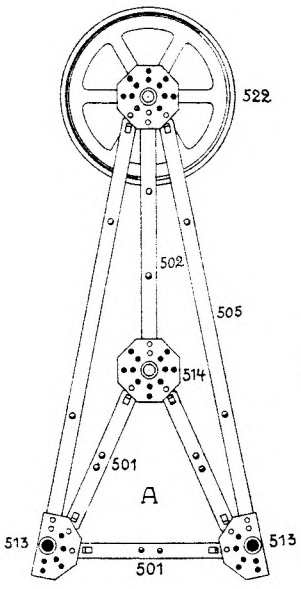


Fig. 15, 16

Fig. 15.



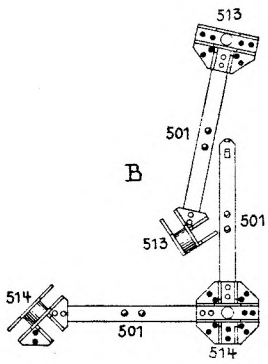
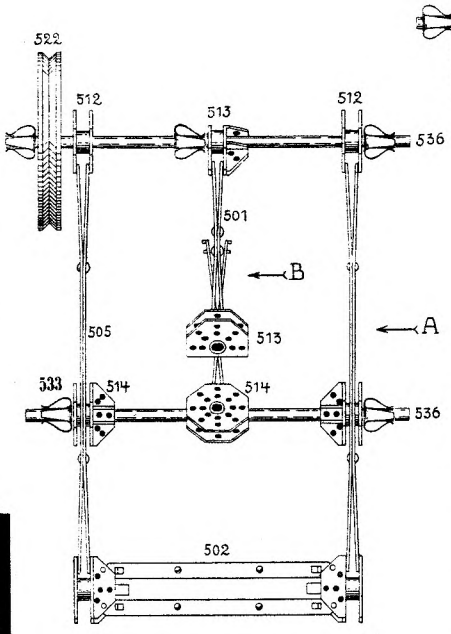
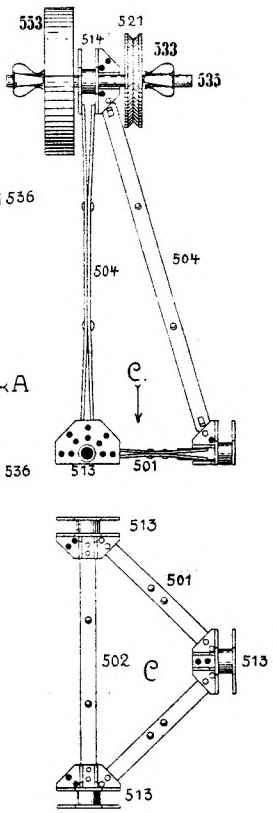


Fig. 16.





One of the simpler models from this pre-WW1 German system (shown at 70% original size). More details on p486.