

**EDITORIAL** All I have to say this time is to point out that on some of the OSN 32 pages the Issue No. before the Page No. was incorrect, with '31' and even '30' instead of '32'. The pages in question were 950, 959, 960, 964, 965, & 970. Sorry about that.

### Shorter NOTES, with thanks to all contributors.

1. David Hobson showed me his Type 1 **MERCATOR** (see 29/848) No.3 set. The red box is 307\*405\*25mm with a portrait label like the one in OSN 29, pasted lengthways onto the lid, and a No.3 sticker on the lid apron. The parts were obviously the remains of more than a No.3 (they weighed nearly twice as much as the weight given for the set in the Manual) and the green parts were in both the dark & medium shades mentioned in OSN 29. Nearly all the parts described in OSN 29 were present with only minor differences. Points of interest follow. • Some of the 10.5mm Ø **bosses** were 11.0mm, and vice-versa. The peening had the 4 indents in most cases but in a few instances it was very shallow with no indents. • The **18mm Pulley** (see also 30/876A) was double-tapped but with a different thread on each side. Neither could be recognised but the bores were 2.55 & 2.75mm – if 'DIY' it was neatly done. • The **N&B** were all the brass sort. • The slots in the **A/B** were 7.7 & 7.9mm long o/a. • The **Loose Pulley #109** was as in OSN 29 (it was not mentioned there that it is nickel plated) but its **Rubber Ring** was smaller, 4½mm wide & 36½mm o.d. • The 6 **Collars** were 10.0-10.7mm wide and one was double-tapped. • The **Spring Clip #210** was bright steel, 3mm wide with 4½mm long wings. • The **Spanner** was 98mm long o/a, cranked as in OSN 29 but with both ends angled (as illustrated in OSN 29 – the 'straight end' mentioned there was probably an error). • The **Crank Handles** were 102, 109, & 145mm long o/a. • A **small parts box** in the Set was red steel, 58\*37\*21mm, with a 38\*20mm clear celluloid panel in the lid.

The **Manual** was identical to the one in OSN 29 except that the address of the Bureaux was 73 rue Pierre Decoster, Forest-Bruxelles, and the address of the Usines (works) is also given – 97B rue de Fierlant, Forest-Bruxelles.

A TRIX-type dc **Motor** (as Fig.1 in 4/52) with a black painted base was in David's set but the only reference to a motor in the known **MERCATOR** literature is that 2 of the 'Supermodels' on C4 of the Manual are said to be powered by a 'moteur puissant (powerful)'.

#### **MERCATOR: S7**

[33/972]

2. Don Redmond wrote that while 3 of his **STRUCTO** Spider (Bush) Wheels are flush on the face side (as were the parts noted in 15/424) the fourth has a boss projecting out about 3mm. All of course are cast parts.

#### **STRUCTO: S13**

[33/972]

3. Don also mentioned the **1914 handed ERECTOR 12" Girders**, see 32/940, and wondered if those in the set on p51 in *Greenberg* had been packed upside down, thus making them appear to be the opposite hand to the norm.

#### **ERECTOR [2]: S2**

[33/972]

4. Orion DreamDancer has just bought the new, enlarged versions of the **METALLUS** Berlin, the largest standard set, and the Archimedes gear set. He finds them very impressive and he is also impressed with the factory who rapidly replaced some missing/unsatisfactory parts. The only manuals supplied are the old TEMSI ones which were of

course for much smaller outfits, but the set contents allow models from the old MÄRKLIN manuals to be made. In doing so Orion has had to resort to MÄRKLIN & MECCANO parts on some occasions though, and he mentioned 3 cases: short Grub Screws, Thin Washers, and the Reversed A/B which has a 5/8" long centre portion in the METALLUS version.

#### **METALLUS: S2**

[33/972]

5. **Snippet – A KUKO Lid** The name KUKO was mentioned in 20/587, and the lid below, from Ebay, is all I have on it. As can be seen the maker is the East German VEB Ankerwerk of Schmalkalen, a town 45km southwest of Erfurt. Presumably the parts are metal, & certainly, from the Screwdriver &



Spanner in the picture, they are joined with N&B. The date given in the Ebay announcement was late 1950s.

#### **KUKO: S1**

[33/972]

6. **Snippet – 'New' System: MILO** Two identical boxes of this simple system, German presumably, were offered as one lot and the lid is shown below. The contents varied a little



between them and above the left & right ends of the one that looked the most representative, with inset between a slightly



better view of the Pulley. The box is said to be 22½\*15cm and by scaling the hole pitch is perhaps a little greater than ½”.

The 11h Strips are below the Pulleys in the top compartment. It is clear in other views that, as on the lid, the Plate is flanged on its long edges. 2 Axles with a scaled length of 5.2h could be seen in the other box. The Flanged Plate is obviously green and many of the other parts have a greenish look too, even the 11h Strips in the other box. It may not be clear in the photo that the Nuts are hexagonal & the Bolts roundheaded. The brass Collar to the right of the N&B looks as if it should be keeping more august company.

The outfits' date was given as possibly the 1960s and I'd have thought it might be earlier than that.

**MILO: S1** [33/973]

7. **Snippet – An INVENTOR Set** The name INVENTOR was mentioned in 11/291 but without any details. It's not sure if that INVENTOR is actually the one below (the name can just be



seen on the top of the manual). I came across it on a Czech web site ([www.e-hracky.cz/zpravy/merkur.htm](http://www.e-hracky.cz/zpravy/merkur.htm)) in a piece, all in Czech, about the history of MERKUR. The name Jaroslav Vancl and the year 1920 are mentioned, and this ties in with the history of MERKUR given on the Merkur web page ([www.merkurtoys.cz](http://www.merkurtoys.cz)). Vancl was the man who in 1920 founded the company which ultimately made MERKUR, but the first set was INVENTOR and the parts were, to quote the English version of the History, 'connected with metal hooks similar to nowadays used (for) scaffolding 'Haki' (the name of a scaffolding firm)'. One might think that the structural parts in such a system would be rods or tubes rather than the slotted parts in the present Set. Perhaps the Czech version of the history, or the e-hracky page would be more helpful, if any reader can understand Czech. To complete the story a change to 3.5mm N&B was made in 1925 and presumably that was when the MERKUR name and parts were introduced, but it's not quite clear that the two changes coincided.

Going back to the Set, the main parts seem to be what look like Angle (or perhaps Channel) Girders, Strips, & DAS. Otherwise just the Spoked Wheels, and inset bottom right is a close-up of them in which the spokes can just about be seen.

**INVENTOR: S1** [33/973]

**OSN Subscription Rates** The price per Issue, including postage, at Printed Paper Rate where available, is £5.50 for UK; £6.50 by air to Europe & surface anywhere; £7.50 by air outside Europe. **Back Issues** For the zones above : OSN 1: £1/£1.30/£1.50; OSN 2,3: £2.30/£2.70/£2.90 each; OSN 4-27: £3.60/£4.10/£4.50 each; OSN 28 on (in colour): £6/£7/£8. (All colour & some B&W issues are on loose sheets.) **Payments** Please make cheques etc payable to P.A.Knowles. Remittances must be in Pounds Sterling (GBP) or, as cash, in Euros or US Dollars (at £1=€1.50=\$1.80). Payments from overseas may also be made using PayPal. **Small Ads** Short ads are free to subscribers; insertion guaranteed in OSN 34 if received by the end of January (but repeats may not always be possible, please ask).

8. **SNIPPET: A COMBINED Solar Set** Judging from the general appearance of the lid below, the boy on it top left (see



30/887), and the rather peculiar slogans on it, particularly the one after SOLAR POWERED (BAND YOUR EYES ON THE FUNNY TOYS!), another offering from Polylong. I've only seen it once, on the German Ebay in August. It has 172 parts to presumably make either of the models on the lid. The cylindrical Motor can just be seen under the nearest seat of the Roundabout, with a red Pinion on it driving the large red Gear – the latter probably spoked like those in the Windmill. Quite a nice little set really.

**POLYLONG: S4** [33/973]

9. **SNIPPET: THE THATCHER TIN CAN TOY** MAKES TOYS FROM TIN CANS. (The ultimate DIY outfit?) This 1919 Gilbert



set was probably inspired by a book, Making Tin Can Toys, written by Edward & Isobel Thatcher, and published in 1919 by J.B.Lippincott Co. of Philadelphia & London. It is said to have been intended to provide occupational therapy for injured military personnel. The Ebay item was an empty, hinged, wooden box, plain on the outside but with the label above inside the lid. No clues as to its contents but some quite ambitious looking models on the label.

**GILBERT THATCHER TIN CAN TOY: S1** [33/973]

**OSN – Your Credit Balance:**

was after OSN 32  
was after your remittance of  
is after this Issue

Please send at least £ if you wish to receive the next Issue.



## MERKUR METROPOL



This architectural system is in MCS but without much detail. These notes arise from some parts acquired recently, no box or manual, just the parts, and the blue 5½cm Ø tin with the lid left. It isn't known for sure when METROPOL appeared but it may have been in the 1930s, or even the late 1920s – the boy & model on the tin lid are on a standard set box lid shown on Merkur's web site and labelled

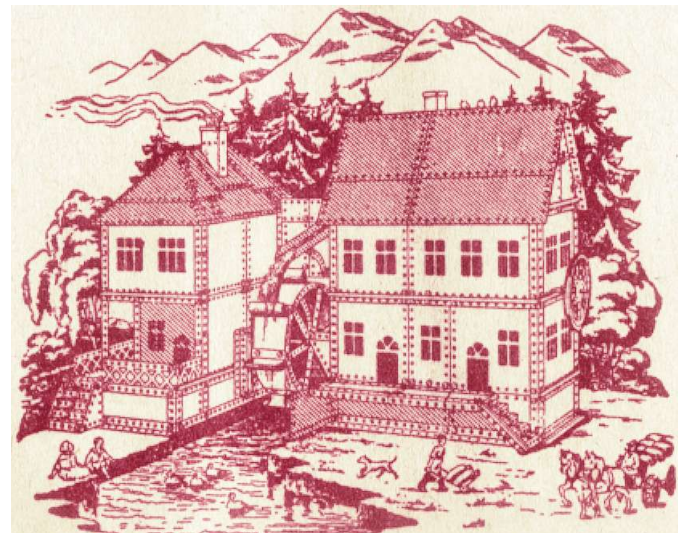
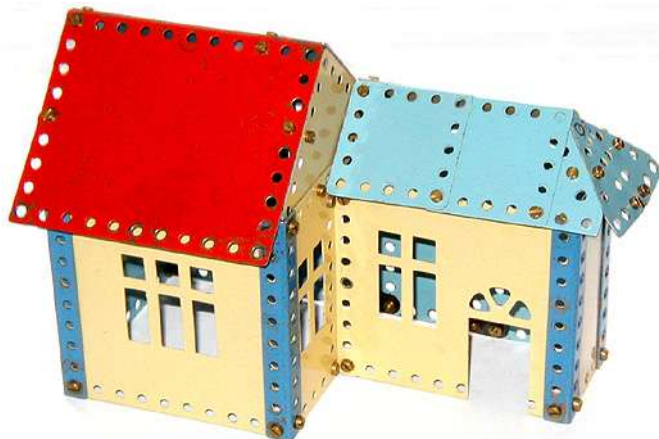
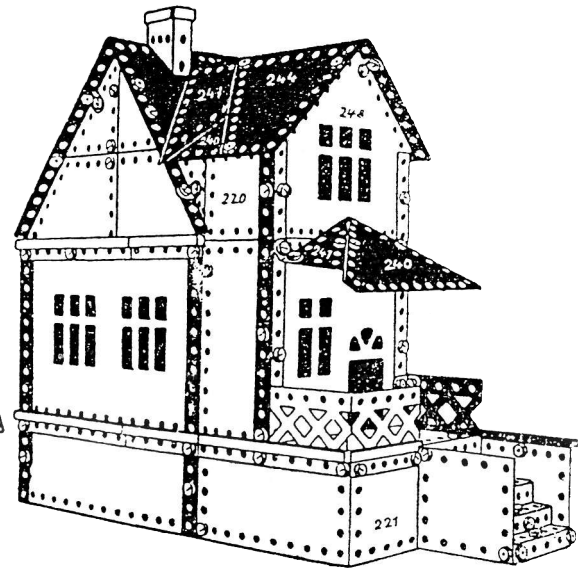
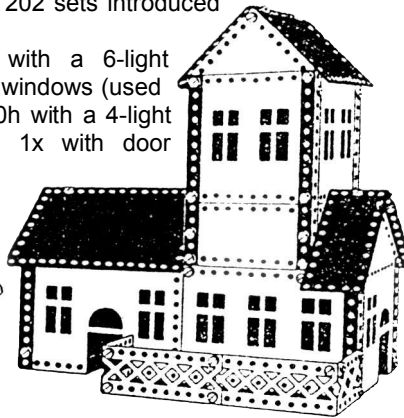
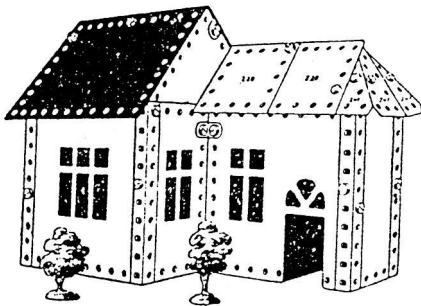
'1928'. As to end date, Maurice Morris listed the system as current in 1964 with 3 outfits and 2 linking sets.

The 3 'b&w' models across the page below are from an MCS page which looks as if it is an ad leaflet for the system. They are, from left to right, for Sets 1, 2, & 3. Below them is the No.1 model made from the actual parts, and a 'super' model from an ad in a postwar manual for the standard sets. The parts in the lot were just about enough, apart from some N&B and perhaps an A/G, to make the No.1 House, so probably they are most of a No.1 outfit.

**The PARTS** The model is made from painted steel Panels, typically .6-.7mm thick, joined by standard parts - Flat & Angle Brackets with A/Gs at the outer corners. Holes are the standard 10mm in pitch, and in size, 3.9mm Ø. The Panels are all light blue on the reverse side except the light blue ones on the smaller roof which are cream.

The parts in the lot were as follows.

- 4x 10h **A/G**, the standard part apart from the colour (a 5<sup>th</sup> would be needed for all the outer corners of the Model).
- **Plain Panels:** 1x 10\*10h; 3x 5\*10h; 4x 5\*5h; 2x 9\*11h (for the roof); 2x 7\*7h Triangular for the gable ends (with 10 holes along the hypotenuse); 4x 3\*5h Triangular (2 of each hand because of different colours on the two sides – this part is identical to #78 used in the 201 & 202 sets introduced in the late 1960s).
- **Window Panels:** 1x 10\*10h with a 6-light window; 1x 10\*10h with two 4-light windows (used at the back of the House); 1x 5\*10h with a 4-light window.
- **Door/Window Panel:** 1x with door



opening & 4-light window.

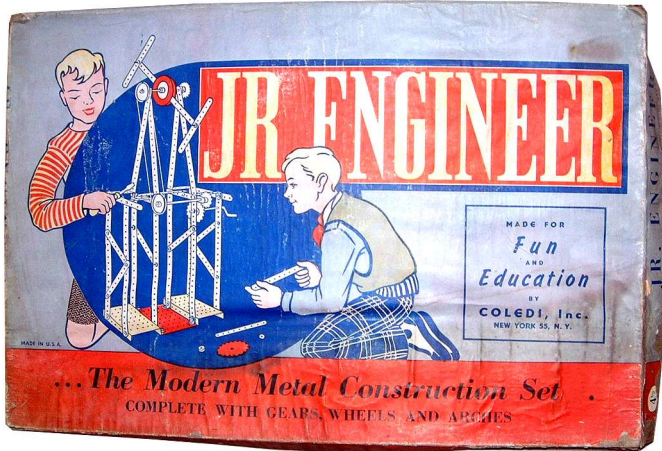
- **Brackets:** 9 Angle & 7 Flat – standard parts with the early chemical black finish (at least 2 more A/Bs would be needed for the House, and 2 more if the 5<sup>th</sup> A/G wasn't used).
- 29 **N&B:** the older brass type with 5.6mm Ø tapered cheesehead Bolts, 5½mm u/h, and 6.0mm A/F hex Nuts (at least 35 would be needed for the Model, and I used over 50).
- **Tools:** a small flat Screwdriver & a Spanner, both standard parts, #80 & #85 respectively, painted dark blue-grey, and dark green.
- **Other parts.** As can be seen in the models below there were other special parts, and a few other standard ones were used as well. Some of the Panels are numbered and of those that can be read, #220 is the lowest & 248 the highest. 10 of them are used in the No.1 House and at least a further 13 can be seen in the other models. The text with the House makes it clear that the little trees in the front are not parts from the system.

**The HOUSE** It was easy generally to build and the pieces fitted well. The only exception was the rather untidy looking hip roof at the righthand end, which has excessive overhang and the line of the eaves along the end can't be quite straight. Apart from that I thought the appearance was rather good for a simple system and the cut out windows look much better than the painted on variety. No doubt proud owners would have contrived doors, and perhaps clear panels with curtains painted on for the windows; I'm tempted myself. Minor quibbles: it seemed impossible to get the main roof Panels to extend out beyond the gables at both ends, and the cutout for the door seems rather low in relation to the windows.



**More on JR. ENGINEER** Since the account of Jacques Pitrat's '4½' set in 22/632, two lots of parts have come to hand, each with a manual. The first contains almost all the parts in the '4½', & the manual is the same too, with Copyright 1946 on C2. The second manual is from a Special outfit, & the parts with it, probably largely complete, don't include all the types in the '4½', but there are some new ones, & a C/W Motor. Also most of the parts are nicked steel instead of aluminium.

Before going on, some photos which Jacques kindly sent. Below the lid of his '4½'. The boys & model are like those on



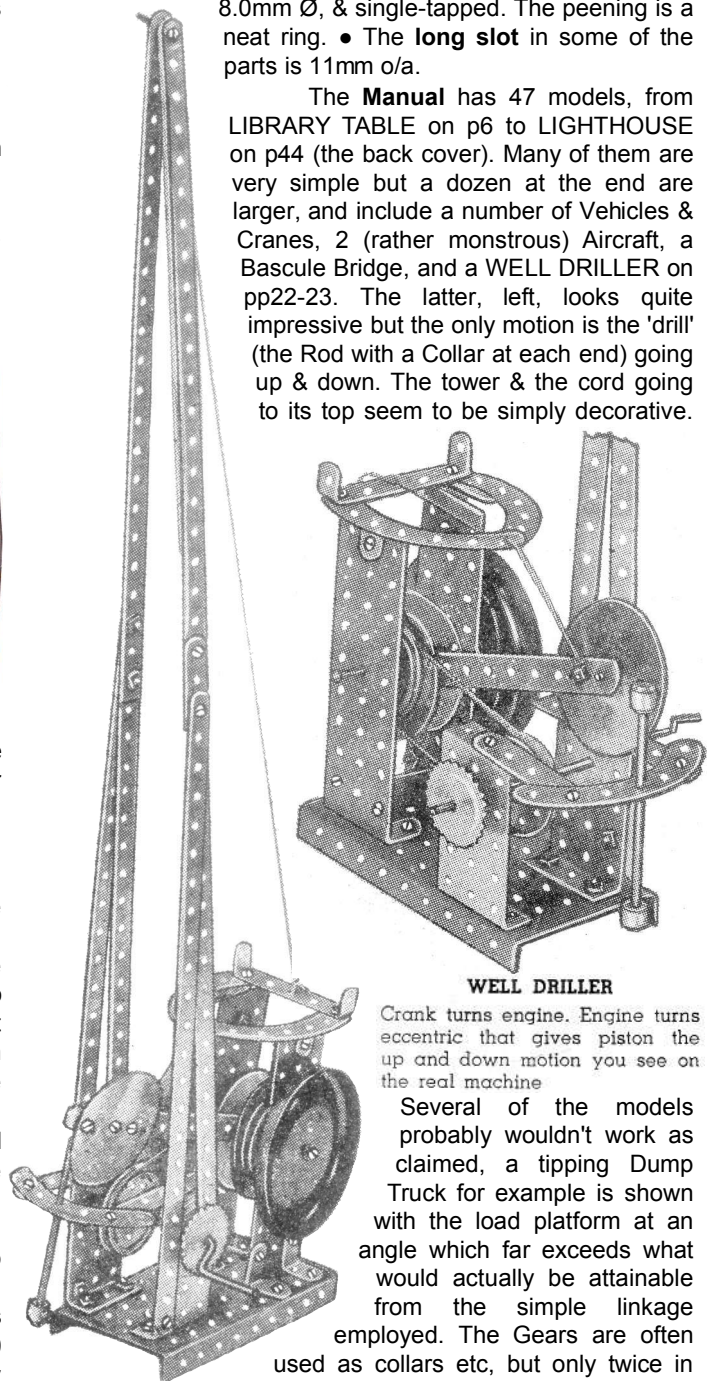
the Manual cover in OSN 22 but with a little more colour. The panel on the right has the maker's name, Coledi Inc. under Fun and Education. With the Set was a box of small parts, 10.2\*8.1\*2.1cm, that was sold separately, & has a similar lid but with CONSTRUCTION SUPPLIES in the bottom red panel.

**THE '4½' LOT** The different parts are shown at the bottom of the page; the only ones missing are the Washer and the Cord. The notes below give differences between the present parts and those in OSN 22, and in some cases add to the descriptions there. First thought to correct 2 errors that crept into OSN 22. • The **hole diameter** is 3.6mm (with from 3.5 to 3.7 in some parts). • The 5 holes in the **Wheel Disc** lie along a diameter.

• The blue main body of the **Road Wheel** is thin steel, and the disc over the centre, held by the boss, is aluminium. The **Wheel Disc** is .4mm thick tinplate & though the pitch of the 3 centre holes is 12.7mm, the outer ones are at about 11.3mm. A manufacturing error perhaps but more likely a bought-in job lot – unlike the other parts it has burr around the holes & rim. • The **Axles & Crank Handle** are 3.17mm Ø. • The **Collar** is the boss used on the Wheels. • The **thread** seems to be 6-40 but though the Nuts run easily on the JR Bolts, they are very tight on other 6-40 bolts. The **Bolts** are ½" & 1" u/h with heads of 5.5 & 8.5mm Ø. The **Nut** is 7.7mm A/F. • The **Screwdriver** is made from 3.2mm steel wire. • **Bosses** are aluminium,

8.0mm Ø, & single-tapped. The peening is a neat ring. • The **long slot** in some of the parts is 11mm o/a.

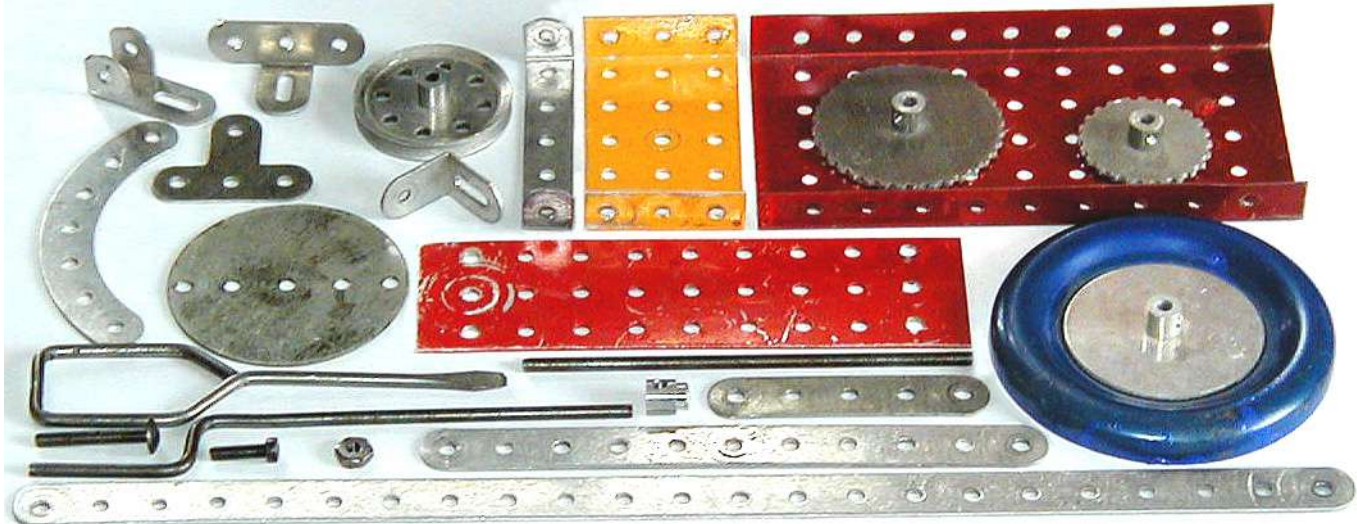
The **Manual** has 47 models, from LIBRARY TABLE on p6 to LIGHTHOUSE on p44 (the back cover). Many of them are very simple but a dozen at the end are larger, and include a number of Vehicles & Cranes, 2 (rather monstrous) Aircraft, a Bascule Bridge, and a WELL DRILLER on pp22-23. The latter, left, looks quite impressive but the only motion is the 'drill' (the Rod with a Collar at each end) going up & down. The tower & the cord going to its top seem to be simply decorative.



**WELL DRILLER**

Crank turns engine. Engine turns eccentric that gives piston the up and down motion you see on the real machine

Several of the models probably wouldn't work as claimed, a tipping Dump Truck for example is shown with the load platform at an angle which far exceeds what would actually be attainable from the simple linkage employed. The Gears are often used as collars etc, but only twice in gearing, and then they are shown gearing the motion up instead of the reduction which would have been more appropriate. The Tractor in the Extra Sheet (its front end is shown in OSN 22) is the only vehicle to have steering.



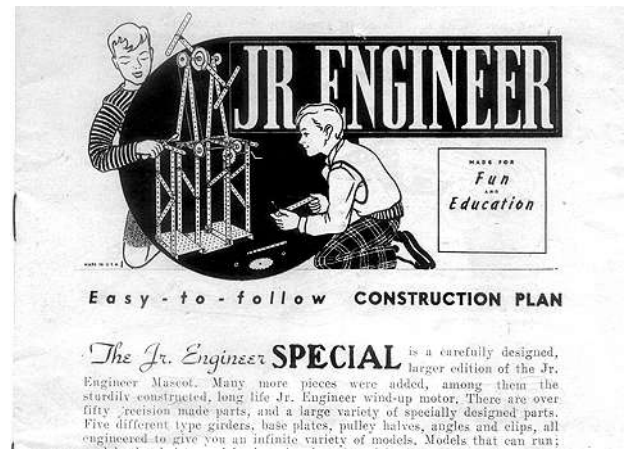
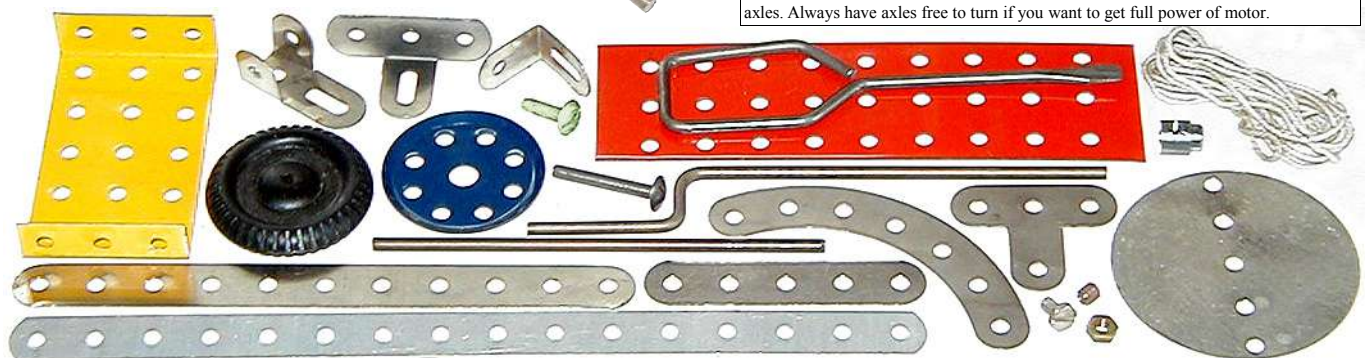


**The SPECIAL Set** To the right, the top of the front page of the manual. Notice the box at top right, still the 'Fun and Education' as on the '4½' lid, but no company name underneath – perhaps the Coledi company was no longer involved. There is no date in the Manual and no other sets are mentioned in it. The first sentence of the Introduction is rather curious: 'The Jr. Engineer SPECIAL is a carefully designed, Engineer Mascot'. The Intro continues, 'Many more pieces have been added, among these the sturdily constructed wind-up motor. There are over fifty precision made parts,' The different parts in the lot are shown at the bottom of the page, and they would allow all the manual models to be made. Not counting the threaded parts there are 18 of them against 22 in the '4½', but as can be seen the mix is different. The 'over fifty' might indicate other sets with other parts in them, but I suspect that it refers to the actual number of parts in the Special – excluding N&B there are 48 in my lot, and judging from the manual models at least 3 are missing. The '4½' has over 80.

**The Parts** Apart from the 16h Strips & the Collars, all the parts are steel. The Strips & Brackets are nicked and the painted parts have a much better (hard smooth) finish than in the '4½'. The 5\*3h Flanged Plate is yellow instead of orange. Some of the parts were still wired to torn pieces of white card, and the N&B were in a blue box, 3½\*2¾\*2¼cm deep.

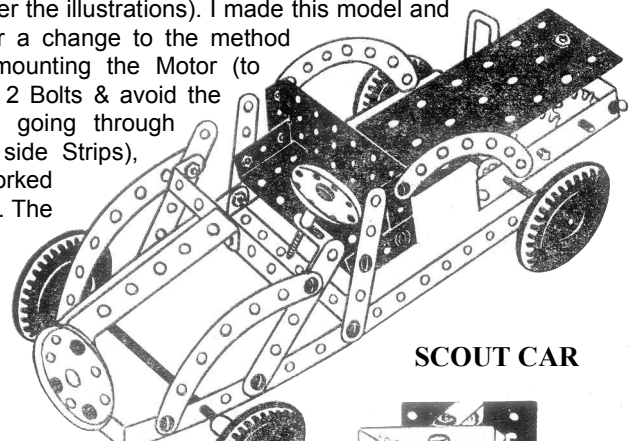
All the different parts will now be listed together with any comments, & with their quantities in curly brackets. • 5,11,16h Strips {2,8,2, but 4x 5h are needed for the manual models}. • **Curved Strip** {3, but 4 needed}. • **DAS** {4}. • **Brackets**. Angle, 'T', Angled 'T', Steering {6,2,2,1}. • **Plates**; 5\*3h Flanged {2}. 9\*3h Perforated {1} (In passing, this piece retains the extra metal outside the end holes, & one reason the A/B has a long slot is to allow the Plate to be joined at 90° to another part.) • **Wheels**. push-on, hard composition **Road Wheel** of 38½mm Ø {4}. 38mm **Pulley Disc** with a 6.3mm centre hole. This is the disc used in the '4½' Pulley, hence the (inconvenient) oversize centre hole {4}. **Disc**, still tinplate. {2}. • **The Axle & Crank Handle** are as in the '4½' (3.15mm Ø) but they have a brownish finish {1,1}. • **The Collar** is the boss as in the '4½' but is tapped 8-36 {4}. • **Threaded Parts**. The **Bolt** is nicked steel with a screwdriver slotted hex head, 6.6mm A/F & 6½mm u/h. The **Nut** is brass, 6.4mm A/F. (The lot contained 20 Nuts & 12 Bolts but at least 2 dozen of each would be needed). There are 2 **longer Bolts**, 25½mm u/h, as before, & 13mm. The latter has the same mushroom head but a pale green finish {4,2}. 4½mm long **Grub Screws** are provided for the Collars. • **The Screwdriver** is made from 3.2mm wire, again as the '4½'.

• **C/W Motor**. A photo of the unit is shown right. It has 2 stages of coarse gearing from the torsion spring to the standard axle, & an 8-tooth ratchet on the key side. All rather crude but effective enough. The frame is flimsy but once bolted to a Plate or Strip the sides can be bent to free any tendency to jam. • A 54" length of white **Cord** was found among



the parts.

**The Manual** It has 8 pages including covers, 195\*163mm wide, & the models are line drawings instead of the half-tones in the '4½' edition. The bottom part of the front page talks of no limit to the possible models and not to lose the parts. The other 7 pages are full of models, 29 in all, with one illustration of each plus a few auxiliary views & constructional hints. The first is RACING CAR & the last, MOTOR SHIP. Most are a fair selection of small designs, some quite attractive. Larger models comprise a couple of Cranes, & the final three which are powered by the Motor: a LARGE PASSENGER PLANE, a SCOUT CAR, & the MOTOR SHIP. They are 10-12" long and the best of them is the model below (the rather stilted instructions for it are too faint to copy so are typed into a box under the illustrations). I made this model and after a change to the method of mounting the Motor (to use 2 Bolts & avoid the axle going through the side Strips), it worked well. The



SCOUT CAR

Motor spring looks rather puny but gave the model a run of over 25ft on a hard surface, and at a realistic speed, a little fast if anything.

This car has streamline design, and with its trim steering wheel, comfortable seats and powerful motor will give the impression of a real automobile. Be careful how you install motor and it will roll a long way. Use metal collars on front axle between wheels and girder.

The illustration shows how motor is mounted in scout car. Car is upside down to give you a better view. Note that motor is fastened through the central hole in motor housing. You may have to give a slight bend to angle-clip that holds motor to keep from wedging axles. Always have axles free to turn if you want to get full power of motor.



**GENIATUS** This simple 1920s system is mentioned in *Baukästen* but with no details. What follows is based on an example of the smallest set, No.930, probably substantially complete, kindly lent by David Hobson. It came from France and although its manual is in German, inside the lid is a label in French, probably stuck over a German original. The basic parts are 4.6mm Ø wooden Rods that push into 8 types of Union, all formed from sheet metal.

**COUNTRY** Germany.

**MAKER** Gustav Tietze AG, Leipzig (from *Baukästen*).

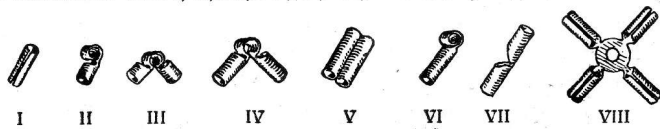
**HISTORY** *Baukästen* gives a date of 1925 and the PR of a label inside the lid is 'Franz. 1000. 4. 23'.



**SETS** The No.930 is in a box 195\*141\*20mm with the lid above. Below the sets as listed in the Manual with the parts

GENIATUS-BAUSPIELE werden in folgend. Ausführungen geliefert:  
 No. 930 . Stck. G.M. **1.50** | No. 934 . . Stck. G.M. **4.-**  
 No. 932 . Stck. G.M. **2.50** | No. 938 . . Stck. G.M. **5.-**

Rundholz in Längen von 50 cm . . . per Meter 5 ♂  
 Verbinder No. I, II, III, IV, V, VI, VII . . je 25 Stück 10 ♂

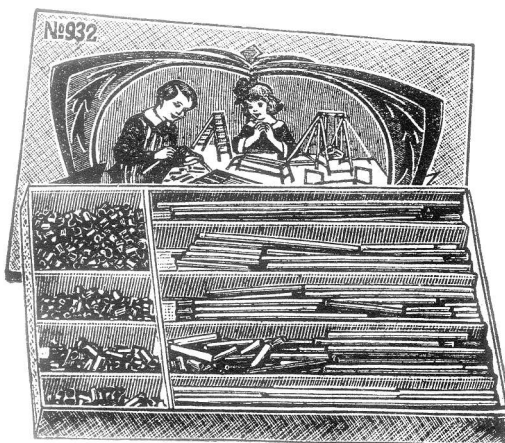


Verbinder No. VIII . . . . . je 25 Stück 20 ♂  
 Gummischnur . . . . . je 25 cm 5 ♂

underneath.

Right the 932 outfit as shown on the cover of the Manual.

**PARTS** In the list of the parts found in the No.930 set that follows, the quantities are shown in curly brackets. They would be sufficient to make all the No.930 manual models



except that 6x 3cm Rods would be needed, and 1x 9.5cm.

The **Rods** are hardwood dowels, 4.6mm Ø, with square ends, and are 2,3,4,5,6,7,8,10,12,18cm long {6,2,17,2,4,4, 21,8,8,4}. Rods 1,6.5,14,22,24cm long are shown in models for the larger sets, and from the Panel above, extra Rod was available in 50cm lengths.

Of the 8 types of **Union** in the Panel, only Types I, II, & III are in the No.930 {6,57,24}. All are rolled from blanks

pressed from thin, pre-painted steel sheet, grey on one side and black on the other. #I is 16mm long, #II, and the arms of #III, are 11½mm long o/a.

Outfit 938 also contains round section **Rubber Strip** (Gummischnur) and it can be seen used for wheel rims, and the curved elements in some of the models shown below.

**MANUAL** Printed in B&W, it has 16 pages, including covers, 135\*192mm. The front is shown right. The 25 models included are numbered but not named; there is one line drawing for each and the lengths of the Rods are shown for the simpler ones. The models for the different sets are as follows. Set 930; No.1 on p4, Chair; to No.7 on p6, Bed (these can be seen on the lid left. Set 932: No.8 on p7, Settee; to No.12 on p10, House. Set 934: No.13 on p10, House; to No.16 on p12, Wind Wheel. Set 938: No.17 on p13, Rocking Cot; to No.25 on p16, Monoplane.

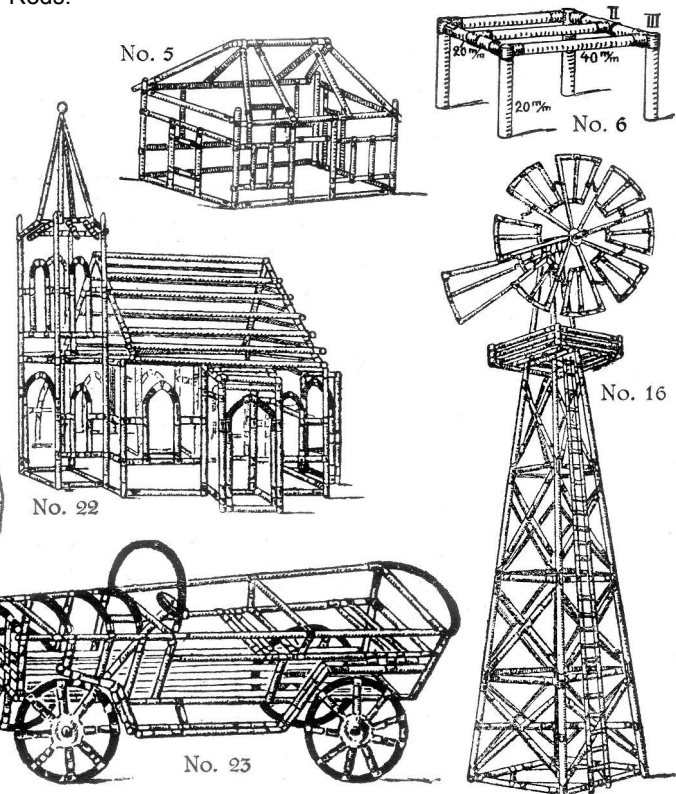


As well as the Manual, the Set contained a Sheet 186\*131mm, printed in blue on both sides. On one is '930' and models 1, 3 & 4 from the Manual; on the other are Nos.6 & 7. None of the models are numbered. An 18cm 'Zentimeter' scale is printed along the bottom of both sides.

The 930 models are all item of furniture except for one small House, No.5 below. Later models are more varied and as well as those mentioned above, and those below, include a Swing, a Roundabout, a Windmill, and various Carts & Handcarts. All the models below are the original size, but the drawings of many of the simpler models, especially the furniture items, are much larger.

**REMARKS** The Unions are quite robust and Rods are held firmly in them. Putting them in is a little difficult and would be easier if their ends had a slight taper. The Rubber Strip is an interesting, simple way of making curved shapes, and (rather lumpy?) wheel rims.

Two other systems with wooden Rods that push into Unions come to mind, FRAMUS (see 27/787) in 1919, and ALCON after WW2 (9/224 & 19/555), but both used match-stick diameter Rods. More of a size was the perhaps earlier MOKO'S SIMPLEX (24/685 & 25/746) but it had tubular metal Rods.





## More PÈRE NOËL / AÉRO TECHNIQUE MACREZ

More parts have turned up since the notes in 30/884, all aluminium this time; and more importantly a set, not complete, but particularly interesting because it indicates that the system was not only for models of aircraft. It belongs to Jacques Pitrat who kindly sent photos and details.

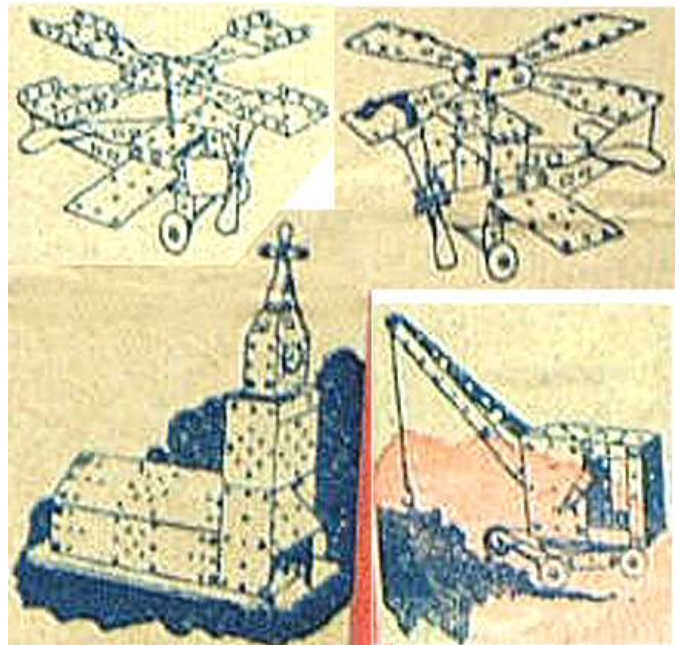
The SET The box is 27½\*17½\*3cm and the lid is shown below. Below it is the bottom of the box with the parts on a



card labelled 'Autogire 1'. Below that some parts which were loose in the box and they are thought to have originally been on a second card, along with others that are missing.

There is no set number or name on the box but from the 'Autogire 1' on the card, & the parts on it arranged like a rotor, it is probable that this was an Autogiro set, perhaps one of those in the ad reproduced in 4/64. There was no literature with the Set but it seems likely, from the parts in it, that at least the 4 models on the lid (shown, enlarged, atop the next column) could be made. The Hook for example can be seen on the Crane but wouldn't be needed for the Autogiros. The missing parts would include a Propeller, various Plates used in the Church, and the long Strips for the Crane's jib.

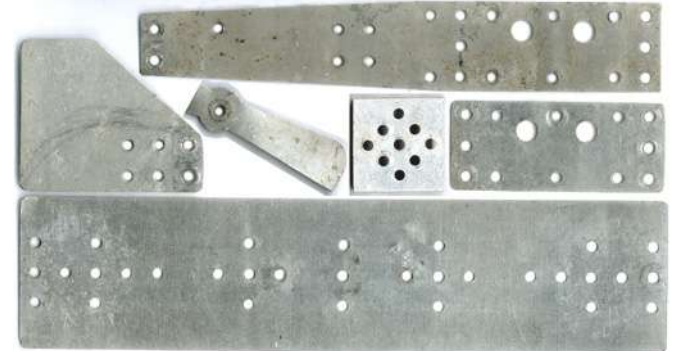
Not many of the parts are common to those in OSN 30 with even the Tail pieces different. Only the brass Rods, Eyelets, and N&B look the same. Apart from these, and the steel Screwdriver, all the parts are aluminium. Said Screwdriver is



painted blue on one side (only a short part of its tip will enter the slot in the Bolts, and this makes it difficult to use). None of the parts are stamped. One part only seen before in the ads is the 5-cylinder Engine (it's in the centre of the box). The fuselage of the Autogiros on the lid is made of the formed part on the left of the loose parts, with the free ends brought together and the Fin etc bolted between them. The part looks like a pair of Rotor Blades with the formed section between.

On dates, there is 'Hors Concours 1932' in small letters on the lid, the latest confirmed date for the system. The Hors Concours is interesting - Jacques explained that in common language it refers to something of very high quality, too good to compare with similar objects, but in an exhibition in which medals are awarded, it indicates that it can be shown but is 'outside the competition' for a technical reason - because it has previously won a prize there for example, or the inventor is a member of the jury, etc. Macrez is using the ambiguity between these two meanings to lead a potential buyer to infer that the excellence of the product has been recognised.

**The PARTS LOT** There were sufficient pieces to make a Parasol Wing Monoplane, generally similar in style to the OSN 30 Biplane. The undercarriage & horizontal tail are identical but most of the other parts differ a little in design, and all are aluminium, unstamped. The 'new' parts are shown below. The



Fuselage Side is slightly longer at 203mm, and the rectangular Plate under it allows the fuselage to be lengthened. The Fin is larger and looks right with the longer fuselage, but the wing span, the same as before, looks much too small. Perhaps there were extensions originally. There were several of the OSN 30 Flanged Plate #6 among the parts plus the one shown above with 4 extra holes - I wondered if these were a 'DIY' addition but then noticed what may be an identical part in the end face of the Church tower on the Autogire lid. Half the Propeller is shown, a part not seen below - it is 98mm Ø, and looks rather too large on the model.

**Two TUBA Sets** A little of the history of TUBA, particularly in the UK, was given in 15/419. The system was German, made in the mid-1930s, & is rather unusual with Tubes joined by Connecting Clips that are wrapped around them, and small, flexible Plates which can be attached in various ways. The different sets were denoted by the colour of the box and this account is based mainly on 2 UK sets, a Yellow, & a Grey kindly lent by David Hobson. The Grey has 'Improved Pattern' on the box lid and is therefore assumed to have been later than the Yellow.

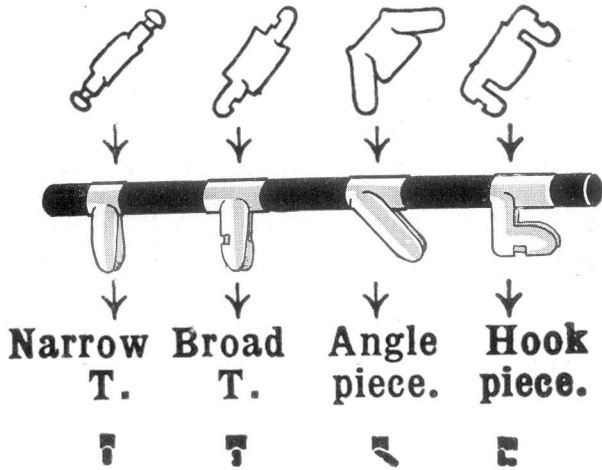
From OSN 15, the two UK firms that sold TUBA were The Chad Valley Co. Ltd., and later, Andrew Charles Ltd. However the obliterated name in one of the manuals with the Yellow set is the Tuba Toy Co., London, and so they may have been involved before Chad Valley.

In the notes on the parts etc that follow, reference will need to be made to the various known items of literature. They are fully described later but for convenience are listed below together with shorthand 'codes' for them.

- With the Yellow set: a Tuba Toy Co. manual with models for 5 sets (Green-Silver) (TT), and the Model Book 'A' for Green models from (probably) Chad Valley (CV A1).
- With the Grey set: a different Model Book 'A' for Green models from Chad Valley (CV A2); and a 'Tuba Tips' Leaflet.
- Photos of 9 pages from a Chad Valley Model Book 'B', with models for 9 sets (Green-Gold) (CV B1).

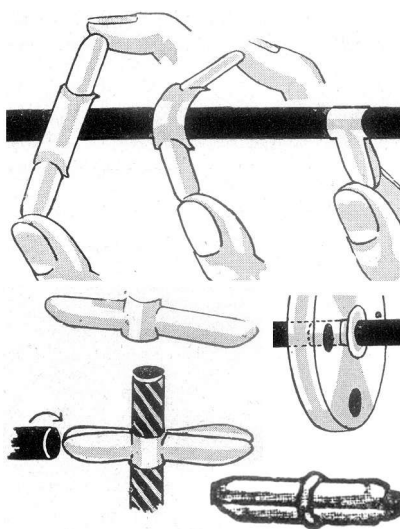
**The PARTS** The **Tubes** are 5.5-5.6mm Ø, rolled from steel about .4mm thick, and with a blued finish. Lengths of 2,3,4,6, 8,10,12,20, & 30cm were mentioned in the early manuals (TT & CV A1), but the 20 & 30cm sizes are not listed in the later ones (perhaps after the advent of a new part, the Prolongation Piece, said to join Tubes more rigidly).

The **Connectors** are soft steel, nickel plated. The 4 below



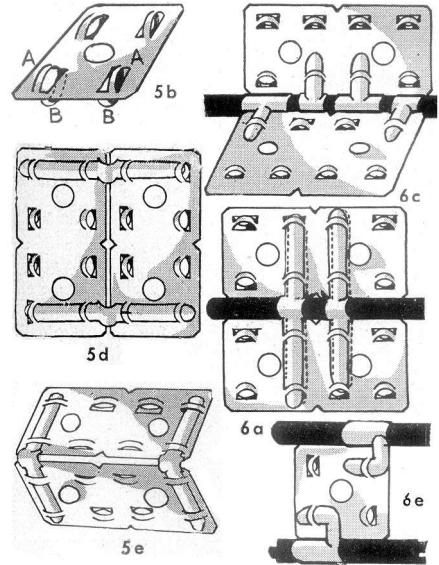
are supplied 'flat' (30-35mm long) and when wrapped around a Tube (as right), form a spigot onto which another Tube is pushed. All the Narrow T-Pieces in the Grey set, & 4 (of 22) in the Yellow, have shaped ends, as in the 'flat' part above, to give a 'knob' at the end of the spigot. What benefit this brings isn't clear.

Pairs of the Cross Piece right (37mm long) allow Tubes to be joined in-line, or added on either side at right-angles, as shown. Finally, bottom right, a pair of Prolongation Pieces, 21mm long, used to join Tubes in-line. The part is similar to the Cross Piece except



that it doesn't have the flexible centre and is generally much more rigid. One of its arms, and the Cross Piece likewise, is a little longer than the other, and has, for no apparent reason, a small hole in it.

The **Plates** are 2cm wide & 2,4,6,8cm long, and are again nickel plated. Fig 5b below shows the 2\*2cm, and the longer ones are multiples of it. The centre holes are large enough to allow a Tube to pass through, and act as a bearing when a Tube is used as an axle. The nicks on the edges and the large holes allow the Plates to be curved in a series of 1cm long flats. The pressed through loops along the edges permit 2 Plates to be joined by snapping one into one another 'like a press button'. This does work but a fair force is needed and some of the loops broke away at one end when the Plates were separated. The different Connectors allow many other ways of joining the Plates, and some examples are shown above using Cross Pieces (Figs.5d,e,6a), T-pieces (6c), and Hook Pieces (6e). In 5e the bend is made after the Cross Pieces are in place. In 5d & 6a corresponding Cross Pieces can be used underneath for extra strength. In many cases Prolongation Pieces can be used instead of Cross Pieces to give more rigidity.



The only other main parts are 2 wooden Pulleys and a nicked Hub (called a Cone) for them. The **Pulleys** are 3 & 5cm Ø, 9mm wide, and the 5cm has 4 face holes at 16mm radius. The 3cm is stained light brown and the 5cm red. The holes are 5.9mm and so rather loose on a Tube (but 5.6mm in the 3cm in the Grey set and so a tight push fit). The **Hub** is a 15mm Ø (13.5 in some) disc with a 7-9mm long split sleeve extension. A Pulley pushed over the sleeve is held fast to a Tube, as in the 5cm Pulley shown above the Prolongation Pieces in the column left. The part also serves as an axle stop & a pair can be used either side of a loose Pulley to locate it.

Finally a hank of twisted green **Cord** in the Yellow set. There was also a **Motor** in the Yellow set but it would have been an addition as the box isn't deep enough to accommodate it. It can be seen in the models shown later. Its body, 30mm Ø by 37mm long, has a nicked brass casing with brown paxolin ends. Stamped onto the casing is TUBA with the 4 elves motif, as on the Yellow lid shown later, and PRECISION MOTOR underneath. The output shaft has a 12mm Ø, 3-step cone pulley pressed onto it. The Motor runs on 4v d.c. and the terminals are short tubes. Red & brown Connecting Wires ending in connectors push onto them. The connectors are similar to T-Pieces with a black Bakelite sleeve over the spigot. Mounting is by Tubes through the large holes at the bottom, with Hubs either side.

The German **patent** hasn't been seen but the parts in the British one are, with a few minor differences, those described above. One variation not proceeded with was the use of hexagonal rather than circular section tubes, with fittings to match - the possible (dis)advantages of this weren't explored.

**The SETS** Initially only 5 sets were available: Green, Yellow, Blue, Red, & Silver. Later the range was extended to 9: Green, Yellow, Blue, Red, Grey, Silver, Check, Black, & Gold. Ultimately the 3 largest included a Motor.

The **YELLOW SET** box is 33\*24\*3cm with the label, 13¼\*



24cm below – the background was probably white originally. The inside is divided into 15 sections by yellow, double-sided partitioning with a truncated triangular section. No inventories are available for TUBA and so the contents of the sets to hand will be given even though neither is entirely complete. For

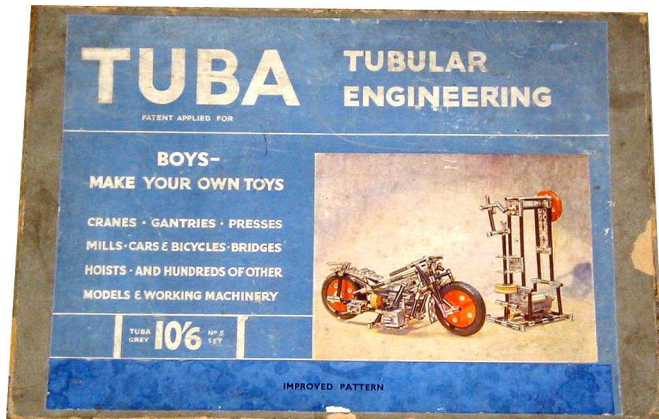


example, the Yellow has only one 2cm Plate and the Grey has only 2 Hubs. Also, as well as the Motor already mentioned, other parts may have been added to the Yellow, the Prolongation Pieces for example (as explained later).

The Set as found contained: 9,5,11,10,6,3,6 of 2,3,4,6,8,10,12cm Rods; 1,5,3,7 of 2,4,6,8cm Plates; 5,2 of 3,5cm Pulleys; 8 Hubs; 22,65 of Narrow, Broad T-Pieces; 7,4,20 of Angle, Hook, Cross Pieces; 3 Prolongation Pieces.

The larger manual with the Set, the TT, has models for 5 sets, Green, Yellow, Blue, Red, & Silver. The other, CV A1, is for just the Green set models, and there are appreciably more of them than in the TT. It bears no company name but may have been from the Chad Valley period because a Model Book 'B' is referred to in it, and one such, from Chad Valley, is known (and described later).

The **GREY SET** box is 45\*31\*3cm and the lid, with its less ethereal label, is shown below. The box is grey and the price



panel confirms the set as a GREY No.5 SET despite the blue label (this is the only known instance of a Set No. being used). The darker blue panel along the bottom with IMPROVED PATTERN on it, has been stuck on top of the label. The inside has the same type of yellow partitioning as the Yellow but now there are 30 compartments, and each has the name of the parts in it stamped on the top of an adjacent partition.

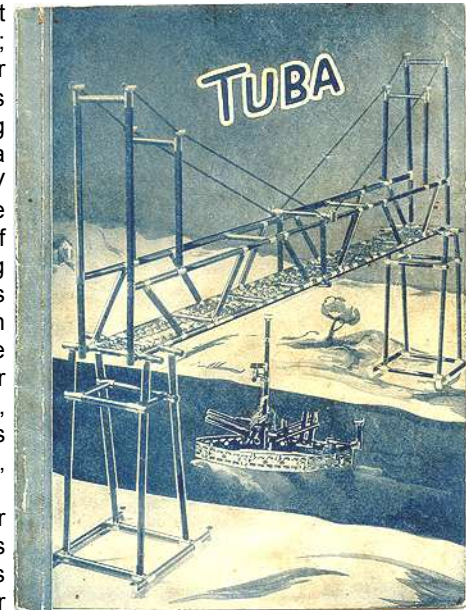
The Contents as found are: 18,11,8,8,11,8,11 of 2,3,4,6,8,10,12cm Rods; 20,8,6,4 of 2,4,6,8cm Plates; 4,2 of 3,5cm Pulleys; 2 Hubs; 26,17 of Narrow, Wide T-Pieces; 6,2,19 of Angle, Hook, Cross Pieces; 17 Prolongation Pieces.

The manual with the Set is CV A2, and it has the Chad Valley name in it, albeit blacked out. It is basically very similar to the CV A1 except that a new part, a Prolongation Piece, to join Tubes more rigidly, is introduced. Since it only includes Green set models, a Book 'B' would presumably have (also?) been in the Set originally. The TUBA TIPS leaflet in the Set has constructional hints on 3 of its 4 sides, and on the back is a list of the 9 sets available, Green to Gold as given earlier. The Motor was included in the Check set (and perhaps in the

larger sets, but this isn't stated).

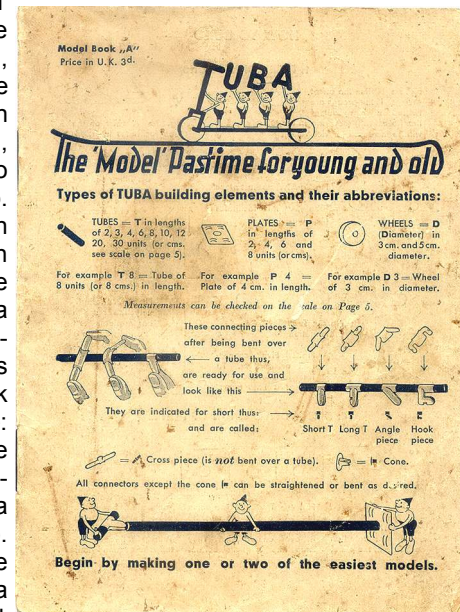
**The MANUALS** All have the same page size, 160\*120mm, and all are printed in dark blue. A shaded line drawing with a parts list is provide for each model, plus one or two scrap views for the largest ones. Each model has a Fig. number.

**The TT.** It has 40 pages plus covers. C1 is shown below; C2 is blank except for 'Printed abroad'; C3 has an ad for the Motor; & C4 has a photo of a Sailing Ship (shown as a Silver model in CV A1). pp1-7 comprise an Intro, details of the parts, & building instructions. p8 lists all the models with their names and the sets needed for them. Underneath, but blacked out, is 'TUBA TOY CO., LONDON'.



The models for the sets are as follows. Green: Figs 1-33, Horizontal bar to Wind pump, on pp9-17; Yellow: Figs 40-56, See-Saw to Tricycle carrier, on pp19-24; Blue: Figs 60-74, Wind Mill to Rack waggon, on pp26-31; Red: Figs 80-90, Swing to Steam engine, on pp33-36; Silver: Figs 100-103, Tramway (overhead cable) repair car (24" high) to Mobile tower crane (27" high), on pp37-40. Photos of a Fire Engine & a Gantry Crane, both non-outfit models, are on pp18 & 32; p25 has a photo of the Fig 103 Tower Crane.

**The CV A1.** It has 16 pages and no covers (but they may of course be missing). p1 is shown below, it has 'Model Book "A" // Price in U.K. 3d' at the top. pp1-4 have details of the parts, and instructions. The Green models on pp5-13 go from Fig 1, Grotesque figure, to Fig 53, Wind pump. So more models than in TT and although most of the latter are present they are in a different order. pp14-15 have 4 examples of models from Book 'B', a Blue Aeroplane: a Yellow Machine press, a Red Stationary steam engine, & a Silver Sailing ship. p16 has a list of the model names, with a Limousine & a Tank underneath – in CV A2 they are said to be Black & a Gold models respectively. 'Printed abroad' is at the page bottom. No company name is shown anywhere.



**The CV A2.** It has 16 pages including covers, and p1 (C1) is similar in style to the CV B1 cover shown overleaf. But it has 'Model Book "A" Price 3d' at the top, the model is the Yellow Machine Press, and the THE CHAD VALLEY CO., LTD., HARBORNE, ENGLAND at the bottom has been blacked out. p2 has a photo of the Roundabout which is on the cover of CV B1 described next. pp3-5 have details of the parts, and



instructions, all quite similar to CV A1 except that the Prolongation Piece is included, and the section is now headed 'The ABC of "TUBA" '. The company details, as on p1, are at the bottom of p3, but again blacked out. There is no PR. One thing about this manual and CV B1 below, the TUBA with 4 elves logo which was in the earlier manuals, no longer appears, and TUBULAR ENGINEERING has been added to the TUBA name. This also applies to the Grey lid of course.

The models are on pp6-14 with, now, their names alongside them. pp8-14 are identical to CV A1; on p6 Figs 2 & 3 are replaced by a new model, Fig 8, Scoring Machine – Fig 3 is dropped and so is Fig 8 on p7, replaced by Fig 2. p15 has 5 example models, a Blue AEROPLANE, a Grey MOTOR CYCLE, a Red SAW BATTERY, a Black LIMOUSINE, & a Gold TANK. A photo of the Silver Sailing Ship is on p16 (C4).

**The CV B1.** The photos of this manual are of pp1-7, & 42-42 – p1 (C1) below has the Silver Roundabout, as in CV A2,



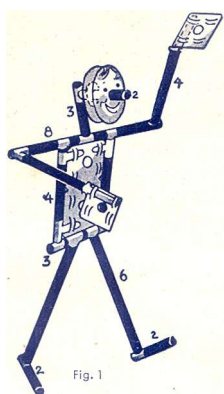
while p2 has the model on the CV A2 cover, but now called AUTOMATIC PRESS instead of MACHINE PRESS (as it was in TT). Under it the 9 sets are listed with the number of the models in the Manual against each. The parts/instructions on pp3-5 are as in CV A2 except that the company name on p3 hasn't been blacked out and a note has been added at the bottom of pp4-5 saying that it is

essential to start by making all the standard constructions.

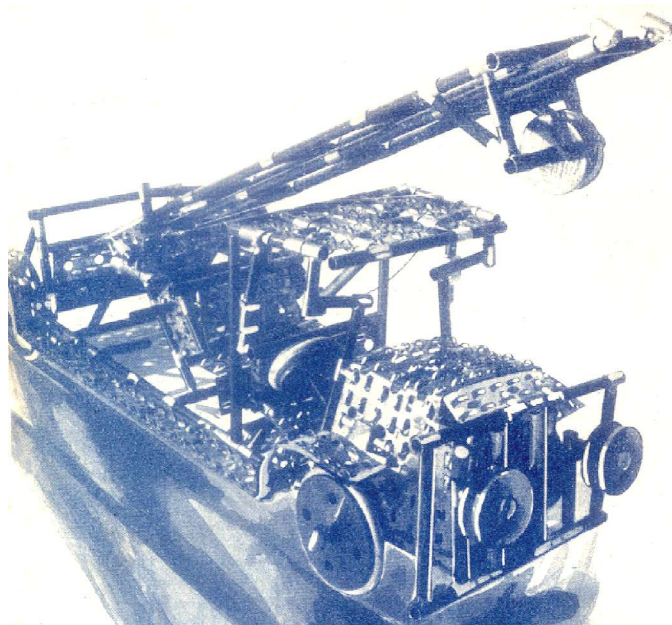
The Green models are Figs 1-53 as in CV A2 and those on pp6-7 are identical. The last Fig. for the other sets are: Yellow, 87; Blue, 116; Red, 141; Grey, 161; Silver & Check, 187; Black, 211, Gold, 241. The last 2 models are 222 (sic), Tank (with Two Motors), on p42, and 241, Aeroplane, on p43.

**The MODELS** All in all a good selection, starting with small items of furniture, Barrows, etc. Then a number of fairly simple mechanical models including some small machine tools, and others such as a Crane, an Anti-aircraft Gun, a Glider, a Lift, & the Yellow Machine Press on the opposite page. Finally in the TT manual, 4 larger Silver models - the Bridge on the TT cover, a large Crane, and, on the facing page, a Tower Repair Wagon with centre pivot steering, & a Crane on a Gantry.

One of the new models in the CV A1 manual is the 'Grotesque Figure' left, the only known TUBA human or animal model. Interesting later outfit models are the Motorcycle on the Grey lid, a realistic looking Car, a Sailing Ship, & an Aeroplane with wings made from Plates curved chordwise. Also, see the facing page, a Steam Engine, & a Tank (an enlarged photo) with tracks made from 2\*2cm Plates joined by 'threading elastic through the loops' - each track is driven by a Motor, & a small Pulley, not mentioned elsewhere, is used in the final drive. Other models, perhaps not made



from any of the sets, are the Fire Engine atop the next column, with the Pulley Wheels fitted with Rubber Rings, and a Gantry Crane. All the models opposite on the next page are the



original size apart from the Tank, at 85%.

I made the Machine Press from the Yellow Set & Motor. A few of the T-Pieces were loose on the Tubes but otherwise they gripped very well once the Tube on the spigot was pushed home (though a very hard push was often needed & removal was even harder – a hammer & a pair of pliers helped). The downside of the excellent grip was that the position of a Connector along a Tube couldn't be changed without removing the spigot Tube, and that often meant dismantling other parts of the model as well. That's quite often a problem with 'Rod/Tube' systems of course. One plus with TUBA was that by opening out a Connector it could be pushed over a Tube between other Connectors already in place. Some care was needed to assemble the framework in the right order, but when finished the model looked the part, and, rather to my surprise, worked well too. The use of 2 Cross Pieces to form the big & little end bearings gave a rather sloppy fit and I replaced them with 2 of the 'loose' T-Pieces.

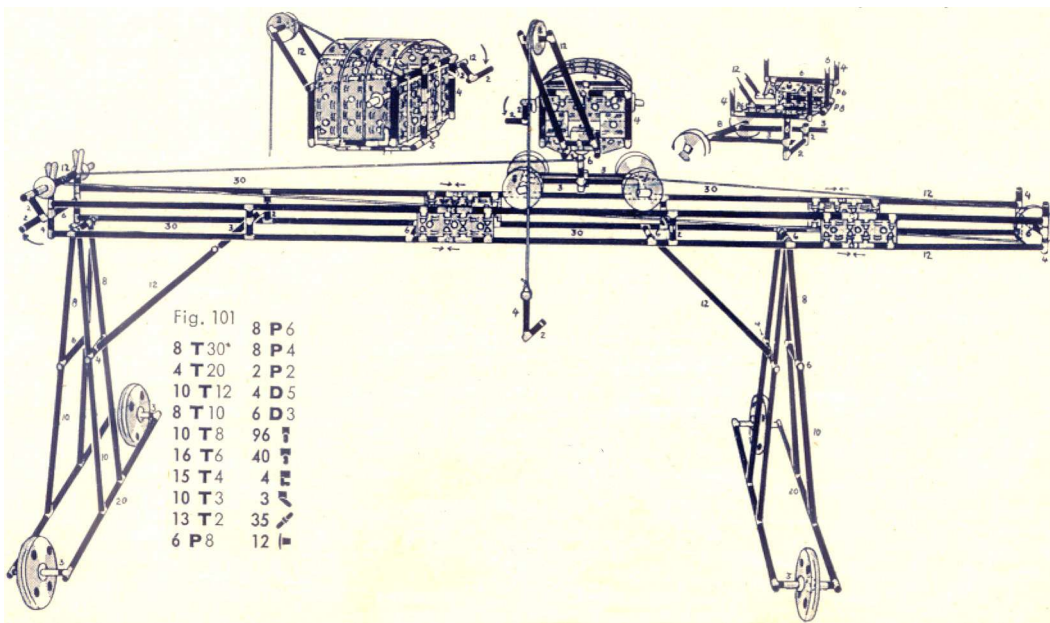
**HISTORY** Details of the German company, Tuba Spielwaren GmbH, were given in 15/419, and also the earliest known date, 1933, the year application was made for the German patent. *Baukästen* gives the dates for the company itself as the 1920s to 1935, and says that 5 TUBA sets were available. All that is known of them is a photo of a Red set in *Baukästen* – the box partitioning looks just like those in the UK sets and the lid label is identical to the Yellow one shown earlier.

As already explained 3 UK companies were involved with TUBA – Tuba Toy Co., The Chad Valley Co. Ltd., & Andrew Charles Ltd. The literature available gives an indication of the changes that occurred, as follows, in the probable date order.

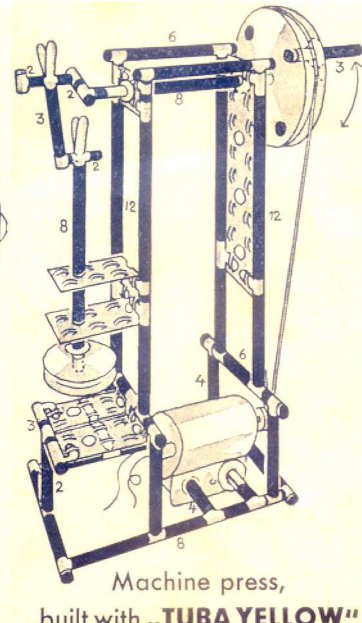
The TT manual has a line in it which has been blacked out, but can still be read as Tuba Toy Co., London. So this company may have preceded Chad Valley as the first UK agent, and Chad Valley, who started advertising TUBA in Sept. 1934, did the blacking out. The CV A1 manual with the TT is for just the Green set models - it bears no company name but is likely to have been from the Chad Valley period, or at least later than the TT, because a companion Model Book "B" is mentioned in it, which has the same scope as the TT. The TT & CV A1 list or imply a range of 5 sets - Green, Yellow, Blue, Red, & Silver. Linking sets are mentioned in both manuals but with no details. Both also mention the TUBA Motor, and some details, including the price, 5/6, are in the TT. It was not included in any of the sets.

The next two manuals have the Chad Valley name in them, albeit blacked out in one, and represent a later Chad Valley phase. They are CV A2 which was with the Grey set, and CV B1. 9 sets are mentioned in both, that's to say the 5 above

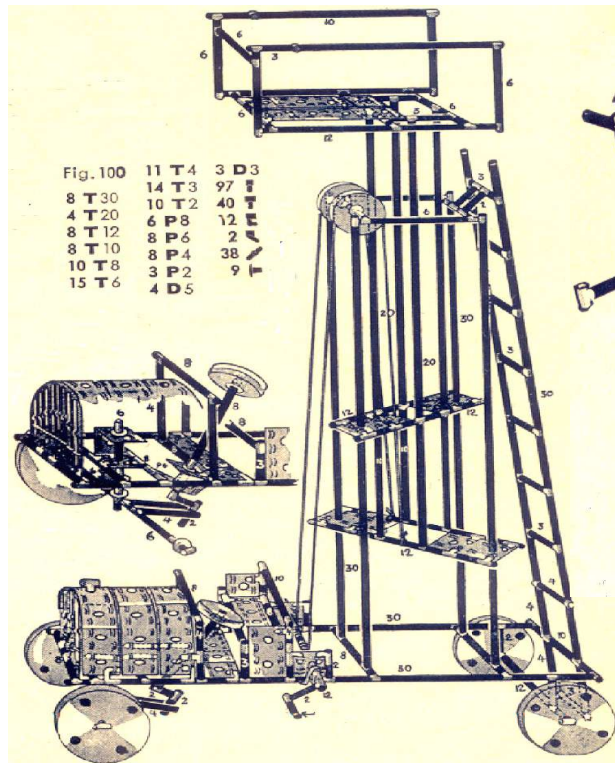




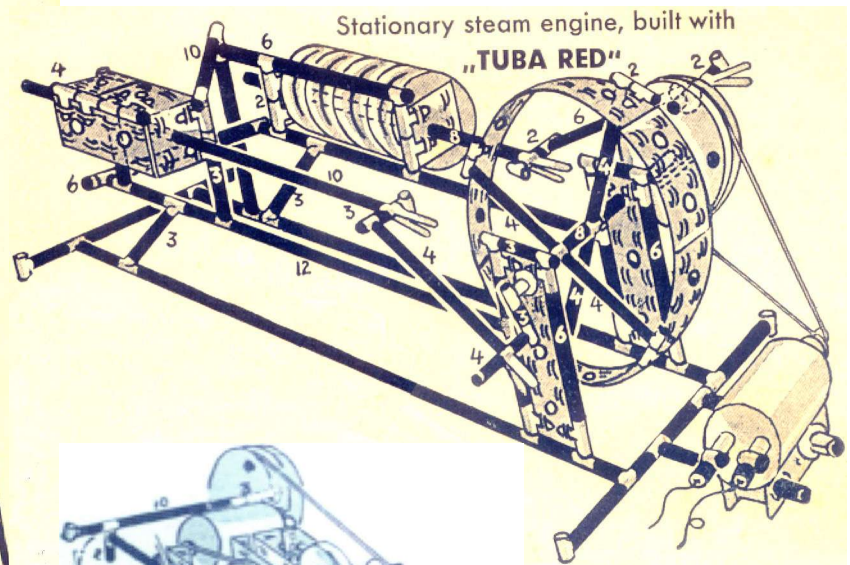
- Fig. 101
- |    |      |    |    |
|----|------|----|----|
| 8  | T30* | 8  | P6 |
| 4  | T20  | 2  | P2 |
| 10 | T12  | 4  | D5 |
| 8  | T10  | 6  | D3 |
| 10 | T8   | 96 | T  |
| 16 | T6   | 40 | T  |
| 15 | T4   | 4  | T  |
| 10 | T3   | 3  | T  |
| 13 | T2   | 35 | T  |
| 6  | P8   | 12 | T  |



Machine press, built with „TUBA YELLOW“



- Fig. 100
- |    |     |    |    |
|----|-----|----|----|
| 11 | T4  | 3  | D3 |
| 8  | T30 | 97 | T  |
| 4  | T20 | 10 | T2 |
| 6  | P8  | 40 | T  |
| 8  | T12 | 12 | T  |
| 8  | T10 | 8  | P6 |
| 10 | T8  | 2  | T  |
| 8  | P4  | 38 | T  |
| 3  | P2  | 9  | T  |
| 15 | T6  | 4  | D5 |



Stationary steam engine, built with „TUBA RED“

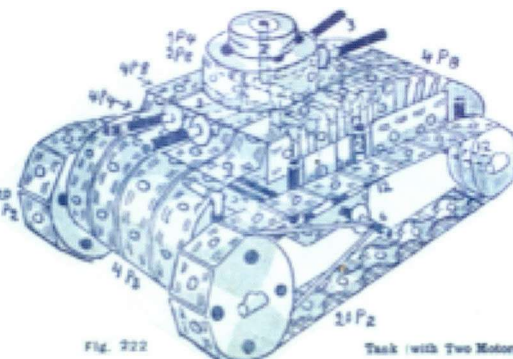
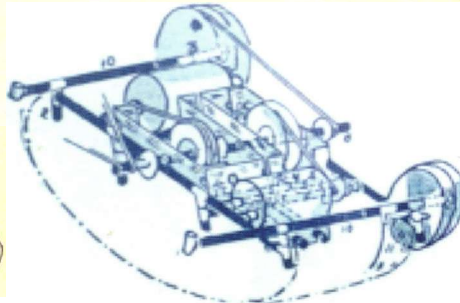


Fig. 222 Task with Two Motors

associated with the 'Improved Pattern' label on the Grey Box, an indication perhaps that earlier 'new' sets were different in some way. The only obvious physical change was the introduction of the Prolongation Piece, and if that were the difference there may have been a manual for the new sets which didn't include it.

After only a year why did Chad Valley cease to be the UK agent? As pure speculation, if Tuba in Germany did close in 1935, that could be the reason. Then the remaining stocks might have been

sold off by Andrew Charles, the Grey set amongst them, and they blacked out the Chad valley name in CV A2.

The TUBA parts are neat, well made, and quite versatile, especially the Plates. And with its good range of models, it seems to me to have been rather better than most comparable Rod/Tube systems. Nevertheless it had but a short life, again like most of its kind. KLIPTIKO & FAC are the only exceptions that come to mind, one very simple & one very complex.

(though it isn't known if they had the same contents as before) plus 4 new ones: Grey between Red & Silver; Check (= Silver+Motor); Black; & Gold. It isn't clear if there was a Motor in the Black & Gold sets. The new Prolongation Piece is introduced in both and in CV A2 it was said to be included in the Red set upwards.

The TUBA TIPS leaflet in the Grey set lists all the above outfits (priced at 2/6, 3/6, 5/6, 7/6, 10/6, 15/-, 21/-, 25/6, 29/6) & the Motor is included in the 3 largest. It now cost 5/11 separately and a Motor Accessory Box, at 9d, was available, with Driving Belts, Plugs, & twin silk Flex.

There is no mention of Linking Sets in CV A2 & CV B1, but it is said in the former that 'TUBA parts are obtainable in small packets, as also are Motor Tyres, Driving Belts, Cleats, etc.'

Chad Valley seem to have been quite busy in the year they were involved with TUBA, with new sets, revised manuals, & new models. Presumably the new sets & models came from Germany but no equivalent German material has been reported so far. Another change would presumably have been



## A BILDAL No.2 Outfit

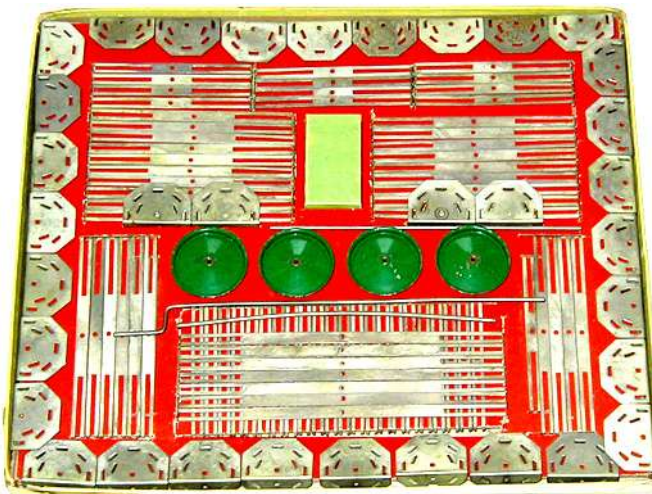
Some notes about a No.1 set were given in 13/358 and now, thanks to David Hobson, I've been able to examine a near complete No.2. The lid is like that of the No.1 right except for the Set No. at the bottom, and the line below BILDAL No.1, which is blank with no Patent No. in it. So probably David's set is an early example before the patent was granted.

The box is 18½" 15½" x 1" and as can be seen from the photo right, the parts push into slits in a red card, or for most of the Angles, between the edges of the card and the sides of the box. The number of Strips found was 5 less than those needed for the manual models but even so some had to overlay others, including all the longest which are on top of the shortest. There is no obvious place for the Axles & Crank Handle and they are shown lying above & below the Wheels. The small parts, including the Tilting Links, are in the light green box, 3" x 1½" x 7/8".

The notes on the parts which follow amplify those in OSN 13. The sizes of the Strips given in the manual (& in MCS), 3½", 6¾", 9¾", 4¾", are overall lengths. Their split ends (below) are bend over at about 90°, and as they are pushed into a slot in an Angle they push together slightly, and then spring back so that the small concave cutouts on each side engage with the sides on the slot. Thus the Strip is positively located and prevented from falling out.

Rectangular tabs are pushed through to form the slots in the Angle (as shown below) and these serve to limit the angular play of a Strip (below left) to about 10°. This applies to most of the Strips because their ends are bent to less the 90° (by about 10°); in a few parts the bend is 90° and this nearly eliminates the play, although it is then slightly more difficult to push the Strip into the Angle. The Wheel (below)

has a slightly conical, flanged, disc & a ¾" o.d., untapped, 3.6mm bore, steel boss



on the inner face, held by a narrow ring of peening, nearly flush with the disc. The length of the boss, about 8mm, prevents 2 Wheels, back-to-back, forming a pulley, and in any case clamping them together with Collars or Spring Washers would probably be unsatisfactory. The Axle & Crank Handle are 3.40mm Ø (.134"). Only 9¼" Axles were found in the Set and the Crank Handle differs from the OSN 13 one – at 12¾" it is longer. Its 1½" handle is offset .7". The Tilting Link measures 2.3" x .5" and is thus smaller than the OSN 13 part (looking again at the latter it's possible that it was made by an enthusiastic earlier owner). The U-type Collar is 9½" x 9½" x 11½"mm deep, and is tapped 6-32. Its ¼" Ø, round-headed Set Screw is nicked steel and ¼" u/h. (There were 2 similar 'spares' in the Set, one dull plated, and one bare steel.) Also in the Set, the small, nicked wire Screwdriver shown under the Angles. It is not mentioned in the manual, and is 2½" long o/a. The Clamp is made of .07" deep rectangular section steel and is .7" long. The Spring Washer is plain steel, ¾" Ø – it has adequate grip and is quite easy to push on & off.

The contents of Sets No.1/2 are given below, with, for each, the number of parts found in the sets followed, if different, by the number needed for the manual models in one in OSN 13. The parts are very easy to assemble and even the larger models, the Lift Bridge shown in OSN 13 for example, can be made in a few minutes. A few of the Strips tended to fall out of the Angles because the bend point at the end was not quite right and so the cutouts didn't engage the edges of the slot in the Angle. 2-dimensional frameworks were floppy in the out-of-plane direction and as already explained this would have been greatly improved if the bends in the Strips had been 90°. In-plane diagonal bracing was needed to give acceptable rigidity and with the parts in the system this was only possible for squares with 3½" or 6¾" Strip sides. The same remarks applied to 3-dimensional frameworks and the OSN 13 House was very wobbly. The Lift Bridge really needed more bracing but was strong enough without it to be raised & lowered, even with no counterweight. The models generally are a decent size, over 2 feet long for the Bridge.

Early systems such as KLIPTIKO had parts which were assembled without N&B but as far as I know BILDAL was the first to use Strips in this fashion. It can be imagined that with a few more parts and a little development it might have been quite successful with youngsters in a quiet way – rather as KLIPTIKO was here in the inter-war years.



**3 BILT-E-ZE Items** A No.4 set, the type with the ¼" Axles, and a Flat rather than a Flanged Plate, was described in 22/628; the **First Item** now is **some Parts and a Manual** which correspond to that set in most respects. The only parts missing are the 2x 25h Strips, the Crank Handle, and 12 of the nominal 72 N&B. The N&B are quite different to the OSN 22 parts and a few of the other pieces show slight variations.

The **Details** follow. The 5 & 7h **Strips** are the same thickness as those in OSN 22, but at .8mm the 9 & 11h are noticeably thinner. The chamfered **corners** are sometimes up to 4½mm long. The normal **Axles** are 3.63mm Ø. The **Collars** are 7.9mm Ø & 8mm long. The **Split Pins** are 12mm long. The **N&B** are ⅜" BSW, plain steel, with 4.8mm Ø RH Bolts, ½" u/h, & square Nuts, 6.3mm A/F & 2mm thick. No doubt the normal 4BA N&B were not available at the time; the bosses & Collars are tapped 4BA but there were no screws for them.

The **Second Item** is an Ebay 'snippet', showing the front & back pages of a BILT-E-ZE **Manual**, and the front in the general style of the OSN 22 one. Most of the text can't be seen clearly but it is either for Set 2 or 3, and the name at the bottom is Covingtons Ltd., rather than COVINGTON TOYS LTD. The address is different too and is possibly '? WEST ?? LONDON ???'. The models were said to go from No.1 Motorcycle & Sidecar, to No.7 Water Pump, and the latter can be seen on the last page. It is in the same style as the No.4 models except that a list of the parts required is included. It is built up from the Flat Plate with only edge holes, and the use of this part points to the manual being from a 'Flat Plate' set.

The **Third Item**, courtesy David Hobson, is an example of the **Other Type of BILT-E-ZE Set**, with parts, including the Flanged Plate, as described under 'The other BILT-E-ZE' in 22/629. The Set is a No.2 and is near complete but doesn't have a manual.

The cardboard box, 9¼\*8\*1", has faded but was originally blue - the lid, with label nearly covering it, is shown right. At the bottom is COVINGTONS LIMITED, LONDON, ENGLAND, and a price of 13/9 has been written on in pencil. Unlike the OSN 22 No.4, there is no set number in the top right red panel, and the Set has been identified by the wording on the N&B packets. In



the bottom left red panel is 'REGISTERED DESIGN'. The parts are in two layers, mostly wired to light brown cards but the Wheels are held with bifurcated clips and the N&B are in two light brown envelopes, 2½\*3½", glued to the card. Both have 'BILT-E-ZE SET No.2' on them, with underneath 'This Packet contains 36 4BA Nuts' on one, & 'This Packet contains 30 ¼"x4BA screws // 6 ½"x4BA screws' on the other. These envelopes have similar envelopes folded inside them and they contain the actual parts - one is plain and the other has 'BILT-E-ZE SET No.4' & 'This Packet contains 36 4BA Nuts' on it. Presumably the 'No.4' or the '36' was an error.

The **parts in the Set** are listed below with quantities in curly brackets, and comments where they differ from those described in 22/629. The **main changes** compared to the 'Flat Plate' outfit parts are the Flanged Plate stamped BILT-E-ZE in its centre, the slightly larger holes, the red tinplate Road Wheels with normal Axles, the brass instead of blackened steel Pulley, single- instead of double-tapping, the extra holes in the Semi-circular Plate, & the normal size holes in the A/B. Note also that the Crank Handle is much smaller in diameter than the Axles, though larger than the 'Flat Plate' part.

- 5,7,9h **Strips** {4,2,2}. 5,7h **A/Gs** {2,2}. 2,3h **DAS** {1,1}.
- **Flanged Plate** {1}. **Semi-circular Plate**, as before but with extra 45° edge holes, as illustrated in 19/539 {2} - these holes are not shown in the parts on the lid.

- **Flat Trunnion** {4}. **A/B** {4}.

- **Road Wheel** {4}. **Pulley**, all brass, 1.06" Ø, 4½mm wide with flat, slightly recessed peening (the black steel type is shown on the lid) {2}. **Brass Collar**, 8.0mm Ø, 7mm long,

single-tapped 4 BA {1 found but probably at least 4}.

- 4,3,1¼" **Axles** {1,1,1, but 2x 4" might be needed}.

- **Crank Handle**, 3.24mm Ø, black like the Axles, 165mm long o/a, with a 40mm handle & large radius 90° bends {1}.

- Dull plated steel, 4 BA **N&B**. Square & hex **Nuts**, 8.0mm A/F & 2½mm thick. {16,21}. **RH Bolts**, 6.0 to 6.5mm Ø, ¼ & ½" u/h. {32,6}. **Span'driver** {2}.

- **Holes** vary from 4.1 to 4.3mm as follows. 4.1: A/Bs, a few Strips, Semi-circular Plates; 4.2: most Strips, Flat Trunnions, Flanged Plate, DAS; 4.3: A/Gs.

**BILT-E-ZE [1]: S1 & BILT-E-ZE [2]: S1**

**OSN 33/984**

**A KITANO No.0 OUTFIT** A manual for this very minor, post-WW2, UK system was described in 8/189, and now, thanks to David Hobson, a set is to hand. It is in an end-opening box, 5\*8\*1", coloured all over in the same vivid yellow & red as the manual cover. The top is the same design as the cover except for 'COMPLETE STEEL SET WITH INSTRUCTION MANUAL No "0" ', at the top, and at bottom right, 'CONTENTS LISTED ON REVERSE SIDE OF BOX'. And so they are. The parts are in a stout brown paper bag, 4½\*7¼", with the contents of Sets 00 & 0 printed on the front, and overprinted in red at the top: **No.124517** with "0" underneath after 'Serial No.

The holes are at ½" pitch and vary from 3.9 to 4.4mm Ø in the different parts. At a glance they could all be mistaken for LYNX (see 16/436) but the holes in some are bigger than in any known LYNX parts. Also their ends, apart from the A/Bs, and the 2 & 3h Strips, are near fully rounded instead of the usual LYNX larger radius. (In passing another similarity to

LYNX is that the DAS & Brackets are all called Brackets preceded by the total number of holes in the part - so the 3h long DAS is a 5-Hole Bracket.) All the parts are quite nicely made, and except where stated they are nickel plated. Quantities in Sets 00/0 are given in curly brackets (the No.0 is the No.00 with more N&B, and 6 each of the DAS & Brackets.

2,3,4,5,9h **Strips** {6/6;6/6;6/6;6/6;2/2}. The 2 & 3h are dull plated. 1\*3\*1h **DAS** {-/6}. Despite the Complete Steel Set claim this part is aluminium, anodised orange (cf later LYNX). 1\*1h & 2\*2h **A/B** {-/6;-/6}. **D/B** {-/6}. **N&B** {15/32}. They are plain steel with a 5BA thread. **Nuts** are pressed, 6.3mm A/F & 2mm thick. **Bolts** have a 5.5mm Ø RH, and are 6½mm u/h. **Tools**. A Screwsdriver Tool, presumably a **Spandriver**, is listed for both sets but a Spanner & a Screwsdriver were in the No.0, both identical to the LYNX parts shown in 16/440 (the 3.2" Screwsdriver). The Spanner's larger opening fits the Nuts.

**KITANO: S1**

**OSN 33/984**



**More Argentinian COMBI Sets** Since the account of the Compa's COMBIPLANO set in 32/963 John Timms has been good enough to draw my attention to 2 Ebay Items. One, a set called COMBICAR to make Trucks & Military Vehicles; the other, another COMBIPLANO outfit, but with different coloured parts. And with the latter, leaflets for COMBICAR, and for COMBINAVE, a ship-building set (nave is Spanish for ship).

**Snippet: COMBIPLANO** The main items shown in this lot are 2 lids & the open box below. One lid is just like the OSN 32 pattern except that the background colour is red instead of greyish. The second, which probably belongs to the open box, is also red but with the label left, about 23cm wide, featuring the PULQUI II model from the manual. The lids are about the same size and scale at 42cm long. The inside of



the box is simpler than before with just the two lengthways partitions, but it looks deep enough to have originally had a card of flat parts above the partitions. As can be seen most of the parts are light green metallic in colour but a Fin #8, the Nose #19, the Propeller Blades #12,13, & the Spandriver #34, are red. This box is most likely the No.1 mentioned in OSN 32 because a Set Contents leaflet in the lot is headed 'equipo N.1 - 15 modelos'. And there are certainly not as many parts in the box as would be in a No.2, though some may be missing of course. Only the bottom third of the manual cover can be seen (at the top of the photo) - it is generally like the OSN 32 one but there is more text in a box to the right of the name & the model's nose (all that can be seen) differs. 4 inside pages are shown and look identical to those in the OSN 32 manual.



the box is simpler than before with just the two lengthways partitions, but it looks deep enough to have originally had a card of flat parts above the partitions. As can be seen most of the parts are light green metallic in colour but a Fin #8, the Nose #19, the Propeller Blades #12,13, & the Spandriver #34, are red. This box is most likely the No.1 mentioned in OSN 32 because a Set Contents leaflet in the lot is headed 'equipo N.1 - 15 modelos'. And there are certainly not as many parts in the box as would be in a No.2, though some may be missing of course. Only the bottom third of the manual cover can be seen (at the top of the photo) - it is generally like the OSN 32 one but there is more text in a box to the right of the name & the model's nose (all that can be seen) differs. 4 inside pages are shown and look identical to those in the OSN 32 manual.

**COMBIPLANO: S3**

**[OSN 33/985]**

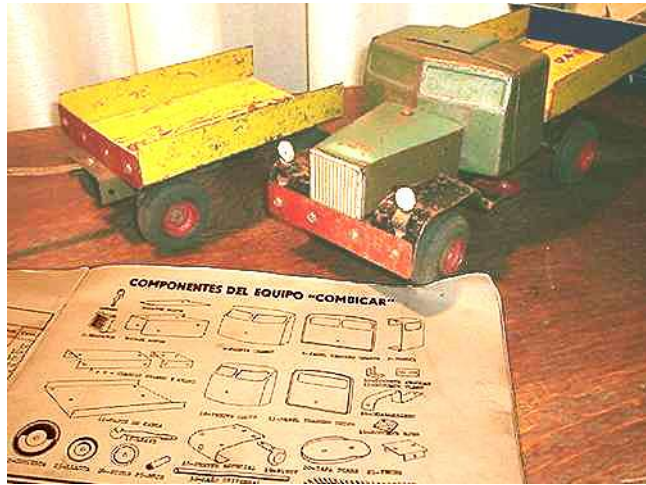
**Snippet: COMBINAVE** All that is known of this ship building outfit, (another first for Compa, apart from Gilbert's ship parts for U.S. MECCANO in the 1930s) is the leaflet right which was part of the COMBIPLANO lot. It's quite blurry and all that can really be seen on it is a Hull with 3 Deck parts above it. Did the models float? Let's hope that some more details come to light.



**COMBINAVE: S1**

**[OSN 33/985]**

**Snippet: COMBICAR** This lot consisted of a made-up Lorry & Trailer, a few parts in an open box, & a manual. 2 photos of the model are shown below together, with pages



from the manual underneath the model in each case - the Illustrated Parts and two Lorries. Right is the manual cover, and under it the open box. Two more manual pages, not reproduced here, show the Lorry & Trailer model, and a Tank on its Transporter, as on the manual's cover. The 15 lines of text at the bottom on the left side of the manual cover are probably a list of the models which can be made from the Set. It's difficult to identify the parts for the Tank but the Gun Barrel may be the part at bottom centre of the Illustrated Parts, and the actual part may be the one lying to the right along the bottom edge of the open box. And the Tracks might run on the numerous red Wheels that can be seen in the box. That the Tank could be made from the set is also indicated by a leaflet with the COMBIPLANO lot which shows 5 models including the Lorry & Trailer, the 6-Wheel Truck on the manual page above, the Tank, and a Tracked Lorry. No positive indication of size is available but scaling from the Spandriver on the top of the open manual gives the width of the manual as 22cm and the length of the Lorry (without its Trailer) as 30-35cm. The Road Wheels are said to be metal & rubber. As can be seen the Truck models are fairly crude with no mechanical refinements. The set though, the only one of its type that comes to mind, allows a reasonable range of models to be made, and they look quite robust.



**COMBICAR: S1**

**[OSN 33/985]**



**MEHANOTEHNIKA** That's the name of the Yugoslav system made from the 1950s by a company of the same name. Much later, in the 1990s, sets called METALLICO were produced, by the same company, see 13/336, but by then called Mehano. One phase of MEHANOTEHNIKA is shown in MCS but this account, based on some parts with a manual, is mainly about what seems to be a later phase with fewer parts and a different set structure.

**HISTORY** According to Mehano's web site ([www.mehano.si](http://www.mehano.si)) the Mehanotehnika company was set up at Izola (in Slovenia) in 1952. Production of metal toys started in 1953, but it isn't clear whether or not the constructional sets were made from the outset. The company name was changed to Mehano in 1990, and Slovenia became independent in 1991. The MCS entry claims 201 parts and Sets 1-8. No detailed information on the parts & sets is given, and there is no mention or indication of linking outfits.

The present manual shows Sets A, B, & 1-7, with No.1, equal to A+B, as the basic set, and then 2-7 as add-on outfits. Four Accessory Sets for Strips, Plates, etc are also shown.

**PHASE 1** Below the lid label/manual cover used at that



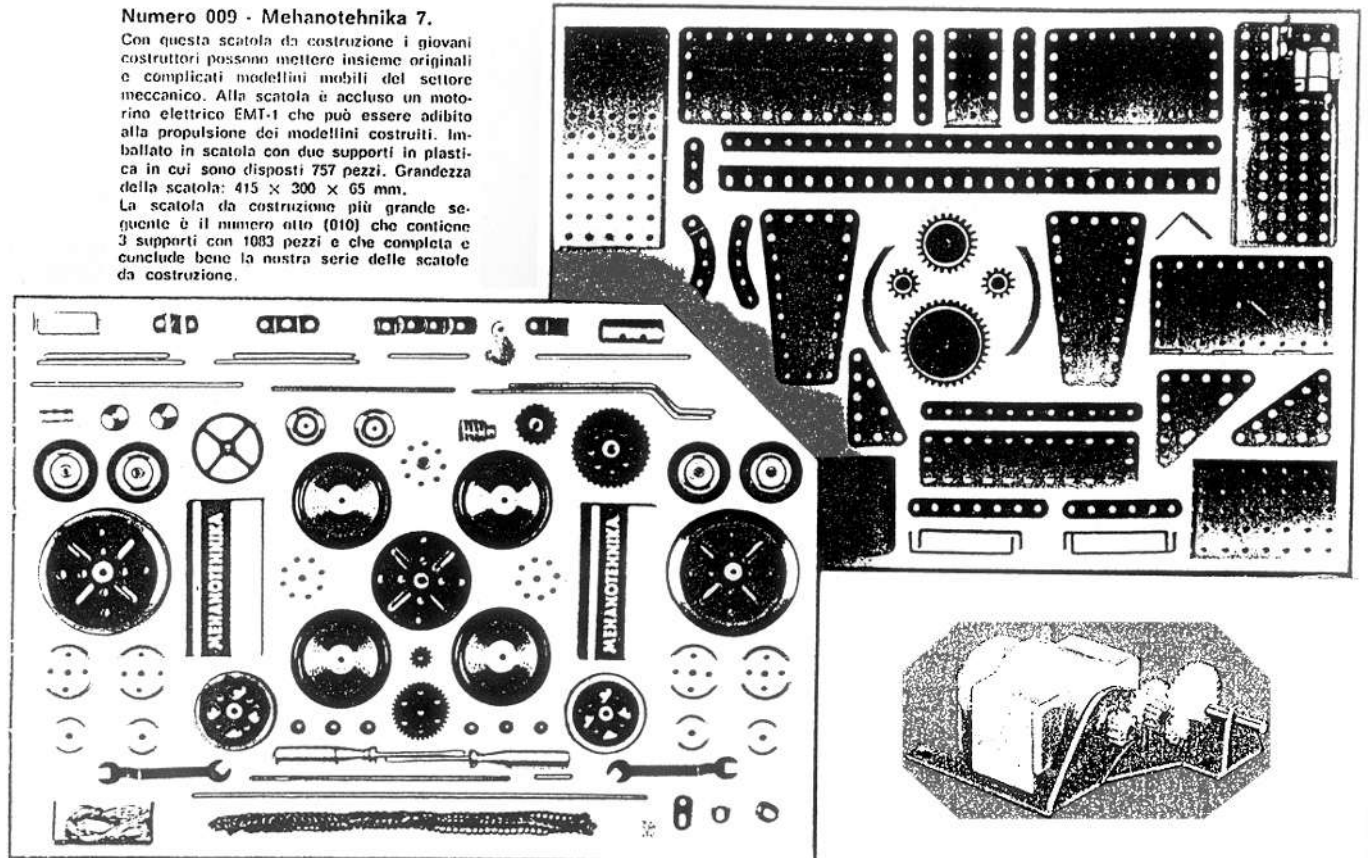
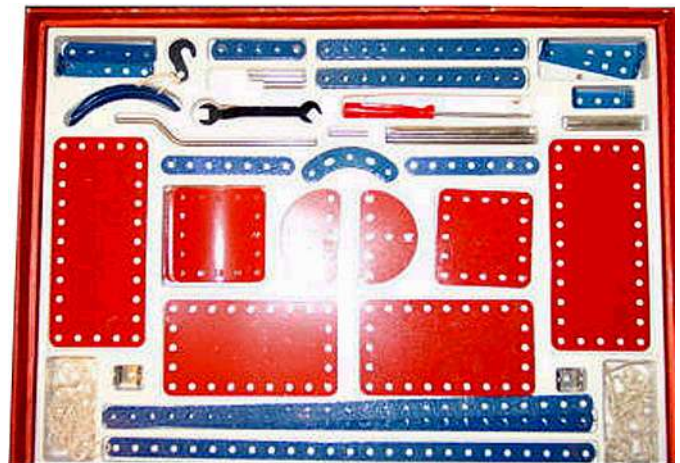
time, and across the bottom of the page, a photo of the No.7 set taken from MCS, with inset the 4.5v Motor included in the outfit. The note below tells of a box 415\*300\*65mm with 757

**Numero 009 - Mehanotehnika 7.**

Con questa scatola da costruzione i giovani costruttori possono mettere insieme originali e complicati modellini mobili del settore meccanico. Alla scatola è accluso un motore elettrico EMT-1 che può essere adibito alla propulsione dei modellini costruiti. Imballato in scatola con due supporti in plastica in cui sono disposti 757 pezzi. Grandezza della scatola: 415 x 300 x 65 mm. La scatola da costruzione più grande seguente è il numero otto (010) che contiene 3 supporti con 1083 pezzi e che completa e conclude bene la nostra serie delle scatole da costruzione.

parts, and of the No.8 with 1083 parts in 3 layers. The 1960s MECCANO No.7 & No.8 had about 770 & 1130 parts, of about 100 & 140 different types. The sets aren't directly comparable of course but if there were 201 parts in the Yugoslav system one wonders if all were included in the No.8.

Two sets of this period have been seen on Ebay. One, a No.6, has the 2 layers of parts below, in trays which look to be

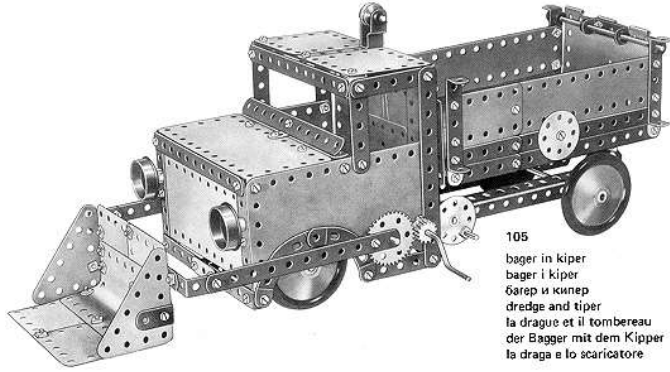




moulded plastic. The box scales at 16½\*11½", and the lid & manual cover are as already shown. Likewise the other, probably a No.2, but in this case the plastic tray is yellow and the box is said to measure 13½\*9¾"

Most of the parts in all three sets look like their MECCANO counterparts but there are a few originals, as follows. A flat, black Hook; Trunnions with different shaped cutouts; a 9h long Flexible Sector Plate; 3 Coarse-toothed Gears with 12, 24, & 36 teeth (16 DP probably); a Pinion & Gear Wheel which seem to have 12/36 teeth (24 DP); and a matching Worm.

There may have been changes to the contents of the sets within Phase 1 because the Lorry below (taken from the

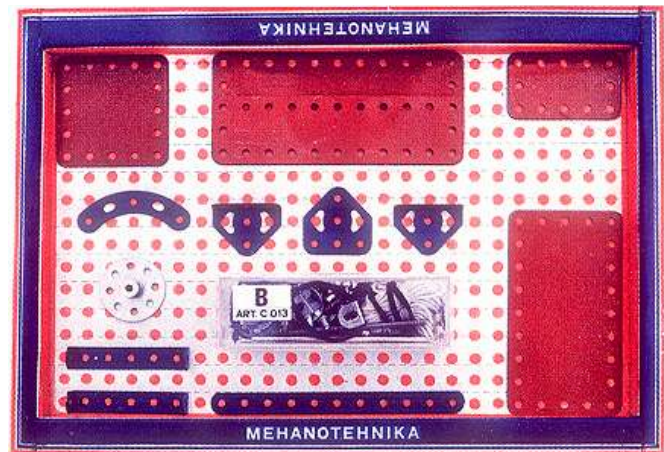


Phase 2 manual, x .55, but identical to one of the Phase 1 No.6 set models in MCS) has Flanged Wheels as headlights and none of these can be seen in the Ebay No.6.

**PHASE 2** As already noted this section is based on a manual (with the cover below) and the parts with it. The



manual contains sections with models for Sets: A, 1 (=A+B), 1+2, 1+2+3, ... 1+2+...+7. Before each is a colour photo of the tray for the 'new' set (as below for the B), and in addition each



individual part is shown in colour with its PN & quantity. All trays are the same size, scaling at 9½\*13¾", and all are the same design. There is one for each set except that the No.1 is made up of the A & B trays packed together. The No.1 lid is

shown and is identical to the manual cover except for '1' in the top right corner. No doubt the other lids are similar but none are shown. As a further simplification to the packaging each set contains an identical selection of N&B & other small parts in a clear plastic box, 12\*4½\*1¼cm, with MEHANOTEHNIKA IZOLA moulded into the lid (I'll call this the N&B Box).

The Table on the facing page shows the parts in the various sets (the parts aren't named so 'Meccano' ones have been used). The first column has the contents of the common N&B Box; the '1-7' column has the total contents of Sets 1-7, and they add up to 1075 parts. With an N&B Box in each set, this total does include rather a lot of some not so useful parts, the Cranked Bent Strip for instance, but the generous number of Brackets would be very welcome.

The accessory sets PL1 & 2 (for Plates), and TR1 & 2 (for Strips etc) are in the same packaging & each contains an N&B Box.

The PNs in the Table are all preceded by 'C 013' in the Manual except the Screwdriver which has the prefix 'E 182'. The N&B Box is #C 013 G1. There is no obvious reason why some of the parts are lettered rather than numbered.

**The parts seen** have black PNs in the Table and they show no obvious differences from the Phase 1 illustrations. Generally they look like MECCANO and most are well made and finished. The colours are red & blue as before, with, as might be expected, most bright parts nickel. The red is the 1960s MECCANO colour or a little lighter, and the quite rich medium blue is between the shades in the two sets already shown. Exceptions to the above are noted in what follows. See 13/336 for references to METALLICO.

**Holes** are 4.2mm at 12.7mm pitch. All **threads** are M4. **Bosses** are aluminium, 10.0mm Ø, 4.2mm bore, and double-tapped. The **peening** is either 4- or multi-point, with a slightly conical centre recess. The **ends** of most Strip parts & Brackets are semi-rounded; the **corners** of the Plates are fully radiused. **Nickeled parts** are steel.

The **5h long DAS**, #07, has the small hole noted in 13/336. The **Curved Strip**, #08, is the MECCANO pattern and not the larger radius METALLICO part. Slots in the #10 **A/G** are 8mm against 8½ in MECCANO. The **2h Brackets** #70-72 are nickel but otherwise as METALLICO. The slot in the **Reversed A/B** #75 is 8mm long. The cutouts in the **Trunnions** #25 & 26 give a 'hole' at ½" pitch from any of the round holes. The **Crank Handle** #44, 5¼" long o/a, and **Axles** #48-53, are 3.95mm Ø, nickel plated, with slightly rounded ends. The **Bush Wheel** #A1 has a 36mm Ø aluminium disc. The **Pulleys** #B1 & C1 are aluminium too with 25½mm Ø discs. The boss on the Loose version is 2mm long. The black rubber **Tyre** #D1 is 5mm wide and 34mm o.d. when on a Pulley. In the manual the **3" Pulley** #E1 is sometimes shown black and sometimes blue. The **Road Wheel** #F1 is almost identical to the MECCANO part except for the boss and a larger, 20mm Ø, flat circle in the centre of the coned outer part. The **Pinion** #42 & 6h **Gear** #43 mesh at 1" centres and in different pictures seem to have 12/36, 14/35, or 14/36 teeth. The DP for these combination would be 24.0, 24.5, 25.0 and a modulus of a little over 1. Exactly 1.0 would need 12/39 or 14/37 teeth. The **N&B** are nickeled. **Bolts** are 5,9,12,19mm u/h and most have a very neat cheesehead, 5.6mm Ø and 2mm thick, but some are 6.8mm Ø & 2½mm thick. **Nuts** are square, pressed, 6.9-7.0 A/F and 2mm thick. #61 **Washer** is 10mm o.d., nickeled, and only .6mm thick. The **Axle Clip** #63 is as METALLICO. #64 **Cord Anchoring Spring** is 8mm long with a loop just large enough to take a Bolt. The **Screwed Rod** #54 is 75mm long, nickeled, with 6mm of 3.6mm Ø plain rod in the centre. The **Threaded Pin** #55 is also nickeled, 3.95mm Ø, 21mm long o/a, with 9mm of thread and no shoulder. The (rather feeble) **Screwdriver** #A2 is 125mm long o/a with a 3mm Ø blade. Its 60mm fluted red plastic handle has MEHANOTEHNIKA along



PN	Name ↓	Set →											PL		TR	
		N&B box	A	B	1	2	3	4	5	6	7	1-7	1	2	1	2
01	Strip 25h				2	2		2	2	2	10			4		
02	Strip 11h		2	2	4	2	2		4	2	4	18		2	12	
03	Strip 7h									2		2			4	
04	Strips 5h		6		6	2				2		10		10		
05	Strip 3h									2		2		2		
06	DAS 3h						2					2				2
07	DAS 5h		2	2	4	2				2	2	10				2
08	Curved St'p'd Str		2	2	2					2	2	8				2
09	Formed Strip					4						4				2
10	A/G 25h													4		
11	Flex PI 3*5h			2	2	2						4	2			
12	Flex PI 3*11h			2	2						2	4	2			
13	Flex PI 5*5h			3	3	3						6	2			
14	Flex PI 5*9h			2	2							4	2			
15	Flex PI 5*11h			2	2							4	2			
16	Triang PI 3*5h										4	4		2		
17	Triang PI 4*5h										2	2		2		
18	Curved PI 3*5h							4				4		2		
19	Curved PI 5*5h									2		2		2		
20	Sector Plate									2		2	2			
21	Fgld Sector PI						2					2		2		
22	Fgld PI 5*11h		1		1					1		2		1		
23	Fgld PI 3*5h							1				1		1		
24	Semi-circ PI					2						2	2			
25	Flat Trunnion			2	2						2	4				2
26	Trunnion			2	2						2	4				2
27	Wheel Disc 8h					2						2				
33	Small Loose Ply					1	1				1	3				
39	Collar										4	4				
40	Small Fgld Whl										4	4				
41	Fgld Wheel										4	4				
42	Pinion 12?t										1	1				
43	Gear Whl 36?t										1	1				
44	Crank Handle		1		1							1				
45	Spanner		1		1							1				
47	Flat Hook		1		1							1				
48	Axle 25m	1	1	1	2	1	1	1	1	1	1	8	1	1	1	1
49	Axle 38mm	1	1	1	2	1	1	1	1	1	1	8	1	1	1	1
50	Axle 50mm	1	1	1	2	1	1	1	1	1	1	8	1	1	1	1
51	Axle 90mm	1	1	1	2	1	1	1	1	1	1	8	1	1	1	1
52	Axle 100mm	1	1	1	2	1	1	1	1	1	1	8	1	1	1	1
53	Axle 115mm	1	1	1	2	1	1	1	1	1	1	8	1	1	1	1
54	Scr Rod 75mm	1	1	1	2	1	1	1	1	1	1	8	1	1	1	1
55	Threaded Pin	1	1	1	2	1	1	1	1	1	1	8	1	1	1	1
56	Bolt 5mm	30	30	30	60	30	30	30	30	30	30	240	30	30	30	30
57	Bolt 9mm	2	2	2	4	2	2	2	2	2	2	16	2	2	2	2
58	Bolt 12mm	1	1	1	2	1	1	1	1	1	1	8	1	1	1	1
59	Bolt 19mm	1	1	1	2	1	1	1	1	1	1	8	1	1	1	1
60	Nut	30	30	30	60	30	30	30	30	30	30	240	30	30	30	30
61	Washer	4	4	4	8	4	4	4	4	4	4	32	4	4	4	4
62	Washer 19mm	1	1	1	2	1	1	1	1	1	1	8	1	1	1	1
63	Axle Clip	4	4	4	8	4	4	4	4	4	4	32	4	4	4	4
64	Cord Spring	1	1	1	2	1	1	1	1	1	1	8	1	1	1	1
65	Rod Conn'tor	1	1	1	2	1	1	1	1	1	1	8	1	1	1	1
66	Rod, Str Conn	1	1	1	2	1	1	1	1	1	1	8	1	1	1	1
67	Hank of Cord	1	1	1	2	1	1	1	1	1	1	8	1	1	1	1
68	Dr Band 20cm	1	1	1	2	1	1	1	1	1	1	8	1	1	1	1
69	Dr Band 48cm	1	1	1	2	1	1	1	1	1	1	8	1	1	1	1
70	Flat Brkt	4	4	4	8	4	4	4	4	4	4	36	4	4	4	4
71	Obtuse A/B	1	1	1	2	1	1	1	1	1	1	8	1	1	1	1
72	A/B	4	4	4	8	4	4	4	4	4	4	32	4	4	4	4
73	A/B 2*2h	1	1	1	2	1	1	1	1	1	1	8	1	1	1	1
74	Dble Brkt	1	1	1	2	1	1	1	1	1	1	8	1	1	1	1
75	Reverse A/B	1	1	1	2	1	1	1	1	1	1	8	1	1	1	1
76	Cr'k'd Bent Str	1	1	1	2	1	1	1	1	1	1	8	1	1	1	1
77	Dble Bent Str	1	1	1	2	1	1	1	1	1	1	8	1	1	1	1
A1	Bush Whl 8h			1	1							2				
A2	Screwdriver		1		1							1				
B1	Ply Loose 26mm					1		1				3				
C1	Ply Fast 26mm		4		4		2					7				
D1	Tyre for B1,C1		4		4							4				
E1	Pulley 3"						1			1		2				
F1	Road Wheel					1	1	2				4				

one side. The **Spanner #45 & Hook #46** are as METALLICO; they are 85 & 30mm long o/a respectively and both are chemically blackened. The Spanner openings are hexagonal despite the square Nuts. The slotted holes in the flanges of #23 **3\*5h Flanged Plate** are 8mm long. The #16 **3\*5h**

**Triangular Flexible Plate** is as METALLICO. #18, **3\*5h Curved Plate** is like a Flexible Plate but thicker to make it rigid and its 3h side is curved through 90° - quite a useful part. The **Rod Connector #65** is 22mm long with wavy butting edges. The **Cord #67** is off-white and rather thicker than usual. The rubber **Driving Bands** are of rectangular section, 2½\*1½mm for the 20cm #68, & 4\*2½mm for the 48cm #69, both with the larger dimension in the radial sense. Among the parts were 2x 46mm Ø **Road Wheels** not shown in the Manual; they have black plastic 29mm hubs and black rubber tyres with a slightly knobby tread - MEHANOTEHNIKA IZOLA is moulded onto one sidewall. They are a nice running fit on the Axles but may not of course have been part of the constructional system.

The **MANUAL** is printed on art paper and has 92 pages, 240\*167mm, plus covers. Text is limited to the Intro & model names, and is in 7 languages. The first 3 are probably Slovenian, Croatian, & Serbian, then English, French, German, & Italian. C2 has a chart in colour showing the recommended ages for the different sets, then p1 has the Intros - suitable for young & old, and the set structure.

p2 gives the contents of the N&B Box; p3 shows the A & B trays; p4 the contents of A; pp5-8, 16 A models from 1 toboggan to 16 elevator; p9 the contents of B; pp10-21, 35 models for A+B=1, from 17 autocar to 51 transport crane.

Thereafter there are 6 sections for Sets 1+2, 1+2+3, .... 1+2+...+7, each preceded by a page showing the contents of the appropriate addition set. The models in the different sections are: Σ1-2, 15 models on pp23-30, from 52 dredge to 66 steam-hammer; Σ1-3, 5 models on pp32-35, from 67 movable bridge to 71 swing crane; Σ1-4, 8 models on pp37-40, from 72 waggon with horse to 79 lift; Σ1-5, 4 models on pp42-46, from 80 tractor with trailer to 83 crossbow; Σ1-6, 18 models on pp48-71, from 84 wire ropeway to 101 pantograph; Σ1-7, 9 models on pp73-89, from 102 quarry elevator to 110 dredge elevator. The English names are not always well chosen, the 'bredge elevator' for example is a Travelling Hammerhead Crane.

pp 90-C3 have the contents & trays for the accessory sets PL1-2, & TR1-2. C4 has 'MEHANOTEHNIKA IZOLA YUGOSLAVIA' - the only reference to the manufacturer at the top, and below a colour photo of a boy firing a Mechanical Crossbow, similar to Model, 83. The models on the front cover are the Σ1-7 109 Concrete Mixer on the left and the Σ1-7 52 Dredge.

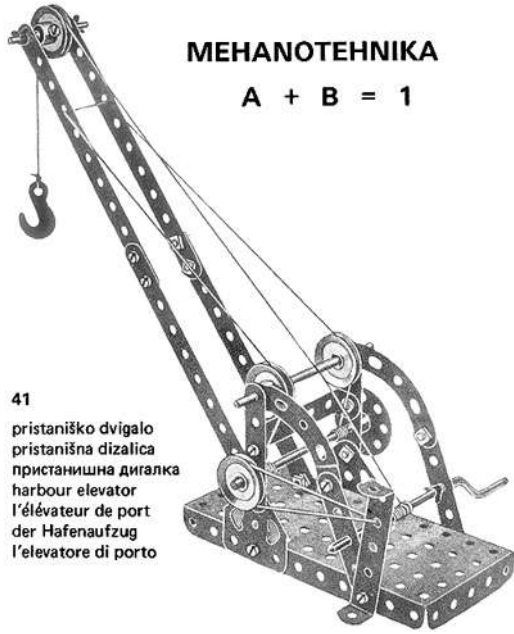
There is no mention of a Motor, or of parts other than those in the Sets. The 4½\*2½" Hinged Plates of Phase 1 can be seen in a few of the larger models but no doubt this was because the Phase 1 photos were still being used.

Each model in the Manual is illustrated by a large, usually good quality photo, with extra views for the larger ones. Even so it's hard to work out how some of them are meant to work and Parts Lists would have helped. There is a good variety of models, typical of the larger systems of the day, but with fewer road vehicles than might be expected, and only one, the Lorry shown earlier, uses the 4 Road Wheels available after Set 4 has been added. Many of the models, over a half perhaps, look original to me; the rest owe something to MECCANO, but have often been changed, though mostly not for the better. A selection of the better original models is shown overleaf at about 70% full-size, and the Manual has other views of #93 & 110. The Tractor is the only model in the Manual fitted with any form of steering and the only other mechanical feature is the wide use of Cord around Pulley brakes in Cranes, etc. The cradle & rocket in #93 tilt upwards using the Crank Handle near the 3h end of the Flanged Sector Plate but the torque needed must be quite high. Only the No.7 set has Gears and then they are only used as a pair in the Lorry, though the Gear Wheel itself is sometimes used as a Bush Wheel.

My Nos.1+4 parts didn't allow any but small models from

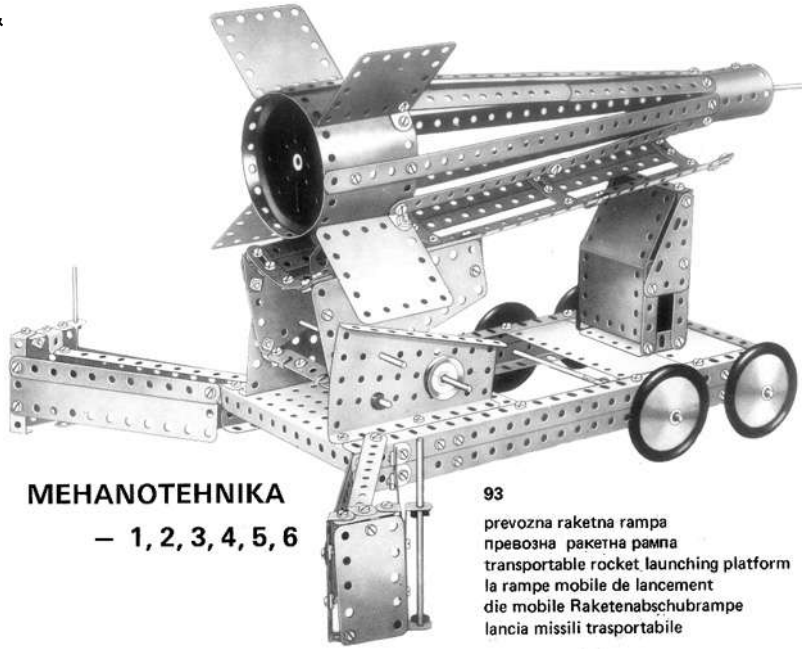


the Manual so I made the Forklift shown bottom right – the rear wheel steers from the Bush Wheel & the hoist action is operated by the Crank Handle.



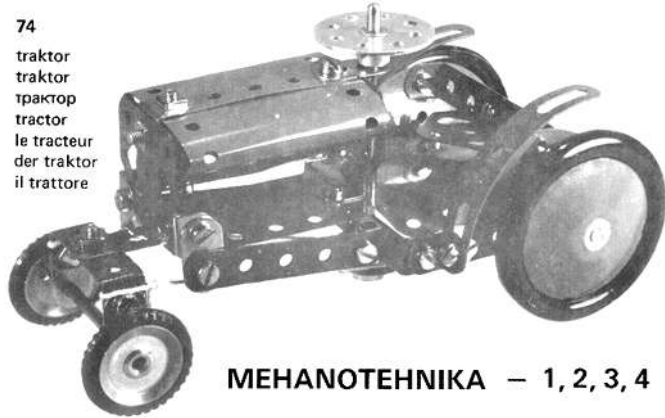
**МЕХАНОТЕХНИКА**  
A + B = 1

41  
pristaniško dvigalo  
pristanišna dizalica  
pristanišna дигалка  
harbour elevator  
l'élévateur de port  
der Hafenaufzug  
l'elevatore di porto



**МЕХАНОТЕХНИКА**  
– 1, 2, 3, 4, 5, 6

93  
prevozna raketna rampa  
превозна ракетна рампа  
transportable rocket launching platform  
la rampe mobile de lancement  
die mobile Raketenabschubrampe  
lancia missili trasportabile



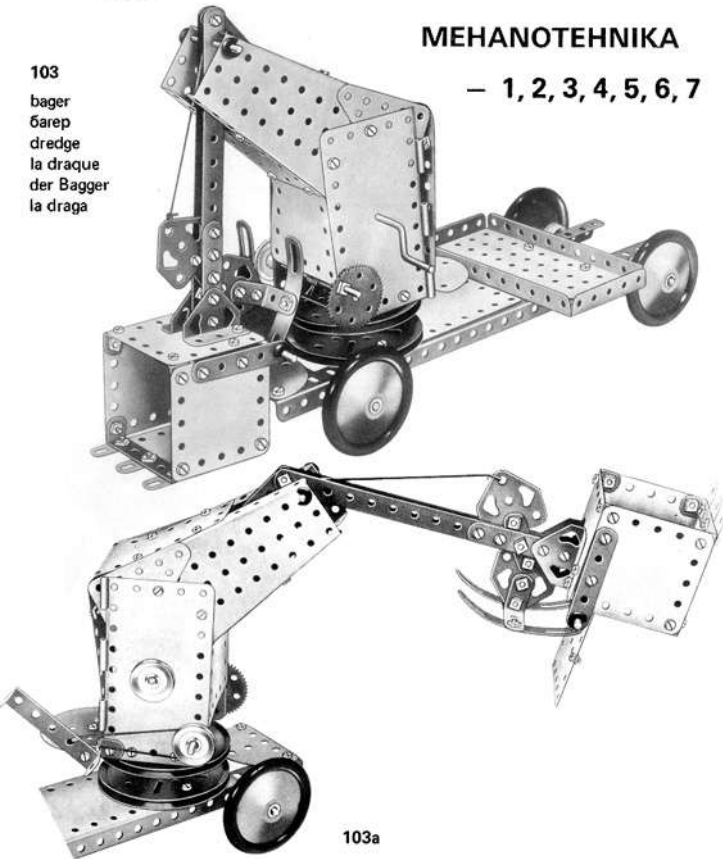
74  
traktor  
traktor  
трактор  
tractor  
le tracteur  
der traktor  
il trattore

**МЕХАНОТЕХНИКА** – 1, 2, 3, 4



**МЕХАНОТЕХНИКА**  
– 1, 2, 3, 4, 5, 6, 7

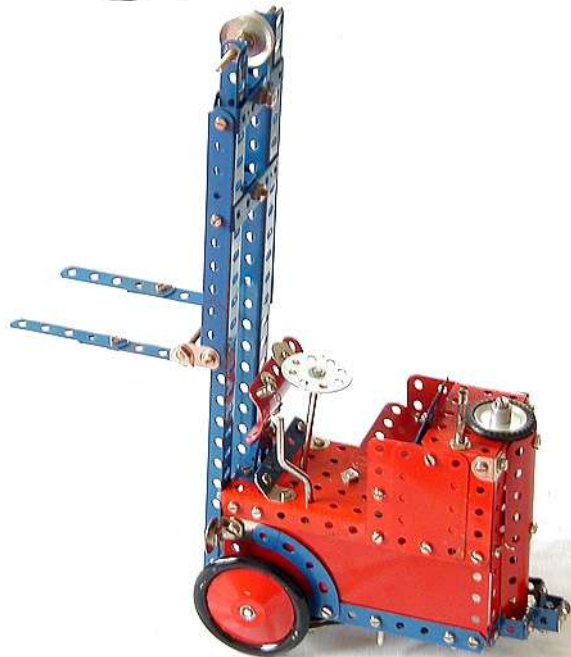
110  
bager dvigalo  
bager dizalica  
бaгep дигалка  
bredge elevator  
la drague élévatrice  
der Baggeraufzug  
la draga elevatrice



**МЕХАНОТЕХНИКА**  
– 1, 2, 3, 4, 5, 6, 7

103  
bager  
бaгep  
dredge  
la draque  
der Bagger  
la draga

103a





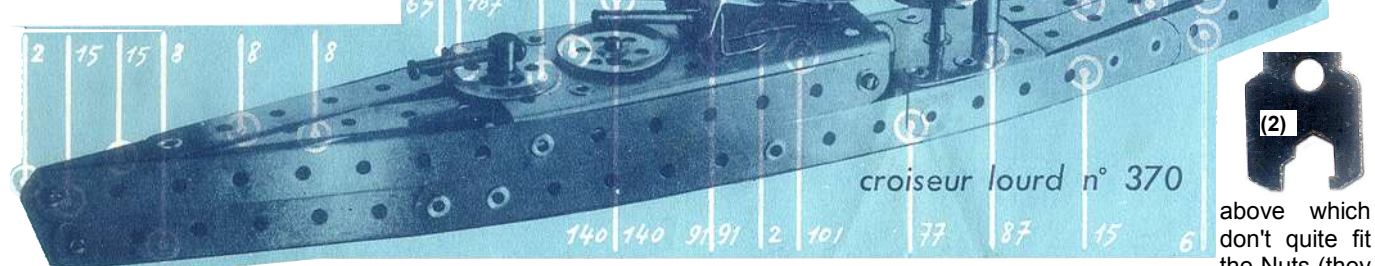
**More on MAC ET NICK** The last notes on this 17mm pitch French system with flexible steel Strips were in 17/472-3. Since then two each of Sets 1 & 3 have come to hand, all incomplete but they add a little to the previous account. My thanks to David Hobson for lending me his outfits. With the Sets were two leaflets showing all the parts – one corresponded to the OSN 17 account, and the MCS Extra Sheets, but the other, probably later, contained some changes - details in the Parts section below.

The No.1 & No.3 **boxes** are the same size, 47\*19½\*3cm, and the lids are the same too except for the blue glued-on flash in the bottom left corner. The No.3 lid is shown below;



the No.1 flash is: '1 base-outillage' (basic-tool). Inside the Strips & Axles push through red card holders glued to the bottom of the box, while most of the other parts, loose or in little cellophane packets, sit in sloping recesses made from yellow card and printed with good advice and plugs for the product. The 35h Strip is too long for the box and sits, curved, inside one of the corners.

Notes on the **parts** follow, to supplement OSN 17. • The **Riveting Tool** works well although quite a bit of force is needed to get a tight joint. The Rivets can sometimes, with care & difficulty, be removed and used again, but often parts of the peening break off in the removal process. The Rivets look very neat but the drawbacks are that using them takes time, and there has to be room for the back part of the Tool inside the model. • **Rivets** The two lengths are about 3 & 3½mm o/a. • **N&B** There were packets of N&B in 2 of the Sets. In one they were bare steel and the Bolts, 10mm u/h, had either a 5.8mm Ø RH or a 5.0mm Ø CH; the Nuts for both were hexagonal, 6.0mm A/F & 2mm thick. In the other Set they were dull plated, on brass for the 5.6mm Ø dome



headed Bolts, 15mm u/h, and on steel for the Nuts, with dimensions as before. The thread was in all cases the old French 3mm Ø by .6mm pitch. • There are different lengths of the **Axle** in the 'later' Leaflet, 62, 79, 96, & 115mm. The 62 & 79mm have been seen, & so has the **Crank Handle**, unchanged at 115mm – that's the shaft, the length o/a is 150mm, with a 30mm handle offset 17mm. All are 4.04mm Ø with square ends and the characteristic longitudinal groove, less than 1mm wide & too shallow for me to be able to measure. • Other changes in the **later Leaflet** are: the Trapezoidal Plates #116,115 are renumbered 115,116; Curved Strips #118,119 are renumbered 130,131; and a #148 has been added, a Rod & Strip Connector, but it isn't illustrated. • The **Axle Stop** #138 is another hollow rivet but brassed steel, with a flat head, 8½mm Ø. It is 5½mm long & a tight push-fit on the Axles – if it is too loose the end is to be lightly tapped with a hammer. • As would be expected the Strips & the parts made from them (#61,65,72,75,76,77) are **steel**. The other parts seen (#86,87, 91,101,106,110,129,130,131,133) are **aluminium**.

There were 2 types of **Model Sheet** with the Sets, both similar in style to the one described in OSN 17 but the models are dark blue on the light blue ground. One is A3 printed on both sides; the other A2 printed on one side only, with 2 panels identical to the A3 sides. All the models are for Set No.1, simple but a good selection. The 8 models on one A3 side go from balance No.122 (Scales) to grue sur rails No.289 (Crane on Rails), & the 10 on the other from manège n° 320 (Chair-O-Planes) to sapine tourante n° 229 (Slewing Tower Crane). This last side is the one mentioned in 18/522, and one of the larger models on it, the Warship, is shown below, about 90% full-size. It would be over 40cm long, and the single-barrel 'guns' fore and aft are the two parts of the Riveting Tool.

**POSTSCRIPT** Since the notes above were written a little more material has come to hand, notably a **1+2 Outfit**, far from complete, but with some interesting parts. The box has 2 trays in a sleeve the same size in plan as the boxes already described, but 6cm deep. The trays are the No.1 & No.2 box bases and the sleeve has a horizontal partition to support the top one. The top of the sleeve is as the box lid but with small '1' & '2' roundel stickers instead of a flash. These are also stuck on the ends of the appropriate trays. '1', '2', 'base-outillage' & 'base-complément' are printed on one sleeve side while on the other are the contents of the 2 sets.

The parts are as expected except: • The two 3\*7h Single-flange Plates #101 are anodised a vivid purple and the 2<sup>nd</sup>, 4<sup>th</sup> & 6<sup>th</sup> holes in the flange are 9.0mm Ø. • There are no 3\*3h Plates #87 but instead two 3\*3h Single-flange Plates with a 9.0mm centre hole in the flange. One of these parts is anodised copper & one is plain. This part has not been seen before & is not in any of literature to hand. • Most of the Rivets found

were formed from a flat aluminium blank, see (1) below. The 2 flat prongs must be bent over by hand and don't grip nearly as well as the normal Rivets. • The 2h Strips, & A/B #65, are steel with a dull rustproof finish. • The Spanner is blackened steel, 60mm long, with the unusual jaws at (2)

are the plain steel type, with RH Bolts). The Booklet with the Set is the 'earlier type' and the Axle lengths match it. The Contents on the sleeve are as expected except that the #151 (petite clavette) is not listed for either set. These facts might point to this being an early set but it had been thought that the coloured parts came later. And were the 3\*3h Flanged Plate & the 9mm holes early features later abandoned, or late improvements? The 9mm holes seem a strange change. A similar set but with 4 trays has been seen on Ebay. The top is as before except that COFFRET (Chest) has been added above the number roundels. Of these only the '4' remains but light patches show where the '1', '2' & '3' would have been. The layout of the 'cardboard' in the trays, and the parts in them, are as would be expected. No coloured parts could be seen. Finally, David made the Submarine on the box lid and very smart it looked too with Rivets nearly everywhere. He told me though that he quickly found it best to use N&B initially and then rebuild using Rivets, and in a particular order if the Tool was to be used to clench said Rivets.



**MERKUR in 2005** These notes are based mainly on Merkur's website, [www.merkurtoys.cz](http://www.merkurtoys.cz), in mid-2005, but with additional material from Orion DreamDancer (thank you), and Girders & Gears at [www.girdersandgears.com](http://www.girdersandgears.com). The Merkur site shows the lids of the sets but photos elsewhere differ slightly, perhaps depending on the market. Also shown are manual pages for many of the outfits, including the illustrated parts with quantities in some cases (click on the Set, then on Manual). For some sets though, not all the pages are shown.

Since the account in 27/790 some changes have been made to the small sets with one new one and more parts in the majority. Now all but the 03x series are said to be able to build any 1 of 10 different models. All the larger set continue unchanged but 4 new ones have been added: John Deere MO1, Classic CO1, Kitty Hawk, & Safari, in that order.

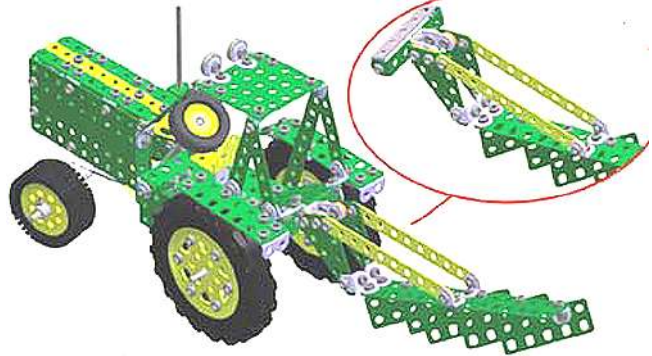
Two general comments on these four new sets. First, there are no Plastic Plates in any of them; second, continuing what seems to be Merkur policy, none contain a Motor – in fact the only set ever to have had one is the M8. Since the MERKUR range does include 2 Motor accessory sets, one might think that they would be advertised in the manuals, or at least in those of the larger motorless sets, and examples shown of how some of the models in them could be motorised. But no, as far as I know, this is not the case. One other thought – several constructional stages are shown for many of the models for these sets (and some at least for the smaller ones too), a better system I think than the rather too mechanical step-by-step instructions often provided these days.

**The SMALL SETS** Their lids are more or less as before but the model(s) on a few have been changed to reflect their improved scope. The new one is 019 with 181 parts and it has a boy & a Windmill on the lid, though the other 3 models shown on the web manual pages are Fairground Rides.

The new parts counts for Sets 010-018 & 030-033 are: 223,230 (no change), 217,230, 101,195,205,202,172, and 300, 222,300,143. Thus quite a large increase for a few sets, from 124 to 205 for 016 for example. The only decrease is for 031 but the original number, 285, is still on the web page box lid. It's not entirely clear what the extra parts in some of the 03x sets are used for but it is said that all the main models on the lids can be made at the same time.

**The NEW LARGE SETS** As might be expected the **John Deere** (Item No,3338) is mainly about agricultural Tractors & their implements, all in the correct colours, and with a little JD logo on the Plates which form the sides of the engine compartment. The box is 360\*270\*55mm with the lid below. There are 2 layers of parts and apart from Strips, the main ones are 9 Flat Girders, 17 Plates, 2,6,2 of 5,3,2h Ø Pulleys, all with Tyres, and 200 N&B (plus 18 longer Bolts).

The 10 models, unnamed, are on pp4-15, after an 'educational value' Intro on p2 (=C2), and Basic Constructions on p3 in 11 languages. 6 of the models are described in detail and 5 of them comprise the one on the lid and variations of it – no roof, wider bonnet, etc. All have centre-pivot steering, and one is towing a 21h long, 4-wheel Trailer. The sixth model, on pp13-14, is perhaps a type of harvester, a little longer than the others, with no steering, but what might be a cutter bar at the front and a side chute for delivery of the 'product'. p15 has 4 models with one photo & an explanatory detail for each. One is a small Blacksmith with a 2h Ø face, and the others are 'typical' Tractors but with implements attached. One is shown



above. The Illustrated Parts are on p16.

The **Classic** (Item 3345) has 2-layers in a blue box 360\*275\*55mm. It is said to be in 1930s style though some of the parts are more recent introductions. The lid below has the Illustrated Parts with quantities on its inside. Each tray is partitioned into 3 areas: 2 with parts clipped down, the other with 2 circular metal tins for N&B etc, with MERKUR CLASSIC on the lids, & a lidded card box between them for small parts.



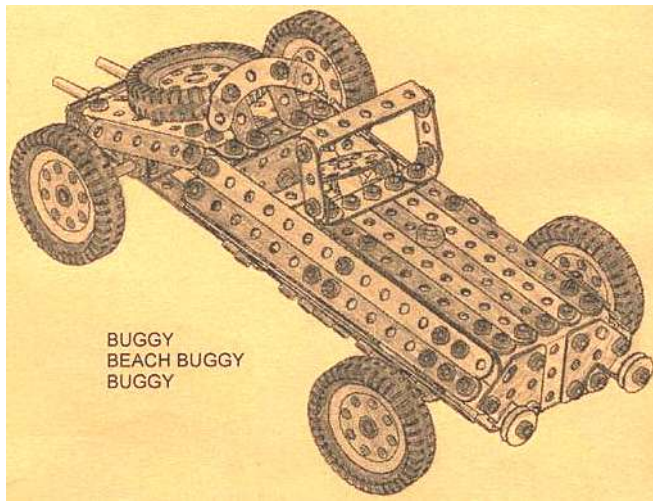
The 929 parts include 4 A/Gs, 7 Flat Girders, 32 Plates, 15 Pulleys including 2x 5h Ø, 4 Gears, & about 300 N&B. The finish looks to be lacquered steel, with some parts bright, some a brownish colour, and some perhaps in between.

The manual has 20 pages including covers, of about 15\*20cm. All except the covers are a light brown shade, with the models shown as line drawings, as in the Buggy on the next page. All the pages are on the website. The text is in Czech, German & English. p2 has a flim-flam Intro, pp3-4 Basic Constructions, & pp18-20 the Illustrated Parts with quantities. The first of the 41 models is SPADE on p5, and the last, on p17, is DOUBLEDECKERBUS, as on the lid. Apart from this last, the models, or at least most of them, are taken from earlier manuals for the 1-7 sets, though some have been changed a little. One of the exceptions is the Buggy in the next column – it has centre-pivot steering linking to the steering wheel by a 10h Strip bent into a 'Z' shape. Of the other models 34 are quite small, and the others are typically about the size & complexity of the Band Saw in 9/211 (it is fitted with 5h Ø Pulleys instead of the 7h). The Bus has seats on the lower deck, opening driver's door & bonnet, & an imitation engine. As on the Buggy the front wheels are on an Axle running in a



The manual has 16 pages including covers, and the front is green & yellow with a small Blacksmith and 3 Tractors; 2 of them are fitted with implements which are described in the manual, the other has a blade at the front, and isn't, unless there are pages not shown on Merkur's website.



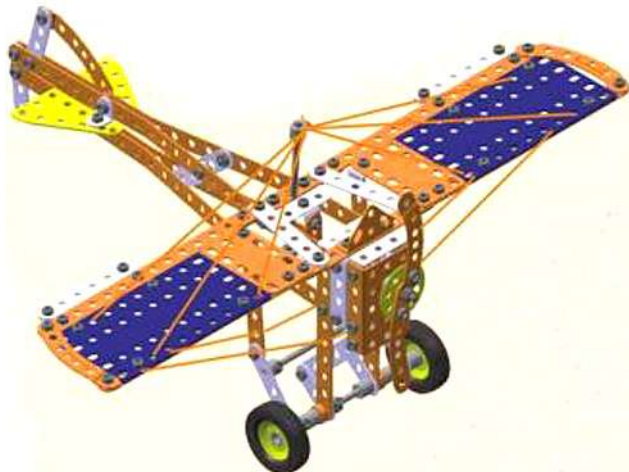


centre-pivoted DAS but I can't see a steering wheel.

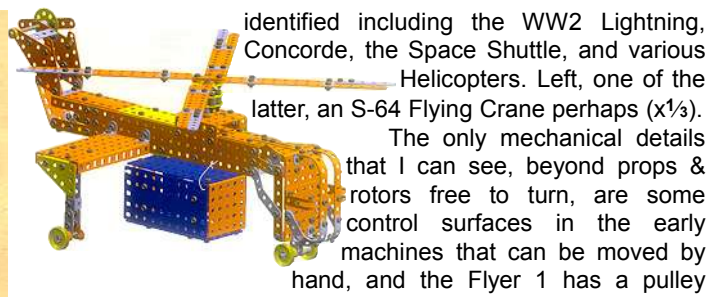
The **Kitty Hawk** outfit (Item No.3352) was advertised as a celebration of the 100<sup>th</sup> anniversary of the Wright Brothers first sustained power flight near Kitty Hawk in Dec. 1903. It is another 2-layer set, with 900 parts in a box 360\*270\*55mm. The lid is shown below; inside the parts are in yellow formed plastic trays & include over 160 Strips & DAS, 2 A/Gs, 4 Flat Girders, 50 Plates, about 90 Brackets, & 250 N&B. Strips, A/Gs, & many of the Plates are a sand colour, with the shorter Strips, DAS, & most Brackets bright plated, probably BZP. Some Plates are blue & yellow, & the Pulleys are yellow.



The manual has 52 pages and the cover is similar to the lid label but with an ad for Czech Airlines down the righthand side. Early manuals had only 48 pages with 96 models, but as 100 models were claimed, later ones had a loose folded sheet in the centre to give 4 extra pages. All the models are aircraft of one sort or another and start with 4 of the Wright's early Gliders, through their Flyer 1 (as on the cover), and then 4 other named early machines including the Blériot below. The



rest of the models are unnamed but some can easily be identified including the WW2 Lightning, Concorde, the Space Shuttle, and various Helicopters. Left, one of the latter, an S-64 Flying Crane perhaps (x1/3).



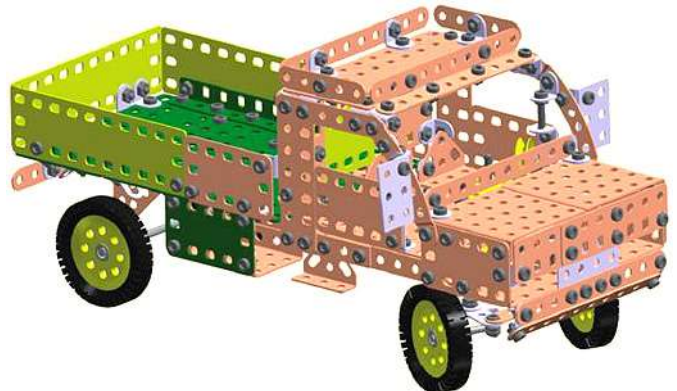
The only mechanical details that I can see, beyond props & rotors free to turn, are some control surfaces in the early machines that can be moved by hand, and the Flyer 1 has a pulley drive between the 2 propellers (but, wrongly, they both turn the same way). The Blériot, and a few other models, have plating and open framework more or less where they should be, but most are partially plated, and to my eyes full plating, or no plating, particularly of wings, would be more pleasing.

The **Safari** set (No.3369) appeared in 2004 and has 765 parts in a 3-layer box, 365\*270\*72mm. The lid is shown below. All the pages from the manual including the Illustrated Parts with quantities are on the Merkur website. The main parts include 10 A/Gs, 9 Flat Girders, 58 Plates, 6x 3h Ø Pulleys with Tyres, & 210 N&B. Most of the parts are painted light



brown but the short Strips, DAS, & Brackets are bright plated, and some Plates are green or yellow.

The manual has 20 pages including covers, and the front is very similar to the box lid. There is no Intro, the Basic Constructions are on C2, and the Illustrated Parts on C4. The other pages contain 50 unnamed models, from a small Rake to a small Mechanical Shovel. The models fall into 3 sections. The first has 18 small, elementary models on one page. The second has 8 Vehicles of various types, the best of which are perhaps the main model on the lid, and the Lorry below. The other vehicles are not easy to name but no doubt this allows them better to fit a youngster's dreams. Several of the models are fitted with 'proper' steering but there are no other features of note. The final section is 4 pages with, on 3 of them, just



one view of each of 18 models, mostly Aircraft & more Vehicles, and mostly quite reasonable. They include the Helicopter that can be seen on the lid. The 4<sup>th</sup> page isn't shown on the Merkur site (one page there is duplicated) but no doubt it has the remaining models in the same style, and the 6-Wheel Truck on the lid is most likely from that page.



**More on NOMA BOOMTOWN** An account, largely from the contents of a manual, was given in 15/422, and now more material is to hand. The main items are a seemingly unused No.9 set kindly lent by David Hobson, and details of a No.3 outfit thanks to Kendrick Bisset. Also some parts from another set, probably a No.9; and Ebay photos of two No.3's.

**The PARTS** The notes below will help in identifying the parts though many are unique to NOMA B. Most can be seen in the photos of the sets shown later or among the smaller parts below. The only part not in the No.9 is the Wheel Disc – in the



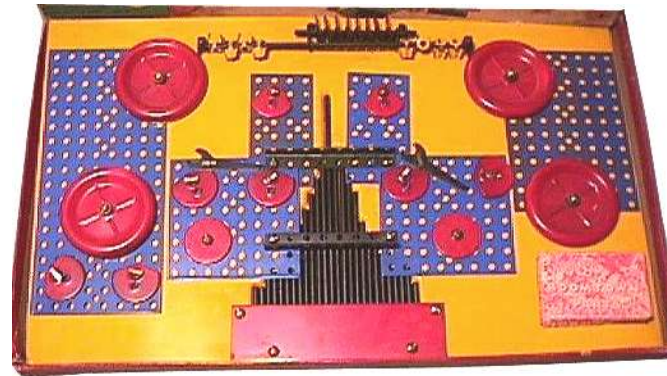
Manual it looks like the disc used for the Bush Wheel. All the parts are steel except the brass Bush Wheel, and all the bosses, again brass. Most parts are accurately made and generally quite well finished. The parts that have 5-40 tapped hole in them are made of 1mm thick metal. The black parts are chemically blackened. The corners of the A/Gs & Plates are square. The only slotted holes are in the Bush Wheel. The contents of the No.9 are given in curly brackets and include the N&B used in holding the parts to the tray.

- **Holes** are at 12.7mm pitch and are mostly 5.1mm Ø.
- The **90, 180, & 360° Clamps** are cut from a 38mm Ø disc, and flanged all round to a depth of 2.7mm. {8,8,8}
- **Rods** are 4.70 to 4.75mm Ø with sheared ends. Lengths are 1½-6" in ½" steps, plus 8 & 9". {8,8,8,6,4,4,4,4,4,4,4}
- **Plates** are 8\*4,8,12,18h with extra holes at 1" pitch along the longest centre line, except that on the 4\*8h they are along the 4h length (so only 2 holes), and not as shown in the Manual & OSN 15. {2,2,3,3}
- **A/Gs** are 8 & 14h long, 13\*14 to 13½\*13½mm in section, with 2mm of metal outside the holes. {4,2}
- **Wheels** The **Road Wheel** is 76mm Ø & 10mm wide at the 'tyre'. The **Bush Wheel** is 30.5mm Ø and has 4 holes on a 13/16" pcd, with 4 similar in between but slotted towards the centre by 1mm. The **Pulley** is 26mm Ø & 5.4mm wide. {6,2,4}
- **Bosses** are 9.5 o.d., 5.0mm bore, 6.7mm long, single-tapped 5-40, and with a thin ring of peening.
- The **NBW** are all brass plated, with nicely pressed Nuts.
  - **The 10-32 parts:** The **short Bolt** has a 7.6mm fillister head and is 3/16" u/h, but with an extra 1/16" for the pointed shank; the **longer Bolts** are 5/8 & 7/8" u/h and have a RH, 8.5-8.7mm Ø. The **Nut** is 9.5mm A/F & 3.2mm thick. The **Washer** is 11mm o.d. & .8mm thick. {26,10,34,52,30}
  - **The 5-40 parts:** The **short Bolt**, 3/16" u/h, has a 7.6mm slightly rounded, tapered CH; the **long Bolt**, 3/8" u/h, has a 5.2mm RH. The **Nut** is 7.9mm A/F & 2.9mm thick. {4,37,4}
- **Brackets** The **A/B** is about 13\*13mm, 10½mm wide, and is made of thin, .5mm, metal. {20} The **Beam Clip** is identical except the metal is 1mm thick and it is black instead of yellow. {12}
- **Other Parts used in clamping** The **Wedge** is 16mm long o/a. {20} The **Half Ball** is 21mm long & 10mm wide. {14} The **Spring** is about 8mm Ø, 7mm long, and is wound from .6mm bright wire. {12}
- **Other Parts** The **Straight Clamp** is 11mm wide, 22mm long o/a, and is tapped 5-40 through the top of the 'U'. {18} The U-shaped **Collar** has 9.5mm wide sides, is tapped 5-40, and the

side holes are 4.8-4.9mm holes. {12} The **Rod Coupling** is 19mm long & 8.7mm wide. The centre hole is 3.2mm and takes the 5-40 N&B to clamp a pair together. {4 pairs} The **Hook** is a feeble thing, 15mm long o/a, and made of .5mm bright wire. {1} The **Span'driver** is 62mm long o/a & the hole in it is 3.9mm Ø. {2}

• The sideplates of the **C/W Motor** measure 2¼\*3½" and are spaced ¾" apart. The winding spindle is 1/8" square and the nickel Key is 41mm across its wings with a 4.7mm hole in the centre.

**The No.3 SET** The lid & the parts layout of an Ebay set, apparently in original condition, are shown below. The box is 19½\*12¼\*1". The main parts are attached to a pressed metal 'tray' which sits on the ¼" flange around its edges – some

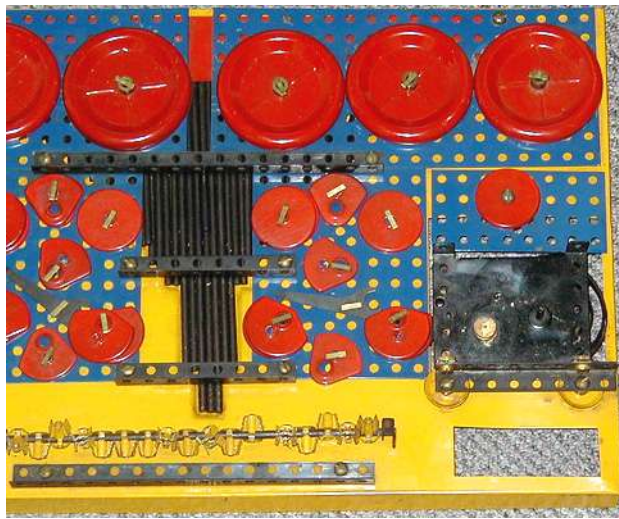


parts are bolted to it, & some clipped to the bolted parts. The Rods fit into a shaped recess in the tray with their ends held under the A/Gs and a red metal packing plate. The N&B, etc are in the card box bottom right, which pushes into a cutout in the tray. The manual is the one described in OSN 15. The layout of the parts is different to that shown on the back page of the manual, and the holes in the tray for the Bolts holding the parts would not be suitable for the manual scheme.

**The No.9 SET** The box measures 19½\*12¼\*2", the same size in plan as the No.3, and the set weighs some 8lb. The sides of the bottom are trimmed in red like the No.3, and the lid is the same too except that the background colour along the top and down the left side is yellow instead of green. The set number is on the ends of the lid, together with the maker's address, copyright 1947, & the patent numbers that were given in OSN 15.

The parts are again attached to a yellow metal tray, but in this case it is flanged to a depth of 1" all round, The right half is shown at the head of the next column; the left side is almost the same except that an 8\*8h Plate and 2 Bush Wheels replace the C/W Motor & 4\*8h Plate. The bottom left corner is shown to the right of the main view. As with the No.3 the main parts are held by N&B or clips, and again the Rods fit into a recess – in this case the red steel packing plate (its centre is just visible between the blue Plates at the top) measures 1½\*13". Apart from the yellow Wedges on the Rod along the bottom, the small parts are in one card box, with the N&B in another. They are identical and push edgewise into openings in the bottom corners – one is shown laid flat in the view of the

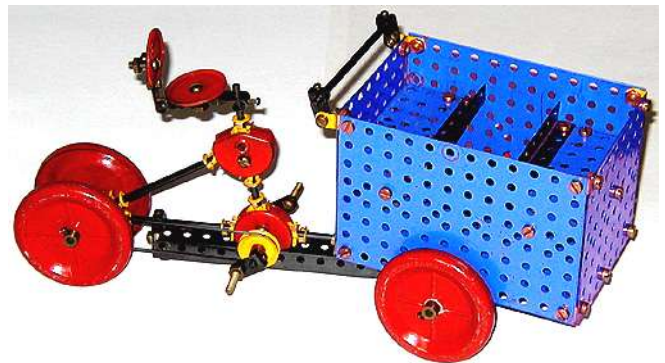




left corner.

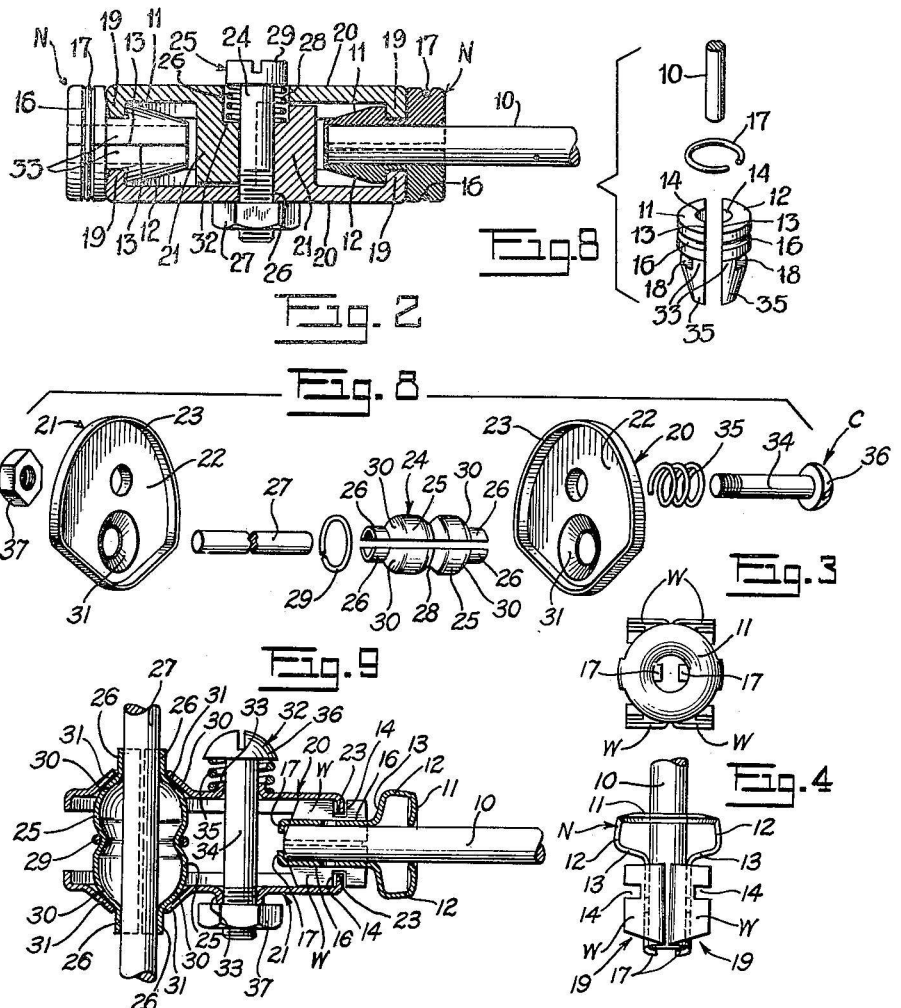
The manual is again as in OSN 15, and as with the No.3, the layout of the parts is not as shown in it. Equally, the holes in the tray would preclude the manual arrangement.

**USING the PARTS** The parts are quite substantial and the (rather small) structures I have made are rigid, with the Rods held exceptionally well – but only if the Bolts through the Clamps are very tight, tighter than could be achieved with the driver end of the Span'driver in the Set. So, better in that respect than most comparable systems, but the size of the Clamps often make them look obtrusive. The main problems for the modeller are that the Clamps are very fiddly to assemble, particularly if more than 2 Wedges are to be used, and more small parts, Plates, A/Gs, etc are needed to make reasonably realistic models. Also if a Half Ball is to be used between the Clamps to allow a cross shaft to run freely, great care is needed to have the Clamps exactly in line as the through Bolt is tightened. I made the No.9 Bicycle Ice Cream Vendor (above right) with my parts. It is about 14" long and is arguably the most realistic model in the Manual.



**The PATENTS** The application for #2410874 was made in January, 1946 by Henry Greenberg, New York, & John J. O'Connell, Jamaica, N.Y., assignors to the Norwalk Lock Company, South Norwalk, Conn. It shows a version of the 360° Clamp that is rather more complex than the production item. The main parts can be seen top left opposite in Fig.2, with details of the 2-part Wedge, held by the springy circular clip 17, in Fig.8 alongside.

The application for the second patent, #2410875, followed in June, 1946 and was in the name of Louis Segal, New York, N.Y. The illustrations show the 180° Clamp and as can be seen from Figs.8 & 9 right, it is quite similar to the parts actually produced. The Wedge has been simplified and is bent up from one pressing (Figs.3 & 4). The Half Ball idea is included although a groove is provided to allow a suggested clip 29 to hold the 2 halves together. Nothing is said of using only one Half Ball to allow a through shaft to turn freely.





**More ENTECH** 12 small sets were mentioned in 32/971, and they still appear from time to time on Ebay, with a few from Germany & America too. I've not seen any actual examples of them but it turns out that they are made by Aries in India, the 'TOY KRAFT' people (see 22/627), and in July their web site ([www.toy-kraft.com](http://www.toy-kraft.com)) showed a range of 20

outfits, the 12 on Ebay and 8 larger. At that time the latter were being offered on Indian Ebay. The details from the Ebay ads & the web site are given in the Table below. Some of the sets seem identical in content to certain of the Brazilian MODELIX outfits described after this, & more is usually known of them.

Sets		No. of Parts	Motor	No. of Models	Colour	Lid		Notes
Name	Ref. No.					Model(s)	Model(s)	
Mini's Flying Machines	1370-2	71;60;72	-	1;1;1	orange	blue/white: Plane*; Helio; Biplane (1)below		* see OSN 32
Mini's Automobiles	1373-5	65;65;67	-	1;1;1	blue	orange: Car*; Racer; Buggy (2) below		* see OSN 32
Mini's Trucks	1376-8	64;43;61	-	1;1;1	red	yellow: Truck*; Truck; Truck		* see OSN 32
Mini's Bikes	1379-81	82;77;70	-	1;1;1	yellow	red: Motorcycle; M/C*; M/C		* see OSN 32
Beginner Set 1; 2	1351-54	102;167	-	10;20	red	blue/yellow: Buggy? + 7 small; Racer + 6 small (3) below		Slightly larger models.
Dynamic Set 1; 2	1352;53	106;110	3v with G/box	6 Cars; 6 Trucks	grey/blue	orange: Town Car? (4) below; Truck, see MODELIX Mobil 2 lid.	Better models. 2xAA Batt. Box with fwd/rev buttons.	
Turbo Set 1; 2	1355;56	102;112	Push-back	6 Cars; 6 Trucks	grey/orange	blue/white: 2 Racers (5) below; 2 Trucks		Quite simple models.
Master Multi-17; -15	1602;03	238; 310	3-4.5v in -17	17; 15	red (similar to 1351-4)	bright/yellow/blue; red: Scan Truck? + 7 small (6) below; Helicopter + 6 small, inc (7, 8) below	Parts inc M26, 27a,32; 2xM27f.	



OSN 33/995

ENTECH: S2

**New System: MODELIX** Edmundo Veiga spotted this Brazilian system, which has been on sale since April, and he kindly sent details of the two sets he has, plus a reference to the maker's web site, [www.modelix.com.br](http://www.modelix.com.br). It has pictures of the lids of the 12 sets in the range, the manual models for each, and the illustrated set contents for the 6 larg-est. Although in different packaging some of the sets have an equivalent ENTECH outfit, and of the rest all but two of the models on the lids are identical to known ENTECH models. The two exceptions are earlier TOY KRAFT models, changed a little in one case. So there is clearly an Aries connection and though the MODELIX sets have 'Manufactured in Brazil' on the cartons, Edmundo wrote that the parts are probably imported (as the sets are expensive, from the equivalent of US\$14 for the smallest to \$140 for the 17-model outfit, sales are not likely to be large, and therefore it would not be economic to make the parts in Brazil).

The first 6 sets have their parts in a blister with step-by-step instructions on the back of the card. The set above (No.1-03) is a **single-model set** equivalent to the ENTECH 1378; the other single-model sets are 1-01 and 1-02, with orange &



blue cards respectively, and they correspond to the ENTECH Nos. 1371 & 1374.

The other 3 blister packs are **2-model sets** 2-01, 2-02, & 2-03, with yellow, blue, & turquoise cards (2-03 is shown top left on the next page (it is copied from the web site where the cards are shown without the parts/blisters). The 2-01 models are the Aeroplanes from the earlier TOY KRAFT 1351 2-model set, see 22/627, but with red and black parts. Those for the 2-02 are the ENTECH Minis 1373 & 1375 (Cars), and for 2-03 they are the TOY KRAFT 1352 Trucks, but changed slightly,

and again with red & black parts.

The remaining sets are probably packed in boxes. The **Multi 1** (3-01) is the ENTECH Beginners 1 outfit, and has an orange lid with 3 blue/yellow models on it. The **Multi 2** (3-02) lid is shown on the facing page and 207 parts & 21 models are claimed – the model is from the Beginners 2 outfit but that set is said to have only 167 parts for 20 models.

The **Frição 2** (4-02) has a similar lid to the Turbo 2 but 114

OSN 33/995

MODELIX: S1

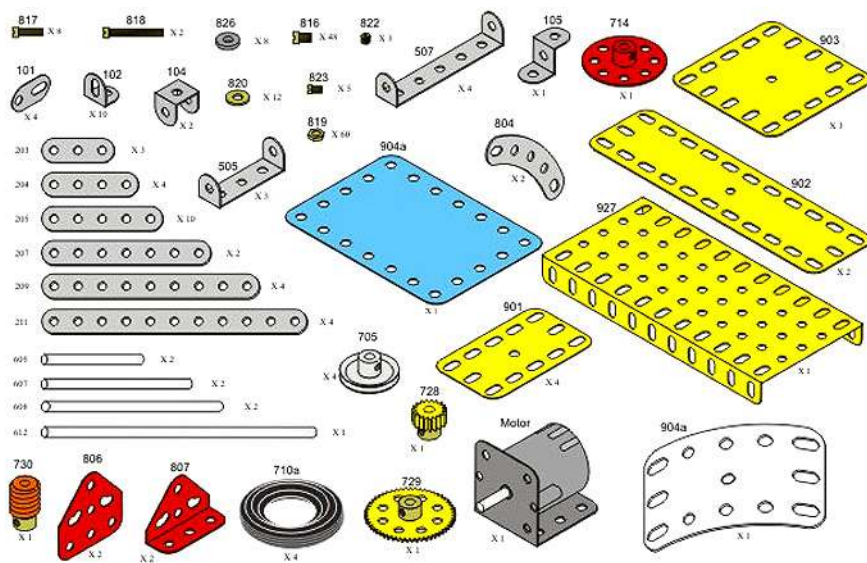




parts are claimed instead of 112 – the extra 2 might be Tools not included in the 112 count. The **Mobil 2** (5-02) lid, right, is similar to the Dynamics Set 2 but at 111, has an extra part.

The **Master 15** is the Master Multi 15 with 2 fewer parts. The lid is quite different, green with a large picture of the Helicopter that is on the ENTECH version. Apart from this model & a nice Crane, most of the others are a good selection of Vehicles, some with centre-pivot steering. The **Master 17** is the Master Multi-17 but again the lid (right) differs. The models are nearly all Motor-driven through the Gears, & include Vehicles, a Tank, a small Helicopter, & 2 Steam Engines.

The **parts** in the Master 17 are shown below, & at the bottom of the



page those in the other boxed sets which are not in the Master 17. Not all the Axles are shown but are included in the **Set Contents** of the Boxed Sets in the Table on the right. The thread is  $\frac{5}{32}$ " BSW as in TOY KRAFT but the Axles in Edmundo's sets are 4.06mm Ø. No Tools are mentioned anywhere but a Spanner (or Spandriver) can be seen in the 1-03 set on the previous page, and Edmundo's other set (2-01) has a red-handled Screwdriver in it.

Edmundo mentioned that the instructions for the 2-01 set would be very confusing for a youngster since some of the building steps for it are shown for the wrong model & vice-versa.



PS The MODELIX firm is: Leomar Equipamentos Ltda., Rua Bernardino Fanganiello 576, São Paulo – 02512-000. Tel: (11) 3858 0099.

Part	P	3-01	3-02	4-02	5-02	6-15	6-17
Flat Brkt	1		4	2	1	4	4
A/B	1	3	10	8?	8	14	10
A/B Obtuse	1	2	2			2	
D/B	1		2	1	1	2	2
Reversed A/B	1	2				1	1
D/B 2h high	1		1			1	
Strip 3h	2	5	4	3	3	3	3
Strip 4h	2	2	2	3	2	4	4
Strip 5h	2	2	6?	3	3	6	10
Strip 7h	2	2	2	2		4	2
Strip 9h	2	3	4	3	3	4	4
Strip 11h	2	2	6			8	4
A/B 1*2h	5	5		2			
DAS 1*3*1h	5	4	2	2	2	4	5
DAS 1*5*1h	5		4			6	4
DAS 2*3*2h	5				1		
Axle 1½"	6		2			3	
Axle 2"	6	2		1		2	
Axle 2½"	6						2
Axle 3"	6		1	1	2		
Axle 3½"	6		1			2	2
Axle 4"	6						2
Axle 4½"	6		1			2	
Axle 6"	6						1
Pulley 2h Ø n/b	7				2		
Pulley 2h Ø	7		4			4	4
Pulley 4h Ø	7					2	
Tyre, 2h	7		4			4	4
Tyre, 4h	7					2	
Bush Whl	7		1			1	1
Road Whl	7	4		4	6		
Road Whl, small	7	2					
Pulley 6h Ø	7					1	
Universal Gear	7					2	
Pinion	7						1
Gear Wheel	7						1
Worm	7						1
Pulley 1h Ø n/b	7					1	
Collar	7					1	
Spacer	7	5	4	4	4	4	
Curved Strip, Slotted	8						2
Curved Strip	8		2			2	
Trunnion, Flat	8		2			2	2
Trunnion	8		2		2	2	2
Bolt	8	20	42	28	30	74	42
Bolt longer	8	4	4	2	2	4	8?
Bolt longer still	8	1	2	1	2	4	2
Nut	8	25	50	32	34	84	60
Washer	8	4	6			8?	12
Grub Screw	8					1	1?
Set Screw	8		6			12	5
Axle Stop	8		6	2		4	8
?	8		2			2	
Crank	8		2			2	
Hook	8		1			1	
Steering Whl	8					1	
Motor, 3v							1
Motor/Gearbox, 3v	8				1		
Motor, Pushback	8			1			
Flex Plate 3*3h	9			2	2		
Flex Plate 3*5h	9		6?	2	2	4	4
Flex PI 3*5h, Clear	9	1		1	1		
Flex Plate 3*11h	9						2
Flex Plate 5*5h	9		2			1	3
Flex? Plate 5*7h	9						1
Triang Flex PI 3*5h	9			2	2		
Figd Plate 5*11h	9		1			1	1



**A No.3 AJUSTO Outfit** This is the French system with wooden, semi-circular section Rods and metal Clips to join pairs of Rods together to form a round rod (which I'll call a strut), and to connect these struts together. An account from a manual and a box lid was given in 12/301 & 315, with a little more in 13/361 & 15/427. Now some further details from this set which David Hobson has kindly lent me.

The **box** is red, 32½\*25\*5½cm, and the lid, right, has the same design of label as the No.1, but has no models around its aprons.

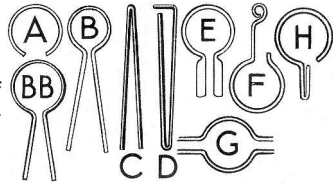
Inside the box is white with a half depth false bottom and 7 compartments formed by red lipped partitioning. The Clips are in greaseproof paper packets and a number of the Rods were found held, 4 at a time, by red paper bands.

The **Rods** are dyed red, and a strut has a diameter of about 12mm.

For ease of reference the various **Clips** are shown below (their use was explained in OSN 12).

Clip A, left, is used to join pairs of Rods together – it is 9mm long & nickel plated. The other Clips & the Hook are bent up from 2.0\*8mm rectangular section wire and mostly look like their illustrations.

2 types of B were found, identical save their tails, 12 & 24mm long. The ring of the bearing BB is very loose on the Rods but the end of an A runs well in it, and the A ridge is high enough to prevent the BB ring from passing over it. H has only one tail and it would push between 2 Rods, as right. As a bearing it is looser than BB and the A ridge will



just pass through it. C & D are about 40mm long, and the Hook F 30mm o/a. G is not as shown, it has longer tails and they are joined at one side, like C. It is 50mm long o/a.

Clip A can fairly easily be bent to close it up a little or open it out, but the steel used for the other Clips makes it hard to change their shape, and near impossible to alter the tails of Clip B, as needed in the Example 9 in OSN 12, by hand at any rate. It is quite tricky to assemble the parts and requires some force to do

so, but the various Clips are very firmly held once locked in place by Clip(s) A. To build anything other than a simple model would need some forethought as to the order in which the parts would have to be assembled, and it would be daunting to have to add to or alter a structure.

The **Wheel** right, 39mm Ø by 12mm wide, is wooden, painted red, and has a shallow pulley groove. Its bore is 14mm and so it is very loose on the struts, but it runs well with the end of an A in the bore on either side, and is then located by the ridges.



The **Panels** in the Set are made of 1½mm thick brown fibre board. One side is dull & matt, the other (right) is shiny & grained. 5 sizes were in the Set, 61\*31, 62, 121, 151mm, & 31mm square.



**David's set** may well be near complete, apart perhaps from the Wheels & Panels, and as found contained: 27,15,10, 10,4,4,4 of 3,6,9,12,15,18,21cm Rods; 30,24(16 long, 8 short), 2,2,4,2,2,6 of Clips A,B,C,D,E,G,H,BB; 1 Hook; 1 Wheel; and 1 each of the 5 sizes of Panel.

The **Manual** is identical to the one in OSN 12.

OSN 33/997

AJUSTO: S1

**Snippet: A No.2 TECHMASTER Set**

Until this outfit was seen on Ebay all known TECHMASTER sets were No.50s, packed in canisters, as left, see 14/391 & 15/426. Before discussing the No.2 a word about a No.50 to hand. The main words on the front of the canister are METAL CONSTRUCTION SET | ERECT AND TRANSPORT | CONSTRUCT AND HOIST. The inventory is on the back, as Extra Sheet X2, with the maker's details under it, & 'No.50' under that in letters 1½mm high. The parts are as described in OSN 14 & 15 with the following additions: the Bolts are dull plated steel with 6.9mm Ø countersunk heads & 6.3mm round-heads; the Nuts are aluminium, 8.0mm A/F; the Pulley is ½" Ø; the Crank Handle is 3.2mm Ø & 104mm long o/a; the Hook is flat, nicked, & 19mm long; the Wrench is the span'driver below, nicked, 75mm o/a & only 8mm thick.



Right the

No.2. As can be seen the Girders are painted red, and other

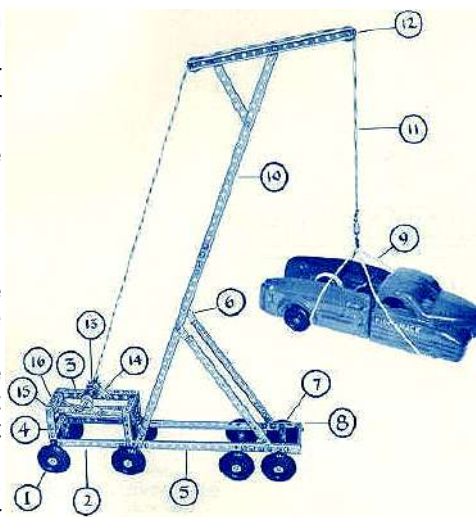




parts easily recognisable are the Wheels, the green Spool with the Crank Handle through it, and the 4h Strip. Also the Pulley in the foreground although it looks larger than the one in the No.50 – perhaps it is the Medium or Large Sheave, both called up for the Tier Lift in MCS – the brass looking Pulleys above the Spool look more the No.50 size. The reddish part on the centre of the third Wheel may be the Ratchet. A darker yellow rectangle can be seen between the Wheels with a pattern of 4\*8 lighter 'holes' in it – more parts perhaps, or possibly an unfaded area of the backing card where parts had once been. Its unclear what the greyish parts to the left of the manual are, or even if they are of the Set.

The notes with the Ebay offer gave the Set No., the name & address of the maker (as before), and said that the bag contained a Screwdriver and the N&B. Also that the parts were wired to the card.

The manual cover is the same as the one in MCS and two other examples of manuals with the same cover have been seen on Ebay. It is said to be 9\*6" and to have 16 pages including covers. One site listed the models in it, 12 in all, from TIER LIFT (the one in MCS) which could be made from 'Sets 1, 2 & 3, to SKY-SCRAPER CRANE, which needed Set 3. So it is likely that the sets were progressive. The last



NO	NUMBER OF PIECES	NAME OF PART
17		SCREWS-NUTS-WASHERS
16	2	2" ANGLE
15	1	WINDLASS HANDLE
14	1	1" ANGLE (PAWL)
13	1	WINDLASS & RATCHET
12	2	SHEAVE
11	1	CABLE
10	4	12" CHANNEL
9	1	SLING
8	12	ANGLE TIE PLATE
7	18	CORNER TIE PLATE
6	15	STRAIGHT TIE PLATE
5	6	8" CHANNEL
4	6	2" CHANNEL
3	2	4" ANGLE
2	3	4" CHANNEL
1	8	WHEEL

SKY-SCRAPER CRANE  
Made from Techmaster Set No. 3

model is shown above (with the original white on blue PL changed to B&W), notice the 12" Channel in it. Most of the other models are on the front of the manual – full instructions have been seen for the 5<sup>th</sup> & 6<sup>th</sup> models, PORTABLE CRANE & WINDLASS, on p8 & p9 – both are for Sets 1, 2 & 3

### TECHMASTER: S1

### OSN 33/998

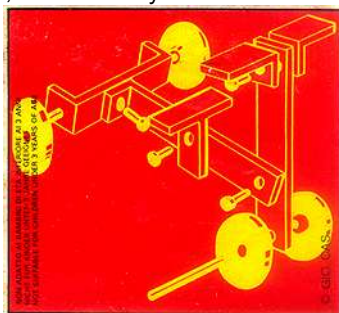
**GIO** This little Italian system, said to be from the 1960s, is in MCS but without much detail. Now 3 different unopened sets are to hand, each to make a single model, a Helicopter, a Trike, & a Handcart. There are only 6 different parts, all small, plus plastic Plugs in 2 lengths to join them. The **GIO** name isn't obvious on the box but comes from the name of the Bolognese maker, Gio Cas, on the side of the box right.



Each set is packed in a little end-opening box 6\*5½\*1½cm, & right is the top of the one for the Handcart (x¾). 4 other models are shown on one of the box's sides, as below (x1½), including the Trike (Triciclo) & the Helicopter (Elicottero). It isn't certain how many sets were available - the same 4 models are on the side of each box, but



the Handcart isn't among them, so there may have been other 'extra' sets. The bottom of each box has an exploded view of the model, as right for the Trike (x¾) The small print down the left side is 'Not suitable for children under 3 years of age' in Italian, German, & English. The parts are in a sealed transparent packet.



The parts are shown at the head of the next column. The blue ones are plastic with the Plugs originally attached to sprue (but much thinner than for the Wheels). The metal pieces are bright plated, probably nicked, a few rather patchily. They are about 1mm thick, 7.5-7.7mm wide, & their corners have a small chamfer. Quality is adequate except that the bends are 5-10° short of 90°. The holes are at 7.5mm pitch and are mostly 3.4mm Ø, with a few

as small as 3.3mm. The Plugs have a 1.5mm bore, but are closed off at the end of the shank. The head is 4.2mm Ø and 1½mm deep; the shank 3.4mm Ø and either 4 or 5mm u/h, enough to easily take



2 or 3 parts respectively. It is hard to push a Plug into the 3.3mm holes and removal is even harder; the grip in the other holes is adequate if parts held by a single Plug are handled with a little care. The Wheel is 14½mm Ø with a 2.9mm bore, and is thus very, very hard to push onto a Plug, and of course if it is attached in this way it isn't free to turn. An alternative is to use the sprue the Wheels are attached to as an Axle. It is 36mm long, just long enough if it runs in the DAS, & though slightly oval in section (2.8-3.0mm), that isn't really a problem. An Axle isn't shown for the Handcart but as can be seen two are indicated for the Trike, but with no indication that the sprue should be used (doubtless it would be obvious to your average bambino but it took me a while to figure it out – initially I assumed that, like the necessary 5<sup>th</sup> A/B, the Axles were missing). It wouldn't be possible to use Axles in the Helio, so both its rotors would be fixed.

**Quantities** The parts found in the Handcart, Helicopter & Trike sets are given in curly brackets for each part. 5h Strip {4,3,2}; 3h Strip {-,3,-}; DAS {3,-,1}; 2\*1h A/B {-,3,4}; Wheel {2,2,4}; sprue Axles {1,1,2}; Plugs {6,6,6 of each type}.

The models on the box tops don't correspond exactly to their exploded views underneath. Thus the Handcart left was



built with one less DAS cross member (as per the exploded view and the parts in the Set) – it is considerably less rigid as a result. The parts for the Trike don't include the 'T' & 'L' parts shown on the box and A/Bs are used instead, with one too few supplied, as already noted.

### GIO: S1

### OSN 33/998



## An Early M K A Outfit, Der kleine Praktikant

It will be the same strip as the 2h high D/B, with a width of 16½mm recalled from 28/830 that MKA was a system which combined normal parts with oversize TRIX-style Strips & Brackets, both types in aluminium and both with a hole pitch of 11.2mm. The set to be described here has only the 'normal' parts and is thought earlier than the OSN 28 phase. One reason for this is that the models in the manual are all taken from a prewar MÄRKLIN manual with identical line drawings, and this points to early post-WW2. Also some of the parts are not as well made and the A/Gs have no slotted holes.

**The Box** is red, 22½\*33¼\*3¼cm, with the (rather sad) lid right. The model is another from MÄRKLIN but would need rather more parts than are in the Set. The set number is IIa but it is a basic outfit and its manual has Nr. II on it. Inside the box is divided into 12 areas by small card trays, but there is nothing to indicate how the parts were held in them.

**The Parts** in the Set, with their quantities, are listed on a label inside the lid. All are given below with comments where they differ from the 'early' parts in OSN 28, and with quantities in curly brackets.

- **Generalities.** A few of the holes in the Brackets are 4.6mm. Most parts are 1.0 or 1.1mm thick but some range from .8 to 1.3mm, apparently at random.
- **Strips.** The 6 lengths have 3,5,7,9,11,25 holes; they are between 12 & 12½mm wide. {4,12,4,4,16,10}
- **Flanged Plates.** 5\*11h & Sector, as before. {1,2}.
- **Brackets** Like the Strips they are a little wider than before. They comprise a • **Flat Bracket** {4}, and • the **A/B** made from it {12}; • an **A/B with longer arms**, about 18\*19mm with some 4mm of metal outside the holes {4} (this part isn't in the list of parts but doesn't look homemade and couldn't be made from any of the other pieces – the Set is very largely complete but lacks 6 of the nominal 12 A/Bs, so just possibly the 2 types of A/B were lumped together in the list); • a **D/B** 15mm wide & 18mm deep {4}, and • a **2h deep D/B** 30mm deep, & again 15mm wide {1} (these D/Bs are made of strips with holes at about 15mm pitch; the OSN 22 D/Bs were 13mm wide by 12/23mm deep and were probably bent from standard Strips); • a **Reversed A/B** 34mm long o/a with all round holes, and again made from a strip with holes at 15mm pitch {4}; • a **4-bend Reversed A/B** with thus 5 holes, all round {4}; • a **Double Bent Strip** - the example in the Set is mangled but was probably made from

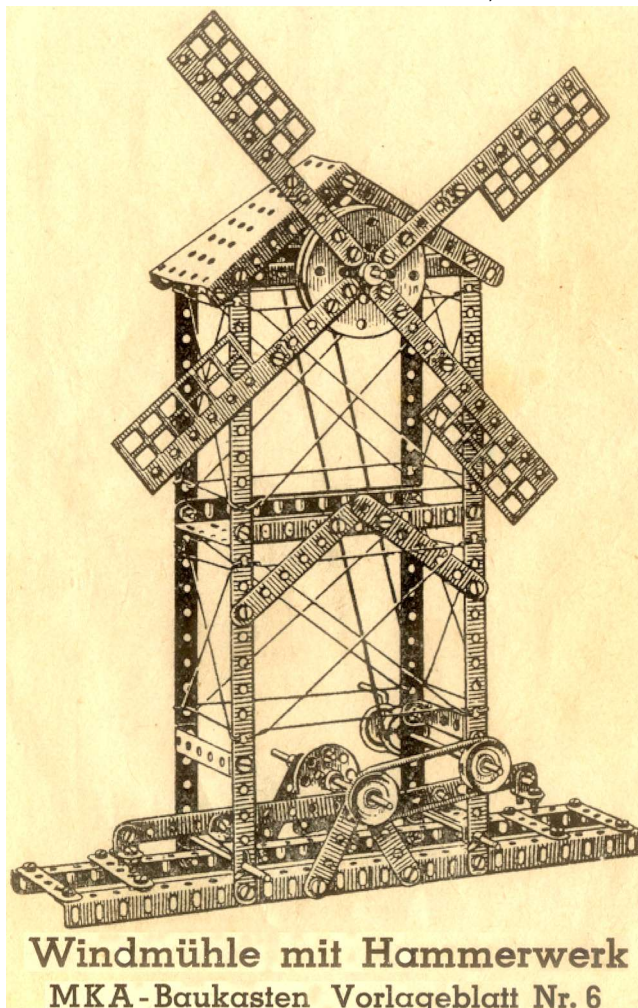


the same strip as the 2h high D/B, with a width of 16½mm across the 'hump' {1}; • a **DAS**, as before but with different bend points giving an increased width of 68mm o/a {6}.

- The **A/G** is 25h long and has no slotted holes. {4}
- **Pulleys.** They are 54½, 33½, & 25½mm Ø with, typically, a 5½, 6, & 7mm vee respectively. All have plain faces. {4,4,6}
- **Faceplate.** 55½mm Ø, with a 1mm thick disc. {2}
- **Bosses** are brass, 9.0mm Ø & only 6mm long, single-tapped M3 as before. The peening isn't so neat, a wide, flat ring with several splits in it. The bore is 4.1-4.2mm.
- **Axles.** They are 13, 11, 9, & 5cm long, with a mix of brass, 3.98mm Ø, and steel, 4.00-4.05mm. {3,3,2,2}. The **Crank Handle** is steel, 3.95mm Ø, 137mm long o/a with 90° bends and a 46mm handle offset 21mm. The ends of the brass parts are flat, the steel ones slightly domed.
- **Collar.** It matches the bosses: 9.0mm Ø, 6.0mm wide, single tapped M3. {4}

- **N&B.** The Bolt is brass with a hex head, 8.0mm A/F, & 8mm u/h. The Nut is steel (with a few brass), hexagonal & 8.0mm A/F. {62,62}
- The **Set Screw** is the tiny, early brass one.
- **Tools.** None are included in the inventory, and none were in the Set, but one or two Spanners would have been needed.
- **Windmill Sail.** It is light brown cardboard, 74\*29mm, and looks exactly like the one in the 28/832 Windmill, printed in black on both sides. {4}

**The Manual** It has 8 unnumbered pages including covers, 150\*210mm, with the front below. The back cover (C4) is blank & the other pages have one



model on each, the first is Motorkippwagen (Tipping Lorry) and the sixth is the one on the left. As already mentioned the illustrations are exact copies from prewar MÄRKLIN; they are No.2 models in fact and the contents of the set matches the prewar MÄRKLIN No.2 quite closely. Some of the parts differ of course but there would be no real difficulties in making any of the manual models.



**An M F C Outfit** In 28/830 it was suggested that MFC was similar to MKA although no set or parts were known at the time. The similarity is borne out by a No.3 Set now to hand, not quite complete but with manual, and all but one of the different parts are present. It was also suggested in OSN 28 that perhaps MFC preceded MKA. In fact the opposite now seems much more likely, for two reasons. First, the MKA set on the previous page (it will be called the 'first type') is assumed to have come before the OSN 28 sets. and therefore having MFC in between seems improbable. Secondly, the Tyres in the MFC set still have 'MKA' moulded into them, like those in the OSN 28 'late' MKA outfit. As will be seen there is nothing in the present parts which would deny this theory.

**The Box** is blue, 28\*38½\*3¼cm, and the yellow lid label is identical to the MKA one on 28/832, except that the 'MKA Aluminium' top left is replaced by the 'M F C' left. The label PR is 'E.PRUSKIL COTTEU 758 1514 He 824 54'. Another yellow label inside the lid lists the parts in the Set with their quantities. There is no Set No. on the box but the manual cover has 'III' on it and there are enough parts in the Set to build any of the manual models. Inside, the box has yellow-topped partitions to create 12 areas and there is a navy-blue false bottom in 2 of them. A number of aluminium offcut strips were in box, as in the 'late' MKA set, & no doubt originally held the parts together.



Aluminium' top left is replaced by the 'M F C' left. The label PR is 'E.PRUSKIL COTTEU 758 1514 He 824 54'. Another yellow label inside the lid lists the parts in the Set with their quantities. There is no Set No. on the box but the manual cover has 'III' on it and there are enough parts in the Set to build any of the manual models. Inside, the box has yellow-topped partitions to create 12 areas and there is a navy-blue false bottom in 2 of them. A number of aluminium offcut strips were in box, as in the 'late' MKA set, & no doubt originally held the parts together.

**The Parts** All are listed below with comments where they differ from the MKA parts in OSN 28, and with the quantities from the PL on the lid in curly brackets.

- **Generalities.** Holes are 4.4-4.5mm with 4.3 in the Flat & Angle Brackets, and a few at 4.6mm. The slots in most parts are 6¼mm, but 6½ as before in the 5\*11h Flanged Plate, & DAS. Most parts are of metal .8-.9mm thick, but most Brackets are 1mm and the 11h Strips are 1.2mm.
- **Strips.** The 7 lengths have 3,5,7,9,11,17,25 holes; they are all 11.0 wide. {4,8,4,4,8,6,10}
- **Wide Strips** are 3,5,7,9,13,17,19h long, and 22.0mm wide as before. {4,6,6,4,4,4,6}
- **Flanged Plates.** The 5\*11h is 67mm wide o/a, and has 16mm deep flanges. The Sector Plate is as before. {1,2}
- **Brackets** The 'normal width' types are the Flat Bracket; the A/B made from it; the 2h deep D/B, the wide D/B (1½\*1½+1+½\*1½h); the Double Bent Strip; & the DAS. The latter is similar in width to the wider Flanged Plate. {8,12,4,4,2,6}

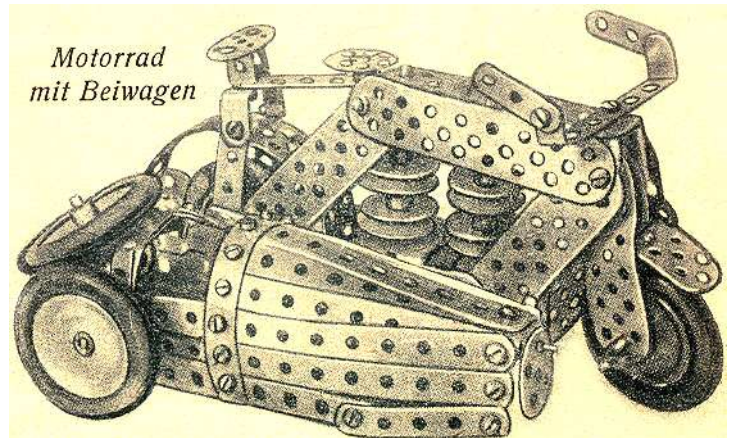
The **Wide A/Bs** are 1½\*1½h & 2½\*2½h. {6,6}

- **A/Gs,** 11 & 25h long. {2,6}
- **Pulleys.** Their diameters are 55½, 36 & 26¼mm Ø so they don't quite match the MKA parts. The smallest has the 5mm vee of the 'late' MKA parts; the face of the largest is flat with no impressed grooves. {4,4,4}
- **Faceplate.** Unchanged. {4}
- **Bosses** are like the 10mm Ø 'late' ones except that the bore is 4.3mm and the peening has no indents.
- **Tyres.** As the 'late' ones (with MKA marking). {4} **NB.** The 34½mm o.d. in OSN 28 should have been 54½.
- **Axles.** They are aluminium with slightly domed ends. The lengths listed are 130, 110, 90, & 50mm {2,2,2,2} but those found were 2x 130, 3x 110, 1x 115, 1x 75, & 2x 50mm. They are 4.00±.02mm Ø except the 75mm at 4.10, so a foreigner perhaps. A **Crank Handle** is listed but was not in the Set.
- **Screwed Rods.** Also aluminium and threaded only at the ends, over 10mm for the shortest to 15mm for the longest. The lengths listed are 110, 90, & 50mm long {1,1,1}, but 1x 90, 2x 60, 1x 55, & 2x 30mm were found.
- **Collar.** As before except 10mm Ø. {6}. Also 3 similar but 9 instead of 6mm long.
- **N&B.** The Nuts are as before; the Bolts found were 9 plain steel with a 6.2mm Ø CH, and 9mm u/h, plus 1 each of 6½ & 15½mm u/h with slightly larger heads. {80,80}. The M3 **Set**

**Screw** is also plain steel, with a 5.3mm CH, and 6mm u/h.

- **Windmill Sail.** This is identical to the MKA one on the previous page but printed on orange-brown card. {4}
- **Misc.** A Screwdriver & Spanner are listed but neither was found. 5 unlisted rubber Axle Stops, 8½mm Ø & 4mm wide, were in the box.

**The Manual** It has 20 pages 197\*143mm, plus covers, and the front is shown right. C2 has a short Intro identical to the one in OSN 28, and a PR of 'I/5/12 Hc 1458/58'; C3 & 4 are blank. 12 models are shown inside, from Schiebekarre (a 2-Wheel Barrow) to Feuerwehrauto mit Leiter (Fire Engine with Ladder). There is one photo of each model, a PL for all but the last one, and fairly lengthy building instructions for all but the first three - they are quite simple - & the last. I rather liked the model below, actual size.



All the models are the same as those in the OSN 28 MKA manual except one of the first three where a Balkenschaukel (See-Saw) replaces a Bank (Bench Seat). The Mechanical Hammer in MCS is not in this manual, no doubt because it is a Set 2 model. An Ebay photo shows it in an MFC No.2 manual similar to the one in MCS – it has a light blue cover and is said to contain 8 pages. The other model that can be seen in it is a simpler Windmill than the No.3 version, and without the card Blades. Another Ebay photo shows the same models in a MKA No.2 manual with a pink cover – 29/847 has some details of another No.2 MKA manual.

**Another MKA Connection** An Ebay photo of a set with a No.3 manual has a similar PL to the MFC one on the inside of its lid. Not all of it can be seen perfectly clearly but probably the only difference is that the MKA list doesn't include the #47 Bauvorlage (manual).

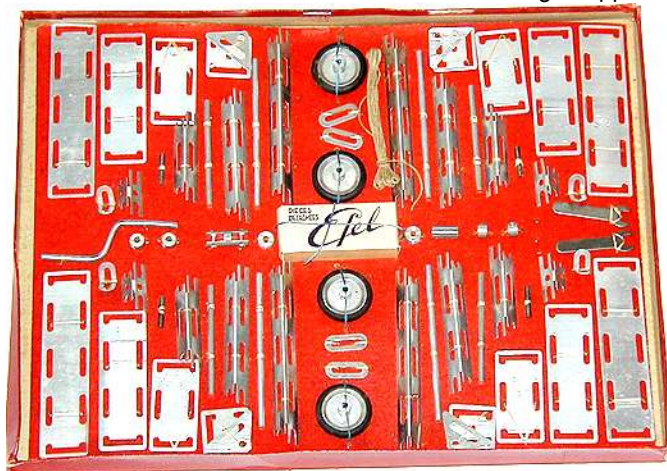
**The MFC Part Names & PNs** Only the PNs are given in the manuals so the list that follows, taken from the MFC set's lid, may prove useful. I hope I've identified the Brackets correctly but I've included the (pluralised) German names and I stand to be corrected. #1-7: 25,17,11,9,7,5,3h Strips. #8-14: 19,17,13,9,7,5,3h Wide Strips. #15,16: 25,11h A/Gs. #17: Flat Bracket (Flachstücke). #18: 2h deep Double Bracket (Lager+gabeln). #19: long Double Bracket (Führungsbügel). #20: A/B (Winkelstücke). #21,22: Wide 5,3h A/Bs (Winkelstücke). #23: Double Bent Strip (Lagerböcke). #24: DAS (Verbindungs+bügel). #25: 5\*11h Flanged Plate. #26: Flanged Sector Plate. #27-30: 130,110,90,50mm Axles. #31: Crank Handle. #32-34: 110,90,50mm Screwed Rods. #35-37: 25,36,55mm Ø Pulleys. #38: Collar. #39: Face Plate, 55mm Ø. #40: Tyre. #41: Windmill Blade. #42: Screwdriver. #43: Bolt. #44: Nut. #45: Spanner. #47: Manual. There is a #46 called up for one model but it isn't in the List and hasn't been identified.



**More on Gédé's EFEL** A brief note about this small 1960s French system was given in 5/91, based on photos of 2 outfits, a No.0 & a No.0A, both still strung. Since then more material has come to hand: the main items, a No.0 box with a few parts in it, a No.1 set still strung, a No.2 box with parts in it from more than one outfit (I'll refer to it as a No.2+), and a few Ebay photos of other outfits.

First though, a correction to OSN 5, the set shown there is a No.0. The 0A is in similar packaging except that the N&B are in a paper packet instead of a box. Both have plain steel Plates & A/Gs with red painted Pulleys. All other sets seen have aluminium parts with unpainted Pulleys.

**The PARTS** Most of the parts can be seen in the various illustrations here including the No.1 Set below, and the photo under it (in what follows the parts in it are shown in red). These notes are based on the parts to hand, aluminium unless otherwise stated, but in appearance they are the same as those in OSN 5. A complete list of the parts is given in the table of set contents on the page opposite. The Plates & A/Gs are well made, so too most of the other parts though their overall dimensions vary quite a bit in the various examples seen. The **thread** is the 4x.75mm prewar French standard. All **bosses** and most 'brassware' are single-tapped.



A **Plate** & 2 views of an **A/G** are shown in Fig.1, about full size, with some dimensions (in mm). The metal is typically .6 mm thick, the A/G is about 10½\*10½mm in section, & the slots are 4.1mm wide. The cut back, angled ends of the A/Gs are to allow a mitre joint when they edge a Plate, as in Fig.2. The Plates are 28½mm wide and a compound plate formed by butting 2 to 4 of them widthways, can be edged all round by the different lengths of A/Gs, but in every case the angled ends overlap a little. Cutting the 'angling' inwards sufficiently to avoid this would leave very little metal around the short end slot. A patent is claimed on the lid & it would be interesting to know if the use of the Plates in this manner is discussed in it.

The 2 **Double Strips** are 6 & 8h long. Holes are 3.9 mm Ø, not quite large enough for an Axle, and even Bolts have to be 'screwed' through. The hole pitch is 15mm lengthways, &

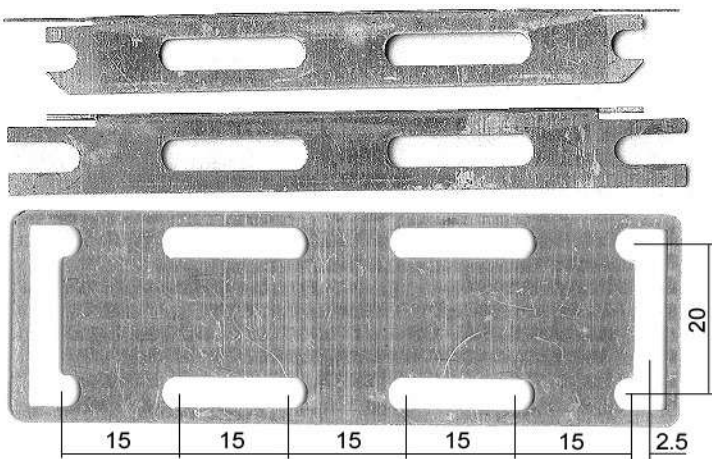


Fig.1

10mm across. In the Manual's Illustrated Parts each pair of holes across are joined to form a slot.

The **Flat Bracket** is 26mm long by 10mm wide pierced by just a 19mm long slot. The **A/B** is made from it.

**Wheels** The o.d. of the **Fast Pulley** is

26½ to 27½mm in the different sets, and Set 2 also has a **larger one** of 32½mm. All have a vee about 6mm wide. The **Rubber Rings** for both these Pulleys are black; most are about 6mm Ø in section but 7mm in a few cases. The **Loose Pulley** is 10mm Ø & 5mm wide. The **Bush Wheel** is 40mm Ø and the disc is only .6mm thick. **Bosses** are 9mm long, either 8 or 10mm Ø, with a bore of 4.2mm usually, but 4.1, or even 4.0, in a few. Peening is a narrow ring, often broken into small segments. The OSN 5 0A set has brass coloured bosses.

**Axles** are 10 & 7cm long, and **Crank Handles** vary from 8 to 9cm o/a with offsets of from 15 to 30mm. Most of both parts are 3.9 mm Ø but a few are 4.0mm; all have square ends. The **Screwed Rods** are plain steel, 4 & 2cm long.

**Collars** are either 8, 9, or 10mm Ø and between 6 & 8mm long. **Couplings** too are 8, 9, or 10mm Ø, and 14 to 16mm long o/a, with the tapped holes at 7-7½mm centres. One 8mm Ø example is double-tapped. The 3 **Fork Pieces** seen are a little more consistent - 10mm Ø, 26mm long, with 5½mm wide slots (just enough to take the 10mm Pulley) and 4.2mm Ø through crossbores at 18 0 or 16mm centres.

The **N&B** in the No.1 are plain aluminium but brassed steel in the No.2+. All are machined and the same size, with 7.0 A/F hex **Nuts**, 2½mm thick, and 6.0mm Ø, 2mm deep CH **Bolts**, 5mm u/h. **Grub Screws** in the No.1 are steel, 7½mm long to their pointed end; they are aluminium in the No.2+, about 5mm long, some with a pointed end, some not. The steel ones can't be used to hold an Axle in an 8mm Ø boss, etc, because the pointed end is too long to allow the thread to engage.

A **Spanner** with one end straight and one angled is shown in the Manual but has not been seen. The other tool shown there is the 75mm long, nicked steel **Span'driver**. Its blade end is too thick though to enter the (very narrow) slot in the Bolts. Often in sets the round-ended **Spanner** is the only tool and again the rounded end is much too thick to act as a screwdriver, if that was the intention. It is steel, 50mm long and is found nicked or chemically blackened. No normal Screwdriver is mentioned in the Manual and none has been found in sets except that the part below can be seen (tied down) in the OSN 5 No.0A set, and it might be a **Screwdriver** – it scales at 7½cm long with a body of 7 or 8mm Ø.

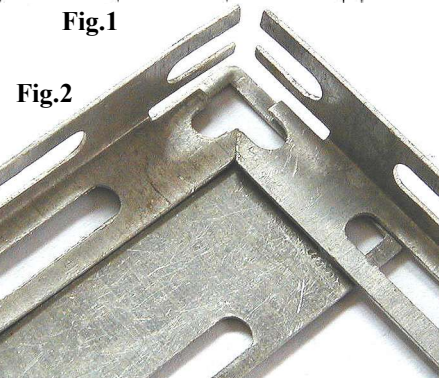


Fig.2





The examples of the flat wire **Hook** seen are made of 1½ or 2mm wire, and are 20-21 mm long with an eye to take a Bolt or Axle, and 13-14mm across the open end. The No.1 Set had a loose hank of brown **Cord** in it. The No.2+ contained a **Propeller**, 90mm long o/a. Neither this part, nor the 32½mm Pulley mentioned earlier, is in the Manual but both have been seen in the Ebay photo of another No.2 set (and Double Strips with holes rather than slots could also be seen among the parts).

**The SETS** All the boxes seen have the same red & yellow label on the lid, as in OSN 5, with a signature, A Boucherat, in the bottom right corner, and all have the Set No. on a sticker on the lid apron. The No.0 box is red, 24½\*32\*2½cm. The No.1 is similar but 29½\*39¾\*2½cm, and as shown earlier the parts are strung to a red card, individually except that the Triangular Plates overlay the square ones. The No.2 box is the same as the No.1 in plan but blue instead of red and 4cm deep. Probably there were 2 layers of parts.

No official list of set contents is known and the table right shows the parts as seen or found in the different known outfits. A '?' indicates parts probably in the 'N&B' box. 'Fe' & 'Al' denote sets with steel/aluminium parts and the No.1 (Al) has a few more parts than its steel counterpart, notably 2 extra A/Gs and 4 Rubber Rings. This is perhaps an indication that the steel sets came first and that would be consistent with the red Pulleys on the lid label. The No.2+ probably contains parts from at least one set other than the No.2, a No.1 perhaps.

**The MANUAL** The cover, 132\*207mm, common to all known manuals, is shown below. Examples in the No.1 and No.2+ sets have 12 unnumbered pages including covers, and are identical (with the same No.346 on the cover) except for 2 pages. In one the Intro is on p2, & p12 has just the maker's logo. In the other the same Intro is on p12 and p2 has the same logo but with text about EFEL being guaranteed,

suitable for children of all ages, and 100% French. A manual with the same cover could be seen in the Ebay photo of an 'aluminium' No.0 outfit (but its bottom where the number would be was cut off in the picture).

Pp3-5 of the Manual have 8 models for Set 0, from Signal routier (road sign) to Balançoire (swing). Next 8 models for Set 1 on pp5-7, from Wagon plateforme (railway platform wagon) to Tramway (single-deck tramcar). Then 2 models on p8, Moulin à eau (water mill) & Moulin (windmill), for 'BOITE No.1 et Complémentaire'. Finally for Set 2, Wagon voyageurs (railway coach) on p9, and the Locomotive below (¾ full-size) on p10. The Illustrated Parts, as in MCS, are on p11. There is a single, good photo for each model, but 2 for each of the No.2's. Quite what the difference, if any, between a No.1 plus a Complémentaire set, and a No.2 isn't explained, but conceivably only the former sets were available at some point, and the No.2 came later.

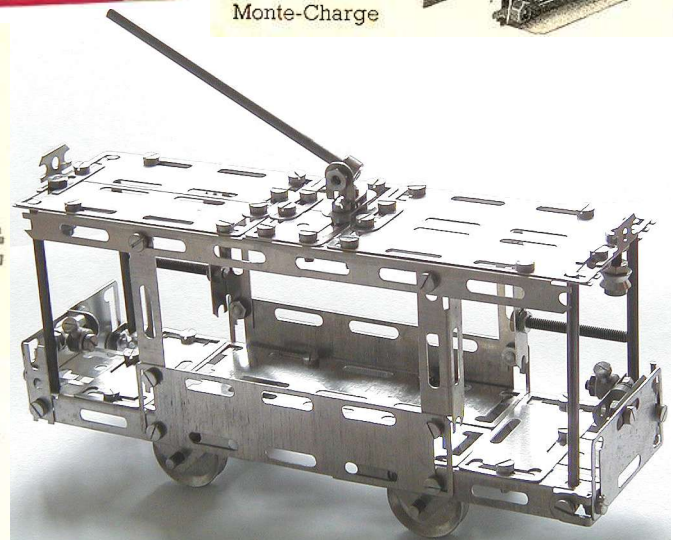
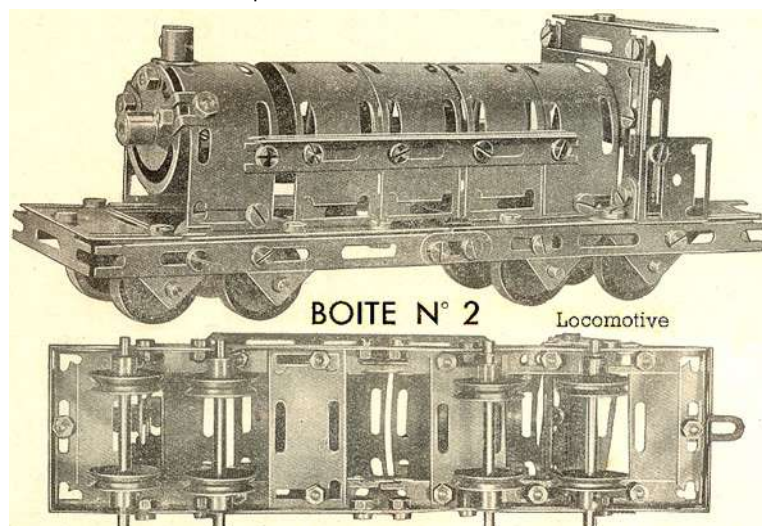
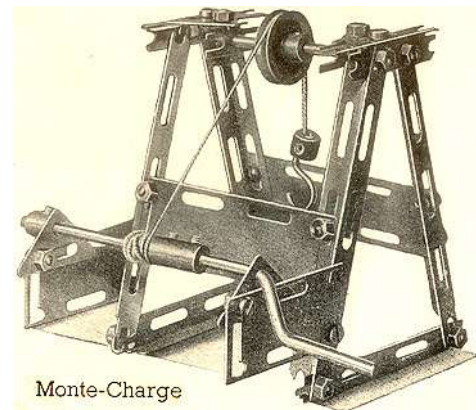
Many of the models are railway related, simple Goods Wagons, Barrows, etc. The others include one or two Machine Tools, the Hoist right, again ¾ f.s., a Jeep, and the Tram below right, the one in MCS, which I made from my No.1 set. It needed all the parts plus 16 extra N&B & was still a little less than really rigid.

**PS.** Since the above was written a different box with the lid (right) has been seen on Ebay. The parts in it include all that are only in the No.2 but the total number of parts is far less than would be

Contents: Part / Set	0 (Fe)	0 (Al)	0A (Fe)	1 (Al)	2+ (Al)
A/G, 3 slots	4	4		4	10
A/G, 2 slots	2	2	2	4	10
A/G, 1 slot		2	2	4	15
A/G, 0 slots	4	4	2	4	10
Plate, 3 slots	2	2	2	4	10
Plate, 2 slots	2	2	2	4	10
Plate, 1 slot			4	4	10
Plate, 1 slot, square			6	4	10
Triang. Bracket	4	4	2	4	12
Wide Strip, 6h					2
Wide Strip, 8h					2
Angle Bracket			2	4	6
Flat Bracket			2	4	7
Pulley, 26½mm Ø	4	4	2	4	11
Rubber Ring for ^		4		4	9
Pulley, 32½mm Ø					2
Rubber Ring for ^					2
Pulley, 10mm Ø	1	1		2	4
Bush Wheel					2
Axle, 10cm			1	4	9
Axle, 7cm	2	2	2	4	10
Crank Handle	1	1		1	2
Screwed Rod, 4cm			1		4
Screwed Rod, 2cm			1	4	2
Coupling	1	1		1	3
Fork Piece				1	2
Collar	2	2	2	4	10
Hook			?	1	2
Span'driver					2
Spanner	1	1		2	1
Screwdriver			1		
Nut	?	?	?	33	80
Bolt	?	?	?	31	81
Grub Screw	?	?	?	10	8
Cord				1	
Propeller					1

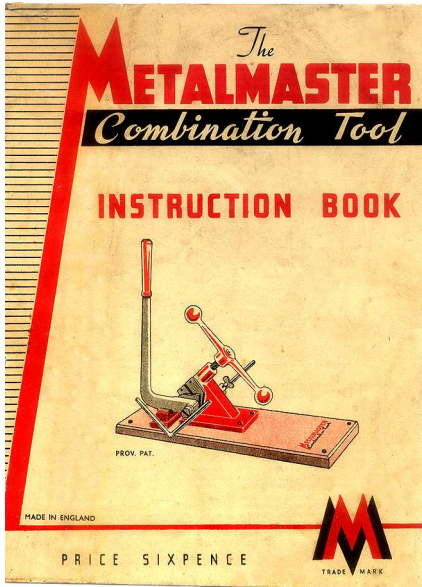


in a No.2. Also the box scales at only 28cm long. Perhaps it is a No.1A. The Loco on the lid is the one below left; of the other models only the Crane Truck is in the No.346 Manual.

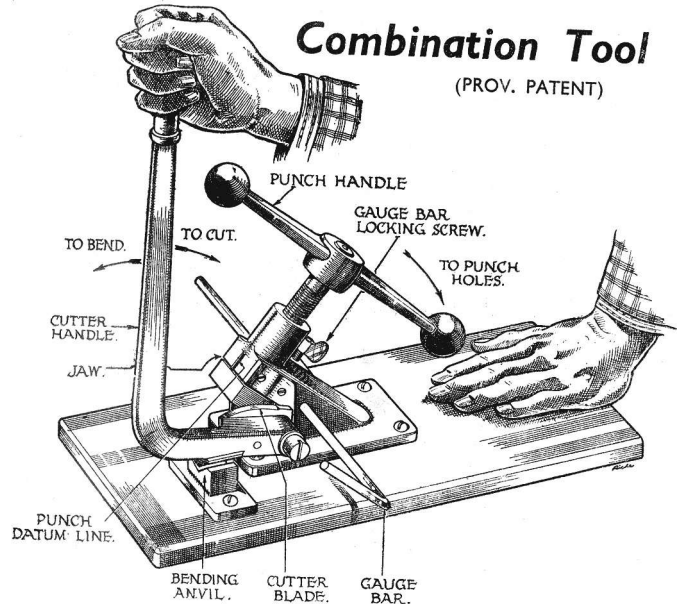




**'New' 'DIY' System: METALMASTER** David Hobson recently discovered, and kindly lent me, a Manual and the remains of a Dealers' Kit for this system. It was made by Sanders Bros. of Sevenoaks, probably soon after WW2 (the Manual's PR includes '8/46'). David also found a small box ad in *Games & Toys* for 9/47: 'Write for full particulars of the successful construction set METALMASTER. The London Magical Co., Francis Terrace, Junction Road, London N19.' The same product? And if so, was the London Magical Co. an agent, or selling off Sanders' stock?



The **Manual** has 8 unnumbered pages including covers, 230\*170mm, and the front is shown above. Inside are 2 pages with the diagram below plus operating & maintenance instructions. The Comb-



ination Tool can shear the steel Strip supplied, make 90° bends in it, & punch holes in it. Then on the next 4 pages, 6 models (RAILWAY SIGNAL to LORRY TRAILER); various small items such as clips & brackets 'For the Home, Household, Garage & Workshop, & Car'; and small side elevations of 5 Bridges & a Titan Crane showing the main structural frameworks. Finally, on the back cover, the contents of Kit No.1 (below), and 'The range of METALMASTER parts, and

**KIT No. 1—Contents**  
 1 METALMASTER COMBINATION TOOL • 1 DOUBLE-ENDED SPANNER  
 1 COMBINED SPANNER & SCREWDRIVER • 24, 12" LONG METALMASTER STEEL STRIPS • 24, 1/4" LONG SCREWS • 12, 3/8" LONG SCREWS  
 6, 3/4" LONG SCREWS • 48 NUTS • 2, 3" LONG SCREWED RODS • 2, 4 1/2" LONG PLAIN RODS • 4, 1" DIA. FIXED PULLEYS • 1, 1/2" DIA. FREE PULLEY  
 equipment, is continually being increased, and new kits are now in course of preparation.' Also details of the company — Sanders Bros: (Sevenoaks) Ltd., Metalmaster Works, High Street, Sevenoaks, England; & the PR — CP/10850/8/46.

The **Dealer's Kit** is a plain brown cardboard box 10 1/4\*8 1/2\*3", & the B&W label, 4 1/4\*1 1/4", has METALMASTER DEALER'S KIT of CONSTRUCTIONAL MATERIAL printed on it. Inside are 7 card boxes 4 3/4\*1 1/4\*1 1/4", & 2 similar but 2 1/2" long. There would

be room for another 4 of the longer ones, or 8 of the 2 1/2". Each box has a B&W label headed 'METALMASTER' with the name & quantity of a part underneath. Each short box is for 2 dozen 1/2" Dia. Brass Pulleys; the long ones are: 1 for Combined Spanners and Screwdrivers, 2 for Double-Ended Spanners, 3 for 1" Diameter Brass Pulleys, & 1 for 4 1/2" Axles. Each contains 1 dozen parts except 3 dozen for the Axles. All the boxes were empty except the Tools & the 1/2" Pulleys.

The Tools & 2 Pulleys are shown left at 50% full-size. The Pulley is turned brass, 5 1/2mm wide with a trace of a boss, 8mm Ø & 1/2mm deep, on either side. Its bore is 4.1mm, and thus the Axles are probably about 5/32" Ø, and the thread likewise. The Tools are pressed from 1/8" thick steel & chemically blackened. The large jaw of the Spanner, .45" wide, fits a lock nut on the Combination Tool; the smaller ones are .25".

3 of the best manual models are shown below, nearly full-size. The Tractor's centre-pivot steering is linked to the crank on the steering column, and it is suggested that thin cardboard be bolted to the framework to form the bonnet.

As can be seen the Strip looks to be about 3/8" wide. The Intro in the Manual says that the steel strip has a pleasant polished surface, and that right angle Gusset Plates, Circles & Rectangles of the same material are also supplied. These aren't mentioned anywhere else except that a 'METALMASTER 1 1/2" Circle' is specified for one model, and a 1 1/2\*1 1/2" gusset in another is either the METALMASTER Gusset Plate or would have to be cut from a Rectangle (users are warned against using non-METALMASTER material for fear of damaging the Tool).

