

# 6 OTHER SYSTEMS NEWSLETTER

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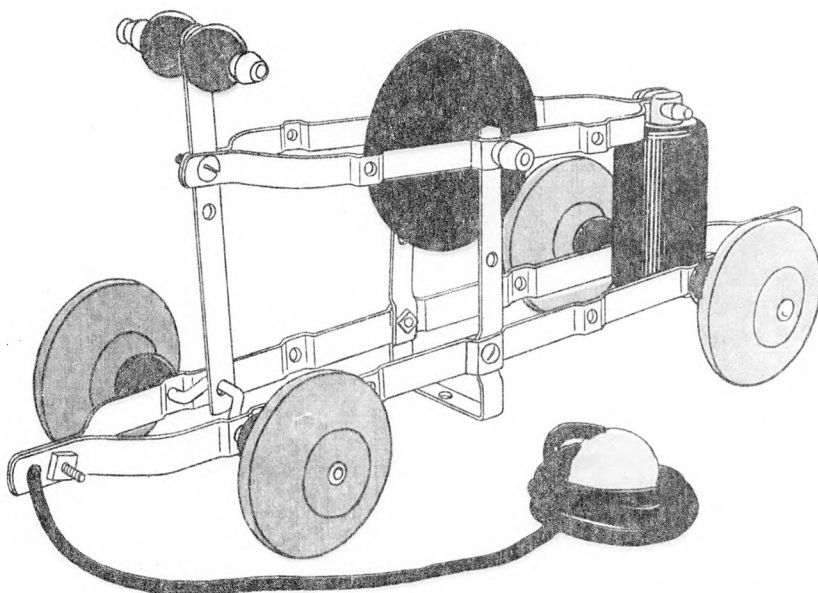
OSN 9      OCTOBER 1993

**EDITORIAL** Just a few routine matters. To save a little space now that the MCS Extra Sheets are well established, new ones will be listed only once, on the next to last page of each issue, and not as at present, at the end of each article as well.

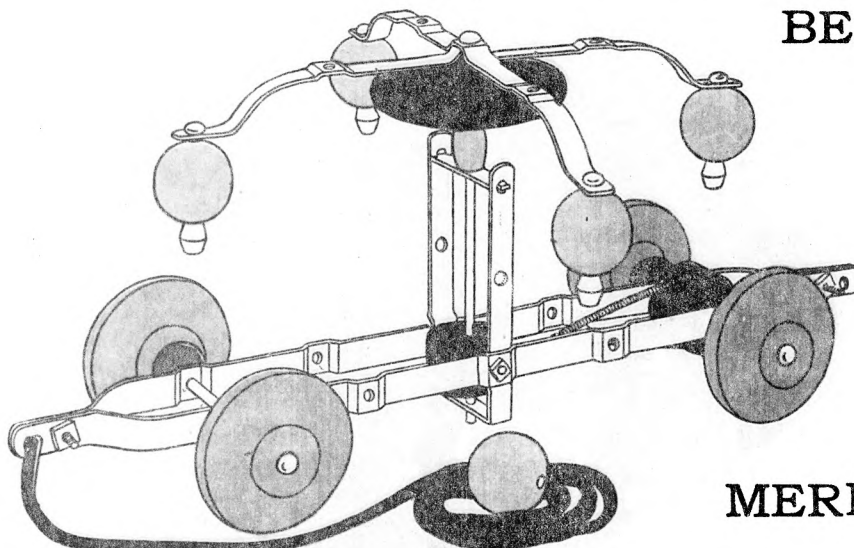
As all who are concerned already know, MW Models now take all UK subscriptions to CMN; however I can still accept payment in Sterling for CMN Back Numbers, or other purchases made from Ed Barclay - please settle the details direct with Ed, who will then let you know how much to send me.

For many it is time to renew subscriptions; please check on p235, if you see any red ink it is time to send more money. I've had to make some increases to cover higher photocopying costs - with the at least partial lifting of the economic recession here, welcome though that is, the very cheap rates that have been available for good quality work no longer exist.

Take two pieces No. 1 and fasten with No. 13 through holes *H*. Enter No. 7 through hole *S* in No. 5. Spread open ends of No. 1 and enter ends of No. 7 in holes *C*. Fasten open ends of No. 1 with No. 13 through holes *B*. On each end of No. 7 place No. 15 - No. 18. Enter No. 9 through No. 18 - No. 15 - hole *G* - hole *Z* - hole *G* - No. 15 - No. 18. Place No. 3 between two pieces No. 1 and fasten with No. 13 through holes *E* - *P* on both sides. Insert No. 10 through No. 26 - holes *L* - *R* - No. 19 - *R* - *L* and slip No. 26 over end of No. 10. Place No. 21 in No. 20 with slot of No. 21 up and insert No. 12 through holes *Y* - *N* - *N* - *Y* and slip No. 26 over end of No. 12. Fasten No. 13 through holes *J* - *U* - *J*. Insert No. 10 through No. 26 - No. 15 - hole *V* - No. 15 and slip No. 26 over end of No. 10. Insert No. 29 through holes *A* and knot. Thread other end of No. 29 through No. 14 and knot.



**BEAM PUMP ENGINE**



**MERRY-GO-ROUND**

Models from a HUSTLER  
ACTION TOY BUILDER  
see p228 for details.



**A LOOK AT THE CONSTRUCTIONEER.** This system was marketed in the U.S. for a few years after WW2 and is unusual in having a hole spacing less than the basic  $\frac{1}{2}$ " normal in American parts. It consisted of about 50 parts (ERECTOR consisted of well over 100 at the time), mainly (see MCS) Strips, large Flanged Plates (called Bases) and some special parts, mostly associated with fairground models. This account is based on a couple of incomplete sets, a #6, generously donated by Bill Harrison, and a #12 via Richard Gilbert (no relation), who found it while looking for MECCANO in Florida, when he was on holiday there. With the #6 and some loose parts with it, were 2 Manuals Copyright 1947 and with the #12, one Copyright 1948.

**THE SETS.** The #6 comes in a cardboard box 14x18x1 $\frac{1}{4}$ " with a colourful lid showing 15 of the models which can be

made with the set. Inside is a yellow metal tray with pressed out tags to hold the parts in place. The #12 is in a red metal case with rounded corners and edges, it has the same plan dimensions as the #6 but is 4" deep; again there is a tray (blue) but as well as the 'tags' there are holes in it which allow it to be used as the base for a Merry-go-Round, see p5b of MCS/FB. No Set Contents are available but from the parts used in the models the smallest set, #2, consists of 2 Bases, Strips, Brackets, 4 off 1-1/8" Pulleys with Rubber Rings, and 26 N&B; the #4 has more of the same and the #6 more again (around 90 Strips and 45 N&B), plus 4x13-hole A/G and a small C/W Motor. This Motor is not mentioned in any of the literature and at first glance might not be thought to be a The CONSTRUCTIONEER [T/C from now on] item, particularly because its mounting holes at 3.2" centres, don't line up with the T/C spacing; however it is undoubtedly part of the Set, there was a small Leaflet with it giving instructions for mounting and using it in models, and there is a special cutout in the metal tray for it. Sideplates are 7/8" deep and  $\frac{1}{2}$ " apart, and the longer one with the mounting holes in it measures 3.7"; the spring is 3/16" wide and its shaft is shaped to form the winding key. The #8 Set has the Wasp 110v Motor, 18 and 20-hole Strips, 6 off 2" Pulleys with Rubber Tyres, 6 Carnival Seats for Ferris Wheels and the like, and more of the other parts including 10 Bases of different sorts. New parts in the #12 are 28-hole A/Gs, Universal Joints, the Barrel, and the Pinion that drives it, Horses, and the large circular parts B-141 and A-142; 143 N&B are needed for the largest model.

**THE PARTS.** • All parts are steel except the Barrel A-151 and the associated parts A-152, 154, they are zinc die castings. Strips, Brackets, Pulleys, N&B, bosses and the Eccentric A-126 are nickel plated, other parts are painted. Parts not seen: A-101, 124, 125, 149, 153, 155, 156. All holes are round except in the second version of the Eccentric, A-126, see below.

• Strips (called Braces) have hole centres exactly 7/16" (11.1mm) apart and their width is the same. They are about .030" thick, holes are 4.7mm dia (in the other parts as well), and the ends are radiused .27". A/Gs (called Angles) are .020" thick with corner radii of about 1/8"; they are yellow or dark red.

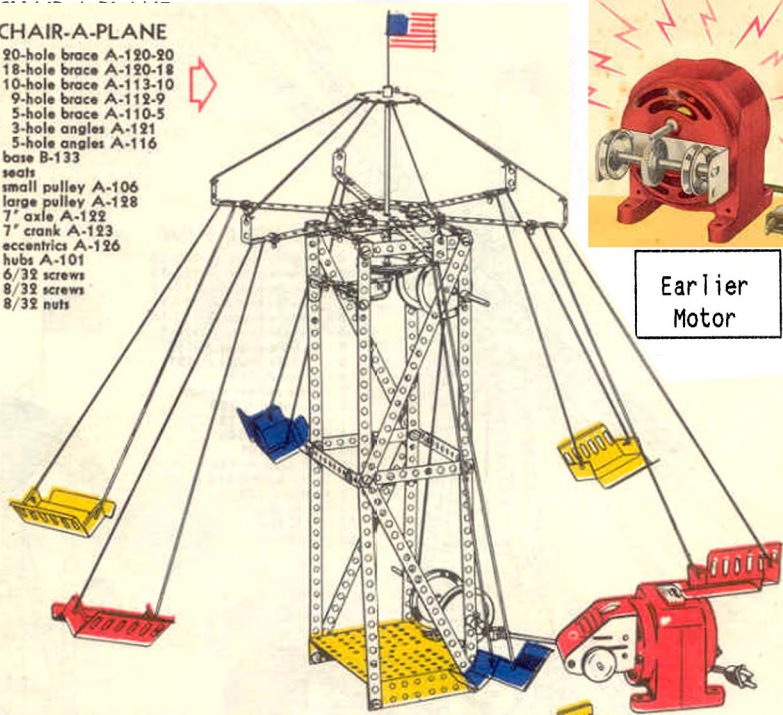
• The Deep Base, B-133, has two rows of holes in both of its flanges. Some of the 3 Sectional Bases, B-135, are as shown in MCS but others are 1 hole shorter with the material containing the single end hole omitted; these also have a lengthways stiffening groove midway between the outer two rows of holes. Bases vary from 22 to 26 thou thick and corner radii from 1/8 to 3/16", with square corners on some Short Bases, B-118. All Bases have been seen painted blue and dark red except B-133, 134, all of which are yellow.

• The yellow circular Base Plate, B-141, has a diameter of 13.9", with a 5/16" flange around the outside and a boss in the middle. The Eccentric Plate A-142 is light red and 3.9" in diameter. B-127, the Carnival Seat, and the Horses, A-143, are light red, blue or yellow.

• The cement mixer Barrel A-151 is about 2 $\frac{1}{2}$ " dia at the 40 tooth gear ring, DP about 16. The bore of the bottom boss is tapped with a coarse thread (why?), and this boss, o/d .373" runs in the centre of the Barrel Support A-154. These parts are not painted but the hand Wheel, A-152 is yellow and it has the name and address of the maker cast around its top face.

• The Eccentric, A-126, is shown in the 1947 Manual with 6 holes, in '48 it has an additional 6 radial slots; both are 2-1/8" diameter. The two versions are shown in MCS but the 6 hole variant is said (incorrectly I think) to be in a later Parts List.

- CHAIR-A-PLANE**
- 4 - 20-hole brace A-120-20
  - 12 - 18-hole brace A-120-18
  - 8 - 10-hole brace A-113-10
  - 7 - 9-hole brace A-112-9
  - 7 - 5-hole brace A-110-5
  - 8 - 3-hole angles A-121
  - 8 - 5-hole angles A-116
  - 1 - base B-133
  - 6 - seats
  - 1 - small pulley A-106
  - 4 - large pulley A-128
  - 3 - 7" axle A-122
  - 1 - 7" crank A-123
  - 2 - eccentrics A-126
  - 4 - hubs A-101
  - 11 - 6/32 screws
  - 49 - 8/32 screws
  - 49 - 8/32 nuts





• Similarly the Manuals show the two versions of the Motor shown in MCS (see opposite), the first has an open worm drive to a cross shaft; the later one has an enclosed gearbox in which the worm drives two cross shafts and each of these carries a pinion which can mesh with a (zinc) gear on a the sliding output shaft. The later is long enough to allow the Universal to be connected to it and carries two cone Motor Pulleys A-149, against the two simple Pulleys (A-106?) of the '47 Motor. The two motors, both painted red, also had slightly different air vents in their front and rear faces. The motor which again Bill very kindly contributed, was the second type and ran at about 40rpm on 50 cycles.

• Bosses are .313" o/d, single tapped 6-32, with a bore of .164" (but up to .172 in a few). Axles and the like are .156" (3.96mm) dia; A-102,103,122,140 are 1-3/4, 4, 7, 15" long. N&B are threaded 8-32, the hex Nuts are .34 A/F, 1/8" thick, the round Bolt heads are .30" dia.

• All the parts are accurately made and free from sharp edges. The nickel parts, if they have not gone rusty, look as bright as new; the paint finish is less good with small runs and blemishes here and there, and some parts look as if they were dipped. But although some of the painted parts look well used there is very little rust even where the paint is missing.

THE MANUALS. The Manuals have a bright, fresh look to them, with line drawings of the models and the painted parts shown in solid colour. It is easy to see how to make the small models but the details of some of the larger ones are not always clear; in the '48 Manual a Parts List for each model gives additional help. Many of the models are of fairground subjects and though not much detail is incorporated they generally look quite well. The other models vary and though some of the small ones which are mostly strips, look quite attractive to me, many are partially clothed by the large plates and suffer from the lack of any small plates to fill the gaps. Mechanically the models are generally simple with for instance no luffing in any of the cranes, or any way to lock the winding gear, and in a realistic looking Drill Press the large 6 spoked handwheel that should lower the drill, just turns without doing anything at all. To try the system I made the Merry-go-Round shown in MCS/FB: the drive through the Barrel worked well and the finished model worked smoothly although there were some problems. The base Tray was made of thin, .016" steel and was not really stiff enough to form a good platform. Adjustment of the friction drive to the Crankshafts to keep the Tyres in contact with the Eccentric Plate through the whole 360° was very difficult. Finally as the Crankshafts came to tdc the Piston Rods would fall off them sideways, and there seemed no way of overcoming this within the parts of the system - resort had to be made to MECCANO Spring Clips. The cement mixer Barrel by the way is used as such in one model, mounted on a lorry trailer.

HISTORY. Al Sternagle wrote on The CONSTRUCTIONEER in the April 1987 issue of YesterDaze Toys. Immediately after WW2 steel was in short supply but the Urbana Mfg Co., unlike ERECTOR, had some available and decided to launch a constructional system. The first sets were on sale in 1946 and a little later more parts were added and the #12 Set was added to the range. Production ceased in the early 1950s for commercial reasons but by that time ERECTOR were also threatening legal action, presumably for patent infringements. It would be interesting to know what relevant valid patents ERECTOR had at that time.

AMENDMENTS TO MCS (as necessary, depending on version). HOLE SPACING: 11.1mm (exactly 7/16"). COLOUR: Nickel Strips, Pulleys, Brackets; other parts painted red, yellow or blue - the same part is often in more than one colour. MOTORS: C/W in Set 6; 110v Electric (Wasp) in Sets 8,12. PERIOD: 1946 to early 1950s. MANUFACTURER: Address: Urbana, Ohio. U.S.A. COMMENTS: All parts were included in Set 12. AMENDMENTS TO INDEX IN OSN 6: SPCE: 11.1. DAXL:3.96.

SUMMARY OF MANUAL. #Name: The CONSTRUCTIONEER. #Details of maker: Urbana Manufacturing Company, Urbana, Ohio. U.S.A. #Dates &/or Ref Nos: IFC: Copyright 1947. #Page size: 146x222mm deep. #No of pages: 24 inc covers, unnumbered. #Language: English. #Printing: Cover is brown halftone photo with some parts of model in colour, and bottom orange panel/yellow lettering. Models are black line drawings with some parts coloured. #Page Nos of Parts List & highest PN: 20-21, B-136. #Page Nos of Set Contents & highest PN: 22[names of parts in sets, not parts count], B-136. #Sets covered: 4,6,8. #No of models for each set: 19,31,15. #Name, Model No, Page No of first & last model of each set: [No Model Nos.] 4: DIVING TOWER,4; CABLE SPAN,6. 6: DUMP TRUCK,7; TRAVELING CRANE,19. 8: ELEVATOR,11; CONVEYOR,14. #Other notes: The #8 models using the early type Motor, are on the centre 4 pages.

SUMMARY OF MANUAL. [Details which are as above are not repeated] #Dates &/or Ref Nos: IFC: Copyright 1948. #No of pages: 32 inc covers. #Printing: as above but red bottom panel. #Page Nos of Parts List & highest PN: 30-31, A-155. #Page Nos of Set Contents & highest PN: None. #Sets covered: 2,4,6,8,12. #No of models for each set: 11,13,24,10,14. #Name, Model No, Page No of first & last model of each set: [No Model Nos.] 2: RAILWAY HANDCAR,3; CARRY-ALL,4. 4: TANK CAR,5; STEAM SHOVEL,7. 6: JEEP,8; LOADING CRANE,13. 8: DRILL PRESS,14; BEACON,18. 12: TRACTOR TRAILER CEMENT MIXER,19; HORSE RACES,29. #Other notes: The Motor shown is the later version with the enclosed gearbox.





**NEW SYSTEM - RHOCANO.** What do you get if you make an imitation of MECCANO in Rhodesia? RHOCANO, of course. And Dennis Higginson kindly sent along a No.101 Set to prove it; he got it from a man who brought back several in about 1975 from Salisbury (Southern Rhodesia), as was, now Harare (Zimbabwe). Basically it's a 1970s MECCANO No.1 Set with a one or two differences:

- There are a few more parts such as 2 extra of Fishplates and Trunnions, and 3 3x5 hole Plates instead of 2 (and they are metal, fully perforated, instead of plastic, with BRAL shaped elongated end holes). Also as well as a normal Double Bracket there's another, but 1" wide with still just the 1 central hole in the base. Other variations in design are a #52 with only 2 flanges, Trunnions without any cutouts, unstepped 90a, a Bush Wheel with only 4 holes in its face, and black rubber #155 Rings replacing 142c Tyres.
- Generally the parts are heavier than MECCANO, for example .032" thick Strips and Flanged Plate, and the Fishplates and Curved Strips are .048". Even the 3x5 hole Plates are .024" and would have been very difficult to bend for some of the models. The parts are generally accurately made with only a few rough edges. The ends of the Strips are fully rounded; those of Brackets not quite so.
- The thread used is M4 and the dia of the Axles is .155". They are rather loose in the MECCANO size holes in the Strips, but the bosses fit snugly on them. The Axles by the way, and the Crank Handle, are made of brass, roughly sheared to length with enough burr to prevent the bosses going onto them easily. The Nuts are square, .293" A/F; the Bolts have a tapered CH, .263" dia. The brass Bosses (.377" dia) are double tapped.
- Except for a few which are painted, all the parts are plated, mostly zinc, dull but with small bright patches, but brass for the #22 and 24. The painted parts are not very glossy and are either light yellow (126,a, and one '188') or mid blue (Flanged Plate and the other 3x5 hole Plates).

The Instruction Leaflet is a straight copy of the MECCANO one. The introductory page and the one showing models from larger Sets are missing, but otherwise identical illustrations are used for the models even though the parts shown don't exactly match those in the Set. The title block has been changed of course, to RHOCANO and SET NO.101. Strangely the whole of that area has been neatly covered with masking tape, although the words above can be seen through it quite clearly, and they even come out, rather blurred, when photocopied. Underneath is a small printed label which read 'made by R.E.S.C.U. SHELTERED EMPLOYMENT, 21 SALISBURY ST., SBY. W.O.8/70'; but the 'by' has been crossed out in blue biro and FOR written in. Like the MECCANO original the Leaflet is printed in colour, which might seem a touch extravagant for such a Set in the mid 70s. The box on the other hand, about 6" square by 1" deep, is made of cheap cardboard and has no markings on it at all; as far as is known it is the original.

Extra MCS Sheets have been prepared including photocopies of the parts, the Contents of the #101 Set, and the front of the Leaflet; details on p235.

**AMENDMENTS TO INDEX IN OSN 6:** NAME: RHOCANO. TYPE:ML. CY:RH. THREAD:M4. SPCE:12.7. dST:4.3. DAXL:3.94.

**GREENBERG'S GUIDE TO GILBERT ERECTOR SETS•VOLUME 1•1913-1932 - by William M.Bean and Al M.Sternagle.**

This book may be good value but at \$59.95 plus \$10 p&p, it does cost quite a lot of money. You will want it if (a) you like beautiful books, or (b) you are confused about ERECTOR history/sets and would like not to be, or (c) you covet a 1931 ERECTOR #10 Set as new, and you want to know how much change you will get out of \$20,000. I won't spoil your day by telling you the answer to that question, but if you're into that sort of thing a price is given for every set produced in the period covered, for Good, VG and Ex condition, with definitions of those terms for sets in cardboard, wooden, and metal boxes. And if it your set doesn't rate a Good then it's only worth the value of the salvageable parts, but there's no prices given for those. For most of us though the interest is in the history, the parts and the sets. The history is covered in some detail, year by year, in Chapter 1, with a mention of other Gilbert toys, and did you know that ACG also made small domestic appliances to keep the factory busy in the early part of the year when toys were not in demand. Included in this Chapter is a brief mention of the Sets produced for various stores under names such as STEEL-TECH and LITTLE JIM, and the special Strips and Plates they contained. There is also a mention of Gilbert acquiring the American MECCANO Company and the Gilbert MECCANO sets thereafter.

Next there are two chapters on the sets, first from 1913 up to 1923, and then after the parts had been redesigned, up to 1932. By that year the depression was causing the Company to lose money and the product range needed drastic revision. Again the sets are described year by year with for many (representative) years, colour photos of some of them, reprints of Illustrated Parts Lists, and tables of Set Contents, though there are still some of these still to be discovered. All the peripheral sets, including the Airplane, Zeppelin, Hudson loco, are covered, as well as the Gilbert MECCANO Sets. The final chapter is a detailed account of 8 Classic Models and they have been chosen as those for which the greatest number of special parts were created. That may sound odd to MECCANO oriented ears but



it does allow detailed notes on some of the rarer parts, for example the early special chassis parts of the White truck, and the Gilbert MECCANO ship parts.

The book has 160 near A4 size pages and is packed with excellent photos, in colour unless the original was B&W; the colour is accurate as far as I can tell and the text is well written, with no padding. The love that has gone into the book does show a little in the perhaps slightly eulogistic account of ACG and his doings, but that can easily be forgiven. The way the book has been arranged, into history, sets and special models, is good if you want an overview of the whole scene but it can mean digging into each part if you want everything on a particular subject, and there is no index to help. But never mind, for a book which to be attractive to enough Americans has to be primarily concerned with more or less expensive sets, the authors have done a very good job in including detail on parts, manuals, motors, colour schemes, etc. I would have loved to see more but I'm grateful for what is provided, and I've started saving up for Volume 2.

You will shortly be able to buy this book from MW models, or it can be ordered from Kalmbach Publishing Co., Dept. 90136, P.O.Box 986, Waukesha, WI 53187-0986. U.S.A.

**DATAFILES 1 • MINIBRIX by Malcolm Hanson.** OSN doesn't usually stray into brickfields but I'm reviewing this book because it's the first in a new series, and because it's really comprehensive, and I know many readers will be interested. DATAFILES have come about to meet the need for authoritative works on specialised MECCANO matters and allied subjects, which can never be met by major books from New Cavendish, etc. Other volumes are in preparation and Geoff Wright of M.W.Models will be pleased to consider ideas for future projects. This one has 32 A4 pages; it is well photocopied and includes 8 pages of B&W photos on art paper. It's crammed with just about everything on Minibrix - origins, history, parts, sets and contents over the years, parts that were never marketed, everything. And if you want to know why the bricks were frozen, or what Maxibrix were, the answers are there. £8.30 from M.W.Models, 4 Greys Road, Henley-on-Thames. RG9 1RY.

**MÄRKLIN SETS FOR 1993.** Dennis Higginson sent a copy of details of new MÄRKLIN sets for 1993. There is a new, small starter set m10 (#1003, 208 parts, 10 models), and a linking set E10 (#1015) to convert the m10 into the existing m30. From 6/129 the m30 has 329 parts. #1010 is another new starter set called M-Start, see below: it seems to be independent of the other sets and with 537 parts it is rather larger than the m50 basic set. There is no indication of the number of parts in the #1062 'Mechanics' (below), or which motor is included, the last 16 volt I know is the 1073. The slogan on all the boxes is Technik mit Köpfchen: what does that mean, Engineering for small Heads (=Kids)?

There is also a new nostalgia set, a reproduction of the Tanker Lorry sold in the 1930s, and I think into the late 40s. It is illustrated in MCS and is said to have a C/W motor, steering, working headlights, and doors that open. It is 40cm long and is finished in the original livery, that of the Standard Oil Co., a red and blue body on a black chassis.

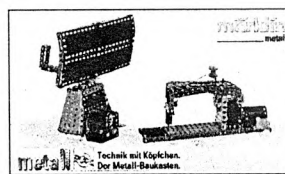
Since the Eiffel Tower 'supermodel' mentioned in 2/16 there has been another of the Dornier Do.X flying boat (I haven't any details or an illustration of it), and in the Winter 1993 issue of The Southern Californian Newsletter there are some details of the newest set, #1082. It is to make a 47" long Mississippi Steamboat and contains 4,700 parts. It's a nice looking model and has two working gangplanks, movable rudders, and 18 doors that open; the stern paddlewheel can be driven by a #1018 motor. Price of the Set which doesn't include the motor, \$1365.



1003 Basic Set m 10.

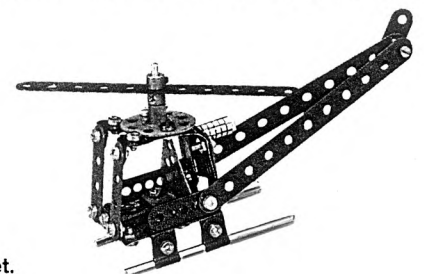


1015 Extension Set E 10.

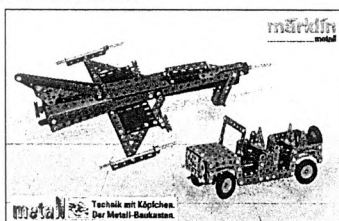


#### 1062 "Mechanics" Extension Set.

This extension set contains a powerful motor as well as a selection of gear wheels, worm gears, and other mechanical parts for building challenging mechanical models. The contents of this set make it ideal for use with the M-Start (1010), m 50 (1005) or m 60 (1006) basic sets. The motor can be operated with 16 volts from any Märklin transformer (example: 6627/6631).



**1037 "Helicopter" Gift Set.** An old favorite brought back, the "Helicopter". Model with rotating main and tail rotors. 113 parts. Model length 18.5 cm (7-1/4").



**1010 Basic Set M-Start.** Large basic set with complete instructions for building different models such as airplanes, cars, trucks, etc. 537 pieces.



**MERKUR AND THE NEW 300 SERIES SETS.** MCS describes the oldest known series of sets, Nos 1 to 7, and also the 201 and 202 Sets which include Tyres and Rubber Tracks as well as various parts not in the 1-7 Outfits. Models can be made solely from the #201 and 202 but they can also be used with the basic sets to allow larger, more realistic models. Nearly two years ago Peter Kessler saw #7 Sets on sale in Barcelona, but as well, two new Sets, #320 and #330. He bought a 330 and kindly lent me the manual to examine. Then Tony Parmee showed me a #300, #310, and #330 that he had bought in Czechoslovakia in early 1992, and also two 'mini MERKUR' Sets bought at the same time. Finally José Bernal Moreno recently sent the Parts List and Set Contents for the #340 Outfit, believed to be the largest in the current range. He also enclosed details of the M1 Motor Set which is listed in MCS along with the 200 series. To start with some notes on the 1-7 and 201/202 Manuals, parts, etc.

**Sets #1-7.** In a 1-7 manual [Ref A] which seems to be the same as that used for the MCS entry, a motor is shown (Fig 1A) which is not illustrated in MCS. Alongside (Fig 1B), as a matter of interest, is one that can be made from the MERKUR ELEKTRO Set. The date of this manual is not known but it does have an old-fashioned look to it, the page size is much smaller than later ones, about the size of 1920s MECCANO manuals, and all the illustrations are elaborately shaded line drawings, in brown on cream paper with blue text. And it contains 180 models, many more than in later manuals. One of the languages used is Russian so perhaps this makes it more likely that it is post rather than prewar. One of the models (Fig 2) shows the 85 tooth Gear Wheel with a wide face, probably the same width as the 119 tooth one in MCS, and in the other view the cutouts in the face are circular rather than triangular, an older pattern perhaps or a mistake maybe. The manual is quite honest in places with for Model No 13 a note: 'In this model Part No 6 was drawn in error instead of Part No 5.' One other extract from the Introduction gives a little information about the parts at that time - 'The MERKUR metal constructional set contains various coloured, varnished parts, brass belt pulleys and accurate toothed wheels of all descriptions cut out of brass, by means of which ....'. The Pulleys in a #5 Set which has this style of manual, are of steel, as are the Gears in a #7 (no manual) which from the colours of the parts predates the #5. One page in the back of this Manual, it is reproduced in MCS on p5, shows some 'supermodels', and one of them consists of two houses (with a waterwheel beside one of them) made from large plates which are not in the Manual's Parts List. These may have been from the MERKUR METROPOL Set, for which as far as I know, no information other than the name is available. If any reader knows anything about it please write in.

**SUMMARY OF MANUAL [Ref A].** #Name: MERKUR. #Details of maker: None. #Dates & Ref Nos: Sg 4 on inside rear cover. #Page size: 234x150mm deep. #No of pages: 129 numbered plus 7 at end, plus covers. #Language: English, Russian, Spanish, German. #Printing: The cover is white, yellow, blue and green, with MERKUR in red on black. The text is blue, the models are line drawings in brown; only the motor is halftone. #Page Nos of Parts List & highest PN: 5-11.98A. #Page Nos of Set Contents & highest PN: 130-131. 99. [English version, other languages follow] #Sets covered: 1-7. #No of models for each set: 1: 37 + Alphabet, Numerals. 2: 33. 3: 32. 4: 33. 5: 16. 6: 17. 7: 12. #Name, Model No, Page No of first & last model of each set: 1: Signal discs, 1, 18; Gun, 37, 24. 2: Fortune wheel, 51, 25; Machine gun, 83, 37. 3: Gun, 110, 38; Planing Machine, 141, 55. 4: Machine Saw, 151, 56; Field Gun, 183, 74. 5: Slewing Crane, 201, 75; Shaking Screen, 216, 90. 6: Potato Lifter, 251, 90; Railway Barriers, 267, 108. 7: Windmill, 302 [error, should be 301], 109; Reversing Gear for Forward and Reverse Motion, 312, 128. #Other notes: There are illustrations of 5 'Supermodels' (in blue) on p129.

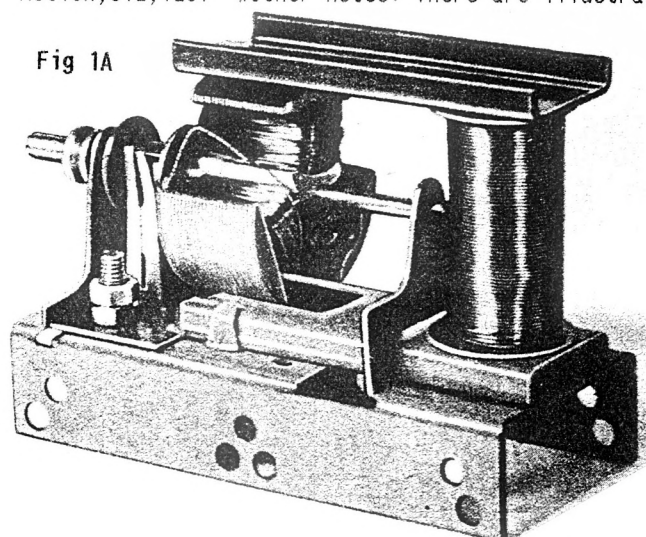
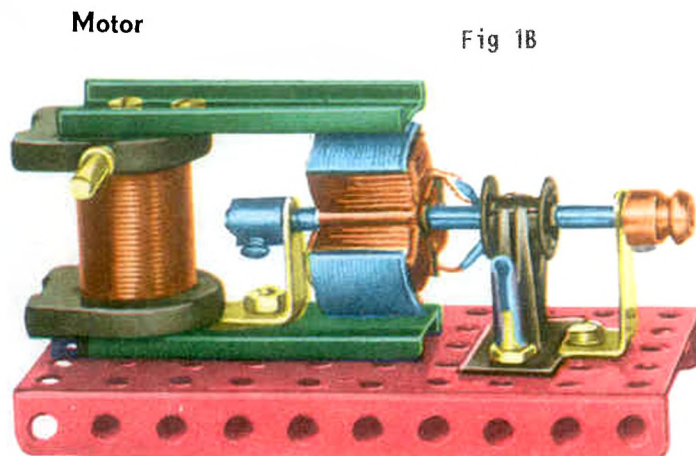


Fig 1A



Motor

Fig 1B



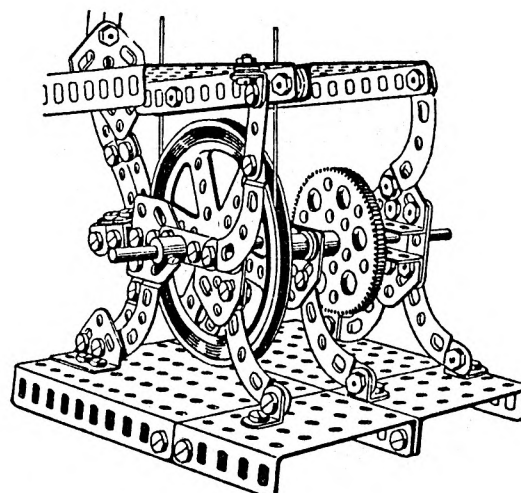
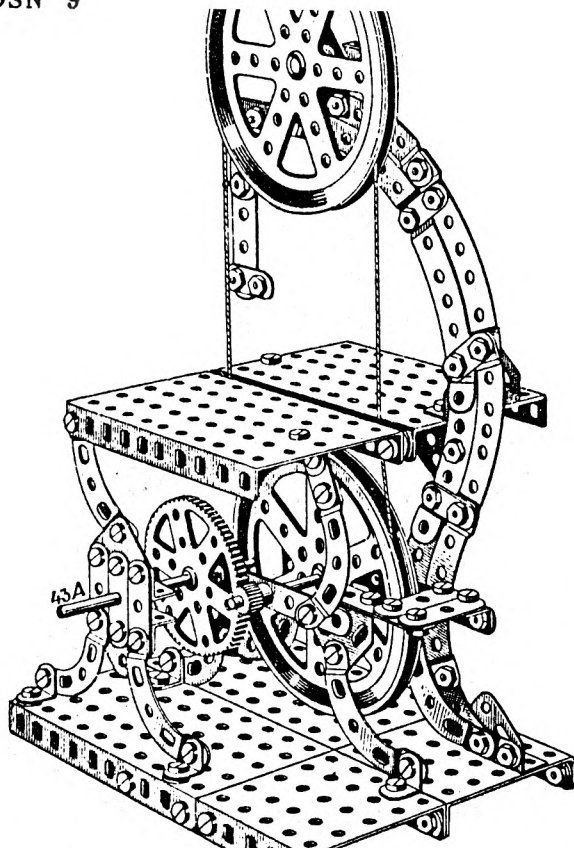


Fig 2

309.

Band Saw  
Ленточная пила  
Sierra de cinta  
Bandsäge

The next manual available [Ref B] is again for Sets 1-7 but is the large size and the cover is identical to that in MCS for Sets 201/202. The parts shown in it are almost unchanged from Manual A above but a variation of the Collar (#50) is shown alongside the type in MCS, the Pinion too has an extended boss, and the large Gears have narrower teeth and no cutouts. Also the Rubber push fit Collar (#95C) is illustrated. These parts are shown in Fig 3. There is one deletion - #54, Nut and Bolt, 22mm. This Manual came with a #7 Set and the Collars and Pinions in it had the normal type boss without any extension. The purpose of the extended boss was presumably to increase the depth of the tapped hole for the Grubscrew, and this would certainly be useful in the case of the Pinion which has a thin wall to the boss and is tapped M4. Or perhaps these parts were made of plastic when the extension would have been essential to avoid stripped threads. The Set Contents are identical to the earlier Manual except that #99, Box for Bolts, is not included, and #98A, Washer, is listed for Set 4 and above.

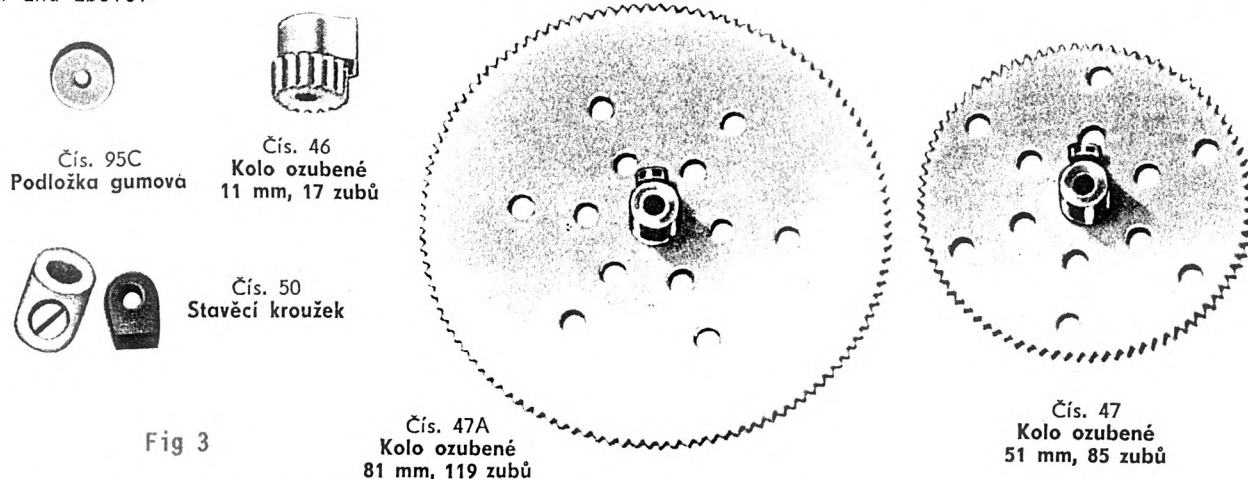


Fig 3

All the models in this manual are shown in colour. There are 65 for Sets 1-7 and the majority of them were in the earlier manual, with some redesign in a few cases; the new models are mostly for the larger sets. In addition there are 9 using Set 201 or 202 combined with one of the basic sets. At the end of the manual a few pages are given to show models that can be made using #201 or 202 alone, from the MERKUR ELECTRO Set, and using the M1 Motor Set. This motor is different to that in the earlier manual and Fig 4 shows 2 views of it, with its associated gearing. More details of this Set are given at the end of this article.

A more recent #6 Set came with a 1-7 manual that is identical to the above except for the cover which is in the same general style as that of the 201/202 Set Manual to be described later. This Set had a label stuck on the bottom of the box which included the words, 'Dispatch date 16 pros. 1987'.

[Cont. &gt;]



Motorek se základní deskou a převodovým soukolím.

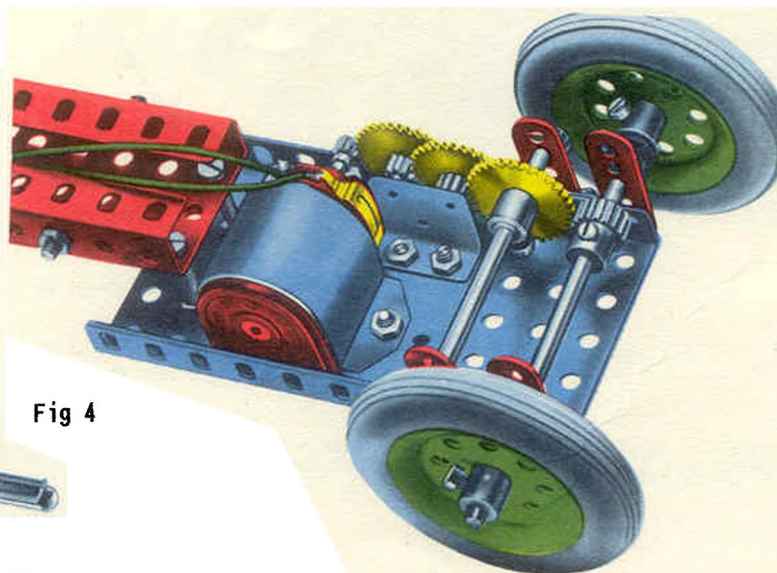
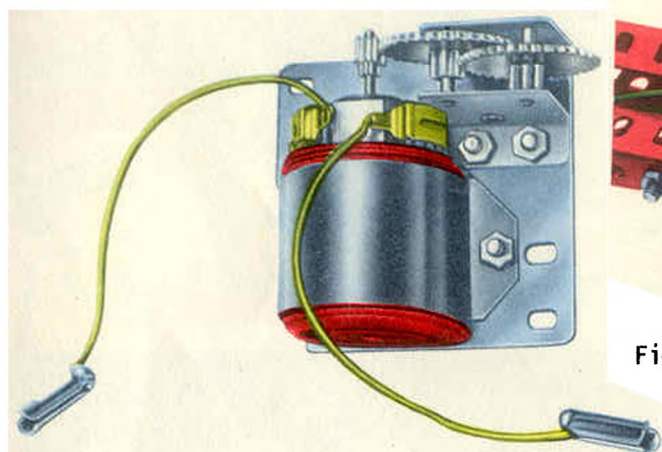
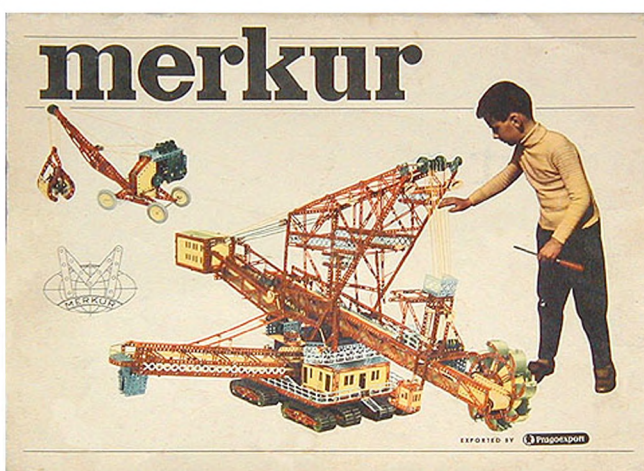


Fig 4

SUMMARY OF MANUAL [Ref B; for Ref C, see 'Other notes' below]. #Name: MERKUR. #Details of maker: Exported by Pragoexport. #Dates &/or Ref Nos: None. #Page size: 240x320mm deep. #No of pages: 48 (1 & 48 unnumbered) plus covers. #Language: Czech. #Printing: All models shown in halftone colour. Cover off-white with MERKUR in black; boy is black/yellow, and models are brown/yellow/light blue. #Page Nos of Parts List & highest PN: 1-3,98A. #Page Nos of Set Contents & highest PN: 48,98A. #Sets covered: 1-7, but also some models using these sets with #201 or 202. #No of models for each set: 1:16. 2:16. 3:6. 4:8. 5:5. 6:6. 7:8. Plus 9 for #1-7 with #201/202. #Name, Model No, Page No of first & last model of each set: 1: LOPATA,1,6; KARA,16,8. 2: VOZIK,17,9; VETRNIK,32,13. 3: BRUS,33,14; PASMOVKA,38,15. 4: VYTAH S JERABEM,39,16; JERAB,46,19. 5: NOSIC NARADI,47,19; VRETENOVY LIS DVOUKOTOTOUCOVY,51,22. 6: MOTOROVY VUZ ELEKTRICKE DRAHY,52,23; VALNIK,57,27. 7: TRAKTOR,58,27; SOUSTRUH,65,34. Combined Sets: POZARNICKE AUTO SE ZEBRIKEM,66,35 (4+201); TEZKY TERENNI AUTOMOBIL,74,43 (7+202). #Other notes: • Models that can be made using Motor Set, M1, are shown on pp43-44; from MERKUR ELECTRO on p45; and Sets 201/202 on pp46-47. • A later version of this Manual [Ref C] is identical except that the size is 235x315mm and the cover, below, is white with a grey band, MERKUR is in black, the models and parts are multi-coloured.



Sets #201 and 202. The next manual [Ref D] is for Sets 201 and 202. It has a different cover to that in MCS but the illustrated Parts List and the Set Contents are identical. 11 models are shown for #201 and 10 for 202. Then there are 7 which need one of 'standard' sets 4-7 plus either 201 or 202; one of these is the model shown in MCS. All the models shown at the back of Ref B above for the 201 or 202 Sets, and for combined sets are included. No mention of Sets 4-7 is made except to specify when one of them is needed for a particular model. All the models look quite modern in character and are attractive if one accepts the multitude of colours in which the different parts are finished. They are not very adventurous mechanically, none are motorised and steering, where shown, (some details are left to the imagination), is of the simple, centre pivot type, although on the back cover there are black and white views of Ackermann type gear (Fig 5). The parts are shown quite clearly in MCS but note that the pulley part of #83 is in two halves, both with boss, which are bolted together around the tyre. The Tyres of #82 and 83 are made of hard black plastic, although they look grey in the manual, and the #82 type won't come off the Pulley using fingers, but no doubt it would if soaked in hot water. Also two of the Strips, #2A and 3A, are included in the Contents but not in the illustrations, and these are made from very thin metal.



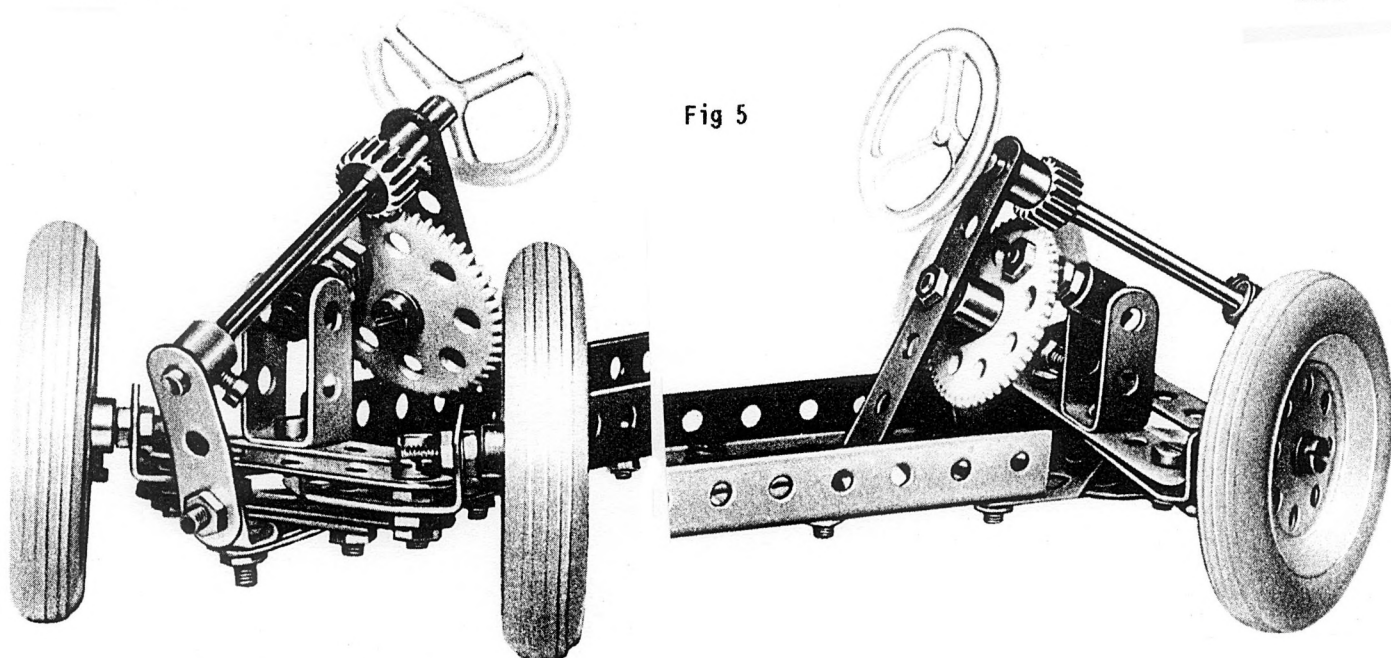
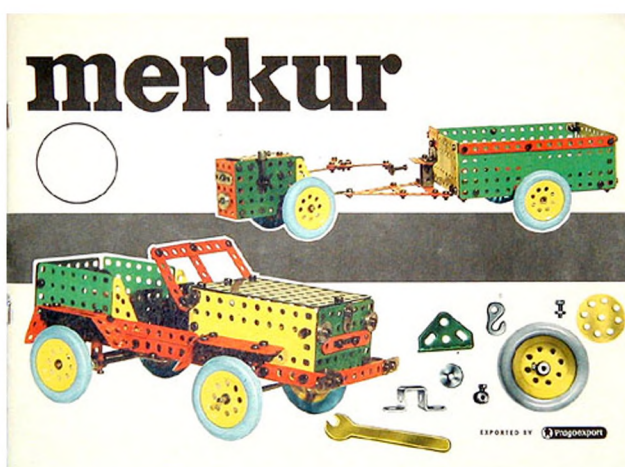


Fig 5

SUMMARY OF MANUAL [Ref D]. #Name: MERKUR. #Details of maker: KOVOPODNIK, POLICE NAD METUJI. Exported by Pragoexport. #Dates &/or Ref Nos: N-05\*61001 - Sg 4 inside front cover. #Page size: 314x235mm deep. #No of pages: 32 numbered plus covers. #Language: Czech. #Printing: Halftone, colour except for the back cover. Front cover is white with grey band and MERKUR in black. Multi-colour models and parts. #Page Nos of Parts List & highest PN: 1-3.98A. #Page Nos of Set Contents & highest PN: Inside back cover.98A. #Sets covered: 201 & 202 but some models need one of Sets 4-7 as well. #No of models for each set: 201:11. 202:10. 201/202+4-7: 7. #Name, Model No, Page No of first & last model of each set: 201: VOJENSKY AUTOMOBIL "GAZ",1,6; LETALDO,11,13. 202: TRAKTOR,12,14; VYSOKOZDVIZNY VOZIK,21,23. Combined Sets: NAKLADAC S DRAPAKEM,22,24 (201+4); TEZKY TERENNI AUTOMOBIL,31,32 (202+7). #Other notes: None.



300 Series Sets. These replace the 1-7 and 201/202 outfits, and their contents are drawn from the whole range of MERKUR parts, including a few new ones. The only part not included in the #340 is the 5-hole Braced Girder. The new sets up to the 330 are of comparable size in terms of number of parts, to the 1-7 range; the 300 equating roughly to the old #1, and the 330 is about the same as the old #7, except that their are rather fewer Nuts and Bolts. This is no doubt because there are many more Plates, and of course many less Strips; for example, the generous 20 each of Curved Strips and Angle Girders are reduced to 4 and 6 respectively. The 340 is larger with, excluding N & B, about 450 parts, against 625 in a #7 combined with a #202. To give an idea the 340 has rather more parts in it than the 1991 MECCANO #6, although the latter has a motor which the MERKUR Set lacks.

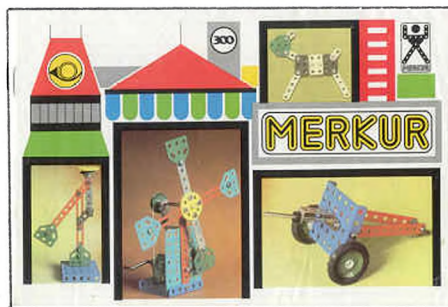
There are 25 new parts and while some are the sort that might be expected such as different length Axles, others are more interesting, for example a Universal, #1140. And MERKUR has finally found the need for a Flanged Sector Plate, it's 8 holes long, the original MECCANO length; and notice those Flanged Brackets, 3037 and 4037, the equivalent to MECCANO #139 and 139a, parts which were never included in standard MECCANO sets. The super Trunnions, 2039 and 3038, look as if they ought to have specific uses but are only used as general purpose parts in a couple of models in the #330 manual. Perhaps their intended role is apparent in #340 models, which I haven't seen. In general the new parts, aside from the new Plates, are not used extensively in the 330 models, and I couldn't spot the Semi-circular Plates (1016/2016) at all. The Magnet, #1268, in case you wondered, is to help pull the parts out of the moulded plastic packaging. A selection of the new parts is shown in Fig 6. As mentioned in OSN 6 MERKUR parts have been given given new Part Nos: generally adding 1000 to the old number gives the new one, but variants of material or design which used to be indicated by a suffix letter now have an extra 2000, 3000, etc added to the old basic number.

Turning to the manuals for these sets, I have details of the #300 and #330. The 300 one [Ref E] is very bright with colour photographs of 13 simple models on art paper. Most of them are from earlier manuals, modified in some cases, but several are new. The recently introduced Tyre for the 23mm Pulley



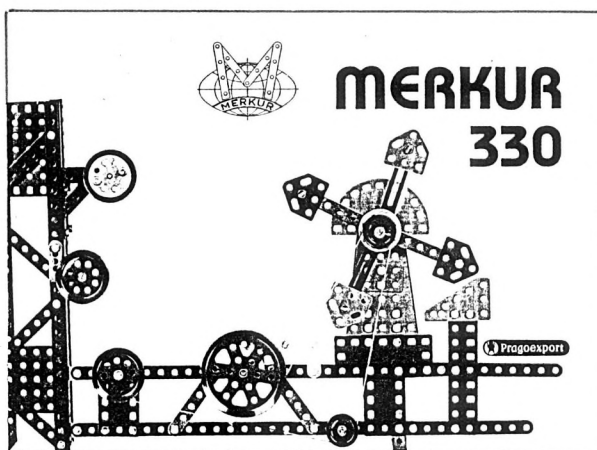
improves the appearance of Carts and the like. A new logo (in Fig 6) is on the front and back covers.

**SUMMARY OF MANUAL [Ref E].** #Name: MERKUR 300. #Details of maker: Kovopodnik OPMH Broumov, zavod 02, Police nad Metuji. Exported by Pragoexport. #Dates &/or Ref Nos: None. #Page size: 236x159mm deep. #No of pages: 12 inc covers, all unnumbered. #Language: Czech, German, English, Spanish. #Printing: All colour photos inc cover. #Page Nos of Parts List & highest PN: 10-11.3031. #Page Nos of Set Contents & highest PN: 11,3031. #Sets covered: 300. #No of models for each set: 13. #Name, Model No, Page No of first & last model of each set: Spade,4; Wind wheel,9. (No Model Nos.) #Other notes: None.



The 330 Manual [Ref F] is also all colour; the models in it vary in size, starting with small, simple ones, and going on to a dozen or so of medium size. Two of the smaller ones are in the 300 Manual, and others are from the 1-7 (Ref B above); the medium size models are all new, and most of them look realistic and make good use of the parts in the set. None are motorised and mechanisms are simple (there are no gears), but steering is included in one or two of them. One model is shown in Fig 7. For the more complex models 'step by step' instructions are given, with a list of the parts needed for each step. Even then a little imagination is sometimes needed.

**SUMMARY OF MANUAL [Ref F].** #Name: MERKUR 330. #Details of maker: Kovopodnik, OPMH Broumov, stredisko 02, Police nad Metuji. Exported by Pragoexport. #Dates &/or Ref Nos: None. #Page size: 319x235mm deep. #No of pages: 40 unnumbered inc covers. #Language: Czech, German, English, Spanish, Hungarian. #Printing: Halftone colour. Cover is white with MERKUR 330 in black, and multi-colour parts. #Page Nos of Parts List & highest PN: 38-39, 4037 (illustrations on pp36-37). #Page Nos of Set Contents & highest PN: 38-39, 4037. #Sets covered: 330. #No of models for each set: 26. #Name, Model No, Page No of first & last model of each set: WIND WHEEL,6. SCREW PRESS,34. (No Model Nos.) #Other notes: None.



Details are given on p235 of Extra MCS Sheets for the 300 Series Outfits. The Contents of Set 320 is lacking and if you have it please let me know.

**'mini MERKUR' Sets.** These are sets with just the parts needed to make one small model packed in a transparent container attached to a card which carries a picture of the model. There are at least 4 in the series and two of them have been seen - one for an Aeroplane (Trempek) and the other for a Windmill (Mlyn). The former has a label on the back with 19/9/91 on it. The parts in these little sets are not all in normal MERKUR colours, some have been changed to give an improved appearance to the models. For example all the Plates for the wing and tail of the Aeroplane are yellow, and the Pulleys, #1040, are red to match the fuselage instead of their normal green.

**Colour of MERKUR parts.** There are so many colours and there have been so many variations, that only broad generalisations are thought worthwhile. The oldest parts seen (judging from the box lid with them) are mid-brown Strips and Angle Girders, green Pulleys and Trunnions, blue Flanged Plates and Braced Girders, and yellow Gear Wheels. Bosses, small Brackets and 3-hole Strips, Pinions, Couplings, and Bush Wheels have a black metallic finish. The next Set (#7 with Manual B) is similar except that the brown parts are bright orange, and all the black metallic parts are nickel plated, except Bush Wheels (yellow), and Collars and the bosses of Pulleys (aluminium). The colours used in the 1987 #6 (Manual C), the 202 (Manual D), and the 300 series, and the mini Sets (but see above), are similar with the following exceptions. The orange of the Strips etc is darker, all Strips through 6-hole in length, and all bosses are nickel; and of the new parts all plastic Plates, Trunnions and Flat Girders are green, the small 5x3 hole Flanged Plate and metal Flat Girders are orange, most of the metal Flat Plates are dark green with a few dark blue, and the 3x5 hole Triangular Plate, Wheel Disc and Pulley with Tyre are mustard. Plastic Gear Wheels have been seen yellow or black, and although the larger Tyres are black plastic the small one, #1089, is of black rubber. Nuts and Bolts are plated (Bright zinc?), whereas in the earlier sets they were untreated steel.

The blue parts vary in shade even within the same set but most Braced Girders are light blue, and Flanged Plates are normally a medium shade. The yellow used also varies with the early parts in a



strong tint and the later ones much lighter.

Parts shown in the later manuals sometimes differ in colour or shade from the actual parts. For example the colours of the illustrated Parts in the 330 manual described above are much darker than the actual parts, no doubt the colour printing went astray. But sometimes different colours do turn up: a red plastic Flat Trunnion was found in a 300 Set, and so the red plastic Plate #2073 shown in the 300 Manual may exist even though the one in the Set was the standard green.

**MOTOR SET M1.** More details of this Outfit are now available, including an Illustrated Parts List that also shows the Contents. Most of the special parts used can be seen in Fig 4. An Extra MCS Sheet gives full details and further illustrations from the Instruction Leaflet, showing how the parts are used.

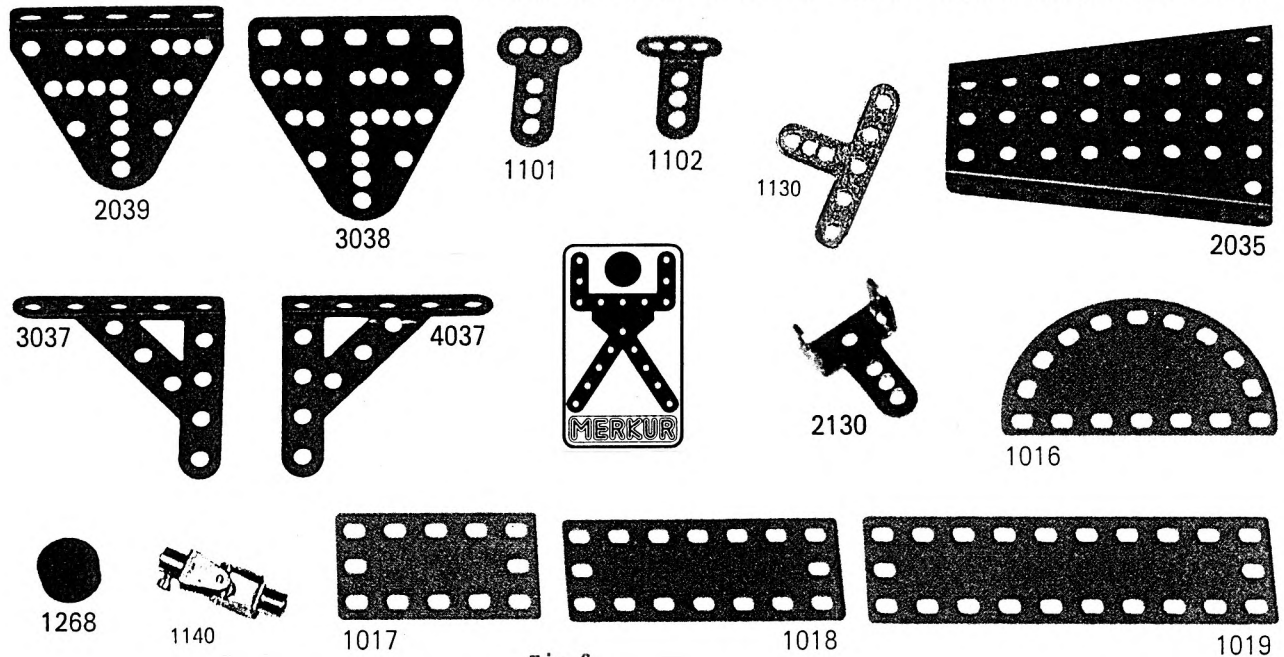


Fig 6

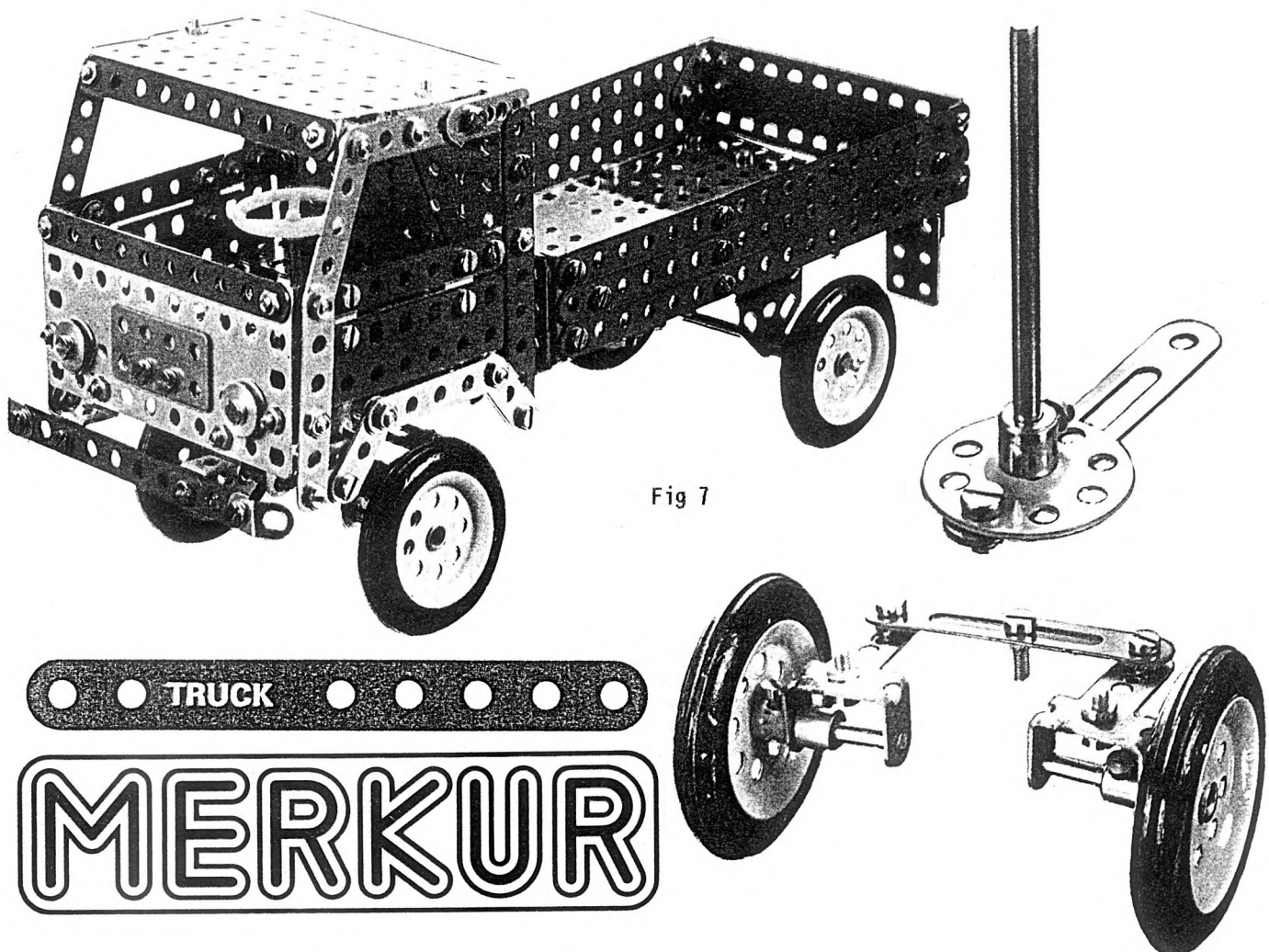


Fig 7



**MORE ON JUNEERO.** The piece in OSN 8 brought more information from Malcolm Hanson and Derek Moore, to whom best thanks. JUNEERO definitely started in 1935, MH send a copy of the announcement in 'Games and Toys' for September of that year. There was just one set price 17/6, and it contained the Tool and '30 flat 10" strips and 12 rods of steel, 4 wheels or pulleys, 50 nuts, 50 bolts, and two threading dies.' It was said to be Manufactured by "Waddy Productions" Astor House, Aldwych, London, W.C.2, but this company distributed several other toys at the time and may have been the promoters rather than the makers. In Games and Toys for September 1937 there was a picture of the box lid (right), the price had been reduced to 12/6, and the set was being marketed by Juneero Ltd., 25 White Street, London E.C.2.

Although JUNEERO existed in the late 1930s it may not have been very well known until around 1940. I mentioned in OSN 8 seeing a large shop window display of it then, and Derek wrote that although he was very interested in all things mechanical at that time, he was not aware of JUNEERO until, he recalls, "my second best friend arrived with news of it and we departed on our faithful pushbikes to study the display he had spotted in one corner of the window of a cycle shop in Hatchend." He added, "I did later obtain a No.1 Set but I don't recall achieving a lot with it. I remember being quite attracted to a Plan Sheet electric motor, but daunted as well I expect, but I did repair our collander, new ones then being unobtainable, with the aid of some of the nuts and bolts. I never had much luck with the screwcutting die, which seemed to part cut, part roll the threads."



Instructions for building the motor were in the March 1940 JUNEERO Newsletter (from Malcolm) and do sound more than a little complicated. As well there is a photo of the new (Stirling Corner) factory and reference to the modified Tool that was in the 2/40 MM. It isn't certain whether sets were produced throughout the war but Malcolm has a No.2 which cost 35/- new, and this puts it somewhere between the 30/- of July 1940 and the late 1945 price of 42/-. The next items give an idea of the date of introduction of the Wheel Kit. A Price List which was in a set has two dates on it, Christmas 1946 and November 1947. It shows Pulleys, Tyres but no Gears. Also in the set another leaflet saying that Gears are on the way and announcing that the new Hand Punch Jig was available, price 6/-.

Derek went through ME ads between 1946 and 1956, the first from JUNEERO was in 1947 (though some '46 issues were missing), showing sets at 25/- and 42/-. They became frequent in the September to Xmas period and may have been triggered by a parallel series of PRESTACON ads starting in July. Ads continued on and off through 1948 and the XAKTO Slide Gauge and Protractor was announced in 6/48; sets containing this item were advertised in 12/48. There were a few ads in 1949, the two shown in OSN 8, and in November one for an engraving tool that could be made from Design Sheet No.125. It looks similar to the one in the 7/40 MM, but isn't exactly the same, and it's a great deal cheaper; in 1940 a set of parts cost 20/-, in 1949 the solenoid coil was 6/- and the standard JUNEERO material was said to cost less than 1/6. And that was the last ad in ME except that in 1/50 a competition was announced with prizes to the value of £150 including Wheel Kits, Gear Kits and Minilec motors. Entry forms had to be sent for or 'see the JUNEERO Annual available from Dealers, 1/-'.

Among MH's collection are several Accessory Kits: this set is mentioned on p3/4b of MCS/FB and Malcolm lists the contents as - Wheels, Pulleys and Tyres as in the Wheel Kit, plus the following packets of material (instead of gears), 2x10" Strips, 1x10" Rods, 1xN&B, 1xNuts only, 1xPlain Metal Sheets, 1xCorrugated Metal Sheets, and 1xGlass Substitute. These Kits may have been available in 1940 because one of them contained the 1940 Newsletter.

Finally, thanks to the good offices of John Bridger, I now own a JUNEERO Engineers' Set as illustrated in 8/179. Its metal box is painted olive green and measures 16"x8"x9" deep; as claimed it is of heavy gauge, and weighs some 12lb empty. Of the tools only the Snips are missing and there is quite a lot of material including 9 packets of Metal Sheets. Some though, particularly Strips and Angle, are probably missing but as is the whole lot weighs over 24lb. The literature with it includes several references to wartime conditions but includes an application form for the JUNEERO Engineer's Club and an invitation to enter a perpetual competition, which involved sending actual models to Stirling Corner. These and several other leaflets are identical to those in Malcolm's wartime No.2 Set.

**AMENDMENTS TO MCS** (as necessary, depending on version) **SETS:** Change to, 'Initially one set, by 1939 Nos.1 & 2. By 1941 also Workshop & Engineers Sets, and probably the Accessory Kit. Range in late 1940s: 0, 1A, 2A, Gear Kit, Wheel Kit. **PERIOD:** 1935 to probably early 1950s (known 1950). **MANUFACTURER:** Add early addresses, etc given above.



**AND A LITTLE ABOUT PRESTACON.** While he was looking for JUNEERO ads (opposite page) Derek also noted those for PRESTACON. This DIY system came later than JUNEERO and had a similar, though more elaborate, Press: there is an illustration of it in MCS. The ads show a Patent No.578398 and this was granted to an M.M.O.Irving in Sept 1944. The first ME ad was in July 1947 and 'Tin Toys' shows a 1947 Games and Toys ad, so that was probably when it was launched. In ME the manufacturer was given as Sydney S.Bird & Sons Ltd., Cambridge Arterial Road, Enfield, Middlesex; and the sole concessionaire, L.Rees & Co. Ltd., 31-35 Wilson St., London E.C.2. In 8/47 a model Lorry was shown and there was mention of outfits and additional kits for making special models. In 11/47 the long Location Extension appeared for the first time, fitted to the Press. Also in that issue Sets Nos 1 and 10 were mentioned, price 55/- and 84/-, that's to say about twice the price of the JUNEERO outfits of the day. The #1 was just the Press and Tools, materials and drawings were included in the #10. In the same ad the name of the maker wasn't given but PRESTACON was said to be A Cyldon Product.

There was nothing in 1948 and just two ads in 1949. In July a Crane was included and in Oct a Jeep; its front wheels and those of the Lorry earlier are shown angled so they appear to have had steering gear fitted. The prices of the outfits remained the same and Speciality Kits were mentioned again in the last (Oct) ad. Then nothing more until Aug 1950 when Gamages offered 'Makers Clearance Stock of the famous PRESTACON'. I haven't details but a similar one in the 9/50 MM is shown below. To give an idea in 1949 a #5 MECCANO cost 34/-, a #7 65/-, and a #8 115/-. In Tin Toys there is also a list of the Kits and over and above those below are #14 2-Seater Sports Car, and #34 Double Decker Bus, 24" long. Also Nos.66,88,55 below are shown as 55,66,88 in Tin Toys. #34 is illustrated in MCS.

What can the Press/Tools do? One of the ME ads shows various shapes that can be cut (bottom right) and I suppose the slots and large circle are made by 'nibbling' with the small square and circular punches shown in MCS. The Die Plate in MCS doesn't show any larger openings, and why there are 3 round holes in it isn't clear to me. The best account I could find of the use of the Press was in an ad reproduced in Tin Toys, as follows, "The PRESTACON Press pierces round and square holes, cuts straight or curved slots and rectangular and circular holes and bends metal plates up to 3" wide to angles up to 45°. All these operations can be carried out at any position on a metal plate and each operation can be reproduced on any number of plates with complete accuracy. This is due to an ingenious arrangement of indexed holes into which the 'location' or 'guide' bars fit at right angles to each other. These guide bars form set edges against which the metal for working is placed. No measurements have to be made by the operator and it takes only a few seconds to change the position of the metal or the operation of the press. The guide bars also provide for a 'minus' working which allows for metal thickness when bending or when piercing holes to match inside an angle." How good were the Press/Tools? If anyone has used one it would be interesting to know. Derek has a beat up Press without any Tools and with a made up punch plate and punches he could slot 'thick tinplate beautifully using an 1/8" square punch'. But that doesn't sound too demanding, the JUNEERO Tool works well I'm told with the soft steel supplied, but baulks at MECCANO Strips.

PRESTACON mechanical parts turn up from time to time but I've never seen any of the Strips, Angles or Lattice Girders. All bosses (and the Collar and Coupling) are .375" dia and all are double tapped 1/8"BSW, except the Road Wheel which has a single angled tapping; Axles are .125" or .128" dia. Gears are 38 DP; the Pinions and 38t Gear are one piece cast zinc alloy; most other parts are brass, the Worm, Flanged Wheel and 5/8" Pulleys being turned from the solid. The Cranks are dull plated steel with brass bosses, likewise the Road Wheel. The latter is unmistakable with the angled boss tapping, and the Tyre has PRESTACON moulded into it and is very difficult to get off the hub. The Road Wheel is a nice part with a deeply recessed inner face and is often found bored out to MECCANO size, gears too have often suffered thus. Parts not seen are N&B, the 2" Pulley, the Hub of the small Road Wheel, the Steering Wheel, the Steering Crank, and the Hook: the last three are believed to be of zinc.

**AMENDMENTS TO MCS** HOLE DIAMETER: Axle dia approx 1/8". SETS: Nos.1 (Press and Tools only) and 10 (including materials). Also Kits of material for specific models. PERIOD: 1948 to 1950. MANUFACTURER: Sydney S. Bird & Son Ltd., Cambridge Arterial Road, Enfield, Middlesex. Later stated to be 'A Cyldon Product'. Sole concessionaire, L.Rees & Co. Ltd., 31-35 Wilson St., London E.C.2.

### COMPLETE OUTFITS

No. 1 Outfit comprises:

Multi-purpose Metal Press, Guillotine Tool, Guide Bars, Piercing Punches, Dies, Forming Die, Spanner, Screwdriver, etc.

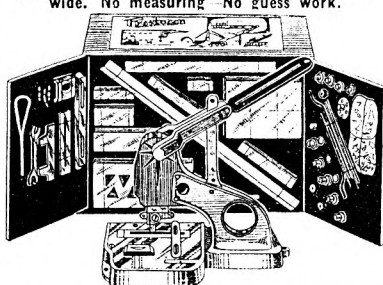
GAMAGES PRICE **21/-**  
Post & Packing 1/6

No. 10 (as illustrated).

This comprehensive Outfit comprises: Complete Multi-Purpose Metal Press Tool and all Jigs, Dies and Tools as supplied in Outfit No. 1, plus an ample supply of Metal in Strip and Plate form, axles, gears and pulley wheels, nuts and bolts.

GAMAGES PRICE **84/-**  
Post & Packing 1/6

'Prestacon,' the metal working tool with a thousand uses—invaluable to Model Engineers. With absolute accuracy, by precision jig methods, it will pierce round and square holes, cut circular holes, slots and arcs, bends to any angle from 45 to 135 degrees, and shears metal up to 2 inches wide. No measuring—No guess work.



### SPECIALITY KITS

Containing all materials for making realistic models, suitable for power drive.

No. 44. Four Wheel Lorry. Length 17 in. Usually 27/6 **10/6**

No. 66. Six Wheel Lorry. Length 26 in. Usually 37/6 **15/-**

No. 88. Eight Wheel Lorry. Length 29 in. Usually 47/6 **18/-**

No. 55. Jeep. Length 15 1/2 in. Usually 31/6 **12/-**

No. 24. Coach. Length 21 1/2 in. Usually 35/- **15/-**

Post & 1/6g. on each of above 1/-

SPARES 50% OFF LIST PRICES

**PIERCES**  
ROUND HOLES  
SQUARE HOLES

**CUTS**  
SLOTS  
CIRCULAR HOLES  
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**GAMAGES, HOLBORN, LONDON E.C.1**

London's Headquarters for Models



**AMERICAN MODEL BUILDER.** This system is famous chiefly as the object of Frank Hornby's litigation for patent infringement in the U.S.A., see Love & Gamble, *The Meccano System* p.50. In fact AMB had some features in advance of Meccano: setscrew fixing of wheels, for example. Two sets have now come to hand, a No.2½ and a No.3. The 2½ was an accessory (linking) set. Box labels hint at dates and may throw light on differences from Love & Gamble's Fig.86. The labels are similar to the manual cover shown in MCS, in red, black, cream and pale greenish-blue; the background wallpaper has broad vertical bars of buff and greenish-blue, not evident in the MCS copy. In the lower panel is: "The world's greatest mechanical wonder | Indestructible, highly entertaining, practical and instructive | All mechanical principles clearly demonstrated." The Set 3 box has the bottom legend as in MCS, "Patented in Canada July 29, 1913 | U.S. Patent applied for", but the Set 2½ box has "Patented in U.S.A. and Canada". Differences from the parts in Fig.86 suggest that changes had been made to some parts to avoid Meccano patents, and that these sets possibly date from 1914-15.

The only gear in these sets is a ½in. 14-tooth pinion, DP28, whereas Fig.86 shows 10-tooth pinions in both Meccano and AMB! As the Meccano DP always was 38 and the pinion originally 20T, is there legal or artistic imagination here? The AMB pinion in Set 3 is only used as a ratchet wheel; but the spring-steel early Meccano pawl, shown in Fig.86, is not in the set; instead the double pointed pivoted pawl, as in the MCS parts list. The pawl is loose on the rivet, so it is a rather uncertain device. The AMB pinion is bronze, 13/64in. face (5.16mm) with a slight ridge around the bore on the side away from the boss. This ridge seems to encroach 1 or 2 thou. into the bore; the reason for the ridge is not obvious. AMB rod size is .156in.

Two sizes of collar were found: 3/8in. dia. by 3/16in. thick (9.5mm x 4.75) in brass, and 5/16in. dia. by 3/16in. thick (7.94mm x 4.75) in steel. Shaft connectors #62 (couplings) both steel and brass are 5/16in. dia. by 5/8in. (7.94mm x 15.9). Setscrews are NC #6-32 with neat fillister (cheese) heads 0.155in. dia. (3.94mm) in grey finish, though other Erector-pattern setscrews were found (and some Erector parts in the boxes). The #65 car wheel (railway wheel) in stamped nickel plate has a setscrew slightly inclined to clear the rear of the flange. Bosses on 1in. pulleys are short, 19/64in. face to face (7.54mm) but in two sizes: 5/16in. dia. and 3/8in. (7.94mm and 9.5mm). One bush wheel 0.038in. thick (0.97mm) has a 5/16in. dia. boss, but another with 3/8in. dia. boss is unusually thick, 0.066in. (1.68mm); both are a full 1.5in. dia.

Strips are 0.032in. thick (0.81mm) the same as Meccano, a few 0.035in. Ends of strips are nearly 5/16in. radius, leaving definite corners. sometimes the end cut is off-centre leaving a distinct point or flash at the corner; holes are occasionally off-centre up to 1mm, or off-ended. The 25-hole strips are 0.040in. thick (1.02mm), angle girders 0.028in. (0.7mm). The slotted side of angle girders is noticeably wider than Meccano, 0.64in. (16.27mm).

Two types of 11x5-hole flanged plates were found, both with slotted flanges: one as in MCS with ribbed face, the other identical but with plain face in slightly thinner steel (0.027in. vs 0.032, 0.69mm vs 0.81). Both have square corners.

Distinctive angle brackets have a round hole only 1/16in. (1.6mm) from the tip of a very short 3/8in. arm, with large-radius ends. Obtuse angle brackets are in two styles, one as in MCS with two equal arms and round holes, the other like the 90° angle brackets. The #28 single bent strip is 13/64in. across with the AMB large-radius ends.

The #66 "truck frame" (trunnion) has a base flange four holes wide so the flange holes are midway between those in the face. Only 0.02in. thick (0.5mm) these would be flimsy in use. The #53 hook is unusual, in stamped nickel-plated steel 0.042in. thick (1.07mm). The #4 "flanged wheels" (flanged pulley wheels) 1-3/8in. overall (35mm) are the same size as the "car wheels" - there seems no good reason for both. The car wheels appear neater in a model because the boss is hidden, whereas the boss of #4 is outward when the "flange" is inside the rail.

Both steel (some nickel-plated) and brass nuts and bolts were found, NC8-32 by ¼in. long with round heads 19/64in. dia. (7.5mm). A 1.25in. nicked bolt and four 2.5in. threaded rods were found, not in the parts list, but some of such parts may not be original as there were Erector parts as well.

The spanner, not clear in the MCS illustration, has a round disc with U-slot riveted to the face, forming a pocket to hold a nut while placing it. The screwdriver is probably bought-in; similar ones came with the White Rotary sewing machine in the 1920s.

The mottoes of AMB, as reported by Joseph E. Freed, were "Half the fun is building the models, the other half is operating them when completed", and "The toy for the boy".

Don Redmond

[In the above Don is referring to the FB version of MCS; the NZ edition shows an earlier Parts List in which the appropriate illustrations correspond to those in L&G, and in which all Flanged Plates (#31,32,33) are shown without the 'ribs'. It contains only parts up to to #62. Also the (earlier)



manual cover in MCS/NZ has just 'Patent Applied For' in its bottom panel. Incidentally in both MCS versions the Pinion is shown with the correct number of teeth (14); the illustrations of pinions in L&G appear to be the 1" and 1½" Sprockets, #36,37.]

**ERECTOR SENIOR and a little more on the GILBERT NEW WHEEL TOY.** On the question of whether kids were meant to ride on the NWT models (8/198), there is a comment in Greenberg that the set did not work well in practice because boys who were big enough to build with it were too big to ride on the 'models'. And on the name, which I had noted as somewhat uninspiring, apparently ACG offered a \$100 prize for anyone who could offer an improvement. No one did and the set, which had been launched in 1919, was dropped for 1923, though ERECTOR SENIOR (introduced in 1922) carried on for another year.

And so to ERECTOR SENIOR, Greenberg says that it was the NWT under another name but in Peter McCall's 1923 Year Book, which it seems actually shows 1922 products, both the NWT and the SENIOR are shown, and it is clear that they are different. Many of the parts, some Brackets and the Gears for example, are probably common but the main structural parts are metal instead of wood and in the Year Book it says that the toy is 'built almost entirely of metal'. Two boys are shown riding on a Coaster!

The Year Book shows two sets, and both came with a model fully assembled, the Coaster for Set #15 and the Speedster for #20; the former has four NWT style Wheels but in the larger set two of them are replaced by 8" dia versions. Set 20 also has the large Gears. The models shown have a different flavour, there is no mention of Sleds but 3 Cranes, large and quite respectable looking, are featured. To confuse the historian one of the illustrations is the NWT Coaster. The Strips used in the Coaster/Speedster scale at only about ½" or a little more. wide but the holes seem to be at 2" pitch, as for the NWT. In the Cranes the hole spacing of the Strips appears to be 1" and 4 sizes can be distinguished with PNs W56 to W59; they have 27, 13, 7 and 3 holes respectively.

The new MCS sheet shows complete the 2 pages on ERECTOR SENIOR in the Year Book.

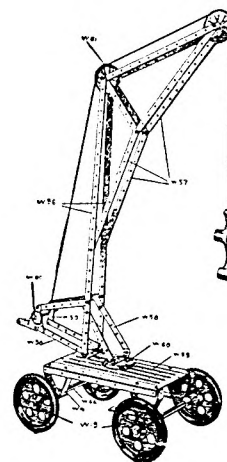
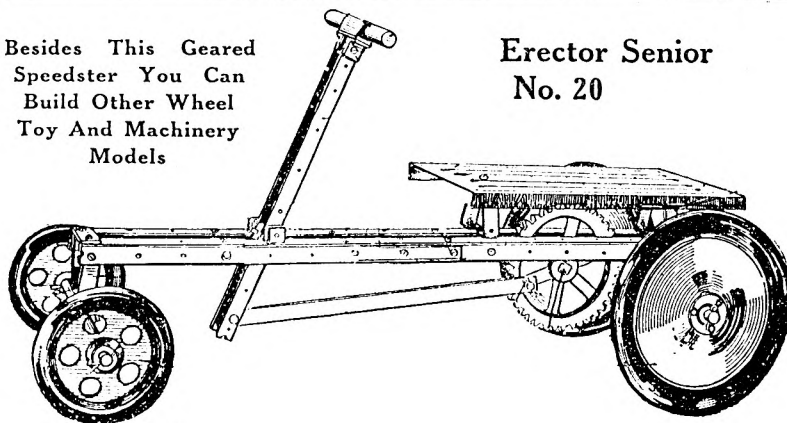
AMENDMENTS TO MCS PERIOD: 1919 to 1922. COMMENTS: Add 'See also ERECTOR SENIOR.'

AMENDMENTS TO INDEX IN OSN 6: NAME: ERECTOR SENIOR. TYPE: NM. CY: US. SPCE: 25.4x?

### ERECTOR SENIOR

Besides This Geared  
Speedster You Can  
Build Other Wheel  
Toy And Machinery  
Models

Erector Senior  
No. 20



**TRANC MADERA.** José Bernal Moreno sent a few more details of this wood/metal system (see 8/200), from a friend of his who owns a Set. All the metal parts are steel, including #1700 which is a Spanner. The Strips are about 33mm wide, and the pitch and diameter of the holes in them are approximately 36 and 6mm; the Bolts are 6mm dia. The Wheels are fitted with rubber tyres, o/d 6-1/16". And the Wheels are the only parts that are painted, light blue.

AMENDMENTS TO MCS: HOLE DIAMETER: 6mm approx. HOLE SPACING: 36mm approx. COLOUR: Unpainted except light blue Wheels. AMENDMENTS TO INDEX IN OSN 6: THREAD: 6x? SPCE: 36. dST: 6.

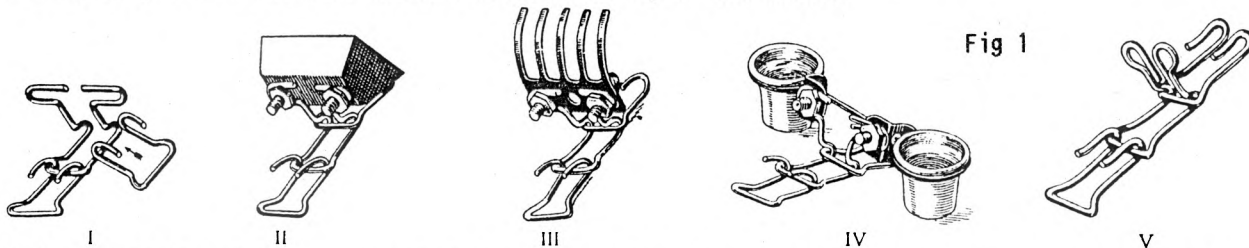
**SMALL AD. FOR SALE.** Nuts N-21 for Erector. Steel, plated nickel over copper. \$4.50/100; \$15/500; \$25/1000; 6-10000, \$20/1000; 11000 or more, \$17.50/1000. Shipping extra - Marion Designs, 594 Front Street, Marion, MA 02738. U.S.A. [These Nuts are ¼" square and are slightly thicker than MECCANO ones (.096"); they are very nicely made and finished. The thread is 8-32 but I've just used 350+ with MECCANO Bolts (5/32" BSW) without problem - Ed]



**MÄRKLIN MISCELLANY.** What follows is based on copies of a 1934 Price List, O 0434 r, from Frank Beadle; a 1929 Illustrated Parts List, 125 05 29, from Thomas Keel; a 1922 Manual #73 for Sets 101/1 and 2 (in French); and a 1929 Manual #76 for Sets 101/1 and 2, and 105/1 and 2. The last two came from Gaston Murette, and my thanks to him, Frank and Thomas.

**The ZUSATZKASTEN.** These were sets to be used with standard sets to make models of particular types. There were 101/1 and /2 for Transportanlagen, with models of railway wagons and conveyors using buckets, etc attached to chains (see 5/99); 102, 103 and maybe 104 for clocks driven by the C/W or electric motor; and 105/1 and /2 for machines and bridges. The /1 sets were to be used with standard sets 1-3, and the /2 with 4-6. #102 was for use with sets 3-6; 103 needed 4-6.

**1922 SETS 101/1 and /2.** From the List of Contents they both contain the same parts, but more of them of course in the /2 Set. There are 7 models for the /1 set (#601-7) and 3 for the /2 (621-3). The model shown in 5/99 is one of them and all are essentially chains carrying one or other of the buckets, etc, I to IV, in Fig 1 (actually from the later manual): all are hand operated. The Railway Wheels, #80, are in the Sets but are not used in any of the models.



**1929 SETS 101/1 and /2.** The Sets had changed hardly at all, only a few Washers and some Paperclips had been added, plus two more Sprockets in /2. Those two meant that apart from there being 13 Washers in /2 and 6 in /1, the larger Set contained exactly twice as many of each part as the /1. Neither set contained #80a (0 Gauge Wheels) or #48a, the Chain element with the Strip on either side. The models from 1922 were all shown, virtually unchanged but renumbered as 661-667 and 681-3. But also at the front are 4 Railway Wagons 651 and 654-6; one is shown as Fig 2 - the roof, sides and little hut are to be made from card. And at the end is Model 686, a splendid figure-8 Roller Coaster using model railway track and wagons, and with an electric motor to power the chain truck lift. This uses chain elements as shown at V in Fig 1, these apparently are not a special part but, if I've understood aright, have to be made by bending #48. There is no room to show the model here but I'll try to put it on the back page of the next Issue.

No. 654 Zweiaxler, bedeckter Güterwagen mit Bremshäuschen

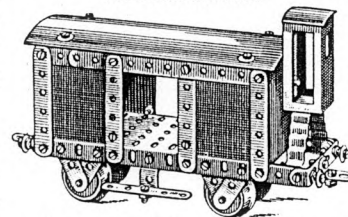
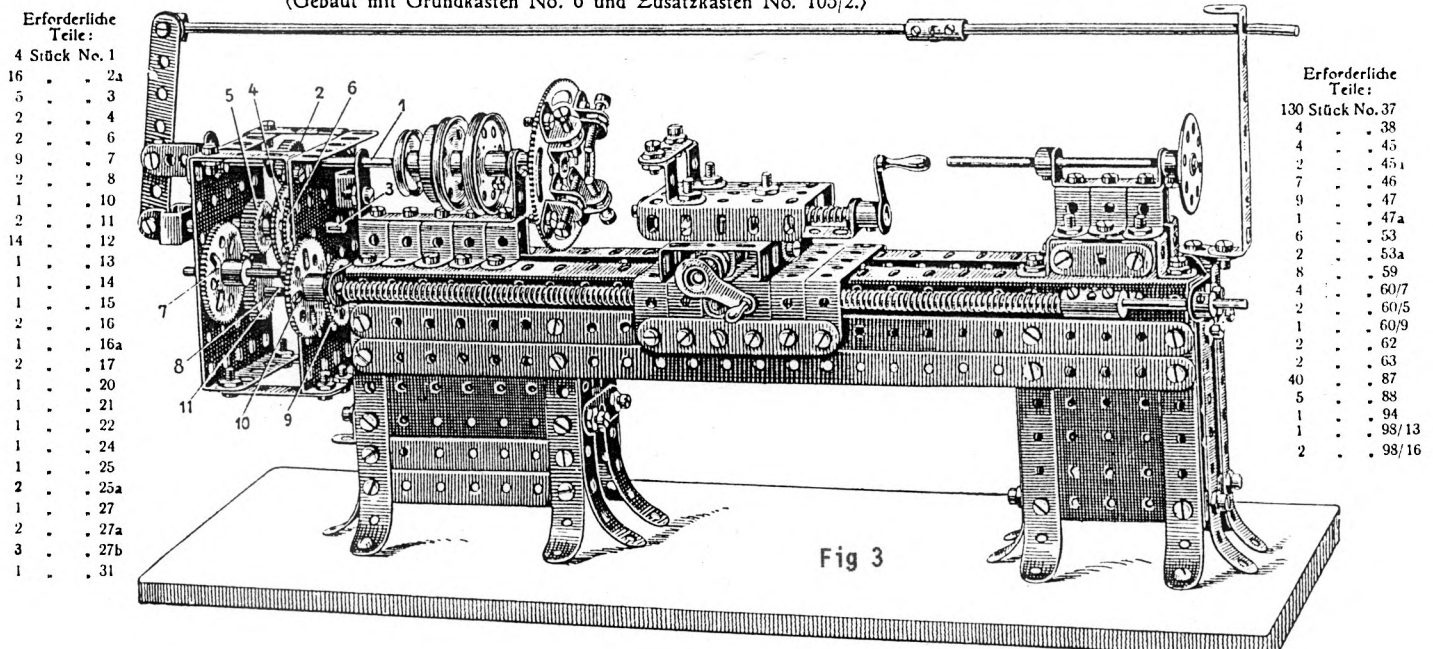


Fig 2

**1929 SETS 105/1 and /2.** The smaller of these Sets contained 150 parts and the /2, 300, with again twice the number of each part in the /2. Some 70 different parts are included, of all sorts but with a good selection of Gears (including the large tooth Gear Rings and the Racks for them), Sprockets, and Lead Screws of different lengths. 16 models are shown, 8 for each Set; big gaps occur in their numbering, 751-771 for /1 and 773-786 for /2. There are a wide variety of 'machines' but only 2 Bridges. Of the former 4 are machine tools and saws, and 5 are vehicles of one sort or another, from

### No. 776. Drehbank.

(Gebaut mit Grundkasten No. 6 und Zusatzkasten No. 105/2.)



a Steam Tractor to a Fire Engine; that leaves a couple of Cranes, a Ship, a small Sewing Machine, and a Mobile Bucket Loaded Conveyor which needs Set 101/1 as well as 105/2. Many of them are attractive designs with varying degrees of mechanical sophistication, although one really needs to be able to read the German instructions to fully appreciate all the details. I've chosen a Lathe (Fig 3) as an example to show the Lead Screw in use. The most complex model though is a Floating Crane. It is powered by a 1301 electric motor with gear/chain drives to (at least some of) its movements, and the current is taken to the motor via 2x#305 (see later) bearing on slip rings, though the latter have to be home made. One small mystery is a little deck house (Fig 4), I can't identify what part is used for the roof, more card perhaps. The Ship is interesting too, it's a waterline model but it is suggested that it could be mounted on a solid wooden hull so that it would float. A sketch of this hull is shown with the large C/W motor mounted on it, driving a propellor, though how the latter is made is not explained in detail.

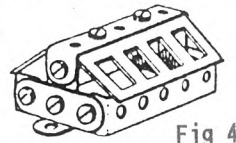


Fig 4

The CLOCK SETS. In the beginning of the 1922 Manual there is a list of the current manuals and #74 is for Sets 102 and 104, for clocks powered by electricity (No. 102 et 104 pour horloges actionnées par électricité). Later 102 is for C/W clocks so perhaps the reference to electricity in that sentence relates only to Set 104. So far I haven't found any later mention of Set 104, the electric clock set was 103. In a similar list in the 1929 Manual, #74 is for Set 102, for C/W clocks, no mention of any electric ones. Likewise in ad pages from a 1931 manual (thanks to Dennis Higginson): two clocks are shown there, a wall clock (see Fig 5) and the same movement and dial fitted into a skeletal longcase - the standard #6 Set was needed to make that. These clocks are stated to run for 4 hours on a winding. In the 1934 List the two Sets shown in MCS/FB are listed, 102 for C/W and 103 for electric. Assuming that Set 104 did exist, it might have used the first electric (mains) motor (#301), and then the 103 Set number might have been used for the 20v 1301 motor version. But then why wasn't the 103 number used in the first place, or was there once another 103 Set? Any thoughts would be welcome, also how did the electric clock work, were the hands geared to the motor, did the motor rewind a weight??

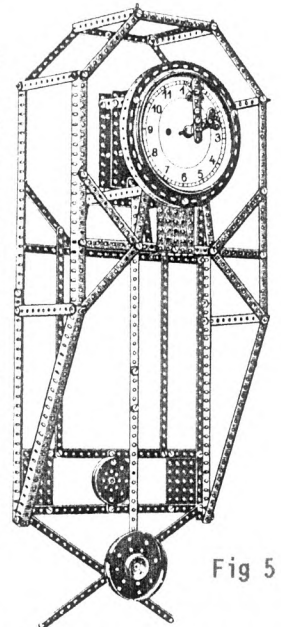


Fig 5

The CLOCK (and early ELECTRICAL) PARTS. The special Clock Parts were listed in the 1934 List and illustrated in the 1929 one. They are shown as Fig 6 and also included are the pre-ELEX Electrical Parts from the same source, because they are not in MCS either. #222 is stated not to have a Setscrew and appears to have a square bore, could it fit onto the winding shaft of the motor I wonder, and is it the scape wheel? #223 is shown as having 10/36 teeth and the bore looks smaller

### Einzelteile für elektrische Anlagen – 20 Volt – (Motoren, Hebemagnete usw.)



No. 304 Schalttafel mit zwei Drehschaltern



No. 305 Schleifkontakt



No. 306 Kontaktmuffe für Schleifkontakt 305 usw. zum Aufsetzen an die Stecker des Motors



No. 307 Doppelschleife für Drehkontakte unter Verwendung von zwei Schleifkontakten No. 305



No. 308 Isolierplatte zum Befestigen der Schleifkontakte 305 an die Modelle usw.



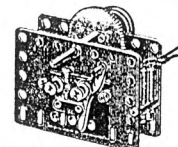
No. 309 Anschlußstecker mit Mutter zur Ueberleitung des Stromes an den Modellkörper



No. 310 Anschlußmuffe mit Mutter zur Ueberleitung des Stromes an den Modellkörper



No. 1300 M Elektro-Hebemagnet 20 Volt, ohne Zubehör



No. 1301 M Elektro-Motor 20 Volt, ohne Zubehör



No. 1303 Beleuchtungskörper Fassung 10 mm, ohne Glühlämpchen



No. 1328 Glühlämpchen, 20 Volt passend zu Beleuchtungskörper 1303



No. 1315 Abzweigmuffe

Kabel mit 2 Anschlüssen, Leitungsschnur 1- oder 2adrig je 0,5 mm Querschnitt, 2 mal umspinnen  
No. 1316 2 Meter lang, 2adrig  
No. 1317 1 " " 2 " "  
No. 1318 1 " " 1 " "  
No. 1319 0,5 " " 1 " "

### Einzelteile der Zusatzkasten für Uhren

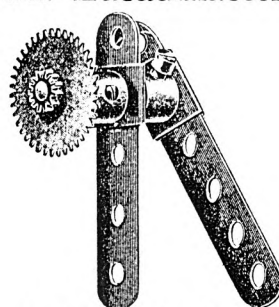


No. 221 Anker mit Stellschraube



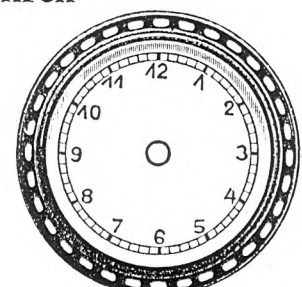
No. 222 Antrieb ohne "

No. 223 Wechselrad mit 7 Lohdband



No. 224 Wechselrad mit Zeigerrohr

Fig 6

No. 68/225 Großer Ring mit Zifferblatt  
" 225 Zifferblatt ohne Metallring



than standard; the 224 is no doubt a concentric drive to the hour hand and appears to have 13/40 teeth. The 10 and 40 could make a useful 4:1 but how the rest of the train would have been arranged I leave as an interesting exercise for the reader.

**VEHICLE PARTS.** The 1934 List contains a complete list of all the Chassis parts, and those for the 5 bodies that could be fitted to it -the Standard Tanker and the Mercedes Racing Car came later. This list, in German, isn't perhaps hot news but if anyone needs it please ask. In passing there are 48 Chassis parts (C1-C50) and the bodies typically have rather less than 20 each.

**FOOTNOTES.** • In the '29 List is #44a which I don't remember seeing before, its the 2 hole high Double Bracket, #44, similar to MECCANO #11a, with a boss on the bottom. • The contents of the Zusatzkasten will need to go into MCS together with other material that has appeared in previous OSNs.

**INVICTA.** At Henley last year José Bernal Moreno kindly brought over an INVICTA Set to show me, such outfits were on sale in Barcelona in the early 1940s. This system is called INVICTA 0 in MCS but the '0' is thought to be an error, the box lid has INVICTA on it but no '0'. Under the name is a ring with Modelo in it and a blank space underneath for the Set No; it is similar to the one on p2 of GOLIATH (a related system) in MCS/FB. There is a number in the INVICTA ring, it might be a 0 but it's too faint to be sure.

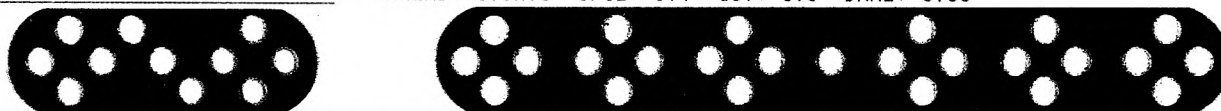
There was no Manual with the Set and it was not complete, but there was at least one of nearly all the parts that can be seen in the models in MCS. The most noticeable thing was the Strips: compared to those seen in MCS the 5 and 9 hole ones had an extra hole in each end (the shorter of them is shown below), and the 13 hole had the same extra holes but in addition the remaining holes were arranged differently (below). The holes in the DAS and the Angle Bracket were as in MCS. So were all the parts originally from this Set? All that can be said is that the finish is similar throughout and that their dimensions are consistent. Now a few comments on the parts:

- The average pitch of the holes in the Strips is 8.1mm, for comparison TRIX is 7.8. There are slight variations of up to .03mm between the 2 shorter Strips and along the length of the longer ones. Strips are .553" wide and .030" thick. The holes in the 26.5mm dia Disc have a pitch of 8.9 or 9.0mm. The dia of all holes is .154" except for the .142" dia centre hole in the 10 and 16mm dia Washers.
- The thread is 3.5x.8mm and so the Washers are a good fit on it but the Discs, with their .154" centre hole, are sloppy. Nuts are hexagonal, .252" A/F; the Bolts are 5mm u/h and have .200" dia tapered cheese heads. Only one size of Screwed Rod was present, 55mm in length.
- All the parts are steel with the screwed parts brass plated. The other parts were generally quite bright in appearance but it was hard to decide whether they had been plated or not, possibly they had a very thin coating of nickel. One side of one Disc looked rather brassy.

José provided some sketches of the parts as well as photocopies of the Strips and these are included in an Extra MCS Sheet. On the reverse side I've put the rather attractive box lid, it shows a small child with golden, curly hair, holding the Monoplane shown in MCS.

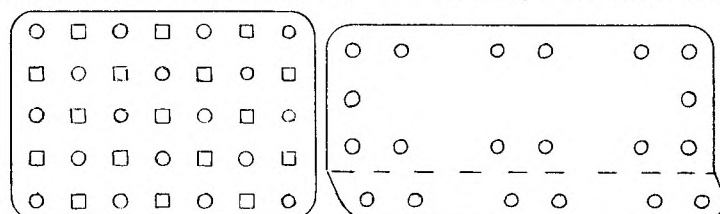
**AMENDMENTS TO MCS** (as necessary, depending on version): HOLE DIAMETER: 3.9mm. HOLE SPACING: 8.1mm. COLOUR: Unpainted steel or possibly nickel plated. PERIOD: add 'Also known from early 1940s.' COMMENTS: replace by: Parts similar to TRIX but with some holes omitted and slightly different hole spacing. See also GOLIATH. MATERIAL SUPPLIED BY: add: and José Bernal Moreno.

**AMENDMENTS TO INDEX IN OSN 6:** THREAD: 3.5x.8 SPCE: 8.1 dST: 3.9 DAXL: 3.58

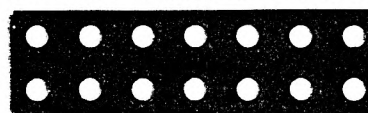


**MYSTERY PART No.19.** A heavy, nickel plated Flat Plate with alternate holes and squares, traced by Richard Symonds and shown here x.5. The actual pitch of the holes is probably exactly 7/16".

**MYSTERY PART No.20.** Another from Richard, a Flanged Plate 4x1½" with one ½" flange, again shown ½ scale. Of the 3 found, 2 were painted dark maroon and the third was unpainted. Don Redmond also sent some photos of an identical looking part, this one nickel plated. Since Richard lives on one side of Canada and Don on the other, this part may hail from Canada, or at least North America.



**MYSTERY PART No.21.** From Peter Kessler, a 2x7 hole steel Plate with 3.0mm holes at 7.0mm pitch, plated dull grey. Photocopied full size.



**MORE META BUILD.** Ashok Banerjee very kindly sent a large parcel of Indian sets including PLANO, MAXHINA, a new name to me, and two more META BUILD Sets, one smaller and one larger than the JUNIOR Set described in 6/126. I'll start with those and go onto the others in the next issue. The smaller Set is called MINI and Ashok has described the larger as SENIOR, though that name isn't used on the box or the Instruction Leaflet. As will be seen the 3 Sets have different characters and parts, and are not related to one another. In what follows the description of the parts for the JUNIOR applies unless stated otherwise, and comparisons are with the JUNIOR.

The SENIOR comes in a box 14x10x1½" with a similar style of lid except that the background colour is blue and purple; the inside plastic formed tray is red. The set is unusual in having Wheels, Axles, Flanged Plates and little else, no Strips at all: the 11 models are, apart from one animal with a long neck, either vehicles, or buildings. The Wheels are light brown Pulleys, 2 large and 4 small, fitted with black rubber tyres with deep circumferential treads. There are 17 Plates, the 3 sizes in the JUNIOR, plus 3 others up to 8x20 holes; colours are white, brown, dark brown, black and nickel plated. Then there are 6 each of the 50 and 100mm Axles, 20 each of yellow and light brown Sleeves, 20 N&B, a blue Spanner and a yellow handled Screwdriver.

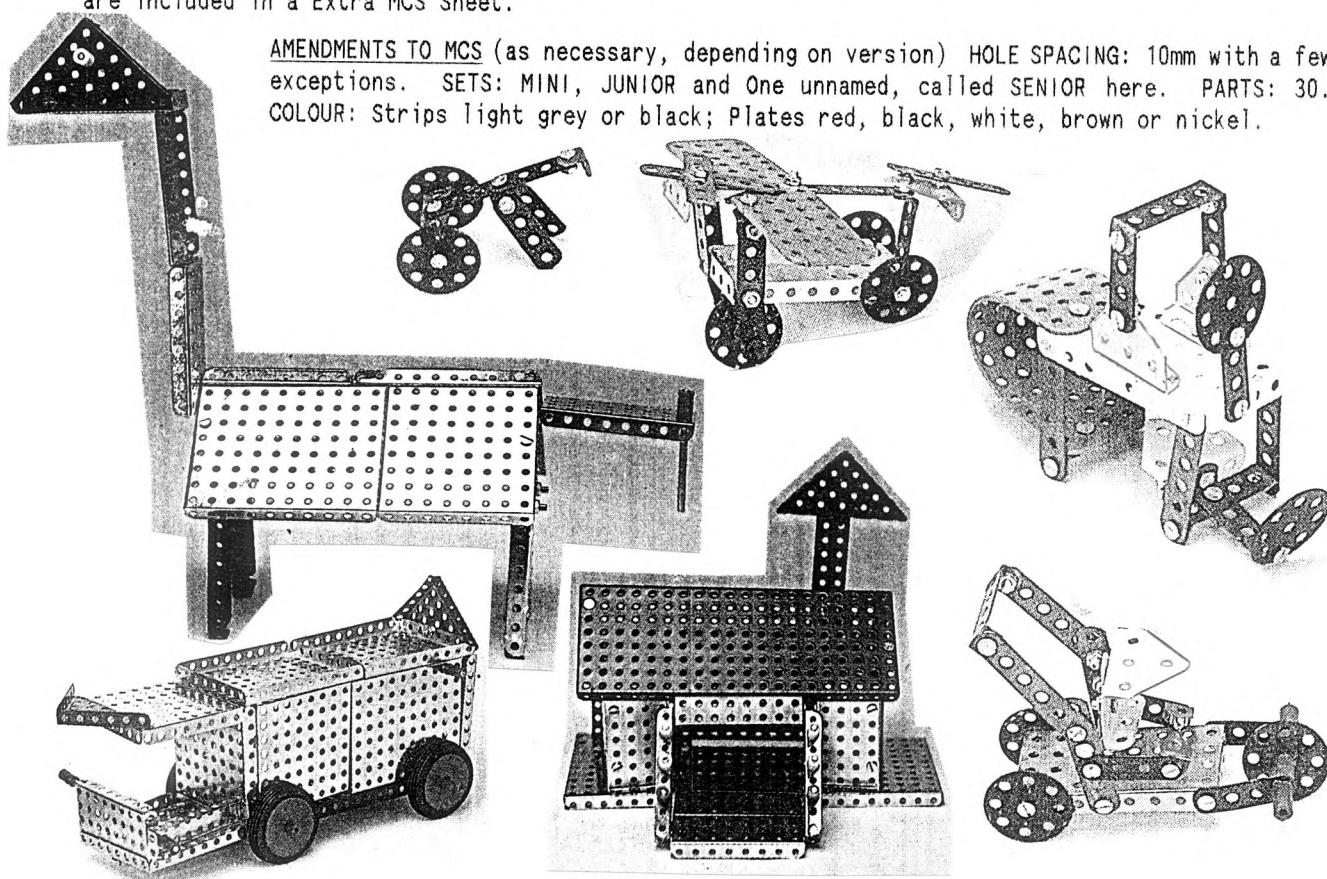
The background colour of the Leaflet is blue, and the models, though unusual, are interesting looking. Three are shown below left. The colours of the parts shown often differ from those in the set and with the latter the models would perhaps look rather drab, and sometimes have a patchwork appearance.

The MINI box is 10x10x1½", the lid has a light blue ground and the inner tray is light yellow. The contents are more conventional, a 4x8 hole Flanged Plate, a very flexible 4x14 hole brown plastic Perforated Plate (with nearly 8mm outside each end row of 4 holes), 4 each of 6-hole and 4-hole Strips (all black), 2 black DAS 1x4x1 holes, 2 black 1x1 hole Angle Brackets, 2 50mm Axles, 21 N&B, Cord, 4 light brown Sleeves, a dark blue Spanner, a Screwdriver, 2 Trunnions, and 3 8-hole Wheel Discs. The last two parts, both dark red, are not in keeping with 10mm hole spacing - the Disc is almost exactly MECCANO size and the Trunnion is 3 holes wide at 12.7mm pitch; it's of the '7-hole variety' with overall dimensions of 11x31½mm, and the 2 vertical holes are at 15½mm centres.

The Instruction Leaflet is 220x270mm deep and shows 51 little models; no Alphabet but practically everything else, Tables, Flowers, a Signpost, an Aeroplane, Carts, all sorts of 3-Wheelers, everything (see below right). And in the Leaflet all the parts are brightly coloured, red, green, yellow, blue, white: splendid but in the set the parts are black, brown, dark red, what a disappointment. What can Messrs. Kidstuff have been thinking of, not what they should have been I'll be bound.

Other points: • The dia of the Axles in both sets is .159-.160". • The 14-hole Plate is moulded and the hole pitch is 9.8mm. • The address on the boxes/leaflets is the 206 DESEIN HOUSE one. • There is a sticker on the MINI box saying 'Date of Mfg 27 JUN 1991'. • Further details of parts and contents are included in a Extra MCS Sheet.

**AMENDMENTS TO MCS** (as necessary, depending on version) **HOLE SPACING:** 10mm with a few exceptions. **SETS:** MINI, JUNIOR and One unnamed, called SENIOR here. **PARTS:** 30. **COLOUR:** Strips light grey or black; Plates red, black, white, brown or nickel.



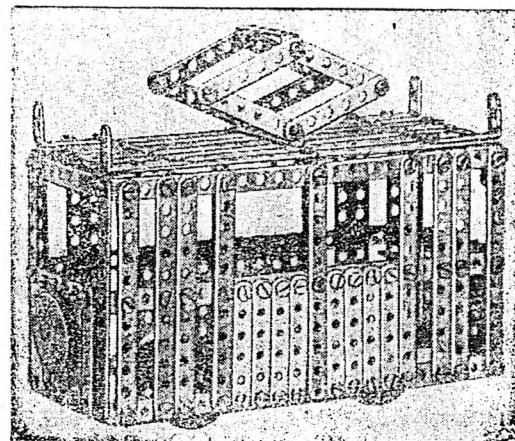
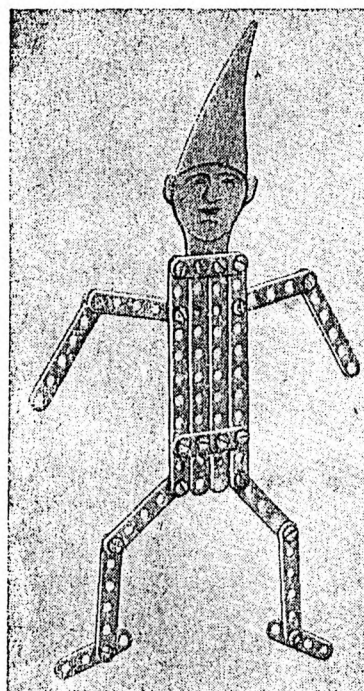


**NEW SYSTEM - KONSTRUKTIONSPIEL.** Another find in Zürich, an early postwar German Set, and Thomas Keel kindly sent a photocopy of the Instruction Leaflet, some notes, and a 4 hole Strip and N&B. On the front of the Leaflet is, 'Made in U.S. Zone - Germany'; the U.S. Zone included Bavaria and Württemberg and became part of the new West Germany in 1949. There are only 13 different parts, plus Cord and Spanners, but it is a fair sized Set with 478 parts including 110 Strips (4, 6, or 11 holes), 150 Nuts and 140 Bolts. The parts are quite small with 3.1mm holes, 7.5mm apart, so the 11 hole Strip is only about 3¼" long. There is no mention of any other size sets.

## KONSTRUKTIONSPIEL

Inside the box lid is a photo of the largest model, a Big Wheel, and 10 more are shown in the Leaflet. They vary from a simple Chair to the Tram below; the latter came ready assembled and had to be dismantled before most of the other models could be made. Various details:

- There are 4 4-hole Discs listed in the Contents which are used as wheels etc, but the Tram seems to be shown with more, 4 to run on plus at least one at the front. No Axles or Screwed Rods are used, the Discs rotate on a lock-nutted Bolts. Where an Axle is needed for the cord drive in the Big Wheel, it is made from a DAS with Bolts in each end; the Winding Drum for the Crane is made in a similar way.
- The Strips are 7.3mm wide and the holes have some roughness around them; the hole spacing in the 4 hole Strip seen is not quite uniform.
- Apart from the Strips, Discs, and N&B, the other parts are Angle Brackets in 5, and DAS in 2, different sizes. In fact all have 4 or 6 holes in them, eg 2x2, 5x1, 2x2x2, and so are no doubt made from those sizes of Strips.
- The thread used is M3; the Nuts are hexagonal, 5.2mm A/F, and the Bolts, in 2 sizes, 8.1 and 10.2mm overall, have 5.8mm dia cheeseheads.
- The Bolts are untreated steel, all the other parts have a dull, dark grey finish which may be a form of zinc plating.
- Among the parts found was a Scale, made of card and marked in grammes, which is used for one of the models, a Letter Balance. Under the Parts List is a note, 'Der Kopf für den Hampelmann, ['Jumping Jack', top right] die Skala und die Platte für die Briefwaage [Letter Balance] sind aus dem Einsatz auszuschneiden.' So these parts were to be cut out of card but I'm not sure if there is an implication that they were designs printed on the card.



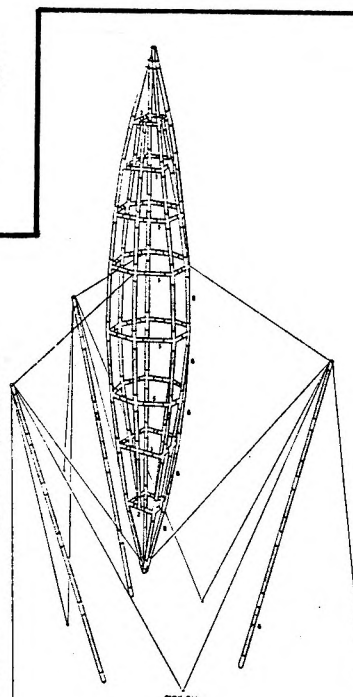
The Parts List/Contents, some more models including the Crane and Big Wheel, and a list of the parts needed for all models, are included in MCS Extra Sheets.

**AMENDMENTS TO INDEX IN OSN 6:** NAME: KONSTRUKTIONSPIEL. TYPE: MPSH. CY: GG. THREAD: M3. SPCE: 7.5. dST: 3.1. DAXL: --.

### QUERIES.

1. More on TRIX threads, Peter Kessler sent a N&B from a Presentation Set No.905, whose literature is all in German. The thread is M3.5, that is a pitch of .6mm. Summarising it seems that the continental TRIX thread was 3.5x.8mm (OSN 2/17), or just possible 3.5mm dia x 32tpi (3/41, 7/166), later (presumably) changed to M3.5; the UK thread was 4BA postwar but the 3.5x.8 was used prewar. This was mentioned as a possibility in 7/166 and was confirmed recently from the N&B in a prewar ELEMENTRIX Set. It may well be that the change in the UK thread did not occur until after WW2.

14. I made a mistake over ALCON in 8/199, the 'sticks' are wooden and not plastic. Malcolm Hanson when he wrote to tell me this, also mentioned that he has since acquired a larger set, probably later because the maker is shown as TRIX. One of the models in its Manual is the 'Skylon' (right) which for anyone who hasn't heard of it, was a tall attraction devised for the Festival of Britain, held in 1951.



**ALCON**

**A MASTERBUILDER CARFAX SET.** Shortly after OSN 8 appeared, with its article (p184) on the later MASTERBUILDER Outfits, I was able to see, courtesy of Geoff Wright, a #6001 CARFAX Set, still strung in its box. Said box measured 10"x14" and had a white label showing 5 manual models from one or other of the 3 Auto/Railway Sets. They were shown with yellow parts except for red Mudguards, and red 11 hole Strips in one model. The parts in the box were blue except for yellow Strips and Mudguards, and metallic black Angle Brackets, Rods, Spanner and Screwdriver. As far as could be seen the contents corresponded to those given in MCS X1.6 (plus the Screwdriver and a Spanner), but the N&B and no doubt the 1" Rod were hidden away in a red Carton with MASTERBUILDER in white on it. Rod #1027 was 3½" long as surmised. The Manual was identical to the one described in OSN 8. Conclusion: later MASTERBUILDER parts can be any colour so long as it is yellow, orange, red or blue, or even grey (see 4/73).

**AND ANOTHER MASTERBUILDER No.1 SET.** In OSN 8/184 a No.1 Set, which may have been an early one, was described briefly. Now again courtesy of Geoff Wright, I've been able to look at another, probably later, No.1. It was still strung in its box and appeared complete. The box, about 8x10", is the same size as the first but has fold out 'wings' with parts strung on them. The lid has red and cream stripes with a large, central photo of a model; it carries the EREKTOR WORKS, MOUNTSOREL address and the Ref No.K.W.1266. The earlier Set had a red lid with a plain white label with the QUORN address and KW1261-1. Both sets had basically similar contents: differences, and notes on the finish of the parts follow:

- In the later Set the Shackles, KW1052, and the Straight Connectors, KW1044, were the shorter types (see 6/119), and the Sockets, KW1051, were also shorter, approximately 7/16" long against 3/4". The Collars, KW1045, and the bosses of the End Brackets, KW1111, were 5/16" dia; all the other parts were 3/8", as in the first Set.
- There was a tiny brass Loose Pulley in the later Set, .377" dia, which I hadn't seen before: it may be the part without a PN in MCS/FB, p3/4 rhs. There wasn't one in the first Set, it may have been missing but there was a 1" Pulley, KW1091, which wasn't in the second Set. The Railwheels in the latter were the 1" steel type described in 6/119, against the ½" KW1081 sort in the early Set.
- Both Sets contained Spring Cord, another part I hadn't seen before; its diameter was .152" and it was plated a dull grey colour. Apart from that all the metal parts in the first set were nickel plated except the brass plated N&B and the black metallic finished Rods; the later parts all had the black finish except the brass gears and all the 'brassware', which were their natural colour, and the steel Railwheels. The N&B couldn't be seen only brass plated steel ones have ever been reported.

I've several times referred above to the Sets as later or earlier, and I've no positive proof of that. But there are some pointers, the PNs of the Sets for instance, and the brighter lid design of the 'later' one. My guess is that the change from nickel to black came in about 1951-52 when nickel was in very short supply; brass too was difficult to get and this might account for the reduced size of some of the brass parts.

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**EZY-BILT.** Following the account in 7/144, Roger Baker sent copies of Lists for August 1960 and July 1961; in the first Sets 1-8 and 1A-7A are shown, in '61 there are in addition, Sets 9 and 8A, and the Clockwork Motor. So that nicely pinpoints the date of introduction of those items. The last PN in both Lists is 161, so the Sprockets, and Gears #176 and 177, had not yet been introduced; nor had the Chain, #149, it isn't in either List. Also neither contains the name of the manufacturer, but it must have been Ezy-Bilt Ltd because Ref F (see OSN 7) from EBL uses the old PNs and so must be before 1960, and Ref G equally from EBL, shows Sets 8A and 9, and the Motor, and so must be from 1961 or later.

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**TEMSI HOLE SPACING.** With the last copy of Meccano Nieuws from the Meccano Gilde Nederland, Don Redmond received a copy of Peter Duyff's 1992 booklet on Meccano, Actuele Onderwerpen No.2449. In it was noted a difference in hole pitch between MECCANO and TEMSI; that for TEMSI being 12.729mm against 12.7 for MECCANO. So over 25 holes that's a difference of about .7mm, enough to cause difficulties in long frameworks if parts from the two systems were used together. I measured up some TEMSI parts which probably dated back to the 1960s or 70s, and sure enough they showed about the same difference. And not only for Strips and A/Gs, which all appeared to have been cut from a continuous length, but also along and across an 11x5 hole Flanged Plate. It was easy to detect the difference in the long parts and it was measurable with care even along 5 holes.

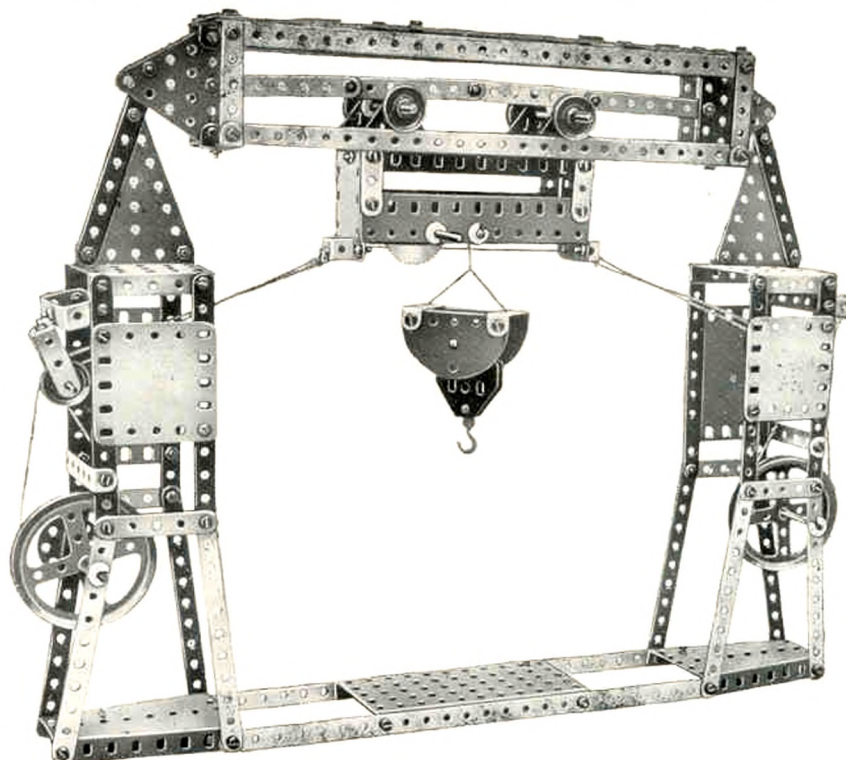
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**SMALL AD. FOR SALE.** PALIKIT No.3 Set. Complete with manual, and parts still strung, but some rust damage. £15 plus carriage - Malcolm Hanson, 11 Willow Close, Long Ashton, Bristol. BS18 9DT. Tel: (0275) 392321.



**METALMEC OPSET.** This Italian system is included in MCS but not many details are given. What follows is from a #5 Set (the largest in the shop), bought in Paris in about 1973. From the Manual it seems likely that OPSET is the name of the manufacturer, and METALMEC is the name of the set. METALMEC parts have  $\frac{1}{2}$ " hole spacing and are generally similar to MECCANO. The #5 Set is slightly larger than a 1960s MECCANO #4, although the mix of parts is different, with more Strips in the METALMEC but many fewer Flexible Plates. The OPSET range of parts is smaller and a noticeable omission is Road Wheels, on the other hand there are 2  $5\frac{1}{2}$ " Flat and 2  $5\frac{1}{2}$ " Angle Girders in the Italian set. The Crane shown in MCS is included in the Manual but although the photo is identical the layout of the wording has been slightly rearranged and the heading refers to "No.5 METALMEC" and not the "MF METALMEC" in MCS. In fact it is likely that this model can be made from Set #1. Parts that vary from the MECCANO pattern are described below, together with other notes on the parts. There are no names or numbers given for the parts and so MECCANO names will be used.

- Trunnions have vertical slots instead of the MECCANO cutouts and their top corners are not rounded. The slots can be seen in the MCS model. Double Brackets are in 3 sizes, 1, 2 and 3 holes high.
- The 3" Pulley is the 4-spoke original MECCANO style, likewise the Flanged Sector Plate with a single centre row of 8 holes, and the 11x5 hole Flanged Plate with no end flanges. The corners of these Plates have radii of .20" and .13" respectively.
- There are no slots in the Reversed Angle Bracket. All slotted holes are BRAL pattern except those in the Trunnions, Curved Strips, and Angle and Flat Brackets, which have fully rounded ends. The Flat Brackets are 1.04" long overall.
- The Flexible Plates have .25"r corners and are about 22 thou thick, so they aren't at all flexible. All parts though are made of fairly soft steel and can be shaped by hand.
- The 1" Pulleys are about  $\frac{1}{4}$ " wide and the 2 halves are spot welded together in 3 places; there are 2 types, the loose variety as just described, and the second type which has rubber between the halves around the hole: this grips an Axle reasonably well but there is generally some wobble.
- The centre hole of the Wheel Discs is  $\frac{5}{16}$ " dia.
- Strips are slightly less than  $\frac{1}{2}$ " wide at .48"; the ends of the  $12\frac{1}{2}$ " have a .3" radius, all the others (and all other 'strip' parts) are fully radiused. The  $12\frac{1}{2}$ " are .061" thick, the others are thinner down to .031" for the  $1\frac{1}{2}$ ". The corners of the Girders have radii of about .20".
- Key dimensions: the holes in the Strips are 4.1mm dia; in the boss 4.12mm; the diameters of the Axles and the bosses are 4.00mm and 9.96mm. Bosses are brass and single tapped M4.
- The 30 and 45mm long Axles have a round head at one end, like a rivet. 'Spring Clips' are 3mm thick clear plastic washers with a tapered cutout to allow them to be pushed onto the Axle.
- N&B are M4; the hex Nuts are 8.0mm A/F, and the 7mm long Bolts have slightly tapered cheeseheads, 6.8mm dia. There are no longer Bolts or Washers. The '2-D' Hook is stamped from .020" thick brass.
- All parts are nickel plated except as follows. The  $12\frac{1}{2}$ " and Curved Strips, the 3" and 1" fast Pulleys, the 7x5 hole Flexible Plates, and the  $5\frac{1}{2}$ " Flat and Angle Girders are painted light blue. The Flanged Sector Plates are medium red; the 11x5 Flanged Plate and the 11x3 and 5x3 Flexible Plates are deep yellow. The N&B and all Axles are black metallic; Rubber Rings are white. The model on the front of the manual shows red, and a few nickel, Strips, and red, blue and nickel Plates.
- The parts are accurately made and quite well finished; some burr can be felt around the edges of parts but it isn't usually sharp. The paint is soft and not very glossy, and it comes off fairly easily.
- There are several parts shown in the models in the manual which were not in the set, nor did there seem any room for them within the packaging. They can be seen in the model opposite, 5x5 hole Flanged and Flexible Plates, 2 sizes of Triangular and Semi-circular Plates, and the Gear below the carriage.



Most of the models in the Manual seem to be original designs and one good photo of each is shown; this isn't really adequate for some of the larger models but perhaps the Italian text by each model would



help. In one such there is a reference to using bulbs from an electrical construction set called LETRIXMEC, made by the same firm.

**SUMMARY OF MANUAL.** #Name: METALMEC Scatola N.5. #Details of maker: OPSET. #Dates &/or Ref Nos: None. #Page size: 247x167mm deep. #No of pages: 56 inc covers, all unnumbered. #Language: Italian, Introduction also in English and French. #Printing: Halftone photos. Cover in colour with light brown background, boys with red and blue jumpers, and a mainly red model. #No Parts List or Set Contents. #Sets covered: 1-5. #No of models for each set: 1,16; 2,17; 3 or 4,8; 4 or 5,5; 5,6. #Name, Model No, Page No of first & last model of each set: 1: BILANCIA,7 [No Model Nos]; SEGA A NASTRO,15. 2: MOTOCARRO,16; JEEP,25. 3 or 4: TRANSATLANTICO,27; CATAPULTA,33. 4 or 5: SEGA PORTATILE NASTRO,35; MORTAIO SEMOVENTE. 5: GRU PER COSTRUZIONI EDILI,41; MOTOCARRO RIBALTABILE,51. #Other notes: the Manual is a little disorganised, models appearing twice have been ignored, and the first 16 models, said to be for Set #5 have been assumed to be Set #1 models.



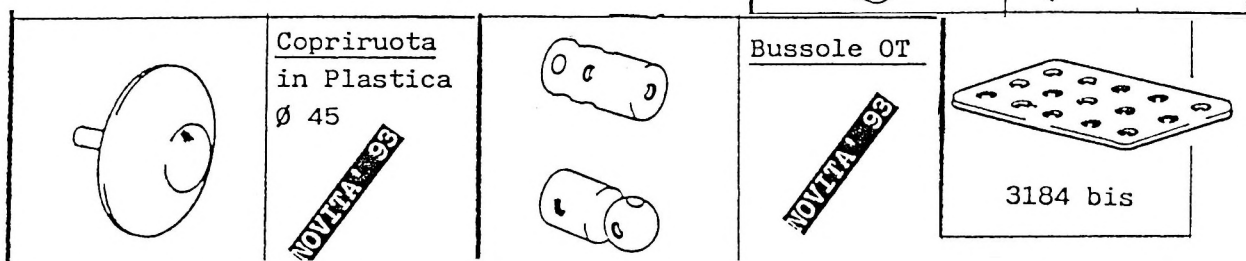
New MCS pages show two other #5 models, photocopies of the parts, and the contents found in Set #5.

**BRAL NEWS.** Tobias Haffter kindly sent some BRAL leaflets and dates for them. The sets described in OSN 7/142 were current into 1992 and were replaced by the MEKABRAL range (see 8/190) later in that year. The official Illustrated List of Parts for 1992-93 includes, with one or two minor differences, the extra parts noted in OSN 8, and there are other changes, mostly additions. Details are as follows:

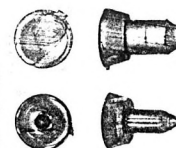
- The Boiler #3211 is shown without ends and the Boiler End, 3211A in 8/192, is now 3048 Tappi Caldaia; likewise the Plate 3185A becomes 3185 bis.
- Most of the new parts are shown below. 3184 bis is no doubt the 3184 (Channel Bearing) opened out; the others (New for '93) have no PNs and only one, Copriruota (Push-on Wheel?), has a description. The others, all made of brass (OT), are called Bussole (Bearings), and might be similar to MECCANO Parts 63c,64,136a,173a,179.
- New parts not illustrated are 3011 bis, Metallo c/bus (Wheel Disc maybe, 3011 is a Bush Wheel); and 3204 bis which is labelled twice, once as Plastica and below Plastica Traspar. - 3204 is the 11x5 hole Flanged Plate but a plastic, transparent version, it doesn't sound likely. Also the Flexible Plates 3186-91 are marked as being in two versions, plastic and metal, the latter have 'bis' after the PN.
- Two deletions, the 75mm Tyre 3016 and the Wire Screwdriver 3239.

The material from which some of the parts are made is shown: all 'brassware', all gears, Sprockets 3019-23, and the Pulleys 3002 and 3007 (15mm with boss and 38mm) are brass; the Flanged and Bush Wheels, the Sprockets 3017-18, all the remaining Pulleys less than 38mm dia, and the Chimney Adaptor are labelled ZAMA, which is I think the zinc based MAZAC alloy. The 77mm Spoked Wheels are cast aluminium.

Peter Kessler wrote that the small 'Kit' models are rather flimsy but can easily be improved by adding a few extra parts.



**PRESS-FIX.** I've never seen a PRESS-FIX Set so I was agog when Geoff Wright showed me a PRESS-FIX box recently. Unfortunately it wasn't the PRESS-FIX in MCS but a plastic set from the same company. But quite possibly the plastic Plugs and Sockets that are used instead of nuts and bolts are the same; they are shown opposite, the o/d of the Socket is .187" and that of the Plug, .128". Also the plastic Wheels look as if they might be the ones described in MCS, they are a push fit on the .172" dia steel Axles and two of them together form a Pulley. On the Instruction Sheet is Copyright 1959 so if the dates in MCS are correct the plastic PRESS-FIX came after the metal version.





**ANOTHER HUSTLER SET.** BILDKRAFT is included in MCS, now some details of another Set by HUSTLER, from a copy of a manual kindly sent by Richard Symonds. It is called ACTION TOY BUILDER and is aimed at a rather younger age group. A competition announced in the manual gives the maximum age for entrants as 12, and the closing date in 1928 gives the only indication of the set's date. There is only one outfit, it is packed in a tube, but the Manual shows a couple of examples of what can be done using 2 or 3 sets together.

From the models right and those on the front cover it can be seen that there are various metal Strips which can be bolted together, and spaced apart by shorter Strips which clip into place. Rods have a rivet head at one end and are retained by a double cone shaped Collar, and there is a Crank Handle and a Crankshaft - none of the parts are given names in the manual, they are referred to by PN.

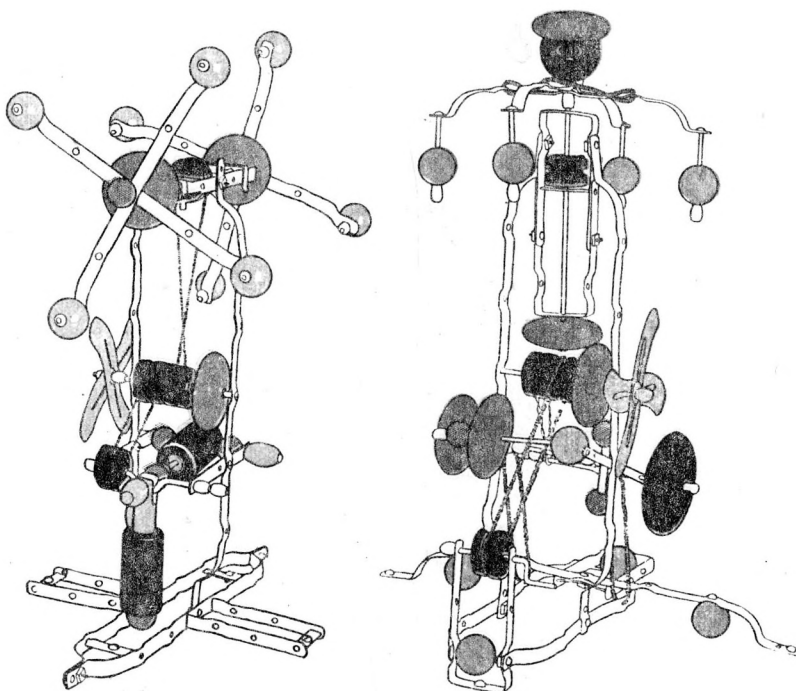
The various parts which appear in black and shades of grey are made of wood painted black, bright red, yellow, green or orange. The only part unpainted is the 'Base Plate', #25. Included in the Set are 2 Pulleys, 4 Wheels, numerous 'blobs', and a cylinder with a fork-ended piston to fit inside it. Some parts like the Pulley and Collar must be a push-fit on the Rods and some like the Wheels may be bushed. One Woodscrew is included in the Set and is used to attach Strips to a wooden part in one of the models. No dimensions are given in the Manual but the Illustrated Parts are probably about full size, they are in the BILDKRAFT manual, and in that case the spacing of the holes in the main longitudinal Strips would be about  $1\frac{1}{2}$ ", and the Wheels would be the same dia, on perhaps  $\frac{1}{8}$ " axles. Most models would be 9 or 10" long. Only one part looks like one from BILDKRAFT, the Propellor, with its characteristic shape.

All the models have some 'motion' built into them, most work as they are pulled along but in some the Crank Handle has to be turned. The action usually comes from the rotating Wheels with Pulleys connected by a Spring Cord band, and sometimes from an eccentric. I think youngsters of around 8 or 10 might rather like the models, I do anyway, and they include a Wrecking Crane and an Aeroplane, albeit with no wings to speak of. The models aren't too complicated and there are only 5 N&B in the Set, but whether kids of that age could cope with the instructions for making them is another matter. Though precise, they are difficult to use, partly because it's easy to lose ones place and go back to the wrong place, but mainly because it's far from easy to identify the part from the PN in the random arrangement of the 34 parts on the page of Illustrated Parts. A super Set for Dads though - and the better ones could cope with lock-nutting (not mentioned but needed in some models) and find a spanner (there isn't one shown anywhere) to tighten one or two vital N&B really tight.

New MCS Sheets show the Crane and the Aeroplane, Set Contents, and the Illustrated Parts.

**SUMMARY OF MANUAL.** #Name: HUSTLER ACTION TOY BUILDER. #Details of maker: HUSTLER TOY CORPORATION, Sterling, Ill. U.S.A. #Dates &/or Ref Nos: 1928 closing date of competition. #Page size: Approx 210x275mm deep. #No of pages: Probably 12 inc covers, unnumbered. #Language: English. #Printing: Models and FC in colour. #Page Nos of Parts List/Set Contents & highest PN: 10,34. #Sets covered: Only one set. #No of models for set: 12. #Name, Model No, Page No of first & last model: [No model Nos.] ROUGH RIDING SAMBO,3; WHIRLIGIG,8. #Other notes: Details from photocopy. Models made from 2 and 3 Sets used together shown on p9.

## Hustler Action Toy Builder



Each of the above are made from two regular Action Toy Builders.



**ERECTOR CONSTRUCTOR "5 in 1" SETS.** This account is based on material sent by Ed Furness (photos of two of his models, ads, and a copy of the Instruction Sheet for the Military Vehicle [MV] Set), and Richard Symonds (an ad, several of the MV Plates, a Wheel, and a section of Track); also used are the Names of Parts in Al Sternagle's *ERECTOR PARTS ILLUSTRATED*, 4th Ed. MCS has a Section on the 5 in 1 Sets which shows all the models that can be made from 3 of the 4 Sets said to exist. That's to say the MV, the Car and Trucks Set (C&T), and the Road Building Equipment Set (RBE), called the Road Construction Set in the Sears' ad shown in MCS. The 4th Set may be a motorised version of RBE which Don Redmond tells me is mentioned in an article by Al in *YESTERDAZE TOYS*.

Basically all these sets used special parts with only a handful of standard ERECTOR Strips and Brackets. There are no PNs and MCS says that there are about 100 parts: I could only identify about 80 but some/all of the difference may be parts in different colours for the various sets. Many of the parts are plastic, 43 in my count, and they are mostly trim but include Wheels, Track, The Crane Boom, and body parts which need 3-d curvature. Apart from Axles, N&B, etc, the standard metal parts are 5 and 11-hole Strips ( $\frac{1}{2}$ " pitch holes), 6-hole Tapered Girders, and what look like standard  $\frac{1}{2}$ " Angle Brackets. The special metal parts are nearly all Plates but there are some others like Fenders, and a Clamshell Scoop; also Flat Brackets (which, dare I say, ERECTOR could with advantage have adopted as a standard part). The Plates, about 15 in all, include two that are flanged and two angled ones; they are easy to recognise because all of them, except for the Cab parts, have alternate rows of holes, and long slots and holes. These rows are  $\frac{5}{16}$ " apart (between centres), and the pitch of the holes (in the rows of holes) is  $\frac{5}{8}$ " (15.9mm). In the flanges there are two rows of holes  $\frac{5}{16}$ " apart in both directions. All the holes are larger than normal at 4.7mm.

The 5 models for the MV (one is shown below) are on a 17"x22" double sided Leaflet (M6639). Most of the models are something over a foot long and are basically made from the flat Plates joined either to the flanges of 'Base' Plates, or by Angle or Flat Brackets (called Angle/Straight Connectors). Strips are only included in the C&T and can be seen in the crane on the back of the breakdown lorry. The 5 in 1 Sets are shown in the 1964 ERECTOR catalogue and clearly someone had taken a clean sheet of paper in designing the parts and the basic way of making the models. Most ERECTOR parts were re-designed in 1963 and possibly that exercise threw up the ideas for these sets. I've never seen any of the models in the flesh but they look attractive in pictures; however they were apparently not a great success and the date of 1967 in MCS may be about the end of their run. Perhaps the incompatibility of the parts with standard ERECTOR was a mistake. The later MECCANO Multikits were said to have been popular and they were no more sophisticated mechanically, though the gun in the Army set did actually shoot plastic 'shells' quite well.

One or two notes on the parts (overleaf):

## MOBILE HOWITZER

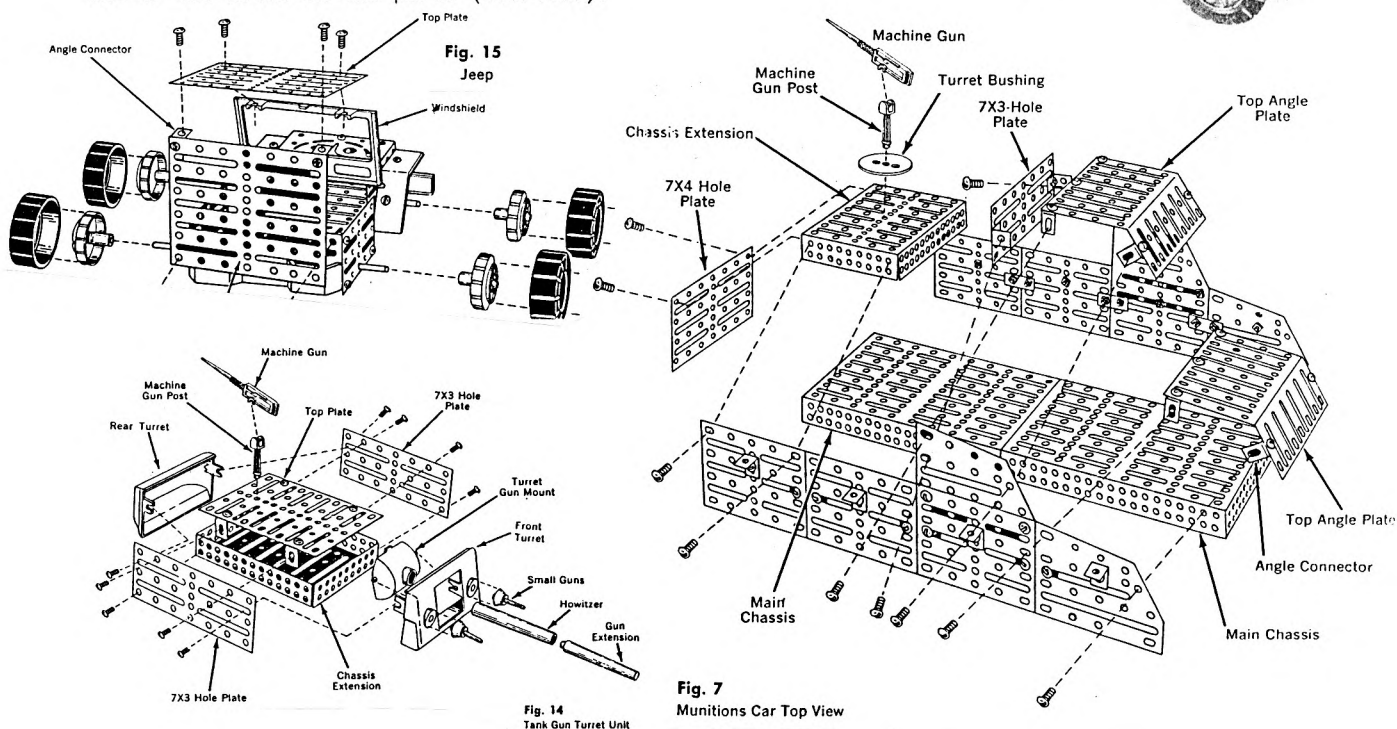
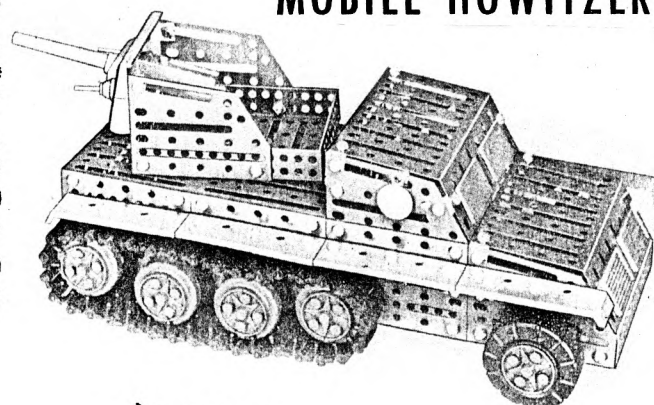


Fig. 14  
Tank Gun Turret Unit

Fig. 7  
Munitions Car Top View



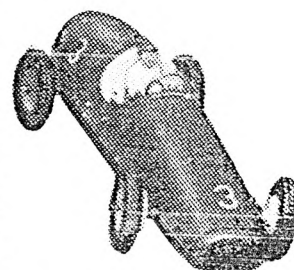
- The Plates are .021" thick with very slightly rounded corners; they are accurately made and the paint finish is very good. There are one or two sharp edges on the corners though.
- 3 lengths of Bolts were used, 3/16" (shorter than the standard ERECTOR 1/4"), 1/2" and 7/8"; round heads are shown and square Nuts.
- The 2" dia Wheel is in two parts, the outer Tyre which pushes onto a Hub. The latter is a push-fit on a standard ERECTOR Axle and its outer edge is shaped to fit within the centre of the Track. Said Track comes in sections about 5 1/4" long which clip into one another to make different lengths for the different models. The treads are 15/16" wide and are connected one to the next by two thin plastic 'strips', each about 5/32" wide, to give flexibility; there are 11 treads in each section.
- The MV metal parts are painted olive green, the plastic Hub is a similar colour and the Tyre and Track are black. An ad says that RBE parts are yellow and black. The photo of Ed's truck model shows black, red and yellow Plates, yellow Hubs, red Fenders, and a blue (I think) front grille panel.

With more information new MCS Sheets could show Set Contents and Illustrated Parts, so if anyone has any such data please get in touch - copies of the Instructions for the C&T and RBE would be a great help. Meantime the reduced drawings from the MV Leaflet on the previous page show some of the parts.

AMENDMENTS TO MCS (as necessary, depending on version) HOLE DIAMETER: 4.7mm. HOLE SPACING: 5/8" (15.9mm) between holes in rows 5/16" (7.9mm) apart. SETS: Military Vehicles; Car and Trucks; Road Building Equipment (this is called Road Construction in the Sears ad shown later); probably a motorised Road Building Set. PARTS: About 80, over half of which are plastic. COLOUR: Olive green for Military Vehicles; red, yellow, black for the other Sets. MOTORS: Probably electric in the motorised Road Building Set. PERIOD: Known 1964 to at least 1967. COMMENTS: Very few standard ERECTOR parts were used in these sets.

AMENDMENTS TO INDEX IN OSN 6: THREAD: 8-32. SPCE: 15.9x. dST: 4.7\* DAXL: 4.

A BRAL FERRARI. Geoff Wright showed me a BRAL products Leaflet which included a constructional set for a Ferrari racing car. There is a small picture of the finished car (right), and one of the Set itself which will be included in an Extra MCS Sheet. The box lid has Auto Gran Prix on it, but no mention of BRAL. The blurb says that the Set contains steel and cast aluminium parts to make a scale Ferrari Racing Car powered by a 3 volt motor. The Set can be seen to contain a chassis, wheels with separate tyres, upper and lower body units, a 3 spoke steering wheel, the driver, and a small, cylindrical motor. No other mechanical detail is clear but there's a part which might be a gearwheel, and others which might be steering gear components. What appear to be 2 Screwdrivers, one large and one small, can be seen. There is no positive indication of date on the Leaflet but also included are the old style Aero Sets which were still advertised in an early 1970s products Leaflet which didn't include the Car, while said car looks like late 50s to this non expert.



AMENDMENTS TO INDEX IN OSN 6: NAME: BRAL RACING CAR. TYPE: CR. CY: IT. SPCE: VAR.

PRIMUS PRICES. My thanks to all those who sent information. The idea was to try to see if anything could be gleaned on dates of introduction and demise of the various sets. The lowest prices were 6/- to 45/- for Sets 1-5, slightly lower than those in the Jan 1917 ad (5/88) for 5 unspecified Sets (7/6 to 50/-), and so probably slightly earlier, given that prices generally rose throughout WW1. So it is fairly certain that the 1917 ad referred to Sets 1-5, and either Set 6 had not been introduced at that time or it wasn't available due to the war. The fact that in the earlier list there was no mention of it makes it more likely that it wasn't on the market until sometime after the start of 1917.

The next fixed point is a Manual stamped with 'revised 2/20 prices': 7/6 for a No.0 set, 10/6 to 105/- for 1-5, and 210/- for a No.6. Also 17/6 for a Big Wheel Set (BW). The original prices in this Manual were 10/6 to 168/- for Sets 1-6, no mention of #0 or BW. Probably the date of this Manual was 1918-19 because in another, Sets 1 to 6 are given as 8/6 to 105/- (actually £5.5.0 but I'll put everything into shillings for convenience), and so this fits between the 1917 ad and the '1918-19' in terms of prices and range of Sets. So call this one 1917-18 and some confirmation of this is that it's the only one seen that shows the model Tank: tanks had been introduced in 1916 and were no doubt a popular subject for toys soon afterwards.

So that puts the #6 around 1917-18, and the #0 and BW around 1919 to early 1920. After that nothing but a page from a Bassett-Lowke catalogue thought to be 1926 or shortly after, that shows the BW, Motor Chassis and Locomotive Outfits, and the postage for Sets 1-6, but no mention of #0. The postage is also given for a PRIMUS Outfit referred to as 'Wood Parts'.

Another Set that I've never seen mentioned anywhere is the 'JUNIOR ENGINEER'S OUTFIT, complete with 32 different parts'. That's on the front of the 8x10½" envelope it was packed in, together with a boy and 12 not very exciting models, and 'Price One Shilling'. The parts in my Set are a Flanged Wheel, 4 x 2" Strips, 2 Catches (#95), a Trunnion, 4 x Posts (#11), 1 Signal Post Rod (#96), 3 Wire Stays (#155), 2 Collars, 2 Axles (#78), and 6 N&B. This little Set probably came quite late in the PRIMUS era, the Flanged Wheel has only 4 holes in its face instead of the 8 shown in all the manuals I've seen, and its boss is (single) tapped 5/32" BSW, whereas most 4 (and all 8) holers have a smaller diameter Set Screw with a non-standard thread: one I've just checked is .102" o/d and about 40 tpi.

If anything comes your way that adds to any of the above, please send details.

**STOKYS CITY.** This system is well covered in MCS but a little more can be added from a Manual and some of the parts that Dennis Higginson kindly sent recently. There are 2 City Sets and basically the system consists of aluminium wall panels and hardboard roof panels, held together by a selection of brackets. The holes in the Panel, as in STOKYS Strips etc, are 4.1mm dia, and their pitch is in multiples of ½". All the designs on the Panels, windows, railings, clock, and so on, are painted on, and there are no cutouts in any of them. And all but the window panels #601 and 602, have designs on only one side, and so may be used with the plain face outside or upwards - the Balcony Railings, #625-7, for instance are used in this way as loading ramps. (In MCS #601 looks as if it is double height like #602, but what is shown is meant to be the two sides of a square Panel: in Dennis's Manual there is a clear space between them.)

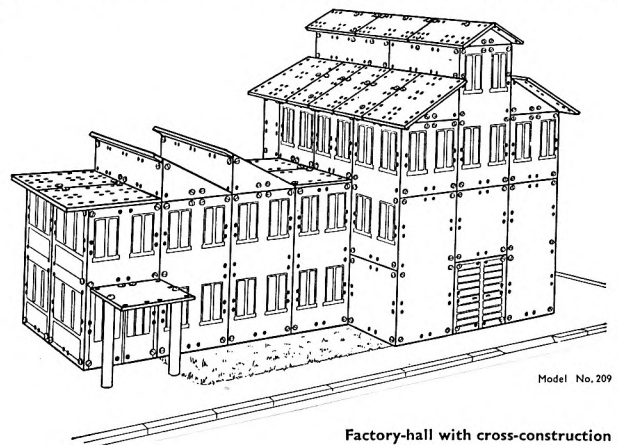
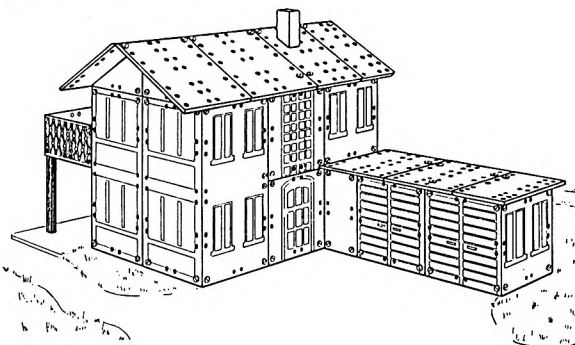
The wall panels are nominally 4" wide, Panel 602 actually measures 3.97x7.94", and are .024-.026" thick. They are silver on both sides with blue-green window panes, and the window frames and other details are dark grey. Balcony railings are 2" deep and no floor is provided for the normal 2" wide balcony: it is suggested that cardboard be used. The smooth faces of the hardboard roof panels, #631-3, are red and they measure 2½x5", 4x4" and 4x5" respectively. The Columns, #661, and the Chimney, are wood painted grey and they are held in place by the Wood Screws 100H.

The panels are normally butted together, and are held by 2 and 4-hole flat Joint Plates and Angle Brackets with slotted holes; angled versions of the latter are used with the roof panels and there are also 11-hole obtuse A/Gs in the larger Set. The Manual shows a good selection of 20 modern, rather undistinguished, looking buildings - houses, flats, factories, a church, etc; the tallest, of 6 storeys, would be about 24" high. I looked in vain for the Swiss chalet of my school geography book, though it could be done with the parts I think, the pitch of the roof is about right. How would the models look? Quite smart probably but I've two reservations: first the flat window and door panels might appear rather 2-dimensional, especially when used in small houses; secondly, there are only enough Brackets provided to put one at the top and bottom of each wall panel and this might leave unsightly gaps half way down, particularly with the 8" ones, unless they were perfectly flat.

**AMENDMENTS TO MCS** (as necessary, depending on version) HOLE DIAMETER: 4.1mm. HOLE SPACING: Multiples of 12.7mm, usually ½" or 1½". COLOUR: Silver with red roof panels; windows blue-green, details grey. PERIOD: 1950s to 1960s [from MCS/FB]. COMMENTS: Wall panel are painted aluminium with no cutouts for windows etc; roof panels are hardboard. The Chimney and Columns are of wood.

**AMENDMENTS TO INDEX IN OSN 6:** dST: 4.1mm.

**SUMMARY OF MANUAL.** #Name: STOKYS-City. #Details of maker: Gebr. Stockmann AG, Luzern. #Dates &/or Ref Nos: No.1600 on FC. 1.Auflage on IFC. #Page size: 225x155mm deep. #No of pages: 40 plus covers. #Language: German, French, English. #Printing: Line drawings, black on light orange inc covers. #Page No of Illustrated Parts & highest PN: IBC,675. #Page Nos of Parts List/Set Contents & highest PN: BC,675. #Sets covered: 1,2. #No of models for each set: 10,10. #Name, Model No, Page No of first & last model of each set: 1:Villa with garage,2,101; Apartment-house with cross construction, 20,110. 2:Scyscraper,22,201; 3-aisle housing-block with roof-constructions,40,210. #Other notes: none.



Model No.209

Factory-hall with cross-construction



**CRUSON.** This unusual Dutch system in which perforated Tubes, about 8mm diameter, are held together by Clamps, came to an end in 1985 after being on the market for only about 5 years. MCS shows the parts used in the sets and the Contents of Outfits No.1 and 2, and FB has added a description of the parts and some notes on them. What follows by way of amplification, is taken from two samples of the unnumbered sets (see below), the Instruction Leaflet for Sets 1 and 2, and photocopies of two Cruson publicity Leaflets, one entitled NIEUW NEDERLANDS SPEELGOED!, and the other dated Herfst 1981, Issue 1 of SPEELGOEDNIEUWS. (Spielgoed = plaything)

- Sets 1 and 2 were packed in identical 23.5x33cm cartons with the same inner expanded polystyrene packaging in each. Photographs of various relatively complicated models were shown on the underside; the lift off lid was transparent. The Sets were identified by a 1 or 2 in a white round on each end of the box. For the Xmas of 1900 the remaining parts in stock were packed into these cartons and sold off cheaply; there was no number in the white circles and no Instruction Leaflet was included. The Contents of two examples seen varied slightly one to the other, particularly in the selection of Clamping Brackets included, but were somewhere between a No.1 and a No.2. Another difference was that the Flanged Plate in one Set was painted medium red, in the other it was dullish (zinc?) plated.

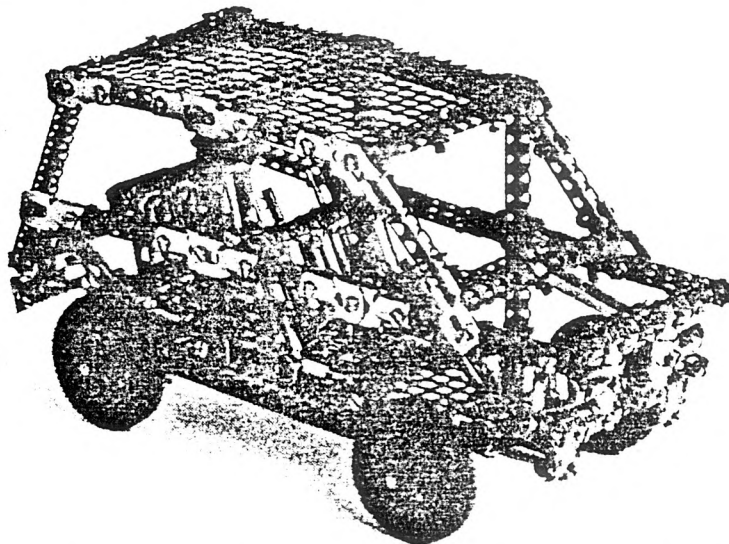
- The colour scheme of the other parts was medium green for all the Tubes, BZP Fittings, and medium red Pulleys with black plastic Tyres. The M4 N&B were nickel plated and are the neatest you can imagine. The Nuts are .215" A/F and .076" thick; the Bolts have .210" dia cheeseheads, .057" deep, and are 1/2" long u/h. The Axles and Crank Handle, 3.98mm dia, were also nickelled. All the parts were well made and nicely finished.

- In the publicity literature mentioned above there are references to Sets 3 and 4, which are said to be in preparation. They were to be packed in boxes twice as large (33x47cm) as those used for Sets 1 and 2, and the parts were to be blue and yellow. Also in the Instructions it is said that the Contents of Set 3 would be equal to those of Sets 1 and 2 combined. As far as is known no such sets were ever available.

- In one of the Leaflets there is a list of the parts that were for sale separately in blister packs. These include Perforated Strips in 8 lengths from 5 to 29 holes long (#305-329), not mentioned in MCS. They are the flat strips from which the Tubes #205-229 were rolled, and are basically 3 holes wide like MECCANO X, but with an additional half hole on each side, which join to make the 4th full hole around the tube. Various models are shown in which they are used as partially clothing for the otherwise rather skeletal frameworks: for instance the roof of the car below.

- The Instruction Leaflet has 6 A4 size sides and shows photos of 11 models for Set 1 and 6 for No.2. Three versions are known, one in Dutch, one in French, and one with a typed English version of the Introduction pasted over the Dutch original.

I have included the List of Separate Parts in an Extra MCS Sheet; note that it doesn't include every part, those missing are the Flanged Plate, #101, the Axle 504, the Clamps 410 and 411, and the Screwdriver and Spanner, 801, 802. A Windmill is included which uses the Perforated Strips and it appears to be powered by an electric motor, though there is no mention of a motor elsewhere in the literature. Also shown is the



part of the Instructions on how to use the various Clamps - I found when making a model that they were well designed and gave a reasonable degree of flexibility in angling the Tubes, one to another. The worst feature of the system is that there is no positive way of attaching a Pulley to an Axle; the method suggested is to push Split Pins, #723, through two of the four small holes in the Pulley so they jam against a Spring Clip on the Axle. None of the models in the Instruction Leaflet require fast Pulleys/Wheels.

Thanks are due to Karst Quast, Harry Mariën, Henk Elema and René Mikkers for the material in this article.

**AMENDMENTS TO MCS** (as necessary, depending on version). HOLE DIAMETER: 4.2mm. SETS: 1 and 2. 3 and 4 planned but thought not to have been produced. An unnumbered Set was sold to use up stock of parts. PARTS: 45. COLOUR: Mid green Tubes, mid red Pulleys, BZP Fittings, mid red or dull zinc plated Flanged Plate. PERIOD: c1980 to 1985. MANUFACTURER: Cruson Toys bv, Breskens, Holland.

**ENGLISH BOB PARTS.** Richard Gilbert recently came across in Bristol, where BOB was made, 4 large trays of parts with dozens of Rods, Pulleys, Tyres, Plates, etc. There was nothing to say positively that they were BOB but the range of parts corresponded to MCS, and where known BOB parts were available, they matched them exactly. As far as I know this is the first time that English BOB Plates have been seen. The following comments add to the details already in MCS:

- The Rods R1-9, CR1-3 and CR11-17 are all steel, all plated, some a dull grey and some nickel. Their dia varies between .115" and .117". The approximate dimensions (in mm) of the formed Rods are: CR1 88X12; CR2 24X24X55; CR3 24X24X105; CR11 125 long, base 80; CR12 55X25X55; CR13 37X18X37; CR14 30X50; CR15 25X25; CR16 25X50; CR17 24X50X24.

- The roundhead Rivet M1 is aluminium, 3/4"x.116" dia. The Sleeve M2 is 20mm long and is used for joining Rods; some are brass and some aluminium. The Clip M3 is of blued steel 5mm wide, with arms 5mm long. • Joint J1 is diecast of zinc alloy and has PATENT cast into one side and G.Ni.K. into the other. (cf BOB B.SCDG on French BOB Clips). S1, the Joint Screw, is brass threaded M3, 4mm u/h with a cheesehead 4.9mm dia.

- The dia given for the Pulleys in MCS is the o/d; they are .2"x.010" thick with a bore of .122", and all other holes in them are the same size. They are turned from aluminium, some of the W1-3 have a shallow recess machined into both their side faces (see photocopies below). The one example found of a recessed version of W1 is 29mm dia o/d rather than 30. The holes in W2 are at a radius of .35", and are thus 1/2" apart; in W3 the equivalent dimensions are .21 and .30". W5 and W6 are 30mm dia and their bosses are 13.0mm dia, double tapped M3, with a cross bore at right angles. W6 has as well, 2 perpendicular cross bores through the pulley part, centred on the bottom of the 'V' groove; these are in line with, and parallel to, the threaded and plain holes in the boss. S2, the set screw is brass, with a 5.5mm round head, and is 8mm long u/h.

- The black rubber Tyre, T1 fits the 30mm Pulleys; it has shallow rings of circumferential tread and an o/d of about 44mm. There were also a few 35mm dia black rubber rings which could be stretched onto the 30mm Pulleys.

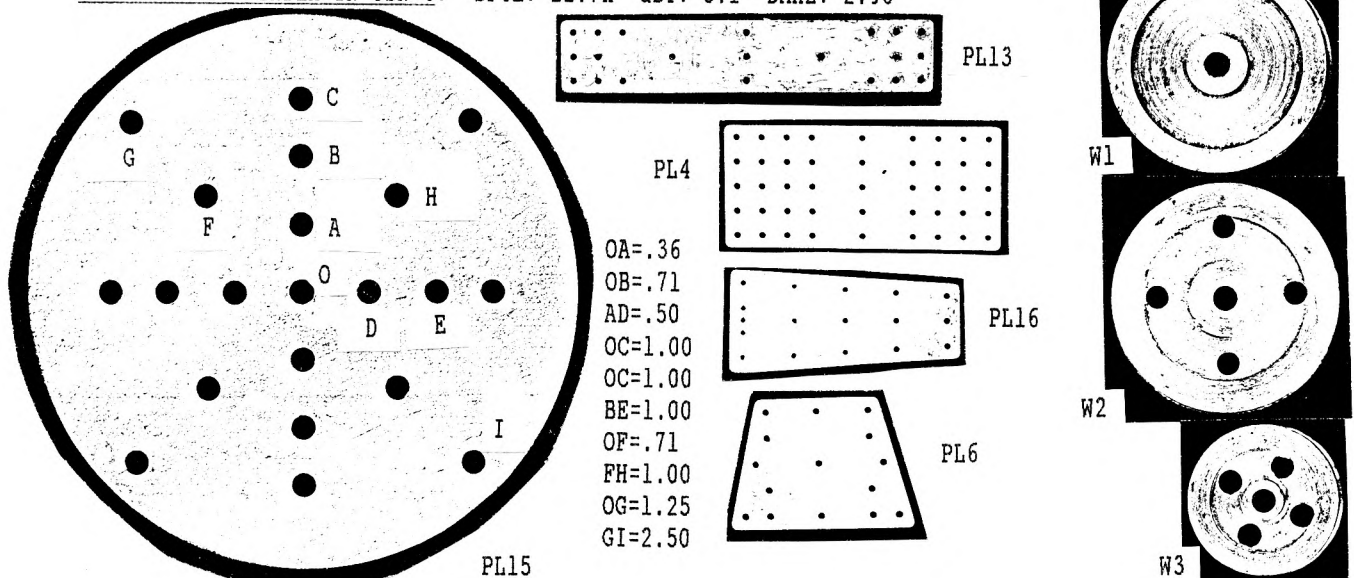
- The Plates are all made of aluminium, .028" thick. The pitch of the holes is basically 1/2" or multiples thereof, except for the Circular Plate PL15, and some of the holes in the tapered plates. The edge holes of PL6 and PL16 are slightly over 1" apart, but for PL2 the edge holes are spaced at exactly 1/2" and the centre row are slightly closer together. The layout of the holes is shown in MCS and with the exceptions noted below corresponds to the actual pattern found. Perhaps the size of the Plates isn't clear from the MCS illustrations, in fact the largest Plate, PL12, measures 7 1/2"x3 1/2", and the dia of the Circular Plate is 2.7/8". The holes are rather smaller than might be thought, at about .123" dia. The corners all have a radius of approximately 1/8".

- Now for the exceptions, and as it is hard to describe some of them please see the much reduced photocopies of the parts below. PL4 and PL13 have the number of holes stated in MCS but arranged slightly differently. PL6 and PL16 each have 4 extra holes so that they actually have the number given in the MCS List. Likewise PL15 has 21 holes and not the 25 in the MCS illustration; the key dimensions of the hole spacing are shown alongside (in inches) the approximately full size p/c below.

As a matter of interest the UK Patent shown in MCS, 500629, was granted to Charles Henry Baumgartner, the Swiss who invented BOB, on 10th May, 1939. See OSN 6/121.

**AMENDMENTS TO MCS** (as necessary, depending on version). HOLE DIAMETER: 3.1mm. HOLE SPACING: Usually multiples of 1/2". PARTS: 51. COLOUR: Plates and Pulleys are aluminium; Rods are plated, dull grey or nickel. MANUFACTURER: Ridinger & Co. Ltd., Feeder Road, Bristol 2, England. COMMENTS: The Rods and Joints are similar to those of Swiss and French BOB, but the Plates differ.

**AMENDMENTS TO INDEX IN OSN 6:** SPCE: 12.7x dST: 3.1 DAXL: 2.96





ITEMS FROM LETTERS.

1. Erwin Wyss sent the following note on the history of MATADOR, the wooden system mentioned briefly in OSN 3/44, which he obtained from a fellow member of AMS, Norwin Rietsch: "In 1900 Johann Korbuly (Vienna 1860-1919) invented MATADOR as a toy for his 3 sons. He started production of it at Pfaffstätten in Lower Austria, and he opened MATADOR-Haus (1070 Vienna, Mariahilferstrasse 62) where his products were marketed and sold. In 1978 the company was sold to Kurt Falk, former editor of the 'Kronenzeitung', and today editor of 'Täglich Alles'. After that MATADOR-Haus was modernised with considerable investment, but as with many similar systems, sales fell and production stopped some time ago. There may also have been legal troubles with LEGO. Considerable stocks of parts were available and are still sold in so called 'Schüttelkasten' (Shuttle-sets) for a price of öS 590 [about £35 -Ed]. These sets contain a bit of everything, worth about öS 1000. Should sales increase, which regrettably I personally doubt, production could be started again."

2. From Keith Cameron in answer to a query about FISCHERTECHNIK: "fischertechnik (small f) is a most engaging medium. The aim of its manufacturer is to promote it to build prototypes for commercial systems such as production lines and other complex machinery, and large showrooms are set up for this purpose. Its many hi-tech parts include computer interfaces, are what attracted me. (It does have many parts suitable for small-scale toys). When assembled correctly, it is reasonably rigid within the accepted limits. Rigid light alloy long parts are available. One can build a 4-axis robot in f/t in a couple of hours. I doubt that the same could be said of Meccano! I have a small/medium amount of f/t and I admire its ingenuity and the high quality of the parts, far surpassing most systems. However, its owners can make far more money out of commercial customers and the educational establishment, so tend to neglect hobbyists. This is understandable but irritating."

3. From Don Redmond, " • The new MW 16 DP Worm is of identical pitch to the 'old' (Mysto and early Gilbert) Erector, and the early coarse-pitch Erector Worms fit perfectly with the Meccano GRB and Large-Tooth Quadrants - and when found may be a lot cheaper! • The toyshop firm in Ottawa and Toronto which carried BRAL is out of business and I've not learned of any other Canadian BRAL stockist, though I haven't pursued the matter."

In a later letter he noted the many anomalies in a STRUCTOMODE manual. Many of the models are MECCANO inspired and so double railway buffers are shown whereas North American practice is a single, central stop. Two models appear to show slotted holes rather than the normal round ones, in the flanges of the 11x5 hole Flanged Plate; in a few others the illustration looks more like a Flat Plate with 11 hole A/Gs bolted to it, even though neither part was included in any of the sets. An unusual part is the 3/4" loose Pulley as well as those of 1/2" and 1" dia, though the latter was not in the sets.

Don also sent details of a Canadian plastic system called THE GROWING ENGINEER/LE JEUNE INGENIEUR which contains parts made in Hong Kong. They are multicoloured and look somewhat like PLASTIC MECCANO, but the Axles are 12.7mm dia with holes of 13mm; Bolts are 12mm o/d. There were 4 Sets available and the Instruction Sheet shows 71 models that can be made from the different sets. Gears and Braced Girders can be seen but are not included in the #1 Set that Don found. Details from Frank Beadle if anyone would like them, he keeps track of all plastic/wood systems. Don also mentioned a LINCOLN (best known for LINCOLN LOGS, a wooden set) plastic set he had seen, which much resembled Plastic MECCANO in the design of the parts and even the colours.

4. José Moreno sent an amplification of the STOKYS address given in 7/167: Grossmatt 7, CH-6014 Littau-Luzern. Tel. 041 574159. Fax. 041 868554. He also sent some literature on PROTO and PIC (Precision & Industrial Components). The PROTO Parts List shows a few differences compared to the details in MCS and I hope to include them in a later issue. PIC is a new name to me and José sent the index from their catalogue, addresses of their agents worldwide, and the Contents List of some of the Kits of Parts that are (were?) available. The company is American and the catalogue of over 400 pages lists a myriad of small mechanical items, bearings, cams, gears, differentials, etc, etc, etc. The 9 Kits, 3 each for shaft diameters of 1/8", 3/16", and 1/4", contain gears, couplings, brackets, mounting boards, and the like, with 657 parts in the largest one. My feeling is that this little lot probably falls outside the OS field but if anyone would like to investigate and perhaps write it up, I will be glad to send them the details I have. The UK agent is The Barden Corp, Western Road, Bracknell. Tel. 0344 24511.

5. On TECC Brian Rowe wrote: "I have since bought a No.6 Set and it is a comprehensive one with no less than four trays packed with parts - including Braced Girders which are not in any of the Spares Packs. The gears though do not always mesh properly but reaming out the holes to get rid of the paint sometimes helps. I understand that the smaller TECC Sets 1-4 (made by the CONSTRUCTION people) are no longer available."

6. MECCANO's first serious competitor was almost certainly STABIL made in Berlin by Walther & Co. Tobias Haffter wrote that a lady, Emma Walther filed a patent application in 1904. In a 1924 manual,

the earliest I have, the Introduction is signed by Franz Walther. I hope to include more details in a later issue. Later Tobias sent copies of a number of other patents to which I shall also return: they include two German 'DIY' systems called MECO and MEWEKA. He also kindly sent a 60 page booklet (in German) on building and constructional sets, issued by a Lucerne museum in connection with an exhibition held there earlier in the year. It has sections on wood, stone, metal and plastic systems, and under metal, BANGAROO and TECHNOFIX are mentioned, but only by name - more details when/if they become available.

7. Dave Taylor remembers that sometime in the mid to late 1950s Woolworths sold a set containing red and green parts, and the corners of the Strips were angled like VOGUE. He is 99% sure that it was called MECANO and asks if anyone else can recall it.

**CONSTRUCTO V-8 AND V-12 SETS** These Canadian Sets, made up from MERKUR parts, were briefly discussed in 4/60. Ed Furness has now kindly sent a copy of the manual which covers both Sets. The models in it are identical to those in the MERKUR manual for Sets 201/202 described on p213, and the Illustrated Parts and their PNs, and the two pages showing Standard Constructions, are the same too, apart from being in English rather than Czech of course. The CONSTRUCTO manual has much smaller pages, about 215x140mm, and the illustrations of the models are reduced accordingly; other differences are that none of the parts in the models are identified by PNs and in two cases pairs of models have changed pages and Model Nos. None of the models have the larger tyres shown fitted to models on the box lid.

The CONSTRUCTO Manual, marked as being Printed in Canada by the way, contains no Set Contents; on the back cover is a list of parts available from Paramount Industries and this contains all the parts shown in the 111 Parts and virtually all the other MERKUR parts then available. It also lists two manuals as well as this V-8/12 one; a 'Junior 1-4' and an 'Advanced 5-6'. These Numbers are presumably references to other sets, perhaps to the then current standard MERKUR Sets, #1 to 7. Some of the models in the V-8/12 Manual are marked as needing a Set 4, 5, 6 or 7 as well as a 'V' set. A copy of a CONSTRUCTO manual from Keith Cameron, it seems to be the one used for MCS, contains a selection of the models for Sets #1-4 from the MERKUR 1-7 manual discussed on p212, redrawn rather crudely, plus some other models which are not in any known MERKUR manual. So perhaps this is the Junior above, and if so was there a larger 'Advanced' CONSTRUCTO Set, as well as the V-8 and 12?

All this calls for some changes to MCS, but there's no more room so these will be included in OSN 10.

**EXTRA MCS SHEETS.** The Sheets listed below are available at 15p per Sheet plus postage.

|                                                        |                                              |
|--------------------------------------------------------|----------------------------------------------|
| BRAL(M): X1.1,7. [1 Sheet]                             | MERKUR(B): X1.3d/4d/6a,5a. [1 Sheet]         |
| CRUSON: X1.3a,5a. [1 Sheet]                            | MERKUR(B1): X1.1,2,3/6,4-a,5. [3 Sheets]     |
| ERECTOR SENIOR: X1.1,7. [1 Sheet]                      | META BUILD: X2.3/6,4a. [1 Sheet]             |
| HUSTLER ACTION TOY BUILDER: X1.1,2,4,5,6/7. [3 Sheets] | METALMEC OPSET: X1.1,4-a,4b/6,5a. [3 Sheets] |
| INVICTA: X1.2a,4. [1 Sheet]                            | RHOCANO: X1.1,2/5,3/6,4. [2 Sheets]          |
| KONSTRUKTIONSPIEL: X1.1,2/3/6,5. [2 Sheets]            |                                              |

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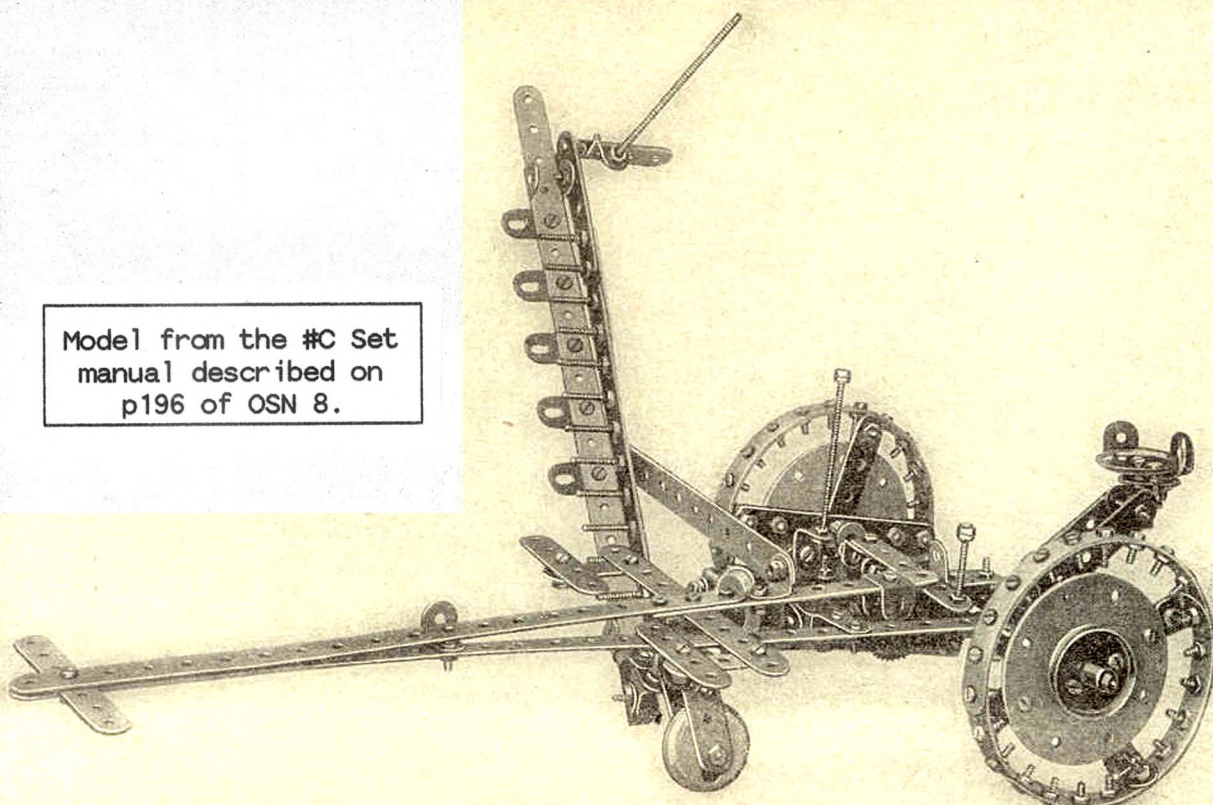
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**CONTRIBUTIONS.** If possible please type these, single spaced, on one side of the page only, within a width of 6½" (165mm). If available please use letter spacing of 15cpi.



Model from the #C Set  
manual described on  
p196 of OSN 8.



Modell 60 **Grasmäher**

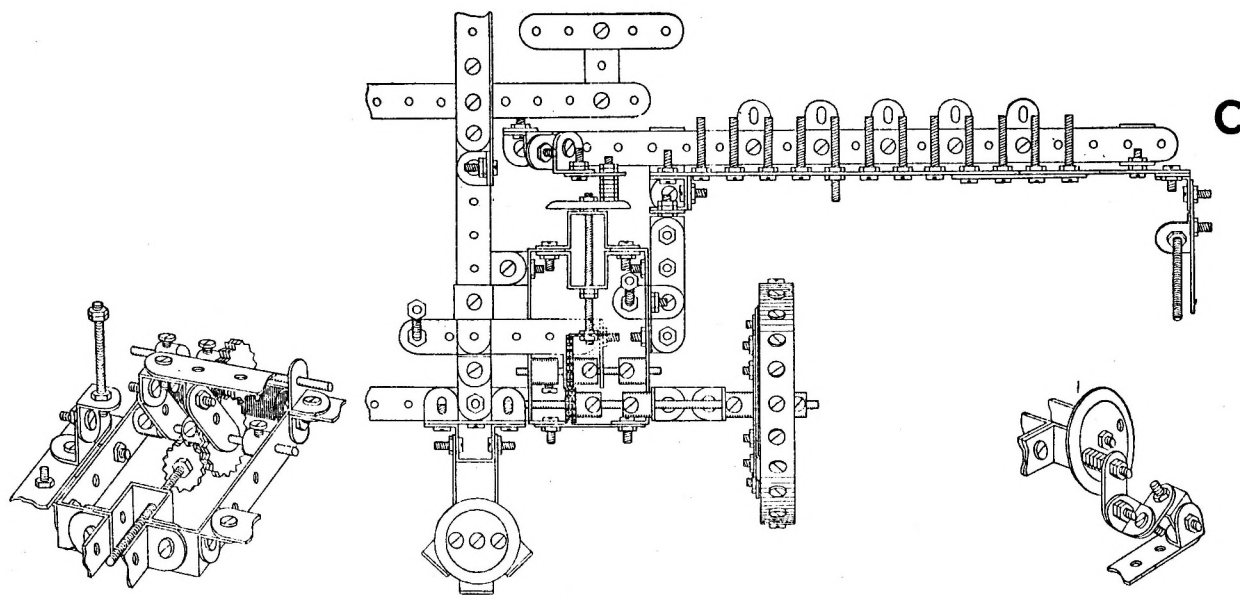


Fig. 60 a

Fig. 60 b

Fig. 60 c

#### Bauteile:

|                |           |   |         |
|----------------|-----------|---|---------|
| 5 Lohbänder    | — 20 Loch | — | Nr. A 1 |
| 5 "            | — 11 "    | — | " A 2   |
| 5 "            | — 7 "     | — | " A 3   |
| 2 "            | — 6 "     | — | " A 4   |
| 5 "            | — 5 "     | — | " A 5   |
| 5 "            | — 4 "     | — | " A 6   |
| 7 "            | — 3 "     | — | " A 7   |
| 15 Laschen     |           |   | " A 8   |
| 35 Winkel      |           |   | " A 9   |
| 2 Brücken      |           |   | " A10   |
| 2 Schnurräder  |           |   | " A12   |
| 2 Lochscheiben |           |   | " A13   |
| 4 Stellringe   |           |   | " A15   |
| 1 Welle 110 mm |           |   | " A16   |

|                       |  |         |
|-----------------------|--|---------|
| 1 Welle 50 mm         |  | Nr. A17 |
| 145 Schrauben         |  | " A20   |
| 210 Muttern           |  | " A21   |
| 3 Lagerböcke          |  | " B26   |
| 6 Bügel               |  | " B27   |
| 4 Radscheiben 30 mm Ø |  | " B30   |
| 15 Schrauben          |  | " B32   |
| 1 Gewindewelle 95 mm  |  | " B33   |
| 1 Gewindewelle 60 mm  |  | " B34   |
| 1 Gewindewelle 50 mm  |  | " B35   |
| 3 Gewindewellen 30 mm |  | " B36   |
| 1 Zahnrad 12 mm Ø     |  | " C37   |
| 1 Zahnrad 12 mm Ø     |  | " C37 N |
| 1 Zahnrad 24 mm Ø     |  | " C38 N |