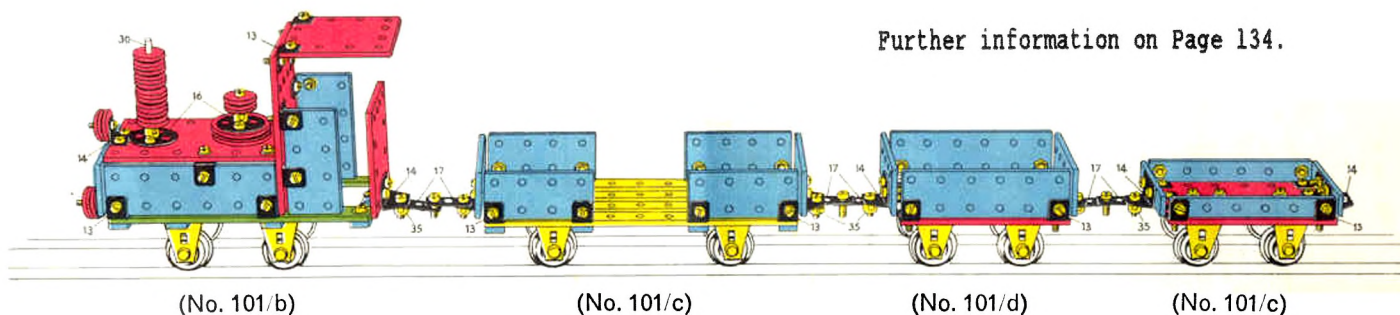


**EDITORIAL** By the time this appears, or very shortly afterwards, Frank Beadle expects to have Part 5 of MCS ready and he and I recently discussed how additions to MCS after Part 5 could best be made. He feels that to wait until enough new systems, or new information on known ones, have accumulated to form a further 'Part' would mean too much delay, and it would be better to send out new material as quickly as possible. This is I think clearly true and one of the reasons for starting this Newsletter was to try to move information around more quickly. But in trying to do so two problems have emerged, first quite a bit of the new factual material in OSN is likely to be included later in MCS, thus giving duplication; this is undesirable but at the same time it is important that MCS should be comprehensive. The second problem is that for various reasons OSN has to be limited to two 32 page issues a year, and this has meant that even with the size and number of illustrations reduced as far as possible, a backlog of material is beginning to build up. Frank and I have therefore agreed that once Part 5 has been issued he will prepare new sheets in the MCS style as soon as possible after new information becomes available, whether it has been sent directly to him or has come from me. Then I will advertise them in the next OSN, giving a brief description and where appropriate adding comments and any information that is available, from Frank or me, that is outside the scope of MCS. The new MCS sheets will be available from either of us, but we hope that anyone who wants them all will order them in advance from me and they will then be sent automatically with OSN. This will save time and in some cases postage. Where new information needs to be included in MCS but doesn't warrant issuing a new sheet, it will be included in OSN so that readers can make additions to the relevant MCS sheets themselves. The new sheets in MCS style and format can of course be simply inserted alphabetically into the appropriate Part of MCS. The cost of the extra MCS sheets will be 15p per sheet, which will usually be printed on both sides, plus (extra) postage at cost. For anyone ordering from me the cost will be deducted from the credit balance shown near the end of each issue. Unless your balance is approaching zero there is no need to send more money immediately for these sheets, whether for automatic dispatch or not, just watch your balance in each issue and replenish when zero is around the corner. It is intended that these new arrangements will start with the next issue, OSN 7, and even if there is probably no sensible alternative to the main bones of the new scheme, the detail may be able to be improved, so if you foresee any problems or if you can suggest any improvements, please let me know.

## Spielwarenfabrik A. Bucherer & Co, Aktiengesellschaft Diepoldsau (Schweiz)



# BUCO-ENGINEER

The JEP KIT series is an educational toy, which consists of more than 100 parts, for assembling a variety of different kinds of models, such as a motor car, robot, helicopter, forklift, etc.

While assembling any of the various models you are able to fully understand principal mechanisms and at the same time, cultivate a scientific mind.

The JEP KIT series is an important beginning to your children understanding of the complicated technology of the future.

Because the JEP KIT is available in a series, it is even more easier to assemble a wide variety of models.

For example, using the JEP KIT series No. 3, you can

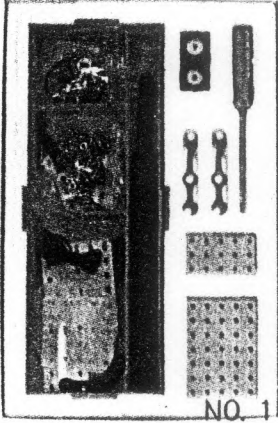
assemble 55 different kinds of basic models, and after mastering the skill completely you can create new and different style models.

Right from the start, when you begin to assemble the JEP KIT series, you will feel interested and excited, until you have completed the model of your choice.

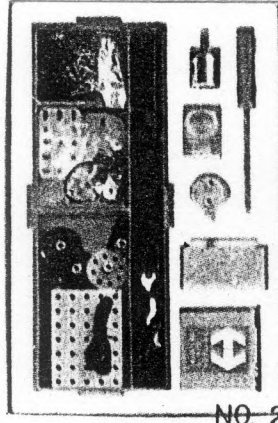
Guaranteed to keep you amused for hours on end. The JEP KIT series is one step to fulfilling your dreams of becoming a future scientist.

While you enjoy, you also study at the same time.

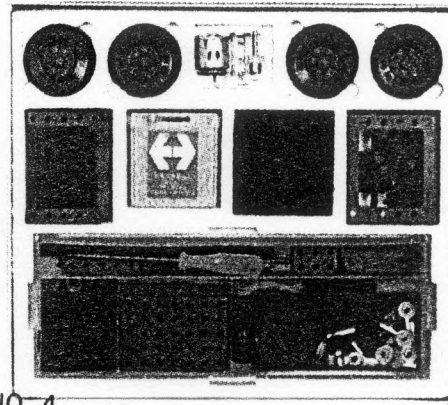
JEP KIT contains no toxic materials and is a perfectly safe toy for your child.



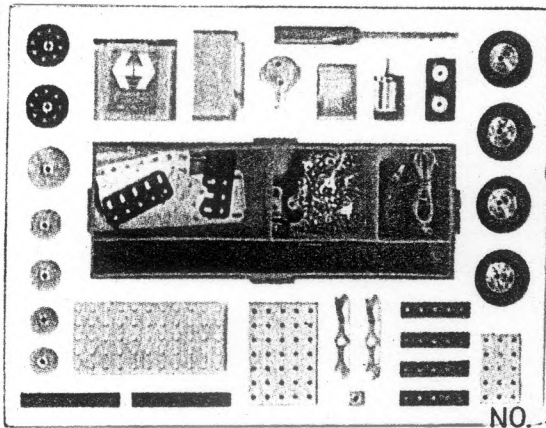
NO. 1



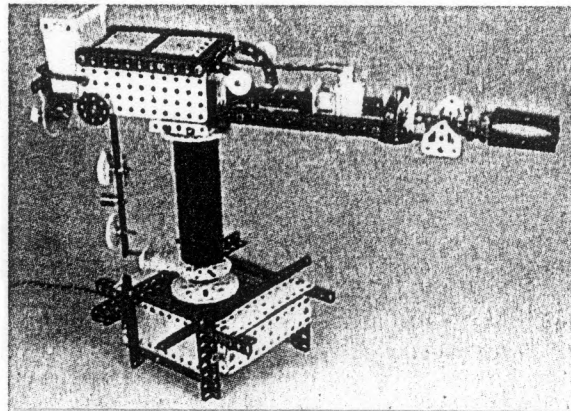
NO. 2



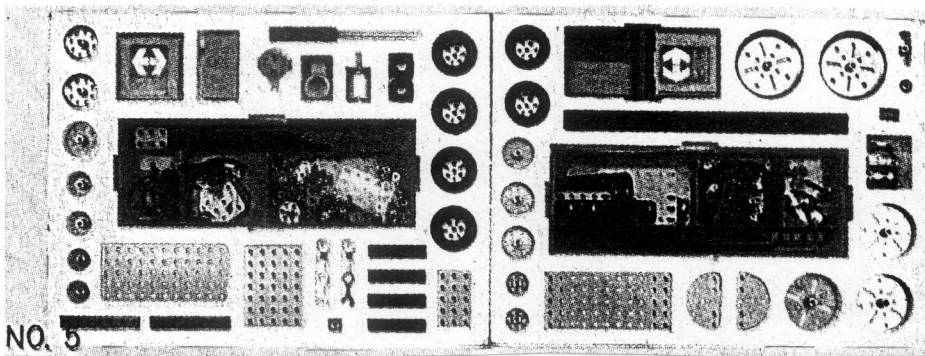
NO. 4



NO. 3



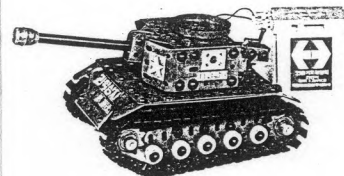
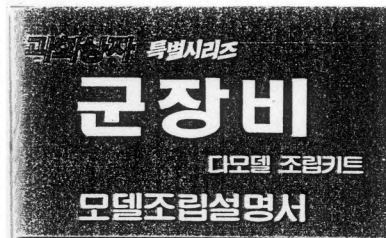
Robot Hand



NO. 5

JEP KIT SERIES

NO. 1	35 various shape basic models
NO. 2	45 various shape basic models
NO. 3	55 various shape basic models
(ARMY SET) NO. 4	10 various shape basic models
NO. 5	73 various shape basic models



제일정밀공업주식회사



**NEW SYSTEM - JEP** Peter Kessler bought a JEP ARMY SET in South Africa in about 1987 and he recently sent some notes on it, and lent the manual and a few parts for examination. It is entirely in Korean but it contained a loose, colour printed sheet in English which gives some details of the JEP range of sets and shows some of the models. Parts of it (the sets and the models with titles) are reproduced opposite and overleaf, enlarged where possible, although it may not copy too well. So starting with that and leaving aside the No 4 ARMY SET, the others appear to contain parts which almost without exception look very, very similar to MECCANO, with yellow plates, dark, possibly dark blue, strips and girders, and what might be brass plated brackets. Apart from Set 1, each contains what looks like a 'Crane' motor and the yellow Battery Box that went with the MECCANO original. And the small parts in each set are packed in a red, partitioned tray just like that in the 1978 series MECCANO sets. The models shown look rather more ambitious than those of the MECCANO 1978 No 5, but whether the JEP No 5 contains more parts cannot be seen from the small illustration of it. It does look though as if it may include the motor with external gearing that is used in the ARMY SET, as well as a 'Crane' motor.

Turning to the ARMY SET, Peter sent the following comments -

" - uncannily similar to the Liverpool MULTIKIT in packaging, quality and colour. Parts are identical to the millimetre (did they get the press moulds from Liverpool?) with the following exceptions:

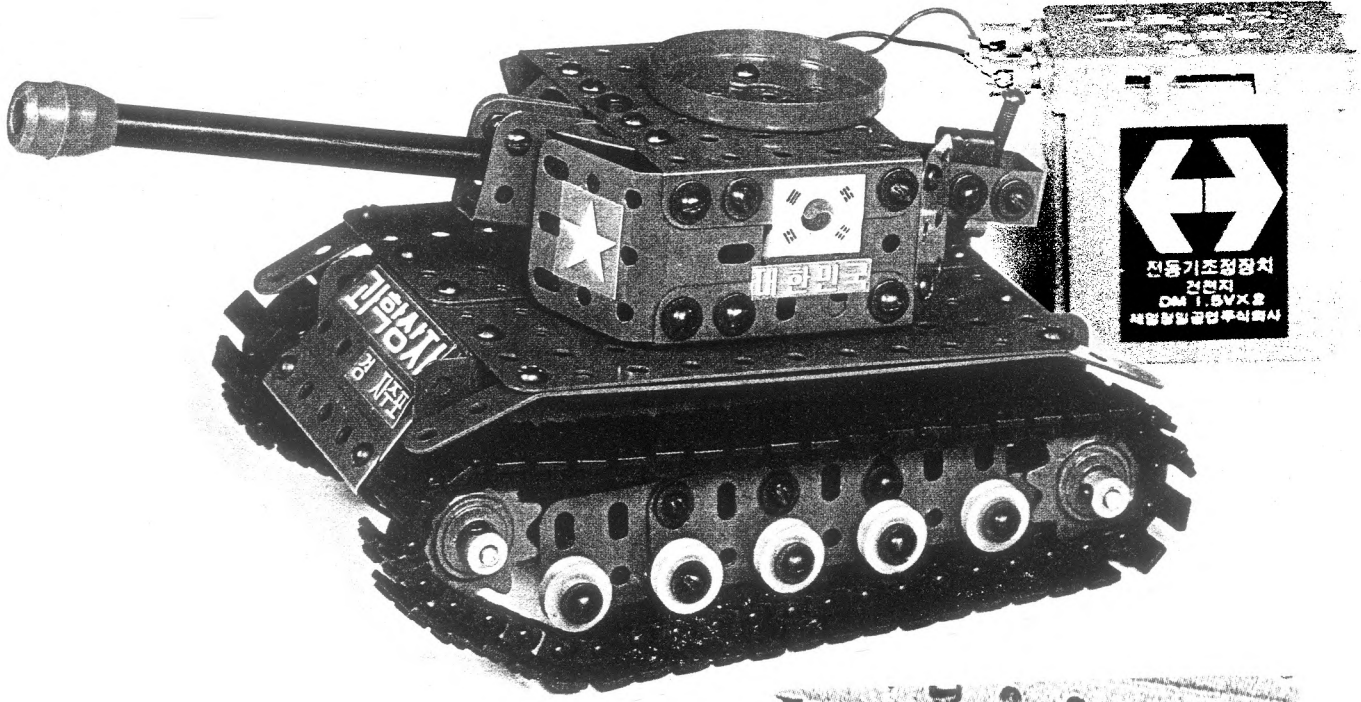
- nuts and bolts are decimal M4 size
- set includes geared down electric motor and battery box
- wheel tyres bear Korean script
- seats are in heavy (unbreakable!) plastic as is the front guard (Meccano: metal)
- tracks have fine, realistic tread (they must have missed THAT mould)
- flexible plates are in plastic
- oh! the screwdriver is a good commercial type and bears MADE IN KOREA in English
- excellent: the track sprockets are BOSSED, no fiddling with couplings and plastic inserts."

The manual is nicely produced with a colour photo of each model and the parts necessary for each are shown laid out (in colour) just as for the MULTIKIT. The various assembly steps are shown quite clearly in black and white photos. The 10 models in the manual are basically the same as the MECCANO ones but they are all motorised with the geared motor unit, shown overleaf, with the pinion on the output shaft of the gearing engaging with a similar pinion on the driven axle of the model. (Both pinions look like MECCANO PN 26 in yellow plastic though the other gears appear to be translucent white in colour).

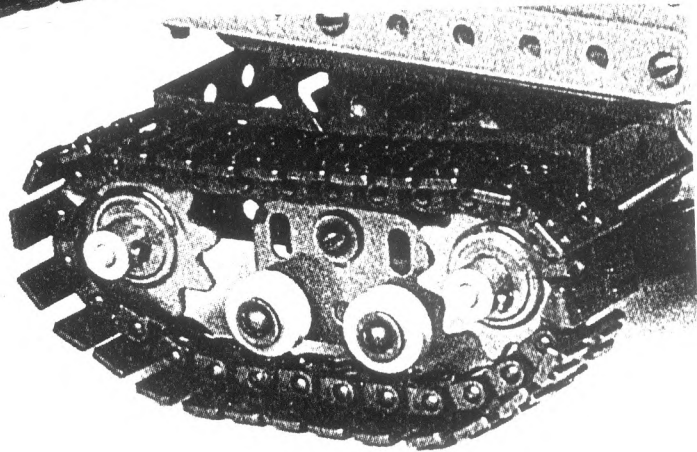
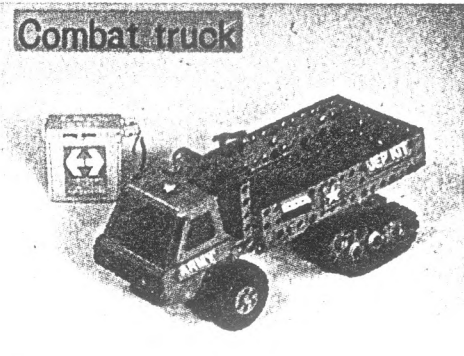
Installing the motor hasn't made any noticeable difference to the external appearance of the models but the other change, to the design of the tracks is apparent and is perhaps an improvement. As can be seen from the models reproduced overleaf, the run of the tracks has been changed and the bottom links are supported on  $\frac{1}{2}$ " Pulleys. So far so good but said Pulleys are shown to be bright yellow and they stand out like sore thumbs against the military colouring of the other parts. Otherwise the colours shown follow those of the MULTIKIT closely with only Axles, Collars and Rod Connectors not in black or green. The green shown in the manual is fairly dark but not at all khaki or olive in shade; the actual parts are similar in colour to MECCANO ones but slightly darker, particularly the plastic plates, which also have a rather glossy finish. The Nuts and Bolts are black metallic; the Nuts are standard M4 size (slightly larger than the MECCANO hexagon), and the Bolts have small, slightly flattened, round heads.

As would be expected the contents of the JEP set (see over) are the same as the MULTIKIT except for the changes due to the use of the bossed sprockets, the pulleys for the tracks, and an extra  $2\frac{1}{2}$ " DAS to which the base of the motor unit is bolted in the model. Finally the names of the three models shown on the loose sheet in English have been changed, so the Mobile Anti-Aircraft Gun becomes an 'Anti-aircraft gun truck', not one might think an improvement.

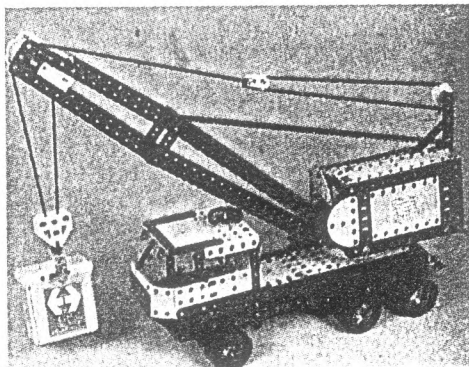
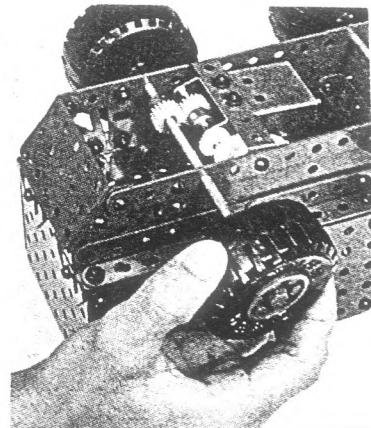
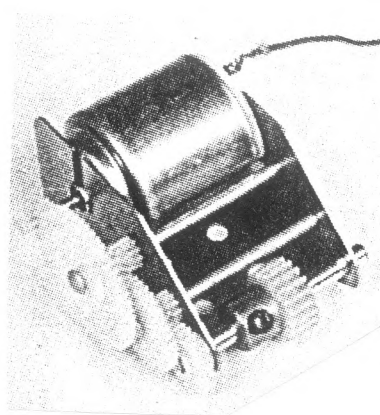
**SUMMARY OF MANUAL** #Name: JEP ARMY SET #Details of maker: none #Dates or Ref Nos: none (the set was bought c1987) #Page size: 209x295mm deep #No of pages: 44 unnumbered including covers #Language: Korean #Printing: Cover is shown opposite  $\frac{1}{4}$  scale, the top is green with red, white, yellow printing, photo of tank is green with yellow  $\frac{1}{2}$ " Pulleys, on pale green ground. There is a colour photo of each model with black & white photos of assembly steps. Parts shown alongside the Set Contents are line drawings #Page nos of Parts List & highest PN: 43, 58 #Page nos of Set Contents & highest PN: 43, 58 #Sets covered: ARMY SET #No of models for set: 10 #Name, model no, page no of first and last model (names are those from MECCANO MULTIKIT): Armoured Scout Car, 1, 4. Missile Launcher Truck, 10, 39 #Other notes: The name of the set is taken from a loose A4 sheet containing the range of JEP sets in English.



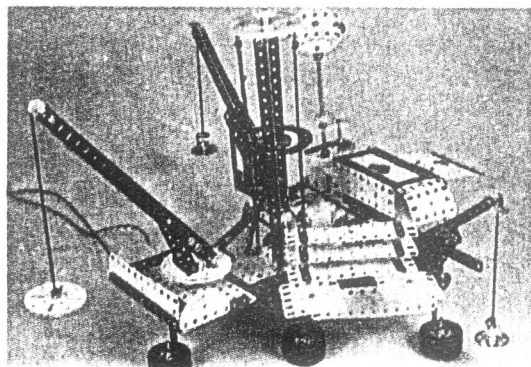
Combat truck



Transport Truck



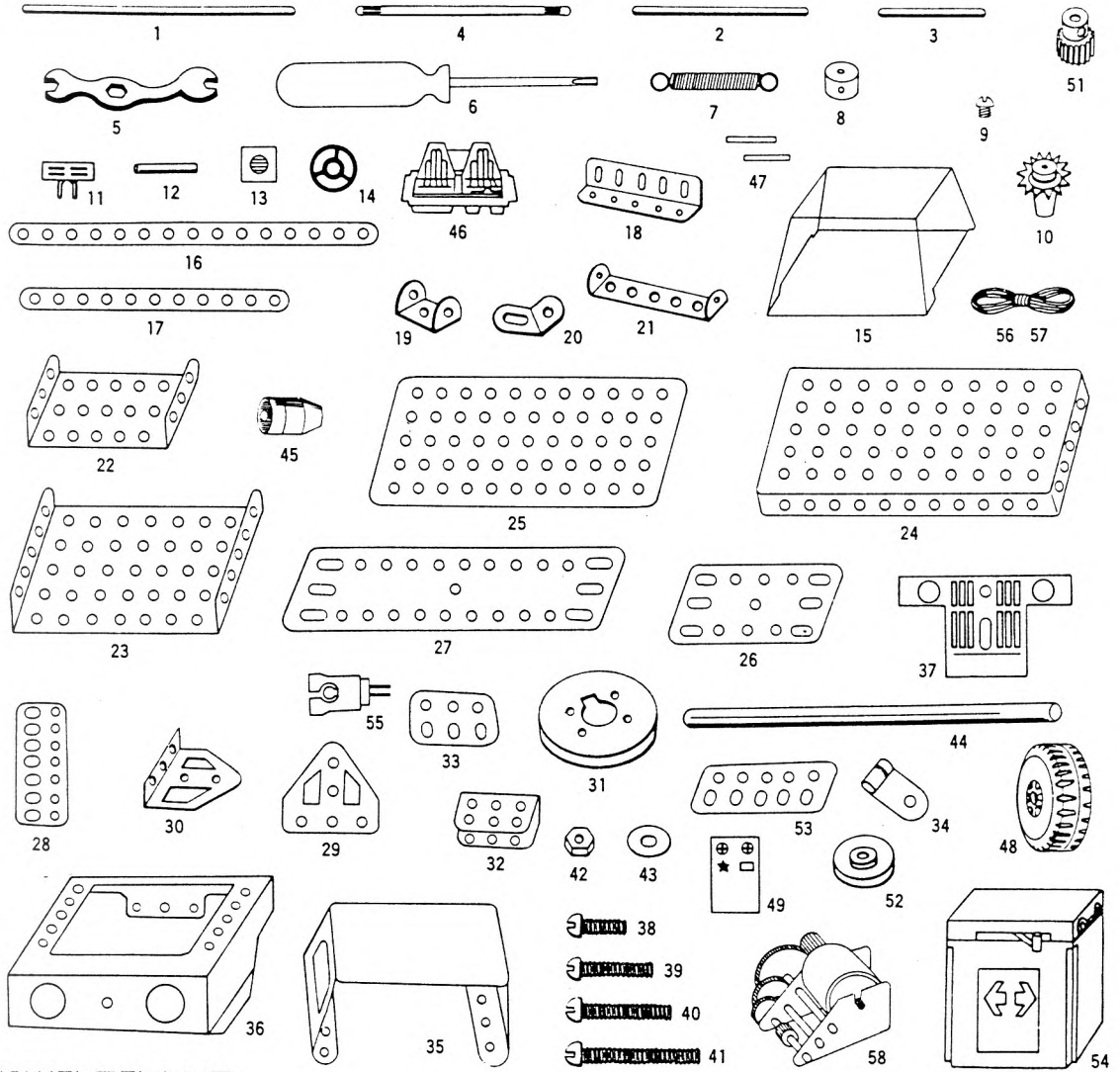
Crane Truck



Oil Rig



# 과학상자 군장비 부품도



과학상자 군장비 부품

번호	부 품 명	단 가	수량	번호	부 품 명	단 가	수량	번호	부 품 명	단 가	수량
1	축 -130	60	2	21	양쪽굽음스트립	140	5	41	볼트-29	10	2
2	축- 64	50	2	22	플랜지판	390	2	42	너 트	10	150
3	축- 25	20	2	23	"	440	2	43	와 셔	10	51
4	너어링축-115	60	2	24	"	400	1	44	포 신	120	1
5	스퍼너	400	2	25	평 판	250	2	45	포 구	20	1
6	드라이버	520	1	26	플라스틱판	30	2	46	운 전 석	60	1
7	인장스프링	60	1	27	"	60	2	47	포 탄	10	6
8	조정부싱	150	3	28	평 판	200	2	48	타이어 문치	250	4
9	멈춤나사	60	14	29	오각브래킷	150	6	49	스 티 카	150	1
10	스프링켓 휠문치	600	4	30	굽음오각브래킷	150	6	50	조립설명서	1,000	1
11	무한케도연결품	10	95	31	플랜지 휠	260	1	51	피 니 언	600	1
12	축 이음쇠	100	1	32	상자형베아링	150	1	52	폴 리	60	10
13	헤드라이트	10	2	33	평 판	100	4	53	평 판	170	2
14	자동차핸들	10	1	34	축스트립콘넥타	200	2	54	건전지 상자문치	280	1
15	유리창	250	1	35	운전석차체-상	200	1	55	플러그문치	10	2
16	스트립-190	260	2	36	" 하	350	1	56	전 선(적)	130	1
17	스트립-140	140	4	37	그 린	120	1	57	전 선(흑)	130	1
18	앵글-60	120	1	38	볼트- 6	10	90	58	감속장치문치	3,500	1
19	D형 브래킷	120	1	39	볼트-13	10	22				
20	둔각 브래킷	120	4	40	볼트-19	10	7				

**QUERIES**

- VEB seems to occur in the names of certain German manufacturers (GDR only?) - does anyone know what it means?
- The Editor would like details of prices of PRIMUS outfits, to try to establish the lifespan of the different sets. If possible give the Name/No of all sets in each ad/list, with the price of each, and of course any associated dates, if there are any.

**TECC** There is a store in Holland called Bart Smit and for the last two or three years at least they have sold various GDR CONSTRUCTION sets, specially packaged for them with just CONSTRUCTIE-BOX on the lid and the CONSTRUCTION set number, but without the initial C, so C02 became 02, etc. But last Christmas they had a new range of 5 sets all called TECC (followed by CONSTRUCTIE-BOX which I suppose means Construction Set or the like). 1 to 4 appear to be from CONSTRUCTION: the illustration on the lid of #1 is similar to that on the last year's standard 02 set, although there are now only 220 parts against the 275 previously; #2 is the C14 Crane Set described in OSN 4 p62; #3 and #4 aren't illustrated in the Bart Smit catalogue but their descriptions fit C07 and C12. Details of C12 were in OSN 3 p34.

#5 is a special set from MERKUR, not marketed elsewhere as far as I know. It is conceived to build the Excavator featured on the box lid, see below. It is a fair size model, simple mechanically, and with no motor or gears, apart from 2 Gear Wheels which are used as ratchet wheels. The parts are in standard MERKUR colours, that is mostly orange, green and blue. The large, glossy manual, in full colour with step-by-step instructions, shows 17 other models but they are not nearly as large and don't really do justice to the range of parts that are in the set. On the back cover there are details of 8 packs of parts, 101 to 108, which contain: angle girders and long strips; plates, brackets and shorter strips; short strips, DAS, etc; axles, bush wheels, etc; gears; pulleys and tyres; flanged plates; nuts and bolts. They sell for between 4 and 8 Guilders each, while the set is 34.95, a little over £11 (the ad below is priced in Belgian Francs). The TECC sets 2 to 4 are slightly more expensive at 39.95.

To save space I have typed out below the contents of the set using the MERKUR PNs given in MCS and not the ones in the TECC manual. They are the new ones recently introduced for MERKUR parts and I plan to include details of the complete range, and some other information on MERKUR sets in the next issue. A few of the parts are not in MCS and I've briefly described them in footnotes, pictures next time.

My thanks to Hank Elema, Brian Rowe and Tony Rednall for sending the TECC info on which the above is based; Brian may be able to help if you want any TECC material from Holland, providing it's still available there.

**CONTENTS OF TECC #5**

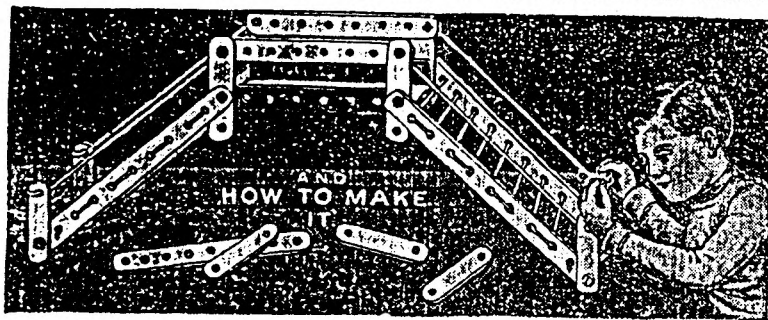
9	of #1	3	of #31	1	of #60	15	of #95C
2	2	2	31A	2	61	1	97
4	3	1	31B	2	62	30	98
2	4	1	34	2	62A	2	*1
6	5	2	35	1	68	2	*2
7	6	1	36	2	70	2	*3
2	6A	4	37	2	72	2	*4
4	7	2	38	2	72A	3	*5
2	9	2	38A	2	73	1	*6
8	10	4	39	2	73A	1	*7
2	11	5	40	4	74	4	*8
4	15	2	41	3	74A	2	*9
4	20	2	41A	2	75	1	*10
2	21	8	42	2	75A	1	*11
4	22	2	43	4	76	4	*12
2	24	2	45	2	77	2	*13
5	25	1	48	1	81	1	*14
2	26	10	50	2	84	1	*15
2	27	140	52	1	86	2	*16
4	28	5	53	1	88	2	*17
4	29	5	54	2	90		
2	30	5	55	1	92		

- \*1: Semi-circular plastic plate, 35mm rad.
- \*2,\*3,\*4: Plates, 3x5; 3x7; 3x10 holes.
- \*5: Flat Girder, 5 holes long.
- \*6,\*7: Flanged version of #37A, R and L hand.
- \*8,\*9: Axles, 50, 90mm.
- \*10,\*11: Spanner, 2-ended; 2-ended & cranked.
- \*12: Tyre for #40.
- \*13: Bracket like MÄRKLIN #11763.
- \*14: Steering arm bracket.
- \*15: Small circular magnet.
- \*16,\*17: Rubber band, thin; thick.





**THE BRIDGE BUILDER** In OSN 5, p85, the MODEL BRIDGE set was described and since then Jim Gamble has come across an ad in an old wholesaler's catalogue (Whyte, Ridsdale & Co., 73-76, Houndsditch, London, E.) which shows a similar set. The illustration and text from it are reproduced opposite. Its date is not known for certain but judging by the MECCANO sets listed on the next page it would most likely be 1913 or 1914. The bridge design is rather simpler than that in OSN 5 and the Flanged Plate is 8 holes long. Unlikely you might think, but also since OSN 5 just such a Plate has turned up chez MW Models; it is 2" wide, has only the 8 holes in each flange and has a black metallic finish. With this Plate were a few other parts - a 5½" Strip with holes every 1" as before; a 2½" DAS, again as before except that it has two extra 1/8" dia holes, ½" on either side of its centreline, though they may have been added after the part was made; and finally three Flanged Plates, identical to the OSN 5 one but with 4 additional holes, each 1" away from the end holes in the flanges.



### THE BRIDGE BUILDER.

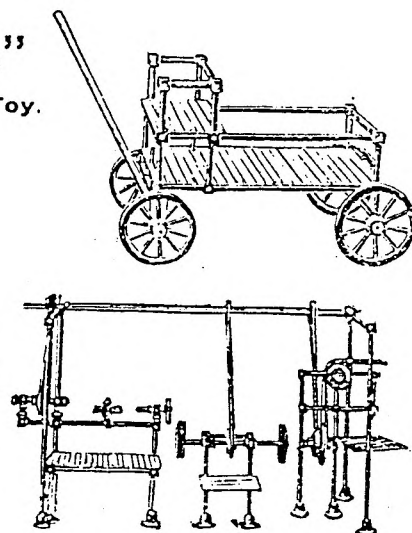
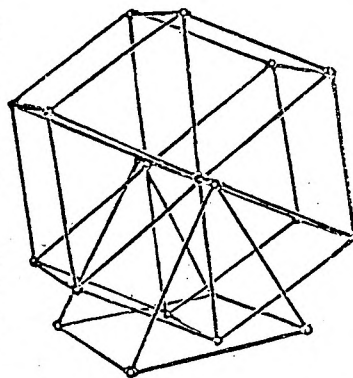
Licensed by MECCANO. Only one of the many models that can be made with our wonderful value sets, supplied complete with all directions. F 8100—Price 8/6 per dozen sets. In 3 dozen lots, 8/- per dozen boxes.

**NEW SYSTEM - SIMPLICO** In the same catalogue as the BRIDGE BUILDER above was the ad opposite. At first sight it looked as if it might be STRUCTATOR under another name but the reference to screwing the bars into the supports and connectors, rules this out I think. Nevertheless it might be an 'improved' version, and the 'Requires no Pincers, ..' could be easily recognised perhaps, by anyone who knew STRUCTATOR, as a distinct improvement.

As a matter of interest the BRIDGE BUILDER at 8d a box, and SIMPLICO at 2/6 or 3/3, compare with the Meccano No 0 at 2/3 and No 4 at 18/9. KLIPTIKO sets are also listed, in three sizes, at 4d, 8d and 1/8 per box. The MECCANO sets are priced per box, all the others are sold by the dozen. All these prices are wholesale of course, and the MECCANO are 80% of the then retail prices.

## "SIMPLICO."

The Improved Building Toy.

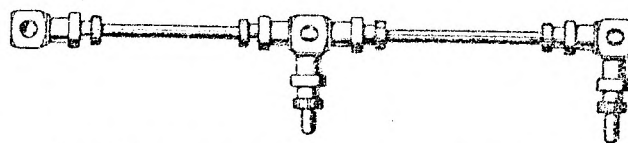


Requires no Spanner, Pincers, nor Screw-driver, Builds Carts, Chairs; in fact, dozens of models can be made without any previous experience, the bars are fitted with threads for screwing with the finger into the supports or connections. All parts are made of nickelled metal.

In strong boxes, with full instructions and displayed designs.

N F8238—Makes 16 models. Price 30/- per dozen  
N F8239— " 28 " " 39/- " "

**STRUCTATOR** This is a page of one thing leading to another, and on the subject of STRUCTATOR Roger Baker has a No 3 Set which has two points of interest. First the 'corrugated' Plates (#10) while still made of light alloy, have a black metallic finish instead of being left in their natural colour. Secondly the Joints (#1-3) are made of steel and have a squarer shape, as shown in the Parts List of the manual; the rounded ones in MCS are cast from a zinc type alloy and are sometimes found with part of the outer housing broken away. The action of the Wedge Rings (#4) might cause this type of damage, but alternatively it could be deterioration of the metal with age. Most of the models in the manual show the rounded type so it is likely that the steel ones were introduced as an improvement, perhaps after trouble had been experienced with the cast ones.



Showing the principal joints fixed to a Standard Bar by means of Wedge Rings.

**MEKANIK AND EL INGENIERO MECANICO - TWO NEW SYSTEMS FROM VENEZUELA** Ike Ascher has sent details of these two sets that he bought in Venezuela in 1987. Starting with **MEKANIK**, it is a small set and it is believed to be the only size available, the hole spacing is 10mm. The 5 hole Strip that Ike sent for examination is accurately stamped from steel and is nickel plated, with a slightly rough finish rather than being mirror polished. The ends are nearly fully radiused and their edges are slightly sharp to the touch in one or two places. The most noticeable thing though is that the holes are 4.7mm dia and within a width of 9.8mm there isn't much metal outside them. The parts and set contents as shown in the manual are reproduced opposite (x.7), all straightforward I think except # T2 is probably plastic or rubber tube which is shown in the models, in short lengths, pushed onto Axles to act as Collars; # U-60 appears to be flanged on its short sides but in the models the flanges are lengthwise; # the Mr (of black rubber) are push fit half wheels/pulleys as shown in the sketch (opposite) taken from the back cover of the manual. Each is 4.4mm thick and tapers from about 22mm dia to about 18; # GANCHO TIPO "S" and DESTORNILLADOR are I expect the S shaped Wire Hook and the Screwdriver.

Details of the manual are given below and 3 of the models, 2 simple ones and the largest, are opposite (x.5). Some of the models are a bit reminiscent of MERKUR and so are some of the parts, but the holes in the strips are much larger. Rubber parts in current sets are now less common than they were with the widespread use of plastic but Ike remarked in his letter that it would be natural to use rubber in Venezuela because of the ready access to rubber producing regions. This system will be **MEKANIK** [3] in MCS, etc.

**SUMMARY OF MANUAL:** #Name: **MEKANIK** #Details of maker: Juguetin S.R.L. (set was bought in Venezuela) #Dates &/or Ref Nos: None #Page size: 163x211mm deep #No of pages: 16 including covers #Language: Spanish #Printing: Black on white line drawings including covers #Page Nos of Parts List & highest PN: Parts illustrated on p2 and listed on p3. Parts are not numbered sequentially; the list of 24 parts starts with P-2 and ends with CUERDA #Page Nos of Set Contents & highest PN: p3. See above #Sets covered: No reference to sets, the contents of one set is given #No of models for each set: 25 #Name, Model No, Page No of first & last model of each set: Models not named or numbered. Spade, p4. Drilling Machine, p15 #Other notes: Drawings look as if they were traced by a slightly unsteady hand.



**EL INGENIERO MECANICO** (small letters are generally used for the name in the manual, thus 'el ingeniero mecánico') has  $\frac{1}{2}$ " hole spacing and a wider range of parts. The manual contains models from Sets 2 to 5 and No 5 is thought to be the largest in the range. No list of parts or set contents are included in the manual but from the models illustrated some 48 or so parts can be identified; these are listed below, when PNs are used they refer to MECCANO parts but the number and type of hole ie round or elongated, may vary.

Strips: 2,4,5,7,9,10,16 holes.

A/G: 2,3,4,5 holes long.

DAS: PN 48, 48a.

Flat Girders: 5,10 holes long.

Plates with 1 flanged side: 3x2, 5x2, 10x2 holes )

The flanges run along

Plates with 2 flanged sides: 5x3, 5x5, 5x10 holes )

the side(s) underlined.

Perforated Plates: 3x3, 3x5 holes.

Flexible Plates: 5x3, 5x5, 5x7, 5x10 holes.

Brackets: PN 11, 12, 12b, 45, 125, 126, 126a.

Wheels: Pulleys with boss in 3 sizes, perhaps

Misc: Nut, Bolt, Spandriver, Axles (perhaps 2" and 3 $\frac{1}{2}$ "), PN 19s, Hook, Cord, push fit Collar.

about 1", 1 $\frac{1}{2}$ " and 2" dia, with 'Tyres' to fit two or maybe all three of them.

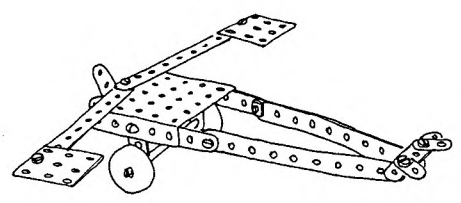
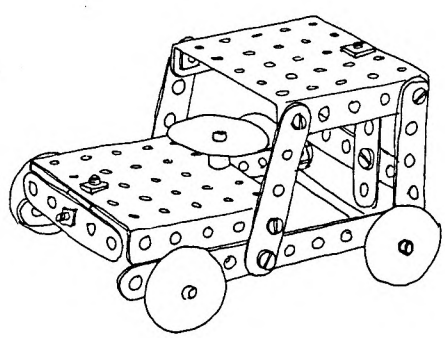
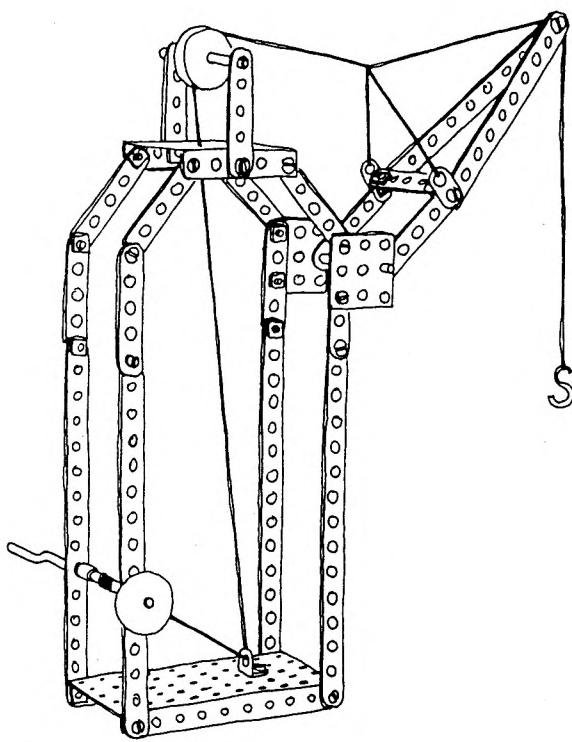
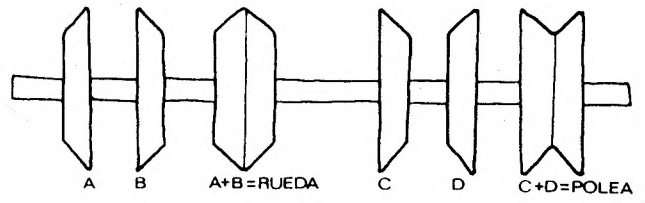
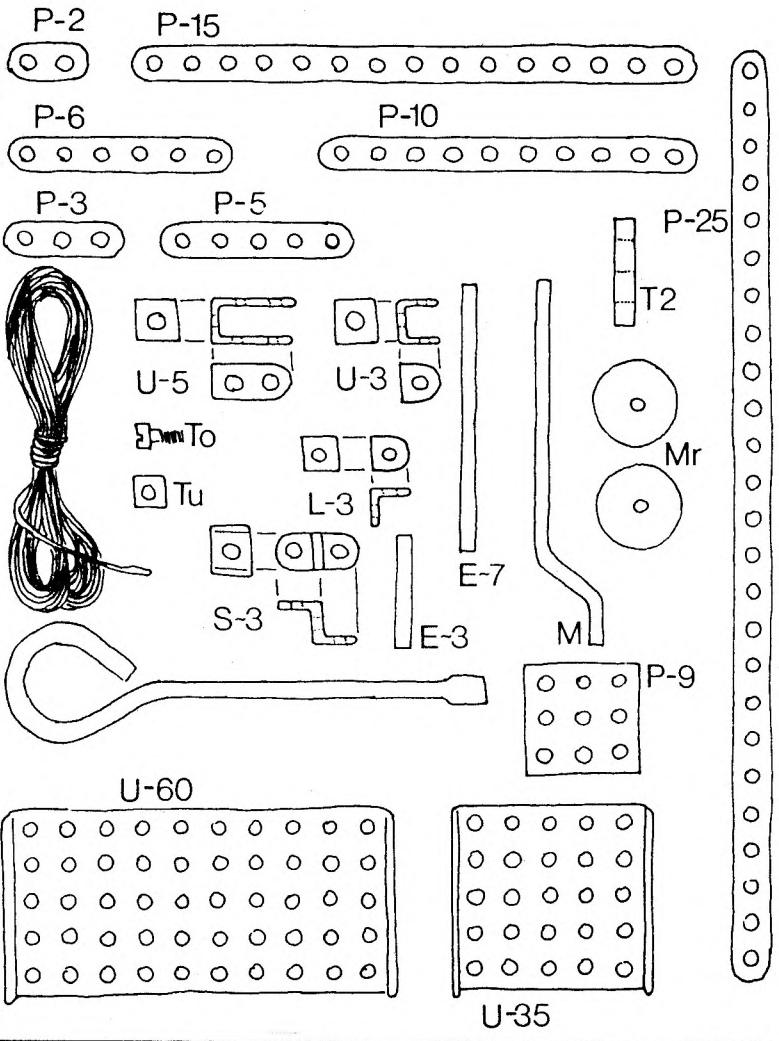
That this list contains uncertainties is clear because one of the parts that Ike sent as representative was a 3 hole long Flat Girder. Ike says that the parts are somewhat BRAL like in general design and the elongated holes are BRAL-like with large radiused ends, but the plates are shown with rather more elongated holes than would be found in BRAL, and the larger Flexible Plates have additional rows of elongated holes across them.

So quite an interesting range of parts but the catch is that they are nearly all made of light alloy and the thickness of the material of some of them is woefully inadequate. Ike sent 3 parts, a Flat Trunnion, a 3 hole Flat Girder and a 5 hole Strip. The Trunnion is very similar to the BRAL design but quite apart from the different material used the EIM part has a slight 'neck', .4" long, along the centre of the top and bottom edges, where it has been sheared from its neighbours. It is .040" thick, and so strong enough for its work, and although it is shown in green on the front cover of the manual, those in the set have a natural, polished appearance, and are perhaps clear lacquered or anodised. The Flat Girder is only .021" thick and is painted blue on one side and white on the other. The 5 hole Strip is the most remarkable piece, it is made from metal which is probably even thinner than the Girder but is hard to measure because both sides have a very coarse 'crackle' finish, polished like the Trunnion. It is at .47", slightly narrower than a MECCANO strip and the holes in it are rather larger than MECCANO holes, with a dia of about .187"; these dimensions together with



# MEKANIK

Identificación	N° de piezas
<b>PIEZAS PLANAS</b>	
P- 2	8
P- 3	8
P- 5	14
P- 6	6
P-10	8
P-15	4
P-25	4
P- 9	2
<b>PIEZAS DOBLADAS EN "U"</b>	
U- 3	1
U- 5	1
U-35	2
U-60	2
<b>PIEZAS DOBLADAS EN "L"</b>	
L- 2	6
<b>PIEZAS DOBLADAS EN "S"</b>	
S- 3	2
<b>MANIVELA "M"</b>	
M	1
<b>EJES</b>	
E- 7cm.	2
E- 3cm.	1
<b>MEDIAS RUEDAS</b>	
Mr	16
<b>TRANCAS</b>	
T	2 cm
TORNILLOS To	45
TUERCAS Tu	45
GANCHO TIPO "S"	1
DESTORNILLADOR	1
CUERDA	1m

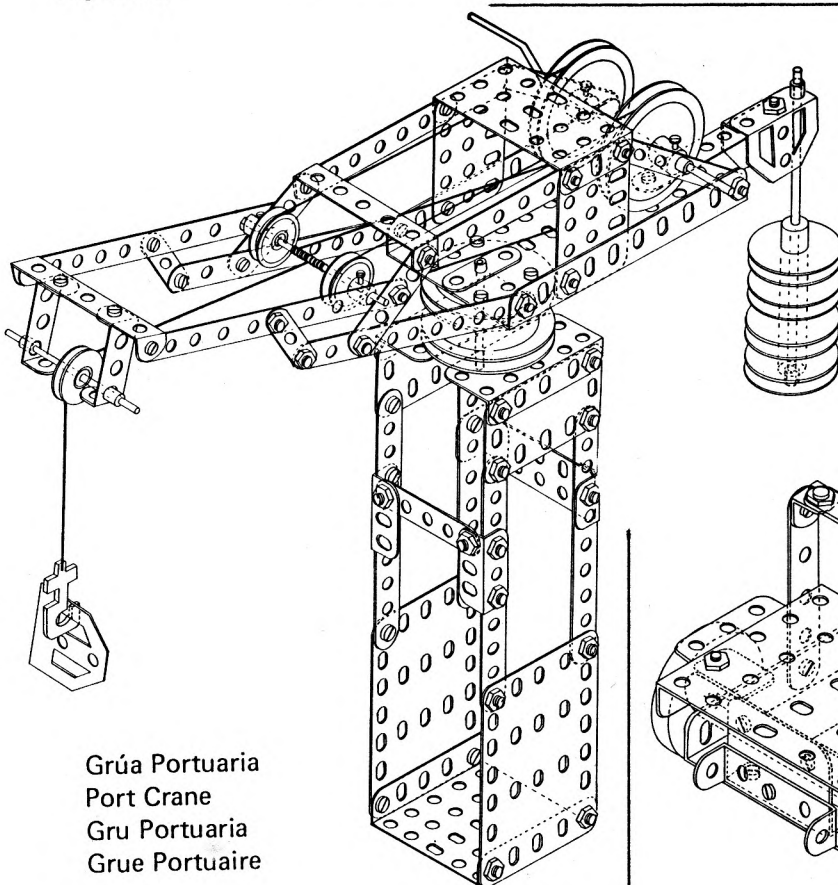


the thin alloy from which the part is made, give this Strip a distinctly fragile feel. The ends are near to being fully radiused. All the parts seen are accurately made (except that the row of holes in the Strip, although straight, is slightly off centre); have only one or two slightly sharp corners; and are quite well finished. Apart from the parts already mentioned the main colour of the parts is blue, but the wheels, of plastic, are red and yellow. The Flexible Plates are also plastic.

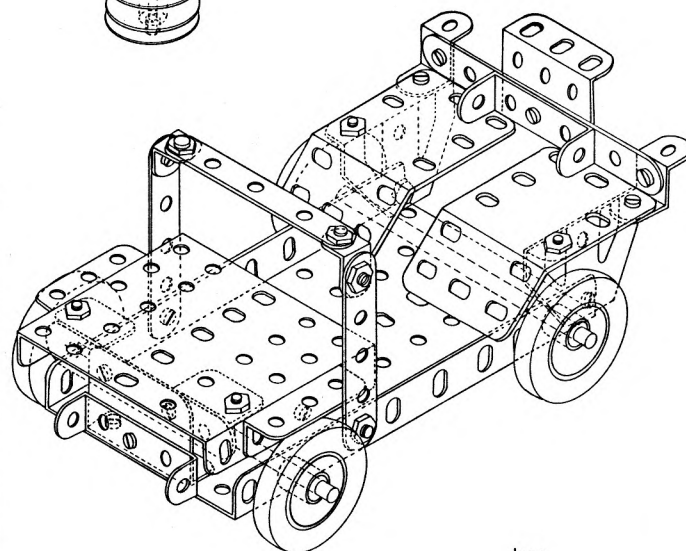
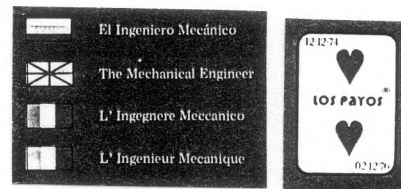
The manual, described below, shows a fair range of models which do not immediately remind one of any other manufacturer, although some of the Basic Assemblies at the beginning do look rather like some in a BRAL manual from the early 1980's. The style of illustrating the models is unusual with a single isometric drawing of each, normally with quite a lot of the hidden detail shown. The Crane (FS) and the Jeep (x.7) reproduced below also serve to illustrate some of the parts listed above.

There is already one EIM in MCS (from Spain), so this one will be [2].

**SUMMARY OF MANUAL:** #Name: el ingeniero mecánico #Details of maker: Inversiones Los Payos, C.A. - Apdo. Postal 17484 - Parque Central, Caracas - Venezuela, Tel. 7525157 - 7525728 (on back cover) #Dates &/or Ref Nos: The 'LOS PAYOS' trade mark has 12.12.74 at the top and 02.12.76 at the bottom, but the significance of this is not known #Page size: 228x 152mm deep #No of pages: 24 inc covers, unnumbered #Language: Spanish, English, Italian, French #Printing: Models are shown as excellent black on white line drawings on good paper, with hidden detail shown dotted. Cover in solid colours with red background, white lettering and yellow panels (top right) showing silver parts except the green Flat Trunnion #Page Nos of Parts List & highest PN: No Parts List or PNs #Page Nos of Set Contents & highest PN: No set contents #Sets covered: 2,3,4,5. #No of models for each set: 7,5,4,4 #Name, Model No, Page No of first & last model of each set: There are no Model Nos. 2: Triciclo, Tricycle, 6; Helicóptero, Helicopter, 10. 3: Autobús, Bus, 11; Tractor, Tractor, 15. 4: Molino, Mill 16; Grúa Transportadora, Crane Transport, 19. 5: Gandola, Truck, 20; Locomotora, Locomotive, 23. (Italian and French names omitted) #Other notes: The name of the system is given in English as The Mechanical Engineer.



Grúa Portuaria  
Port Crane  
Gru Portuaria  
Grue Portuaire



Jeep  
Jeep  
Jeep  
Jeep

# el ingeniero mecánico no. 4



**MASTERBUILDER** Several readers have asked if there is more information available about this system and there is a little but there are still large gaps. The parts available as originally shown in MCS were from a 0 set manual; in Frank Beadle's latest version those in a No 2 are reproduced, with a wider range of strips, girders, plates, brassware, etc. The only manuals and sets seen are within the range 0 to 3 and how these relate to the sets 4001 to 8003 given in MCS is not known.

First to discuss the MB (MASTERBUILDER) parts that are usually found and are included in sets 0 to 3, though not necessarily in those from 4001 upwards, as will be clear later. As stated in MCS the steel parts normally have a black metallic finish although occasionally they are nickel plated. The strips are  $\frac{3}{8}$ " wide, the Channels are  $\frac{1}{2}$ " wide by  $\frac{1}{4}$ " deep, and the Angles are  $\frac{1}{2}$ "x $\frac{1}{2}$ ". The plates are rather brittle, they are very dark brown in colour and those seen are about .135" thick rather than the 6mm stated in MCS. The Drum is also of plastic and two colours exist, black and a very dark red. Some of the brass parts are castings with the part numbers cast in and only the bores machined. The rest are fully machined and are often not marked with their numbers. Variations in the design of these parts are found, for example the Shackle as illustrated in MCS is  $1\frac{1}{8}$ " long but there is also a  $\frac{7}{8}$ " version with an almost fully rounded end. There is a short version of the Connector 1044, only  $\frac{1}{2}$ " in length, and one variety of the Socket has a diameter of  $\frac{5}{16}$ " instead of the normal  $\frac{3}{8}$ ", and has a cross bore at right angles to the usual cross tapping. Three gears are shown in MCS although only two of them are numbered, the third is marked KW 1103 and has 30 teeth against the 20 and 40 of the other two. All are made of brass and they and all the brass parts, including the cast ones, are found either nickel plated or left in their natural state.

MCS shows two Railwheels (flanged wheels), the  $\frac{1}{2}$ " 1081 (0 set) and the 1" dia 1082 in the No 2. 1081 is fully machined from brass and stamped with its number but 1082 has not been seen bearing a number and there may be two versions of it. One that has been seen in a more or less complete set is made from a steel pressing with a  $\frac{5}{16}$ " dia boss added (sketched below); the other is fully machined and similar in form to the 1081, but has not been positively identified as MB.

These then are the parts commonly found, but much less often parts painted dark blue, red, yellow or orange turn up. This finish was applied not only to the steel parts but also to the brassware. Not all the parts in MCS have been seen in this colour scheme but 4 parts not in MCS have been found so painted: a blue 3x5 hole plate, fully perforated, and stamped MASTERBUILDER 6005 MADE IN ENGLAND, a similar plate, but with flanges added to its longer sides (KW6004 in both blue and orange), an 11x5 hole Flanged Plate with the flanges on the longer sides (not stamped but in the same blue as the Plates above), and a red 8 hole Bush Wheel bearing KW6031. These parts were probably from the time of the 4001 etc sets because with some of them was found a small cardboard box with MASTERBUILDER CARFAX on it and the latter name is that of set 6001 in MCS. Inside the box were some labels, 2 of which are reproduced here, they mostly have names of known parts on them but two are additional 6000 series parts. No doubt there are other parts yet to be found.

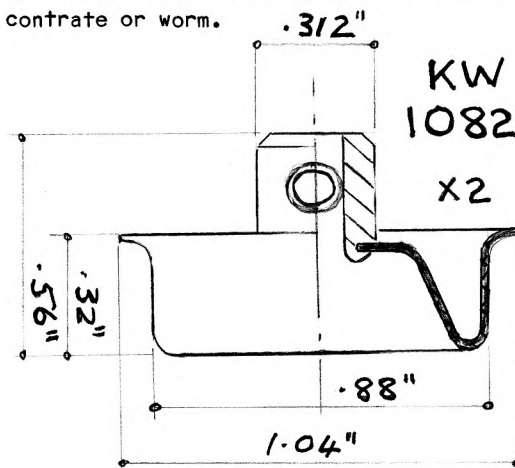
MB is a rather unusual system with its narrow strips, the channel girders and the relatively large amount of brassware available. One drawback when making models is that none of the parts have any slotted holes, although some play is present because the bolts are smaller than the holes. Some detailed dimensions were given in OSN 1. Frameworks can be made that look both light and strong by careful use of the various strips and girders, but the brass parts, particularly the cast ones, tend to look rather clumsy. The (later?) ones with the diameter reduced to  $\frac{5}{16}$ " look much better and with the  $\frac{1}{8}$ " diameter thread used there is still an adequate, if not generous, wall thickness for the tapped holes. There was no roadwheel or anything that could be used as one even in Set 2, which can't have helped sales in the 1950's, but presumably the Automobile Sets mentioned in MCS would have included them. Another oddity was to have 3 spur gears, which gave at most a 2:1 ratio, but no bevel, contrate or worm.

*precision engineered*  
**MASTERBUILDER parts**

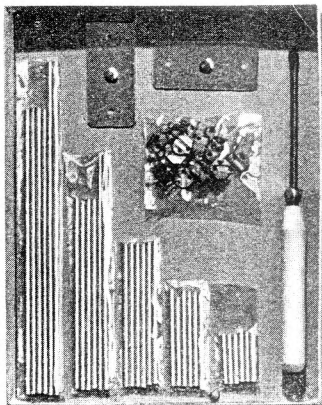
FLAT PANEL, 1" PART No. KW6005  
MADE IN ENGLAND KW3029

*precision engineered*  
**MASTERBUILDER parts**

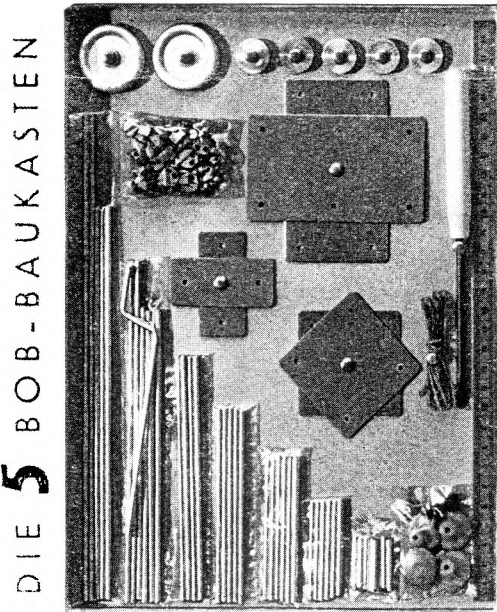
STRIP, 2" PART No. KW6012  
MADE IN ENGLAND KW3029



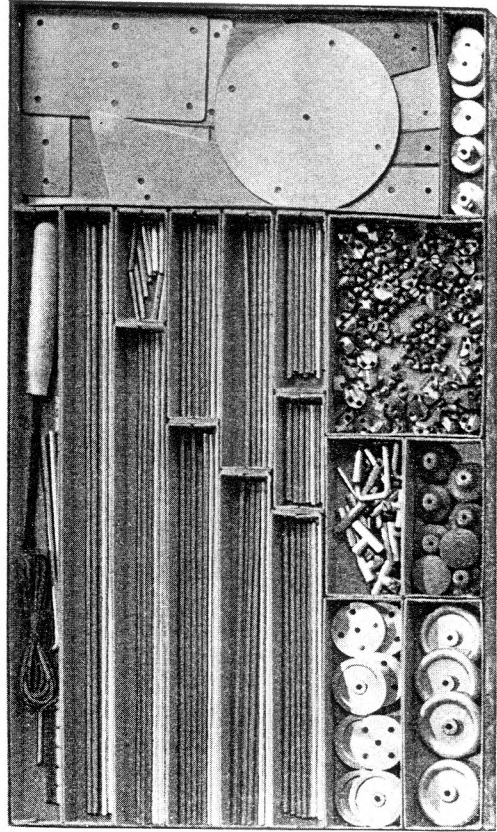
DIE 5 BOB-BAUKASTEN



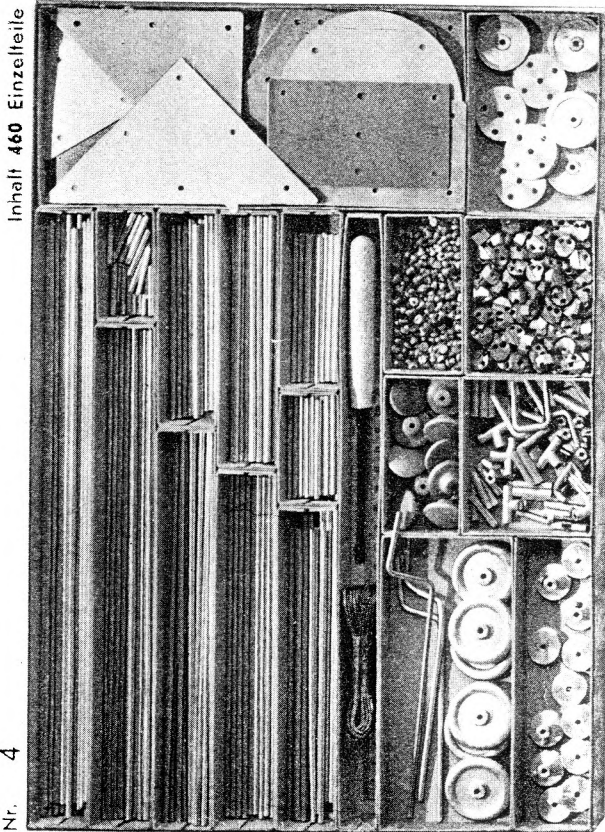
Nr. 1 Inhalt 75 Einzelteile



Nr. 2 Inhalt 136 Einzelteile

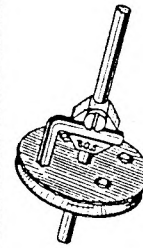
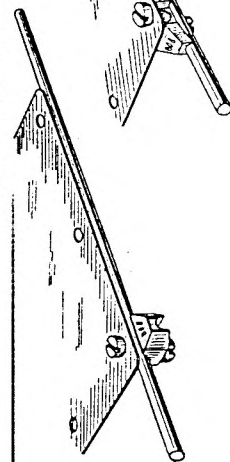
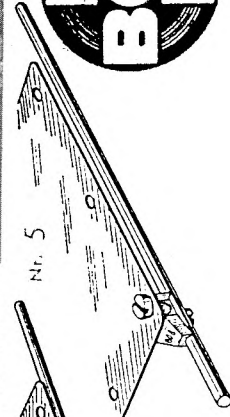
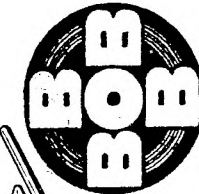


Nr. 4



Nr. 5

Inhalt 460 Einzelteile



Inhalt 220 Einzelteile

Nr. 3

**BAUKASTEN 2**  
**JEU DE CONSTRUCTION**

Ce jeu de construction contient:

no	article	nombre
1	Plaques	2
2	Plaques	2
3	Plaques	2
21	Tiges, 2,5 cm	8
22	Tiges, 5 "	6
23	Tiges, 7,5 "	6
24	Tiges, 10 "	5
25	Tiges, 12,5 "	4
26	Tiges, 15 "	4
27	Tiges, 17,5 "	2
28	Tiges, 20 "	3
29	Tiges, 25 "	2
31	Joints »Bob«	22
32	Vis	44
34	Cavaliers	10
40	Manivelle, petite	1
43	Boutons	4
50	Poulies, petites	4
51	Poulie, fixe	1
54	Roues	2
55	Tournevis	1
57	Ficelle »Bob«, 2 m.	1



**BOB (BEST OF BEST)** First a couple of items that throw some light on the history of BOB. Jean-Louis Figureau sent a copy of a letter dated 10 Dec 1988 that Dr Georges Perinel, son of the proprietor of French BOB, had sent him in reply to a request for information. My translation is as follows:

"The patent for BOB was bought in 1939 by my father Jean Perinel (who was a qualified civil engineer, educated at the Mining College of St Etienne), from Monsieur Baumgartner, an industrialist living in Geneva.

The principle of this constructional toy was inspired by the metal tube scaffolding which at that time was starting to replace the old wooden type.

The name BOB was given to the toy by M.Baumgartner - one day while waiting in a queue at a transport depot he noticed a stack of crates which had come from the Near East. They contained dried figs and dates, and on each there was stencilled in English: Best of Best. He used the initial letters of these three words and thus christened his toy BOB, an easy name to remember commercially and one bringing to mind the English diminutive form of Robert.

BOB was not marketed in France until 1942/43 because of difficulties in obtaining supplies of metal during the war (all metal requisitioned by the Germans) and the need for vouchers...[bons de monnaie-matiere].

The parts came from different sources, the rods were supplied cut to length by the wire-mill at Bourg (Ain), the pulleys, generally of boxwood, came from the Nantua region (Ain), etc. All the parts were brought together at Annemasse (Haute Savoie), and were packed into the cartons, with the manual, by outworkers.

BOB enjoyed instant success but it didn't last for very long. The return of genuine MECCANO and the appearance on the market of other toys of different sorts brought strong competition, and production ceased around 1951/52.

My father and M.Baumgartner died more than 25 years ago."

The second translation (rather free but I hope the sense is right) is from the introductory page of a French BOB manual:

"BOB the metal, patented constructional toy, directly derived from tubular scaffolding, with easily varied adjustment, was marketed in Switzerland by its inventor M.H C Baumgartner at the beginning of the last war.

It was in Oflag II D, in Pomerania, that a group of prisoners, engineers and architects, fascinated by the wide scope that BOB offered to both art and science, made the first models of the range, ever growing and in principle unlimited, that the French licence of the BOB patents permitted from the end of 1942."

I had always thought, though I'm not sure why, that BOB originated in France but it is clear from the above that it first saw the light of day in Switzerland, and then in France, and finally, presumably not until after the war, in England. There is a photo of M.Baumgartner on the back of the French BOB manual.

**SWISS BOB** There is a list of parts in MCS but not much on the sets. Erwin Wyss has sent some details of a No 3 Set that he owns. The Parts List in the manual is as in MCS but there are also pictures of the sets (reproduced opposite) and two A4 pages showing the parts needed for the 82 models that are listed for Sets 1 to 5. There isn't room to include them but I can supply copies if necessary. One of the largest models, the Big Wheel shown in MCS requires 429 Joints and over 250 Rods. Also shown are ways of using the Joints to attach Plates and Wheels.

The Rods, Wheels and Plates in the set are of aluminium and the Plates are finished (anodised?) in various shades of pale to mid green.

The box lid has a light blue panel on the left with BOB on it (vertically and horizontally with a common O), and two kids with a small model. The centre panel has a black and white photo of a larger model, I'm not sure what it is, and the righthand orange panel has the Set No., the number of parts in the set, the maker's name (FRABA), 'FABRICATION SUISSE' (all the other information is in both French and German), and another name in script with a number after it, neither of which I can read.

Thomas Keel sent a photocopy of a No 2 set box lid, it is of similar design but with a different model (of a Railway Signal) in the centre panel. The script name looks like Papyria and the number that follows it on this lid is 907. Thomas also sent the set contents, see the French version opposite.

**OS DATA** In OSN 4 I said that I would list the Threads and Axle Diameters for the systems I know about, and that one day I would try to produce a Database (Db). This started me thinking about the best layout for said database and I quickly succumbed to the temptation of putting a (relatively) simple one together. More of that in a moment, first, overleaf are some extracts from it, for all systems even where there are no data, so that what is missing can be added later, and with the country of origin (CY), the type of system (TYPE), the hole spacing (SPCE), and the hole diameter (dST), as well as the axle diameter (DAXL) and the THREAD, because I think readers may find it useful to have a fairly concise index containing all these key facts.

Some explanations are needed: after most columns there is a 1 character space which is used for codes, and asterisks that in the full Database relate to a COMMENTS column. The codes are explained as they arise in the notes on the various columns below, except that overall a and p mean approximately and probably, and dashes, --, mean not relevant; printing the COMMENTS column here would take too much room so the asterisks, apart from those explained under NAME in the next paragraph, are listed under ASTERISKS below.

**NAME:** An asterisked name indicates that in the original Db it is given in full in the COMMENTS column. Here the full asterisked names are given after the initials of the system:

ACO, ACS, BDCM (CONSTRUCTION); CME (MECHANICAL); CCS, DSC (CONSTRUCTION); EIM, ENIA (INGENIERO); EPJA (INGENIERO ARGENTINA); EKS (ELEKTRISKAIS KONSTRUKTORS); EK (ELEKTROMECHANISKAIS); HSOMD (MECHANICAL DEMONSTRATION); JDIMI (INGENIERA MECANICA INFANTIL); JMDF.M. (METALICO); LPADLM (PETIT, MECANIQUE); MBCS, (CONSTRUCTION); MCABO (CONSTRUCTION AND BUILDING); MSOSL (SPIRIT, LOUIS); NME (MECHANICAL); PIM (INGENIERO); PME (MECHANICAL). NB. 1. BUILDEX \* explains that the country of origin is not certain. 2. MECCANO SPACE \* notes that there are two similar sets.

**TYPE AND COUNTRY** Notes on these follow the Index.

**THREAD:** I haven't used codes for this to make it is easier to read. The following examples are meant to explain all entries

6 BA: BA = British Association, 6 indicates o/d (high no = small dia) and a specific pitch.  
 1/8W: Whitworth having nominal o/d of 1/8" and a specific pitch.  
 8-32: US thread, 8 shows o/d (high is large) and 32 is threads per inch (tpi).  
 M4: metric thread with nominal o/d of 4mm and a specific pitch.  
 4x.8: metric with 4mm nominal o/d and pitch of .8mm (M4 has a different, specific pitch).  
 5/32: nominal o/d in inches.  
 2.6: nominal o/d in mm.

**SPACING:** In mm; LG, SH are spacings greater, less than 12.7mm; VAR, NA, NK, mean varies, not applicable, not known. The following qualify the entry: x: multiples of the value shown; e: estimated; w: spacing only relevant to holes in wheels (eg some DIY systems).

**HOLE DIAMETER:** Given in mm. An 'm' afterwards is for mean, where the total variation found was more than .1mm.

**AXLE DIAMETER:** Given in mm. Less than 2 decimal places denotes less accurate data, MCS sometimes gives nominal values.

**ASTERISKS** These are explained in order for THREADS, SPCE, dST, DAXL in turn. For each the name of the system is first identified by its name, sometimes in a shortened form or initials.

**THREADS:** NOTE 1. 6-32 means 'Bosses tapped 6-32'. NOTE 2. M3/4 means 'Some bosses tapped M3 and some M4.

A M B, 6-32. AUTOMAT 1, Also M2.6. AUTOMAT 2, also M6, M8, M10. BILDAL, Screw in U Collar. BOB 2, M4 in bosses. BUILD 2, M3/4. THE CONSTRUCTIONEER, 6-32. CONSTRUCTO 1, M3/4. D S C, 6-32. DUX, Also self tap in early version, 3.2mm od. EDOBAUD, Threaded Rods. ERECTOR, 6-32. ESCO, 6BA in bosses. FAC, Also M4. FORGEACIER, In bosses. FUNSTRUCTION, M3/4. KLIPIT, In bosses. KONSTRUKTA, Or 3BA. LITTLE JIM 1, 6-32. LONE STAR, Needs checking. LYNX, 6BA sometimes found. MAR MINEX, Said to be M3 or 1/8W. MECANICA INFANTIL, bosses may have 1/8" thread. MERKUR, M3/4. MET TRIGON, In bosses, N&B probably larger. MIGNON, Taken from CW motor. MULTIMOTEUR, Several. N-G-NEERO, In bosses. NOMA BOOMTOWN, 5-40 used in Clamps. PRESTACON, In bosses. PRIMUS, 1/8W or 5BA in most bosses. STEEL-TECH, 6-32. TECC 2, M3/4. TECHKIT, 4BA in bosses. YOUNG ENGINEER, M3/4. YUNYI UMELETS, May vary in bosses.

**SPCE:** BATIFIX, BAUFIX, 10, 11mm in Disc for large, small holes. BILDICO 2, 12.6 in one 21h Strip. CONSTRUCT, 3/8" exactly. ENGINEERIT, Rather irregular. JUEGO DE ING MEC INF, May be less. KINCO, Possibly 1". MET TRIGON, 12 in some parts, also 8 or 8.5 for outer holes of DAS. METAPLAN, 15xe. MEX, 9.5 in Disc. M F C, Might be near 1/2". SCHEFFLERS, MCS gives 12.87. STABA 2, Probably 15 in Flgd Plates. STAHLBAU TECHNIK, Assumes Mod 1.25. UNIMETAL, Deduced from MCS data. YUNYI UMELETS, As MCS but parts look like MERKUR.

**dST:** ALPHA, In plates. DER JUNGE KON, May be larger. DUPLEX STAN CON, And .25" alternate holes in some parts. EZY-BILT 1, In a Flgd Plate. LITTLE JIM 1, And .25" alternate holes in some parts. MARKLIN, 4.2 c.1920. MAR MARBI, Nominally as standard MARKLIN. MECANIC 2, 4.05 to 4.20, measured in Plates and Brackets. MET TRIGON, Typical but up to 3.4. STEEL-TECH, And .25" alternate holes in some parts. YUNYI UMELETS, As MCS but parts look like MERKUR.

DAXL: AUTOMAT 1, Also 2.5. AUTOMAT 2 and SMP, Also 2.5, 6. COMPACT MECH ENG, Also 2. CONSTRUCT, Crank Handle (no axles). CON-O-STEEL, CON MODELS, Also 2 for push fit Wheels. ELGIN, Crank Handle. ERECTOR 3a, Also 1/4, 5/16". FAC, Also 4. MAR MARBI, Nominally as standard MARKLIN. NORELCO MECH ENG, PHILIPS MECH ENG, ALSO 2. PHANTASIE, Nominal size of split, thin walled tubular Axle. PROTO, Also 4. ROBO, Estimated, may be somewhat less. WISDOM, Also 2 for push fit Wheels.

Back to the Db, in its present form, with small type, it runs most of the way across the width of an A4 page and the facing page contains comments and amplification from the first page as necessary. In addition to the headings above the following are included

# In some cases a code for the manufacturer.	# Number of different parts in each system.
# Start and end dates	# Diameter of bore in boss.
# The materials from which the main parts are made.	# Shape of bolthead and nut, and their material and finish.
# Whether bosses are single or double tapped.	# Size of nut across flats, and diameter of bolthead.
# DP of gears.	# Comments.

At the moment there are many gaps where information is not available and no doubt mistakes as well; it is also not quite as up to date as the Index. Some changes in format/content are possible at this stage if anyone has any ideas, although the scope for adding additional information is rather limited. If in the end it remains very much as it is - what I felt I needed in terms of data, plus an aide-memoire for the overall character of those systems unfamiliar to me - it is not easy to say how useful it would be to other people. But when it is finalised, in perhaps a years time, I plan to make it available but not to include it in OSN, if for no other reason than it would take well over half of one issue for the basic alphabetical listing.

In the meantime if anyone would like a copy to work on, comment on, make suggestions about, I could send photocopies for their cost plus postage, or if it's convenient, you can borrow the originals to copy yourself for just the postage. At the moment there are three versions, one with the systems arranged Alphabetically, one with them classified by Country, and in the third they are sorted into Types. They run to 8, 8 and 10 A3 sides respectively and there are also 4 A4 sides of explanations (covering all 3 versions) and abbreviations, which you need to get to grips with it.

The Db is on a spreadsheet called SuperCalc 4 and I run it on an unnamed PC XT clone with a hard disk and 640k of RAM; at the moment each version uses about 100k but that will increase as the gaps get filled in. Also space is needed for sorting but I suppose that there are ways of splitting it up to reduce the RAM needed. I could easily make a copy of the Db (not SuperCalc of course) for anyone who wants one. It would be on a 5 $\frac{1}{4}$ " 360k DS DD diskette.

Finally I would like to acknowledge that the vast majority of the data in the Db has come from MCS and gratitude is therefore due to its compilers, Frank Beadle and Don Blakeborough, for their sterling work. The Db in no way supplants MCS which remains the foundation on which everything else is built.

#### ALTERNATIVE NAMES

ALTERNATIVE	NAME IN THIS LIST	EXPLANATION OF ALTERNATIVE NAME
BINGS' CONSTRUCTIONAL SET	STRUCTATOR	For US and other(?) markets.
BOOMTOWN	NOMA BOOMTOWN	Used in MCS FB.
CONSTRUCTO [4]	CONSTRUCTION theme	Used in MCS.
DISTLER	GIANT	Manufacturer.
LE JEUNE INGENIEUR	YOUNG ENGINEER	Alternative French name.
ENA or EMA	EPA	Used in MCS.
GIGANT	GIANT	Name for German speaking markets.
GUINA	MICRO-MECANO GUINA	Used in MCS NZ.
IOHOCTb	YUNOST'	Used in MCS.
METALEN CONSTRUCTIE	BOITES DE C* METALLIQUE	Alternative Flemish name.
MUSZALA	MUSALA	Used in MCS NZ.
ONBITOB	ELEK*MEH*S KONSTRUKTORS	Used in MCS.
PERE NOEL	AERO TECHNIQUE MACREZ	Used in MCS NZ.
ROBBEDOES	SPIROU	Alternative Flemish name.
SAGESSE	WISDOM	Name for French markets.
VEB INJECTA	SONNEBERGER	Same system, VEB is manufacturer.
WKONbHMK	SHKOL'NIK	Used in MCS.
YMEAEU	YUNYI UMELETS	Used in MCS.



NAME	TYPE	CY	THREAD	SPCE	dST	DAXL	NAME	TYPE	CY	THREAD	SPCE	dST	DAXL	NAME	TYPE	CY	THREAD	SPCE	dST	DAXL	
ABRA	TR	DE		7.85	3.6		CONSTRUCTOR [1]	MPSH	FR	3x.75	11.0	3.2	3.0	HELLER-MECANICUS	DY	FR			NA	4.0	
ACRO-FLAK	OO	IT		NK			CONSTRUCTOR [2]	ML	HO	1/8W	12.7	3.9	3.81	HEROS	OO	FR			NK		
AERO TECHNIQUE MACREZ	AS	FR		NK			CONSTRUMECANICO	OO	ME		NK			HOHA	MPLG	GG			13.1	4.4	
AJUSTO	RT	FR		NK			CONSTRUMENTS	ESNM	UK	4BA	VAR		--	HOLLYWOOD U-BUILD-IT	MP	US			12.7e		
ALIMIAM	OO	IT		NK			COPSY	OO	FR		NK			HORNBY SYSTEM OF M* D*	ESMC	UK	5/32W		12.7	4.2	4.06
ALPHA	ML	GG		12.7	4.3*		COSMOS	RT	UK		NK			HUSTLER BILDKRAFT	MP	US			12.7	4.2	
ALUMINIUM CON* OUTFIT	MP	UK	4BA	12.7	3.5		COZZONE CONSTR*M SET	OO	US					IMPERATOR	RT	GG	---		NK		
ALUMINIUM CON* SET	MP	US		12.7p			CREME ECLIPSE	BX	FR		13.0	3.6	--	INDUSTRIE	MPLG	GG			15.2	5.0	
AMERICAN MODEL BUILDER	ML	US	8-32p*	12.7	4.2		CRUSON	RT	HO	M4	6.35x	4.2m	3.98	INGENIO	MPSH	FR			12.3	4.2	
AMI LAC	MM	IT	5/32W	12.7	4.1		D-180	MPLG	JA	M4	14.0	4.4	4.04	INGENIUM	MP	FR			NK		
ANCHOR	RT	UK	---	NK			DAN DARE	AS	UK		12.7x	3.8		INSTRUCT-O-SCALE	NM	US	---		NA		--
ANKER-MODELLBAU	MPSH	GG	M3	12.0e			DELTA-X	MPLG	US	M4	14.0	4.4	4.04	INVENTRIX	ST	UK			12.5	4.1	
ARKIRECTO	BD	UK	---	12.7x	3.2	3.05	DER JUNGE KONSTRUKTEUR	MPLG	GE	M4	13.4*	4.1*	4.0	INVICTA O	TR	SP			NK	4.0	
ARMEC	AR	AR		12.7	4.2		DER JUNGE MECHANIKER	ML	GG		12.7e			ITALIMEC	OO	IT			NK		
ARQUITECTURA	OO	UK		NK			DER KLEINE KONSTRUKTEUR	GE	M4		12.0	4		JEULIN	OO	FR			NK		
ARTE-MECCANICA	MP	IT	4x.7	12.7e			DERUTAXE	OO	JA		NK			JOUEF	OO	BE			NK		
ARTS ET METIER	ST	FR	5/32W	12.5	4.2m		DINKY BUILDER	DK	UK	---	NA		3?	JUEGO DE ING* MEC* INF*ML	AR	5/32			12.7*	4	4.0
ASSEMBLO	DK	FR	---	NA		3?	DU-EN-LOZ	AR	AR		12.7	4.2	4.0	JUEGO M* DE ARMAR F.M.	ML	AR			12.7	4.2	
AUSTRALIAN MODEL B*DER	OO	AL		NK			DUPLEX STANDARD CONST*	ER	US	8-32*	12.7x	4 *		JUNEERO	DY	UK	6BA		NA	3.0	2.65
AUTO-CONSTRUCTEUR	CR	HO*		10.0x			DURFAM	OO	US		NK			K.do	MP	FR			NK		
AUTO-CYCLE	RTCR	FR		12.0	3.0		DUX-UNIVERSAL	MPLG	GW	M3*	15.0	3.3	3.25	KIKO	MP	FR			12.7	4.3	
AUTOMAT [1]	PRNM	SW	M3.5*	12.7?		4.0*	EDISON	MA	CZ		12.7a			KINCO	MPLG	UK			LG*		
AUTOMAT [2]	PRNM	GW	M3.5*	12.7		4.0*	EDOBAUD	NM	FR	3*	VAR	4	4.0	KIS TECHNIKUS	HA	HU			NK		
AUTOMAT SMP	PRRT	US	M3.5	12.7		4.0*	EFEL [1]	MPSH	FR		10.0		2.0	KITOU	MP	FR			NK		
AVIADYP	AS	FR		NA			EFEL [2]	MPSH	FR	M4	10.0	4.1	3.98	KLIPIT	RT	UK	1/8W*		NA	--	4.8
A.W.S.	OO	GG		NK			EFEL [3]	MPSH	FR		10.0x		4.0	KLIPTIKO	RT	UK			NA	--	9.5 a
BATIFIX	BX	FR		13.0*	3.7	--	EL EXPERTO MECANICO	AR	AR		12.7	4.2		KNIRPS	ST	GG			12.5p		
BAUFIX	BX	GG		13.0*	3.7m	--	EL INGENIERO INFANTIL	TR	AR		12.7	4.2		KONSTRUKTA	UK	UK	5/32W*		12.7	4.1	
BEAYER	UK	UK		12.7p			EL ING* MECANICO [1]	RT	SP		NK			KONSTRUKTION	CK	GE	M4		10.0	4.1	
BEMCO	MPSH	GW		12.6	4.5		EL ING* MECANICO [2]	MP	VE		12.7	4.7		KONSTRUKTOR [1]	MP	SD			12.7	4.2	
BERBIA	OO	GG		NK			EL INVENTOR	MP	AR		12.7	4.2		KONSTRUKTOR [2]	MPLG	RS			13.3	4.0	
BERGSTADT	MPLG	GG		14.0	4.5		EL MECANICO	AR	AR		12.7	4.2		KONSTRUKTOR [3]	MPSH	RS	M4.M3		10.0	4.3	
BETTAFIT	ML	AL	5/32	12.7p			EL NUEVO ING* ARGENTINAER	AR	AR		12.7	4.2		KONSTRUKTOR [4]	ST	RS			12.5	4.4	--
BILDAL	NM	US	*	NA			EL PERQUENTO ING* ARG*	OO	AR		NK			KWIK BUILDER	MP	BE			12.7	5.0	
BILD-A-SET	MPLG	US		LGe			EL TECNICO	OO	AR		NK			L'ECOLE	OO	FR			NK		
BILT-E-Z	BD	US	---	NA	--	--	ELECTRIC	ESMP	GG		12.7	4.0		L'EDIFICE METALLIQUE	OO	FR			NK		
BILDICO [1]	RT	UK		NK		2.95?	ELEK* KON* SKOLNIEKS	ES	RS	M4	12.5p			L'INGENIEUR ELECTRICIENOO	FR				NK		
BILDICO [2]	UK	UK	5BA?	12.7*	3.8	3.20	ELEK*MEH*S KONSTRUKTORS	MPSH	RS	M4	12.5	4.4		L'INGENIEUR FRANCAIS	TR	FR			SH	--	
BILL DEEZY	RT	US		NK			ELEKTRO	ESMP	GE		NK			LE CONSTRUCTEUR	MPBD	BE			12.7	4.0	
BILT-E-ZE	UK	UK	4BA	12.7	4.1		ELGIN	MP	UK	4BA	12.7	3.9	3.18*	LE JEUNE MECANICIEN	ML	BE			12.7	4.0	
BOB [1]	RT	UK	M3	VAR	3.2	2.98	ELMEC	ESMP	HO	M4.M3	12.5	4.1	3.99	LE P* ARTISAN DE LA M*	MPSH	BE			12.4	3.9	
BOB [2]	RT	FR	3.0x.6*	VAR	3.2a	2.90	EMPIRE EDUCATIONAL KIT	MP	UK		12.7a			LEDOM	RT	NZ			NK		
BOB [3]	RT	SW		20x	3		ENGINEERIT	ML	AL	---	12.7*	4.3	3.76	LEICHMETAL	OO	GG			NK		
BOITES DE C* METALLIQUE	ML	BE	M4	12.7	4.1		ENGINEERO	MP	US		12.7	4.5		LIONEL	RT	US	---		NK	3	3
BOY CONSTRUCTOR	MPSH	US	---	2.4	.8	1.5	EPA	MPSH	GR		12.5	4.2		LITTLE ENGINEER	ML	PO			12.7	4.0	
BRAL	MM	IT	5/32W	12.7	4.2m	3.96	EPECE	OO	FR		NK			LITTLE JIM [1]	ER	US	8-32*		12.7x	4.2*	
BRAL AEREI	AS	IT		12.7x			ERECTOR [1] prototype	ER	US	8-32?	12.7x	4.2		LITTLE JIM [2]	TR	US			12.7	4.5	
BRAL ASTRO/SPACESHIP	ASML	IT	5/32W	12.7	4.2m	--	ERECTOR [2a] mysto	ER	US	8-32*	12.7x	4.2		LONE STAR	UK	UK	5BA?		12.7	4.2	
BRAL ELETTRO	ESBR	IT	5/32W	12.7	4.2		ERECTOR [2b] old	ER	US	8-32*	12.7x	4.3	3.96	LYNNCRAFT	MP	US			12.7x	4.3	
BRICOLO	OO	FR		NK			ERECTOR [3a] new	ER	US	8-32*	12.7x	4.3m	3.96*	LYNX	UK	UK	5BA*		12.7	3.8	3.25
BRITISH MODEL BUILDER	TR	UK	5/32W	6.35	4.1	--	ERECTOR [3b] revised	ER	US	8-32*	12.7x	4.3m	3.96	MAAKEETS	MP	SA	5/32		12.7x	4.2	
BUCO	NM	GG		NK	2.5		ERECTOR [4a] gabriel	ER	US	8-32*	12.7	4.2	4.04	MAC ET NICK	MPLG	FR	3		17.0	4.0	
BUILDRCRAFT	OO	US		NK			ERECTOR [4b] ideal	ER	US		12.7			MACAFER	OO	FR			NK		
BUILDEX *	ML	AL		12.7e			ERECTOR AIRPLANE	AS	US	8-32*	VAR	4.2		MACON	MB	SP	---		12.7	4	4
BUILDEX #	ML	NZ		12.7e			ERECTOR ELECTRICAL	ES	US		NK			MAHINA (or MAXHINA)	OO	IN			NK		
BUILD0 [1]	MP	US		12.7	3.8		ERECTOR HUDSON	ERNM	US	8-32*	VAR	4.2		M A M	MP	FR			NK		
BUILD0 [2]	ME	CA	M3.5*	10.0	3.9	3.73	ERECTOR SKYSCRAPER	BD	US	8-32	12.7x	4.2	--	MANUFAX	DY	UK	---		NA		
BUZ BUILDER [1]	ML	AL	5/32W	12.7	4.3		ERECTOR ZEPPELIN	ASER	US	8-32*	12.7	4.2		MARKLIN	MA	GG	5/32W		12.7	4.3*	3.98
BUZ BUILDER [2]	ML	NZ	5/32	12.7	4.2		ERECTOR 5 IN 1	ER	US		12.7	4.2		MARKLIN AEROPLANE	AS	GG			VAR	4.1	
CASTLE BUILDER	ML	CA		12.7	4.2		EREKITIT	RT	UK		NK		2.95?	MARKLIN CAR	CR	GG			VAR		
CHARPENTO	NM	FR		12.5	3.0		ESCO	MP	UK	28A*	12.7	5.0	4.75	MARKLIN ELEX	ESMP	GG	5/32W		12.7	4.1	
C.I.G.E.A.	MPLG	IT		13.0			EXACTO	ML	AR	5/32W	12.7	4.2		MARKLIN MARBI	MA	GG	5/32W		12.7	*	*
CLIFFIX	RT	UK	---	NA	--		EZY-BILT [1]	ML	AL	5/32	12.7	4.1*		MARKLIN MINEX	MA	GG	3*		6.35		
CLIP	RT	SW	---	NA	--	4?	EZY-BILT [2]	ML	AL	5/32	12.7	4.2		MASTER BUILDER	MP	US			12.7	4.3	
CLIRO	RT	UK	3a	NA	--		EZY-BILT [3]	ML	NZ		12.7	4.2		MASTERBUILDER [a]	MP	UK	1/8W		12.7	4.0	3.91
CLOU	MB	GG?	---	8.7	3.1	3.00	F A L T	MA	IT	5/32	12.7	4		MASTERBUILDER [b]	MP	UK	1/8W		12.7	4.0	
COMPACT MECH* ENGINEER	PH	HO	---	15.0	5.0	3*	FAC	PRRT	SO	M3*	7.0	3.1	6.0*	MATCH BOX C*N SET [1]	MB	US	---		8.7p	3.4	3.05m
COMPACT SMP	PRNM	US		NK			FALCO	DK	IT		NA			MATCH BOX C*N SET [2]	MB	JA	---		12.7e		
CONDOR	ML	IT		12.7	4.0		FALTERBOT	ASMA	IT		12.7p			MECA LABO	PRNM	FR			20.0	5.5	
CONSTRUCT	MPSH	UK	6BA	9.5*	3.1	2.67*	FEMEPITO	HA	HU		15?			MECANIC [1]	MPSH	BE			12.4	5.0	
CONSTRUCT-O-CRAFT	MP	US																			

NAME	TYPE	CY	THREAD	SPCE	dST	DAXL	NAME	TYPE	CY	THREAD	SPCE	dST	DAXL	NAME	TYPE	CY	THREAD	SPCE	dST	DAXL
MECCANO ELEKTRON	ESNM	UK	68A	VAR		--	MONTEX [1]	TR	SP		6.35	4.1	--	STEEL BUILDER	NM	US		NK		3
MECCANO MECHANISED ARMYMC	UK	5/32W	12.7x	4.3	4.06		MONTEX [2]	MP	SP		12.7	4.2		STEEL CRAFT	OO	US		NK		
MECCANO MEXICO	OO	ME	12.7p				MOTEC	MA	GG		12.5?			STEEL ENGINEERING	ER	US		12.7	4.2	
MECCANO MOTOR CAR [1]	NM	US	8-32p	12.7x	4.2		MOUNTJOY	ML	SA		12.7p			STEEL WORKER	NM	US				--
MECCANO MOTOR CAR [2]	CR	UK	68A	VAR			MULTIMOTEUR	ESNM	FR	*	18.0	4.5		STEEL-TECH	ER	US	8-32*	12.7x	4.2*	
MECCANO RADIO SET	CR	UK	68A	VAR			MUSALA	ME	BU		10.0	4	?	STERLING	MP	US		12.7p		
MECCANO SPACE *	ESMP	UK	5/32W	12.7	4.2		NECOBO	MM	HO		12.7	4.5		STOKYS	MP	SW	5/32W	12.7	4.1	4.00
MECCANO X	ASMC	UK	5/32W	12.7	4.3	--	N-G-NEERO	DY	UK	1/8W*	10.0w			STOKYS CITY	BDMP	SW	5/32W	12.7x	4.2	--
MECCANO-MORECRAFT	TR	UK	5/32W	6.35	4.1	--	NOMA BOOMTOWN	RT	US	10-32*	12.7p	5		STRUC	MPLG	HO	1/8W	14.0	3.9	3.73
MECHANICS MADE EASY	MC	UK	5/32W	12.7	4.3		NORELCO MECH* ENGINEER	PH	US	---	15.0	5.0	3*	STRUCTATOR	RT	GG				
MECHANIKA	HA	HU	M3	15.0	3.4	3.32	OLYMPIA	ML	GG		NK			STRUCTO	MP	US		12.7	4.2	
MECHANIMALS	NM	JA	M3	VAR			OHICHIYA	OO	JA		NK			STRUCTOMODE	ML	CA		12.7	4.2	
MECHANIX	ML	NZ		12.7	4.2		ONADO	UK	UK		12.7p			STRUKTIIRON	MPLG	US		15.9x	3.2	
MEHANOTEHNIKA	ML	YU		12.7	4.2		PAJTAS	ESMP	HU		NK			TAKA	OO	FR		NK		
MEKANIK [1]	MPLG	GW	M4	13.0	4.2	3.98	PALIKIT	UK	UK	48A	12.7	3.9	3.66	TECC [1]	CK	HO	M4	10.0	4.2	3.99
MEKANIK [2]	MM	SD		12.7e			PEQUENO ING* MECANO	ML	UR		12.7e	4.1		TECC [2]	ME	HO	M3.5*	10.0	3.9	3.73
MEKANIK [3]	MPSH	VE		10.0	4.7		PHANTASIE	MPLG	GG	---	15.0	5.1	5.2*	TECHMASTER	MP	US		12.7		
MEKKANO	TR	IG		NK			PHILIPS MECH* ENGINEER	PH	HO	---	15.0	5.0	3*	TECHNICAL KID	ESMW	GW		NK		
MERCATOR	MP	BE		12.7	5.0		P I C	OO	US		NK			TECHNIFIX	OO	GG		NK		
MERKUR	ME	CZ	M3.5*	10.0	3.9	3.73	P I N I T	RT	UK		NK			TECHNIKUS	ST	GG	M4	12.5p		--
MERKUR ELEKTRO	ESMP	CZ		10.0	3.8		P I N - I T	NM	UK	---	6.35	2.1		TECHNOKID	HA	HU	M3p	15.0	3.4	3.34
META BUILD	MPSH	IN	M4	10.0	4.3	3.99	PIONEER	UK	UK	48A	12.7	3.9p		TECNIC	MPLG	BE	5/32W	13.0	4.5	4.06
METACON	ML	HO		12.7p			PIONIER	MA	GE	M4	12.7a			TECNICO	NM	SW	2.6	11x	2.9	4.0
METAL C* A* B* OUTFIT	MP	UK		NK			PIONIERUL CONSTRUCTOR	MPLG	RO		12.8	4.1		TECHKIT	UK	UK	3/16W*	12.7	4.6	3.96
METALCRAFT S* OF ST. L*	AS	US	6-32?	VAR	4		PITT	ST	GG		12.5	3.5		TEKNIK [1]	TR	DE		7.8	3.5	
METALING [a]	ML	SP	5/32W	12.7	4.2		PLANO	ML	IN	1/8W	12.7	4.1		TEKNIK [2]	MP	SD		12.7p	4.2	
METALING [b]	ML	SP	5/32W	12.7	4.2		PLEASURE BEACH	MPLG	UK		27.0	3.5		TEKNO [1]	TR	DE		7.8	3.5	
METALIX	TR	BE		7.85	3.7	--	POLGAR	OO	FR		NK			TEKNO [2]	MP	NO	5/32	12.7		
METALLBAUTECHNIK	MA	GG	M4	12.7a		4.0	PREMIER	UK	UK	48A	12.7	4.6m	3.96	TEKMOSET	TR	DE		NK		--
METALLIC	MP	FR		NK			PRESS-FIX	UK	UK	---	12.7p			TEMSEI	ML	HO	M4	12.7	4.2	4.00
METALLO	RT	BE		NA	--	4	PRESTACON	DY	UK	1/8W*	12.7w		3.25?	THE ENGINEER	OO	CA				
METALLO TRIGON	NM	GG	M2*	12.5*	3.2*	3.07	PRIMUS ENGINEERING	UK	UK	5/32W*	12.7	4.1	3.96	THE 100 IN ONE TOY	MPLG	US		LG?		
METALLO-TECHNIC	RT	FR		NA			PRIMUS MOTOR CHASSIS	CRMP	UK	5/32W*	12.7	4.1	4.04	TIGVALE	OO	GG		NK		
METALLU	MP	FR		NK			PROTO	PRMP	UK	M3	NK	6.1	6.0*	TITAN	MPSH	GG	M3.5	10.0	3.5	
METALMEC OPSET	ML	IT	M4	12.7	4.1	4.00	PROTOTYPIA	PRRT	FR		NK			TOYTOWN	MPSH	AL		9.75	3.8	--
METALOR	MPSH	BE		12.0	3.5		PYFYLY	RT	FR	---	NA	--		TRIX [1]	TR	UK	48A	7.8	3.7	3.56
METAPLAN	HA	HU		15*			PYGMEE	NM	FR		NK			TRIX [2]	TR	GG		7.8		
METEOR	OO	AS		NK			ROBO	RT	GG		25a		4*	TRIX [3]	TR	FR	3.5x.8	7.85	3.6	
MEX	MPLG	UK*		13.0*	3.6	3.63	ROBOT	OO	GG		NK			TRIX [4]	TR	GW		NK		
M F C	TR	GE		NK*			RODOPI	TR	RS	M4	8.0	4.0	--	TRUMODEL TOYS	NM	US		VAR	4.4	
MIGMAC	OO	IN		NK			SCHEFFLERS	MPLG	GG	M4	12.9*	4.2		TUBA	RT	UK	---	10x	5	a
MICRO-MECANO "GUINA"	NB	SP	---	15.0	2.1	2.03	SCIENTIFIC BOUNDOOS	MA	HO		12.7p			TUBEPLAC	RT	FR	3	VAR	3.4	
MICUL MECANIC	MP	RO					SHKOL'NIK	MP	RS		NK			ULOX	OX	UK	5/32W	13.0	4.1	--
MIGNON	MPSH	AS	M2.5*	6.0	3.1	3.00	SIMPLIFIED MECHANICS	MC	UK	5/32W	12.7			UNIMETAL	MA	AR		10*		4.0
MILANA	ML	IN					SOMNEBERGER	MPSH	GE	M4.M3	10.0	4.0		VASEK	NM	CZ	M4	12.7a		
MINIATOR	MPSH	BE		8.0	3	3.0	SPIROU	ML	BE	M4	12.7	4.0		VENTO	MPLG	GE	M4	15.0	4.5	
MINITECH	MPSH	FR		9.5	2		STABA [1]	MP	GG		NK			VINTIK I SHPUNTIK	MPSH	RS	M4	10.0		4 a
MOBILO	RT	FR		NA	--		STABA [2]	NM	GW	M4	VAR*			VOGUE	UK	UK	48A	12.7	3.9	3.66
MODEL ENGINEERING	RT	NZ		6.35x	3		STABIL	ST	GG	5/32W	12.5	4.2m		VULCAIN	OO	FR		NK		
MODEL-IT	ML	AL		12.7	4.2		STAHL-KLEMM	RT	AS		NK			VULCANO	ML	IT		12.7		
MODELIT	ML	US		12.7	4.2		STAHLBAU TECHNIK	MA	GG		12.5*			WISDOM	CH	CN		12.5	4.3	4 *
MODELLO	MPSH	GG		10p			STANDARD L.R.	NM	FR		10.0x	4		YOUNG ENGINEER	ME	CA	M3.5*	10.0	3.9	3.73
MODERN-MORECRAFT	NM	US	8-32p	12.7x	4.2		STANLO	DK	US		SHw		3.18?	YUNOST'	ML	RS		12.7	4.2	
MODULO	OO	SD		NK			STATO-BAU	MPSH	GG		10.0	3.5		YUNYI UMELETS	ME	RS	M3*	10.1*	4.3*	
MONTEUR	ST	HU		12.5?																

**TYPE:** This classification is basically as described in OSN 4, p72, and the first two letters of the four letter codes are as below, in order of priority.

AS Aerospace	RT Rods/tubes are main elements	CK CONSTRUCTION type	ME MERKUR type	NM Types using non-Meccano principle
BD Buildings	AR Certain Argentinian	DK DINKY BUILDER type	PH PHILIPS type	ML Very like Meccano
CR Road vehicles	CH Certain Chinese	ER ERECTOR type	ST STABIL type	MP Meccano principle
ES Electrics/science	HA Certain Hungarian	MN MC and MA features	TR TRIX type (inc MECCANO X)	but significant changes
PR Professional type	UK Certain UK	MA MARKLIN type	MC MECCANO	OO Not enough data to classify
DY DIY type	BX BAUFIX type	MB Matchbox and similar types		

The second two letters give limited cross-referencing using the codes above and also SH and LG which qualify MP systems which have hole spacings of less or greater than 12.7mm.

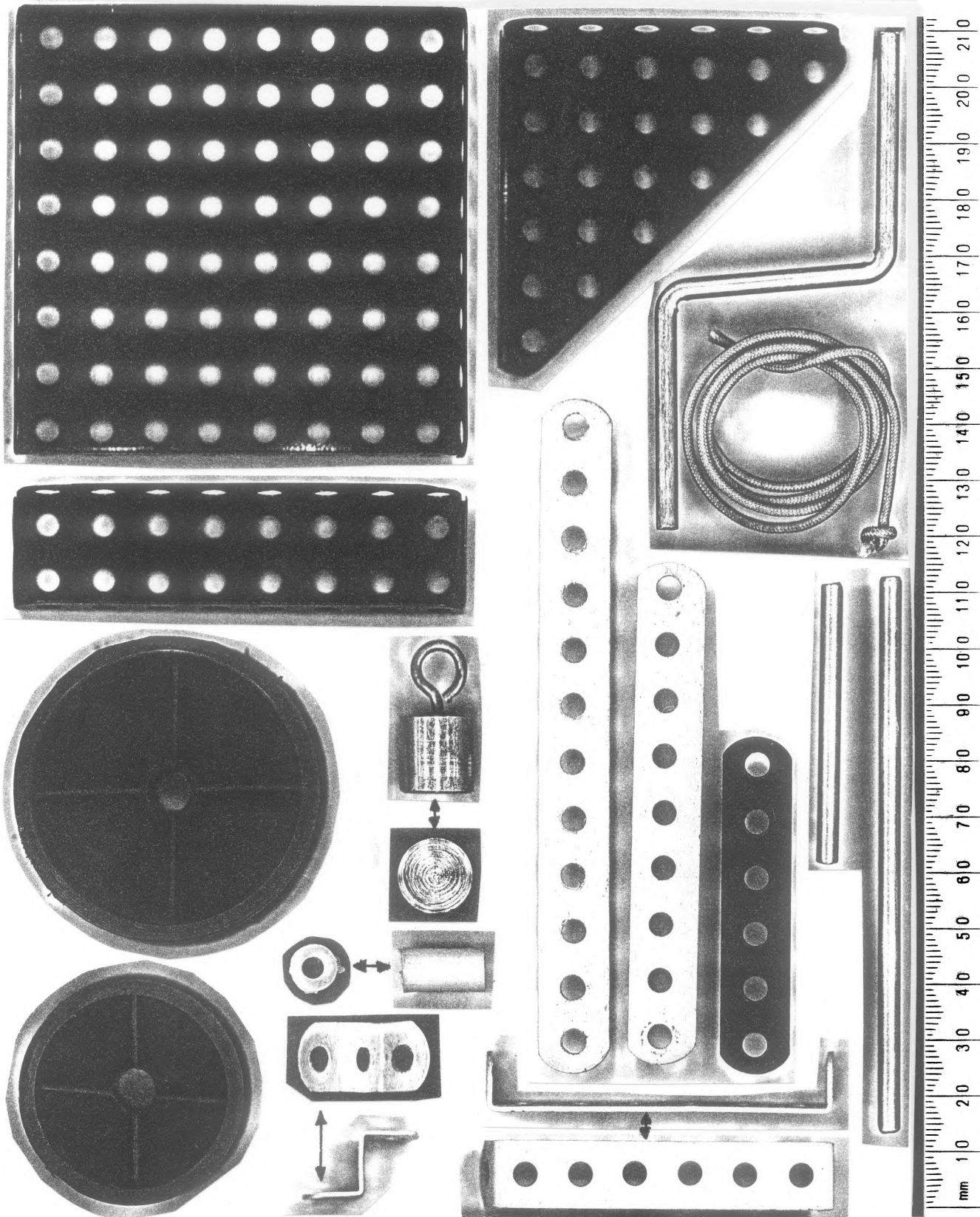
**COUNTRY:** The codes used are as follows

AL Australia	CL Chile	GW West Germany	JA Japan	SA South Africa	US USA
AR Argentina	CN China	GR Greece	ME Mexico	SD Sweden	VE Venezuela
AS Austria	CZ Czechoslovakia	HO Holland	NO Norway	SP Spain	YU Yugoslavia
BE Belgium	DE Denmark	HU Hungary	NZ New Zealand	SW Switzerland	
BU Bulgaria	FI Finland	IC Iceland	PO Poland	TA Taiwan	
BZ Brazil	GE East Germany	IN India	RO Romania	UK UK	
CA Canada	GG Germany	IT Italy	RS Russia	UR Uruguay	



**NEW SYSTEM - META BUILD** In OSN 3 Ashok Banerjee mentioned a new set which had recently appeared in India, and thanks to him I now have one of them and can give some details. The box measures 13.2x8.9x1.4" and inside the parts are loose in the different compartments of the white moulded packaging. On the lid there is a colour photo of two models within an orange frame, and the main wording is similar to that on the front of the Instruction Leaflet, shown overleaf. On one edge is: Designed and manufactured by: KIDSTUFF, B-186, OKHLA INDUSTRIAL AREA, PHASE-1, NEW DELHI-110020. There are no illustrations of the parts or detailed set contents, so I've photocopied most of the parts (below) and listed those that I found in my set:-

- Perforated Plates, flanged 4 sides: 2 off, 8x8 h, light red; 4 off 2x8 h, 2 light red, 2 black.
- Perforated Triangular Plates, 6x6 h, flanged on the two shorter sides: 2 off, light red.



- Strips: 4 off, 12 h, light grey; 4 off, 9 h, light grey; 2 off, 5 h, black.
  - DAS: 4 off, 1x6x1 h, light grey.
  - Reversed Angle Brackets: 4 off, 1x1x1 h, light grey.
  - Pulleys, plastic: 1 off, 55mm dia, brown; 1 off, 41mm dia, light brown.
  - Axles, plated, .157 dia: 2 off, 100mm; 6 off, 50mm; 1 off, Crank Handle, 40x40x40mm.
  - Weight: 1 off, 13mm dia x 14mm long with ring on top, plated.
  - Sleeves: 10 off, yellow plastic, .313"dia x 14mm long.
  - Nuts and Bolts, M4, plated: 20 off each, Csk Screws 10mm overall, standard size hex nuts.
  - Tools, plated: 1 Spanner, single ended; 1 Screwdriver, black plastic handle, blade .092" dia.
- NB. Plating is probably zinc, mostly bright.

The hole spacing is 10mm and the holes are about .170" dia; there are no elongated holes at all. All the metal parts are of steel, the Strips are of normal thickness but the Plates are very thin, .016" over the paint. All the parts are reasonably accurately made and although some of the Strips have a little burr around a few of the holes, the finish overall is quite good, and the paint has stood up well to limited, careful use. The selection of parts is rather unusual for a small set, particularly that the two Wheels are of different diameters so it isn't possible to make a two-wheeled truck of any sort. The design of the parts themselves is also unusual with several based on an even number of holes. This doesn't matter for some parts such as the Triangular Plate, and it is understandable that the small Flanged Plates are 2 holes wide, but why the basic Plate is 8x8 and why most of the Strips, including the DAS, have an even number of holes is hard to fathom. The 10mm spacing leads to problems at the edges and corners of the Flanged Plates where there is only room for one Nut on the inside. This is partly because the Screws are over long but also because the edge row of holes is quite close to the bend line of the flange. The makers have solved the problem for the models in the Instruction Leaflet by never using Screws where they might foul each other. This problem does of course exist to a greater or lesser extent, on many other systems with hole spacings of much less than  $\frac{1}{2}$ ", particularly when a 4mm diameter or thereabouts, thread is used. Given that appreciably smaller nuts and bolts are rather fiddly in use, about  $\frac{1}{2}$ " would seem a natural hole spacing, especially for a small system mainly intended for youngish children. So why does a manufacturer choose 10mm? One can only suppose that it makes the product a little cheaper in that less metal is needed for the parts, less cardboard for the box, etc. But it would be interesting to know just what these savings would amount to on the selling price.

Back to the parts - the strips are unusual for a 10mm system in being nearly  $\frac{1}{2}$ " wide, and this overcomes the lack of strength sometimes found with 10mm spacing and 4mm holes. Of course they can't be bolted side by side but this isn't a real disadvantage in a set of this sort. The ends of the Strips and Brackets are semi-radiused as can be seen in the illustrations; in some of the models the ends of the Strips are shown extending well beyond the end holes but none of the actual parts were like that. The method of fixing the Pulley to the Axles is unusual with the Pulley a very tight push fit on the Sleeve, and the Sleeve a very tight push fit on the Axle. Once in position there was not too much wobble and no slippage would be likely under normal loads, but the fitting proved difficult for this 60 year old, never mind the 6 year old mentioned on the box. The Sleeve also acts as a collar and as a coupling for two Axles, or more importantly, for an Axle and the short Crank Handle. In the latter role it performed adequately in small models but would not resist any appreciable torque. The Pulley too could do more than one job, there being 4 holes in the bottom of the groove, into which Sleeves could be inserted to hold Axles as 'spokes'.

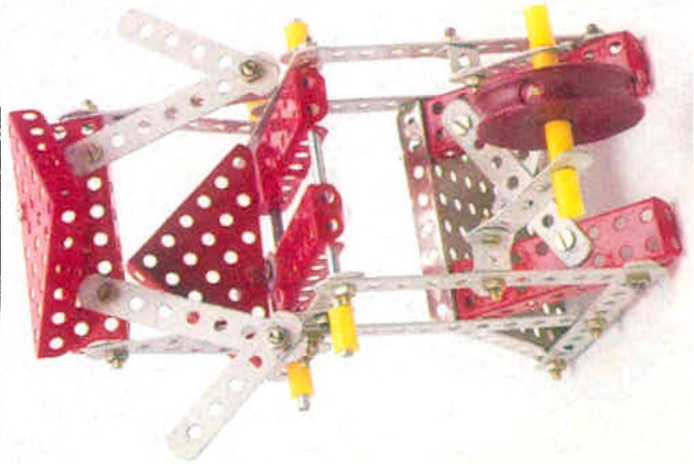
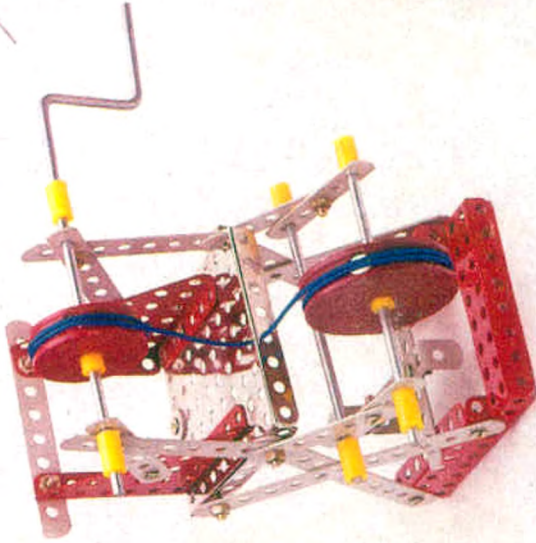
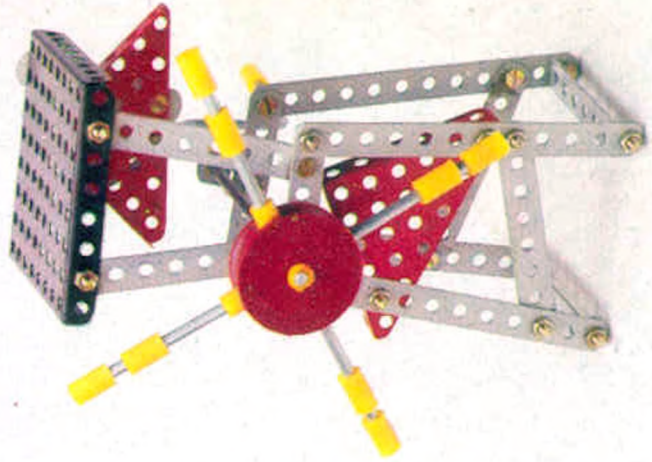
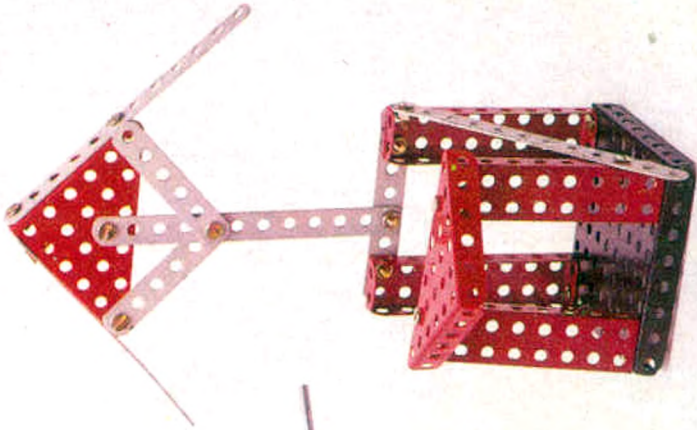
The Screws and Nuts were well made, probably they were commercial items; the Screwdriver was a rather weedy little thing with a blade tip that was much too small for the slot in the Screw, while the Spanner was overspecified in terms of strength and was too large to use easily in corners. Finally the Weight - a good idea although perhaps a bit of a luxury in a set which does not boast a hook; it only weighs 12g but it fell under its own weight very satisfactorily when it was used as a tup.

The Instruction Leaflet is one sheet, 278x201mm deep, folded into two. The front page, (overleaf) is yellow with a red band and white triangle at the top; the other 3 sides show colour photos of 12 models, and at the bottom of the back page is an address for KIDSTUFF which is not the same as that on the box:- 206 DESEIN HOUSE, DLF COMMERCIAL COMPLEX, GREATER KAILASH PART-II, NEW DELHI-110048. The models are not numbered and have no titles, only three have any moving parts and in two of those it is just an Axle and Pulley that revolve. I am not sure what most of the models actually represent but they do look attractive and some are perhaps models of buildings or shrines; the 2 hole Flanged Plates help to avoid the models having a spindly look. One or two of the models needed more Screws and Nuts than were supplied, and extra ones could often be used to advantage to increase the rigidity of the models. I ended up making a Drop Hammer based on one of the Leaflet models (I couldn't resist that tup), and using all the structural parts in the set gave a nice rigid model, but I needed 38 Screws to do it. The parts in the models in the Leaflet and on the lid are not all the same colour as those in the set, although all are either black, light grey or light red.

[cont ->]



There is apparently a SENIOR set available too and Ashok says that although it contains some different parts it doesn't seem to follow on from the JUNIOR. He also remarked that the sets are relatively expensive in India, well I've certainly had my money's worth but what a 6 year old would make of it I am not sure. It's more difficult to make models with it than with a small MECCANO set, but perhaps for 6 year olds it's really a question of Dad showing how clever he is.



**JUNIOR**  
**META BUILD**  
 THE MOBILE METAL CONSTRUCTION SET!

JUNIOR META BUILD is a mobile construction set with 25 sheet metal part, plastic wheel, metal axles, weight, nuts and bolts, plastic fitting, spanner, screw driver and sling.

AGE : 6 YEARS UPWARDS

BEAVER/KONSTRUKTA At Skegex last July some parts and the remnants of a manual were on sale and were first taken for BEAVER, based on the illustration of the parts in MCS. There was no obvious name on the pages of the manual but in the instructions for one of the models a 'Konstrukta 12 volt electric motor' is mentioned. In MCS the range and description of KONSTRUKTA parts is very similar but not identical to that for BEAVER, but all the parts seen could certainly have been KONSTRUKTA. The TRACTION ENGINE illustrated under BEAVER in MCS is included in the 'Skegex' manual but the title is STEAM TRACTION ENGINE. So it looks as if BEAVER and KONSTRUKTA were closely related in some way. Neither of them turn up very frequently and KONSTRUKTA sets in particular are very rarely seen.

The parts in question look exactly as would be expected from the MCS BEAVER entry, the Strips and Angle Girders are painted a medium/dark green, the Flanged Plates, Trunnions and Bush Wheel a medium red, the 1½" dia balloon type Road Wheel is medium blue, the 3" Pulley glossy black, and the 1" pulleys are brass plated steel. Bosses are of brass, single tapped 5/32 BSW, 3/8" dia for the 1" and ½" dia for the 3" Pulley. The Gear Wheel has been pressed from rather thin material and has 57 teeth, not the 53 shown for both BEAVER and KONSTRUKTA in the MCS lists. (The Pinion looks quite MECCANO like at a glance and has 19 teeth)

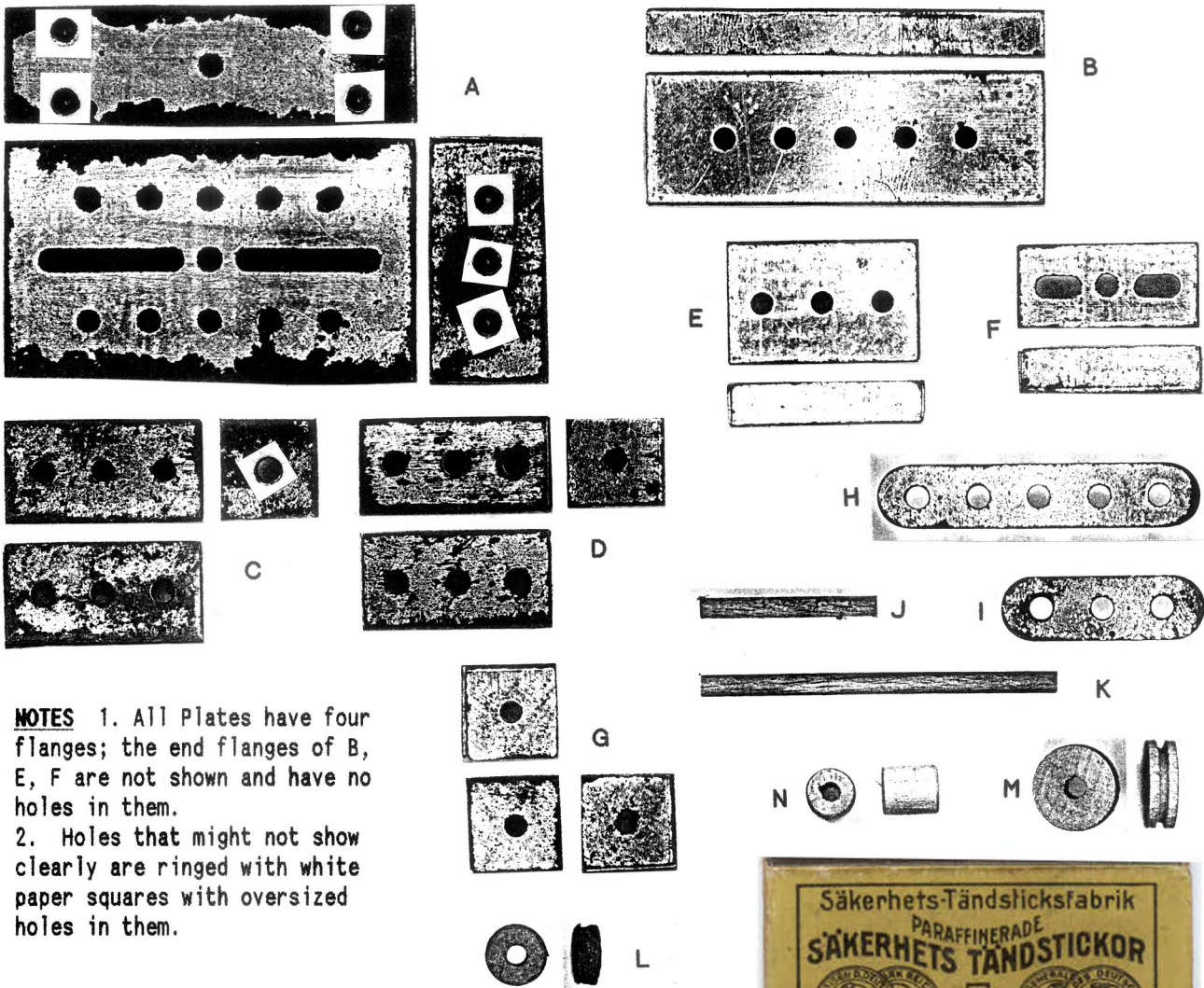
In a BEAVER Set No 1 (details from Alf Reeve and Geoff Wright) the design of the parts appears identical but the colours are different. The Road Wheels are glossy black, the red parts are slightly darker and the green ones slightly lighter. The colours of the parts in Frank Beadle's No 1 KONSTRUKTA set are very similar to those of the parts which were on offer.

CONTENTS OF MÄRKLIN 'm' SETS Georges Spinner has sent a copy of the Set Contents of these sets taken from a manual, and to save space I have typed the details, and also added MECCANO style names against the PNs. The m sets do not bear any marked resemblance to the previous A,B,C,E series (see OSN 5, p100); they are considerably larger than Sets A,B,C (in round numbers the m30 contains 100% more parts than the A, and the m60, 50% more than the C), but the m60 is smaller than the C with its add-on E. The number of different parts used to make up the new sets is about the same as before, but it is a rather different selection with no couplings or fine toothed gears. The Collar #11060 is illustrated in the list - it looks as if it is made of plastic with one side deepened to take the grub screw. The Collar was originally #11059, of conventional shape and made of brass; in the A-C list PN 11060 was used but the illustration was of the old style part.

PN	Description	Set: m30	m50	m60	PN	Description	Set: m30	m50	m60	PN	Description	Set: m30	m50	m60
10000	Fishplate	8	8	8	10205	" 50mm	3	3	3	11419	" " 5x9 h	-	-	2
10001	Double Bracket, ½"	4	4	4	10207	" 70mm	2	2	2	11421	" " 5x11 h	2	4	9
10002	Angle Bracket, ½"	16	16	16	10209	" 90mm	-	2	2	11501	Cord, 4m	1	1	1
10003	Strip, 3 hole	3	3	3	10210	" 101mm	2	2	2	11515	Spring Cord, 150mm	-	1	1
10004	" 4 "	6	6	6	10211	" 115mm	2	3	3	11605	Curved Strip, 5 h	2	2	4
10005	" 5 "	8	8	8	10213	" 130mm	1	1	2	11631	Flat Trunnion	2	2	2
10006	" 6 "	-	2	4	10215	" 150mm	-	-	2	11632	Trunnion	2	2	2
10007	" 7 "	10	10	10	10220	" 200mm	-	-	1	11713	Hook	1	1	1
10009	" 9 "	6	6	6	10312	Pulley, n/b, 12mm	1	1	1	11717	Crank Handle	2	2	2
10011	" 11 "	10	12	12	10325	" 25mm	5	5	5	11727	Washer	5	10	10
10017	" 17 "	-	-	4	10336	Flgd Pulley, 36-m	-	-	6	11728	Spacer, 3mm	3	4	4
10025	" 25 "	2	4	8	10350	Pulley, 50mm	-	2	2	11800	Parts Box	1	1	1
10040	Rev Ang Brkt, ½"	1	2	2	10365	Flgd Wheel, 65mm	1	2	2	12400	Plastic Axle Clip	16	16	16
10042	" " " 1"	-	1	1	10914	Universal Gear, 14t	2	2	2	14006	Allen Key	1	1	1
10044	Dble Brkt, 3x1x3 h	1	1	1	10918	Gear Ring, 18t	-	-	1	14007	Spanner	2	2	2
10045	Dble Bent Strip	-	-	1	10940	" " 40t	-	-	1	14010	Nut	90	120	190
10047	" " " 3h ctr	-	-	2	11036	Bush Wheel, 36mm	1	1	1	14025	Tyre for 10325,10914	5	5	5
10055	Strip 5h, oval end h	2	2	2	11060	Collar	3	5	5	14036	" " 10336	-	-	6
10059	Strip 9hx½" pitch	-	2	2	11138	Seat	-	1	1	14050	" " 10350	-	2	2
10065	DAS, 1x3x1 holes	4	4	5	11148	Steering Wheel, 36mm	-	1	1	14200	Allen Hd Screwdriver	1	1	1
10067	DAS, 1x5x1 holes	7	7	7	11320	Flgd Plate, 5x11 h	1	1	1	14202	Bolt, 8.5mm	60	90	160
10069	DAS, 1x7x1 holes	-	-	1	11340	" Sector Plate	-	2	2	14203	" 12mm	26	30	30
10105	Ang Girder, 5 hole	-	-	2	11352	Perf Plate, 5x9 h	-	-	1	14204	" 25mm	2	3	3
10111	" " 11 "	-	-	4	11405	Flex Plate, 3x5 h	3	3	4	14223	Grub Screw	14	20	20
10125	" " 25 "	-	-	4	11415	" " 5x5 h	2	4	4					
10203	Axle, 30mm	3	3	3	11417	" " 5x7 h	2	2	2					

NOTE: Sets E30 and E50 convert m30 into m50, and m50 into m60; they contain exactly the parts needed except that there is a #11800 in each conversion set.





**NOTES** 1. All Plates have four flanges; the end flanges of B, E, F are not shown and have no holes in them.  
 2. Holes that might not show clearly are ringed with white paper squares with oversized holes in them.

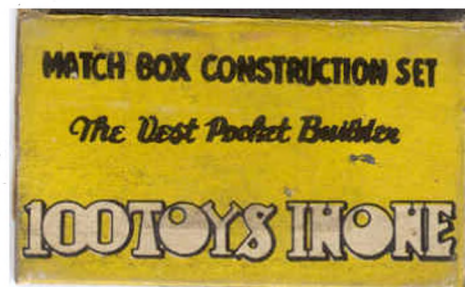


**MACÓN**  
**TOYLAND MECHANIC**

100  
 modelos diferentes pueden construirse con esta cajita

*Macón*

Illustration of a child building with matchbox toys, including a train and a house.





**MATCHBOX SETS** They are called Matchbox sets because of their size, their sleeve type packaging, and because one face is sometimes printed to look like an (old fashioned) matchbox. I didn't realise until recently that they come in two sizes. If you look carefully it says so in MCS(FB) but it was José Bernal Moreno who put me on to it when he sent photocopies of two sets, a CLOU, box size 36x58x18mm, and the 130x160x28 MACÓN. Basically the parts are the same but scaled up for the larger version, and the models shown on the Instruction Sheet are identical. The dimensions of the larger parts are generally a little less than 50% more than those of the small ones, though there are a few exceptions.

Now comments about the various sets for which information is available; the code after each title is to make references easier.

**CLOU (CLU)** The top of the sleeve is shown in MCS, but at the bottom of it, on a set belonging to Jim Gamble, are D.R.P.a. and U.S.A.pend. (Fig 2). The underside of the sleeve is printed to look like a (Scandinavian) matchbox (Fig 1), the main name on it, SÄKERHETS TÄNDSTICKOR means probably Safety Matches, and whether the MADE IN GERMANY at the bottom is the country of origin or part of the cover being copied is not clear. The other lettering looks Scandinavian, all about matches by the look of it, except that the words around the 'medals' are in German, and translated read: Wilhelm I, Emperor of Germany; (Bism)ark, German Chancellor; Moltke General... [a German general]; Crown Prince of Germany. So what does one make of that, I suppose that the chances are that the set was made in Germany. A photocopy of the parts is shown opposite and they are labelled A-N for reference. The hole spacing is 8.6mm and the holes have a diameter which varies between 3.1 and 3.2mm. The set contains: 1xA, 1xB, 2xC, 1xD, 2xE, 2xF, 2xG, 2xH, 2xI, 8xJ, 8xK, 36xL, 4xM, 2xN. Note that #G is not in MCS, and that the composition of the set is slightly different.

**MATCH BOX CONSTRUCTION SET (MBC1)** This set is not in MCS, for the version there under that name see MBC2 below. The upper side of MBC1 (Fig 3) has the name and at the bottom LINEMAR, BEST BY FAR, LINE MAR TOYS in the circle, and below DES.PAT.PEND. Linemar Toys I understand was a company founded in Tokyo c.1950. The underside is shown in Fig 4. The parts are similar to those in CLU but are not so well made, and the tinplate is .009" thick against .014" in CLU. Some of the non-metal parts are particularly bad with off centre holes and the wheels have no pulley grooves. The 'washers', L, are made from thin cardboard instead of 4mm hardboard, and the holes in them are too large to allow them to grip the dowels. The contents are as CLU except that only 1xC and 27xL were found.

**MACÓN (MCN)** The top half of one side of the Instruction Sheet is in MCS(FB), the other side has models 55-100 and of those 69 on are shown for MCB2 in MCS. At the bottom are the names of all 100 models, in Spanish of course, and instead of the note about Figs A-D in MCS there is, after translation: 'With the parts contained in the MACÓN set and those of the TEXAS metal construction set, it is possible to make wonderful models'. So there's another name to watch out for and José commented that nothing was known about it in Barcelona. As stated earlier the parts in this set are similar in form to those of CLU; their dimensions (in mm) and how many were in the set follow:

A: 1 off, 79x51.4x25.	H: 2 off, 64.5 overall )_hole spacing 12.7,
B: 1 off, 79x25.8x6	I: 2 off, 38.4 " ) hole dia 4, 12.8 wide.
C: 3 off, 39x20x19.5	J: 2 off, 120 and 5 off 90 long )_ 4mm
D: None found in set.	K: 4 off, 41 long ) dia
E: 2 off, 38.8x25x6	L: None found in set.
F: 2 off, 37x18x9	M: 4 off, dia: 16.
G: 3 off, 19x19x18.7	N: None found in set.

Note: Metal parts are 0.5mm thick and painted blue; wooden parts are unpainted.

The envelope which contained the Instruction Sheet is shown in Fig 5 (x.8). A suitably enlarged version of the 'boy, gun, train' motif covers the whole of the upper face of the sleeve.

**MATCH BOX CONSTRUCTION SET (MCB2)** From the appearance of it in MCS it might well be another version of the small type, but in MCS(FB) it says that the parts are identical to MACÓN. The only thing that makes me wonder is the picture of the set in MCS with the 3 holes in the end. If it were a small set that would be expected because the holes would be those of part A, which contains all the other parts and slides into the sleeve. But from the dimensions of #A for MCM and its overall size, this can't I think be how the large version is packed, and there must be a cardboard sliding part which contains the parts; and there seems no reason why it should have holes in its ends.

The metal parts from the small Matchbox sets turn up from time to time in the UK, although complete sets are very rare, and I've never seen any of the large parts at all, or an original Instruction Sheet. Final thought, where does the name CLOU come from? It doesn't seem to be a German word; in French it does have several meanings and neglecting 'nail' and 'boil or carbuncle', perhaps 'star turn of entertainment' would be appropriate, if perhaps a little OTT. But why a French name, is it likely that the set was made in France with those pictures of Bismark et al on its cover?

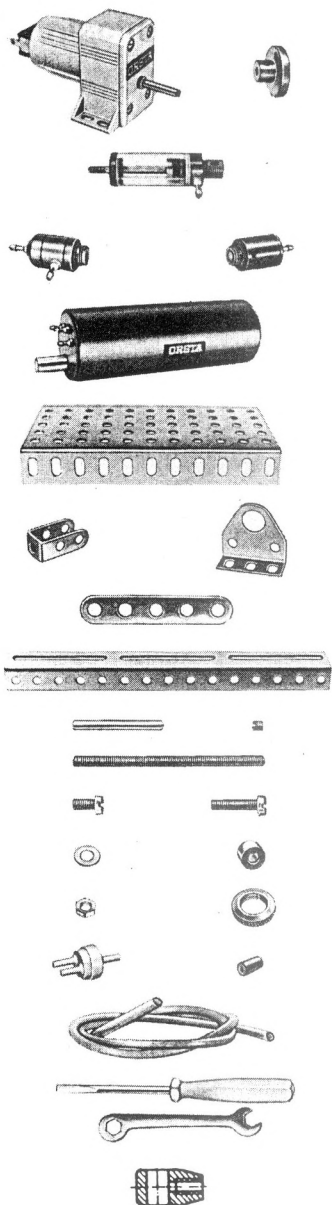
**ORSTA P01 AND P02** In OSN 4 p65, some details were given of Set P02 and now from Brian Rowe comes further information. Both the P01 and the P02 are included in the catalogue of the same educational supply house that lists the C40 set. P02 provides the actuators while P01 provides the pressure with a geared motor, pump cylinder, pressure tank, and suitable valves. There are also various fittings, and CONSTRUCTION structural parts to provide mountings for the different units, no doubt. The various parts in the P01 set are shown below but unfortunately the quantities in the set are not given. There is a similar list for P02 but it only repeats the details in OSN 4. Also below are rather blurry pictures of the sets; you may be able to see a lorry mounted crane on the P02 lid and a wider range of parts than is available in these sets would be needed to build it. The obvious choice would be more CONSTRUCTION parts but in the catalogue it is suggested that their own UMT parts, of which more another day, could be used. The prices given for the sets is DM 99.50 for the P01 and 136.50 for the P02, plus 14% tax.

Der Baukasten P 01 enthält alle Bauteile für den Druckluftverdichter, wie Druckkessel mit eingebautem Sicherheitsventil, Verdichterventil, Druckanzeiger, Verdichtierzylinder, Getriebemotor und die mechanischen Teile.

Der Baukasten P 02 enthält die Bauteile für pneumatische Steuerungen und Antriebe, wie 2 Arbeitszylinder, 2 Wegeventile, 2 Drosselventile, 2 Druckanzeiger, 3 Verteiler und die mechanischen Teile.

## Orsta-Pneumatik-Baukästen

### Einzelteile Orsta-Construction P 01



Motor mit Getriebe  
(Das Übersetzungsverhältnis des Getriebemotors beträgt 1:11,6)  
Kurbelscheibe

Verdichtierzylinder

Verdichterventil  
Druckanzeiger

Druckkessel mit eingebautem Sicherheitsventil

Platte 11 x 5 Loch

Bügel 1 x 2 Loch  
Befestigungswinkel

Flachstab 5 Loch

Winkelstab 15 Loch

Achse und Welle 35 mm  
Gewindestift 65 mm

Schraube M 4 x 8  
Schraube M 4 x 20

Scheibe 4,3  
Elastiksterring

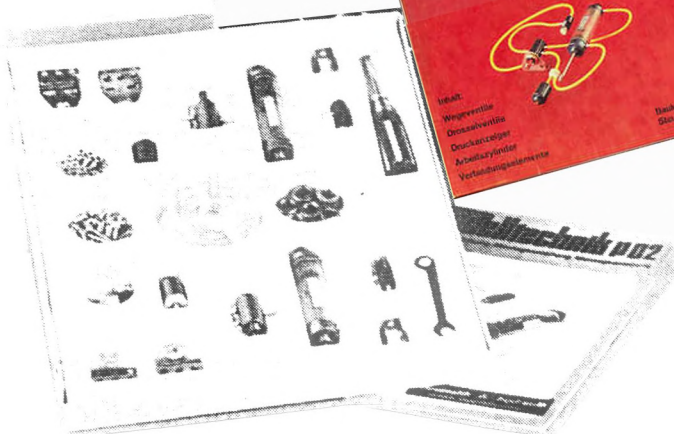
Mutter M 4  
Mutter M 10 x 1

Verteiler CA 2  
Blindverschluß

Schlauch

Schraubendreher  
5,5 x 100 mm  
Schraubenschlüssel

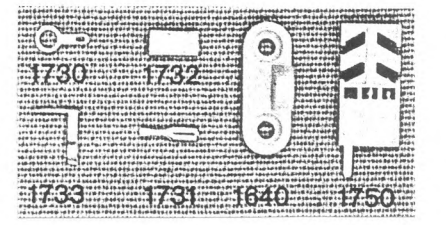
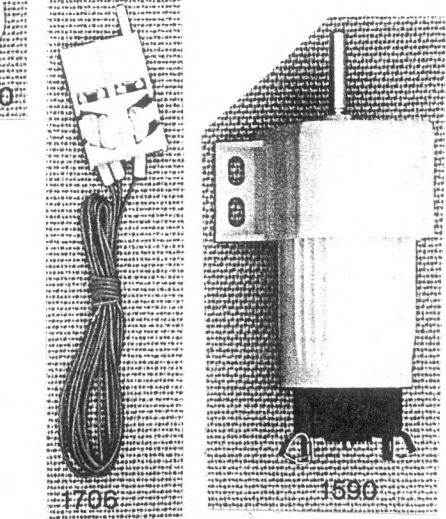
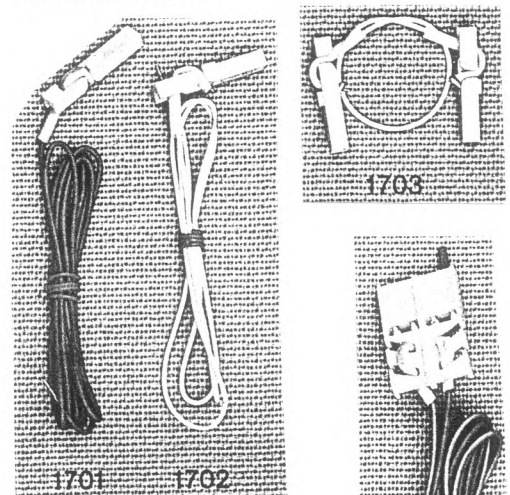
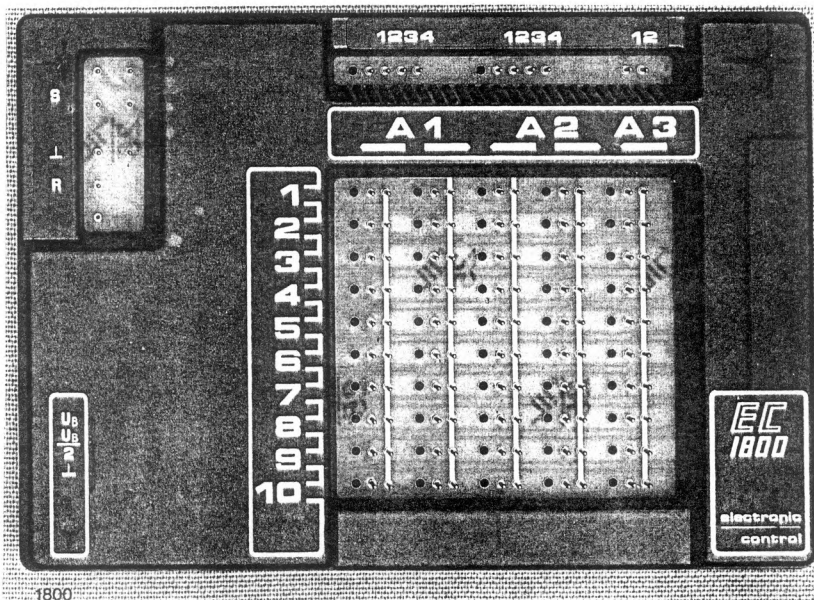
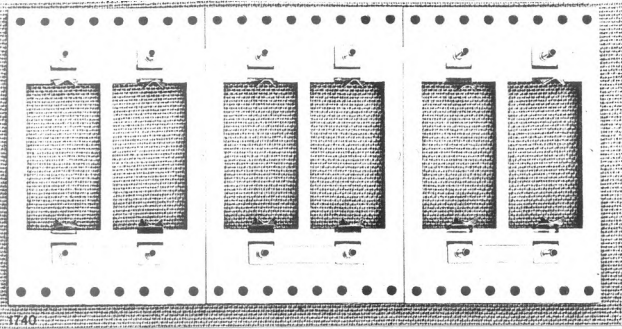
Kolbenstangenkopf mit Lagerbuchse





**CONSTRUCTION C40** Further to the brief note on this set in OSN 5 pl07, the manual is now to hand and the Set Contents are shown below. All the parts except the Motor, the Control Unit and the 1700 series electrical parts are known from earlier sets; the new ones are illustrated below. Apart from the various cables, #1640 is a plastic bracket used to insulate a Bolt from the metal structure; 1731 has a wire crimped to it and pushes onto the contact tag 1730; 1732 is a plastic sleeve which pushes over the arm of the contact clip 1733, and locks the end of the cable to it; and 1750 locates in the main panel of the Control Unit to activate the required programme step. I had hoped to give an account of the capabilities of the Controller and its application to models but the technical German in the manual defeated me. However help is on the horizon and Hellmuth Kohler, who has been experimenting with a set, hopes to include some notes on how the Unit works and its practical applications in the next issue.

4	1001	Flachstab 2 Loch	1	1461	Ritzel 13 Zähne
4	1002	Flachstab 3 Loch	75	1501	Schraube M 4 x 6
6	1003	Flachstab 4 Loch	10	1502	Schraube M 4 x 8
6	1005	Flachstab 6 Loch, Langloch	6	1503	Schraube M 4 x 16
2	1006	Flachstab 7 Loch	100	1511	Mutter M 4
4	1008	Flachstab 11 Loch, Langloch	1	1551	Schraubendreher 4 mm
4	1051	Winkelstab 10 Loch	1	1552	Schraubendreher 6 mm
6	1053	Winkelstab 20 Loch	2	1553	Schraubenschlüssel
2	1103	Platte 7 x 3 Loch	1	1554	Schraubenhalter
1	1104	Platte 9 x 5 Loch	2	1590	Getriebemotor
15	1151	Scheibe $\varnothing$ 10 mm	4	1640	Winkelstück 3 x 1 Loch
1	1201	Bügel 1 x 1 Loch	1	1701	Buchsensteckverbindung 1-adrig, 1 m blau
6	1202	Bügel 3 x 1 Loch	2	1701	Buchsensteckverbindung 1-adrig, 1 m weiß
2	1211	Bügel 1 x 2 Loch	1	1701	Buchsensteckverbindung 1-adrig, 1 m gelb
4	1251	Winkel 1 x 1 Loch	1	1701	Buchsensteckverbindung 1-adrig, 1 m braun
4	1253	Winkel 2 x 1 Loch	2	1702	Buchsensteckverbindung 1-adrig, 0,5 m weiß
4	1301	Radfelge $\varnothing$ 20 mm	1	1703	Rücksetzverbindung
2	1302	Radfelge $\varnothing$ 30 mm	1	1704	Buchsensteckverbindung 2-adrig, 1 m grün/gelb
4	1311	Schnurlaufrad $\varnothing$ 14 mm	1	1704	Buchsensteckverbindung 2-adrig, 1 m grün/braun
2	1352	Achse + Welle 65 mm	1	1706	Buchsensteckverbindung 3-adrig, 0,5 m
2	1353	Achse + Welle 95 mm	1	1720	Litze 0,5 m blau
2	1371	Gewindestift 29 mm	1	1720	Litze 0,5 m weiß
8	1381	Gewindestift mit Querschlitze M 4 x 4	10	1730	Lötöse
1	1401	Stellring	10	1731	Flachsteckhülse
8	1402	Elastikstellring	3	1732	Kabelhülse
1	1412	Lasthaken	3	1733	Verbindungsklemme
1	1441	Schnur 2 m	1	1740	Batteriebaustein, 3fach
1	1442	Schnur 1 m	15	1750	Programmierstecker
1	1452	Zahnrad 63 Zähne mit Buchse	1	1800	Elektronisches Steuergerät EC1800



**NEW SYSTEM - BUCO-INGENIEUR** Peter Kessler recently came across a No 2 set in Switzerland and he sent some details, and the manual for inspection. The Illustrated Parts List and Set Contents are shown opposite (x.6); the Strips and Plates are made of wood, and the steel brackets are designed to hold the wooden parts together and, with the one or two 'brassware' parts, to allow simple mechanisms such as vehicle steering, to be constructed. In the first pages of the manual it is explained (see below, x.7) how the Strips are held one to another by a clamping action. Throughout the manual the different parts are coloured; blue, green, red and yellow for the various Strips, Plates and Pulleys; and black or yellow for the metal parts. It all looks very charming. Peter says that the wooden parts in his set are mostly painted red and green, and the Brackets have a black metallic finish.

As can be seen from the Set Contents there are 3 basic sets with the two 'a' connecting sets. Most of the models in the manual are for these three sets, and one of them is shown opposite. The 101 set contains all the parts in one each of the 101/b, /c, and /d sets, and a train made from it (reproduced on the front cover, x.7), is on the manual's back page. In fact the 101/d has enough parts to allow two of the open wagons to be made. Also on the back page are three small models made by combining one of the 101/ sets with a No 1 or 2 set. More details of the manual are given in the summary below and it is curious that of the 6 languages used the English version is usually put first, and that there is no Italian version of the Introduction (the English text is that given below).

Thomas Keel sent through Peter an extract from the April 1986 issue of a Swiss collectors' magazine called *Sammeln*, which contains an article on the history of the firm that made BUCO. It is in German but Thomas added some notes in English saying that August Bucherer set up his firm during WW2 and went out of business in 1958. It mainly made model trains, which are now much sought, but also produced the BUCO-INGENIEUR constructional sets. There is a photo in the article which shows 4 models that are in the manual discussed above. There is also reproduced a Testimonial, dated January 1912, from MÄRKLIN, for whom Bucherer had been working, but as far as I can tell there is nothing about what he did from then until the second war. What caused me to wonder was the MCS entry for BUCO with its reference to the 1920s as a possible date for the parts shown there. In fact the latter look very like those of TECNICO, a Swiss product, whereas BUCO in MCS is described as German. Unfortunately there is nothing in MCS to explain how the name BUCO or the German origin came to be attached to the parts shown.

No details are to hand about the hole spacing or diameter, thread size, etc of BUCO-INGENIEUR.

**SUMMARY OF MANUAL** #Name: BUCO-INGENIEUR #Details of maker: A.Bucherer & Cie, Société Anonyme, Diepoldsau (Suisse). [German equivalent also given] #Dates &/or Ref Nos: Made in Switzerland on 1st page #Page size: 298x212mm deep #No of pages: 16 unnumbered, inc outer pages, there are no covers as such #Language: English, German, Dutch, French, Spanish, Italian #Printing: All parts in the Parts List and in the models are in solid colour, red, blue, green, yellow for those in wood and black, yellow for metal parts #Page Nos of Parts List & highest PN: 1, 49 #Page Nos of Set Contents & highest PN: 1,49 #Sets covered: 1,1a,2,2a,3,101,101/b,101/c,101/d #No of models for each set: 1: 37. 2: 16. 3: 4. Plus 4 models from the various 101/ sets, forming a train, and 3 from 101/ sets used with a No 1 or 2 set #Name, Model No, Page No of first & last model of each set: No Model Nos. 1: Letters ABC, 4; Trapeze, 8. 2: Street-signal, 9; Cargo-steamer, 12. 3: Swingboat, 13; Suspension Bridge, 15. No titles are given for the 7 101/ models on pl6, the first 4 form a Train and the last is a Saw Bench #Other notes: The English name of the set is BUCO-ENGINEER. The Titles of the models are in all 6 languages but in the introductory building instructions there is no Italian version.

The construction set BUCO-ENGINEER contains the building material shown on the first page. A striking novelty are the patented connecting links 17 to 20, which can be applied everywhere, and not only at points provided with holes. As may be seen from the illustrations 1 to 4, a beam wedged through the T-link number 18 is tightly joined by screwing the link to another beam. On the same principle joints can be made with the help of straight and angle links numbers 19 and 20 shown in figures 3 and 4. Moreover, a number of diverse other connectings with different parts may be made, as illustrated in the various examples.

**Washers** should always be placed **under the screwheads**, unless the use of one of the metal parts 13 to 20 makes this unnecessary.

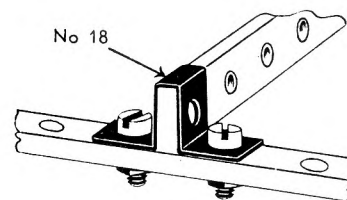


Fig. 1

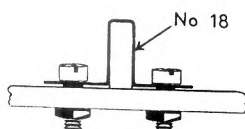


Fig. 2

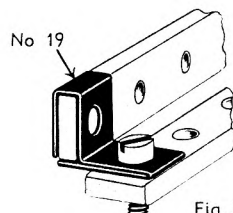


Fig. 3

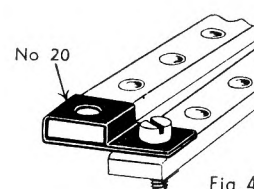


Fig. 4



Construction set  
Konstruktions-Baukasten

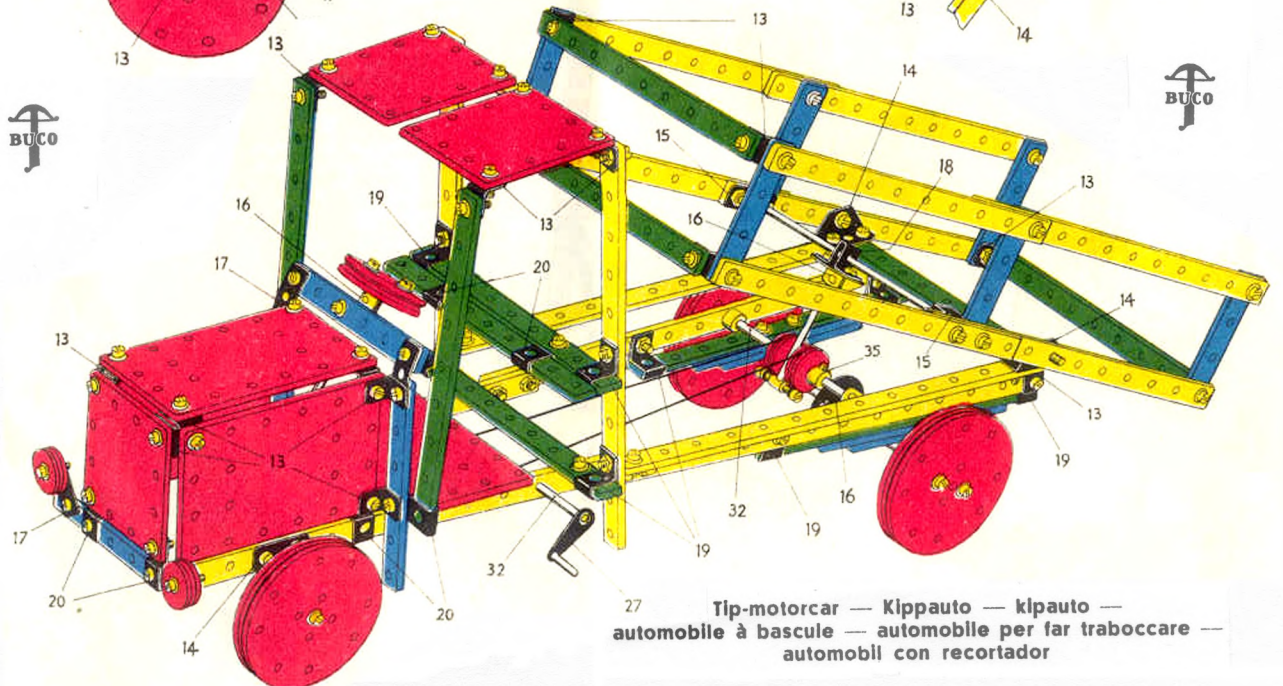
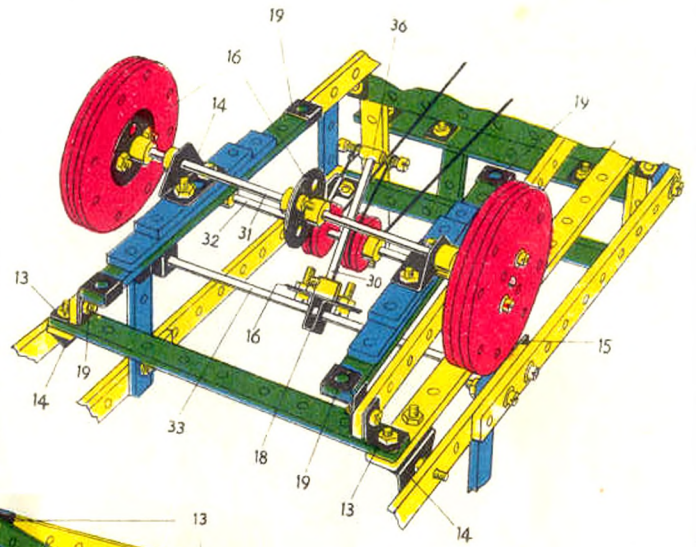
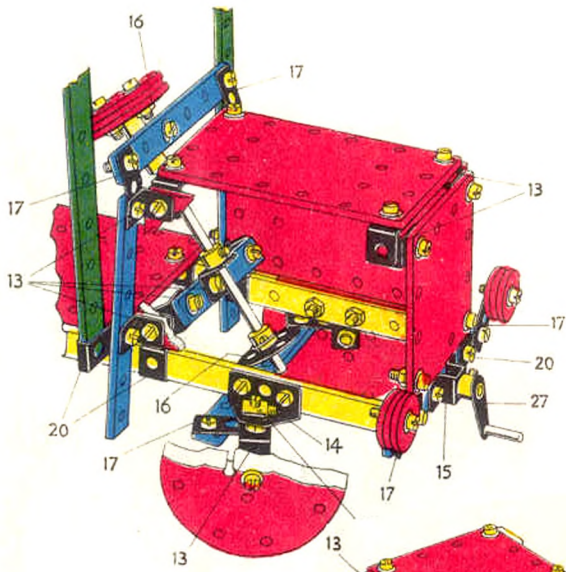
Constructie-bouwdoos  
Boîte de construction

Scatola di costruzioni  
Caja de construcciones



Made in Switzerland

No.	Buco-Ingenieur No.	1	1a	2	2a	3	101/b	101/c	101/d	101
1		4	2	6	4	10	4	6	2	12
2		4	2	6	4	10	-	2	-	2
3		4	4	8	4	12	2	-	-	2
4		4	2	6	4	10	-	4	-	4
5		4	2	6	4	10	-	-	-	-
8		-	-	-	-	-	3	6	4	13
9		-	-	-	-	-	2	-	4	6
10		1	1	2	2	4	2	-	-	2
11		1	1	2	2	4	2	1	2	5
13		8	8	16	16	32	20	20	16	56
14		4	-	4	2	6	2	4	4	10
15		2	2	4	2	6	-	-	-	-
16		4	2	6	4	10	2	-	-	2
17		4	2	6	4	10	1	2	2	5
18		4	2	6	4	10	-	-	-	-
19		6	2	8	4	12	-	-	-	-
20		6	2	8	4	12	-	-	-	-
23		1	1	2	4	6	10	-	-	10
24		4	-	4	2	6	1	-	-	1
25		-	2	2	2	4	-	-	-	-
26		1	-	1	-	1	-	-	-	-
27		1	-	1	1	2	-	-	-	-
28		1	-	1	-	1	-	-	-	-
29		1	-	1	-	1	-	-	-	-
30		1	1	2	2	4	1	-	-	1
31		2	-	2	2	4	-	-	-	-
32		2	-	2	1	3	-	-	-	-
33		-	-	-	1	1	-	-	-	-
35		4	2	6	4	10	1	2	2	5
36		1	1	2	1	3	-	-	-	-
37		30	20	50	55	105	10	12	8	30
41		14	10	24	1	23	6	39	54	42
42		12	8	20	20	40	10	8	-	18
43		10	2	12	20	32	3	-	-	3
44		-	-	-	8	8	-	-	-	-
45		10	5	15	10	25	1	2	2	5
46		36	20	56	60	116	52	60	40	152
47		-	-	-	-	-	4	8	8	20
48		-	-	-	-	-	2	4	4	10
49		-	-	-	-	-	2	4	4	10



Tip-motorcar — Kippauto — klpauto —  
automobile à bascule — automobile per far traboccare —  
automobil con recortador



**ITEMS FROM LETTERS**

1. On the subject of MÄRKLIN Zusatzkasten (OSN 5 p99), Georges Spinnier wrote that they were introduced in 1919.

2. In OSN 5 p101, I asked what might be the purpose of the Screws and Nuts included in the larger KLIPTIKO sets. Roger Baker wrote that they were used to bolt the WHEEL #9, which is a pulley, to the large Wheel 10, so that for example, the spokes of a Big Wheel can be attached to a 10, with a cord drive onto the 9. Further points:

- INGENIEUR FRANCAIS, illustrated on p101 of OSN 5, looks very much like X series MECCANO.
- CONSTRUMENTS. Enclosed is a photocopy of the Hamley's advert from the Feb 1934 Meccano Magazine showing 4 models together with a boxed set, presumably a No 100. Note that only 3 sets are listed (10, 20, 100) but it may have been that they were the only ones stocked by the shop.

3. Derek Strickland sent details of the parts he now has available, primarily intended for use with MECCANO. Those associated with his 3/8" dia Axles have been reviewed in CQ, some of the others (they'll turn up as Mystery Parts one day) are: Coupling, 3/8" bore x 1/2" long; Gear Ring, 132 external teeth; 38t Gear Wheel, 1/8" face, single tapped, solid brass; Dredger Bucket, the description of it makes it sound like the AMI LAC part; Spring Buffer, solid brass, similar to MECCANO original; Cone Pulley, solid brass, 3/8" dia boss; Worm Housing, equivalent to MÄrklin #11720, BRAL 215; Wide Double Bent Strip, equivalent to MÄRKLIN 10047.

4. George Wetzel sent his new sales list of nearly 100 items, virtually all of them sets. Quite a few are ERECTOR but there are many others including 'building block' and 'architectural' sets. From the rest new names to me were:

- #2 Gilbert clock set, 1925, sold under KLAX TOY label. Makes an operating pendulum clock using ERECTOR gears, rods and chain.
- Various '100 TOYS IN ONE' sets from #1 1/2 to 6 1/2. [I'm not sure whether these are ERECTOR under a different name]
- BUILDER BOY, #1, by Norwood Co., Chicago. 1949. Boltless metal construction set.
- TECHNICAL TRAINER, metal construction set made by Tucker Toys, N.Y. 1940's.
- LANKY LINKS, late metal and plastic ERECTOR variation. 1961. Simple linking 'girders' and nuts and bolts.
- CLIP CRAFT. Metal construction set, postwar, Yonkers, New York. Small tube box. Boltless aluminium rods and clip fasteners.
- Marx 'Matchbox' Construction Set, 1930's. 2 1/4 x 1 1/2 x 3/4".

George's address is 221 Hickory Street, Park Forest, Illinois 60466. USA.

5. Some remarks from Don Redmond:

- YUN'II or YUNYI? (OSN 5 p97). It all depends on which system of transliteration is used. [Since it is readily available to readers, and for uniformity, I suggest that the one in OSN 4 p70, contributed by Don, should be the 'OS standard']
- There is an error in OSN 5 p82, the longest STOKYS parts have 78 holes and not 80.
- On BAUFIX etc, BATIFIX is the literal translation into French of BAUFIX (bâtir=bauen=to build, houses, etc). I assume they are identical? CREME ECLIPSE is the name of a household polish, and no doubt was given away as premiums. All the details including packaging, colour, etc are the same as BAUFIX. [BATIFIX is not in (my copy of) MCS; I have a photocopy of the lid of a set (from Harry Mariën) which shows an Aeroplane similar to but not exactly the same as the BAUFIX one in MCS. The parts in this set are identical to some I have, and which I had assumed to be BAUFIX, though I have never seen a BAUFIX set. But since making the comparison I've acquired other similar parts from several sources and there are some differences in hole size between them. Of the Strips 11 have end holes of about .140" dia, and in 15 they are between .145 and .150. The large holes in 2 Discs are .140", in 2 they are .150, in 12, .160 and in 2, .165. Some of the larger ones may have been drilled out but most looked genuine.]
- At least one shop of a [Canadian] hobby chain (Leisure World) had WISDOM sets 0 to 5 at Christmas, the #5 was \$21.99 (£11). The nuts and bolts are nicely finished, though the nuts are rather thick. The thread seems to be M4, I suspect they are plated after cutting, an M4 tap is tight in the nuts.

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**MEKANIK [1]** The parts are illustrated in MCS and the Pinion #Z18 is interesting because it has a square section bore and slides on the special Rods AV6 or AV9 (6, 9cm long), which have normal ends but a raised square section centre portion. There is a Double Fork X13 to move the Pinion along the Rod. I suppose that these parts are intended for use in gearboxes, the name of each part is prefaced by Schalt and one meaning of the verb Schalten is 'to change gear'. As far as I know no other system has this feature; has anyone any first hand knowledge of these parts?



AMERICAN MODEL BUILDER AND CASTLE BUILDER Looking at these systems in MCS there are many points of difference between them but there are also some remarkable similarities. In particular many of the illustrations of the parts are identical and some of the parts common to both systems are unusual. For example the 2x1x4 hole DAS called in each Hanger Strip, and then both have 3 Cranks (MECCANO Crank Handles) 4½", 5½" and 6½" long. Was this a case of straightforward copying or was there some connection between these two systems?

[I had suggested to Don Redmond that there might be a connection and he responded: "There are some intriguing coincidences in the illustrations of parts in MCS, but not as many as would be expected if there were any actual linkage between the manufacturers/distributors. Would it be more likely that some parts were bought in, probably by Castle? Or just designs copied? AMB copied Hornby, so probably AMB designs were not as closely protected as they might have been - Hornby won his suit. Incidentally the AMB screwdriver illustrated was almost certainly a commercial 'bought in' part, as it is identical with a screwdriver used for the White Rotary sewing machine of approximately the same period (c1917-20)".]

### SMALL ADS

**WANTED:** VOGUE nuts & bolts. D.A.Redmond, 9 St. Catherine St, Kingston, Ontario K7K 3R9. Canada.

**WANTED.** • To complete a boxed No 6 KLIPTIKO set - original manual, one of each of the following parts:- Large Chute Side, 3-3/4" Wheel, 1½" Wheel, 10" Bent Tube, 6" Bent Tube, Hook, Bucket, Cord; also 2 Cables, 3x2" Tubes, 2x4" Rods, 8x6-5/8" Tubes, 17x10" Tubes, 20xHub Caps, 2xHalf Clips, 17x4" Clips. PX or cash.

• Info and/or details on internal arrangement of No 3 STRUCTATOR set (thought to be later set as it has square steel Joints).

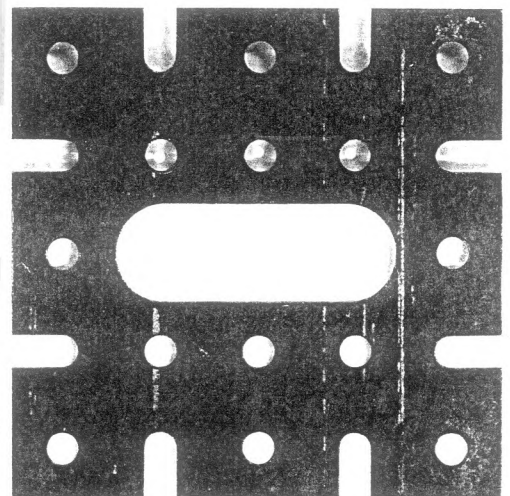
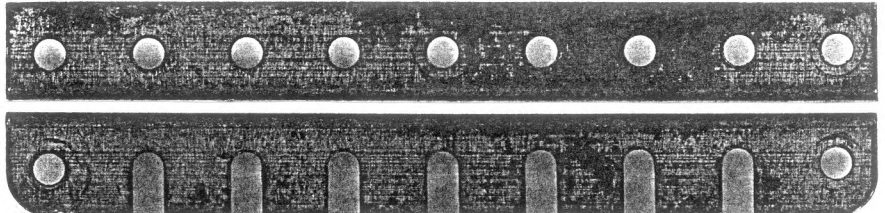
• Any N-G-NEERO parts especially Hole Punch, Screwdriver, Instruction Manual, Model Plans and 'consumables'.

Contact Roger Baker 079 710358.

### MYSTERY PARTS NO 14 ULOX

Strips and Discs turn up fairly often and with a few of them recently was the Plate opposite, and then with another half a dozen or so, a Plate and the Angle Girder. Their finish is typical ULOX grey plating

except that the second Plate is painted dark red; the paint doesn't look very even though so it may have been put on by a previous owner. The hole spacing and diameter is the same as ULOX parts, 13.0 and 4.1mm. Can anyone confirm that these are ULOX? Also is any literature or sets of ULOX known, there must have been some but all that has ever been found are several of the small tins of parts that are shown in MCS.



**MYSTERY PART NO 15** From Don Redmond, "Two separate groups of brackets, including Reversed Angle Brackets, Double Brackets, and in one group also Flat Brackets (Fishplates) and an Angle Bracket. The peculiarity is that the Double Brackets are stamped from the same piece as the Reversed Angle Brackets, ie there is a slot in one lug. One group has Double brackets 5/8" across (not quite as wide as the old style MECCANO part); in the other it is 9/16in."

**MYSTERY PART NO 16** Another from Don - "The Strip opposite, 1/16" short of 4", .033" thick, nickel plate, 4 holes at 20mm spacing and 20mm from the ends."





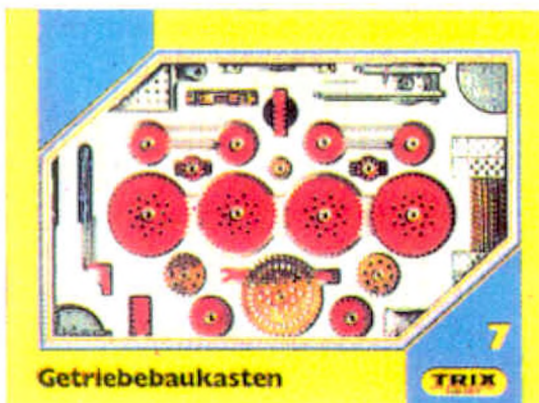
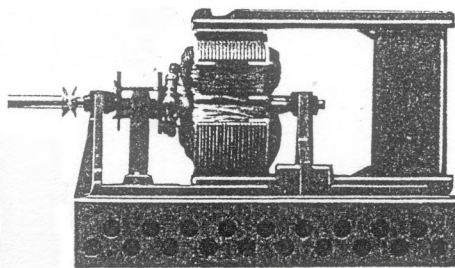
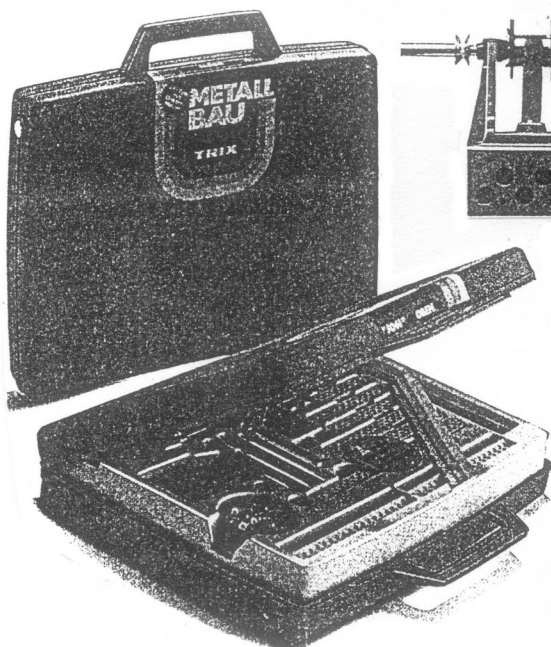
**TRIX TODAY** Tony Matthewman sent photocopies of the two pages of the 1991-92 TRIX catalogue devoted to Metallbaukästen. They are pages 170 and 171, so it seems that metal construction sets do not loom large in the TRIX scheme of things. 5 sets are listed, as below, preceded by the Reference No:

- 85051 Metallbau A, which contains 217 parts and a motor. The box lid shows the crane that is shown in MCS FB (TRIX [3]).
- 85052 Metallbau B, with 275 parts; it is a set in its own right but also combines with #A to allow bigger models. There is a gantry crane on the box lid.
- 85053 Metallbau A+B, is just that. The lid has another gantry crane, with a small crane rather than a crab on it, and a lorry behind it.
- 85007 Metallbau Getriebe. Gears and associated parts, 277 in all. Its picture, the only one to show anything of the set's contents, is reproduced below, the significance of the '7' in the bottom, right corner isn't known, but I'll call it #7 for ease of reference.
- 85061 Metallbau-Kofferset K. Over 280 parts and a motor in a plastic carrying case, see below. It comes with instructions to make a large crane (einen großen Baukran) and 5 other models.

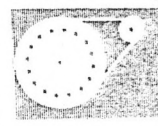
Then there are 25 Packs of parts (TRIX Metallbau-Einzelteil Packungen), as listed below. In general the finish is bright zinc plating and by implication the Angle Girders are of steel, but some Strips and A/Gs are shown coloured yellow and are described by 'Vergütet durch Kunststoff-Einbrenn-Beschichtung' which may mean protected by a plastic coating. On the other page it says that this finish gives the models a more 'Teknik-Look'. The parts finished in yellow have the same PNs as their plated counterparts, but the pack numbers differ. If the parts aren't yellow then, according to the catalogue, they are plated, but some pulleys and others are shown coloured in the illustrations and any such information is included below.

- 85021-5: contain yellow Strips FB5, FB9, FB13, FB17, FB26. (30, 20, 12, 10, 8 off per packet)
- 85084-5: yellow A/Gs WS17, WS26. (6, 4 off)
- 85031-5: Strips FB5, FB9, FB13, FB17, FB26. (30, 20, 12, 10, 8 off)
- 85080-2: A/Gs WS9, WS17, WS26. (10, 6, 4 off)
- 85036: DAS. 3 different lengths shown on the packet, together with an Angle Bracket.
- 85037: Nuts and Bolts. Also Grub Screws and Long Nuts on the packet.
- 85039: 4 rolls [coils?] of enamelled wire for coils etc. (Dracht, lackisoliert, 4 Rollen. Gut geeignet für Spulen usw.).
- 85038: Sprocket Chain. Shown gold in models. (2 lengths)
- 85040: Screwed Rods. Also Axle with threaded ends on the packet.
- 85044: Tyres, Small, R1. (4 off)
- 85046: Tyres, Large, R3 (2 off)
- 85047: Gears. (3 off). Perhaps the traditional TRIX type as shown in #7 (centre bottom and the 2 perforated gears on either side), brass finished; but on the packet (below) not all the holes are shown, particularly the outer ring of 30 slots which allowed a 3:1 ratio with the 10 tooth wheel.
- 85048: Gears running at 90° (Kegelzahnräder). (3 off). A large and a small Gear are shown on the packet (below) and the large one has the same pattern of holes as the row of large, toothed 'wheels' in the #7 set. They are red and the smaller toothed wheels (the 4 above the large ones and the 2 at the bottom on either side of the large trad gear, are also red.

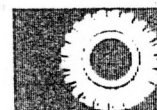
**TRIX**



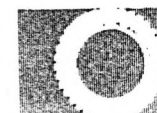
**85049**  
(58 5049 00)  
Rillenräder  
4 Stück



**85044**  
(58 5044 00)  
Reifen, klein R 1,  
4 Stück



**85046**  
(58 5046 00)  
Reifen, groß R 3  
2 Stück



**85047**  
(58 5047 00)  
Stirnzahnräder  
3 Stück



**85048**  
(58 5048 00)  
Kegelzahn-  
räder, 3 Stück





• 85049: Pulleys. (4 off). 2 sizes are shown on the packet, and the larger one is red in one of the models shown. (I have a Pulley which looks just like DR25/50 in MCS FB, it is of red plastic with a brass boss moulded into it).

There are other parts shown in the models and the sets which are not it seems included in the packets. For example the Flanged Plate, Hook, and Double-ended Spanner SCH4 shown in MCS FB. As far as can be seen all the parts are consistent with MCS except for the shortest A/G being called WS9. In the earlier German parts in MCS it is WS8 and that would be consistent with the standard TRIX practice of ending the designation for Strips and A/Gs with the number of holes in the centre of the 3 rows. Although it can't be confirmed that the WS9 here is the same as the earlier part, in an older German manual WS9 is used for the 8 centre hole part. In fact no A/G with anything other than the 8 centre holes is known and why the designation is irregular is a mystery - the English PN is A9, so the error, if error it be, is international. Every illustration of the part available (all postwar), except one, shows 8 centre holes. The exception is a Belgian leaflet from the late 1940s where there is a drawing of the part in a set, with 9 holes in its middle row and 10 in the outer ones.

The catalogue reference of the motor is 85041 and it is described as GM1; apart from the base it looks identical to that in MCS FB under the same reference. It runs on d.c. of up to 12v.

The UK agent for TRIX is Euro Toys and Models Ltd, Euro House, Llansantffraid. Powys. SY22 6BH, they do not stock the construction sets but whether they could get them to order is not known.

**TUBEPLAC** The parts shown in MCS are stated to be full size (MATÉRIEL GRANDEUR RÉELLE) but this meant that the hole spacing in the Plate #10 is different to that on the shorter sides of #11 for example. I had one or two other questions about the system so I asked Jean-Louis Figureau if he could help, and he replied as follows:

- All the parts are made of steel.
- The hole spacing in #10 is 16mm; in the other Plates (#11-14) it is 12, 42 and 100mm as appropriate; and in the Link #30 it is 16mm.

He also sent a photo of the No 1 bis set that he owns and except for #10 all the Plates are included painted both yellow and red, #10 is only in red.

**PRIMUS BIG WHEEL OUTFIT** The nuts and bolts in this set do not have the usual PRIMUS 5/32W thread; Roger Baker showed me a set recently, complete and shining in its box, and the o/d of the Bolts was .135"; I was not able to identify the thread but the pitch looked coarser than say 4BA. The Bolts were steel, brass plated, with .300" dia mushroom heads and were 3/8" long. The nuts were solid brass and square, .253" A/F, the same as standard PRIMUS nuts. The holes in the lugs of the Wheel Sections, in the Hubs and in the eyes of the Wire Stays (spokes) are large enough to admit normal bolts but presumably the slightly smaller ones were supplied to allow for tolerances in the length of the Stays and so forth.

In MCS the date for this set is given as 'probably about 1920's'; in the manual and on the Wheel Sections there is Patent No. 3479-1916, which probably means that the date of the patent was 1916. 'Probably' because in MJ 6 p141: 'Up to 1915 Patent numbers commenced again at No 1 each year, but from 1916 onwards numbering was continuous. Hence up to 1915 it is necessary to quote the year also.', and from the examples given the numbering in 1916 started from 100,000. Perhaps the change didn't start until part way through 1916. The set certainly existed in 1920, it is included in a list of prices (from Roger Baker) dated 23rd Feb 1920.

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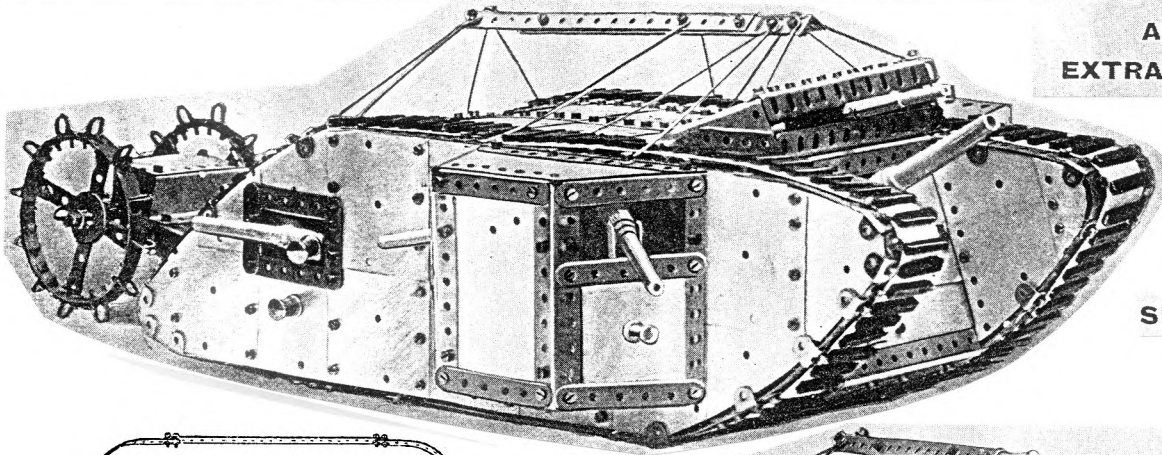
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**CONTRIBUTIONS.** If possible please type these, single spaced, on one side of the page only, within a width of 6 $\frac{3}{4}$ " (170mm).

# "The PRIMUS" TANK

CONSTRUCTED WITH  
PRIMUS ENGINEERING

CAN BE MADE  
WITH  
No. 5 OUTFIT  
AND  
EXTRA PARTS



SIDE VIEW.



Fig. 1. Side frame before shaping.

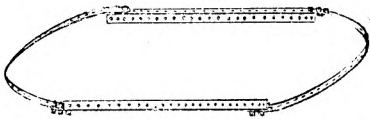


Fig. 2. Side frame after fixing Angle Bars.

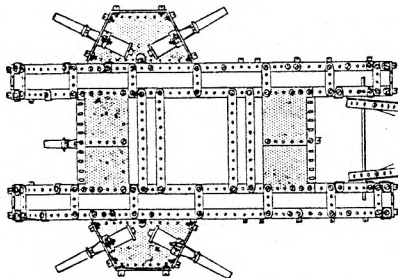
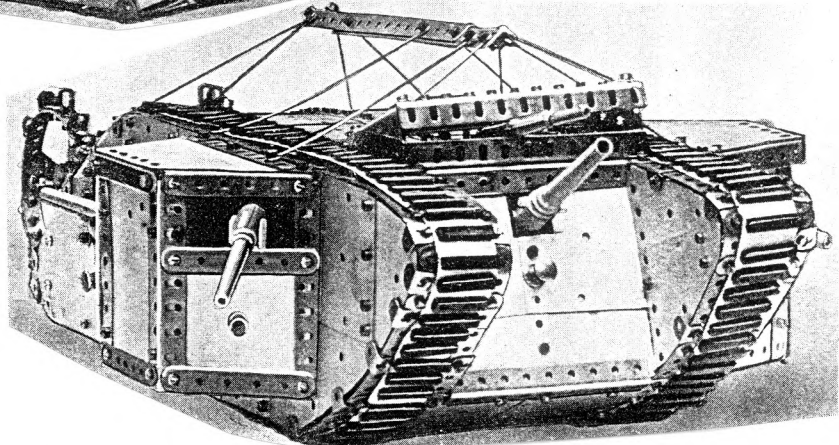


Fig. 3. Underside of Tank. Note how 3 x 3 in. plates are fixed.



FRONT VIEW.

## INSTRUCTION FOR BUILDING

(1) Build the frame first, take eight 12 in. metal strips and bend them U-shape in the centre to obtain the correct angle. This is best done over a broom handle or similar rounded article.

(2) Connect up two of these bent ends with two straight 12 in. strips, so that it resembles Fig. 1.

(3) Take two of these frames, and then force in 12 in. angle bars at top and bottom as shown in Fig. 2, so that the framework assumes its correct shape.

(4) Take one of the shaped frames and connect to one of the unshaped by 2 in. strips placed at 3 in. intervals. This will give the correct shape to all frames.

(5) Then connect the framework with 3 x 3 in. plates, as shown in Fig. 3.

(6) The sides can then be filled in with 3 x 3 in. plates as photograph, or a sheet of cardboard cut to shape. If 3 x 3 in. plates are used, it will be found necessary to cut some to shape for the curved ends of the frame.

(7) Build gun turrets and then affix to sides.

(8) Now take the web band and sew it so that it fits tight on the side frame. The Tank is now complete.

This model is shown in relatively few PRIMUS manuals. It has been reduced here to .87 full size.

No.	Parts in No. 5 Outfit.	Additional Parts.
50	Screws .. .. . 312	108
54	Angle bars, 8 in. .. . 4	—
55	" " 12 " .. . 2	2
56	Strips, 2 in. .. . 16	28
58	" 3 " .. . 8	10
59	" 3½ " .. . 4	—
60	" 4 " .. . 3	9
61	" 5½ " .. . 4	2
64	" 12½ " .. . 3	15
66	Brackets .. .. . 78	26
68	Metal plates, 3 x 3 in. .. . 14	54
76	Pulley Wheels .. . 2	—
82	Collars .. .. . 6	—
85	Buffers .. .. . 4	—
96	Signal Post Rods .. . 10	—
	Axles, 8 in. .. . —	2
	Angle bars, 4½ in. .. . —	4

2 Cut plates to form the roofs of side gun turrets, each 6d.  
Web bands with wood treads ready fixed—4 ft. long, each 3s. 6d.  
The model guns can be obtained from any toy shop.

# THE PRIMUS TANK No. 362