

A NOTE ON "CONSTRUCTION"

In MCS the sets referred to are 100, 101, 110, 111, 120, 200, 300 and C01, C02, C03, C04, C06. Details of set contents are given for 100-300. Another entry gives details of C07. In fact sets C01, C02 and C03 (basic sets) replaced sets 100, 110 and 120, and the linking sets 101 and 111 no longer exist. Set 200 (which includes a motor and extra gears) was replaced by C04, and 300 (mainly plastic plates) by C06. C07 is as shown in MCS, a theme set for lorries, C08 is a simplified version of C07 and C09 is another theme set intended to make a tanker lorry. I obtained this information from a visit to a Conrad Electronics store in West Germany during 1986 and from memory their catalogue also showed a C05 set and I think it contained a selection of gears and other parts. All but C05 were on sale there.

In a 1988 Conrad catalogue (the sets illustrated here are from it) all the C0 series are shown except C05 but there is also a gears set, C4 (containing one of each gear plus a universal coupling) and a new theme set to make helicopters, C20. One twist, a set bought in Holland recently was labelled C03 but was found to contain most of the contents of the C06 set as well as all the C03 parts. This set was shown in the Set Contents of the manual as C03+6, with the normal sets C03 and C06 shown in separate columns.

Comparing the contents of the old 100 sets and the C0 replacements there are a few minor changes including the introduction of three new parts, a 20 hole Strip (PN 1010, the 25 hole Strip is renumbered 1011), a Triangular Bracket 1125, and a plastic Windmill Sail, 1147. Comparing the C03 set parts with those of a much older 120 set the Pulley Wheels 1301 and 1302 are made from red plastic instead of from nickel plated steel, while parts 1401, 1403, 1431, 1471, 1481 (collar, coupling, universal, worm, small bevel) are now made entirely from black plastic instead of metal, or for the bevel, white plastic with a nickel plated boss moulded into it. The plastic parts are accurately moulded but the threads in the bosses strip easily if the grub screws are overtightened, despite the shape of the boss being modified, as illustrated, to give more depth of thread. Most of the parts are unchanged though and are still nickel plated. There is a different electric motor, or perhaps it is the same motor with a modified case and mount, and a battery box has been introduced.

One final change, the tyres 1421 and 1422 are now moulded from plastic and seem to be hollow, but the walls are plenty strong enough to stand the weight of vehicles likely to be made from these sets.

I have acquired quite a collection of Construction parts and I have made one or two largish models; I can recommend it for model building, accepting its obvious limitations, as an interesting change from say Meccano or Marklin, and it is relatively cheap to buy. One potential problem might be the varied colours of the plastic plates, there were typically three different colours, all bright, in any one box. Great for fairground models but not so good for a steam engine maybe.

The only set that I have seen on sale in the UK is C07, it was sold in garage shops two or three years ago, with the boxes marked CONSTRUCTO 7 on the outside although the Instruction Leaflet referred to Constuction C07. I am told that the new Helicopter set is currently on sale in some areas.

Apart from the Conrad catalogue the above material has been taken from (a) the Instruction Manual with the 120 set. It matches the MCS data exactly and has a Reference No. V/4/59. Ag 47/88/71 inside the rear cover, and (b) the Manual in the Dutch C03 set, and that has III/6/15 Rf 78/88 on the outside of the rear cover. Incidentally the rear cover of the earlier manual shows six different packs of parts, No 310 containing strips and 311-315 angle girders and brackets; plates and discs; pulleys and tyres; axles, collars and the largest pulley; nuts and bolts, respectively.

**Construction C08**

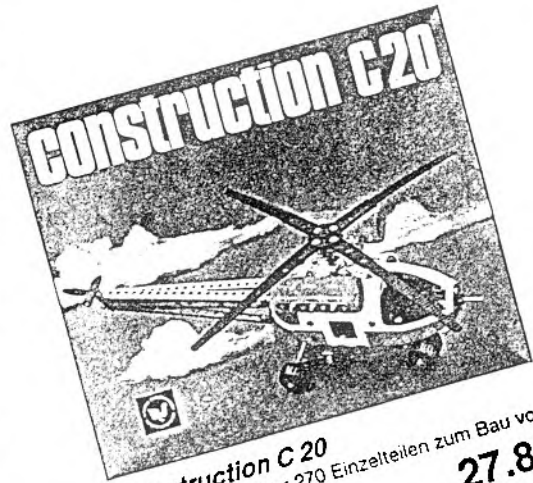
Baukasten mit 367 Einzelteilen, speziell für den Bau von für Fahrzeuge erforderlichen Elementen, z. B. Räder, Türen, Karosserie.

Best.-Nr. 29 78 28-54 **24.50**

**Construction C09**

Der Baukasten C 09 ist der neueste der Construction-Serie und enthält 416 Teile zum Bau von z. B. Lkw mit Containeraufleger, Jeep oder Kleinbus.

Best.-Nr. 29 78 36-54 **29.70**

**Construction C20**

Baukasten mit über 270 Einzelteilen zum Bau von Hubschraubermodellen.

Best.-Nr. 29 78 52-54 **27.85**

1147



Windmühlenflügel

C01 C02 C03 C04 C06 C03+06

4

4

4

1125



Trapezplatte 5 × 3 Loch, abgewinkelt

2

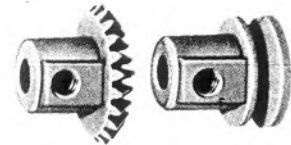
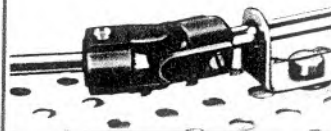
2

2

Top: New Sets

Centre: New Parts

Right: New Plastic Bosses



USING ... CONSTRUCTION. I have recently made one or two models from this East German system and one of the good points was that there were two types of Angle Bracket available. One had the normal arrangement of a hole in one face and a slot in the other, and the other had slots in both faces. The first type is necessary to provide a bearing but apart from that I often found the second type more convenient.

SMALL ADS.

For Sale. Arkirecto parts. 22 red strips, 2" to 12". 8 red connecting pieces. 19 black OAS (3 types). 2x3" faceplates & 6x 1 1/4" pulleys with 5 collets. 1x1 1/4" loose pulley. 1 axle, 4 sprig clips. Some rust on circ parts. £10+Carr - OSN Editor.
Wanted. Esco sets or parts - OSN Editor.

NEW FACTS. Premier parts often turn up in the UK but from time to time there are some which might well be Premier but are not listed in MCS. In the Manual described in the Literature Index, which came to light recently, the following parts not in MCS are listed, they are not illustrated.

B9 3 1/2"x1"x1/2" Girder Plate
B11 2 1/2"x1 1/2"x1/2" Girder Plate
P3a Rectangular Base Plate 5 1/2"x1 1/2"
P3b " " " 4 1/2"x3 1/2"
P3c " " " 3 1/2"x2 1/2"

P4 Rigid Plate 5 1/2"x3 1/2"
P5 " " 5 1/2"x2 1/2"
W1 1/2" Pulley Wheel
L4 8" Axle Rod
L7 3" Crank Shaft

Parts W5a, W7, W7a which are shown in MCS were not in the Parts List of this Manual.

SOME NOTICABLE FEATURES ON OTHER SYSTEMS

by Frank Beadle

Having collected 'OS' since before 1981 when at that time I had started to put them into some sort of order, several emerged that began to form a pattern or indicate a trend.

I have not found any system made before MECCANO in 1901, though PRIMUS (England) is a near runner at 1903 with STRUCTATOR (Germany) not far behind at 1905. Several manufacturers made toy items such as trains even before 1900 though not Metal Constructional Systems.

The earlier systems came from the heavily industrialised countries early in the century, reaching a peak in the 1930s and another in the 1950s or so, this is mainly due to WWII.

As countries became industrialised systems began to appear from a far wider field, especially in the 1950s and 1960s, this was helped of course by trading between countries being easier in that period.

Today there are nearly 50 countries who had manufactured systems. Many of the systems are copies of MECCANO using the same 0.1678 ins. (4.2mm) hole size with the 0.5 ins. (12.7mm) hole spacing even though the metric system was common to the country or origin. Whilst others such as MERKUR and associated systems have always had a metric 10mm hole spacing. Hole sizes vary more than spacing, this was probably due to the nuts and bolts intended for use as a deciding factor.

The most common part, as in the Meccano system, is the five hole strip, many systems preferring to keep to the odd number of holes in a strip i.e. 5.7.9.11 etc. as a central hole along the length was a useful feature on any strip in any system.

It is hoped to continue these notes in future issues of 'OS' and show trends and variations over the whole span of Other Systems.

CONSTRUCTION. The article in OSN 1 brought in quite a few comments from readers as follows

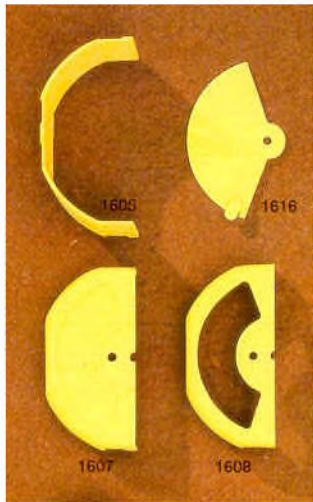
Dennis Higginson bought a C01 in Bournemouth and would like to be able to buy other sets.

Peter Page has seen locally (Nuneaton) sets C10 (a 4 wheel small lorry), C12, a farm tractor with trailer, [first mention of C10 and C12, can anyone supply details please - Ed], and C20, all at £5.99 each. He says that letters to GDR and to the local distributor for the range have gone unanswered.

A E Williams (Manchester) says C07 sets were being sold by the Poundstretcher chain and that he has also seen in the local market C010 sets at £5.95. They are in squat, square boxes and make up into small 4 wheel Jeep type vehicles. [I wonder if this is the same as the C10 mentioned above, it is confusing to have a C0 and a C series - Ed]

Brian Rowe (Devon) has bought several sets including C01's at £4 each and C03+6's at under £10. He is impressed by the very acceptable quality of the parts, particularly considering the price, but wonders what will happen to prices come German reunification. His main criticism is the lack of sprockets and chain. He has built a Big Wheel from his sets using the seats from C10 sets as chairs. He would like to obtain other sets, particularly C04 and asks if anyone knows a source of supply.

[Several people including myself would like to buy Construction sets of one sort or another. If any reader knows where sets are actually on sale and lets me know, preferably with address, telephone number, which sets are available, and prices, I will pass the information around - Ed]



CONSTRUCTION C09, C12, C15, C20 SET CONTENTS.

Only new parts are illustrated, the others can be found under the standard sets and C07 in MCS. Some Editions of MCS also contain C20. Illustrations of some of the models that can be made from these sets are shown overleaf.

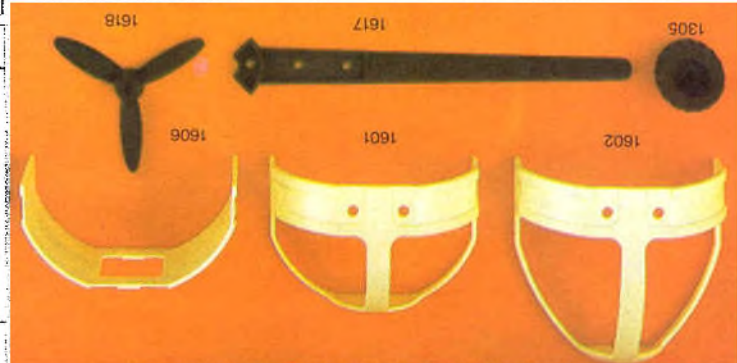
Stückliste									
1001	Flachstab 2-Loch	4	1502	Schraube M 4×8	8				
1002	Flachstab 3-Loch	14	1503	Schraube M 4×16	5				
1003	Flachstab 4-Loch	2	1511	Mutter M 4	150				
1004	Flachstab 5-Loch	4	1552	Schraubendreher 6 mm	1				
1006	Flachstab 7-Loch	17	1553	Schraubenschlüssel	2				
1008	Flachstab 11-Loch, Langloch	2	1554	Schraubenhalter	1				
1052	Winkelstab 15-Loch	2	1561	Stoßstange	2				
1102	Platte 3×3 Loch	1	1562	Kotflügel	4				
1111	Platte abgew. 5×5 Loch	1	1563	Tank	2				
1112	Platte abgew. 11×5 Loch	2	1564	Frontverkleidung	1				
1122	Trapezplatte 5×3 Loch	4	1565	Frontscheibe	1				
1151	Scheibe Ø 10 mm	4	1566	Mittelsegment flach	2				
1153	Scheibe Ø 30 mm	3	1568	Rückwand	2				
1252	Winkel 1×1 Langloch	2	1569	Tür	2				
1253	Winkel 2×1 Loch	4	1570	Sitzelement	4				
1271	Lagerbock	1	1572	Lenkrad	1				
1304	Radfelge	4	1605	Zylinderring	8				
1353	Welle 95 mm	2	1607	Zylinderrückwand	3				
1371	Gewindestift 29 mm	2	1608	Zylinderrückwand offen	1				
1372	Gewindestift 44 mm	1	1616	Drehverschluß	1				
1402	Elastikstift	9							
1413	Sperklinke	2							
1414	Aufschraubband	4							
1423	Reifen	4							
1501	Schraube M 4×6	120							

C09

Stückliste

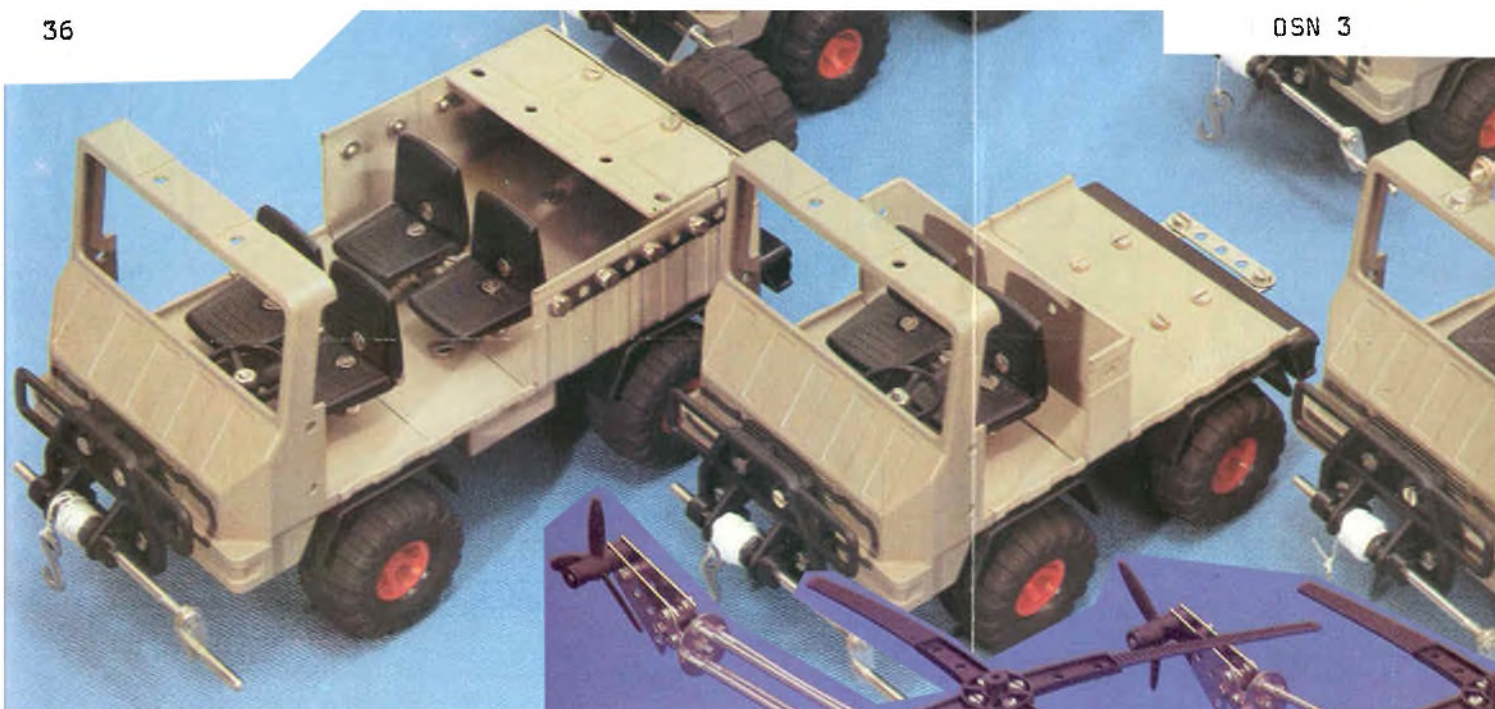
1001	Flachstab 2 Loch	1	1413	Sperklinke	2
1002	Flachstab 3 Loch	6	1414	Aufschraubband	2
1004	Flachstab 5 Loch	7	1423	Reifen	5
1006	Flachstab 7 Loch	2	1441	Schnur 1 m	1
1007	Flachstab 9 Loch	2	1501	Schraube M 4×6	60
1008	Flachstab 11 Loch, Langl.	1	1502	Schraube M 4×8	6
1009	Flachstab 15 Loch	2	1503	Schraube M 4×16	4
1111	Platte 5×5 Loch zweiseitig abgewinkelt	2	1511	Mutter M 4	76
1112	Platte 11×5 Loch, zweiseitig abgewinkelt	2	1551	Schraubendreher 4 mm	1
1122	Trapezplatte 5×3 Loch	4	1552	Schraubendreher 6 mm	1
1151	Scheibe Ø 10 mm	2	1553	Schraubenschlüssel	2
1252	Winkel 1×1 Loch, Langl.	10	1554	Schraubenhalter	1
1253	Winkel 2×1 Loch	2	1561	Stoßstange	1
1271	Lagerbock	2	1562	Kotflügel	4
1304	Radfelge	5	1563	Tank	2
1351	Achse + Welle 95 mm	1	1566	Mittelsegment, flach	3
1353	Achse + Welle 95 mm	2	1567	Mittelsegment, hoch	2
1361	Achse + Welle 95 mm mit Gewindeenden	1	1568	Rückwand	4
1362	Achse + Welle 120 mm mit Gewindeenden	3	1570	Sitzelement	8
1372	Gewindestift 44 mm	1	1571	Ladeklappe	1
1381	Gewindestift M 4×4 mit Querschlit	2	1572	Lenkrad	1
1401	Stellring	4	1573	Frontteil	1
1402	Elastikstift	6	1574	Stoßfänger	1
1411	Kurbel	1			
1412	Lasthaken	1			

G10

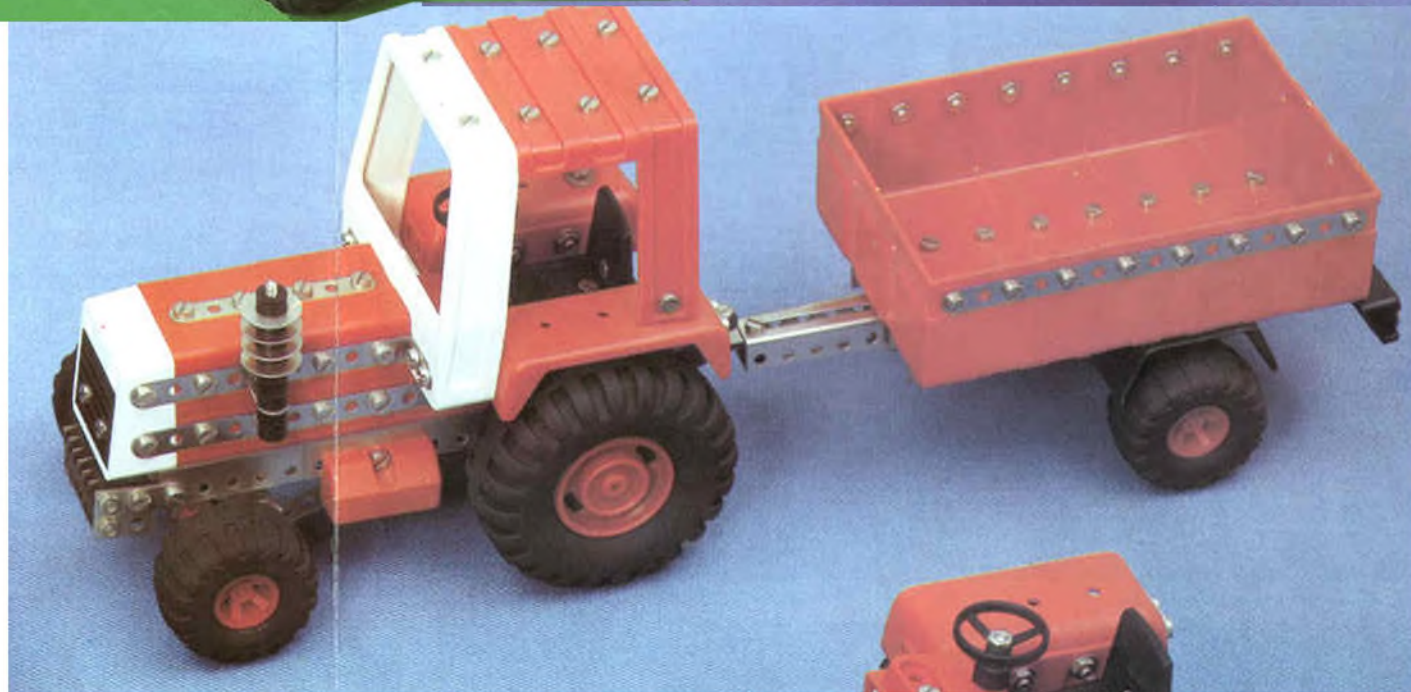


1001	flat bar, 2 holes	5	1361	shaft 95 mm, with threaded ends	1
1002	flat bar, 3 holes	12	1372	grub screw 44 mm	2
1003	flat bar, 4 holes	-	1381	grub screw, slotted	1
1004	flat bar, 5 holes	-	1401	adjusting ring	1
1005	flat bar, 6 holes, oblong	1	1402	elastic adjusting ring	26
1006	flat bar, 7 holes	6	1411	crank	1
1007	flat bar, 9 holes	8	1423	lyre	4
1008	flat bar, 11 holes, oblong	1	1424	tyre $\varnothing$ 90 mm	2
1009	flat bar, 15 holes	4	1501	bolt M 4 $\times$ 6	110
1020	connecting member, 6 holes	2	1502	bolt M 4 $\times$ 8	10
1051	angle bar, 10 holes	2	1503	bolt M 4 $\times$ 16	17
1052	angle bar, 15 holes	2	1511	nut M 4	152
1101	plate, 2 $\times$ 2 holes	7	1561	bumper	1
1111	plate, 5 $\times$ 5 holes, bent on 2 sides	3	1562	mudguard	2
1113	plate, 5 $\times$ 3 holes, bent on 2 sides	3	1563	fuel tank	2
1114	plate, 3 $\times$ 3 holes, bent on 2 sides	1	1567	central section, high	3
1122	trapezoidal plate, 5 $\times$ 3 holes	2	1568	rear panel	2
1127	trapezoidal plate, 3 $\times$ 4 holes	2	1570	seal	2
1146	cover panel, 30 $\times$ 40	1	1572	steering wheel	1
1151	washer $\varnothing$ 10 mm	2	1575	central section 3	6

1152	washer ϕ 20 mm	4	1578	central section 4	2
1211	bracket, 1 $\times$ 2 holes	1	1577	central section 5	1
1212	bracket, 1 $\times$ 3 holes	1	1578	radiator unit	1
1251	angle, 1 $\times$ 1 hole	2	1579	roll bar	1
1252	angle, 1 $\times$ 1 hole, oblong	2	1580	front part 2	1
1253	angle, 2 $\times$ 1 hole	4	1581	mudguard 80	2
1261	Z-angle	1	1582	instrument panel	1
1271	bearing block	2	1583	axle stub	2
1304	wheel rim	4	1551	screw driver 4 mm	1
1306	rim ϕ 42 mm	2	1552	screw driver 6 mm	1
1353	shaft 95 mm	2	1553	spanner	2
1360	shaft 65 mm, with threaded ends	1	1554	screw holder	1



CONSTRUCTION models from (top to bottom) C10, C20, C09 and C12 sets.



ITEMS FROM LETTERS

1. Brian Rowe notes that the last CONSTRUCTION Helicopter set that he bought is marked "Set No 20" instead of the C 20 of earlier ones. He may still be able to buy this set and CO 1 locally and for anyone interested his address is 23 Courtenay Park, Newton Abbot, Devon. TQ12 2HB, Tel 52188. He has also received from a friend in Holland some Gear Packs which include the large Bevel in black plastic, and metal, nickel plated Worms. They are packed in plastic bags with an orange card stapled on bearing the legend "Construction B-317 Kd Nr 297780 Hergestellt in der DDR". He says that these may be from old stock because of the metal Worms. Also Brian can supply some TEMSI parts and hopes to have supplies of the new, longer green Girders shortly. TEMSI Axle Rods come in a range of lengths and fit CONSTRUCTION bosses.

2. Gaston Marette says that MARKLIN chain is a very good substitute for TRIX chain. [This arose because I advertised for TRIX chain in OSN 2, I actually wanted it to run on CONSTRUCTION gear wheels, engaging every second tooth, because CONSTRUCTION lacks sprockets and chain. After experimenting I found that the MARKLIN chain seemed if anything a better fit on TRIX gears than the original, but that whereas the TRIX would run on CONSTRUCTION gears the MARKLIN, with only a very slightly different pitch, would not - Ed]

3. Jeannot Buteux sent some interesting notes on how the group CONSTRUCTORAMA record details of OS in France. One tip from him for illustrating flat parts is to rub over with pencil, thin (airmail) paper placed on top of them. He sent some examples where it can actually be seen where the paint is chipped off. My attempts haven't been quite so successful so far but it is obviously a good way for showing suitable Mystery Parts, etc.

4. From Ashok Banerjee: "With regards to the MARKLIN Solar Set, your readers may be interested to know that the Solar Panel and Motor are available separately as Item No 14260."

5. J.L.Figureau writes that he owns a TRIX Moto Sable (see OSN 2) which he found with other TRIX items in a shop in the 1950's, so it may have been made postwar. [I have a leaflet in French from a TRIX 1a set which shows the Moto Sable and, judging by the poor quality of the paper used, could well be postwar - Ed] He also mentions that he bought a MERKUR set at a very reasonable price in Bilbao, Spain (from JADO-JARDIN, Colon de Larreatequi 37, Plaza de Jado, Bilbao 9. Tel 424 2565.

6. From Don Redmond

Dear Meccanisti:

(After seeing that this is the plural noun the Gruppo Amatori Modellismo Meccanico use for the amateurs of construction systems, I think it solves the feminist gripe about "Meccanomen", and is vaguely reminiscent of other borrowings such as "cognoscenti".)

Page 15 of OSN 2 has Keith's note about ELEKTRISKAIS KONSTRUKTORS. MCS already lists a related system, which was in error listed as "ONBITOB" and which I have already written to Frank should be listed as "ELEKTROMECHANISKAIS KONSTRUKTORS/yelektromekhanicheskii Konstruktor". I said erroneously that it was from Yugoslavia, not the USSR; but comparing the parts list with Mario Pei, The World's Chief Languages, it is evident from the alphabet that it is in Lettish (from Latvia) and Russian---not Serbian/Croatian. I suspected Lettish from Keith's word for "screwdriver", as the -is ending is very frequent in Lettish. So the system Keith reports is almost certainly also Lettish/Russian and as we know from recent news reports there is a strong (immigrant) Russian minority in Latvia. The key clues in the Lettish alphabet are cedillas under k, l, n, r, and long marks over four vowels ā, ē, ī, ū, and inverted circumflex over c, s, z. Evidently from the fact Keith's set was on the market in Poland (which was what made me suspect Yugoslavia), it has been a Latvian export.

Other notes from OSN 2: Mystery Parts: I had already written to Tony that I have a sample of #1. In my box of what-is-its I've found Construct-o-Craft, D-180 (note: pitch of this appears to be 14mm not 12.7; anyone verify?) etc. D-180 and Delta-X appear to be identical.

DISTLER: I have a Distler clockwork motor key 33x42mm, nicely nicked, cast, with a different glob logo, having DISTLER in caps curved (concave upward) across the equator (rubbing in margin).

CONSTRUCTION [Info from Brian Rowe, Peter Page and Karst Quast] Two new sets have appeared in the UK, C13 and C21, and one in Holland, C14. A model from each set, their contents and new parts are shown here. The Dutch catalogue which lists C14 also includes C01, C02, C03+6, C04, C07, and C12 as well as 8 small packs of parts. Apart from C12 and a few C01 sets none of these have been reported on sale in the UK, but C10 and C20 have been reported several times as well as C13 and C21.

Several models can be made from the C13 set including a Road Grader and Tractors with Buckets (made from 4x1584 with a 1585 at each end). The slewing of the C14 Crane is achieved by a Worm acting on a Gear Wheel and the winding shafts for the hoisting/lowering motion, and the luffing of the fly jib can each be locked by a Pawl engaging in a Pinion. The leaflet for the C21 shows 5 space vehicles of different sorts, all quite attractive but with no working parts.

The packs of parts have been described as containing - C101, Angle Girders, long Strips; C102, Flat Plates and Strips; C103, Brackets; C104, Face Plates, Discs, Rods; C105, Gears, Couplings, Collars; C107, Flanged Plates. The C105 contains much more than the earlier C4 Gear Pack with one of each Bevel and the Worm, 2 of all other gears, the Universal and the Coupling, plus Collars and small Pulleys.

Super Set 4 was mentioned in OSN 3 and Peter says that a secondhand set so marked was identical to C07 including the instructions, the only difference was in the lid design.

Brian has tracked down the main importer of CONSTRUCTION - The Royle Group, Royle Works, Royle Road, Castleton, Rochdale, Lancs. Tel: 0706 344383. He also sent a photo of a Steam Plant made from CONSTRUCTION using some of the plastic parts to very good effect for the boiler and chimney. The eccentric was made by drilling an off centre hole in the large Washer and mounting it on a Screwed Rod, surrounded by 2 of PN 1271 (Double Angle Strip), bolted together and to the eccentric rod. It is driven by the motor from the C04 set and for identification purposes this has a bright yellow plastic casing with 'Piko' stamped on the metal housing. Also on parts, in the latest C03+6 set (obtained from Holland) the largest tyres, formerly in rubber, are now black plastic. And he spotted an error in OSN 3, on p35 the captions C12 and C20 should be interchanged. Finally Brian says that he can supply most CONSTRUCTION sets from UK and Dutch sources, so contact him (address on p 42 of OSN 3) if you need anything.

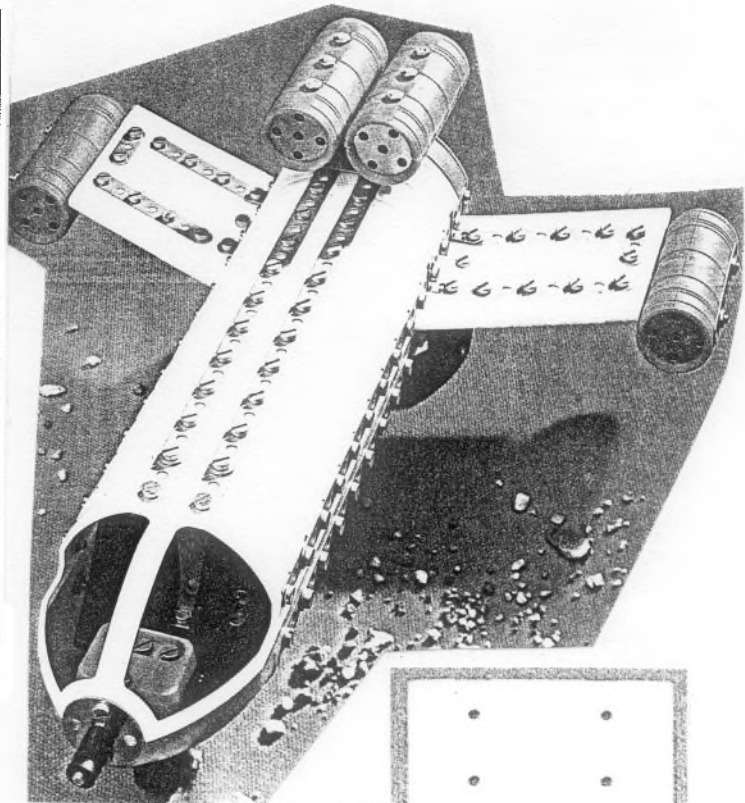
Description					
1001	Flat bar, 2 holes	4	1362	Shaft, 120 mm with threaded ends	2
1002	Flat bar, 3 holes	10	1372	Threaded rod, 44 mm	1
1003	Flat bar, 4 holes	3	1381	Grub screw	2
1004	Flat bar, 5 holes	6	1401	Adjusting ring	2
1006	Flat bar, 7 holes	2	1402	Elastic adjusting ring	25
1007	Flat bar, 9 holes	2	1415	Tie block	1
1008	Flat bar, 11 holes, slots	3	1423	Tyre	2
1009	Flat bar, 15 holes	2	1424	Tyre, Ø 90 mm	2
1051	Angle bar, 10 holes	2	1501	Screw M 4 x 6	85
1113	Plate, 5 x 3 holes, bent either side	3	1502	Screw M 4 x 8	17
1121	Trapeziform plate, 3 x 3 holes	2	1503	Screw M 4 x 16	5
1146	Panel, 30 x 40	3	1511	Nut M 4	125
1151	Disc, Ø 10 mm	17	1570	Seat member	2
1152	Disc, Ø 20 mm	4	1572	Steering wheel	1
1201	Bracket, 1 x 1 hole	3	1575	Cover segment 3	4
1202	Bracket, 3 x 1 hole	7	1576	Cover segment 4	2
1221	Bracket, 3 x 1 hole, small	1	1577	Cover segment 5	3
1251	Angle, 1 x 1 hole	3	1578	Radiator core	1
1252	Angle, 1 x 1 hole, slot	3	1581	Mud guard 80	2
1253	Angle, 2 x 1 hole	6	1582	Control platform	1
1261	Z-angle	2	1584	Shovel member	6
1304	Wheel rim	2	1585	Shovel member, closed	2
1306	Wheel rim, Ø 42 mm	2	1551	Screw driver, 4 mm	1
1351	Shaft, 35 mm	2	1552	Screw driver, 6 mm	1
1352	Shaft, 65 mm	2	1553	Spanner	2
1353	Shaft, 95 mm	3	1554	Screw holder	1
1360	Shaft, 65 mm with threaded ends	1			
1361	Shaft, 95 mm with threaded ends	3			

C13

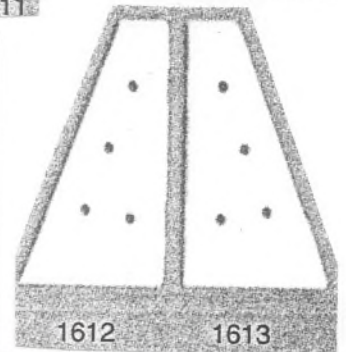
C14

Stückliste					
1001	Flachstab 2 Loch	4	1253	Winkel 2 x 1 Loch	4
1002	Flachstab 3 Loch	2	1301	Radfelge Ø 20 mm	9
1004	Flachstab 5 Loch	3	1311	Schnurlaufrolle Ø 14 mm	2
1006	Flachstab 7 Loch	8	1351	Achse 35 mm	2
1007	Flachstab 9 Loch	7	1352	Achse 65 mm	1
1009	Flachstab 15 Loch	2	1361	Achse 95 mm mit Gewindeenden	2
1010	Flachstab 20 Loch	2	1362	Achse 120 mm mit Gewindeenden	1
1011	Flachstab 25 Loch	2	1372	Gewindestift 44 mm	1
1005	Flachstab 6 Loch, Langloch	4	1381	Gewindestift mit Querschlitz M 4 x 4	8
1008	Flachstab 11 Loch, Langloch	13	1402	Elastikstellring	9
1041	Bogenflachstab 8 Loch, Langloch	4	1411	Kurbel	3
1051	Winkelstab 10 Loch	2	1412	Lasthaken	1
1052	Winkelstab 15 Loch	4	1413	Sperrklinke	2
1053	Winkelstab 20 Loch	2	1415	Winkeltasche	1
1102	Platte 3 x 3 Loch	1	1441	Schnur 2 m	1
1103	Platte 7 x 3 Loch	4	1451	Zahnrad 37 Zähne mit Buchse	1
1104	Platte 9 x 5 Loch	2	1461	Ritzel 13 Zähne	2
1111	Platte 5 x 5 Loch, zweiseitig abgewinkelt	1	1471	Schnecke eingängig	1
1112	Platte 11 x 5 Loch, zweiseitig abgewinkelt	1	1501	Schraube M 4 x 6	118
1122	Trapezplatte 5 x 3 Loch	4	1502	Schraube M 4 x 8	2
1146	Verkleidungsplatte 30 x 40	2	1503	Schraube M 4 x 16	10
1151	Scheibe Ø 10 mm	12	1511	Mutter M 4	160
1152	Scheibe Ø 20 mm	1	1575	Mittelsegment 3	3
1161	Scheibe Ø 50 mm mit Buchse	3	1578	Kühlerblock	2
1201	Bügel 1 x 1 Loch	1	1551	Schraubendreher 4 mm	1
1202	Bügel 3 x 1 Loch	2	1552	Schraubendreher 6 mm	1
1203	Bügel 5 x 1 Loch	1	1553	Schraubenschlüssel	2
1251	Winkel 1 x 1 Loch	2	1554	Schraubenhalter	1

List of parts					
1002	Flat bar, 3 hole	21	1505	Screw M 4 × 12	26
1004	Flat bar, 5 hole	8	1511	Nut M 4	200
1006	Flat bar, 7 hole	10	1552	Screw driver, 6 mm	1
1009	Flat bar, 15 hole	8	1553	Spanner	2
1011	Flat bar, 25 hole	8	1554	Screw holder	1
1103	Plate, 7 × 3 hole	1	1570	Seat member	4
1121	Trapeziform plate, 3 × 3 hole	2	1582	Control console	1
1122	Trapeziform plate, 5 × 3 hole	2	1602	Cockpit 80	1
1151	Disc, Ø 10 mm	16	1604	Nose segment 80	1
1153	Disc, Ø 30 mm	10	1605	Cylinder segment	12
1154	Disc, Ø 50 mm	1	1607	Cylinder rear panel	2
1201	Bracket, 1 × 1 hole	1	1611	Wing segment	4
1203	Bracket, 5 × 1 hole	1	1612	Wing attachment, left	4
1251	Angle, 1 × 1 hole	8	1613	Wing attachment, right	4
1252	Angle, 1 × 1 hole, slot	11	1615	Cylinder segment, Ø 34	8
1253	Angle, 2 × 1 hole	4			
1261	Z-angle	2			
1306	Wheel, Ø 28	3			
1362	Axle/shaft, 65 mm	2			
1371	Threaded rod, 29 mm	2			
1372	Threaded rod, 44 mm	10			
1402	Elastic adjusting ring	13			
1501	Screw M 4 × 5	122			
1502	Screw M 4 × 8	22			
1503	Screw M 4 × 16	15			

C21

1611

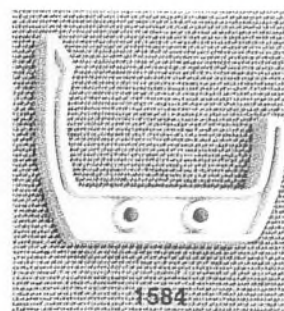


1612

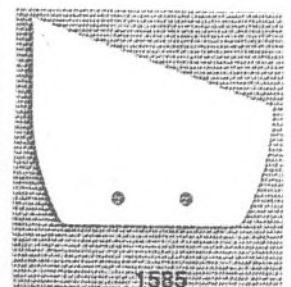
1613

C14

1505

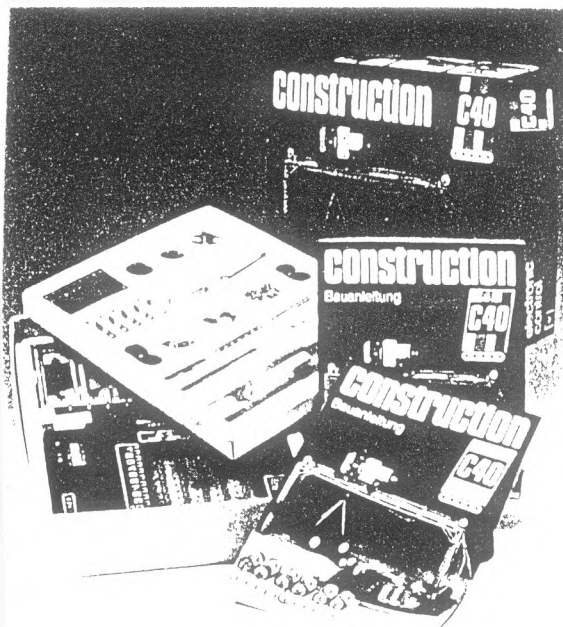
C13

1584



1585

CONSTRUCTION C40 ELECTRONIC CONTROL SET News of this set has recently come from Brian Rowe although how long it has been in production is not known. In a German educational catalogue it says that the set contains electric, electronic, and mechanical parts, 367 in total, including an Electronic Controller EC1800, a Battery Holder for 6 cells and 2 Geared Motors. It is said to be suitable for 10 year olds and to offer great scope to hobbyists in, for example, controlling model trains, making lights flash sequentially, and programmed music. Programmes can be easily changed and 10 programme steps are possible. Other applications mentioned are sound generators, tachometers and timer units. It concludes by saying that 4 models are described in the 32 page, A4 size Manual (colour throughout). Thanks to Peter Kessler for translating the above from the German original.



More details of the set will be included in the next Issue but the little I can gather from the German language manual indicates that there are enough standard parts in the set, including 100 Nuts, to allow simple models to be made that demonstrate automatic reversing of 1 or 2 motors when limits of travel are reached. One model is for example the simple Gantry Crane that you may be able to make out on the cover of the manual in the illustration. If anyone has the necessary expertise I would welcome comments on the potential of this set, in terms if you like of the claims for it quoted above.

The C40 set is rather more expensive than other CONSTRUCTION outfits, but it does of course contain 2 geared motors and the electronic controller; in the German catalogue it is listed at DM75 and a C03 is 43.65. The C40 and other CONSTRUCTION material including spare parts may be available from Brian (23 Courtenay Park, Newton Abbot, TQ12 2HB) for anyone interested. On a less happy note I am told that the factory where CONSTRUCTION is made, in what was East Germany, is not working at present.

MYSTERY PART NO 13 David Martin would like to positively identify a 2" Pulley fitted with a black rubber, ribbed Tyre, with OLYMPIC AIR RIDE MULTI RIB moulded into both sides. The Pulley is similar in design to MECCANO PN 20a (3/8" dia, d/t 5/32W) and the two examples found both have traces of dark red paint on one side, whilst on the reverse one is painted medium green and the second has no paint on it at all. These parts were found among others stamped BUZ and EYZ-BILT and the Tyres do look rather like the EYZ-BILT PN 25A in MCS.

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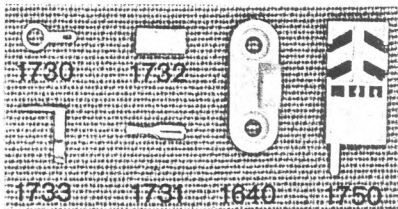
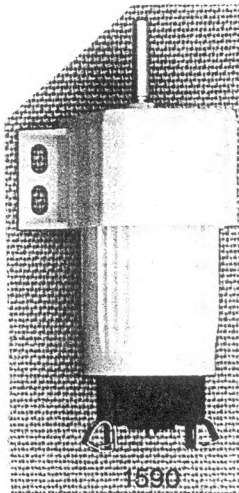
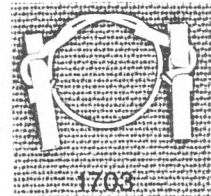
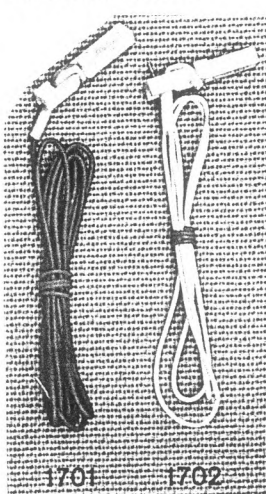
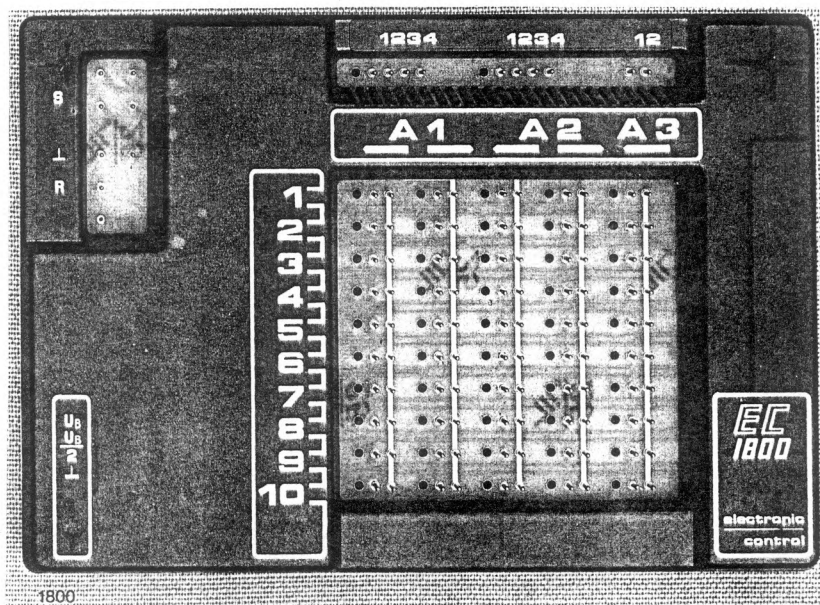
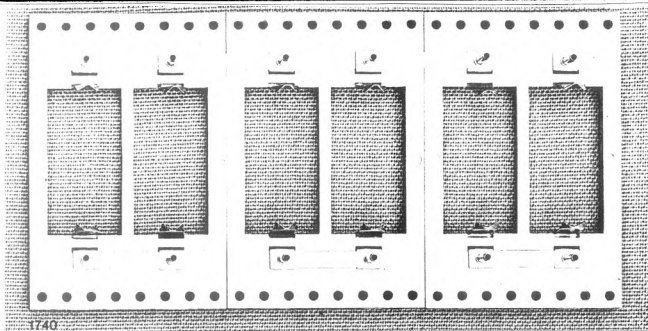
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CONTRIBUTIONS. If possible please type these, single spaced, on one side of the page only, within a width of 6 $\frac{3}{4}$ " (170mm).

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 Ø 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 Ø 20 mm	1	1703	Rücksetzverbindung
2	1302	Radfelge Ø 30 mm	1	1704	Buchsensteckverbindung 2-adrig, 1 m grün/gelb
4	1311	Schnurlaufrad Ø 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



BET YOU DIDN'T KNOW THAT - MERKUR. MERKUR 10-hole Braced Girders are to be found with either male ends or with female ends. The MCS entry (MERKUR (C). 3/4c) which comes from the older style small format manual, shows the latter, and so does my similar manual; the other sort appear in the newer large format ones. And its not just in the manuals, I have some of each sort, but unfortunately I didn't notice until I had mixed up for ever those from a new and those from an older set.

NECOBO MOD 1 GEARS. In OSN 5/85 I suggested that the original NECOBO gears were Mod 1. Hans Klarenbeek recently kindly gave me a handful of gears which turned out to be Mod 1 and which fitted more or less exactly the description of NECOBO gears #127-130A in MCS(FB), p3/4. That's to say they have the same number of teeth, and there are no holes in the faces of the gearwheels. The only difference is that the Worm Wheel in MCS looks like a proper one with the teeth shaped to conform to the Worm whereas the one I have is just like the other gearwheels except for the number of teeth. The Worm and Worm Wheel mesh at 2-hole centres and not the 1-hole spacing that I postulated in OSN 5. I've typed 1-hole and 2-hole advisably because the only problem in saying these gears are almost certainly early NECOBO is that suitably paired they bind rather if mounted at centres that are multiples of $\frac{1}{2}$ ". They run sweetly when spaced x 12.9mm apart. I haven't myself any NECOBO parts to check their hole spacing but MCS says $\frac{1}{2}$ "; it also says that the hole diameter is 4.5mm and if that is correct it would mean that MECCANO diameter axles (4.1mm) would be a loose fit, and this might just allow the gears a reasonable mesh. All five gears are brass throughout; the bosses have an o/d of 10.0mm, a bore of 4.1 (they just fit a MECCANO axle), and they are double-tapped 5/32 BSW; the o/d of the Worm is 14.0mm and the face width of the Pinion is 5.3mm.

CONSTRUCTION C40 Control System

Hellmuth Kohler

The last two issues of OSN have given brief details of this set which contains a programmable sequential controller; here is a fuller description. The heart is the programme unit, as illustrated in OSN 6/133. This has groups of electrical inputs, outputs and a programming board area.

What does this quite complicated system do? It controls a sequence of up to ten 'states' or steps. Each step is initiated by a momentary contact closure - and maintained until the next impulse is received. At each step, zero, +4.5 or -4.5 volts is provided at each of two independent output sockets, a third output socket gives only zero or +4.5 v. Motors or lights or other 4.5 v devices can be driven from the outputs. Reset, that is a return to the first step in the sequence, is automatic after ten steps, or can be programmed earlier at any stage. There is no inbuilt timing element, contrary to the claims in the original German publicity.

OUTPUTS and PLUGBOARD. Output channels are at the top of the unit. A1 and A2 each have two pairs of pins, 1 & 2 together with 3 & 4. A3 has just pins 1 & 2. On channels A1 & A2, pins 1 & 4 are connected always to 4.5 v, on channel A3 pin 1 is also at 4.5 v. Jumper plugs, which can be inserted for each step (row) of the controller, determine the output states at the pins when the program row is active. The controlled pins of the output channels A1 and A2 are 2 & 3, on A3 pin 2 only.

With no jumper plug, pins are not live. Either pin 2 OR 3 can be made active by inserting a jumper. With the jumper to the left, pin 2 is at 9.0 v (U_0); with jumper to the right, pin 3 is at 0 v ($\perp$). Inserting two jumpers in channel A1 or A2, which would appear to switch on both pins 2 and 3, is not allowed, and might (will?) damage the unit.

Single pole devices, lights, etc. are connected to pins 1 & 2 and/or 3 & 4 as desired, and can be switched on or off. Channels A1 and A2 can drive 4.5 v d.c. motors in either direction, by taking pin 1 (or 4) to one motor terminal, and commoning pins 2 & 3 to the other. The system output connecting plugs do this for you. As pins 1 and 4 are at 4.5 v, 2 at 9 v or 3 at 0 v, the motor 'sees' + or - 4.5 v.

CONTROLLING the SEQUENCE. The active row (or step) in the program is shown by a lit LED. At the top left of the controller is the input area. There are 4 input pins 'S' (all with similar function, but not just in parallel to give one input), ($\perp$) are two ground pins, and at R are two reset pins. Every time an 'S' pin is grounded, the control steps along one row. This input need only be a transient contact. The system protects against contact bounce by requiring about a two second interval before any further input signal is accepted.

On applying + 9.0 v to an 'R' pin the sequence resets to step (row) 1 immediately. This 9.0 v can be obtained direct on the board from the first pin in a row, with no jumper in place, as shown in the model picture. Note that this 9.0 v only appears when the program row is active.

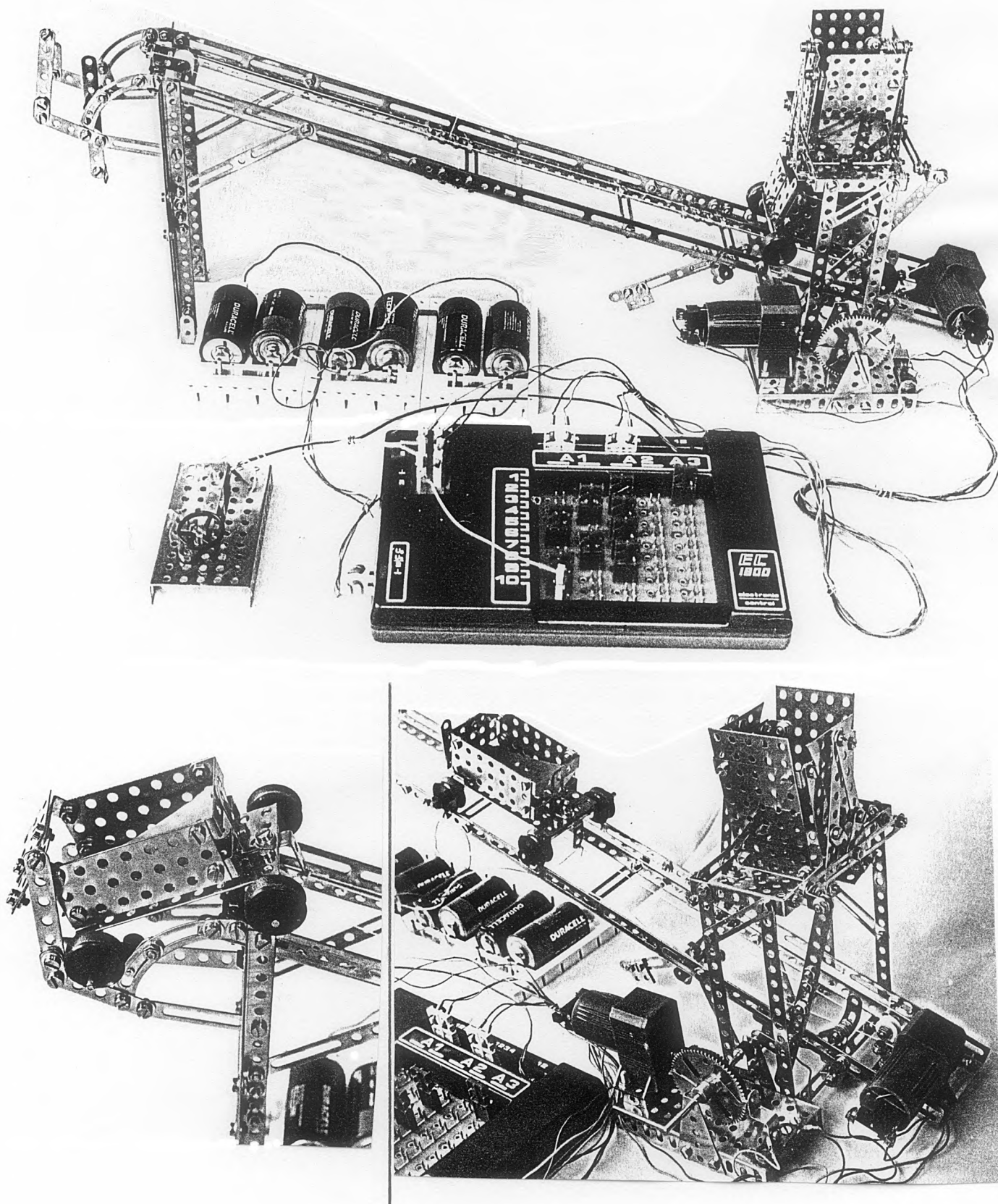
The jumpers are not simply connectors, they contain diodes to prevent unwanted current flows.

[cont. >]

POWER SUPPLY. A three wire cable and plug connects the battery pack to the bottom left of the unit. A special procedure for making the connections is described in the manual to avoid any risk of damaging the Controller. With batteries, working voltage U_0 is 9.0v (6 x 1.5v U2 batteries), with a 4.5 v centre tap, $U_0/2$. A mains adaptor giving stabilised 2×4.5 v could be used, but must be voltage controlled so that the output does not rise above 2×6 v on no load. Actual working voltage range is 6.0 v to 12 v, though this requires 6 v motors (and bulbs, etc.).

No-load current is 25 milliamps, and the maximum permitted output current is 800 ma, apparently for each output, rather than overall, but be careful. This is plenty for the motors supplied.

It is not clear how well the system is protected against overload, short-circuits, incorrect battery connections, program errors, etc, so be very sure connections are OK.



The MODEL. This 'fun' model was built to try out the various features of the controller. Lightweight objects (I used acorns) in the hopper are released by clamshell doors which open and close, and fall into the trolley. This then runs to the end of the ramp, tilts, and the trolley end door is opened by a fixed screw pushing against an arm attached to the door. With luck, the acorns fall out. The trolley then returns to the bottom of the ramp, and the sequence repeats. After two cycles, there is a reset to program row one, which has no motor outputs, only a lamp output. The lamp under the hand switch lights to invite a press and consequent impulse to restart the sequence.

One motor drives an endless cord with a gravity tensioned jockey pulley to work the trolley. The other motor both works the hopper doors, by a crank, and provides a timer element. Two projections on the large gear driven by this motor touch an insulated contact at each half revolution of the gear. This contact is connected to a controller input pin at region 'S'. The gear shaft also has a crank, the connecting rod is slotted so that only the top half of the crank rotation lifts it and thereby actuates the door linkage, opening and closing the clamshell doors in one continuous operation. The other half-rotation of the gear has no effect on the doors, but does give a time delay before a further stepping impulse.

Not seen well in the photograph are the limit contacts for the trolley. Because the plastic wheels insulate, a flying lead to the trolley body would be required if the trolley simply touched an insulated contact to the controller input at the extremes of its travel. Flying leads have poor aesthetic appeal, and on the model the trolley pushes earthed swinging arms, which rotate to make contact with the insulated input contacts.

The need for multiple inputs to the controller is demonstrated by the model. The timer contacts move slowly, so that they remain closed when their drive motor stops. So the next stepping impulse has to be routed to a different input pin, and is then accepted, even though the previous input pin is still earthed.

In detail, the controller steps are as follows:

Step 1. A 'waiting' step. The jumper at A3 causes a lamp at the key-switch to light. Pressing the key initiates Step 2.

Step 2. Hopper motor, controlled from A2, jumper inserted to give anti-clockwise rotation, runs for one half revolution of the timing gear and crank, which lifts and lowers the connecting rod thus opening and closing the doors. A pawl on the big gear closes a contact at the end of the half revolution, and initiates Step 3.

Step 3. Trolley motor, controlled from A1, jumper to give clockwise rotation, runs to drive trolley up ramp, on reaching end the trolley pushes a swinging arm to make a further contact, which initiates Step 4.

Step 4. Hopper motor, controlled from A2, jumper inserted to give anti-clockwise rotation, runs for one half revolution of the timing gear and crank, but as the crank is slotted, the doors do nothing. A second pawl on the big gear closes the contacts at the end, and initiates Step 5.

Step 5. Trolley motor, controlled from A1, jumper to give anti-clockwise rotation, runs to drive trolley back down ramp, on reaching end the trolley pushes another swinging arm to make a further contact, which initiates Step 6.

Steps 6, 7, 8 and 9 repeat the sequence of Steps 2,3,4 and 5, except that the impulse at the end of Step 9 initiates Step 10, which causes reset to Step 1.

The model goes through two sequences before needing a restart impulse not because this seemed a good idea, but because on my controller the 'reset' mode does not work from the middle few programming lines. This is a fault, but the only one found so far. Some general comments - the parts are very well thought out, with push-on connectors, pre-wired battery and output plugs. One of my motors is a little temperamental. After a week or two out of use, it is reluctant to start, possibly due to sticky brushes, but the brushgear is very primitive and best left alone. The geared motors have good low-speed torque, and the plastic pulleys with metal grub screws eventually slip on the motor output shaft so providing a slipping overload clutch - whether intended or not I do not know. The claims for applications referred to in the OSN p107 notes are exaggerated, there are insufficient steps for anything beyond the most simple sequences. However, all in all, very good fun.

This is perhaps the place to express my thanks to Brian Rowe, who introduced me to the C40 set, and was kind enough to pass his on to me at cost. Brian also provided most of my other CONSTRUCTION sets, as a search of local cut-price toy shops yielded only two sets. CONSTRUCTION (CONSTRUCTO?) has its irritations, as can be seen from the model, linkages do depend on lots of locknutted bolts and angle brackets. Also the plastic pinions have inadequate boss thickness so that the grub screws only hold with care. It is not MECCANO, but then neither is a 2CV a Porsche Carrera.

Construction

METALL- UND GETRIEBEBAUKASTEN

M 29

Fahrgestell mit motorangetriebenem Differential

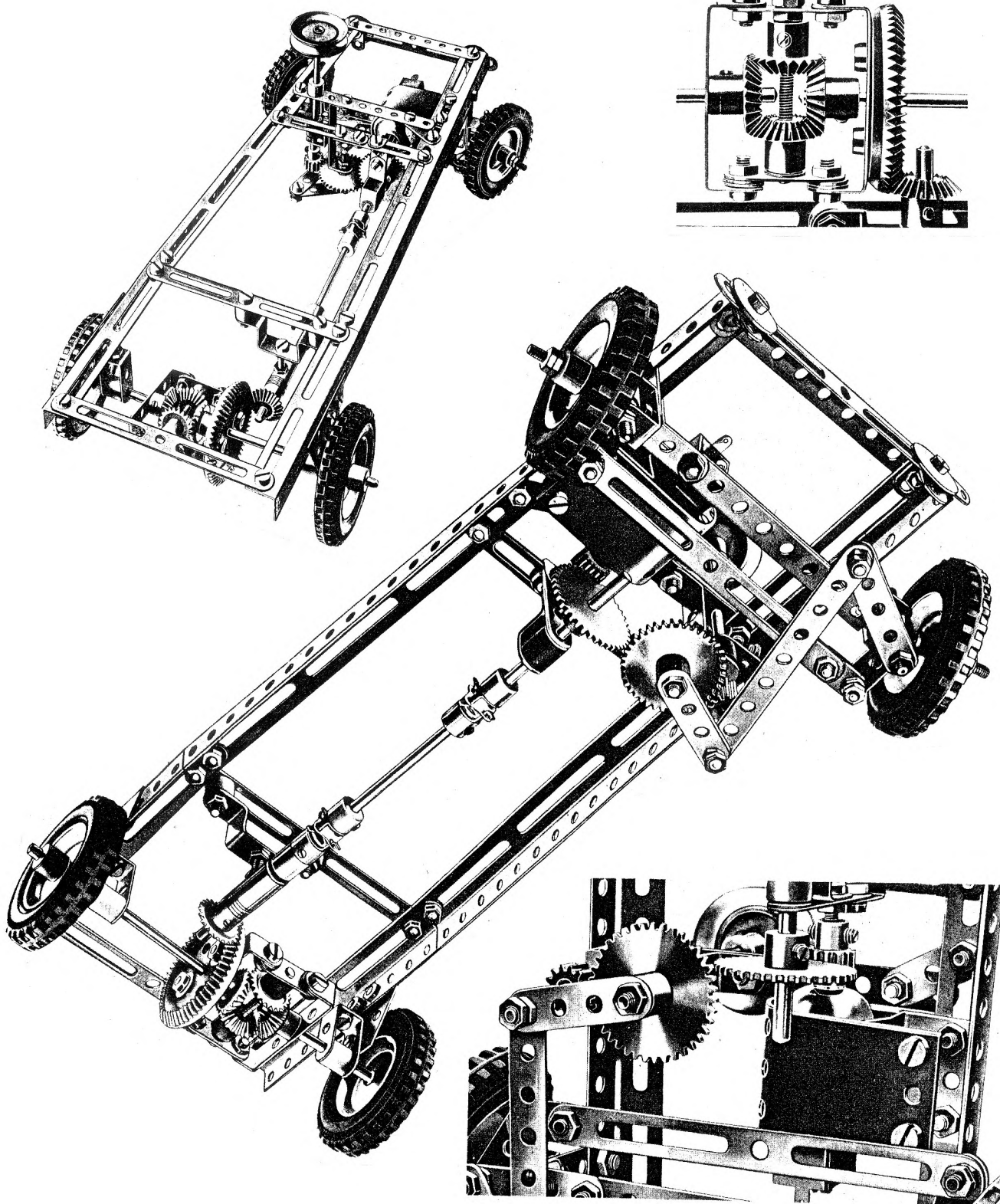
Chassis with motor-driven differential

Châssis à différentiel commandé par moteur

Chassis con diferencial accionado por motor

chassis met een door motor aangedreven differentiaal

This Chassis was contained in the manual of the superceded #120 Set, and is not in the current, equivalent #C03 book. The motor is the obsolete type which was held by being clamped between upper and lower formed plates, with a square of thin rubber sheet inserted to make sure of a good grip. MCS contains illustrations of this motor and some larger views of the Chassis.



Some GERMAN SYSTEMS Below notes on various systems that are not in MCS, and extra points about some that are. Many of them are small sets that appeared in the decade following WW2 and were only produced for a few years. My thanks to Jeannot Buteux who sent much of the information, some of it from the *CONSTRUCTORAMA* archive. Many other details have been taken from *EISENZEIT* (EZ), the invaluable book reviewed in 14/377, and from data that Werner Sticht kindly sent. However, as will be seen, there are still many gaps and any additional information will be very welcome. Also with my limited German I may have misunderstood EZ in places, and so, as always, corrections will be much appreciated.

AKRON This set dates from the WW2 to the early 1950s period and there's a small photo of the lid, and some notes on it, in EZ. Under the name is Stahl-Leichtbau-Kasten (Steel Lightweight Building Set) and what I can understand of the note says that thin elastic steel Strips were used with holes in them at 5mm pitch. And there's mention of spiral springs, possibly used as the method of fixing?

ALPHA MCS has 2 systems of this name and from the start date of 1931 given, the notes in EZ refer to the second one in MCS, the one with the 12mm spacing. The end date is given as c1970 though unless this encompasses both there may have been 2 ALPHAs on sale at the same time. There were 4 main and 5 linking sets, plus a small 50-Pfennig outfit, and it was the first system to have parts made of coloured plastic. The models included such non-technical subjects as a Weightlifter, an Ibex and Dancing Hares.

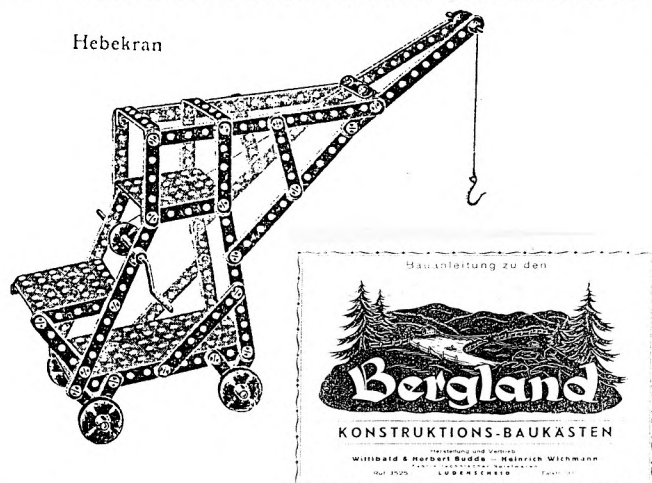
AUKI The box lid of this early 1950s set is shown in EZ but without any details, and the model on it is too small to see.

AUTO-CONSTRUKTOR This system is mentioned in EZ but no details are given. It may be the same as AUTO-CONSTRUCTEUR in MCS - that name came from a manual in Dutch, but the titles in the figures in it were still in German. EZ gives the start of production as 1928 and the maker as Curt Schrader of Eisenach, and from 1929 München. This firm had earlier made METALLO-TRIGON although it was called Stanzwerke GmbH at that time.

BAUFIX EZ gives the start date as 1932, and the maker as Saalheimer & Strauss, Nürnberg. It also refers to 'BAUFIX and **SIMPLEX**' as two cheap sets from that firm, but I'm not certain whether they were identical systems.

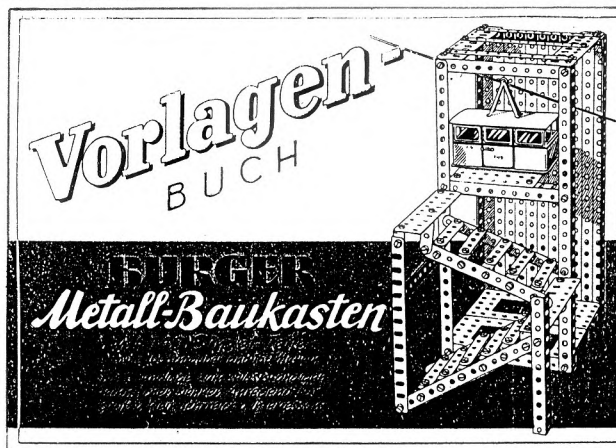
BENCO The start date isn't given in MCS - a set from around the early 1950s is shown in EZ.

BERGLAND Made by Willibald & Herbert Budde/Heinrich Wichmann, in Lüdenscheld from c1945 to about 1950. The



manual cover with its mountain scene is shown at the foot of the last column; an inner page has two Nr.1 models that can also be made from Sets 0 + 0a. About 18 parts can be seen in the Crane, including Strips from 2 to 15 holes, a 5*11h Plate flanged along its longer sides, and a smaller one, probably 5*5h but sometimes it appears to be 6h long.

BURGER Probably from the 1950s, only one set is mentioned on the manual cover (below), and the text on it says that it contains 140 parts plus 100 Bolts and 150 Nuts. That might suggest that Threaded Rods were used as axles. Other parts that can be seen in the Cable Car Station on the cover are 5*11 Flanged Plates with the STABIL-style centre 7*3h cutout; 25,14 & 11h Strips and A/Gs; and 9 & 11h Flat Girders.



CONSTRUCTION EZ gives the start date as around 1965 and the original manufacturer as VEB (K) Metallwaren Schmerbach bei Gotha. From sometime between 1979 and 1982 production passed to VEB Ppaffschwende, and the original sets numbered from 100 upwards were replaced by the series starting with C01. KONSTRUKTION, the forerunner of CONSTRUCTION (see 8/181), isn't mentioned in EZ but the manufacturer given in MCS was from Gotha (a town near Erfurt).

Of the earliest parts EZ says that the Flanged Plates were sometimes painted, and the large plastic Circular Plates (Lochscheibe) was bright blue. This might have been the 50mm Ø Scheibe shown in MCS for CONSTRUCTION but it may be noted that for KONSTRUKTION a 70mm Lochscheibe is listed as well as a 50mm version. Both look as if they are metal, but the MCS entry may well not show the earliest parts.

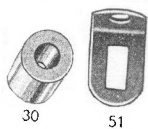
DER KLEINE INGENIEUR EZ has 2 references to a system of this name and I'm not sure if they are one and the same. There's a photo of a small box lid from the WW2-early '50s period, with a model of a Ferris Wheel on it, and elsewhere talk of a DDR set with STABIL-like steel parts.

DER JUNGE KONSTRUKTEUR There is quite a bit about this DDR system in EZ. It was made by Hans Wunsch of Niederwiesa and appeared in 1959. The hole spacing was 12.5mm and the parts were black, of good quality, with plastic gears. As well as the outfits in MCS there was a theme set to make a Tractor, 3-Furrow Plough, Roller, and Harrow, and a Nr.1000 outfit with about 1000 parts. Later on (after 1966?) there were sets to make bridges and cranes; railway locos and wagons; and cars and other motor vehicles. No reference to the system is known after 1972.

DER KONSTRUKTEUR FMF A small set from the WW2-early '50s period. The box lid shown in EZ has 3 boys and a girl admiring a very simple model of an open-topped

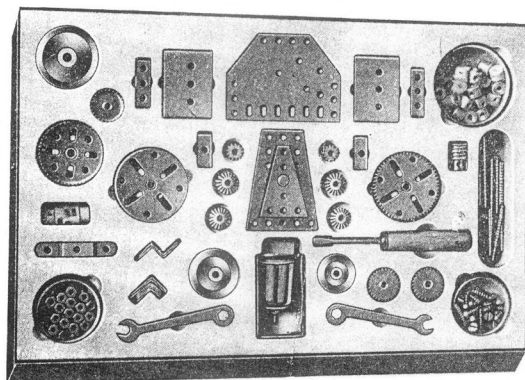
An Early CONSTRUCTION Manual In 8/181 a KONSTRUKTION (KNN) set was described in which most of the parts were identical to the later CONSTRUCTION (CNN), and differed in several respects from those shown for KNN in MCS. David Hobson recently showed me a CNN manual for Set 01 in which the sets advertised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

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



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

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



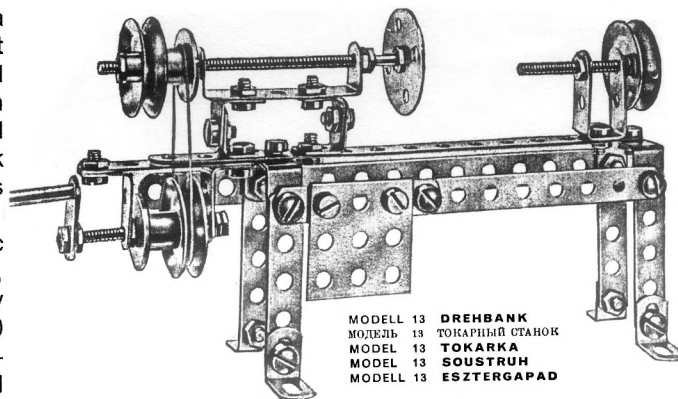
The main differences were in the Gears, as already explained, and in the use of the special gearbox Side Plates, joined at the ends by the small Flanged Plates which can be seen on either side of the Side Plates in the Set.

Less obviously a different selection of Strips, Brackets and Pulleys was included. The contents are probably similar to those of the KNN set in MCS and the method of holding the Motor in a metal strip Frame looks the same. It can't be seen if the KNN Dog Clutch (like M144) was included.

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

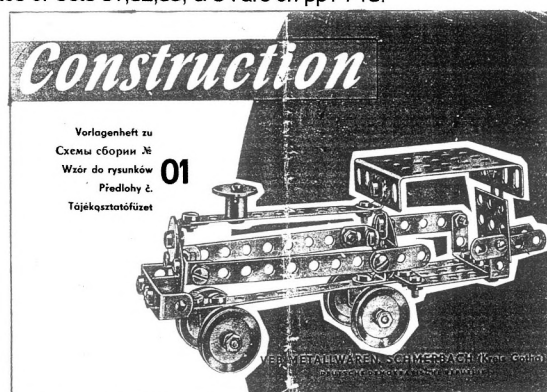
The PN's used are not the MCS ones for CNN or for KNN, but are based on the MCS KNN ones with for example 2,2a,2b,2c,2d replaced by 20,21-24.

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



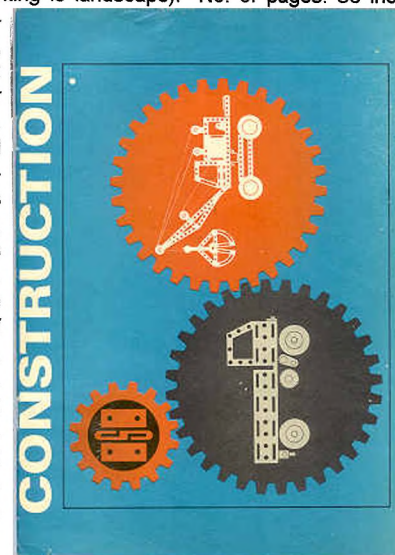
MODELL 13 DREHBANK
МОДЕЛЬ 13 ТОКАРНИЙ СТАНОК
MODEL 13 TOKARKA
MODEL 13 SOUSTRUH
MODELL 13 ESZTERGAPAD

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



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

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



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

The parts in this phase are in most cases very similar to later ones found in the C series of sets, C01, C02, etc., and some notes on them were given in 1/4. A couple of other points - originally the Pawl had no lifting tab at the sharp end, and the bend at the flanges of the Flanged Plates was quite rounded, up to 4mm radius on the outside in some cases. The plating often had a different appearance too, with Strips looking smoother but the Flanged Plates duller with a very fine granular surface. The colour(s) of the Plastic Flexible Plates at the time isn't known, but in the C sets they were bright red, bright yellow, a slightly dull blue, and a

translucent pinky-red. It was potluck what colours were in each box. One Plate, 1145, is described as 'neutral' but this means there were no holes in it - it's size isn't given in MCS and it's shown with square corners, but later at any rate it was the same size as the 12*6h No.1136, with the corners fully radiused, like those of all the other Flexible Plates except the Sector Plate, 1141.

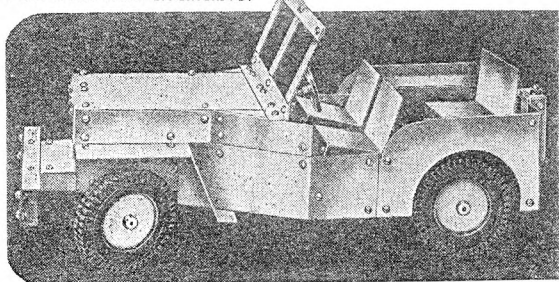
Some notes on CMM manufacturers/dates were given in 15/412 and so the /67 part of the early manual's PR might indicate 1967, and the /71 of the one above might mean 1971. There's no indication of the maker in the second except the logo in the small gearwheel on the cover, and the 'S' its centre perhaps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

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

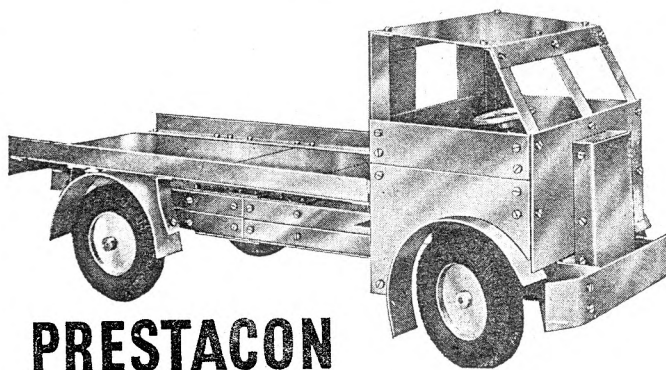
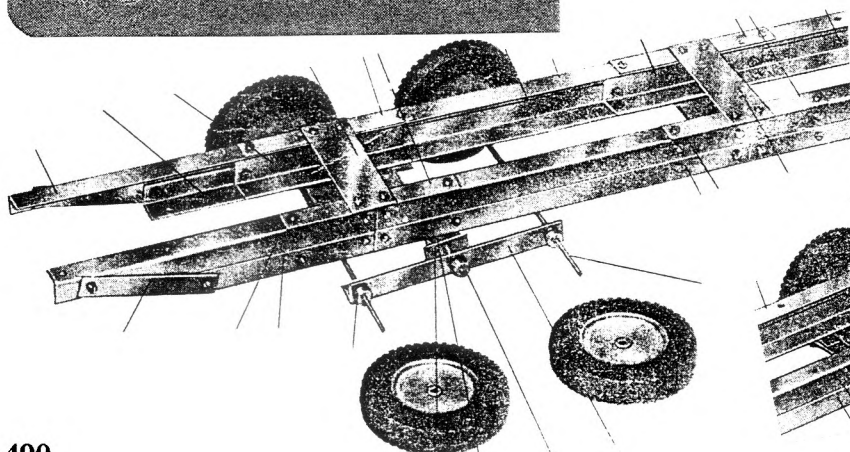
First about the parts. The Crank, C.14, has the standard $\frac{3}{8}$ " brass boss but the strip part is steel (with a dull metallic finish), $\frac{1}{2}$ " wide by $1\frac{1}{2}$ " long o/a, with large (over 1") radiused ends. The Steering Wheel, C.124, is a fine aluminium casting of a typical 1950s design, with a narrow rim, horn push in the hub, and 3 sprung steel triple bar spokes. The Steering Crank, C.151, is again cast aluminium alloy with a pressed in steel stub axle. The blank Strips and A/Gs are made from polished aluminium [and no doubt the Lattice Girders but these haven't yet been seen]. The N&B are bare steel with $\frac{1}{4}$ " square Nuts (though hex are shown in some models), & Bolts with domed heads of approximately $\frac{3}{16}$ " Ø.

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

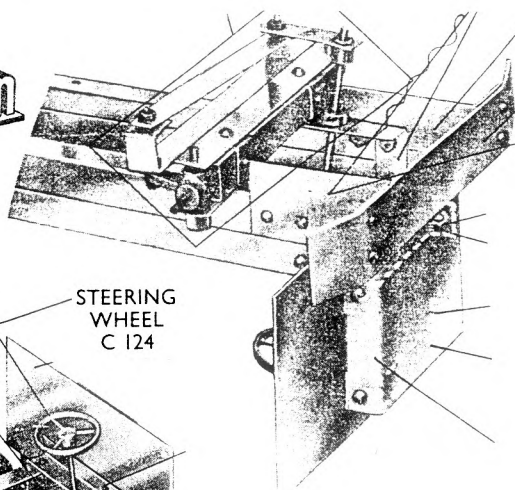
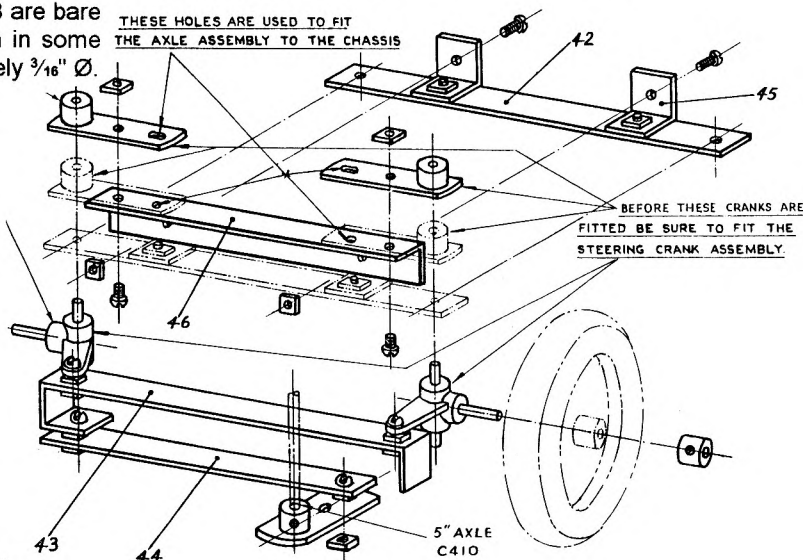
The 15½" Jeep below is another of the vehicle Kits that was available.



Prestacon
A CYLON PRODUCT



PRESTACON

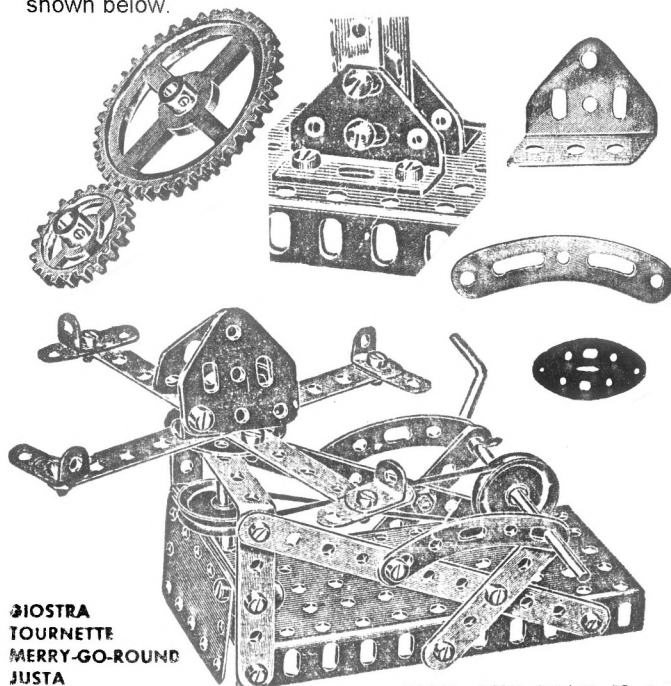


STEERING
WHEEL
C 124

CONDOR Roger Baker has kindly sent me a photo of 2 unused sets, a No.1 and a No.2, from this Italian system. Both are in green boxes, and in each the main parts are attached to a yellow backing board by brass bifurcated clips, with the small ones are in a red box with CONDOR on the lid. The label on the lids is in full colour and is the same as the manual cover shown opposite (and the one in MCS).

With a number of exceptions the parts look like MECCANO, and have the same size holes at $\frac{1}{2}$ " pitch. Most also look like those in MCS, but there are a few differences:

- The 5*11h Flanged Plate has flanges on all sides (with vertically elongated holes in them as in MCS, & the model below).
- The holes in the Flexible Plates in the sets (5*3h with no centre hole) are all slotted (like MÄRKLIN), and not round.
- The Curved Strips in the model below have elongated centre and outer holes but the one in the MCS Parts List (below, right) has longer slots between the round centre and outer holes. The pair below are those in the No.2 Set and have a slotted centre hole, but the shape of the outer ones can't be seen.
- The 28mm Loose Pulley doesn't have the 4 holes in its face that are shown in MCS and is made of plastic.
- The Trunnions with their 2 vertical slotted holes look just as in MCS and the Trunnion Sheet, but a different pattern can be seen in one of the manual models. Both are shown below.



GIOSTRA
TOURNETTE
MERRY-GO-ROUND
JUSTA

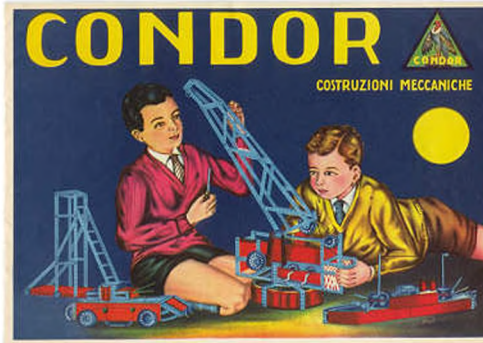
MOD. PER SCAT. N. 2

In passing it may be of interest to note the other unusual parts:

- The Flanged Sector Plate is 7h long with 3 rows of holes, but in the models in MCS it has 1 row of 8 holes.
- The 3*1*3 Double Bracket.
- BRAL-style Braced Girders, and 2h deep Fork Piece.
- MÄRKLIN-type Coupling (see 5/106, Query 9), and Flat Cross Bracket (#114a/11760) but with the 2 outer holes elongated.
- The Large-tooth Gears above, which are also shown running at right angles in one model.
- The Bush Wheel is about $1\frac{1}{2}$ " Ø.

MCS gives the colours as nickel, red & black, and on the front of the manual most of the Plates are red, with a few, and all the Strips, light blue. (And some of the parts don't match the design of the actual ones) The Flanged and Flexible Plates in the sets are red, as are the 28mm Pulleys; the Trunnions are green; the Bush Wheel and Curved Strips dark blue; and all the other Strips are nickel plated. The Spanner, Screwdriver, and Crane Hook are black.

Below details of my own manual, which has a number



of models for Set 1 but only 2 for Set 2. The Merry-go-Round is one of the latter. Unlike Roger's it doesn't have a number in the circle on the cover and it was originally sent to someone who had enquired about the price of parts - they've been added in ink. The models are typical of the early postwar period & all the Flexible Plates have round holes - perhaps as they were when the system first appeared.

The only known history of CONDOR is that it was available in 1966 & 1969, & that the manufacturer was Condor S.N.C., via Cortina d'Ampezzo 12, 20139 Milano.

SUMMARY OF MANUAL •Name: CONDOR Costruzioni Meccaniche. •No details of maker/dates/ref nos. •Page size: 243*170mm deep. •No. of pages: 12+covers. •Languages: Italian/French/English/Spanish. •Printing: cover in full colour; inside brown on white with line drawings of parts/models. •Page Nos. of Illustrated Parts List & highest PN: 4-7, 69. •No Set Contents. •Sets covered: 1,2. •No. of models for each set: 13 (+10 Letters/Numbers), 2. •Name, Page No. of first/last model of each set [no Model Nos.]: 1: TELEGRAPHIC KEY,9 (after Letters/Numbers on p8); GANGWAY,11. 2: MERRY-GO-ROUND,12; WINDMILL, 12. •Other notes: the names of the parts on pp4-7 are in Italian only.

Postscript, a No.7 Outfit After writing the above a photo arrived from Don Redmond showing a No.7 which belongs to Bernard Champoux. The box scales at about $15\frac{1}{2}$ *13", and has a tray which fits inside. Both are made from a wooden frame forming 3 compartments, with bottoms that look like hardboard. The lid is open so its top face can't be seen; the manual cover is as shown above but with a '7' in the circle.

The parts that can be seen show the following points of interest:

- Nickel Strips & A/Gs.
- A 25h Braced Girder with no centre diamond cutouts, apparently identical to Mystery Part 17 in 7/156, except that it is a lighter red.
- A dark green Propeller (#37) of some 4" Ø.
- MECCANO-pattern 1" & 3" Fast Pulleys, but the 2" have holes, about $\frac{3}{8}$ " Ø, instead of triangular openings. All are red.
- The 1" & 3" are fitted with white Tyres, the small ones with a radial tread and the 3" with the circumferential pattern shown in MCS.
- The Large-tooth Gears, cast from white metal, with 20 and possibly 39 teeth (some can't be seen). Their diameters are probably about $1\frac{1}{3}$ " & $2\frac{2}{3}$ ".
- A $1\frac{1}{2}$ " Gear with no holes in its face.
- A dark blue Bush Wheel as in Roger's sets.
- A nickel Screwdriver.
- The Flanged Wheel #34 is about $\frac{3}{4}$ " Ø and looks like turned brass.
- Some bosses appear to be double-tapped but the Bush Wheels in the Sets 1 & 2 are single-tapped. All except those of the Large-tooth Gears, look brass.

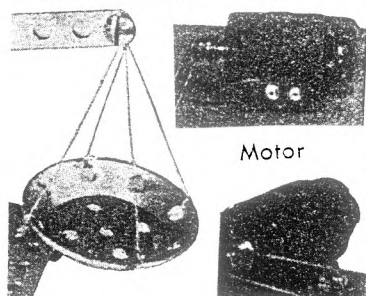
Another CONSTRUCTION Manual Thomas Keel kindly sent a copy of a manual similar to the one at the bottom of 17/489, but a little later. At first I thought it was earlier because although the Universal is shown in the Parts List & Set Contents, the Basic Construction showing its use isn't included. However the motif in the gearwheel on the cover is the bird of VEB Ppaffschwende and not the 'S' of VEB (K) Schmerbach. The maker is given on the back cover as VEB Spielwaren-Mechanik 5631, Ppaffschwende, and the PR is ?39 - 244 - R 123/79. The 79 might indicate 1979, and this may be the last manual before the new series of sets (C01 upwards) was launched. Some notes on possible dates were given in 17/490.

The manual has only 48 pages including covers. It contains all the models in the 'S' but some are not in the same order, and some of the auxiliary views are omitted. The Basic Constructions too are in a different order and only go up to G15.



The main changes to the Parts List are that the 6 & 11h Strips are marked as 'Slotted', and 2 Rods with Threaded Ends, 95 & 120mm long, are introduced to replace the 90 & 120mm Threaded Rods, & the Piston Rod. All the MCS Pulleys are still included except that the 20mm is now 16mm Ø. The Set Contents show a few minor changes, the most noticeable being the deletion of the two 15h A/Gs from the 01 Outfit.

There's a single photo of each model with the Parts Required for it, inadequate for the larger models given that no instructions are given. The models are probably all the same as in the MCS manual: there are the same number, the parts required for them are identical, and the models on p9 are identical to those on the MCS/NZ p5. None of the



modified parts can be seen. One has an unusual and unknown part as a scale pan (far left) - a pre-1954 part? Two models are driven by the Motor (left) which, though indistinct, doesn't look like the one in the MCS Gears Set. It looks cylindrical, mounted on a base with 2 terminals on the side. The

Drill & Racing Car at the bottom of the facing page are made from Sets 03 & 03+03a respectively. The Digger, the last model in the Manual, needs Sets 02+03+03a, and is similar to the one on MCS/FB p5, but without any of the long slotted parts that can be seen in the MCS version. The latter came from a later manual, but its PR isn't known.

SUMMARY OF MANUAL •Name: KONSTRUKTION Metallbaukasten •Details of maker: VEB(K) Technische Werkstätten Gotha. •Dates &/or Ref Nos: Re 299/59 V/6/17-10 on p12. •Page size: 211*297mm deep. •No. of pages: 12 inc covers. •Language: German. •Printing: B&W ½-tones of models, parts; blue cover with red border (at top of facing page). •Page No. of Parts List/Set Contents & highest PN: 12,15b (Illustrations on p2). •Sets covered: 01,02,03,03a. •No. of models for each set: 3,10,5,1,5(03+03a),1(02+03+03a). •Name, Model No., Page No. of first & last model of each set: 01: Säulenkran,1,3; Dreirad,5,3. 02: Dezimalwaage,3,3; Fahrbarer Drehkran,11,5. 03: Torkran,13,5; Windmühle,24,9. 03a: Motorrad,20,8. 03+03a: Exzenterpresse,16,7; Luftschaukel,23,9. 02+03+03a: Löffelbagger,25,10. •Other notes: •The parts for each model are on p11. •No.19 on p8 is misspelt Rennwaen.

A Later Set This is the #02 described in OSN 8. The parts in it look to be just like those in the 1957 #02, and are, with minor exceptions, just like their CNN equivalents.

The bottom of the box is a dark colour outside and yellow inside; the top is half yellow and half blue with a large photo of the later Digger, and KONSTRUKTION in white on a red rectangle, followed by METALL-BAUKASTEN in black on the yellow. The style and italic letters of KONSTRUKTION are identical to those on the cover of the Gears Set manual shown in MCS/FB, p2. The Set No. is on the side of the lid.

The Last Sets, from about the mid-1960s These are the ones illustrated in the CNN manual described in OSN 17, with /67 in its PR. They are thought later than the #02 above because of the plastic packaging. The lids of the 3 standard sets look (in B&W) identical to that of the #02 above, except that the Set No., 01, 02 or 03, follows METALL-BAUKASTEN. The Gears Set has KONSTRUKTION in the same style but it is followed by METALL-GETRIEBE *Baukasten*; and 2 models, the rear of a Chassis & most of a Mobile Crane, are shown inside the 2 largest of 3 'gears', rather like those on the cover of the CNN manual shown at the bottom of 17/489.

It has been suggested that from early in the 1960s the system was produced at Schmerbach, by VEB Metallwaren Schmerbach, but the date of this changeover is discussed below.

An Early CONSTRUCTION Set After writing about KONSTRUKTION it was interesting to see, courtesy David Hobson, a CONSTRUCTION 01 Set, which was probably

made soon after the name was changed.

The box measures 35*23½*2cm and the base is red, with a yellow moulded plastic tray for the parts. It is very similar to the illustration of the KNN Set in the Set's Manual but the Angle Brackets are housed slightly differently. The Strips sit up at 45°, like those in the card partitioning of the KNN Set in OSN 8. The N&B, etc are in 2 round yellow plastic boxes with lids to match. The box lid is exactly like the OSN 8 KNN one, except for C's instead of K's in the name, and 01 after it instead of METALL-BAUKASTEN. Again the layout of the Set (as per the picture in the Manual) is printed on the inside of the lid.

Now the noteworthy points about the parts. • The slot of the Angle Bracket, 51, has rounded ends, not square as shown in 17/489. • The Distance Piece 30 in OSN 17 has not yet been supplanted by the tapped Collar. • The Tyres have KONSTRUKTION moulded into both walls. • Most parts are in the thicker metal of the day, the 1.1mm thick 20mm Discs caught my eye. • The Screwdriver is the normal CNN type with a hexagonal section plastic handle, instead of the wooden one in the illustrations. • The Spanner is the CNN shape but the throat of the opening is semicircular, and the hex opening at the other end is 'rotated' slightly.

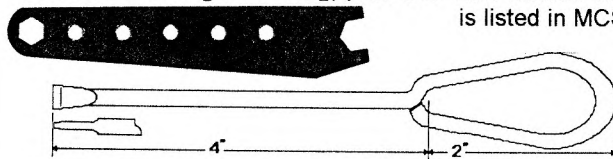
The manual is identical to the 17/489 one except that it's in German, English, French, Spanish, & Dutch; the PR is Re 50/66 V/6/17-10, so a year earlier than the other; and the maker's name isn't on the cover (or elsewhere in the Manual, or the Set). This last might be thought to indicate that the change of manufacturer to VEB Schmerbach occurred in 1966-67, but as already mentioned it may have been earlier.

Following the note in 18/497, Werner has written that it was in 1975 that production of CONSTRUCTION passed to VEB Pfaffschwende.

Another ONADO Set Don Blakeborough kindly sent notes on some parts that he has acquired, complete with the Manual described in 15/405, and an end opening, card, N&B box. Said box (left) measures 2¼*1½*¾" deep, and also has ONADO on the sides & ends. Don thinks the lot may be most of a No.3 Set, and I can pass on the list of parts that he sent to anyone interested.

The parts seem to correspond to the blue & red ones of OSN 15 except as follows:

- The red Balloon Wheels are 1.9" Ø and ⅜" thick.
- The Axles are again 4" long, plus a 2" one. Neither size is listed in MCS.



• Don's Screwdriver (above) is wire. His Spanner is just like the one (above) that belonged to the Bob Curling parts, but which wasn't available earlier. It is rather like the UMAKIT one (see 13/339), but has a hex opening at the narrow end instead of the end hole, and the outer shape is not quite the same. The open jaws admit a ⅝" nut but the ring is only a little over ¼" A/F. It measures 3¾" o/a, and looks as if it may have been nickel plated.

• Among Don's parts were 36 Nuts, ⅝" A/F, and various Bolts comprising: 15 CH & 13 RH, 9.5mm u/h; and 2 CH & 2 RH, 6.5mm u/h. All the Bolts are commercial looking, and plated but not polished, Don found that the thread of the N&B, and in the boss/Collars, isn't ⅝" BSW. One of the longer RH Bolts was found in the boss of the 1" Pulley and was partly red, as if in situ when the part was painted.

Don added that he had also found some more Chassis (Flanged Plates) in his 'unknown' box, together with a 15h 'L' Section Channel, painted blue with square corners.