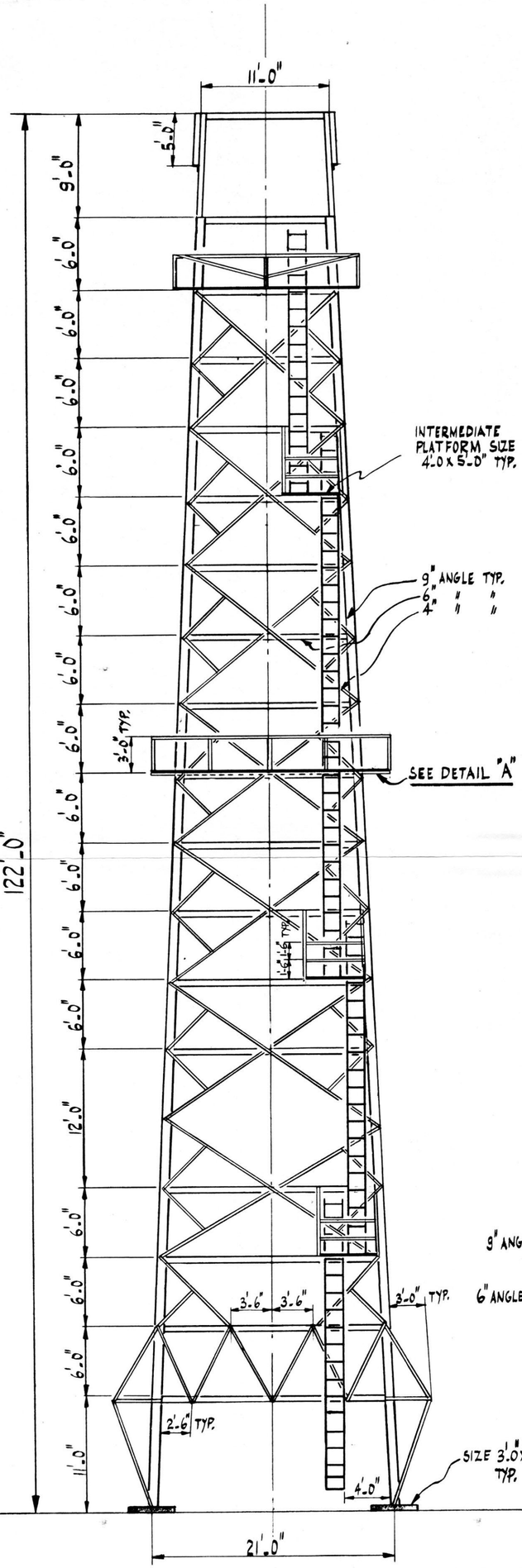
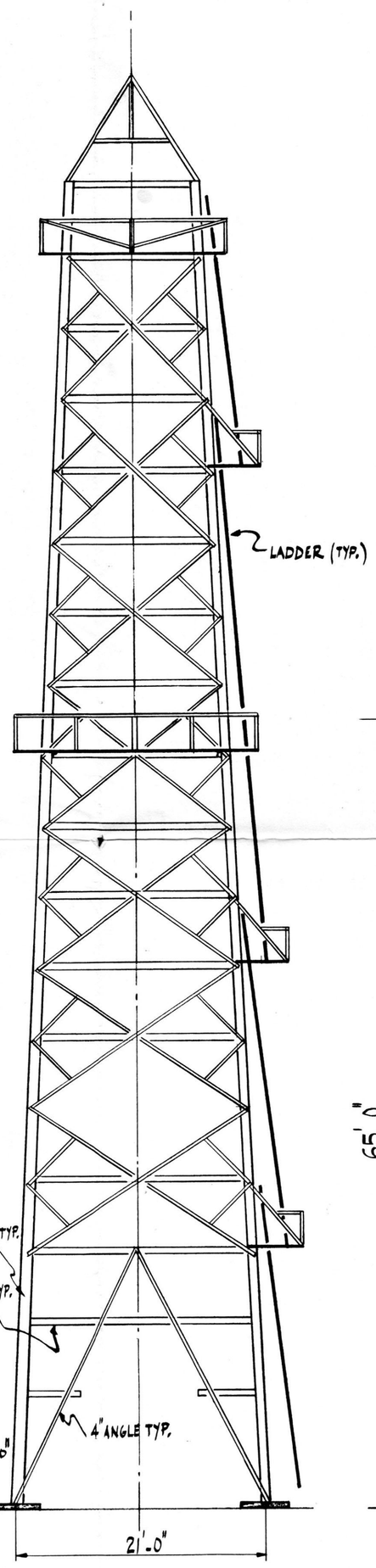
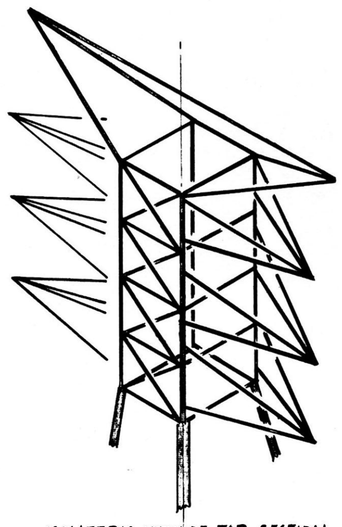
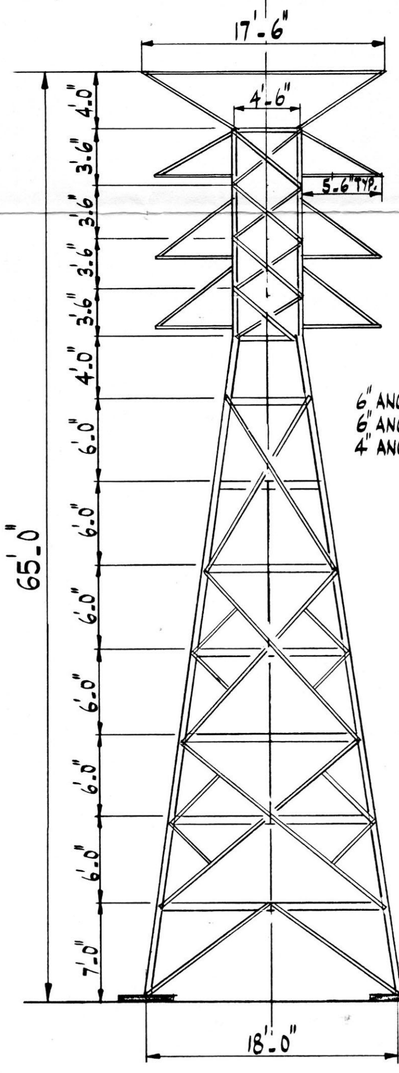
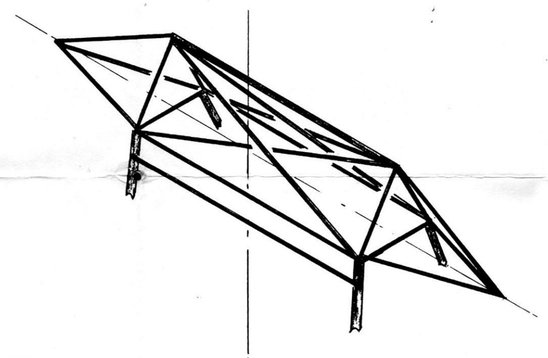




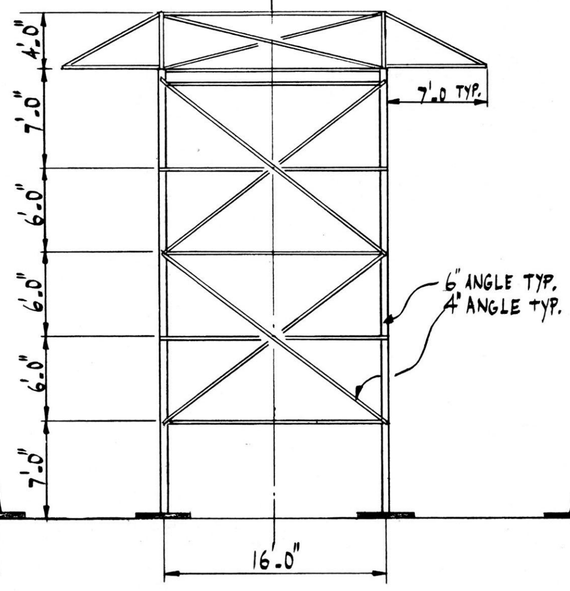


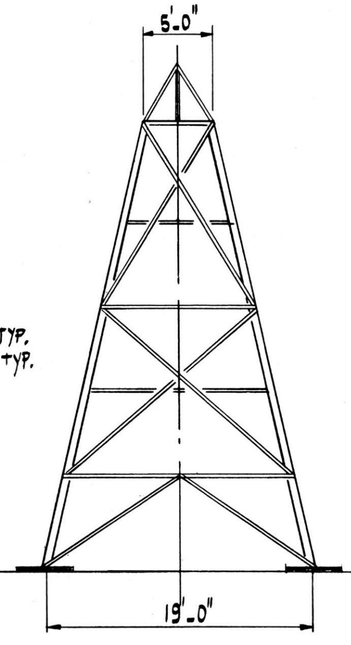
ISOMETRIC VIEW OF TOP SECTION
(SEE BELOW)





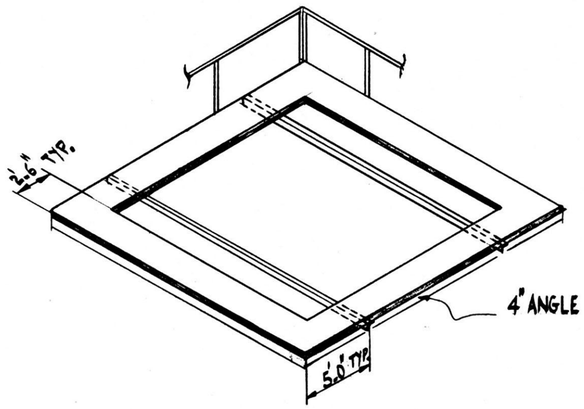
ISOMETRIC VIEW OF TOP SECTION
(SEE BELOW)





NOTE: DERRICK MAIN PLATFORMS.

BUILD THE 2 PLATFORMS WHICH GO COMPLETELY AROUND THE DERRICK, INCLUDING THE HANDRAIL, SEPARATELY. INSTALL THE 2 SUPPORTING MEMBERS AND THEN PLACE THE COMPLETED PLATFORM ON THESE MEMBERS.



DETAIL "A"

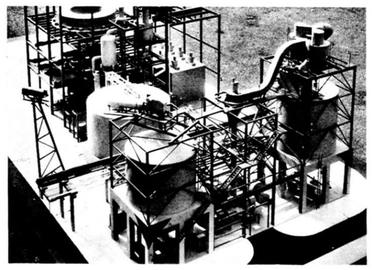
NOTE: CONSTRUCT 2 SIDES OF THE DERRICK OR TRANSMISSION TOWERS USING THE DRAWING AS A TEMPLATE. (IN THE CASE OF OTHER SCALES WE RECOMMEND YOU MAKE AN OUTLINE DRAWING OF THE BASIC MEMBERS.) WHEN THE 2 SIDES ARE COMPLETED, INSTALL MEMBERS OF THE CORRECT LENGHT AT THE TOP AND THE BOTTOM OF THE STRUCTURE. THEN ADD HORIZONTAL MEMBERS AT THE CORRECT INTERVALS. FILL IN THE CROSS BRACING MEMBERS LAST.

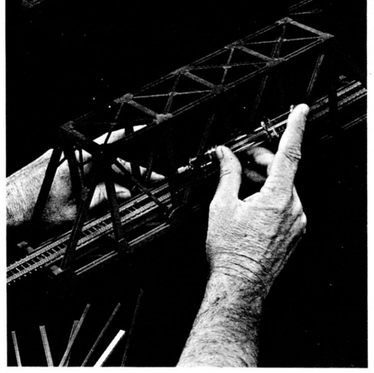
LASTRUCT, MA
Scale Model Plastic Structurals
74A THE CENTRE, FELTHAM, MIDDLESEX

OIL WELL DERRICK, ELECTRICAL TRANSMISSION TOWERS

DES.	CH.	DATE	DWG. NO.	REV.
N.M.	H.W.	1.10.70	PL-5	0
DR. Z.Y.	SCALE: H O			

WORKING WITH PLASTRUCT ABS





Acrylontrile-butadiene-styrene, or ABS, a recent miracle plastic from America's chemical laboratories, has been hailed by professional model-makers as "the best all-around construction material since wood".

Stronger and more rigid than many metals; easier and more flexible to work with than any previous plastic; cleaner and more durable than wood, ABS structural shapes by Plastruct have been used for engineering design models on an international scale since their introduction.

For the professional, ABS has virtually replaced wood and brass as the prime construction medium.

PROPERTIES

ABS is a thermoplastic terpolymer combining the best qualities of the acrylics, butyrates, and styrenes. It is more than half again as rigid as its cousin, styrene, and, size for size, is nearly as rigid as brass. Extremely resistant to most acids and alkalies, the ABS lustrous surface is unaffected by most chemicals, even lacquer – a property unheard-of in the early plastics.

Unlike wood and brass, Plastruct's ABS structural shapes require no priming, sanding, or sealing to enhance its hard finish. But like even the most primitive plastics, ABS bonds easily, quickly, and with a minimum of fuss.

TOOLS

Probably the single most useful tool for working with Plastruct's small structural shapes is a knife, preferably a sharp, thin-bladed type of the Exacto variety which has a replaceable blade. This knife, with a #11 blade, is used by many professionals for up to 80% of their work. As an alternative, some modelers prefer a surgeon's scalpel, also of the replaceable blade variety. A small hand saw such as a Zona or Exacto may be used for cutting larger structural shapes or miscellaneous parts.

Invaluable as a cutting guide for sheet stock is a 12-inch steel rule or steel square. As a surface to cut and trim on, rather than cut up a good table surface, the builder is advised to buy an inexpensive kitchen breadboard or butcher's block.

A couple of simple, inexpensive files will also come in handy for shaping and trimming both sheet stock and structural shapes. Some modelers buy an inexpensive set of jewelers' files for close-delicate prototype work. For rough work, medium-cut files from your neighborhood five-and-dime will do the job well.

Bonding should be done with either a fine-pointed, well-made brush or, again as the professionals do, with a physician's hypodermic syringe. If you do use the syringe, cut the tapered point of the needle to a blunt right angle. Some builders have also had success using a small, syringe-like jewelers' oiler. The main point to remember, regardless of which tool is used to apply the bonding agent, is that the modeler must be able to control the amount applied. For a neat job this is critical.

The best all-around bonding agent is Plastruct cement. Do not use airplane cement as it seems to have too many "fillers" for good work. Many modelers will eventually try one of the exotic "solvent cements" which will bond just about anything to anything else, such as methyl-ethyl-ketone, methylene chloride, ethylene dichloride, or industrial chloroform.

> Those are the basic tools for working with Plastruct ABS stock and shapes. Depending upon your skill and facility, the following may also be useful: long-nose tweezers or jeweler's pliers, proportional dividers, vernier calipers, a jewelers' lathe (one that may be geared down), drill bits and a drill press – and just about any other tool with which you work metal or wood.

BONDING

Most plastics, including Plastruct ABS, are not "glued" but are bonded or welded. The so-called "plastic cements" do not cement, but rather dissolve a part of the surfaces to be joined so that they actually flow into each other to form a joint that is as strong as the material itself.

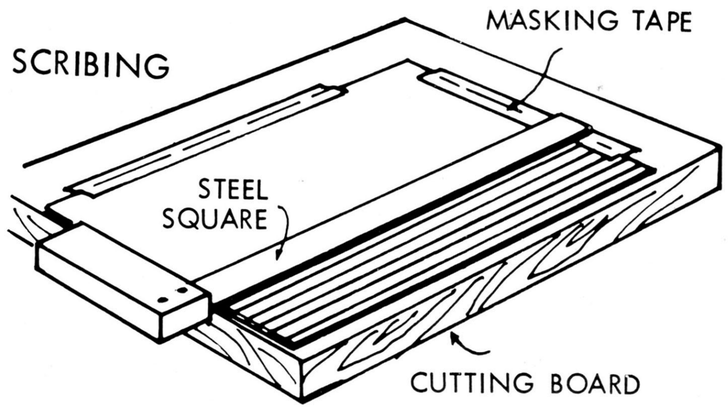
Also, ABS' beautiful, lustrous finish allows applied bonding agents to quickly spread by capillary action to just the right depth of penetration. Use small amounts of the bonding agent; it will not only go much further, but the joint will actually be stronger and will look far better!

A small area to be joined will bond almost instantaneously but larger areas, such as laminates of sheet stock, will take longer and in many cases should be weighted while bonding.

To bond Plastruct to most woods, the tube-type "airplane cement" is probably best. It will take longer to bond and the parts should be held together in some fashion while drying. This heavier "cement" will also bond Plastruct to most types of paper and thin cardboard stock. Plastruct ABS will bond to any of the commonly used plastics just as it will to itself. Liquid cements may also be used, if preferred.

Except by using one of the contact or epoxy cements, ABS will not bond to metal, a trait shared by all of the plastics. But to pin-fasten a piece of ABS sheet, for instance, to a metal part, simply insert the metal pin in a close-fitting hole in the plastic. Then, with a warm soldering iron, heat the pin until the plastic melts around the pin. When set, the plastic will hold the pin firmly. Do not use too much heat.

...WORKING WITH PLASTRUCT



CUTTING AND WORKING

Generally speaking, working with Plastruct's ABS structural shapes requires no more skill – and in most cases less – than working with metal or wood. A prime point to remember is that because of its thermoplastic properties, Plastruct ABS should not be subjected to too much heat. A high-speed saw or a fast and heavy hand with a hand saw could cause plastic dust to gum together and a clean cut or hone is less possible.

To cut sheet or any form of thin section, the easiest and simplest method is to scribe and break it. Any rough edges you get, until you learn the exact technique, may be scraped or filed off.

Any type of machine tool – drill press, table saw, or lathe – may be used successfully to work Plastruct if you can cut the speed down. The high speeds just aren't needed and the heat they generate can cause gumming of the plastic dust.

When using a table saw, a fine-tooth blade without set is recommended.

HEAT FORMING

Heat forming, shaping, and bending this material can be done in as simple a device as your kitchen oven – provided that the upper heat range can be controlled to at least a fair degree.

The best temperature to work Plastruct materials is approximately 250°F.(135°C). And unless you actually want to melt the material to a near-liquid, don't exceed about 425°F. (204°C.) under any circumstances. If you are fortunate to have home heat-forming equipment, Plastruct may be shaped and worked into just about any shape imaginable.

DETAILING

Aside from the typical rivet press used by modelers for both plastic and metal, relatively "passable" rivet heads may be formed with a low-heat, pointed soldering iron or gun. This is tedious, free-hand, and is really not recommended except as a touch-up device. You may also purchase a rivet-making tool made by Griffen Mfg. Co., Webster, N.Y. which has a variety of spiked wheels for different rivet spacing. Put Plastruct .020 strip on a surface that gives, such as a magazine, and press down firmly with the tool.

PAINTING

Almost any paint ever used by modelers on brass, wood, and plastic models may be used on Plastruct ABS. And as a plus, just about any paint you can find in a craft store, neighborhood paint shop, or artist's supply house will adhere to Plastruct without harming the surface. You have free rein to use all of the enamels, lacquers, or pigments available! Aside from the bonding agents, very little will affect the lustrous, smooth surface of Plastruct ABS.

The above is only an introduction to the uses of new Plastruct structural shapes and sheet stock. To all modelers, they open new vistas. Just as an architect has innumerable girders, beams, and columns with which to build his bridge or skyscraper, now you too have this new "warehouse" to draw upon. Good luck, good modeling – and please write us if you have any questions.

BILL OF MATERIAL

OIL WELL DERRICK

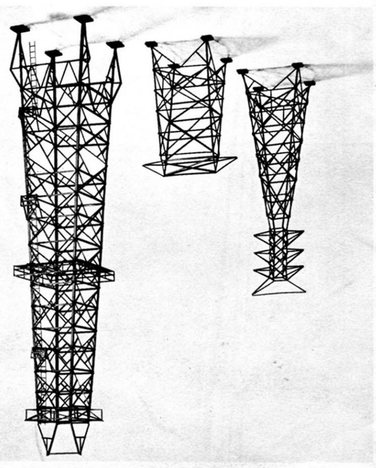
ITEM	GAUGE									
	O		S		HO		TT		N	
	CODE	PCS	CODE	PCS	CODE	PCS	CODE	PCS	CODE	PCS
ANGLE	A-3	35	A-2	39	A-1	26	A-1	20	A-1	13
ANGLE	A-4	25	A-3	20	A-2	15	A-2	12	A-1	8
ANGLE	A-6	8	A-4	6	A-3	4	A-2	3	A-2	2

ELECTRICAL TRANSMISSION TOWERS

ITEM	GAUGE									
	O		S		HO		TT		N	
	CODE	PCS	CODE	PCS	CODE	PCS	CODE	PCS	CODE	PCS
ANGLE	A-4	3	A-3	3	A-2	2	A-2	2	A-1	1
ANGLE	A-2	36	A-2	27	A-1	18	A-1	14	A-1	9
ANGLE	A-3	15	A-2	17	A-1	11	A-1	8	A-1	6

LARGE SIZE

SMALL SIZE



PLAN NO. PL-5
OIL WELL DERRICK
ELECTRICAL TRANSMISSION TOWERS
A TWO-PART PLAN
PRICE – 20p

PLASTRUCT, E.M.A PRECISION MODEL PARTS

MATERIAL is ABS plastic (except a few instances as noted) – a combination of acrylontrile, butadiene, and styrene. We have combined the BEST technical features of each of these plastics to provide you with the best possible parts for your model making. It is compatible with other materials – you may use it with styrene, metal, wood, or cardboard, although easier and faster to use than these materials.

MOLDING is, whenever possible, done by the injection process which affords maximum quality control over parts produced. You will notice the absence of "flash" which means no preparation of the parts is needed – you can get to your model project faster. Sizes and shapes meet standards set by the NMRA.

WORKING Plastruct parts is easier and faster, and you'll find you can duplicate almost anything architectural. You can saw it, blade-cut, drill it, and sand it. Any standard woodworking tools may be used, and parts will not splinter. It joins in SECONDS with small amounts of LIQUID SOLVENT CEMENT (use any available type such as PLASTRUCT Cement, Pactra, Testor's or Bachman). No surface preparation is necessary, and cementing will not discolor Plastruct parts. We recommend setting up a jig and cutting all parts for a construction FIRST, so that cutting will be accurate. IMPORTANT: When bending Plastruct parts, they will change to a lighter color when the stress point is reached. Exceeding this can break the material; thus you have an automatic stress "warning."

FINISHING may be done with ANY type of paint – enamel, oil, water base paints, EVEN LACQUER, either brushed or sprayed on.

DETAILING of Plastruct parts can bring out your most creative talents. One example is to add "rivets" by tapping a small pointed tool on the reverse side of Sheet Stock, Code SHSC–1 which gives a raised rivet on the exposed surface.

A crazed surface for period layouts is achieved by laying a THIN coat of solvent on the surface and allowing it to "etch." Time required will vary, so try it on scrap first. Materials can be knicked and scribed with woodworking or metalworking tools to achieve special effects. By doing a little experimenting, you will have the fun of creating your own desired details.

Most of all, ENJOY working with the products of –

PLASTRUCT, EMA
Scale Model Plastic Structurals
74A THE CENTRE, FELTHAM, MIDDLESEX

OTHER PLANS AVAILABLE

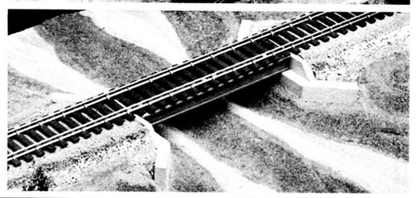
CONCRETE OVER/UNDER PASS

An authentically engineered and scaled Elevated Simple Span for overcrossings or simply to enhance your layout. Drawings are complete to scale and NMRA standards contain instructions, parts list, helpful suggestions and tips to aid in authentic duplication.

AND BEAM BRIDGE

Easy-to-build Simple Span that will add interesting detail to a layout. Or, use it as a display base for cars you build. Fully engineered drawings, parts list, tips on detailing for authenticity.

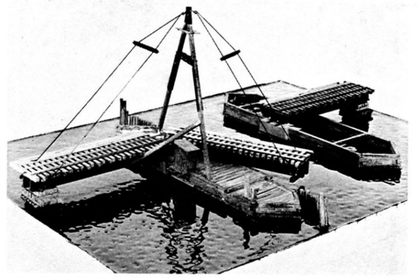
Code No. PL-1 Price, 20p



MOVING BRIDGE

This *real* drawbridge, built over the Christina River in Delaware, is part of the Pennsylvania RR (Delmarvia Div.). The oldtime bridge (now abandoned) opened horizontally by means of a central pivoting system. The interesting A-frame tower structure supports the span while it moves. If you're ambitious you can develop a way to actually make it open and close automatically. A scratchbuilder's dream of an authentic bridge with character, and a challenge to your detailing expertise! Plan shows material breakdown for all railroad gauges.

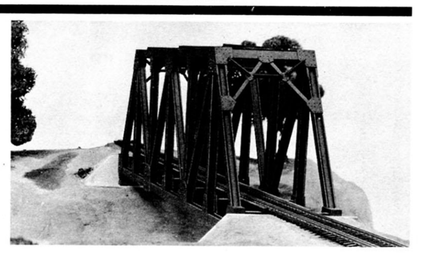
Code No. PL-7 Price, 20p

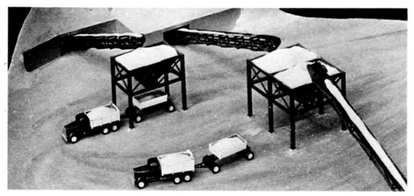


TRUSS BRIDGE

For the more sophisticated scratch builder, yet simple enough for the "tin-hatter." Fully engineered drawings to scale, parts list, and instructions. Also included are easy, quick detailing tips for more authenticity.

Code No. PL-2 Price, 20p





GRAVEL LOADING FACILITY

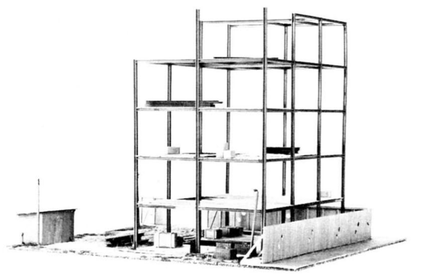
Adaptable to train layouts by running track underneath hoppers, or use it with trucks as an interesting layout accessory. Completely engineered plans include suggestions for adapting, instructions for building and detailing for authenticity, and other construction tips.

Code No. PL-3 Price, 20p

TRANSFER DOCK

No layout is complete without freight facilities. This Transfer Dock plan will accommodate scale track for loading, unloading, piggy-back shipments. Shown is the dock in the building stage. Plans give detail for completion to a carefully engineered realistic warehouse. Instructions are included, plus parts list and suggestions for finishing and detailing.

Code No. PL-4 Price, 20p



SKYSCRAPER FRAMING

Graceful, soaring architecture is today's profile of our great cities, and this skyscraper in the framework stage lends a very interesting dimension to any layout. The fun is in the "real building" feeling, as you work with miniature girders, columns, and beams all perfectly shaped to scale.

Code No. PL-6 Price, 20p