Wooden Models – By David Gray

Anyone who knows me will immediately know that this is not my subject. I used to glue Airfix kits together when I was twelve, but I would not call that 'modelling'. I came across these wooden, WWII plans and models recently and wanted to find out more about them. I have merely scratched the surface here, but I learned something in the process and it has got me thinking about how I could take my interest in this further.

Above, a model Hawker Typhoon by Silverwings using a Grace Airplane plan.

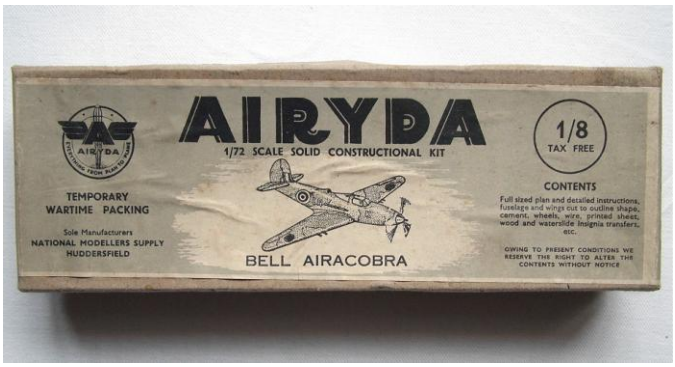
The evolution of the British wooden Aircraft Identification model is a fascinating tale, intricately woven within the fabric of World War II history. The scale and magnitude of production during that time was immense, resulting in a vast array of variations and models. Such was the extent of production that it has become difficult to create a complete narrative amidst the sheer multitude of these wooden creations.

Many were made by serious modellers as part of their ongoing hobby. Others were constructed purely for recognition training taking place in the armed forces, Observer Corps, ATC, clubs, schools and other groups. A large number were constructed by children, mostly boys, either for the sheer fun of playing with a model of an aircraft they were seeing in the skies almost every day, or often, as part of exhibitions and competitions, held at various events, such as National Savings campaigns which were taking place regularly across the country.

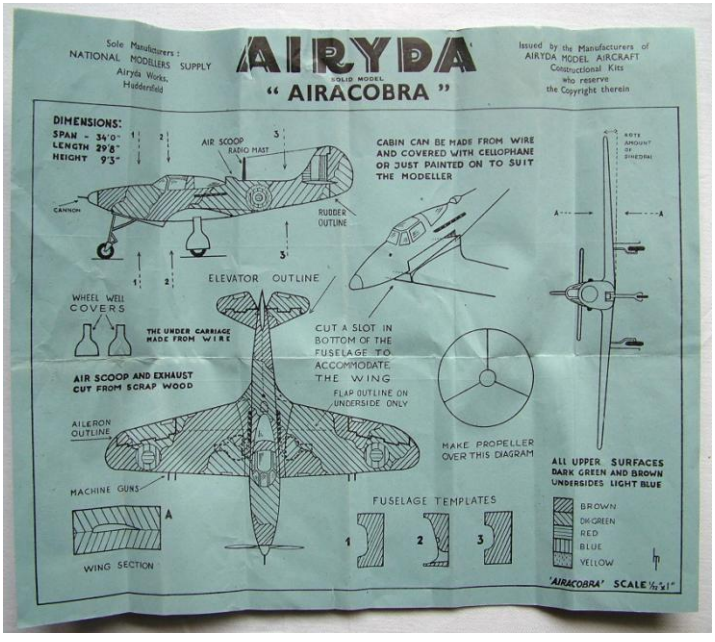
Numerous manufacturers, both renowned and lesser-known, contributed to the production of these ID models. These ranged from individual builders acquiring their own building materials and utilizing construction plans, to the advent of kits containing prefabricated wooden components. The assembly process involved the collective efforts of civilians of all ages across the country, from school children to adults. The further we look into this complex world of British wooden ID models; it becomes apparent that unravelling the complete story is almost impossible. The sheer quantity of production during that era makes it challenging to gain a comprehensive understanding of the variations, manufacturers, and historical context.

The models were made in various scales from wood including balsa, mahogany, fruitwood and probably any other type of wood people could get hold of. At the beginning of the war, they were made by anyone with a suitable sized block of wood and using construction plans. These were supplemented later with prefabricated wooden parts made to be assembled. They were offered by various manufacturers such as **ScaleCraft, AIRYDA, (1/72), Solid Scale Model (1/48), CMA, ASTRAL, TRUESCALE,** and many others.

Prefabricated models in boxes were made by companies such as **Earnshaw Bros and Booth**, **International Model Aircraft Ltd (FROG and PENGUIN)**, **James Walker, Whitley, Compass and others.**



The model kit *left*, by AIRYDA is a solid 1/72 scale construction kit of a Bell Airacobra. These model kits were popular with children and aircraft spotter groups during the war. They appear basic but could be fashioned into quality recognition models. The kit came with an instruction sheet, decal sheet, canopy, undercarriage wheels and airscrew. The box is marked 'Temporary Wartime Packing'.



Above, the contents of the box showing the folded plan, some pre-cut parts (which still required finishing), and some parts that had to be cut out and finished off. We can see the decals.

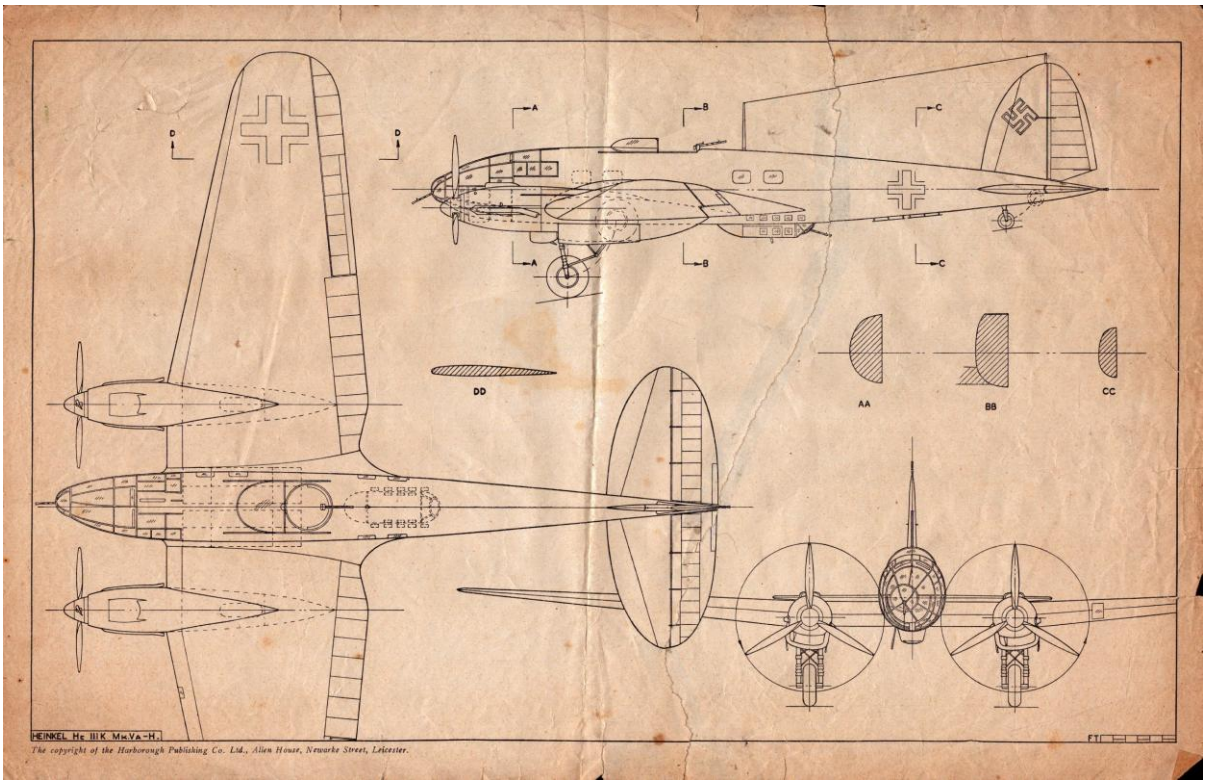
Left, the plan with instructions.

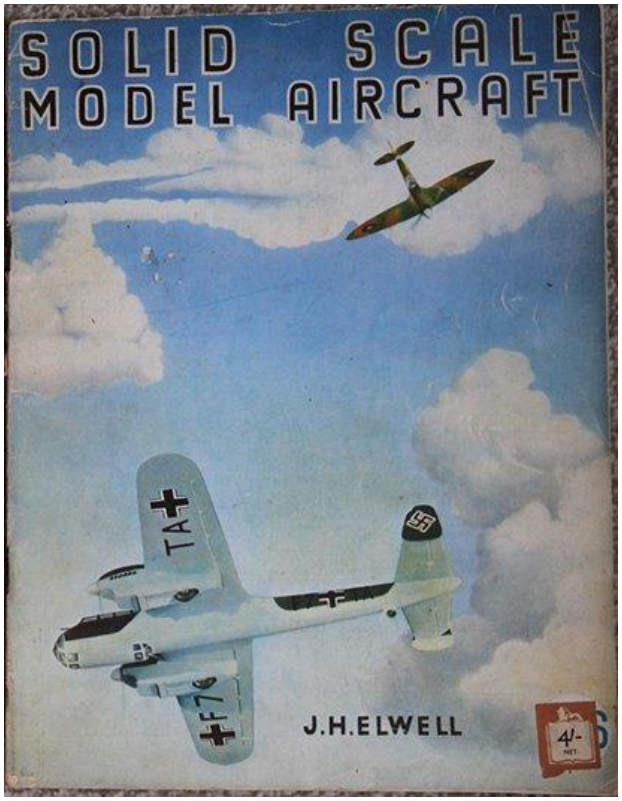
This model is a 'Solid' kit, meaning it was made from solid pieces of wood. Other models were made by gluing thin sections together and often these could fly, either with a rubber band or a small engine.

Solids were often used in the training of aircraft identification as they were more robust, and didn't need to fly. This plan looks to be quite professional compared with other AIRYDA plans I have seen. I have a number of different construction plans and most appear to have the instructions written on the original plan by hand and then reproduced for the kits.

The model of an Albacore on the *left*, by ASTRAL, is a solid, but as can be seen, it contains a plan by AIRYDA. I can only assume that some model manufacturers didn't make their own plans, but included those by others under licence. Modellers could just purchase plans, or sometimes they were included in modelling magazines. It appears that model making companies would make all the parts needed for these plans and sell them with the plans included, which meant that modellers did not have to source their own materials and also got decals in the kit.

What really piqued my interest in these model kits was that there were many made featuring enemy aircraft. I suppose this shouldn't be a surprise as they were made for identification purposes as well as just models to keep on the sideboard. But identification models could have been a specialised product. The idea of selling kits to the general public (and the public buying them), of models of aircraft that were shooting down their loved ones and dropping bombs on them too, seems a little strange. Clearly, through crashed examples and probably specifications issued by the Germans and captured documents, the British had a pretty good idea of how a German aircraft was built, and going by the number of model and plan manufacturers, there was no shortage of customers. *Below,* we can see a plan showing a Heinkel He 111 made by the Harborough Publishing Company.

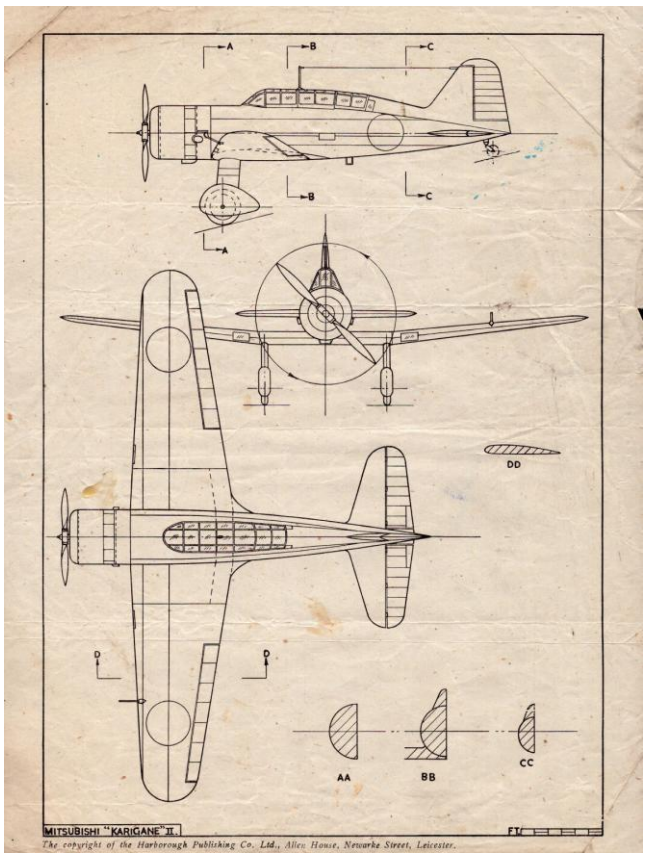




Harborough also published the **Solid Scale Model Aircraft** magazine, this copy is from 1941.

"It is as well before commencing the fascinating hobby of solid model aircraft building," they state, "to have some idea of the educational and constructional value of the pastime." It goes on, "No aero-modeller can claim to be really experienced until he has built several 'Solids' for inclusion in his collection."

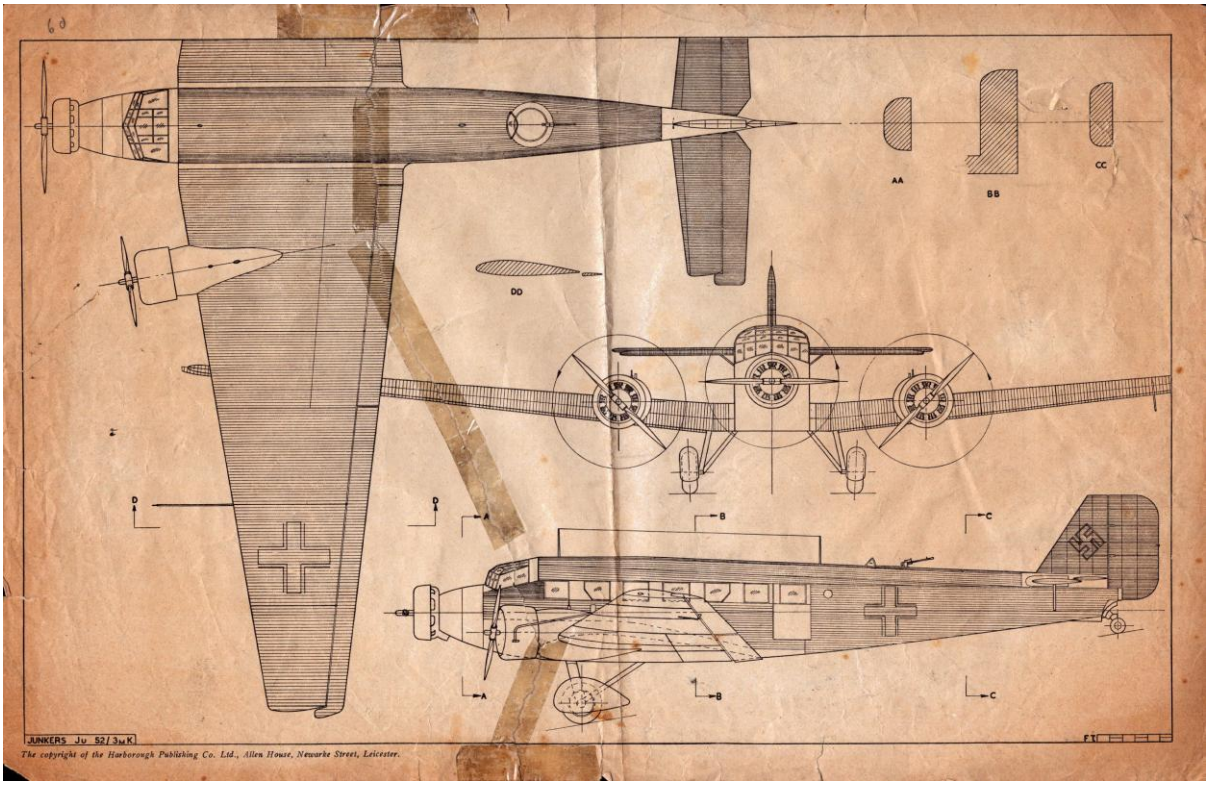
The magazine also gives a simple explanation of the difference between flying models and solids. "While flying scale models are extremely attractive, especially during the summer months, it is essential in most cases to sacrifice some of the full-size proportions, tail area, dihedral angle, undercarriage etc., to gain a greater degree of strength and stability. It is also impossible, for reasons that should be very clear, to include all the intricate details on a flying scale model which it is possible to imitate on the 'solids'." Flying aircraft models at this time were mainly covered in tissue paper for lightness and propellers were often elastic powered so accuracy in detail was out of the question.



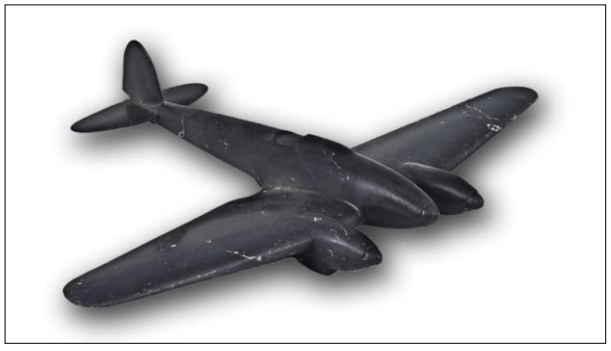
Harborough also produced plans of other Axis aircraft such as this MitsubishiKi-15 on the left.

The magazine went on, "At the time of writing our Empire, and in particular this small island home of ours, is passing through the greatest ordeal of its long and glorious history. The aircraft is playing a tremendous part in this ordeal. The air defence of the country...depends greatly on the speedy recognition of enemy aircraft, either by night or day...there have been many unfortunate errors, and some of these have led to loss of life. Only by absolute familiarity with general and detailed points which go to make up the general outline of different aircraft can success be achieved. We must be better trained than the enemy in this all-important work."

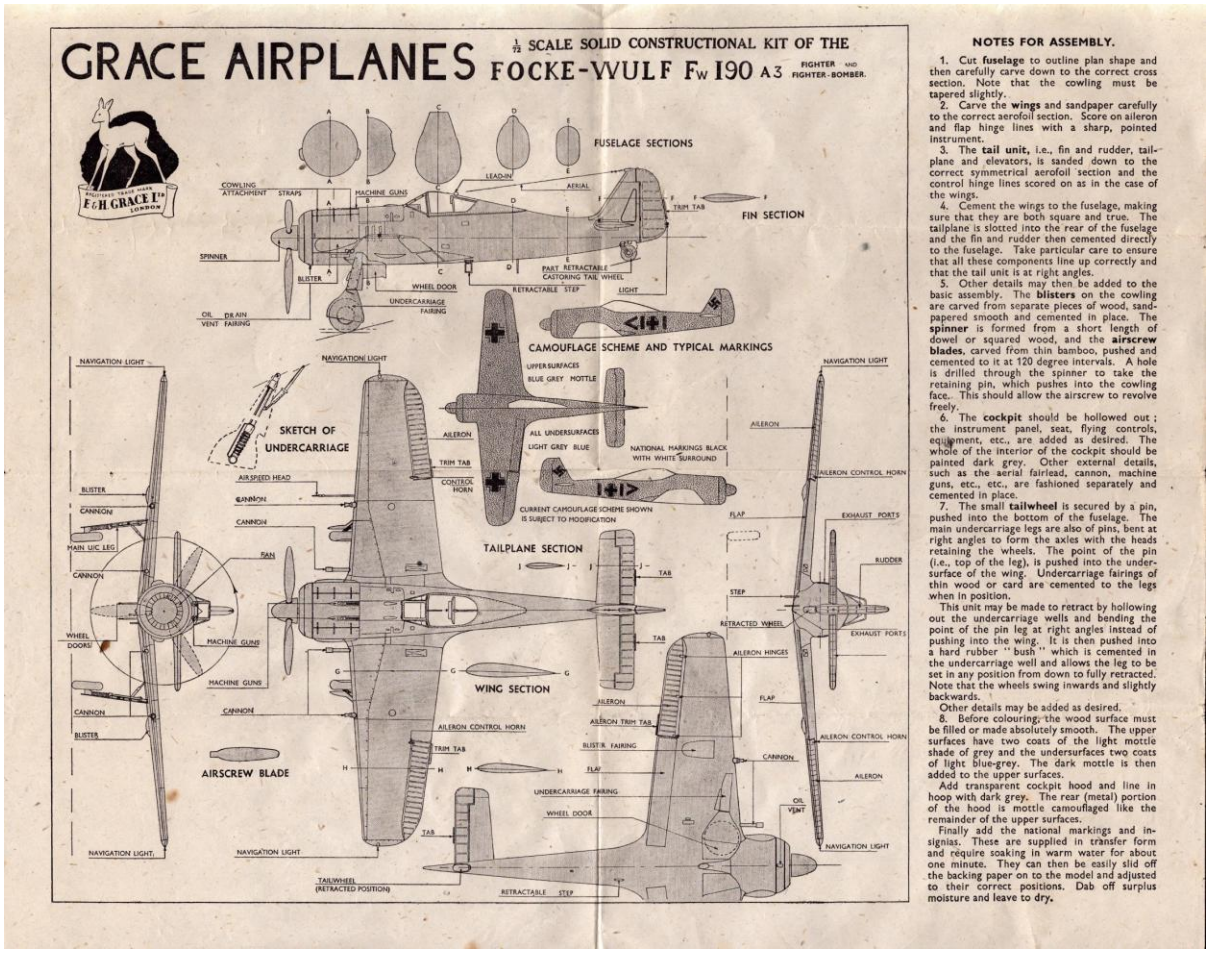
Below is another Harborough plan, this time a Junkers Ju 52/3m. Although the British public would not generally see these before the Germans embarked on their invasion of Britain, they were more likely to see them than the Mitsubishi on the previous page



It will be noted than some of these plans I have in my possession have been damaged and stuck together with tape. This would have been done at the time when the model was being built.



Above, we can see the finished models of the Harborough Heinkel He 111 and Junkers Ju 52/3m. These two models are painted black, presumably because they were used as silhouettes for recognition training. It is not usual to be able to see national markings on an aircraft high in the sky; otherwise spotters would know which country it was from by looking at the markings without having to identify the actual type. Also, both of these models have lost their propellers. These would not have lasted long through rough handling and they may never have been added as they would not be seen in the sky anyway.

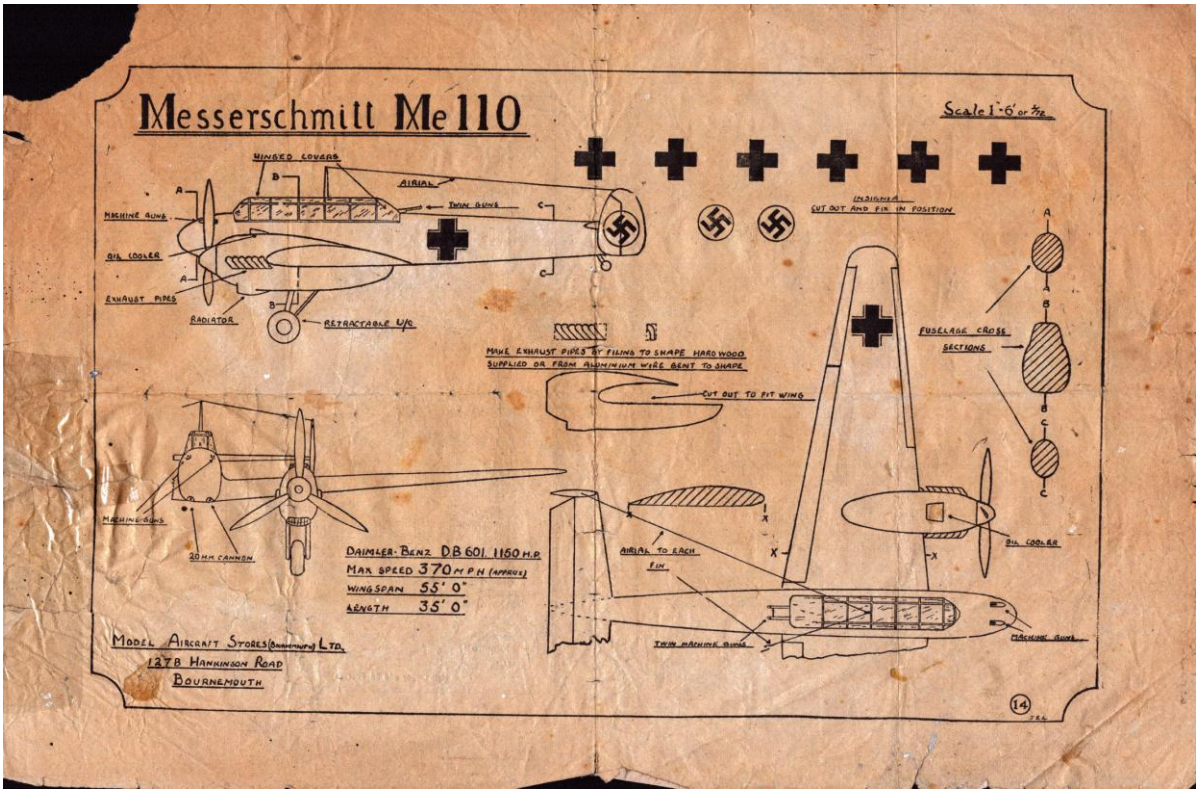


The 'Grace Airplane' plan *above* is a very detailed one of A Focke Wulf FW 190 A3. This came in an envelope (seen in the picture below), along with a small envelope containing a transparent plastic cockpit canopy, a recognition leaflet and a full description and history of the aircraft up to that time. The specifications of the aircraft are very detailed and it says that some of it comes from photos and data extracted from Axis technical publications. It goes on to say that "Several Fw 190 A-3s have been shot down in this country and one made a forced landing and was practically undamaged. This in the summer of 1942. Overhauled and repaired, it has been test flown and compared in performance and mock combat with our own standard fighters."

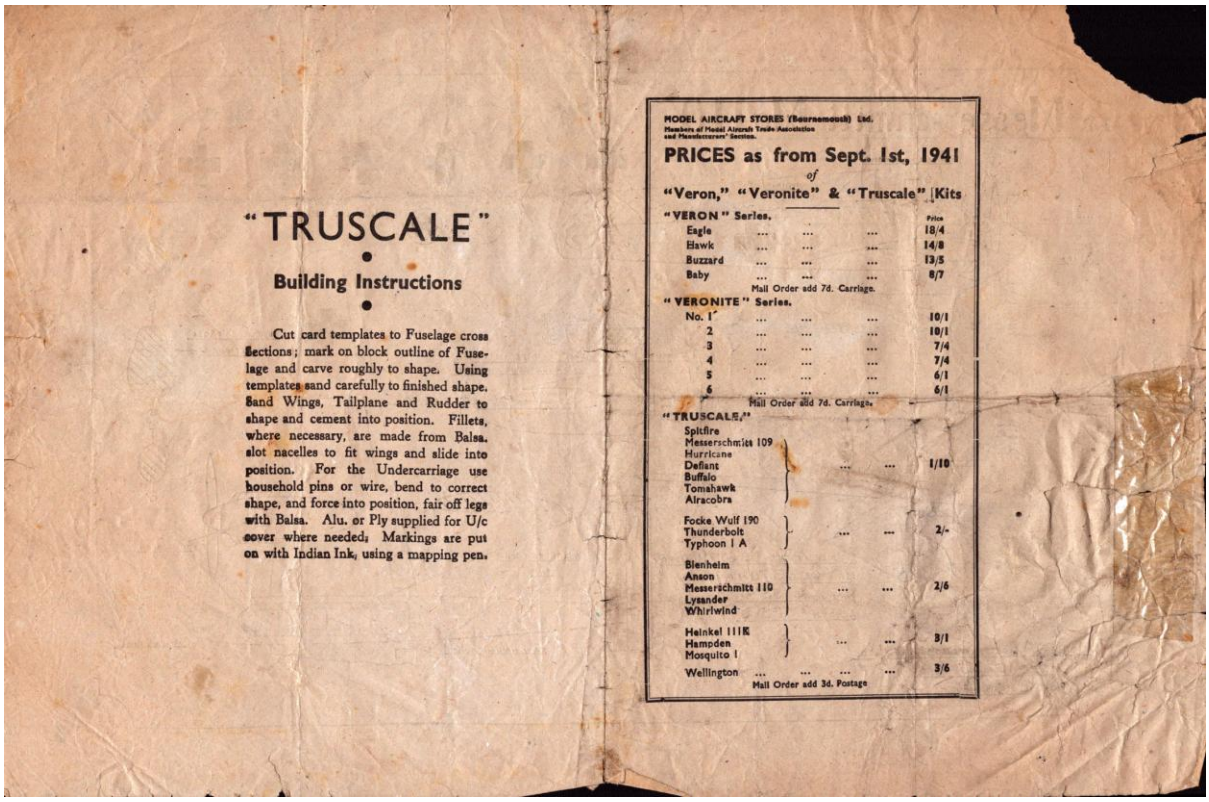
It goes on to say that "Focke Wulf 190 A-5s are now coming into service, differing only in detail and type of engine. Very little accurate information is yet available concerning these types." Clearly this proves that this is a wartime model kit, although we don't know if it came with parts or just the documentation.

Below left, we can see a completed model of a Focke Wulf Fw 190, and below right, an example of a Me 110 as set out in the plan further down the page.

The next plan below is one by Truscale and shows a Messerschmitt Me 110. This plan was published in 1941 as the text on the reverse explains (see next page). There is also a full list of all the models Truscale were selling at that time. These plans came in a kit along with card templates on which were the outlines of the various sections which had to be cut out and marked up on blocks of wood that came with it. Once the wooden sections had been cut to the shape of the templates, they were glued together. It was advised that household pins or wire should be used to make the undercarriage. The national markings should be drawn on with Indian ink using a mapping pen. The text on this plan appears to have been written on by hand on the original plan before printing.



Below, the reverse of the Truscale plan showing building instructions, prices with date, and a list of available models.



"TRUSCALE"

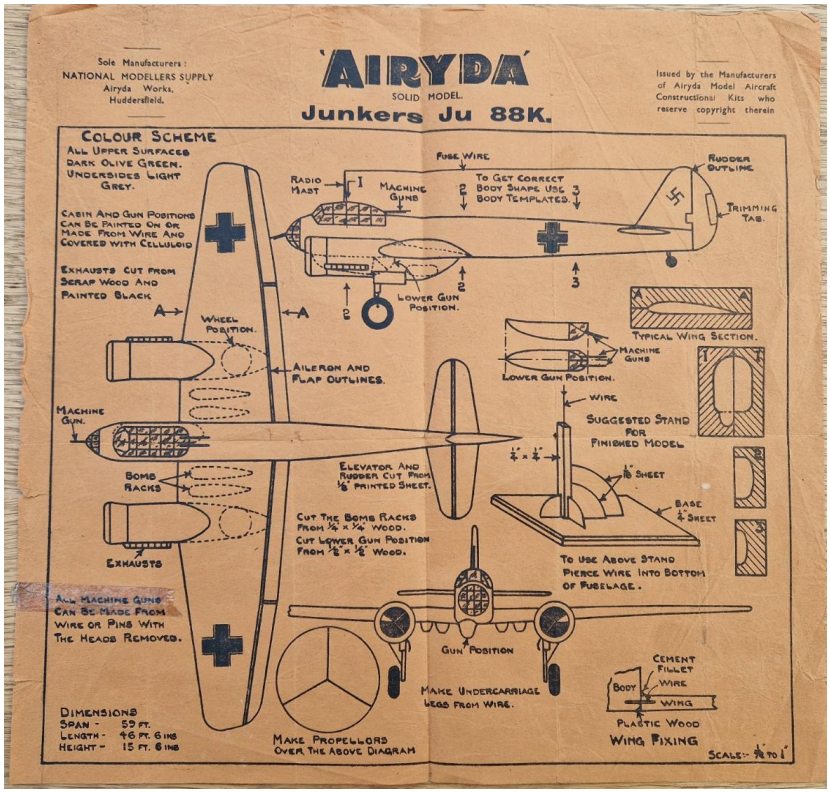
Building Instructions

Cut card templates to Fuselage cross Sections; mark on block outline of Fuselage and carve roughly to shape. Using templates sand carefully to finished shape. Sand Wings, Tailplane and Rudder to shape and cement into position. Fillets, where necessary, are made from Balsa. slot nacelles to fit wings and slide into position. For the Undercarriage use household pins or wire, bend to correct shape, and force into position, fair off legs with Balsa. Alu. or Ply supplied for U/c cover where needed. Markings are put on with Indian Ink, using a mapping pen.

MODEL AIRCRAFT STORES (Bournemouth) Ltd.
Members of Model Aircraft Trade Association and Manufacturers' Section.

PRICES as from Sept. 1st, 1941
of
"Veron," "Veronite" & "Truscale" Kits

	Price
"VERON" Series.	
Eagle	18/4
Hawk	14/8
Buzzard	13/5
Baby	8/7
Mail Order add 7d. Carriage.	
"VERONITE" Series.	
No. 1	10/1
2	10/1
3	7/4
4	7/4
5	6/1
6	6/1
Mail Order add 7d. Carriage.	
"TRUSCALE."	
Spitfire, Messerschmitt 109, Hurricane, Defiant, Buffalo, Tomahawk, Airacobra	1/10
Focke Wulf 190, Thunderbolt, Typhoon I A	2/-
Blenheim, Anson, Messerschmitt 110, Lysander, Whirlwind	2/6
Heinkel 111K, Hampden, Mosquito I	3/1
Wellington	3/6
Mail Order add 3d. Postage	



This next model *Left*, is by AIRYDA and these 1/72 Solid kits came with everything. This kit is a Junkers Ju 88K.

The instructions are on the reverse of the plan. The fuselage was already cut to size as a block, but had to be filed and sanded to get the curvature. The wings were the same and needed tapering. Modellers were told to make sure they got the correct dihedral! There were two separate engine nacelles and the tail unit had to be cut from a printed sheet. The cockpit canopy should be painted white with black lines

representing the framework. Interestingly builders were advised that should they prefer to build a transparent cabin, sufficient celluloid and wire was enclosed as long as wartime conditions did not interfere. This is good confirmation that the models are of wartime date. The models came with transfers which were applied after the model was painted.

The reverse of the plan *below*, shows the instructions and some basic diagrams to help with the build. At the bottom we can see a list of all the plans that were available and their prices.

AIRYDA

BUILDING INSTRUCTIONS FOR 1/72 SOLID SCALE MODELS

FUSELAGE

The Body has already been cut to side view as shown in Fig. 1 by the black dotted line, and will only require filing and sanding to get the correct shape. It is suggested to begin by drawing first the central line along the top and belly of the fuselage and to trace the plan view to the upper surface of the block. This should give you a lead when commencing work. In later stages use the templates cut from the plan to check the cross section at the given points.

Prepare then for fitting the wings. A hint as to which one of the various methods is thought most suitable for your particular model will be found on the plan.

WINGS

The Wings have been cut to plan view and require tapering (on most models) and sanding down to aerofoil section as shown on the plan. When glueing the wings together be careful to get the correct dihedral when viewed from the front. The fillets (if any are required) are made from plastic material such as Plastic Wood, Glitter Wax, etc.

Fig. 2 shows a wing arrangement used on most low-winged monoplane models with the wings being fitted into a groove cut into the bottom of the fuselage. It is left to the modeller to decide whether the part of the wings sunk into the body should be left in their original shape until fitted into the groove (with V cross-section) or whether it is preferred to finish the whole of the wings to aerofoil section and shape the groove accordingly. In our illustration (Fig. 2) both methods are shown, the starboard wing being left unfinished at the root.

NACELLES

Nacelles, holding the Motor Units of multi-engined 'planes are built in the same way as the fuselage. Two alternative methods how to fit them into the wing can be seen in Fig. 3. You may either carve away part of the finished nacelle or indent the wing.

Fig. 1

Fig. 2

Fig. 3

Fig. 4

Fig. 5

TAIL UNIT

The Tail Unit of most 'AIRYDA' Solid Models is to be cut from the printed sheet supplied with the Kit. The single parts want sanding down until the proper cross section (with a knife-edged trailing edge) is accomplished. A typical Tail Unit is shown in Fig. 4.

CABIN

The Cabin is included in the Body as supplied in the Kit; it will be painted white with black lines representing the framework.

Should you prefer to build a transparent cabin, sufficient celluloid and wire is enclosed as long as wartime conditions do not interfere. A ready made cockpit cover will be provided with as many models as possible.

UNDERCARRIAGE

This is usually formed from wire; make the legs directly over the plan so as to get the correct shape and length. Fig. 5 is showing two variations of a similar type of undercarriage. Wheel well covers (if any are required) can be cut from stiff paper. The wheel wells themselves can be painted on with black paint or gouged out with a sharp knife.

FITTINGS

Wireless masts, airspeed indicator tubes, tail skid, etc., can be made from piano wire; exhaust pipes, radiators, cowl bumps, etc., can be made from scrap wood. These must be carefully sanded before fixing in position.

PAINTING

Before commencing to paint make sure the model is in alignment as it cannot be altered once it has been painted. Next use medium grade of sand paper and finish off with fine so as to get a perfectly smooth surface on which to paint. Commence painting by putting on the lightest colour first. The model may require several coats of paint, sanding between each. The model is now ready for putting on any external details such as insignias, Wireless Mast, etc.

TRANSFERS

To fix the transfers, soak in water until it is possible to slide the transfer off the backing paper on to the model. Make sure the transfer is in the correct position before you fix it on because you will not be able to remove it afterwards.

THE FOLLOWING PLANS ARE AVAILABLE

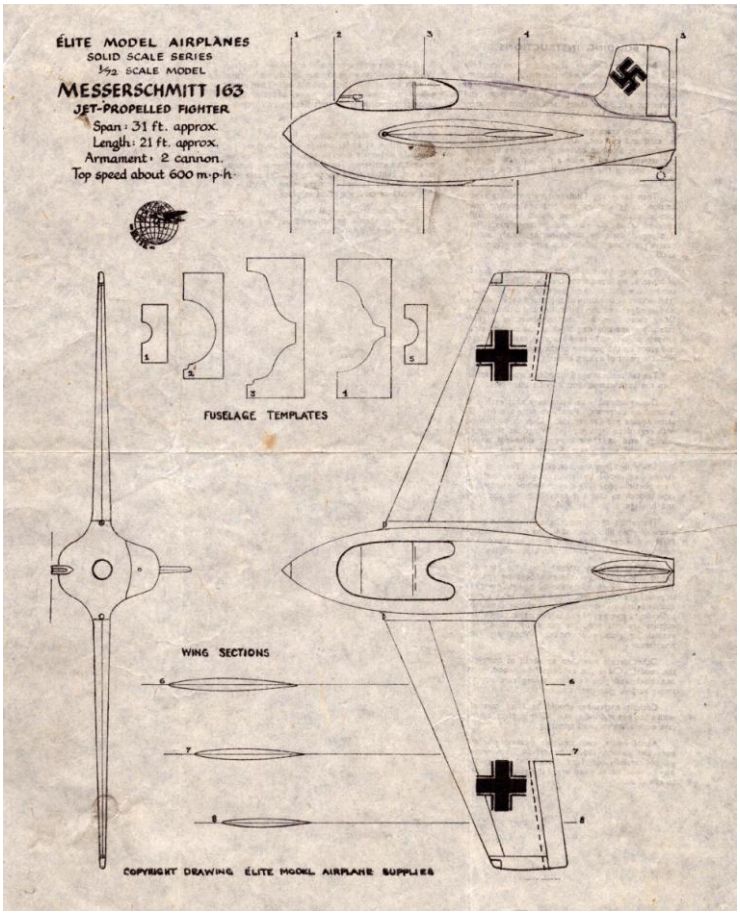
Hawker Hurricane	4d.	I-18 Russian	4d.	Beaufighter	6d.	Dornier Do 217	6d.
Westland Lysander	4d.	I-16 Rata	4d.	Fairey Albacore	6d.	Messerschmitt Me 110	6d.
Supermarine Spitfire VC	4d.	Grumman Wildcat	4d.	Avro Anson	6d.	Junkers Ju 88K	6d.
Curtiss Tomahawk	4d.	Grumman Martlet	4d.	Lockheed Hudson	6d.	Whitley Bomber	9d.
Curtiss Kittyhawk	4d.	Heinkel HE 112	4d.	Lockheed Lightning	6d.	Consolidated Catalina	9d.
Bell Airacobra	4d.	Messerschmitt Me 109F	4d.	Westland Whirlwind	6d.	Vickers Wellington	9d.
Miles Master II	4d.	Focke Wulf 190	4d.	Douglas Boston	6d.	Junkers Ju 52/3M	9d.
North American Mustang	4d.	Mitsubishi S-00	4d.				

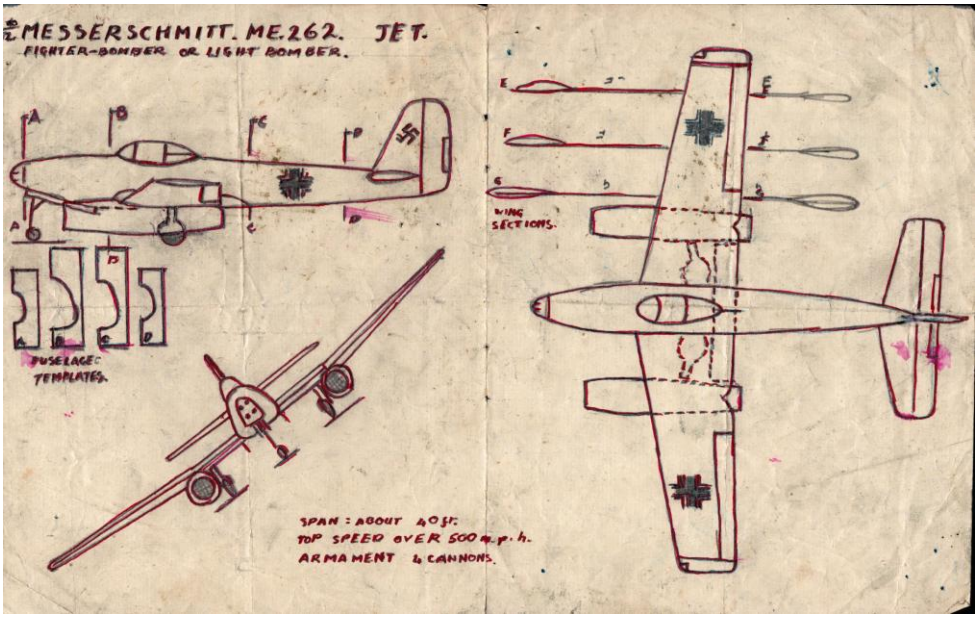
NATIONAL MODELLERS SUPPLY - HUDDERSFIELD

The two plans on the next page are very interesting. The first is an Elite plan of the Messerschmitt Me 163, which they called a Jet-Propelled Fighter. The plan is very basic and I don't know if it came

with parts or this was just a plan and parts had to be obtained and cut to shape. It is possible that this plan was published before the end of the war, as this aircraft was rocket propelled not a jet, and this may not have been common knowledge before hostilities ceased.

The second plan shows a Messerschmitt Me 262 Jet Fighter and is completely hand drawn. We don't know if it was copied from another, published plan, or whether a modeller wanted to build this type but no plan was available at the time.





I hope I have provided some information here that most people were not aware of. Any modellers out there please forgive me for any schoolboy errors. This is a new area for me and if I have created any ‘howlers’, please let me know and I will make the necessary alterations.

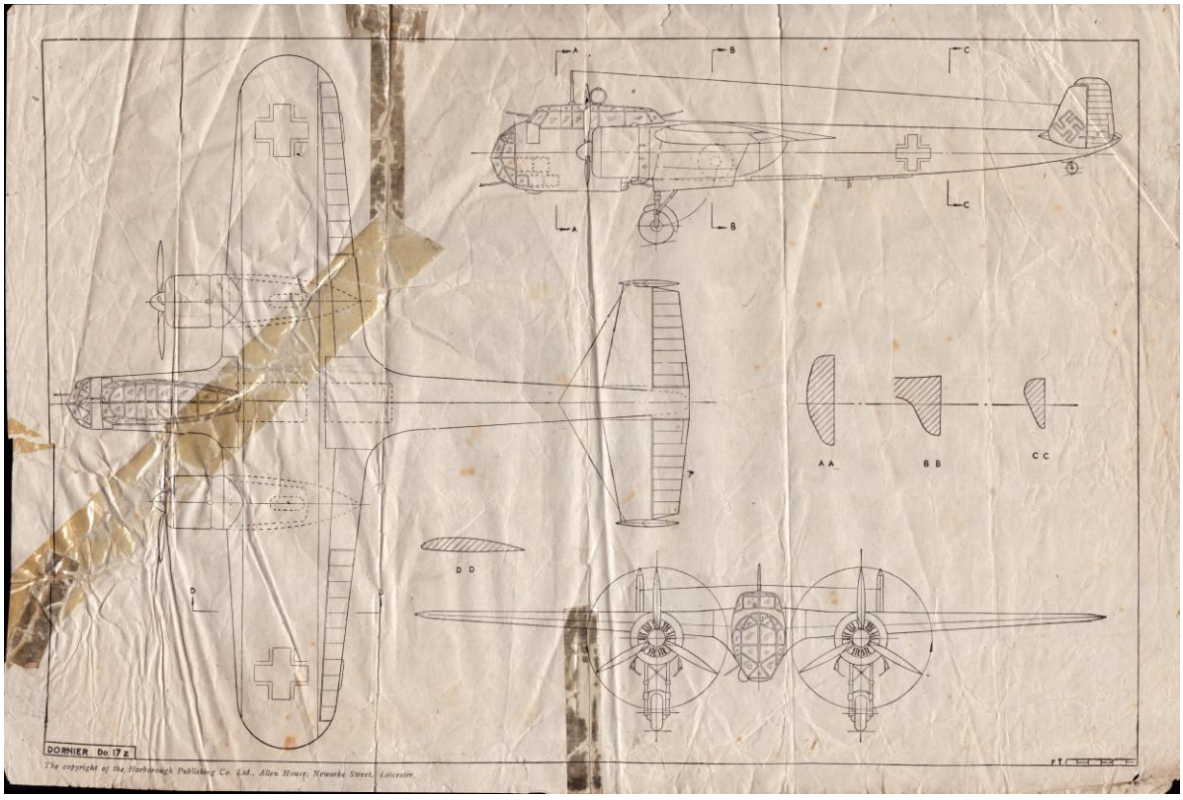
I said at the beginning I was thinking about how I could take my interest further. What I am thinking is should I buy a kit? There are still many unmade WWII boxed kits available from which I could build a model. This would leave me with a nice finished aircraft model, but of course the originality of the kit will have been destroyed. Not sure if I should do this, what do you think?

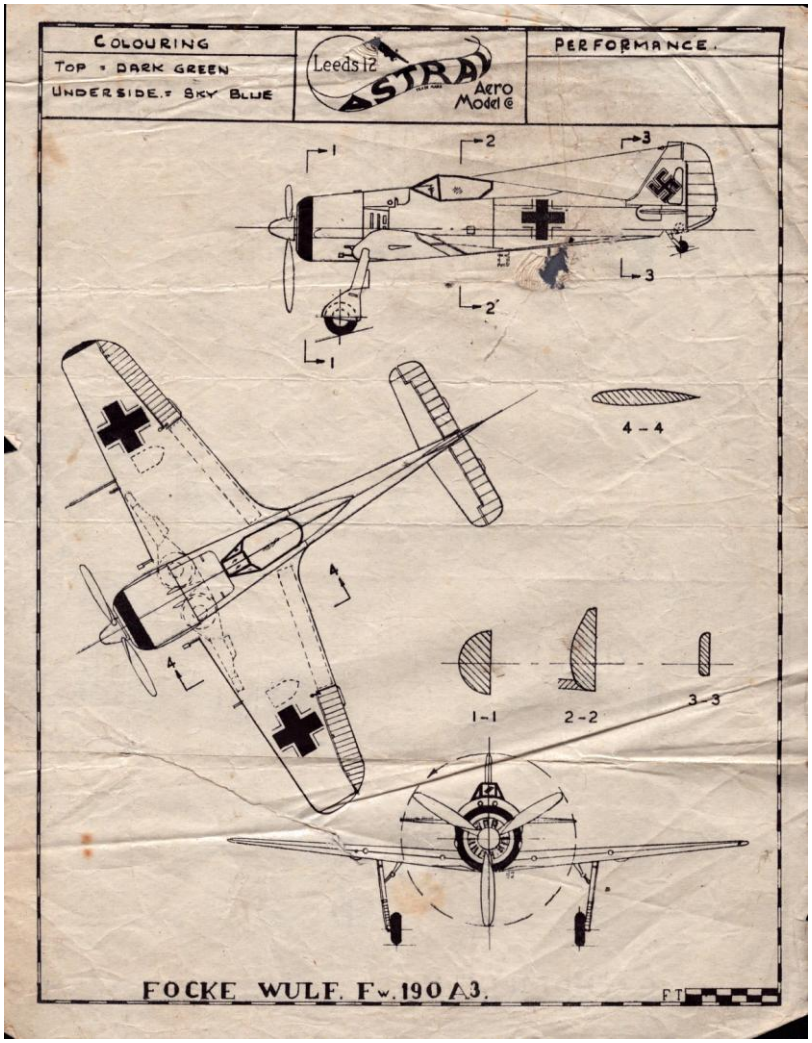
I have a series of model plans that were issued by the National Savings Committee during WWII for people to use in building models to display at savings events. These include Aircraft, ships and vehicles. I will write an article on these in the near future.

I will end with three more plans from my collection:

Below, a Harborough produced Dornier Do 17 with some taped, wartime damage repair.

On the following pages are an Astral Aero Model Co. Focke Wulf Fw 190, and an Airyda Junkers Ju 52/3m.




COLOURING
TOP = DARK GREEN
UNDERSIDE = SKY BLUE
Leeds 12
ASTRA
Aero Models
PERFORMANCE.
1
2
3
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4
4
1-1
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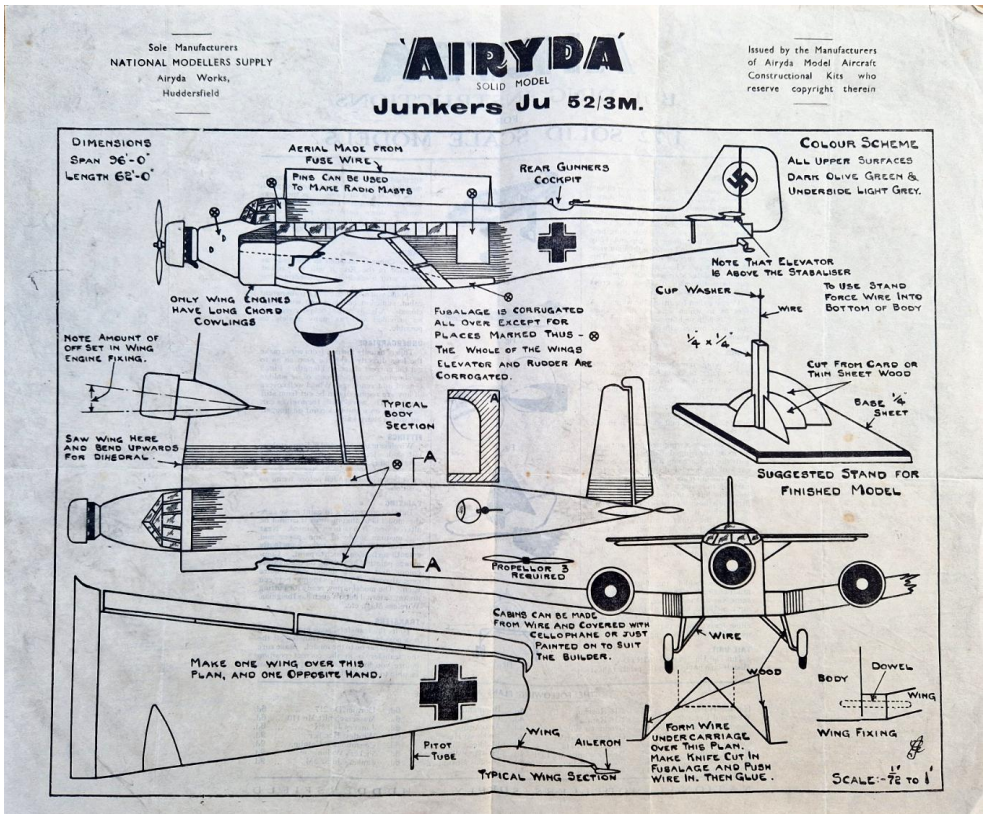
FOCKE WULF. Fw. 190 A3.


Sole Manufacturers
NATIONAL MODELLERS SUPPLY
Airyda Works,
Huddersfield
'AIRYDA'
SOLID MODEL
Junkers Ju 52/3M.
Issued by the Manufacturers of Airyda Model Aircraft Constructional Kits who reserve copyright therein
DIMENSIONS
SPAN 96'-0"
LENGTH 62'-0"
AERIAL MADE FROM FUSE WIRE
PINS CAN BE USED TO MAKE RADIO MASTS
REAR GUNNERS COCKPIT
COLOUR SCHEME
ALL UPPER SURFACES DARK OLIVE GREEN & UNDERSIDE LIGHT GREY.
NOTE THAT ELEVATOR IS ABOVE THE STABALISER
CUP WASHER
WIRE
TO USE STAND FORCE WIRE INTO BOTTOM OF BODY
ONLY WING ENGINES HAVE LONG CHORD COWLINGS
FUSALAGE IS CORRUGATED ALL OVER EXCEPT FOR PLACES MARKED THUS - ⊗ THE WHOLE OF THE WINGS ELEVATOR AND RUDDER ARE CORROGATED.
NOTE AMOUNT OF OFF SET IN WING ENGINE FIXING.
TYPICAL BODY SECTION
A
A
SAW WING HERE AND BEND UPWARDS FOR DIHEDRAL
1/4 x 1/4
CUT FROM CARD OR THIN SHEET WOOD
BASE 1/4 SHEET
SUGGESTED STAND FOR FINISHED MODEL
PROPELLOR 3 REQUIRED
CABINS CAN BE MADE FROM WIRE AND COVERED WITH CELLOPHANE OR JUST PAINTED ON TO SUIT THE BUILDER.
WIRE
MAKE ONE WING OVER THIS PLAN, AND ONE OPPOSITE HAND.
WOOD
BODY
DOWEL
WING
WING FIXING
PITOT TUBE
WING
AILERON
TYPICAL WING SECTION
FORM WIRE UNDERCARRIAGE OVER THIS PLAN. MAKE KNIFE CUT IN FUSALAGE AND PUSH WIRE IN. THEN GLUE.
SCALE - 1/72 TO 1'