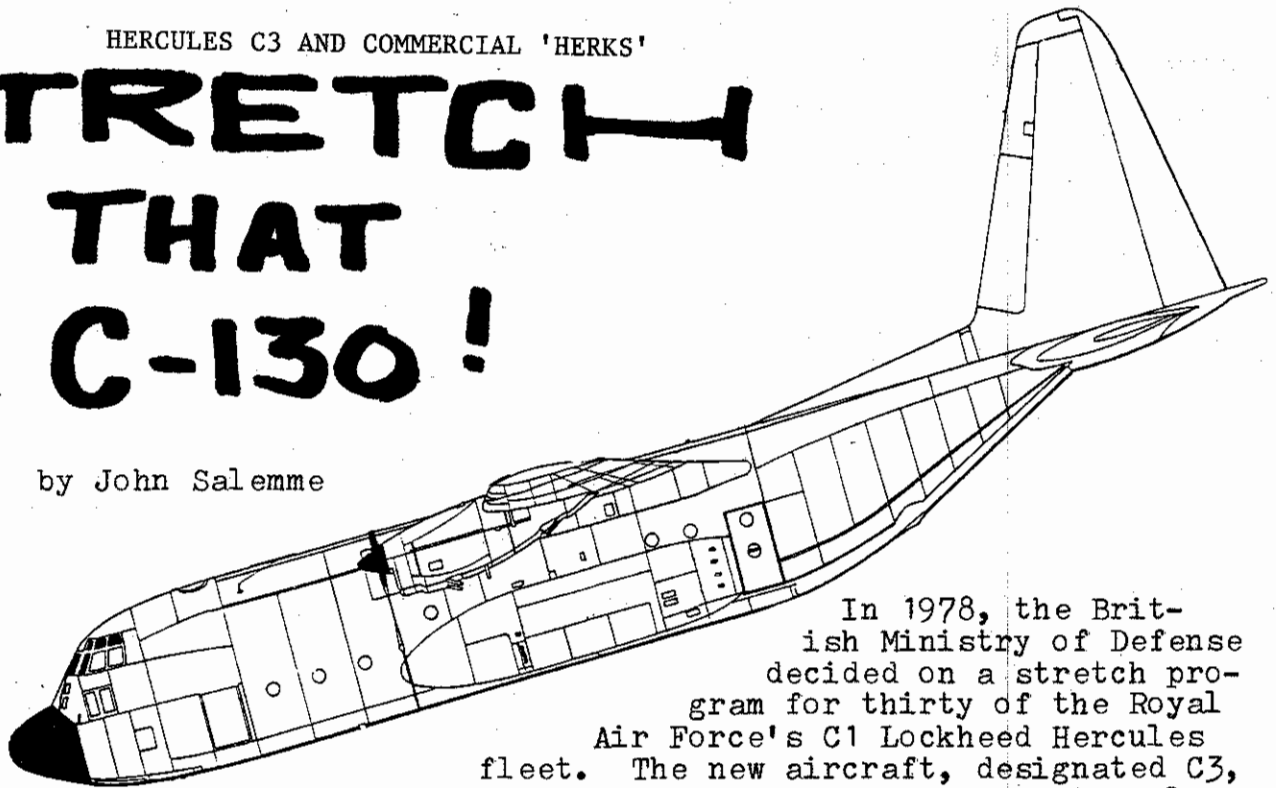


# STRETCH THAT C-130!

by John Saleme



In 1978, the British Ministry of Defense decided on a stretch program for thirty of the Royal Air Force's C1 Lockheed Hercules fleet. The new aircraft, designated C3, differ from the C1 model in its having two plugs inserted in the fuselage, one located in front of the wing the other located to the rear of the wing. The added length to the aircraft totals some 13 feet, 4 inches. This allows the aircraft to carry 40% more freight or increase the total troop carrying capacity to 128 from 92.

The first of these planes were converted by the Lockheed Company, and the Royal Air Force took redelivery at the Lockheed-Georgia (Marietta) on December 11, 1979. This first plane served as the test model and the remaining aircraft were then converted by Marshalls of Cambridge. Now that these planes are completed and in service, the RAF has the equivalent of ten NEW standard C1 aircraft without the need of any increased personnel or extra airfield facilities.

## THE COMMERCIAL HERCULES

The most successful transport plane in history, the DC-3/C-47, achieved much of its popularity and longevity through military production and civilian utilization. Mindful of the lessons in this, the engineers at Lockheed decided to submit the C-130 for civilian certification in the mid-1960's. This would ensure continued use of retired military aircraft and might possibly open new markets for sales of a civilian version of the C-130.

The first civil version of the Hercules, the model 382-L-100, was subsidized in large measure by the sub-contractors of the C-130 systems, who donated their products to build a company demonstrator a/c. On April 20, 1964, the plane made its first flight. It was later modified to an L-100-20 and flew with a number of airlines before being sold to the Philippine government. Lockheed sold twenty-one L-100's, twenty-five L-100-20's, and has to date sold thirty L-100-30's, which make the plane an unqualified commercial success.

With every stretch, the Hercules becomes more competitive since its cost per ton-mile has begun to better that of small and medium sized pure jets. The future of the Commercial Herk may be in the dash 50

model proposed by Lockheed in 1979. Modifications on this model include 501-D22E engines, a new landing gear fairing (similar to those seen on the C-141), and the insertion of a 20 foot plug in the forward fuselage and a 16 foot plug in the rear fuselage; this would put the plane's overall length at 133 feet. The Dash-50 is aimed at regional cargo transport operators that need wide body capacity to interconnect with smaller airports.

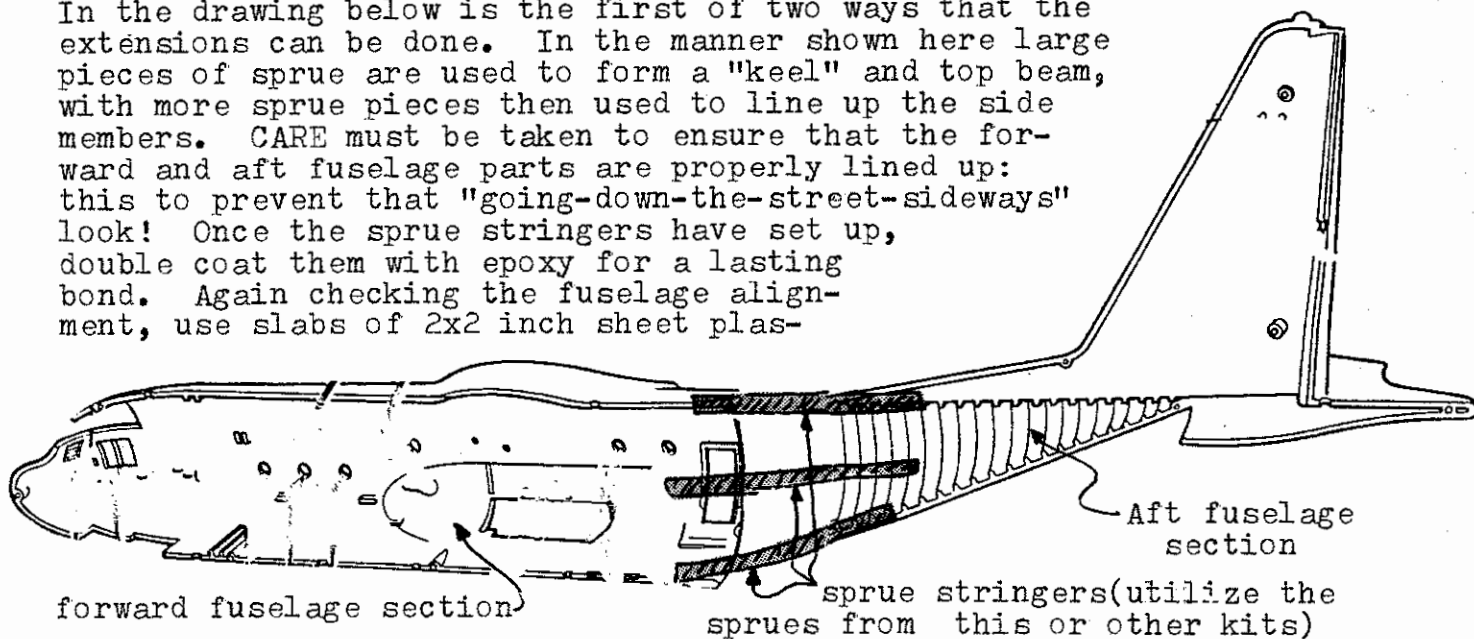
Another possibility for the future is the Model 400, a twin engine variant of the C-130. It would retain the basic L-100 fuselage and utilize the Allison 502-D22D turboprop engines on a shorter wing. Development of the Model 400 was given the go-ahead in 1980 and the first plane<sup>was</sup> in 1982. Commonality of these follow-on versions to the earlier models of the C-130/L-100 series should ensure use of the Hercules in commercial ventures well into the next century.

### THE CONVERSION....

Kit availability poses no problem whatsoever. Also, you have a choice of models in 1/200th, 1/72nd, and even 1/48th scales. However, anyone wishing to tackle the Testors 1/48th Herkie has my undying admiration for the kit is already a monster....and you wanna make it bigger?!

A firm known as "DB MODEL" is advertising in the current Squadron mail order flyers as having for sale a resin conversion kit which consists of four cast resin plugs to turn the Testor or Airfix 1/72nd C-130 kits into the L-100 or C3 versions. These four resin plugs retail for \$28.00. The way mentioned below will cost you zip, zero, nada, you get the picture.

In the drawing below is the first of two ways that the extensions can be done. In the manner shown here large pieces of sprue are used to form a "keel" and top beam, with more sprue pieces then used to line up the side members. CARE must be taken to ensure that the forward and aft fuselage parts are properly lined up: this to prevent that "going-down-the-street-sideways" look! Once the sprue stringers have set up, double coat them with epoxy for a lasting bond. Again checking the fuselage alignment, use slabs of 2x2 inch sheet plas-



tic to begin a 'planking'-like covering of the stringers. Let each piece overlap onto the next. Use glue freely. When this part of the exercise is completed, set the unit aside to dry COMPLETELY for at least a week.

If your creation looks anything like mine did, then you can start using your Numbr.11 X-acto blade to hack some of the surplus away. When this is done, sand, file, and fill until the fuselage half/plug joints are smooth. Then finish the kit following the kit instructions.

The second way of making this conversion is the easiest; it's also going to cost some money. Go out and purchase a second kit and use the sections from the 2nd fuselage for the needed extensions. There is actually a third way to make this extension which

involves the cutting and carving of balsa wood blocks to form the necessary plugs. In this third method you get to use epoxy, balsa sanding filler, sanding, balsa sanding filler, more sanding, and yet MORE balsa sanding filler....very tedious...not to mention messy! Use this method only if you're desperate.

In this second method start construction by following steps No. 1 through No. 7 in the kit instructions. These steps will be identical for both the Testors and Airfix kits in 1/72nd. One thing to immediately point out is that the rear cockpit bulkhead(see Fig. 1) has to be revised. Go ahead and detail the cockpit, if you want, and don't forget to add weight to the nose!

Since this conversion is a major fuselage alteration, the floor section in the rear of the plane was left out completely and the rear door was sealed shut. No doubt someone out there is already planning to say "the hell with that! I want MY doors open." All I have to say is-good luck.

Finish steps 9 through 12. Steps 13 and 14 should be left until the very last as these are for the installation of the external fuel tanks and the propellers.

Now is the time to start on the alterations to the front fuselage. One thing I must point out is that the accompanying drawings that show the cut lines are not, repeat NOT to scale. However, there should be no problem finding the cut lines for all are either on a panel line or within 'eyeball measure-

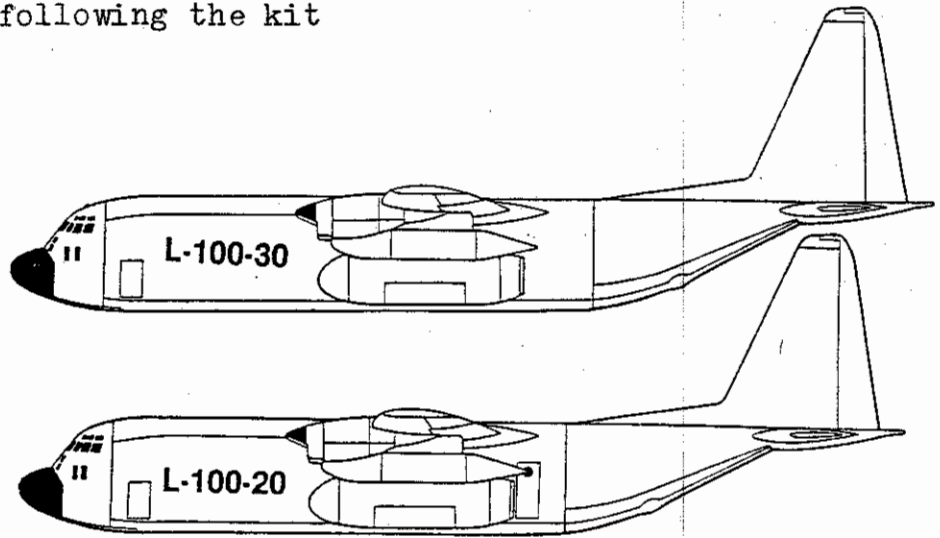
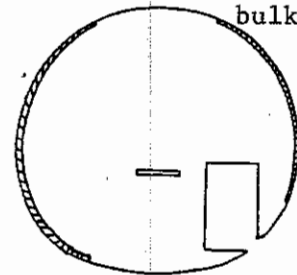


FIG. 1

Part 10: rear cockpit bulkhead



remove shaded areas of bulkhead to allow plastic sheet to protrude between the outside of the bulkhead and the inside of the fuselage wall.

ments' so that you can create a decently accurate aircraft.

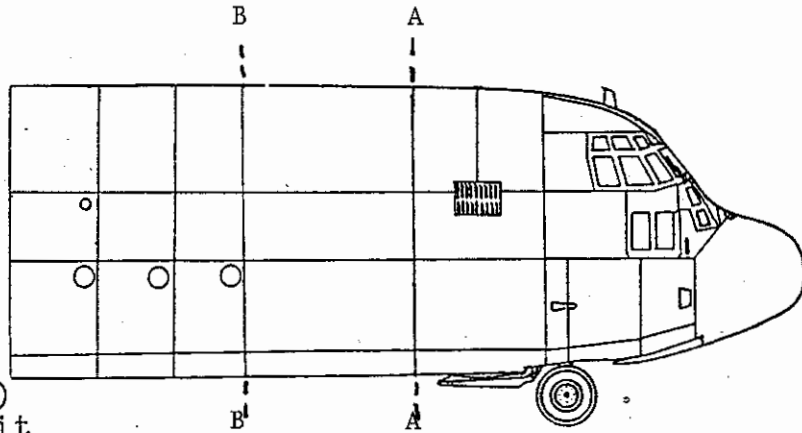
The first cut to the front fuselage involves a vertical saw cut right through the entire front fuselage at point A-A as shown in Fig. 2. The easiest way to accomplish this is to lay a one inch wide strip of masking tape on either side of point A-A, this gives good protection to the fuselage while you're cutting! Use the panel lines as a guide here and make sure the cut remains parallel all the way down.

FIG. 2

not to scale

This drawing shows the fuselage of our first kit

The drawing shows the lengthened fuselage. Section A-A/B-B is the installed plug(G-G/H-H) taken from our 2nd kit



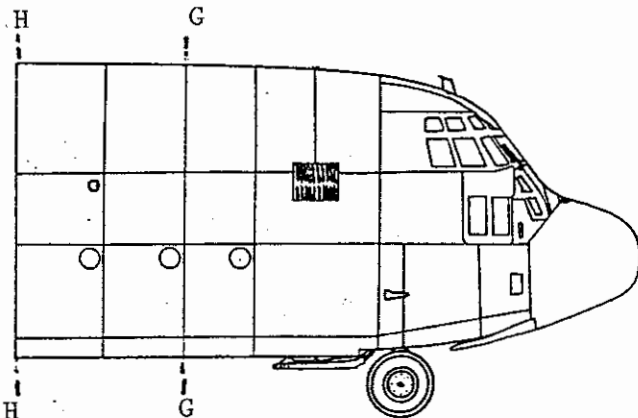
Now it's time to use that second fuselage in the second kit that we purchased. Cement the fuselage halves together and put the assembly aside to dry thoroughly. Once the halves are completely dry continue the sawing operation. This time you will make your saw cuts on both lines G-G and H-H(see Fig. 3)

FIG. 3

not to scale

Section H-H/G-G comes from our second a/c fuselage and will be attached to the forward section of our first fuselage at point A-A

The drawing shows the fuselage as it comes straight out of the box



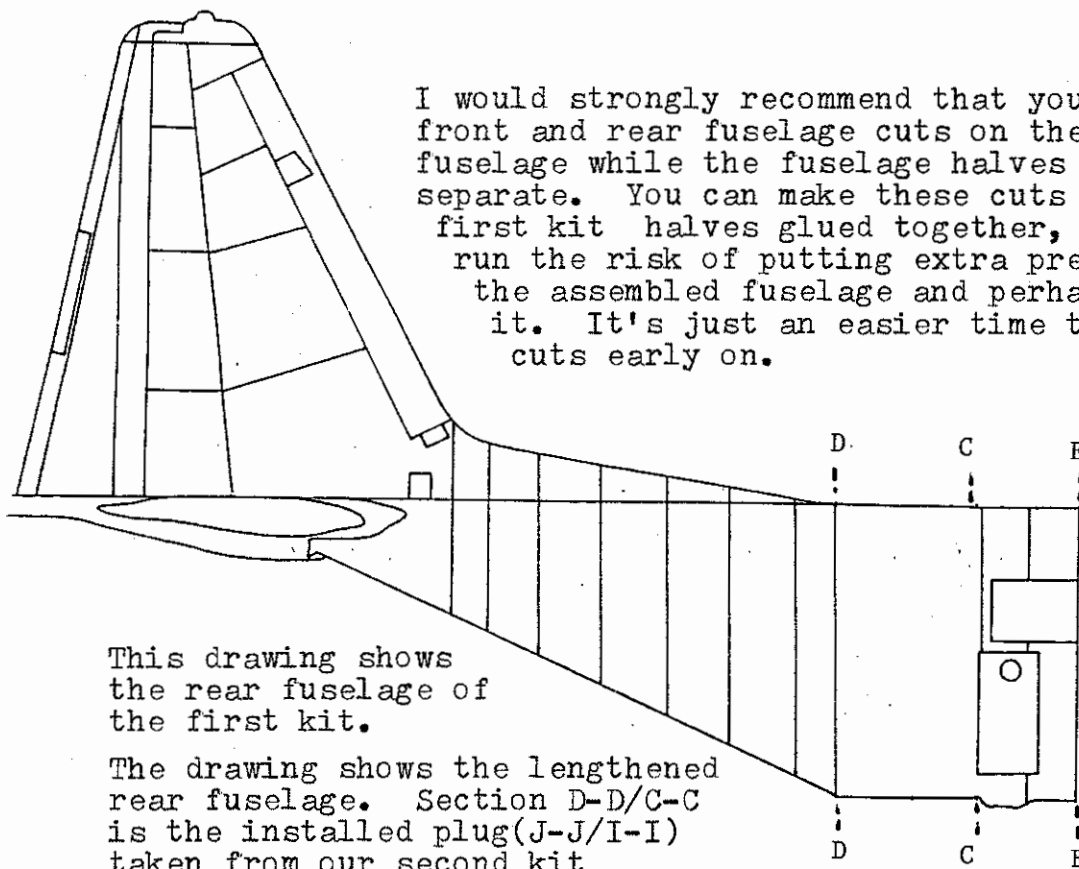
This section(G-G/H-H) from kit number two will now form the front fuselage extension for the C3/L-100 variant.

The next step is to install a number of 'tabs' to our 2nd fuselage extension plug. Using plastic sheet make a number of these tabs and cement them to the front and rear inner rims of the extension piece. Make the tabs long enough so that at least 1/2 to 5/8" of

each tab protrudes from the extension. The more tabs you put in the extension piece the better the grip when the extension is fitted to the forward fuselage. You'll also need to blank over the window ports in the extension section. I just used a piece of sheet plastic to cover the window on the inside and later on filled the covered window with putty. As to the remaining, smaller holes in the extension plug, these, too, can be filled from the outside at a later time. Make sure the tabs are securely attached (super glue).

The next step is to do some cutting to the aft section of the planes. On our first fuselage we're going to cut the rear of the plane along the D-D line (Fig. 4). On our second fuselage we're going to remove the plug marked off by the J-J/I-I lines; this J-J/I-I section is the rear fuselage extension. Having removed the plug from the second kit, remove the shaded area from the tail-plane fairing on the fuselage extension plug. I attached a piece of sheet plastic on the inside of the plug to cover as much of the opening as possible. Putty was then used to fill the 'trough' and make the upper surface of the plug level. See Fig. 5 for the cuts to the 2nd kit fuselage.

FIG. 4



I would strongly recommend that you make your front and rear fuselage cuts on the first kit fuselage while the fuselage halves are still separate. You can make these cuts with the first kit halves glued together, but you do run the risk of putting extra pressure on the assembled fuselage and perhaps damaging it. It's just an easier time to make the cuts early on.

This drawing shows the rear fuselage of the first kit.

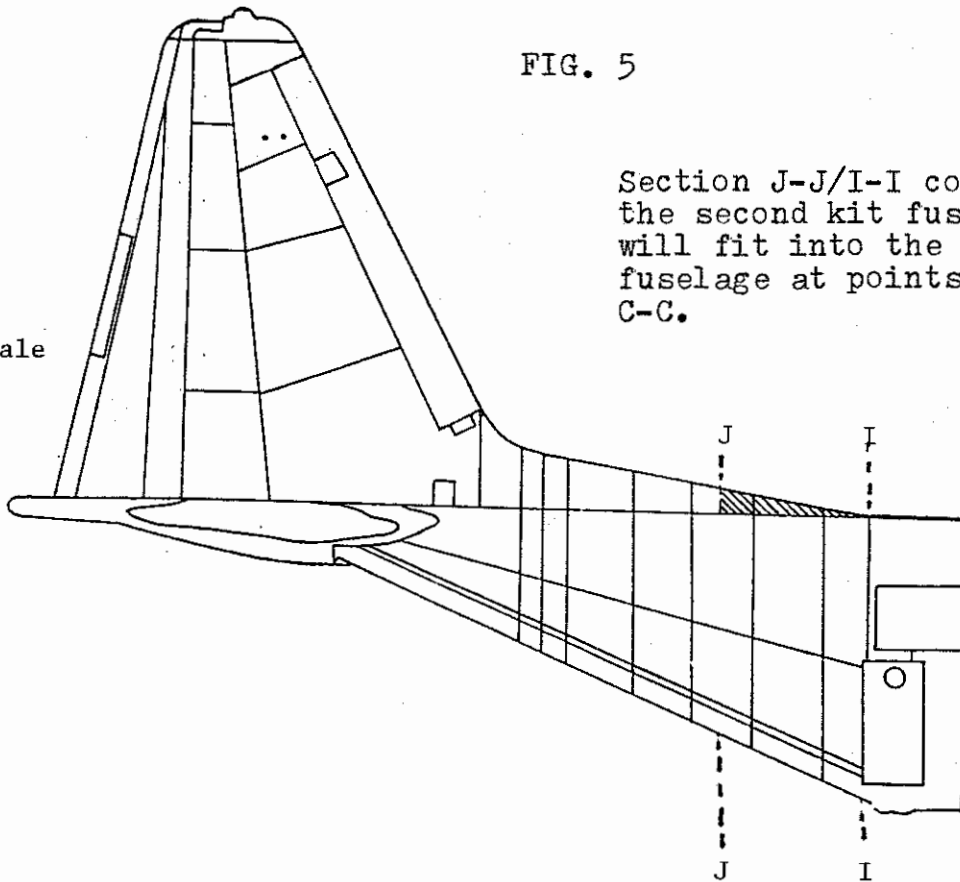
The drawing shows the lengthened rear fuselage. Section D-D/C-C is the installed plug (J-J/I-I) taken from our second kit

Line E-E=  
Trailing edge  
of wing-fuse-  
lage joint

not to scale

FIG. 5

not to scale



Section J-J/I-I comes from the second kit fuselage and will fit into the first kit fuselage at points D-D and C-C.

Remove shaded area off the top of the tail plane faring, and fill gap as indicated in body of text.

As with the forward extension, you'll need to fashion plastic tabs to fit to the front and rear rims of the rear extension. Again, let me say that good adhesion is going to be required when the various fuselage sections are all attached, so make sure the tabs are securely in place.

Alright, having made all these cuts and having followed the kit instructions to this point, you'll have a fuselage that is in five pieces: three sections of the first kit fuselage and two extension plugs from the second kit. It's now time to join all these guys together. I started at the nose of the plane and worked rearwards. I took the forward plug from the second kit and attached it to the nose of the first kit at point A-A. Before joining the middle section of kit one to the forward extension plug I added a weight to the nose. No doubt this model will be sitting in a 'gear down' configuration, so add the weight to the forward section. Plan on approximately 2 1/2 ounces of weight to do this job. It's best to put it inside the fuselage extension at point B-B(see Fig. 2). With the weight in place, the middle section of the first kit was attached. Next the rear extension plug was glued to the rear end of the middle section. It will soon become clear that although the extension matches up nicely at the top of the fuselage contour, the same cannot be said for the sides and the bottom. This is due to the convex shape of the fuselage contours. This condition has to be remedied by building up the sides and the bottom with a series of plastic sheet laminations until you arrive somewhere near the existing fuselage

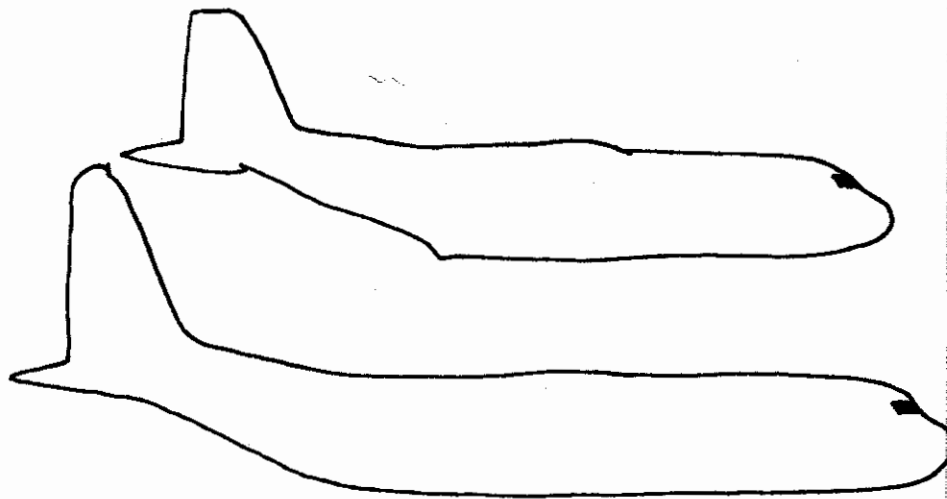
contours. The remainder of the shaping and smoothing of the surface is done with the use of putty and sandpaper.

Going back to the attachment of the forward extension to the nose: let me say that you should make sure that the extension is cemented parallel to the existing fuselage contours. The tabs attached to the extension should fit neatly between the outside of the rear cockpit bulkhead shape.

With any kind of luck this is the time that you should be holding a completed C3/L-100 fuselage in your hands. The wings and tail sections can be assembled now, but don't add them on just yet. Having now completed the hardest part of the conversion, the tiresome chore of filling and sanding now begins. A goodly amount of filler will be required for the underside of the front fuselage extension as the bottom has not "married up" with the existing fuselage contours.

With the boring chore of sanding and smoothing accomplished, the wings and tail surfaces can be attached. For the moment, the rest of the filling is confined to the wing/fuselage joints. When I do this sort of sanding my personal preference is to start with a really massive piece of heavy-duty sandpaper and work my way down to the stage where a little 'wet' sanding finishes off the job. With a conversion of this magnitude and the amount of sanding required, washing the model is essential. This will clean off all the hand oil, sanding dust, etc., that's clinging to the plane's surfaces; it'll also show up any rough areas or areas needing more putty/sanding. On a job ~~is~~<sup>is</sup> large there'll probably be one or two (hey, maybe more) spots that'll need reworking and/or resmoothing. A primer coat here would be most helpful in locating some of the 'dimples' that you'll no doubt have missed.

As indicated in the rough sketch below, the difference in size between the regular C-130 and the 'stretched' version is impressive, to say the least!



The rest of the plane's assembly is as per the instructions. One thing I'll mention here is about the kit windows. I found that instead of using the regular clear "windows" provided in the kit (and having to go through the trouble of masking them off for spray painting), a much simpler method is to wait until you've finished the model and use Crystal Kleer for the windows. Simply dip a toothpick into the bottle and then rub the Crystal Kleer around the frame of the window. If necessary, just coat all four window edges and with a fresh blob of Kleer on the toothpick, plunge the toothpick into the center. It's worked very time for me, and it will cover larger areas than you ever thought possible!

When I built my 'stretch' version of the -130, the completion time was a little longer than usual as I applied a bare metal finish using Reynolds Aluminium Tin Foil. I know that this sort of thing is avoided by many modelers, but it isn't as hard as it seems. In a nutshell, you merely cut a piece of Reynolds Wrap a little larger than the panel you wish to cover. This 'overage' of size allows you to cut and trim the piece properly. When you have the foil cut out, burnish it down by rubbing it with your finger. Make sure that you rub the foil on the OPPOSITE side that is to be applied to the surface of the model. Next apply Squadron's Tin Foil Glue(which is milky in appearance) to the tin foil. When this has dried to a colorless state, burnish it down onto the plane, trimming to the panel lines that you had fitted it for. The foil can be reversed, for one side is dull and the other is shiny. The effects are good; and it's a lot cheaper than using the commercially available foil found in the hobby shops. However, there is one drawback to this technique! The lifespan of an X-acto No. 11 blade is shorter than the time it takes to tell about it! When you cut the foil, you're actually cutting metal and this will take its toll on the blade. OK, so this technique isn't perfect, but the end results can be quite excellent if you have the patience and the blades.

Deciding on a military or civilian livery is entirely up to you. If you can't decide what you want to do here, then take a look at the Squadron/Signal publication on the C-130(S/S pub. no. 47); there're several tasty pictures to get you started down the path. While mentioning publishers here, I would also like to pay homage to the old Airfix magazine for some assistance in putting this article together.

And lastly, I'll pass on a fact unknown to me until I began researching this article. This little tidbit is that ALL c-130's have a slight color variation in the center section of the wing panels. This variation is easily simulated by first masking off the outer wing panels prior to the spray application of a mixture of Micro Gloss and Micro Flat(mix them in a ratio of one-to-one). Use the panel lines as a guide for the section to be sprayed on each wing.

And there it is. Yes, there is a lot of cutting and sanding to be done here, but the addition of this 'stretch' plane to the collection was worth the effort. It makes into an impressive model!