

CHRISTEN



'HUSKY'

The model you asked for! Your pull-out plan, over two months, features:

1/8th scale; 53in. span R/C version of the new 'Husky' utility aeroplane for .15 to .20 engines and 3-4 function radio.

Design by David Boddington



IF YOU WERE GIVEN THE TASK of designing and producing a replacement aircraft for the highly popular and effective Piper Cub and Super Cub, where would you start? Frank Christensen and Herb Andersen, Frank's consulting engineer, had that problem when it was decided to diversify the Christen production of 'Pitts Special' and 'Eagle' aerobatic biplanes. With the market for sporty biplanes likely to become saturated, Frank opted to look into the marketing of a utility aircraft that would also have an appeal to the individual sports enthusiast - and this at a time when the sales of light aircraft were at an all time low in the States!

There first thoughts were to buy the rights of an approved design, such as the 'Super Cub', or one of the 'Cub derivatives', but this proved to be a costly exercise and would have left them liable for all the previous aircraft of that type that had been produced . . . and product liability is a crippling disease for the aircraft industry in the USA. So, with the in-house experience of light aircraft design, they decided to design their own aeroplane and include all the features they considered desirable. In the same way that the 'Eagle' is similar in appearance to the 'Pitts Special', so the 'Husky' has more than a passing resemblance to the 'Super Cub'. In fact, although they have an undoubted similarity only a few parts of the 'Super Cub' are interchangeable with the 'Husky'. The aim was primarily to produce an improved aeroplane which is also easier to maintain.

Some of the external differences are obvious, the Hoerner style wing tips (in place of the more curvaceous outlines of the 'Cub'), the modified tailsurfaces and - too many eyes at least - the overall more attractive lines of the 'Husky'. Less apparent are some of the structural changes, the fitting of a 185bhp Lycoming engine and the slight, but important, modifications to the Clark Y/USA 35B wing aerofoil.

Rugged, dependable, a no nonsense aeroplane these were all adjectives descriptive of the Cub series, they apply even more so to the 'Husky', a

name that sums up the virtues of the utility design.

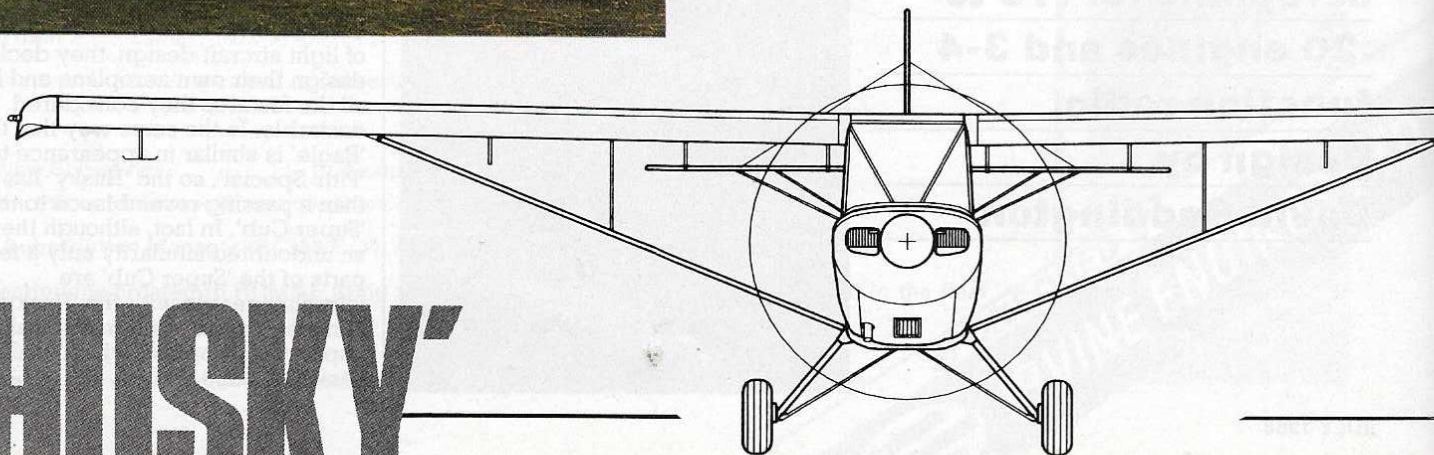
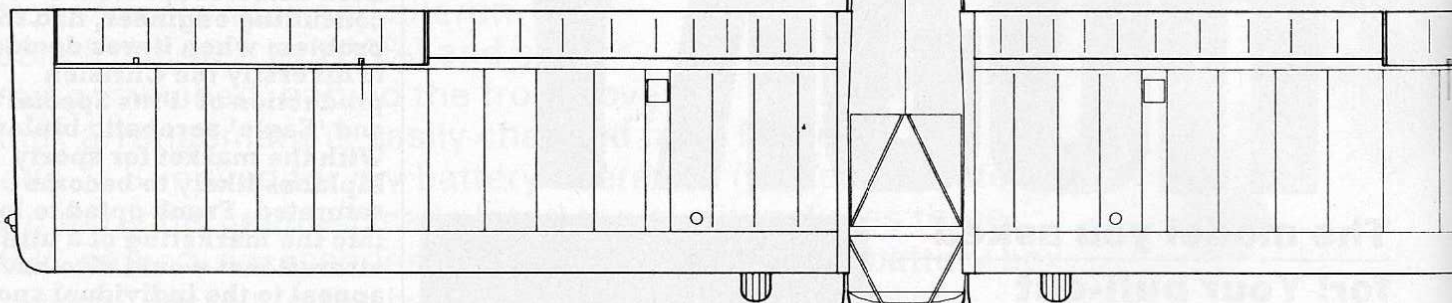
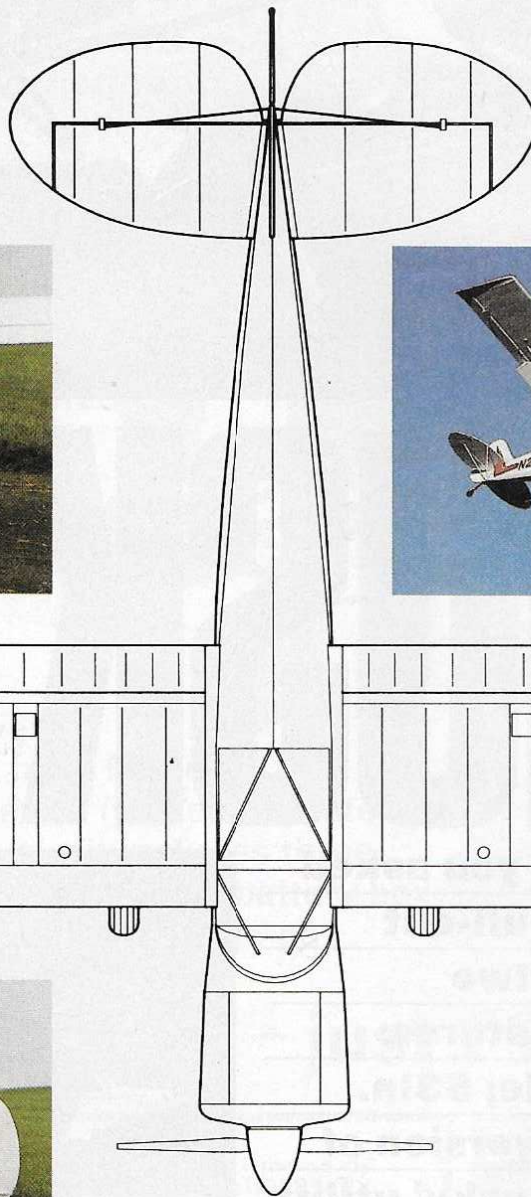
Before making the incision

The pull-out plans for the 'Husky' are presented over two months, with the second part to be included in the August issue. All the fuselage parts, plus the tail surfaces, are included in the drawing presented here - BUT - the pull-out next month includes a series of constructional photographs

showing the building sequence of the fuselage. So, you have the choice, you can either satisfy yourself with just cutting out the parts, or you can push ahead in the hopes that you have interpreted the drawings and instructions correctly.

Designed for three function control, no working ailerons are installed. If you wish to fit ailerons you could have a micro servo in each wing, or have a centrally mounted servo, in the fuselage, with removable linkage connections. Space for the radio equipment in the fuselage is not over

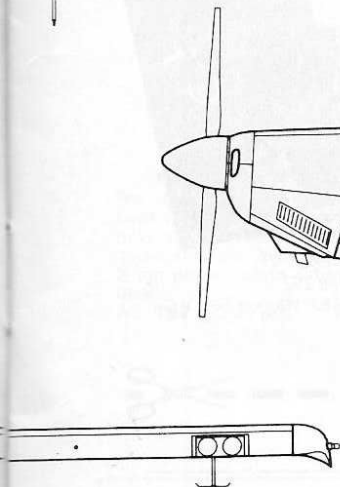
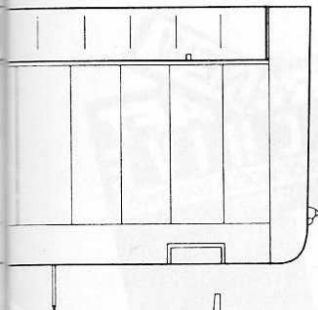
Similarity with the 'Super Cub' may not go unnoticed, however the tail surfaces have a distinctive Christen outline. Our model is shown in the two photos below, the remainder of illustrations are of the full-size aircraft - courtesy of Christen Industries.



'HUSKY'



Three view drawings show the 'Husky' are to 1/48th scale. There will be a special ASP Plans Service offer for a cowl and decal - see the next issue of RCM&E for details. We have no doubt that the 'Husky' will be a winner.



generous and access via undercarriage plate/hatch is reasonably limited. It is possible to install standard size servos and a 500 mAh battery, but work out the positions of the equipment before you commence construction. Space for the fuel tank is also tight, ideally, a special tin plate tank would be made to fit between formers F1 and F2, with no projection into the cabin area. With a commercial clunk tank ie. SLEC 4oz. square tank, the tank must be installed before the fuselage windscreens are attached, otherwise it will be near impossible to fit when covering is complete.

Position the engine mount according to the engine you are using; the larger engines, including four-strokes will have their heads projecting through the

cowling. It should be just possible to hide away a '20' size engine under the cowling. Conventional silencers will obviously not fit under the cowl, you will have to either fit a 'dumpy' or remote mounted silencer - or use a diesel engine with an integral silencer!

Closed loop rudder linkage and pushrod operated central elevator horn are suggested for the control surfaces you could use external rudder and elevator horns and conventional pushrods if you preferred.

Cut out, or form, all parts before you commence construction, it makes for quicker and more enjoyable building - and the second article may be out by

the time you have completed the preparation!

Fuselage

A couple of points to note. You cannot build one side over the top of the other because the cabin glazing supports project above the 3/32in. sides, as does the 1/8in. top sides. So, remember to build one left hand and one right hand side. Moulded cowls are available, although it would be possible to fabricate a cowling form 3/4in. nose piece and milli-ply sides.

Join the 3/32in. sheet sides and mark on the positions of the formers. Note that the formers F3 to F8 are stiffened across the width with balsa strip. Pin down the sides and top 1/8in. wing mounts and glue the vertical glazing strips (hard balsa) in position. Remove the sides from the board and add the 1/2in. triangular, 1/8 x 3/8in. stern posts and 1/4in. x 5/16in. beech lower undercarriage rails.

Cut a groove in the underside of the bearer at the position of strut fixings and predrill for the screws to hold the struts and undercarriage plate. Bolt the engine mount to former F1. Glue formers F1 to F5 to the sides and when they are set add formers F6 to F8, note that the 12g wing joining tubes are bound and epoxied to F3 and 4 before they are fitted. Fit the 1/2in. underside, side sheets and top 3/4in. sheet to the front of the fuselage and carve and sand to shape. Glue 1/8in. sq. stringer to fuselage sides, top 3/16 x 5/16in. top stringer and 3/32 x 1/4in. lower stringers. Fit the 1/16in. tailplane seat and the 6mm plywood insert for the tailskid fitting.

Install the fuel tank and feed the fuel pipes through F1 and the predrilled servo bearers. Glue the .4mm plywood side sheeting from F3 to the F4 position. Bind and epoxy the undercarriage legs to the 1.5mm

plywood undercarriage plate and solder the axle stubs together. Glue the 1/2in. sheet fairing to the plate and shape to the underside of the fuselage, make recesses for the fixing bolts. Sand the whole fuselage, trim for the cowling, add the 1/8in. diameter dowels to the inside of the fuselage and paint the interior. Check the fit of the windscreens and when satisfied glue them in position with a contact adhesive or Modellers' Glue.

Next month we complete the 'Husky' article with details of construction of the tail surfaces, wings and struts, covering, finishing and flying.



Completing your pull-out plan model of the Christen Husky – a 53 inch span model for .15 to .20 cu.in. engines

Tail surfaces

The fin, rudder, tailplane and elevator are constructed from 1/16in. sheet cores and 1/16in. strip and edging pieces. Two alternative forms of construction are possible, to use 3/16in. sheet without any built-up structure, or to use laminated outlines (1/16 × 3/16in. strip and micro ply strip) around 1/16in. core, plus strip in position of the structural members.

Wings

The wing panels are built flat over the plan, pin down the trailing edge, centre spar and – on 3/32in. packing – the leading edge. Check with the wing ribs for accurate spacing. Glue and pin all the ribs in place, except for the .4mm ply root ribs. Add the 3/16 × 1/4in. top spars and the 1/8 × 1.3/32in. top leading edge strip. Remove panels from the board and glue the 3mm plywood strut fixing plates, wing joining tubes, .4mm plywood root rib strips, 3/32in. packing – the leading edge. Check with the wing ribs for accurate spacing. Glue and pin all the ribs in place, except for the .4mm ply root ribs. Add the 3/16 × 1/4in. top spars and the 1/8 × 1.3/32in. top leading edge strip. Remove panels from the board and glue the 3mm plywood strut fixing plates, wing joining tubes, .4mm plywood root rib strips, 3/32 × 1.1/32in. lower leading edge and block wing tips. Sand the leading edge to the aerofoil profile and carve and shape the Hoerner tips to the sections shown – you may have to add 1/16in. sheet to the top of the tip to get to the full depth of the rib.

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Wing struts

The wing struts are structural and must be soundly constructed and fixed to the fuselage and wings. The struts are made up from .8mm ply cores, with brass fittings of similar thickness at all ends, faired on the outside with 1/16in. obechi. Fix the fuselage end of the struts and, with the wing panel propped to the correct 7/8in. dihedral, and mark the fixing positions on the 3mm plywood wing plates.

Covering

With the rigid structures of the 'Husky' being fairly strong, any of the recognised covering materials may be used. Follow the full size practice of fairing the fuselage to the fin by allowing the covering to span between the sides up to the first horizontal fin member. Naturally, the fin and tailplane must be glued to the fuselage before the fin/fuselage junction is covered. After the tailplane has been glued to



Flight characteristics of the "Husky" are very pleasant providing you follow the basic rules of (a) keeping the model as light as possible; (b) not having a rearward balance point or warps and (c) avoiding steep turns on the approach.

the fuselage, fit the 1/8in.sq. pieces to the top of the tailplane to follow the plan form of the rear fuselage.

Finishing

There are no problems in deciding what colour-schemes to choose for the 'Husky' - there is only one factory paint scheme, a simple all white colour with maroon trip restricted to the fuselage. The wing panels are held at the dihedral angle by the 14g wing joining rods and the wing struts. You may find that the wings tend to pull away from the fuselage during flight. If this happens the panels can be retained by putting a piece of double-sided adhesive tape between the wing root and fuselage, at the leading edge, when assembling the model. Very slightly 'kinking' the joining rods may also assist in holding the wing panels firmly in position.

Also structural are the bracing wires and struts for the tailsurfaces, the top bracing wire is from nylon covered fishing trace line, the lower braces can be from the same material, with plastic tubing slipping over the wire, or from 16g aluminium tubing, to represent struts.

Preparation

As always, carefully check the balance point, and correct if necessary, and the operation of the engine and radio equipment. Use a large diameter/low pitch propeller as this will give good acceleration and low top speed - in keeping with the prototype. Take-off or hand launch is acceptable, just make sure you have an experienced modeller if a hand launch is being attempted.



Flying

A final check to make sure that no warps have developed in the wings and tailsurfaces, fill the tank and you are ready to go. Unless you have a very smooth runway surface I would suggest that the first flights are commenced with a hand launch. Once used to the control of the model and the effectiveness of the rudder and elevator, then you can go for the take-offs. What can I say about the flying of the Husky except that it is predictable, for the maiden flight there was far too much rudder and elevator movement, but the model was still quite manageable. Cut down to sensible amounts (we were flying with an 'old fashioned' Tx, without rates) the model becomes quite docile. Watch it on turns in the circuit when the fuel is low, gross handling might cause the 'Husky' to stall and drop a wing at the same time. I don't know what aerobatic capability the prototype has, but loops and stall turns are all that look sensible with the model.

Most importantly, the 'Husky' looks a real 'sweetie' in the air and will captivate the hearts of many a modeller. The model, built by Maurice Partington, weighed 3lb 8oz and you should start with 3/8in. elevator movement each way and 3/4in. rudder left and right (measured at the extremes).

ABS moulded cowls (COWRC1575) cost £4.25 and self adhesive trim and registration decals (AAARC) cost £2.25 are available from the ASP Plans Service, 9 Hall Road, Maylands Wood Estate, Hemel Hempstead, Herts HP2 7BH.

Maurice Partington built the prototype "Husky", covered by the ubiquitous Peacock, and was delighted by the performance of the model. Fitted with the PAW19 R/C engine, all you have to take with you to the flying field is the transmitter and can of diesel fuel.

