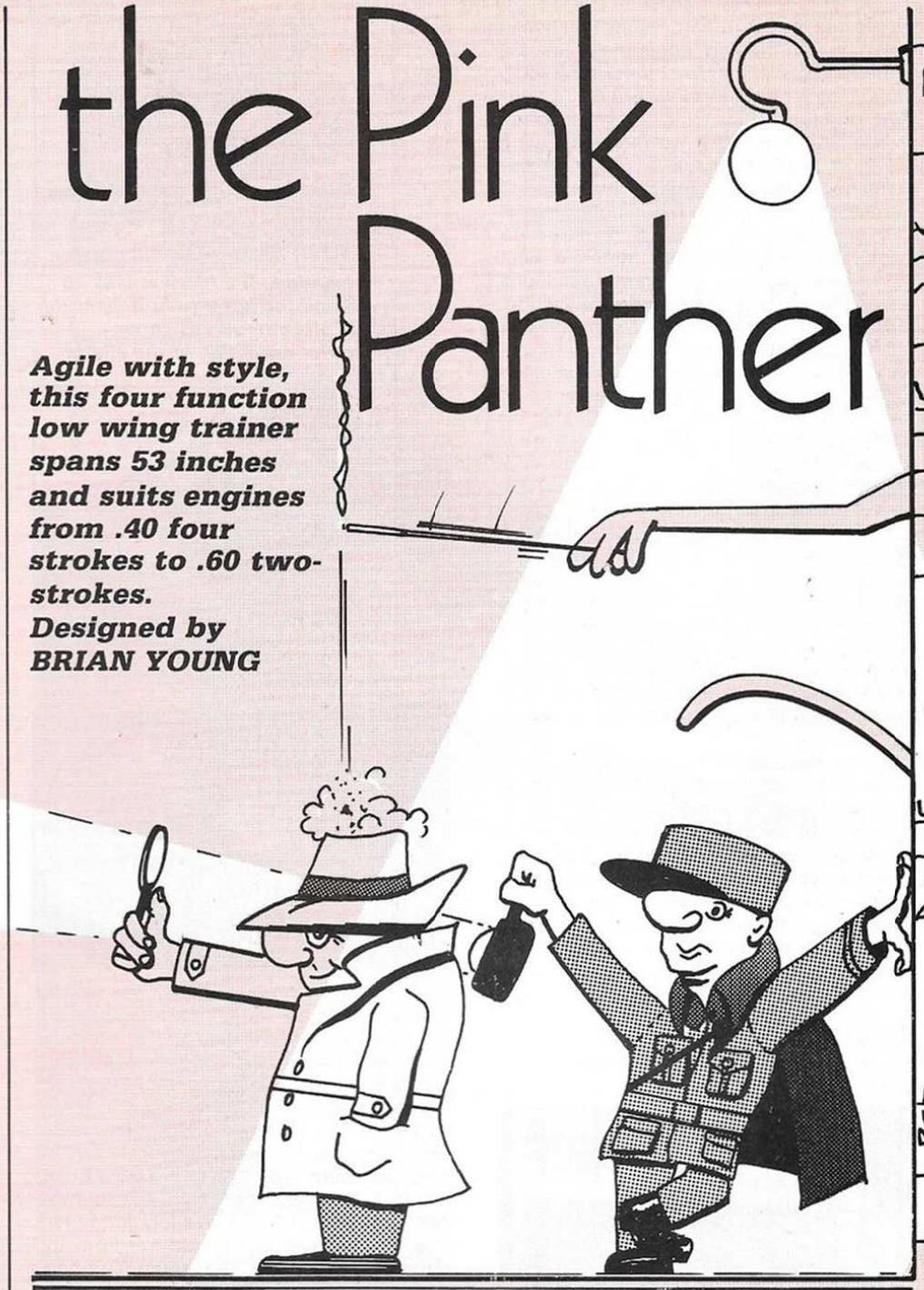
the Pink Panther

Agile with style, this four function low wing trainer spans 53 inches and suits engines from .40 four strokes to .60 two-strokes.
Designed by BRIAN YOUNG



I originally designed this model about seven years ago when, having learned to fly with a Tauri trainer, found that at that time there was not a suitable follow on low wing model available in the .40 motor range. Not wanting to jump up to the Bullet type of model, I decided to develop my own. The original prototype was basically a Tauri with the wing moved down and the tailplane moved up. This flew quite well but I was not happy with the 'balance' of the model's flying qualities, i.e. the long wing/short fuselage gave a slow roll rate and a twitchy elevator. The evolution process then started in that I built a second model with shorter wings/longer fuselage and reshaped tailplane which flew much better.

The plan shows the Mk3 version which includes further minor modifications, the only remnants of the original Tauri influence are the wing section and the fin/rudder shape, the remainder is all new. Various versions of this final mark have been produced with either built up or foam wings and with tricycle or tail dragger undercarriages. Power units have ranged from ·30 (docile) to ·61 + pipe (wow!) two strokes mounted inverted, sidewinder or upright, and more recently with a ·40 four-stroke. The most used engine has been a ·40 two stroke side mounted, giving a good all round performance and this is shown on the plan.

There are now several kits about on the same basic lines as the Pink Panther, but as far as I know not a plan available. As this is intended to be an intermediate model I have kept the construction simple yet tough — mine have survived some incredible 'arrivals' and either bounced or been easily repaired — it is thus a proven design!

Flying

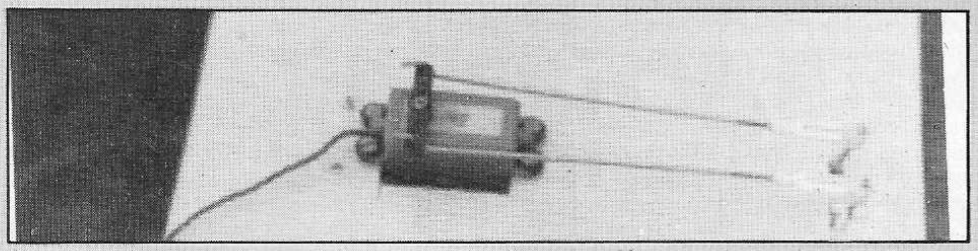
I have no doubt that most of you, like myself, when reading one of these constructional articles — turn first to the 'how it flies' section to see if its worth reading the rest. Well, to save you the trouble, I have put this interesting bit first!

With modest power and reduced control movements this model is as docile as a pussy cat, and (using reduced rate switches) has been flown by novices barely able to fly a trainer. Under these conditions it is in fact very similar in control response to a trainer, the only basic difference being the need for a touch of opposite aileron after a turn to straighten up the wings, and it is in fact far easier to fly on ailerons than some well known trainers using rudder.

With more power and increased control throws the Panther comes to life — it will loop or bunt with equal ease, rolls nice and axial, stall turns, flick rolls, etc — all are possible. Inverted is as easy as right way up, including inverted pylon turns and spins — all in all a very interesting model to fly that is as demanding as you wish to make it. Its only real limitation is prolonged knife edge flight — but then it is supposed to be an intermediate model! One final point of interest is that it will not stall; with closed throttle and full up elevator it simply descends at about 30°, nose high, with ailerons remaining effective all the way.

I have built and flown several models since my original Pink Panther, mainly





Commercial torque rods combined with strip ailerons produce surely the simplest linkage.

scale or aerobatic, but keep coming back to this old faithful as a good all round fun model.

Before you can share in the pleasure of flying such a beast, you first have to build one. This is not difficult and having previously built a trainer or two you will have no problems with this one. The Editor telephoned me to ask for this report two days after I had pranged my current model. One thing it won't do is a flick roll at 10 feet altitude, or rather it will but it won't recover if you've moved the C.G. back to 50% chord and fitted a duff elevator servo like I did. As the model was over five years old and a little tatty, I decided not to repair it at this stage (yes it is repairable) but to build a new model for this article with stage by stage phots. This took about three weeks of part time working, but alas no photos due to camera fault — ah well the thought was there.

Wings

The wings may be either built up balsa or foam/veneered, both have been used and both are shown on the plan. I have also tried a set of 'built up foam' wings using a full depth ⅛in. sheet balsa spar with ½in. thick foam ribs, finished with sheeting and cap strips as per the built up version.

a) *Built up Wings.* Make two templates from ply, Formica etc., and produce 10 ribs for each wing by the time honoured sandwich method. Cut web spars and slot to take ribs 'egg box' fashion. Modify three inner ribs of each wing to accept u/c ply plate and cut 1/16in. ply W2 ribs to reinforce outer (third) rib. Slot ribs onto web spar add ¼in. false trailing edge to align ribs accurately, then add top and bottom main spars. Once this basic structure is completed (either pinned over the plan, or free) the remainder of the structure i.e. u/c plate, leading edge and sheeting can be added, not forgetting the cap strips on each rib. Fit torque rods for ailerons and fixed portions of trailing edge strip over torque rod and at tips. Add ½in. sheet at tips then carve and sand tips and leading edge to blend with wing. Take particular care when adding sheeting that wing is true — any warps added now, stay! Cut ailerons from trailing edge section and chamfer front edge as shown.

b) *Foam Wings.* By retaining the original Tauri wing section life is made much easier as there are several commercial sources of ready made Tauri foam wing blanks which can be modified (shortened) to suit. Alternatively, make your own using the template shown on the plan. I am not going into how to make foam wings as there have been several articles in various magazines recently. If you cannot make your own then I'm sure you know someone who can, or buy them ready made as above. In small quantities (one or two pairs) the time and cost of foam wings will be about the same as built up wings, but make more and foam starts to come out on top. However, foam wings tend to be slightly heavier than the built up equivalent so you take your choice. Leading and trailing edge and ailerons are added in the same way as the built up wing.

Joining either type of wing is identical (for this model anyway). First trim and sand the root faces flat and to the correct dihederal angle. Next cut out 'half a hole' in each wing root for the aileron servo and servo/undercarriage mounting block. Butt join the two wings using five minute epoxy ensuring that the wings are square and at the correct dihedral angle, and at the same time incorporate the hardwood servo and undercarriage block. Line the aileron aperture with 1/16in. sheet and add the rear servo support and the two 1/16in. ply lower trailing edge reinforcement strips. Finally use a 4in. wide glassfibre bandage to reinforce the centre section wrapped round the leading edge start and finish at the rear. Make sure during this operation that the resin does not affect the operation of the aileron torque rods, and also if using foam wings and polyester resin make sure there are no ways that the polyester can get to the foam — fill any gaps in the veneer or round the lined servo box with epoxy resin.

Tail Feathers

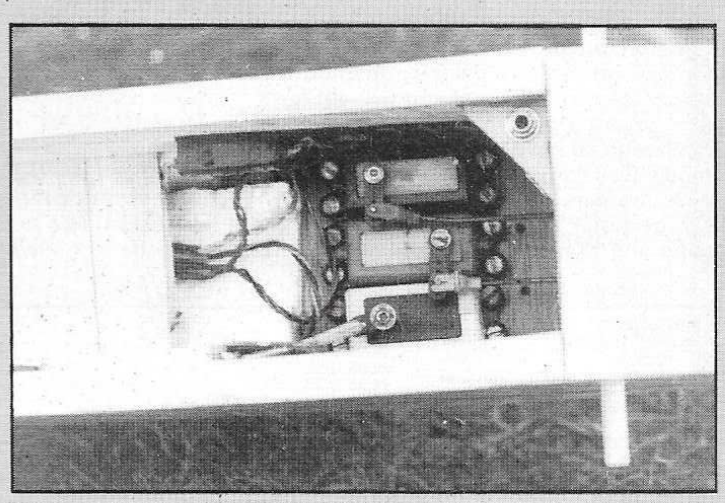
As the fin and tailplane will be required during the later stages of building the fuselage they are best made first. All parts of fin/rudder and tailplane/elevators are made from ¼in. sheet. As all of my models have tended to be slightly nose heavy, there is no need to select ultra light sheet for the tail. My Meteor 40 is admittedly not the lightest ·40, if yours is lighter than a lighter tail would help. I have used a Webra 40 four stroke, ½ pound lighter than the Meteor (and a direct fit) and flown the model with the C.G. back at 50% chord successfully — but not recommended for a start. Note that the shapes and sizes of the tail pieces have been cunningly chosen to suit standard 3in. wide sheet, e.g. the fin strake is the offcut produced from the rudder, elevators fit back to back in a 3in. width, etc.

Fuselage

Although the fuselage sides are 4in. deep they can be made from 3in. wide sheet using offcuts to make up the difference. Cut the two basic sides and add the ½in. square strips along the top of each (one left and one right — sounds daft to mention it but it has been known for someone to make two left sides — no names etc). Next add the 1/16in. ply doublers front and rear using a contact adhesive (Evo-stik, etc.) followed by the ¼ sheet treblers and ¼in. square bottom strips. Finally add the two ⅛ x ½in. vertical stiffeners to complete the basic sides. Cut out the ply formers — no forgetting cutouts for the tank (F2 and F3) pushrods (F4). Put the two basic sides together outside to outside and mark out and drill holes for the wing retaining band dowels also check tailplane and pushrod slots. Now make up the fuselage assembly of sides and F2, F3 and F4 plus the two dowels assembled upside down on a flat surface, checking that all is square and true before the glue dries — don't pull the rear in at this stage. It will help if a vertical centre line is marked on each former and aligned with a straight line drawn on the building board or over the plan. Once this lot is dry, pull in the rear end and chamfer the ½in. and ¼in. square strips to match the angle of the fin. Glue in the tailplane and temporarily clamp the rear fuselage using a scrap piece of ¼in. sheet to give the correct spacing. Check that the



A cockpit — or at least a canopy — is essential to break the line of the top of the fuselage.

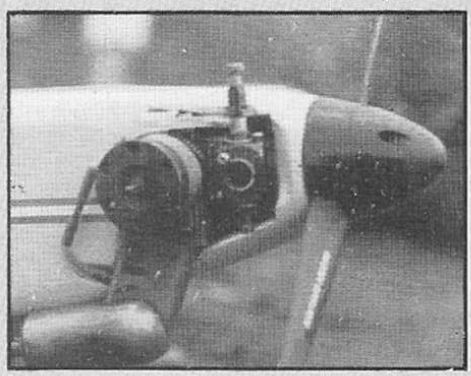


Three servos fit abreast the fuselage, well aft in the wing bay to compensate for the long nose.

tailplane is squre in all directions. It is advised that the joint between F2 and the sides be reinforced with glass fibre over the trinagular fillets shown and that the engine mount and throttle linkage be fitted before the front top and bottom sheeting is added. When this is OK glue top ⅛in. sheet in place and leave to dry, note a standard 3in. wide sheet will be OK if fitted centrally. the next stage is to attack the top corners with a razor plane and create a nice rounded corner (eliminating the steps left by using the 3in. wide top sheets). The fin can now be fitted — slotted through the top sheeting to rest on top of the tailplane. Note that it is advisable to fit pushrods (or snakes as you prefer) before adding the rear bottom sheeting. Add the servo mounting to suit three of your servos and temporarily fit the servos and make up the linkages. Temporarily fit your engine to the mount and sort out the throttle linkage, then build the cowl with sheeting and triangular corner fillets. Finally fit the rear fuselage bottom sheeting and carve/sand everything smooth — particularly the cowl, and carve/sand the wing seating so that the wing fits snugly and square to the tail (allow the thickness of wing seating tape).

Finishing

The structure does not rely on the covering for strength, so any finishing method will be satisfactory. Many of you will opt for a film covering and this is a very popular method that I have used myself, in fact the model was named after a job lot of 'orrible pink film that I used to cover the original. My personal preference is the good old dope and tissue/nylon and paint as I consider this to be more durable (remember you've learned to fly — so now you can start building models with a reasonable life expectancy). Having said all that, the review model was a compromise — tail surfaces covered in dope/tissue, remainder Solartex for quickness, all topped with one coat of normal household liquid gloss — easy and fuelproof, bright pink of course.



The exposed engine allows simple installation and ease of maintenance combined with maximum cooling.

Drill the two holes into the wing centre block for the u/c leg ends and hold each leg with two saddle clamps screwed into the ply supports. Alternatively, move the main legs back behind the aileron servo and sandwich a nose leg between F2 and engine mount.

Installation

The bulk of the installation will (or should) have been done during the building stage. Keep the receiver and battery pack as high in the fuselage as possible to ensure clearance for the ailerons servo and linkage. I used pieces of balsa or thin ply across the width of the fuselage wedged against the ¼in. trebler/wing seat — see photos. Arrange for your radio switch and aerial exit on the side opposite the engine exhaust.

Adjust your throttle linkage for a reliable tickover at forward trim and engine cut at nearward trim, and of course check that all control surfaces move in the correct sense with no slop or binding. I have used Mylar hinges throughout as they are cheap, reliable and easy to install — and I've never had one fail or pull out. Roughen both sides with coarse sandpaper and put a couple of drops of cyano on both sides before pushing home.

The 'pilot' and cockpit are optional but it doesn't look right without it — I did have one version with an 'open cockpit' i.e. with a windscreen and simple headrest complete with pilot and scarf blowing in the breeze — very nostalgic. Another modification was to fit a hopper under the wing centre to hold and drop ½lb of toffee at a local fete — very versatile this model.

Finally — fit a CG, I know it's a nuisance but rumour has it that its an essential option. The model has been flown with the CG between 25% and 50% chord, but 3in. back is the theoretical position and gives best performance. Don't forget lateral balance, put a small weight in the (usually) left wing tip to balance the off centre weight of the engine/silencer.

So there you are — a model that will take the fledgeling pilot on as a first low winger, and still satisfy the more experienced pilot who wants a weekend fun model.

One final word of thanks to my mate Kevin McNaughton for taking the photo's, at no small risk to life and limb!