

# Smoke Trails no 20

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The reasons for putting the profile Valiant in the header will I trust become clearer later. But first, here is a selection of 'jet action' photos taken at various Gets-together in 2008.



**Clockwise from the top:** Peter Taylor with KK MiG 15; Andy Blackwell with the Bell X-1E with which he won Rapier scale at Peterborough *Flying Aces*; the author about to launch Atom 35 powered Jetex Wren; John Digby's *Mystère* gets away; Andy gives his Jetex 100 powered Comet a very stylish launch; Mark Digby with his T-50 'Golden Eagle'.



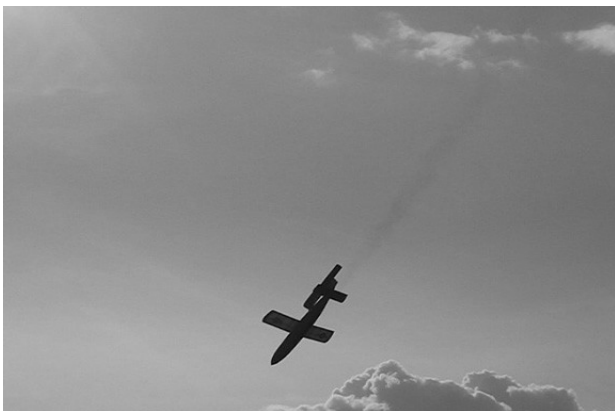
**Clockwise from the top:** Andy lights up Chris Richards' all-foam MiG 15 . . . Pee-yong!! Chris, in classic pose (5.8/6.0 for style) shows us all how to launch with a rubber band. Chris' MiG 29 roars across the Old Warden sky, L3 blazing; Mike Stuart's more sedate L3-powered Tunnan; John Digby launches his OD *Volksjaeger* ; John launches his well-flown Miles M.52.

Below are some annotations to the illustrations (as they say in scientific journals):

1. Peter Taylor, new to jet propulsion, but a refugee from control line, is obviously an experienced and accurate builder, and his Keil Kraft MiG 15, built from the *Replikit* without modification to the trough or wings, never missed a flight. I'm not sure my modified version of Bill Dean's classic, whilst superior in looks, goes quite as well. Peter's next project is ambitious: a Skyleada Canberra for twin Rapier L3s. This I look forward to.

2. Andy looks a little tired here, as well he might, having been up all night building a replacement Bell X-1E. This one does not climb with quite the panache of the original: Andy confesses it is quite a bit heavier due to less choice balsa and a heavy (acrylic) paint job. An interesting wrinkle is that the wings slide in and are only 'tacked' in place: a wise precaution as straight wings are much more vulnerable than swept wings when encountering the usual flying field hazards – chairs, traffic cones, stooges, fellow flyers, or even *terra firma*.

3. My Wren flew well with an Atom 35, though seven seconds of thrust seems awfully short compared to the 15 sec plus of an L1. It will be recalled that my Wrens, 95% size of the original, and weighing 9-11g are also more than adequately powered by a 55 mN L1. Howard Metcalfe's built his 'full size'. He writes, "it flew well, but height gain suffered as it had 2.5g of [perhaps unnecessary?] thick aluminium foil and weighed 15g with an 'empty' motor. On an L2 it flew fast and wide about 50 feet up. [hmm . . . sounds overpowered to me]. I did see one with a Jetex 50 at Middle Wallop about 10 years ago – very fast and furious with tight level circuits. Fun though". I have since built several 97-100%-size Wrens for the coming season.
4. John liked my description of his Skyleada Mystère as 'skeletal'. Here it is at Old Warden (OW) in September, where it had regained its perfect trim after a disappointing time at *Flying Aces* just a week or so earlier. I hope this will encourage him to finish it in one of the many colourful liveries there are to choose from.
5. It is rumoured that Andy will be seconded to the javelin team at the 2012 Olympics. His Skyleada Comet, authentically powered by a Jetex 100, flew beautifully in July, but appeared somewhat underpowered at OW in September. Andy says it really does need 'Red Spot' fuel, as, with original ICI pellets, even a forceful though balletic launch results in no better than a stately cruise at head height. The distinctive colour of 'Red Spot' pellets is, by the way, due to the surface coating and not to any great change in chemistry. I have been hunting through the ICI patents to find out why these were (and indeed still are) more potent than the original fuel, but none refers to Red Spot explicitly, so I guess the formulation is covered by the original specifications, and their enhanced potency lies in small changes of the various catalysts or enhancers, for example dinitro resorcinol and potassium nitrate. They do not, unlike the later Sebel formulation developed to bypass the ICI patents, contain potassium dichromate.
6. Mark Digby has designed a number of very elegant 'semi-profile' models. Here is his latest T-50 'Golden Eagle' for L1. It proved quite tricky to trim, but by the end of the day he had got a decent glide. Part of the problem may be that the motor is mounted within a very angular trough in the fuselage which can cause turbulence – bad news for motor efficiency.
7. Chris Richards' diminutive OD MiG 15 is of all-foam construction with a motor 'hanging in the breeze'. It certainly flies well from a catapult launch (8). Such launches are easier with the help of an experienced igniter, and here Andy does the honours.
9. Chris' L3-powered MiG 29, made a couple of show-stopping flights at OW in September. Some batches of L3s have been quite feeble this year, with not enough thrust to keep Mike Stuart's Big Fat Tunnan in the air, but there was no problem here.
10. John Digby's OD L1-powered *Volksjaeger* is at last putting in some good flights; his M.52 is a most consistent flier despite being a bit overweight due to a much-repaired (unswept) wing.



I must apologise for the lack of photos of duration models, modern or vintage. As fellow flyers will testify, there were Skyjets, Starjets and Aerojets leaving pleasing smoke trails about, but I'm afraid I have no pictures of these – somehow they are just not as photogenic as real jets (!). As proof of the previous inflammatory comment, on the left is a genuine flying (?) shot of a Richard Crossley design that will have other SAM flyers scrambling their Spitfire XIXs or Hawker Typhoons!

It is encouraging that we have seen some young jet flyers this year: apart from Mark and Peter, there was also Nick Aiken with his Mystère. I was ruminating about all this to a colleague: "It's surprising", I said, "that we see any new 'jet flyers' at free-flight gatherings, given that for the price of a few boxes of Rapiers one can buy an ARTF EDF RC MiG 15, or if one is so inclined, an F-22 Raptor. These fly well and are very exciting. So that's what most reactionary inclined neophytes must do. I know, I've seen them on 'YouTube'".

My correspondent demurred, "It's worse than that", he opined, "RC ARTF models used to be the bread and butter of the market, but now air-minded youngsters are much more likely to go for a realistic flight simulator. It's very worrying for model shops and folk trying to bring out new 'jet models', especially given the uncertainty in the supplies and quality of Rapiers".

Apropos of which, towards the end of the 2008 flying season, in which the availability of Rapiers had been reasonable, and their performance at least bearable, alarming rumours circulated that the latest production run of motors had been withdrawn due to a catastrophic failure rate. As far as I can tell there are two factors at play: (a) a new source of propellant of variable, but high, potency; (b) established producers no longer willing or able to supply motor tubes of the original specification. At first the problem was associated only with L2s ("that's OK, I thought, "I'll fly smaller models with L1s ... what's this? L1s of 80 mN thrust ...looks good to me . . ." ) but it then hit these as well, and it would appear that no new batches of L1 motors are being produced whilst the problem with L2s is addressed. I have no information about L3s. We believe Dr Zigmund has tried impregnating cases with resin, at some weight penalty, but without reducing the failure rate (which for me would have to be 2% or better). Whilst it is good that Dr Z has at last recognised what has been a chronic QA problem for some years, and is actively seeking a cure, it is unlikely we will see fresh stocks of Rapiers 'ells' 1, 2, or 3 anytime before the Spring.

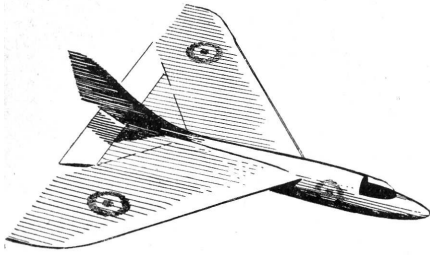
At present old stocks of L2s are available, and the 'L2 HPs', (look for the purple nozzles), though of limited thrust (about 120-140 mN or so), and short duration (about 15 sec), are at least predictable and not going to destroy your model. But I can find no UK supplier with any stocks of L1s. All this is a great pity, especially when *Bluebottle* and *Aerographics* are producing some lovely kits and contemplating new ones. Below are some suggestions about what we can do in response to this latest crisis, apart from giving up and flying stimulators:

1. Carry on building that super-scale Hunter and 'hope for the best'. Given Dr Z's track record this is the least rational option, though popular with some people who appear otherwise sane.
2. As above, but build duration or all-sheet profile models which are less susceptible to motor failures and whose loss is less traumatic in the event of a CATO.
3. Fly genuine Jetex! This is a good time to build up stocks, given the Howard Carter-like discoveries that flyers who haven't touched a Jetex motor in fifty years, are making in their lofts. Not a month goes by without fresh vintage Jetex stuff appearing on eBay at quite reasonable prices, so it is now perfectly possible to fly Jetex as cheaply (or expensively) as Rapiers.
4. Fly EDF. There are a number of options available to the 'hi tech Sammite' – GWS fans, Lithium-Polymer batteries, Zombie controllers and the like – such that it is possible to wring out a 'jet-like' performance from a 'Jetex 50'-size model if one does not worry unduly about overstressing the motors. I'm not quite ready to try this – there is the question of the initial outlay and a steep 'learning curve' afterwards – but if I can learn to live without the smoke (burnt-out motors or spontaneously combusting lipos don't count) I may well give it a go.
5. I can hear in my mind's eye (or is that ear) what *Funf's* comments about our predicament would have been, especially given the accursed 'credit crunch', and they would have been both pithy and sensible. So option (5) should be called the Stan Pearson memorial option – build catapult Jets! It's what we used to do in the old days, after all, even with built up models, either because of impecuniosity or because they were too heavy. There are some very nice options available at <http://groups.msn.com/SimpleFlyers/deltacatspluspostal.msnw>.

Resisting the ostrich option (1), my favoured strategy is a combination of 2, 3, & 5. I find the early Jetex profile models very attractive (probably because they were beyond my reach as a boy) and reproducing these has been a good therapy. So far, apart from the Wrens, I've built two Sharkies, one for L2 (hope springs eternal) and the other Jetex 50. The Rapier-powered version is a shade over 20g and should go like the clappers with any L2 of reasonable specification. The Jetex 50C version is a full 10g heavier – blame that steel case – but then a 50C on song can give anything up to an ounce of thrust. A comparison of the Sharkies' performances will be most interesting. Also, I now have a number of PAA Loaders, so there is no excuse not to start that large Skyleada Vulcan languishing in the loft.

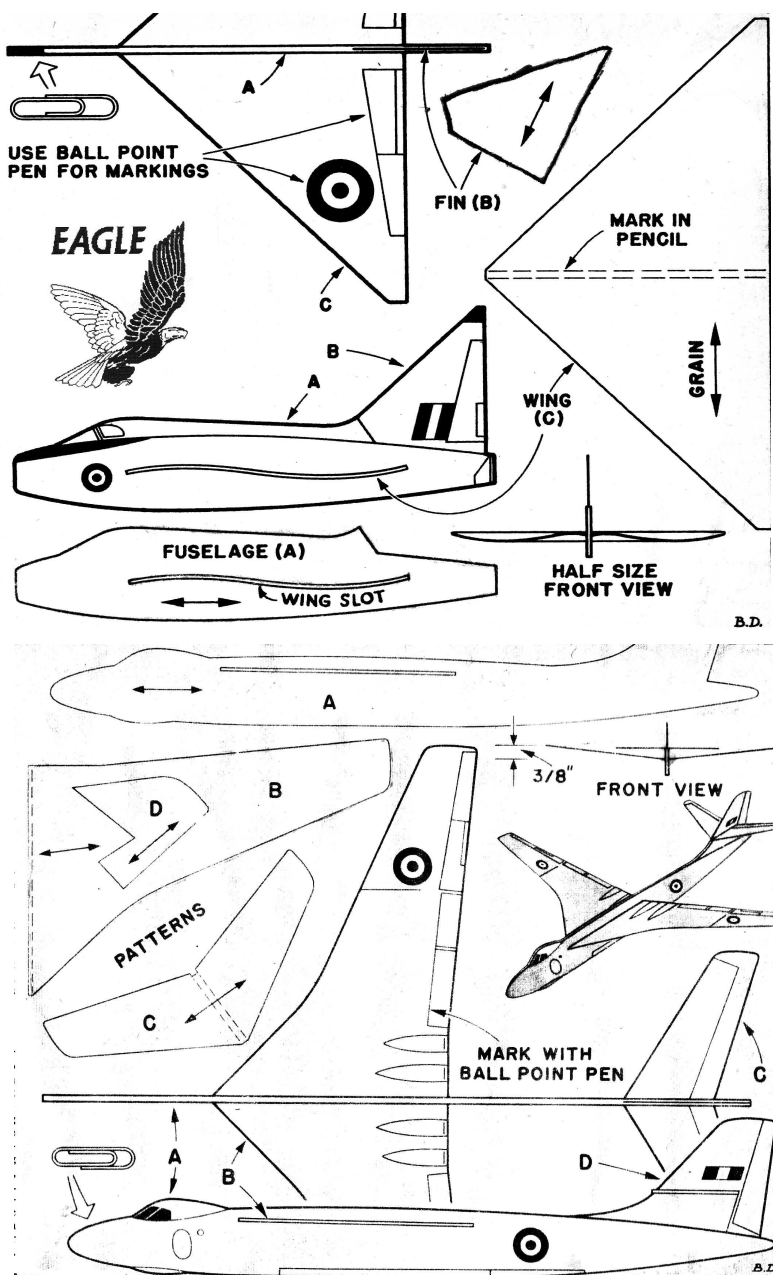
CONTEST KITS

# XC 4



Option 5 is especially attractive to an antique modeller, given the number of classic models of this genre. For example, *Contest Kits* marketed their 'XC 4' in 1955. They claimed this Avro 707 look-alike it would fly in any weather, featuring as it did 'a simple Automatic Device' (Patent applied for) that ensured a 'glide after the catapult launch and renders trimming a thing of the past'. Hmm ... the 'automatic device' was I believe a blow-back elevator. These were quite tricky to set up – the elevator weight / elastic band tension had to be just right. Still, the XC 4 is most appealing; has any reader has access to a plan?

The pedagogic potential of catapult gliders made them attractive to the editors of boys' comics, who (rightly) thought they would inspire and nourish the 1950's air-minded boy. The *Eagle* published several Bill Dean 'Flying Scale Gliders', including an Attacker, a Comet and, uniquely, a Bolton Paul P111A and a Valiant, both of which were then much in the news.



I am indebted to Tim Jeal for sharing the drawings reproduced on the left. Tim took the *Eagle* as a boy (didn't we all), but had the foresight to remove the plans and file them for more than fifty years.

The P111A is similar to Dean's better-known Skyray, with which it shares the 'S' shaped aerofoil. Unlike the Skyray, it never made it to either the 'Eagle book of Balsa models' or the later 'Solarbo Book of Balsa Models'; nor was a version for Jetex power published in other magazines like *RAF Flying Review* or *Model Airplane News* (10/'54) in the US. Despite its limited exposure, Howard remembers this particular P111A: "Having seen the original at Farnborough, I thought it was the bees' knees and built one; sadly, I have no recollection of how it flew, I only know that I loved it! Dean claimed, 'The secret of the P111A's unique flying qualities rests in the 'S' section wing curve'. Now this aerofoil was characteristic of several of Bill Dean's creations at that time – he also used it in his flying saucers and the Space Scooter for example, but I'm not convinced of its efficacy in a catapult glider.

Nevertheless, the P111A and the more conventional Valiant are both worth resurrecting. Howard, at least, will be building one. He can always fit an L1 should these ever again become available.

**Above:** two unique catapult gliders from the prestigious Bill Dean, published in the *Eagle* in the early 1950's.