

Smoke Trails 31

***Roger Simmonds; 8 Orchard Way, Offord Darcy,
PE19 5RE; rsimmo@globalnet.co.uk***

First, welcome back to your favourite column dedicated to what could be loosely called, “model jet planes”. It is good to be back, and I hope to retain the mix of nostalgia, historical plans and articles and commentary on the current scene. By ‘current’, I am not referring to EDF: I hope we will carry on flying rockets despite the present unavailability of Rapiers. First, here is a selection of the models seen leaving smoke trails at Middle Wallop, Old Warden and Peterborough Flying Aces this year.



Clockwise from top left: Mark Digby's Sparrow hawk for Rapiet L-1; Chris Richards' MiG 29 for L-2; John Digby's Junkers EF 128 for L-1, Meredith Evan's XB 70 for enclosed L-2 in flight; John Lawson's MiG 17 for Rapiet L-1; Gordon Hannah's menacing X-15 for L-1; Chris Richards' Rocket Boy for Jetex 50.



The weather has not been too kind to us at meetings this year – small models, and jets in particular, fly better on a nice calm day; and sensible trimming, as Andy Blackwell can attest, is well-nigh impossible in a variable breeze of anything over 12 mph or so. That is not to say that we haven't seen some wonderful rocket flights this year, but, as Paul Del Gatto said many years ago, "Be wary of flying in gusty winds. You may get some amazing flights, but will probably have a crack-up first!" So, in the main, I have been campaigning profile models this year, and have been most impressed with the reliable performances not only of my well-established Wrens and Sharkies, but also the Veron Quicky Sea Hawk and Panther. These fly nicely, if sedately, with any Rapier over about 80 mN, and, just about, with an antique Atom 35; but they can be spectacular with a Jetex 50. With a little 'up elevator' to compensate for the extra weight (which puts the wing loading up to about 6 oz/sq ft) they climb to great height. Landings are fast, but the large fins and generous dihedral keep them into wind.

Top: Paul Risdale's version of the well-regarded Bill Dean Hunter. Note the position of the motor - back from where Dean had put the original J 50. Paul says this steadied the flight pattern. **Below:** Richard Crossley launches Derek Knight's twin L-2 engined Scimitar



Left: the Veron 'Quicky' Sea Hawk was a revelation in the gusty conditions at Peterboro Flying Aces this year. Trimmed out and with a properly functioning 50B and an ICI pellet, this comparatively heavily loaded model cut smoothly through the choppy air to find some better conditions at height, where it cruised steadily until the motor burned out and it came in for a fast, though highly rated, landing.

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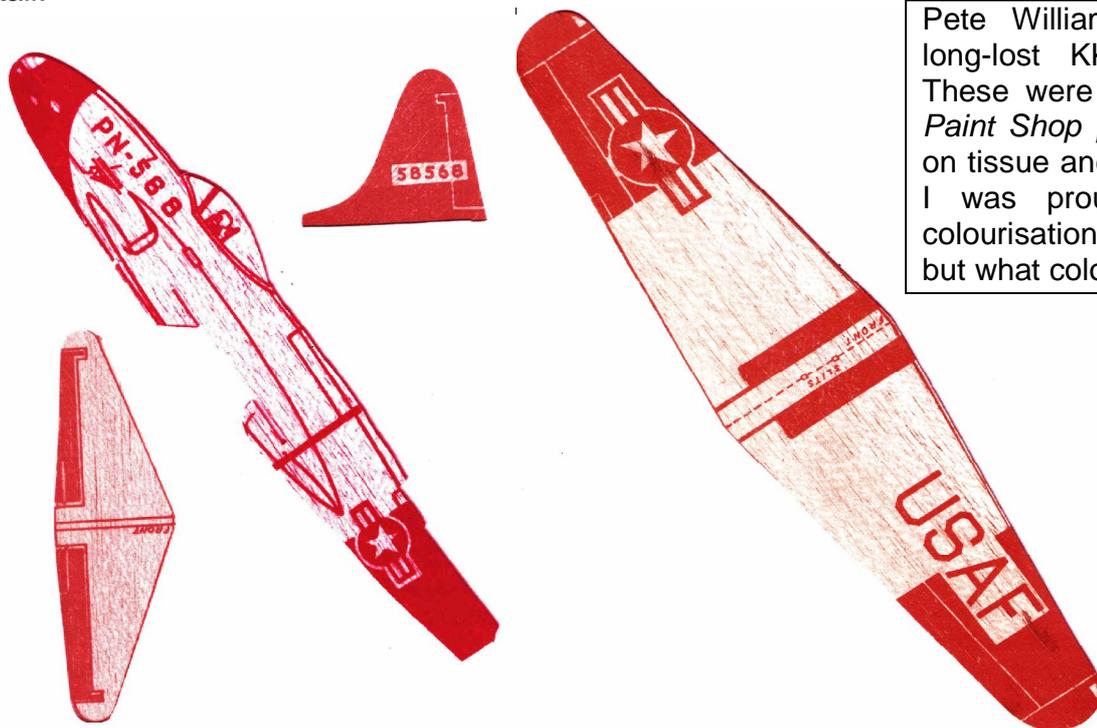
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THUNDERJET
SEA-HAWK
PANTHER

Pete Williams has corrected my previous assertion that there were two Jetex models in the Quicky range. There were in fact three: (see Veron Advert, courtesy of Mick Porter, on the left). I am eager to have a go at the Thunderjet, so if any reader has access to a kit, from which I can make scans, please let me know. No great claims were made for the accuracy of the models, but they were attractively presented and then, as now, they are a splendid introduction to Jetex flying.

The KK 'Shadow' Attacker, too, proved to be a great flier in marginal conditions, so I was very pleased when Pete finally tracked down its long-lost stable mate, the Shooting Star. The scans he sent me were of excellent quality, and the red wings and tail needed less colour correction than those of the green Attacker. However, the fuselage markings appeared a dirty brown; so, exercising my computer skills to their maximum, I re-colourised the image to match the wings and tail:



Pete William's scans of his long-lost KK Shooting Star. These were cleaned up using *Paint Shop pro* before printing on tissue and transfer to balsa. I was proud of my 're-colourisation' of the fuselage, but what colour should it be?

Pete, commenting on my artistic endeavours, writes: "these are very nice, but, don't you think that maybe the fuselage printing was originally black and faded to the brown as in my scan? I don't think it could ever have been red. Try it. I think it would look better. The serial number would probably have been black on the prototype anyway". Hmmmm He may be right, and whilst I can easily undo all my hard work, neither Pete nor I, nor Howard Metcalfe, can remember what colour the Shooting Star's fuselage should be! Can any reader help? I'm sure the Shooting Star, like the Attacker an Albert Hatfull design, will fly splendidly whatever colour it ends up!



I have had some success with my much-abused MiG 29 this year. Readers will remember I did, finally, get it to fly well with a Rapier L-3, but, given the dearth of good L-3 motors, I re-engined it with a PAA loader (*Smoke Trails 25*). I was somewhat dubious I would get more than an extended glide from it, given that it now weighed more than 100g (over 3 oz) with three Sebel pellets.

But I need not have worried, and it showed just what it can do at the SAM Gala: the thrust appeared pretty fierce after lighting up, and it climbed steadily across the runway to 50 feet or so. It was then as if the pilot cut in the reheat (or the second pellet started, or the model hit a terrific thermal) and it lifted its nose, but didn't stall, and climbed near-vertically to great height where it circled in a lively manner for some time (a PAA loader burns for up to 20 seconds). With its high wing loading the 'glide' was nothing to write home about and it landed 50 yards down the runway. Wow! A performance that kinda puts the L3/L4 in its place. This flight – quite the best Jetex or Rapier flight I have ever had – was witnessed by Andy Blackwell, Chris Richards, and by several other old guys previously more than a little sceptical of Jetex flying.



Above: Chris Richards with his Jetex 50 powered Rocket Boy, which coped with of this year's tricky conditions with great aplomb.

Chris said he had never seen a model fly vertically before – well not in a stable fashion anyway – and I think several folk will be looking at the MiG 29 plan, and checking out prices of PAA Loaders on eBay (which are still reasonable). I will now make a built up model for my several PAA Loaders, but, I suspect, will have to fly this in a larger airfield. Readers can view this flight, ably recorded by the ever- vigilant Mark Digby, at:

http://www.youtube.com/watch?v=t2pBFF_moxM.

I Have not (yet) repeated this performance, but my failure to do so is due to the motor never giving its potential thrust due to leaking seals and less than optimum pellets. There is no doubt these old motors need careful handling – Andy Blackwell has had similar frustrations this year – but, as the above story shows, persistence pays off.

The smaller motors – especially the Jetex 50 – are easier to handle and Chris has made some wonderful flights this year with his colourful and authentically-powered 'Rocket Boy' in some very tricky conditions.



Above: modified Attacker festooned with trim tabs and fitted with Jetex 50B. This not only adds weight forward of the CG but also looks for all the world like the full sized prototypes drop tank!

Readers will remember Harry Hannant's Keil Kraft Attacker from April's *Smoke Trails* 28. I met Harry at the SAM Gala, where a few tentative test glides showed it needed some attention before it could be flown under power. So Harry left this beautiful model with me, and I was able to make some modifications before the next meeting.

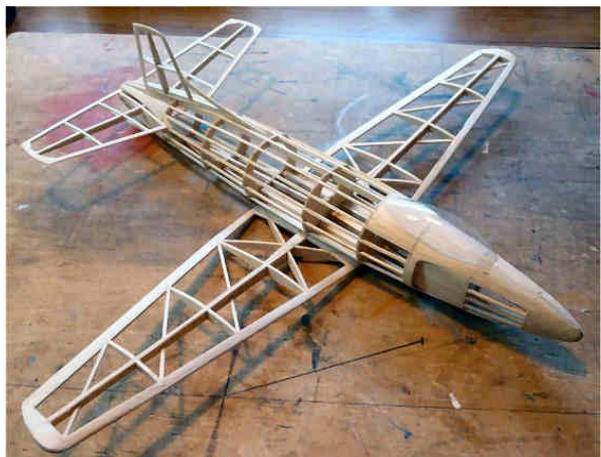
Such a beautiful vintage model cries out for a vintage powerplant. So, thinking that the lovely finish might also be spoiled by dirty Rapier exhaust (Jetex exhaust is much cleaner), I fitted a Jetex 50. This also helped with the balance, and only a little lead was needed so that the model balanced 1/3 back from the leading edge – just on the end cap of the Jetex motor, which is the traditional place for it and a good starting point. The model with a loaded 50B now weighed 40g – not too bad! As Harry hadn't built in moveable flying surfaces I added acetate trim tabs, which can be just about seen in the photo, to control any turn, add 'washout' to the wing tips and allow up or even down elevator.

The weather at July's old Warden 'Aeromodel' event was not too unkind – a variable North wind with some short periods of calm days associated with thermal activity. After some tweaks of the Attacker's trim tabs I was rewarded with a nice flat glide, but I obviously hadn't corrected a right tendency quite enough, and the first flight under power ended with a wingover and a crunch into the ground. Oops!!

The wing had come adrift – these are always vulnerable on straight wing designs – but after gluing it all back together I tried again with a little more ‘up aileron’ to keep the offending wing down. This time the Attacker rewarded us with a nice stable flight in a bit of a breeze, with the 50B with ‘Red Spot’ pellets producing its rated thrust for 15 sec or so, and it landed into wind without further damage to those vulnerable wings. Just wonderful! I was relieved and happy.

Now the Attacker, whether model or full-size, has had a poor reputation, but there is nothing wrong with Albert Hatfull’s built up design, nor, let me say, with his profile ‘Shadow’ Attacker, which flies well with a Rapier L-2 LT, or, at reduced size, with an L-1 (see *Smoke Trails* 30).

Howard Metcalfe, encouraged by the above saga, has now finished his Attacker, addressing its more obvious challenges, viz: wings vulnerable in any landing less than perfect and short nose moment needing a lot of noseweight, especially if you are going to fit an L-2 and not a Jetex 50.



Above: Howard Metcalfe’s Attacker for Rapier L-2. Note the built up tail surfaces, lightened fuselage formers and cross-braced wings, which are ‘knock-offable’. It is finished with acrylics.

Howard writes: “The full size Attacker was not a very good aircraft, but I am pleased I’m not the only one who finds it attractive. The simple lines are well balanced and harmonious and it was built by Supermarine. Irresistible! I can still remember, even at the age of 70 [!] the glee with which a 13 year old built models like this from the KK and Veron scale range.

The wing joiner is a split 2.5mm carbon rod with metal tubes rolled from a Coke tin. Extra diagonal ribs have been added in the root bay, the tube has been blocked in with 4 pieces, the $\frac{1}{32}$ " webbing has been doubled up and balsa strips have been added to the fuselage ‘socket’ and alongside the root rib. It is covered with *Airspan* [Howard loves this as its shrinkage can be controlled and it doesn’t get brittle with age] with one coat of 50/50 dope/thinners.

Many years of struggling with an old dual-action airbrush and artists’ acrylics had left me a little shy of airbrushing, but I followed Mike Stuart’s advice and bought a simple Badger 350 airbrush and used *Tamiya* acrylics with the accompanying thinners. What an improvement! – no waterlogging – and it was quick drying too. I wish I had tried it years ago. The lines were drawn with a ruling pen and slightly thinned *Tamiya* acrylics in various shades of grey and off white. The gun blisters were painted on by hand and the guns were turned from the wooden kebab skewers.

A couple of ‘mist’ coats of *Johnsons Klear* were sprayed on after all the details and this solved the overtly matt look. All up weight ready to test glide with a used Rapier was only 27.3g and it only needed [a very creditably low] 2g lead in the nose to get the CG right.

A test glide in the flat calm of an evening was fairly straight, though nothing to write home about – it is quite a draggy model – and showed the wing retaining dress studs needed strengthening.

The wind never fully abated at Middle Wallop the next day, but impatience got the better of me and I decided to give it a go. After thoughtlessly correcting a slight left turn by bending, and cracking the rudder [how often have I preached building in moveable flying surfaces?]. The first flight started beautifully with a gentle climb out, the 120mN Rapier proving about right for the model's weight. However, after a level cruise, it slowly came round to the left, the speed built up, the nose went up and it started a roller coaster ride of increasing alarmingness until it hit the ground. It did not quite fly out the full motor run [which as we know is the definition of a successful flight!] but this was promising. More flights followed, and more nose weight was gradually added, which eliminated the climb and dive cycle, but now, as the speed built up, the turn increased, the nose dropped slightly, and she hit a wing tip at speed. Fortunately there was no damage as the wings popped off on cue. At least that part worked out OK!"

Overall, Howard was well pleased, saying the Attacker looks great in the air. In common with most rocket propelled models, it needs to be trimmed for a dead straight glide from a hand launch, and, in addition Howard thinks: (a) It may be overpowered – with 120 mN behind it it is quite fast, but, he adds, this is the way he likes 'em! (b) It is probably over elevated – 2° is too much 'decalage' when the model gets up to speed. (c) Moving the CG back may prevent the nose dropping in the turns, but, as the exhaust impacts the trough close behind the wing, it will need a downthrust tab; (d) The (near scale) fin may be too small, allowing spiral divergence. If shifting the CG rearward doesn't work a clear extension piece may be required. Trying all this will be of course good fun, but in order to eke out his precious stock of Rapiers, Howard will proceed with catapult tests.

News about Rapiers

I received an email from Mike Woodhouse: "The production of Rapiers has ceased. The product has been reclassified from a smoke generation device to a firework. This change in definition results in a considerable change in the management of both production and distribution of the Rapiers. This places considerable new constraints and controls on the product. Dr Zigmund is looking into ways and means of sorting the situation, but it will be some considerable time before new product becomes available". Hmm ... This is too unexpected, and Dr Z is, I believe, appealing against what appears to be some heavy-handed EU legislation. George of SAMS Models, and others, affirm that having identified a market niche, Dr Z, or others, will not let this be unfilled. I hope they are right!

Meanwhile, what to do? David Lloyd Jones, CD for the prestigious Eddie Riding competition, has drafted some changes in the rules to encourage us jet fliers. David writes:

"In view of the fact that both Rapier and Jetex types of propulsion units are becoming difficult – if not impossible – to obtain, this class will allow, temporarily, the use of catapulted free flight jet type models, at least until these propulsion units, or similar, are available again. The rules are as follows: **1.** A "scale" model of a jet type of aircraft can be entered. **2.** All models must be fully constructed using balsa and tissue (or film or tissue equivalent). **3.** Maximum wingspan to be 24" (approximately 61 cm). **4.** Minimum span to be 11" (28 cm). **5.** Minimum qualifying flight time is 15 seconds if not powered - 20 seconds otherwise. **6.** If the model is actually powered by a reaction motor or ducted fan on the day, it will gain 50 additional flying points - but cannot be catapult launched for flight if a propulsion unit is present. **7.** Catapult system must be using a stick in one hand, and the aircraft in the other. **8.** String and/or rubber combination in the catapult to be provided by the competitor, and can be any combination to satisfy rule 7 above. **9.** Documentation will be the plan the model is built from, and one coloured print or photograph of the aircraft modelled to establish markings and colour. **10.** This class will not be eligible for the "Eddie Riding Trophy", unless the model is entered with full documentation as laid down in the "Eddie Riding Trophy" rules together with the flying requirements therein. There will be substantial cash prizes in the class, and a trophy cup that will be awarded for one year, before its' return to the organisers of the event for subsequent representation".

All this seems eminently reasonable to me. David (01565734040, d@vidlloydjones.co.uk) would welcome your comments.