March 2008

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The articles and views expressed by our members, are not necessarily the views of the editor or committee and therefore we reserve the right to modify and or refuse an article if it is considered in the best interest of the club.



In this Issue Goodwood Update Sledge Hammer

CHICHESTER AND DISTRICT MODEL AERO CLUB

Chichester and District Model Aero Club website - cadmac.co.uk

Committee 2008

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Committee appointed positions

Snr. Training Offr. John Riall Junior Members Protection Co-ordinator: Bruce Smith

01243 531602

01243-782922

Cover Photo: Bob Partington's Mk,XIV Spitfire at the Yeovilton display. Bob's 72" w/s model, built from a YT Kit, is Axi 5330/24 powered and turns a 20X13 APC E prop. AUW is 15lb 10oz including a digitised Griffin engine sound system. 2

Competition Rules 2002

I/C Climb and Glide

All pilots can have helpers or instructors. Model will be any i/c engine plane. Timed climb from ROG. Time to be decided on the day. Shut off engine and Timed glide to spot land in box. 10% extra for touch in box. Non A. B cert flvers will get an extra 20%. Winner is highest total of Two Rounds.



GOODWOOD VEE - STATIC DISPLAY For a registration form please contact the Static Display Manager: Peter Houseman on 01243 606046 Or by email at: murielhouseman@aol.com.



Chris Gold's model was about 50 feet away from the spectators but he still got a severe reprimand from the Flight Line Director for allowing it to face them with running engines. TOO MANY OF US STILL DO THIS! Never taxi back towards the pits. Never taxi close past the pits. For the BMFA 'C' Test, you are required to taxi out, away from the pits but upon landing, if you make any attempt to taxi towards the pits you receive an instant FAIL! Please, if you manage to land with your engine still running, then taxi out of the active flying area to the side of the runway. If your run stops close but short of the pits or box then make a 270° turn to taxi out of the active flying area if you can't stop your engine!

Events/Competition Calendar 2008

March15th	Sat 12 noon	Climb/ Glide i/c only	Thorney
April 12	Sat 12 noon	Bomb Drop	Thorney
May 3,4,5	Bank Hols (1 day)	Goodwood Practice	Thorney
May 10	Sat 12 noon	Goodwood Practice	Thorney
May 25⁄26	Sun/Mon	Goodwood Vintage Flying Event	Goodwood
June 14	Sat 12 noon	Scramble (i/c only)	Thorney
June 15	Sun	BMFA Southern Elec Fly-in Chec	kford Heath
June 28/29	Sun	Wings & Wheels	North Weald
July12/19	Sat 12 noon	Open Glider + Electric	Thorney
July 26/27	Sat⁄Sun	Hastings Show	Hastings
Aug 02	Sat 12 noon	Open Glider + Electric	Thorney
Aug 16	Sat 12 noon	Slope Soaring Comp	Trundle
Aug 23/24/25	Bank holiday	British National Championships	Barkestone
Sept 13	Sat 12 noon	Loops, Rolls and Spins	Thorney
Sept 20/21	Weekend	South of England Model Show	Hop Farm
Oct 11	Sat 12 noon	Scale Comp	Thorney

Seaford College Indoor All Saturdays from 2.00 pm to 5.00 pm

	0	,				
	March 22nd April 26th	September October 25		Novembe Decembe		
	Proposed Club-night Events in 2008		All 2nd Thursday of the Month			
	13th March 10th April 8th May 12th June 25th June 10th July 24 July	Auction Indoor Comp Skittle Night Outdoor Flying Club TBA Outdoor Flying Club TBA	14th August 28 August 11th September 9th October 13th November 11th December	Outdoor Fly Club TBA Auction TBA AGM (provi Fees (provis	sional)	
Goodwood Vintage Flying Event R/C Practice/Rehearsal Days						
May 3,4,5Bank Holiday (first good day)Goodwood PracticeThorneyMay 10Sat12 noonGoodwood PracticeThorneyN.BAll CADMAC pilots are welcome to attend and fly at these two sessions. We will, however be operating a double peg frequency control system.						
	May 24	Sat 5pr	m ish Display Pr	actice	Goodwood	

Editorial

Yes we're back. Well, as I was thinking the other day.... Now that world order has been restored once more.... I refer of course to the long awaited return of the Tranny Toff, The Raja of Radio, his Royal Airworthiness Lord Barnstormer to the hallowed pages of RCM&E.......

Ah yes, as I was saying now that Bertie's back, perhaps Brucie ought to be back also, and he is - well I am. Ably assisted. now, by my very own Young Miss Gussett in the shapely form of Super Hero, Bryan Stitchbury, who has come bounding in to save the planet, so to speak, and take charge of the printing and distribution of the nation's favourite magazine. (Why it's never been featured in Have I Got News For You, beggars belief.) Bryan's featured on page 9 along with newly elected members Steve Skinner and Philip Roberts as well as the two newly co-opted members Derek Honeysett and Mike Pinn.

Now then, back to this Clear Dope thing. You will recall that in the last issue of its old format (December 2007) | wrote an article on My Electric Edge 540, I wrote an article on My Laser 150 4c engine and I wrote an article on a couple of My own books. In this edition, returning to the old format I've written an article on My Sledge Hammer and another article on My assessment of how the Goodwood thing is developing. Throughout the years I've visited every show in the area and written a report, with photographs and last year I wrote a series of articles on Hairy Batics. Now you may recall, when I first took over this job I wrote a long spiel about how I was just the editor, and this was YOUR magazine - well it's taken a long time, but at last the penny's dropped and I've finally realised - this isn't your magazine at all. IT'S MINE!

Most of the CADMAC committee have realised this for a long time and wouldn't dream of interrupting the seamless flow of priceless prose with their clumsy interjections of anything that might be remotely useful to the membership. No, there're just a few, too thick to realise what's really going on. Toni BR's the worst of the bunch never missing an opportunity to force his way into the public arena with his minutes. Keith Wood's aot an irritating habit of keep sending notelets regarding membership - as if anyone cares. Ray Beadle's another gross usurper with his twee lists of events and his 'look I can put boxes and grids in my Microsoft Word' comp results. Lately, Allen Miller's been trying to muscle in on the act too - heaven help us with all those Indoor Meetings to come. Well I'm not standing for it any longer! At least YOU know your place. No body wants to read anything about your puny. boring modelling experiences or the latest piece of junk you're concocting in the potting shed. Now at last I'll be free to enthral you with ALL MY OWN personal interests and activities. You can look forward to badminton coaching and the reverse sliced backhand drop-shot - ballroom dancing with some cheeky cha cha moves, Brucie's top fifty favourite Status

Quo tracks, 8 different ways to fold a linen table napkin into a suggestive shape, Sex and Fruit -Sex with fru





Minutes of the Committee Meeting 5th February 2008 from Toni Reynaud - Hon Secretary

Members Present Tony Chant, Morris Campbell, Ray Beadle, Keith Wood, Bruce Smith, Allen Miller, Ray Andrews, Ken Knox, Toni Busuttil-Reynaud, Philip Roberts, Steve Skinner, Derek Honeysett, Mike Pinn.

Apologies for absence. None

Correspondence. Allen M – letter from the Bursar at Seaford College requesting proof of Insurance Cover. Keith W provided a copy of the necessary BMFA Insurance certificate; Tony C signed the draft reply letter. Allen to send to Bursar at Seaford College.

Treasurer and Membership Secretary's report. Three applications for membership – Mark Record, Chichester, former member, A cert; Graham Cowling, Chichester, A cert F/W and Heli; Sandra Dawson, Waterlooville, beginner. All agreed.

105 members (out of 152) have renewed so far. Approval of three new members takes the total to 108. The BMFA says that members are NOT covered by the BMFA Insurance scheme until the Club has received the Club membership fee and the BMFA subscription. Therefore collecting fees at the first Club meeting in January means that members are uninsured for between 7-14 days. Many members take far longer to renew so the exposure is greater. To prevent unwelcome incidents in future, the following steps are recommended:

1. CADMAC fees are decided at the first Committee meeting in December. This would synchronise with the BMFA who also set their fees at this time.

2. Fees are collected at the December Club meeting.

3. As it would not be possible to hold both the AGM and collect fees on the same night, then the AGM is moved to the November Club meeting.

4. The membership is advised through direct mailing of the change in procedures and

Flying Display Organiser Display Organiser's Assistant Flying Display Director Flight Line Director Air Traffic Control & Safety Police and Emergency Services Liaison Flight Line Marshal / Scrutineer CADMAC Safety Officer Frequency Control Officers

Display Liaison / Press Officer Marshalling & Spectator Control Control Line Flight Director Control Line Flight Marshal Commentary and Public Address Static Display Co-ordinator

Rav Andrews Philip Roberts Bruce Smith Harry Walton Tony Chant Roaer Andrews John Riall Morris Campbell Rav Beadle John Fowler Allen Miller Ken Knox Toni Revnaud Mick Blundell Dick Stepney Andrew Gibbs Peter Houseman



If you're not already involved, but prepared to roll up your sleeves and put in some hard work over the week end, please get in touch with the appro priate contact above.

01243 804119

01243 373739

01243 531602

01243 375156

01243 262816

01243 673882

01243 782922

02392 464364

01243 670163

01903 814820

01243 261839

02392 593104

01243 370422

01243 670791

01403 250936

01243 861804

01243 606046



Morris's proposals were generally agreed amongst members and it was felt that much of the above had already been included in the Mission Statement.

6 Tony Chant proposed four options for consideration regarding CADMAC's involvement with the Goodwood VFE. After much discussion each option was voted on and the votes recorded. By a majority of 12 votes to 1, the following option was agreed:

CADMAC should carry out the display arrangements and control line flying using club members but use BMFA members from other clubs and the Large Model Association for the flying display. Also they should set up a static displays and be on hand to talk to those interested.



On Saturday 9th February, a party consisting of Tony Chant, John Riall, Ken Knox, Harry Walton and Bruce Smith visited the Southern Area BMFA during their Public Flying Display at Yeovilton, where they gained a great deal of valuable information and experi ence, watching the proceedings and talking to organisers, officials and pi lots.

8 During this last month there have been several meetings between the CAD MAC planning staff and the Goodwood Organisation which have proved most helpful. Tony Chant has made himself available over a whole weekend to con duct committee members around the proposed activity areas. Ray Andrews has conducted a variety of discussions with BMFA and other bodies concerning the event's organization and the core planning group have so far held meetings with those who will be primarily responsible for Frequency Control, The Control Line Flying and Marshalling all the CADMAC related activities. The next planned meeting will concern the organisation, requirements and logistics of mounting the Static Display.

There has been a tremendous response from CADMAC Committee and members in support of this undertaking. Listed below are the names and contact details of some of the members most involved in early planning and there is also a good list of volunteers to undertake marshalling responsibilities over the two days. (Not shown here.)

the reasons for that change.

5. The Membership Secretary is instructed to immediately contact all Club members who have not renewed their subscriptions to explain the position and make it clear that they may not use the flying Club sites until the Membership Secretary has received those fees. (Keith W has already drafted the letter) In line with the Club Constitution, an EGM is to called for April to ask the members to accept these changes. Bruce S will also put the information in CD. Members will sign for CD at the next meeting, and those who don't sign will be mailed directly. Keith W to draft the resolution to be put at the EGM and include it in the CD article and letter.

Social Secretaries report. A list of dates for the Club meetings for 2008 with events and is to be sent to Mike P for inclusion on the Website. Extra evenings have been planned in for the summer to ensure communications as well as flying. The hall Committee rooms and playing field have been booked for the year apart from one date, which will be sorted this week. List of dates to be circulated. Possible dates for bus trips are: Jun 28 The 22nd Wings and Wheels Model Spectacular. Jul 26 Hastings Annual Model Air show. 20th September The Southern Model Air Show. Bruce S volunteered to drive the bus. Ray B noted that the Hastings show appeared to conflict with the last Open Glider Comp date. Toni to check dates and confirm. A summer evening fly-in and BBQ is to be arranged at Porthole. Date to be finalised as a Friday afternoon/evening in July/August. The march Auction has been advertised to local clubs. The auction booking-in is to begin at 7.00 pm, bidding at 8.00

Thorney Island representative report. Derek H said that the flyers at Thorney island seem to be self-policing fairly well. His only concern is that microlight aircraft seem to be regularly infringing our airspace on takeoff and landing. A letter is to be written to the microlight operators inviting discussion.

Thorney non-member flying forms. Reminder - In the box at Thorney

Thorney Island general use. (update section). No Issues. Any suggestions to be put on paper and processed through the committee.

BMFA representative's report. Ken K – T Butterworth has volunteered for the position of Chairman of the Southern Area BMFA. The Petersfield Club chairman was voted in as Comp Sec. A meeting is to be held at The Museum of Army Flying to be held at Middle Wallop the presentation will be: What the S. Area Committee does for the area and what more do the clubs think that the committee could or should do for them. Everyone welcome – many other clubs are sending reps. B M F A Flying display to take place at RNAS Museum Yeovilton on 9th Feb – a good time for committee members to see how a display is run. Please attend. Bruce S – What is the current state of the Southern Area BMFA website – it appears to have vanished, or links to it do not work. Ken K – Hampshire Council Webmaster messed up. BMFA Have the matter in hand.

Safety Officer's General report and site accident report Morris C hadn't received any reports of accidents at Thorney Island or Porthole Farm. He requested permission to remove some bushes near the storage boxes – agreed. Requested a working party to tidy up the flying area, repaint Pilots' Boxes, etc – agreed. Morris stated that the safety standard at Thorney appeared to be very good.

Porthole Farm representative report. Steve S said that flying at Porthole presented no problems. Flyers were keeping clear of the Poo Farm, and there had been no comments or complaints from that area. Steve then presented a proposed layout for future use of Porthole, with different pit areas in use for different wind directions. All members to study and discuss at the next committee meeting. Steve and Ray B to provide Tony C with additional descriptive information.

Porthole non-member application forms. No report

Porthole general use. (update section).

Tony C requested that the barn be tidied up.

Editor's progress on production of March Clear Dope. Bruce reported that a three page CD had been completed for February. Printing is on schedule. Printing of Instructor ID tags and display board are in hand.

Competition Rep ReportRay gave a list of competition dates for 2008. Someclashed with other major events or Club Bus Trips. He also noted that there werethree dates included for practice for the Goodwood Vintage Event, should it take place.Dates to be confirmed in later discussion and advertised in CD.Toni R toconfirm event dates and arrange trips.

Indoor Flying representative report Allen M reported that the meeting at Seaford on 21st January had been well attended – 22 flyers plus spectators, about the most that could be handled. Too windy for outdoor flying. Income from the event was noted. Hall hire has risen from £60 per meeting to £65. Next meet Feb 23rd.

Trundle hill representative report. Ray Andrews informed the meeting that Letters have been sent to Air Traffic Control and Goodwood Estates ref the rule changes for the Trundle, but there have been no replies as yet. Meon Valley Soarers have also been informed of the rule changes. There has not been much activity at the Trundle recently. Tony C said that some members had requested that repairs be made to the path in the area of the gateway. Ray A will talk to Goodwood Estates to see if they will effect the repair. There was a phone call from Rob Wildebore at Goodwood to arrange a meeting with the Airport Manager. He also offered the facility of a "run-through" of the possible display on the evening of Saturday 24th if required.

Tony C asked if anyone had any information of the antennas in the vicinity of the proposed display area. Ray A said that the frequencies in use from ATC and the VOR/DME Beacon are much higher than 35MHz. (VOR/DME is 114.75 MHz @ 62.5W). More information is to come from Rob Wildbore. Bruce S suggested that Allen M get in touch with a new member who is apart of the Signals Establishment on Thorney island and who will therefore have lots of good information on this subject. Morris C passed around a sheet of points that are important from his point of view as Safety Officer. These covered his suggestions for the order in which things should happen and who (in the greater scheme of things) should be responsible or consulted for each

continue organising the display as so far discussed. The vote was carried unanimously.

Tony Chant proposed a vote of thanks to Ray for the work and organisation achieved so far. This was unanimously agreed.

4 Ray Andrews discussed a variety of roles with committee and club members amongst which was the position of Flying Display Director, which Bruce Smith agreed to undertake. Bruce then commenced to produce a draft mission statement with particular reference to the Radio Control model flying, and which included names and roles of the key officers who would be involved, along with a suggested programme of flying slots to be flown primarily by CADMAC 'B' Certified pilots.



This draft mission statement was circulated to committee.

- 5 At the CADMAC Committee Meeting of 5th February 2008, Morris Campbell (Safety Officer) made the following proposals with the intention of protecting and promoting CADMAC at the proposed Vintage Flying Event.
 - (a) The CADMAC committee to agree on the go-ahead for the event;
 - (b) They should appoint a Planning Supervisor COMMITTEE DECISION
 - (c) The Planning Supervisor to liaise with G/Wood Estate's and procure intended programme of Events;
 - (d) The Planning Supervisor to contact the BMFA and to be advised by them in all matters relating to the event.
 - (e) The Planning Supervisor to build programme of events around G/Wood Estate's proposals;
 - (f) That CADMAC provide static model displays and control line flying only and that other display pilots i.e. LMA be used;
 - (g) CADMAC to promote its self through the Goodwood Vintage Flying Event;
 - (h) CADMAC to request list of Duties and responsibilities from Goodwood Estate

i.e. Public notices and telephone No's in case of emergency or accidents and First Aid Points/First Aid personal to be appointed and Marshal's.

GOODWOOD VINTAGE FLYING EVENT

From bruce smith with photos from last year's Goodwood Revival Meeting

I thought you'd appreciate a bit of a history of how we've become involved along with details of where we're at, at the present moment.



1 In January 2008, CADMAC Slope Representative, Ray Andrews was negotiating changes to the flying conditions on the Trundle Hill with the Goodwood authorities. During these talks, he was informed that the Goodwood Organisation would like to involve model flying during their Vintage Flying Event and he was asked to approach CADMAC with a view to their organizing such model flying.

- 2 Ray Andrews communicated this invitation to CADMAC Chairman, Tony Chant who was cautiously interested in CADMAC's involvement. Tony suggested that since Ray had made the early contact and received the initial invitation, he should look further into the possibilities of organising, staffing and running such a display.
- 3 At the CADMAC Committee Meeting of 8th January 2008, Ray provided initial details of the proposed participation of CADMAC in the display and reported that various club and com-

mittee members were willing to provide assistance and participation.

Toni Reynaud proposed and Bruce Smith seconded that Ray was to continue investigating and forwarding proposals for the display, and if all proved OK (EG Risk Assessment, participating pilots, BMFA agreement etc) he was to



point (CADMAC or BMFA). Ray A said that these items had all been covered in the work done so far. He has investigated as requested at the last committee Meeting and the outcome is covered in the Mission Statement produced by Bruce S and sent to Tony C and all Committee Members. Tony C has seen the Mission Statement and ignored the names against each task until the Committee has formally accepted the task of organising the display. There followed a discussion between Tony C and Ray A on responsibilities. The committee then considered four options as suggested by Tony C in the Agenda: These ranged from CADMAC running the whole show including all the flying to CADMAC having nothing to do with the organisation at all. After a great deal of discussion Tony's Option 2 was carried by a vote of 12 for / 1 against. Option 2 Reads: "To carry out the display arrangements and control line flying using club members and use BMFA members from other clubs and the Large Model Association for the display. Also set up a static display and be on hand to talk to those interested."

Ray B stated that in his opinion, this year would be a useful vehicle for the club to gain experience in this sort of event. Ken K stated that the work of Ray A and Bruce S so far is excellent. The full size planes expected to be seen at the even will no doubt be top notch, and any display that CADMAC organises should match this.

If any of the above 1-3 options are considered, extra meeting's for all and everyone involved in arrangements or flying should be arranged by the person's who have already taking it hand to get involved, at the Fishbourne club house ASAP for updating reasons.

The four transmitting aerial systems in close proximity of the flight line to be cleared for interference possibilities before any flying at Goodwood airfield goes ahead. A Planning meeting will be held at the Fishbourne Club on Wednesday 13th February. Toni R to book the room.

Tony C proposed a vote of thanks to Ray and Bruce for the work and organisation so far. Unanimously agreed.

Junior Members' representative report. Philip R stated that he nothing to report this month.

Web Site Update Mike Pinn said that he offered to take on the job of Webmaster in answer to the advertising campaign. He restated that he would do the job from home. He is easily able to improve the website, and plans to recode it to look better and to future proof it. He will accept ideas willingly. He has control now. He can be contacted via webmaster@cadmac.co.uk

Any other business Derek H said that he might not be able to get to every meeting

Date of Next Meeting

The next committee meeting will be held on Tuesday evening 4th March 2008





For power, I opted for a 108 2/c glow engine combined with a Genesis Throttle Pipe and turning an APC 16 X 6 prop. This provides ample umph to hold station in a prop hang at about half throttle and I'd imagine that a decent '90' should be 'man enough' for the model which has an 'all-up' weight of just under 7 lbs.

Early flights have exceeded my wildest expectation as she'll fly and glide slowly with no hint of a tip stall. Stick response is extremely smooth though positive and so far I've not come across any nasty traits. As you'd imagine, with that slab fuselage, the Sledge Hammer will sit happily in knife edge all day, with just the tiniest amount of rudder, and with no down-thrust but an engine thrust line that bisects both the main wing and tail, inverted flight is 'hands off.'

So far she's managed to perform a rather ragged knife edge loop, and in a strong wind down at Porthole. a vertical knife edge descent (Phil Claridge suggested we call it a 'Forge Drop.') What is quite obvious is that at present, the flying capabilities of the Sledge Hammer are severely restricted by her pilot's capabilities - so l'd better get a lot of practice in. In the words of Peter Doe - I seem to have got myself the plane I've always wanted.



Let's hope it survives all the attempt at death slides and waterfalls and manages to make it through a year of Ray's competitions! I built in a small servo under the fuselage for the Bomb Drop Comp though I don't know how it'll compare with the ultra light Limbo Dancers and Cougars in the climb and glide. We'll have to see.

In all, I think it cost me about £60 to build and cover, though a fair bit of that was the c/f tube and rod, and I used JR 591 servos for the four control surfaces. I've not 'tarted-up' the plan sufficiently, yet for printing, but if you're interested in joining the 'Hammer' Swingers' Brigade' drop me an email and I'll let you know shortly, what the plans will come out at.

13



Ame



For positive, flying surface controls I wanted to use a closed loop (pull pull) system. This presented no problems for the elevator servo but mounting a rudder servo in the fuselage of a profile model caused me to scratch my head for a while. Eventually I hit on the idea of using a three block servo tray, as shown above, which slotted into the fuselage from one side, with a dummy outer covering, and was secured by servo screws from the other side through the light ply fuselage side. This made a tidy and easily ac-



cessible installation.

The battery, receiver and switch harness are all contained within their own compartments and accessed via a hatch in the underside of the fuselage. NB. A slim-line Rx unit is essential which must have its sockets at the end of the casing since the gap is only 3/4."

As you can see from the photograph, above, I had to put my thimble on and do quite a bit of stitch-work in this model. I could have used saddle clamps to mount the undercarriage but I chose to stitch it on for greater strength and lightness. In much the same with the way I attached the spats to the piano wire undercarriage. I also used stitching to provide the first hinge between the tail-plane and the elevator on each side of the stabiliser. The two elevator halves are joined by a piano wire torque rod which locates almost half way along the elevator's length. This ruled out any chance of using a conventional first hinge and I didn't want to go down the double brass tubing root. The old control-line flyers, of course, are no strangers to stitched hinges and they know just how efficient and durable they are. I always use a No.1 Whipping Twine for my stitching which can be bought for a couple of quid from any chandlery. It's wax impregnated so it has its own lubrication and built in fuel proofing. Its incredibly strong.

New Committee Members

Bryan Stitchbury CD Production and Distribution Manager 01730 812485



Derek Honeysett Thorney Island Representative 01243 342629

Steve Skinner Porthole Farm Representative 01243 601780

Philip Roberts Junior Members' Representative 01243 373739

Mike Pinn CADMAC Webmaster webmaster@cadmac.co.uk







Sledge hammer

For a couple of years, now, I've been casting about, trying to find my ideal 3D aerobat. I wanted something that would pull through all the aerobatic manoeuvres and also be

capable of flying the 3D manoeuvres: A competition machine, a Thorney Island aerobat but also something with a short take-off and landing capacity that I could fly happily on the restricted patch at Porthole Farm. My Hot Knife showed promise and was a big step forward for me since it was the first aircraft I'd had that could hold it's altitude in a knife edge. It was, however, quite a heavy craft, it struggled to prop hang even with an Irvine 53 up front and it didn't spin very well.





The Twist 3D was quite a bit lighter and had a really superb flat spin but with that slim fuselage it didn't like flying in knife edge at all. Both these aircraft were good fun-flyers, ideal for Porthole and excellent competition machines but they both had that square, plank wing which makes them very stable and easy to land but doesn't like a Snap-roll and causes all kinds of wing rocking in an Elevator.

Nearly all of the manoeuvre flying problems were sorted out with the arrival of my Edge 540. Here was a machine that was soft on the sticks but responsive. It's aerobatic credentials were impeccable with large smooth (IMAC / F3A) manoeuvres clean spins

and a reliable knife edge performance. The trusty old Super Tigre G90 has just about enough power to prop hang but with that razor thin wing section she really is too fast for 3D flying. Landings are gentle with a long flat glide but very hot and with those wheel spats, just not the sort of craft for Porthole unless you particularly like repairing them.



In the end I decided to take the bull by the horns and try and incorporate the best aspects of all these designs into one model, using essentially the same gear that I'd first used in the Hot Knife and then in the Twist 3D. For a couple of years I'd been contemplating the design of a 3D Profile P51D to be known as the.......get ready for it...... Mustpropang. Recent experience, however, had left me enamoured with the flying characteristics of Edges and so the Sledge Hammer, Smithy's Light Edge, was born.



Right from the off set, a light wing loading was the main priority with this design and the only heavy bits were the beech engine bearers and bearer spacers which support the carbon fibre wing joiner rods and the undercarriage.

At a span of 62 inches, the wing halves needed to come off separately so they each derive their strength from two lengths of 10mm carbon fibre tube and slot onto 8mm carbon fibre rods set into the fuselage. As you can imagine, accuracy of tube setting during wing construction is critical otherwise they wouldn't slide on or off, so jigging up and building the wings around the c/f tubes was necessary. This would appear quite a complicated procedure, particularly since the rib depth decreases along its length but with a couple of gigging supports either side of the wing, and the rods located through the fuz I actually found building the wing, suspended over the building board quite easy. Another feature that I wanted to build in the wing was a really thick rib root chord to slow down the glide characteristics of a profile model, so the aerofoil section is 3 inches thick at the root with a 1 inch flat leading edge and tapers to a one and a half inches thick section at the tip with a half inch flat leading edge. Also, with a wicked wing shape, tapering from 20 inches at the root to just 10 inches at the tip, it was essential to ensure that the ratio of **A**ileron to **R**ib at the **R**oot was greater than

the ratio of Aileron to Rib at the Tip $A^{R}/R^{R} > A^{T}/R^{T}$

This ensured that for any angle of downward aileron deflection - the angle of attack at the root was always greater than that at the tip - so the wing will always stall first at the root, and just nod. (That's the theory, anyway!)