

Court IRCULAR



Spring - 07
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Copy Deadline

All contributions are welcome
send photos, ideas, letters, etc
by email to [duncan@east-two.
co.uk](mailto:duncan@east-two.co.uk) as an attachment in
Word for PC, or as a hard copy
if you have no computer.

The Editor
31 Glyn Road
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Scorpion **K & B.40 Texas Quickie Rat**

The Newsletter of The Three Kings Aeromodellers London
United Kingdom
Affiliated to the BMFA

Cockpit Comment

From my home office!

Generally I have been busy helping one of the UK's premier architectural practices redesign your town! But seriously I have been preoccupied building some Vintage Team Racers, and flying 1/2A Combat with the help of Mike, Steve, Martyn and Richard. I am looking forward to some successful flying this year and I hope you are too.

This edition of the CC sees a conucopia of stuff, including technical stuff on props and aerodynamics, which is always very interesting, if not there is a more lighthearted report on my trip to Portugal last year and some great pics of models out and about as well as Mike and Steve Waller's photo journal of the 2006 World Champs.

I hope that you have a great year flying with the Three Kings.

Once again we hope to be able to get over the 50 member mark this year, which is as you can imagine is a milestone for any club, especially in this day and age, so if you haven't paid your fees, get them in quick smart to our treasurer Brian Glithero.

Enjoy **your** Court Circular. – And don't forget Let me know what you are up to.

Cheers to this issue's contributors.

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The Court Circular

The Court Circular is the Newsletter of the Three Kings Aeromodellers, and is produced by the Club for the members and selected affiliates and aeromodelling contacts, the views and opinions expressed are those of the correspondents only and do not necessarily represent the official view of the Three King Aeromodellers. Any comments or questions should be addressed to the specific author.

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News and Views

AGM

Thanks to those members who could be bothered to turn out for the Club AGM in February. It was an interesting meeting and some valid points discussed. The most important being the fact that due to the hard work of the Chair and Wal Cordwall we now once again are in possession of a key to the gate of the field. It can be obtained from Brian Cordwall who lives very close by.

It is apparent that we still have a major problems with Anti Social Behaviour from the people on Mini Motor bikes, the council have been informed and the committee is investigating what other cation can be taken to stop this menance and dangerous disruption to our site.

In the mean time can I URGE you to use the site, it is a crucial resource that we must use in order to support our claim to it. Without use it will be lost so please support the planned Flying and Contest Days, come on down, have a fly and meet old and new friends.

Monthly Flying Days at Croydon in 2007

Fun fly days are for control line flying fun - practice, pristine new models, tatty old models, training, testing, chatting and avoiding other jobs.

Starts about 10.00 hrs finish about 15.30 hrs depending on wind and weather. The gate will be opened, so cars can be taken onto the site and the site will be fenced with hazard tape, to help prevent ingress by the bikers, but that can not be guaranteed. We would ask any non members to book in with the organiser before travelling.

All are welcome, the more the merrier.

No R/C flying.

For general info on flying dates call Steve Waller
T 020 83106101 Email: - SWSE20DW@aol.com

Dates

18th March 2007
15th April 2007

Organiser - Steve Waller 020 8310 6101 and Mike Waller
01474 871569

20th May 2007
17th June 2007
15th July 2007

Organiser - Keith Hynds 01932 223078

19th August 2007
Organiser - Steve Waller 020 8310 6101 and Mike Waller
01474 871569

Contests

F2CN and Brit Goodyear at Croydon

1 April 2007

Pre entry essential to ensure event takes place please advise Duncan on 0207 682 0421 or duncan@east-two.co.uk

Racing to start from 11 am, access from 9 am, processing and line check from 10. Sport flying on the grass all day.

BMFA License essential.



Letters to the Editor

Some really nice words from around the world, many thanks - Ed

Dear Duncan,

What a cracking edition of Court Circular! It's such a nice change to read about people who actually compete, instead of just flying aimlessly around till it's lunchtime, as seems to be the case with so many R/C clubs.

No wonder they have a 25% membership turnover each year on average; I'd get pretty bored, too, without the spur of competition.

The mention of a Weatherman event even got this hard-bitten free-flyer a bit nostalgic. I built one from the plans in Bill Dean and Ron Warring's Model Aviation in about 1949 when everyone else flew Phantoms; had a flat-head Mills 1.3 in it and was finished in red Marjonos two-part fuel proofer.

Anyone remember that stuff? My flying mate had a Mac .19 in his, which we considered rather poor form...

Keep on circulating,
Martin Dilly

Hi Duncan

Thanks for the 3 Kings Circular, it was a great read, and I did enjoy reading it.

Kindest regards
Lance Smith
Speed Research Group, Australia

Excellent newsletter, Duncan, thanks for including me on your list.

Thanks, Tim Stone NCLRA - USA

Hi Duncan

I've been meaning to write you and thank you for the for the plans, pic and instruction for the Cleaver. We are cold, no we are really cold. this morning it is -13 F (-25 C) and at Dad's it is -20 F (-29).

But we still thinking about flying so we have to settle on building for now. We are finishing up 2 new Fox racers for Ashley and our next project is F2A. Ashley want to try out for the USA Speed team this summer which would bring us back to Europe in 2008, Metz, France. We have a lot of hard work ahead of us and as soon it warms up we will be at the flying field. Thanks again for the plans we are now looking for a Irvine 25, red case.

Steve, Tom & Ashley Wilk Minnisota USA

Dear Duncan,

Many thanks for the 3K newsletter, marvellous stuff. I was interested in the article about hidden hazards in the materials we use. I seem to remember that when we file ali bellcranks and somesuch, we should avoid at all costs inhaling any of the resulting dust. I can't for the life of me remember why..... :)

Regards, Nigel Cheffers Heard

Thanks also to Nigel for some amusing thoughts...

A man in a hot air balloon realised he was lost. He reduced altitude and spotted a young man below. He descended a bit more and shouted, "Excuse me can you help me?"

I promised a friend I would meet him an hour ago, but I don't know where I am."

The young man below replied, "You are in a hot air balloon hovering approximately 30 feet above the ground. You are between 40 and 41 degrees north latitude and between 59 and 60 degrees west longitude."

"You must be an an NCO," said the balloonist.

"I am," replied the young man, "How did you know?"

"Well," answered the balloonist, "everything you told me is technically correct, but I have no idea what to make of your information, and the fact is I am still lost. Frankly, you've not been much help so far."

The NCO below replied, "You must be an Officer."

"I am," replied the balloonist, "but how did you know?"

"Well," said the NCO, "you don't know where you are or where you are going. You have risen to where you are due to a large quantity of hot air.

You made a promise which you have no idea how to keep and you expect people beneath you to solve your problems. The fact is you are in exactly the same position you were in before we met, but now, somehow, it's my fault."

Wings of Portugal 2006

Duncan Bainbridge

*An interesting sojourn to the Iberian Peninsula - Or
"How to try not to get sun stroke whilst flying toy planes!"*

Wings of Portugal is an international CL and RC event held once a year in Portugal, it covers most aspects of our CL discipline and RC Gliding and Vintage Duration, it is supported and organised by Three Kings member and renowned Portuguese TV personality Julio Isidro and his wife Sandra. In the past several 3 K's members have attended, along with a large number of the UK's premier speed, aerobatics and team race fliers.

This year the Three Kings were represented by Ted Horne, Miles/Eisner and Bainbridge/Orchard/Delgado, our first visit to Portugal and our first trip abroad as a team, so we were nervous and excited at the same time, Alex and I were joined by our wives, Dawn and Stephanie and for ourselves we were going to stay on after the contest and enjoy a short holiday in what promised to be a fantastic country.

Julio is; I guess, the Michael Parkinson of the Portuguese chat show and at 61 he is very famous and active in his chosen field and his face appears on billboards all over the country. In some of them he is even pictured holding a CL TR model; imagine 'Parky' doing that!

As well as being a famous TV personality he is well known throughout the aeromodelling community through his attendance at various Nats and flagship events in the UK and USA. He has hosted the Portugal event for some years now and it is seen as a nice amalgamation of contest and social gathering; attracting folks from all over, not to mention a few Portuguese as well!

Whilst well established, for those that had been before and that was quite a large proportion of the UK group, it was a comfortable ride, for the newbies....and our partners, it was an interesting, but enjoyable learning curve.

Interesting... Well interesting is probably the best word to describe our experiences, but in a good way, as I am sure that we will go back again next year to what was best described by Julio as a 'Friendship – not a Championship', although my jury is still out on that one, as it was a racing event for most and racing equals competition!

However; or whatever, the Friendship attracted over 300 competitors, or friends!

The delivery of such an event is an amazing logistical achievement and to create such an event that attracted Brits', Yanks, Russians, Brazilians, Irish, Spanish, Dutch, Canadians, Italians, and a wonderful load of home grown juniors, is something that must be applauded in this era of apathy, - Thank you Julio.

However, I do have one question? Where were all the Portuguese racing fraternity that I was hoping to meet?

We met some of the F2C guys at the airport, but did they turn up to fly at the event? No, we had Paulo and Abel, who both had a great event, but sadly the stiff local competition that I had been led to believe that I would be flying against, failed to materialise.

Maybe next year?

The possibility of an Antipodeans' assault on the Brit Nats and Portugal next year in an effort to take the TR Titles of Portugal down under may see some more locals come out of the woodwork, but be on your toes boys; as these Aussies are serious, you think us Brits are hard, just wait and see..

Onto the activities.

A large contingent of fliers and WAGS met at an ungodly hour at London Luton Airport on route to the fun in the sun! An uneventful flight saw us all land safely in Lisbon, to be met by Julio's PA. – see! I told you he was famous!

After a few samples of the local Brew – Super Bock, and a bit of waiting around, we were off onboard our air-conditioned coach, bound for our contest destination, the historic city of Evora.

Described in 1985 by the UNESCO World Heritage List as ..."Evora is the finest example of a city of the golden age of Portugal after the destruction of Lisbon by the earthquake of 1755".

We travelled over Santiago Calatrava's magnificent 17 Km long bridge dedicated to Portuguese explorer Vasco De Gama and saw the Parque das Nacoes, the former Expo 98 site, with its wonderful Atlantico Pavilion by SOM, the superb floating concrete roof of the Pavilhao Portugal designed by Portugal's best known architect and personal favourite; Alvaro Siza, although by this time we were moving quickly and the best look I got was a glimpse, but we hoped to see more when we returned to Lisbon in a few days time.

A short ride through very flat open and dry country saw us arrive at Evora, one of the most historically impressive and enjoyable cities outside of Lisbon.



Roman Temple to Diana

Full of wonderful churches and monuments, including a rebuilt Roman temple, dedicated to Jupiter, but locally known as a Temple to Diana, rather fanciful historically, but probably the best preserved Roman Temple in Portugal and one of the best that I have seen in my travels, more amazingly used as a killing ground during the Inquisition.



Évora is also the site of a wonderfully intact set of medieval walls, and famous Moorish planned street plan.

It has some nicely considered modern interventions within the historic fabric of the city and an interestingly majestic collection of sixteenth century palazzos that are in amazing condition; all centrally located they would make Pevsner proud. The many monuments erected by the major artists of each period now testify to Évora's lively cultural, artistic and historical past. The variety of architectural styles (roman, gothic, manueline, mannerist, baroque), the palaces and even the squares and narrow streets are all part of the rich heritage of this museum-city

As benefits a UNESCO world heritage site, Évora attracts a load of tourists, but is able to accommodate these with ease, and a load of Aeromodellers!

Once we arrived at our destination of Évora, we were met by Julio and his wife Sandra, our hosts for the event.

The new attendees were dropped off in the centre of town to find that our accommodation was to be within the walls of the cities Monastery, now part of the University.

Founded by the Company of Jesus in 1551, it was here that great scholars such as humanist philosophers Clenardo and Molina who influenced English thought, passed on their knowledge.

In the 18th century, the Jesuits, which had spread intellectual and religious enlightenment since the 16th century, were expelled, the university was closed and Évora went into decline. However, the university was reopened in 1973 and the Monastery is now used to provide basic student accommodation for theological pupils attending the Seminary.

We were more than a little surprised at just how basic the accommodation was, but I am sure that it was worthy in the most spiritual way; we survived and hopefully our souls will be better for it; but I am sure that Stephanie and Dawn will not be putting top of their list as

destinations of choice!

The other half of our group, were accommodated in more recent yet not as ecumenical accommodation in a modern hotel, no where near as interesting as ours!

After getting settled and exploring what is a most charming town and enjoying a superb lunch we were collected by the coach and travelled to the municipal airport; the Évora Aerodromo, which would serve as our contest site. Depositing our gear, we met up with a few of the US contingent and had a few beers and checked out the lay of the land. It was flat and hot and had big aeroplanes parked on it, what did we expect from an airport! But it did have the circles marked on it! But it was the late afternoon and it was hot and boy was it going to be hotter, we ordered another beer and wondered what the fuel was going to do in the heat!



The bus came and we were conveyed back to our Monastery in air-conditioned comfort, shame it didn't continue in our accommodation, but hey, it is not everyday that you get to stay in a house of religion, well at least I don't!

A quick shower and we all headed out into the town, hoping to meet up with various folks, we managed to see a few people but most were spread to the four winds and dining all over the place, we found a suitable hostelry and tucked into some great local grub, although some in our party were feeling the strain of the early rise and didn't manage to finish their sardines! We had an enjoyable evening and with the early start beginning to take its toll on everyone we headed back to our welcome if somewhat hard beds. - *A Monks life must not be a happy one!*

Friday dawned clear and sunny; bound to be a scorcher, so on with the sun cream before I was even out of the room and down we headed to the Monks Mess for a breakfast of ham, bread, jam, juice and coffee. No full English, but who wants that when you know that it is going to be 40 degrees!

Collected once more by the coach, off we tripped to the Aerodromo to register, which due to the number of competitors took ages, but once we had our name tags and got our fuel, provided by the organisers at a very cheap price, but it did involve some rather funny smelling red kero, but at least we were all in the same boat, no one being brave or stupid enough to bring their own fuel.

Fuel made, we checked the programme to find that the first cab off the rank for Bainbridge/Orchard of our 4 events that we had entered was F2CN.

So off we trotted, and got it going but we were not to have any luck, banging up a motor in practice and a past history of split tanks, meant that we had little practice with a brand new motor and tank set up in an existing model that we had just now got to fly well and unfortunately were unable to finish. But the racing is another story!



A Lonely pilot - yours truly out on the nice hot concrete!

Hot, bothered and somewhat jaded about not being able to get a model that we had spent a lot of time getting ready to go, we were consoled by the WAGS and after a few cleansing ales we were suitably chilled and headed back into the centre of the beautiful mediaeval city, with good friends, food, conversation and plentiful beer and wine.



The Wags check out the bar!

Saturday saw the WAGS off site seeing, they visited a Mesolithic Burial Site and some superb standing stones; older than Stonehenge! The historian in me was very jealous, it was all very educational, but perhaps not quite the shopping extravaganza that they had hoped for, although Diane Taylor did opine that being around the standing stones was better than listening to Terry complain that he 'couldn't start the 'bloody' motor because it was too hot!



and some non Rolling Stones!

I am sure that she didn't mean it! Some of the WAGS stayed in town for a girly lunch, but others, notably ours, stoically ventured back to the Aerodromo to see how we were getting on.

SuperBock Racing!



Fueled by ether, nitro and SuperBock we were doing ok, not the fastest, by no means, but we flew hard and fast, every race is a competition, as a pilot I am out to win every race, I am not do or die, but if you don't go in a race to win, as Michael Schumacher says – "What is it for if you cant try and win a race!" Racing is fun and it is what we do and some of us love the buzz of racing. I love it and it is what I love doing, so we tackled the racing like we would any other, with gusto.

We perhaps had a little misunderstanding and a little bit of discussion but hey isn't that racing, and there are rules which must be followed that is why they are there; they should be enforced for one and all, not bandied about willy nilly, but in the words of Stuart Robinson "Next Time!"

But that is another story!

We ended Saturday hot, tired and hopeful of a better day. Back to our cells we got cleansing redemption and headed out to the banquet.

Held in the equivalent of a listed building, a local historic building that had been regenerated into an arts centre, the venue was something to behold, lit with lanterns and candles, benches were spread throughout the courtyard of a wonderful C17th granary, huge quantities of food, wine, beer and local sangria were consumed by all and sundry to the accompaniment of a local singing group and Julio and Sandra's hospitality. In keeping with the Julio's idea of friendship not championship, no-one went home empty handed and the boys and girls of the 3 Kings did well in the raffle as well.



Saturday Banquet, one raffle prize was Eddie Murphy's jacket!

On our table we were lucky to meet American Speed legend Warren Kurth and his lovely wife, who tried very hard to convince us to come to the USA and fly at the Nats, which may have worked, but only if it involves a shopping pit stop in New York for Stephanie.



Blimey! where's my Sangria? Mick Orchard looks worried!

We shared our table also with the lovely Jane Andrews and Diane Taylor, their slightly less fragrant (unless you really love the smell of castor) other halves and the fastest John in the west – West country speed demon John Mealing, it was a very entertaining and boisterous table, not quite sure what Warren and his wife thought, but I am sure that they enjoyed our silly antics!

Tired and well entertained we headed back to get some rest before Finals day. Once again it dawned hot and clear, does it ever rain in Portugal? Out to the airport we found that we were not on in the B final until after lunch, so we did a bit of practice and then retired to the best seats in the house; the bar for hamburgers and lots of thirst quenching SuperBock!



Well laid out contest area, speed, TR and stunt circles

In the heat I managed to film the A, F2CN, and Barton Finals, Steph got the B final that we were in down on tape, all for watching and learning from at our leisure.

The final was good fun, but we only managed a Third Place, as Sid said before, "Next time".

We packed our gear and then it was time for the closing ceremony. With podium, flags and bucket loads of trophies, it looked more like a championship than a friendship; but remember my tongue is



*In the dark of the hanger-
Winners in Class B VTR*

Whatever, it was a perfect end to a great weekend, back to the monastery we cleaned up and headed into town, much later than on previous occasions, and it was Sunday, so our choice was somewhat limited.

So we headed to the main square and found a restaurant which, whilst touristy was not too bad and was still open, we quickly found our fellow diners to be Miles/Eisner, and were joined by Sid Robinson, Toogood/ Ward/ Toogood and later by our gregarious host himself; Julio and Sandra, who could only get some dinner once he had had his photo taken with the owner of the restaurant.

Not the greatest dinner, but as tired as we were, it was a top ending to a top event.

Up early the next morning, we waved goodbye to my team mates, who were off back to the UK with the majority of the crowd.



Back on the bus one last time.

Watching the bus move off down the road we walked back into town, had a coffee and went and collected our hire car.

All packed up with the model box well and truly locked and in the back of the car, we left the Monastery and headed off into the sunshine; off down through the south of central Portugal to Tavira and the Eastern Algarve... we were off on our holiday!...

But that is another story!

The final word

Wings of Portugal is a great event, one which I gratefully thank Julio and the lovely Sandra and their team for organising, I strongly recommend it to everybody.

If you have the opportunity, do it, it is great fun, you meet super people, make some great new friends and you get to fly some toy planes, it is hot but well worth it and Steph and Dawn enjoyed themselves.

Rumour has it the Aussies would like to come, so hopefully they will be invited, so put it in your diary now!

It will be one hell of a *Rumble!*



All the way from Brazil beautiful Mustang by Bene Rodrigues



Clever Ready To Go



Stunt in action



Miles / Eisner Get Ready



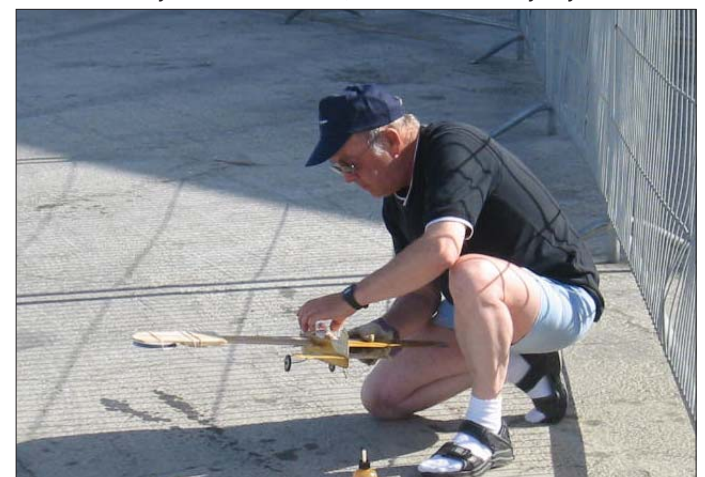
Look at all that gear - on Easyjet too!



OAP Mini Goodyear Pilots in Action, Tom Wilk and Terry Taylor



Julio's Texas Quickie Rat K & B Power



Taffy Bollen warms up Dave Smith's Little Warrior ready for 1/2A



Ted Horne and Julio Isidro running Mini Goodyear



Tony Toogood and Julio flying F2CN



USA v's UK Mini Goodyear



Toogood/ Toogood Texas Quickie Rat



The Ends of the Day!



The End!

Round & Round

Duncan Bainbridge

Profile Vintage Team Race



The name of the game is experience;
Practice x Performance = Experience

Experience should be defined by a combination of pilot, pitman, engine and aeroplane, but to gain that experience and performance in modern Team Race today perhaps requires a level of technical ability and commitment in terms of time and finance that may be daunting to the beginner or one who is new to racing.

However this year a solution has arrived courtesy of VTR SIG member Roger Reece, Profile Vintage Team Race. (PVA)

Now before you all start yelling, "We don't need any more classes!" I agree that there are already too many classes and too few flyers, however PVA is merely a slight modification of an existing class.

Some of you may have seen Roger's article in the November 2006 AMI – Aeromodeller, which details the design and construction of a profile version of the Humpty Go-Kart, a Dick Edmunds design originally published in Aeromodeller, 1955. It is a neat little racer to build and as with all Edmunds designs, no doubt it is an excellent flyer.

For some time Roger has felt that there is scope within VTR to provide a sub class which uses a simplified racing machine that flies well; takes off and lands on well mown grass is well overdue.



The object of PVA is to encourage 'would be racers' not to be put off by the need for 'high technical' know how that is essential in today's racing classes.

The models must be true to the ethos of VTR, but use a modern plain bearing 2.5cc glow motor like the Enya

of Fuji .15's, these can be bought new for about £50.00 or found or scrounged at swap meets or on eBay, whilst wheels, controls and tanks can be easily made or bought.

At the AGM last November the VTRSIG agreed to run, as a novice class; PROFILE VINTAGE CLASS A at any / all meetings of the 2007 season. This will be on the basis of three or more teams prepared to race.

A short summary of the rules is listed below:

- 1/ Pilot must be Novice (a beginner to c/l or perhaps a pitman?)
- 2/ Any vintage A approved design built as a profile (along lines of MG Y)
- 3/ Any 2.5cc (0.15cu) glow, non Schurnle, plain bearing commercially available
- 4/ Fill by squash bottle
- 5/ Max 10% nitro fuel (usually provided)
- 6/ Glow clip (no remote) Suggest 2 x man pit crew
- 7/ Only APC or Graupner 7x6 glass filed prop (no rework)
- 8/ All other rules as per vintage A



Martyn Haywood's Dimple Dumpling

Like I said the key to Experience is Performance and Practice, these models will allow you to learn or improve on your basic race craft, building on what is learnt in Mini Goodyear or will provide you with a class to fly that is fun, but has none of the pressures of F2CN, or Full VTR.

So go on, have a go, try something different, there are a few people building already, I know of a Dimple Dumpling and a Black Chiffon being built and no doubt there are a few more out there as well. So check out the November 2006 AMI – Aeromodeller and build a Humpty Go-Kart or just take any of the VTRSIG approved models and there are loads and build a profile version. Grab a mate, go practice and join the winners circle.

The first event is scheduled for the 29th April at RAF Cottesmore, Oakham, Rutland, LE15 7BL where F2C and all VTR classes will also be flown, but if you fancy it you must call the organiser Jo Halman on 01582424398 and tell her your name for security reasons as it is an operational RAF Station.

If your interest grows you can always get more info by attending any of the contests throughout the year or join the VTRSIG and get their comprehensive newsletter.

For more info on PVA and the VTRSIG News contact Roger Reece on 0121 585 9598.

Propeller Dynamics - an extract

- Joe Supercool the Prop Dr Writes Again!

Chapter 9: Model pylon race propellers

The design process for pylon race propellers may be used to illustrate the material presented in the previous 8 chapters of this book. Pylon race propellers are particularly interesting because they operate at advance ratio's which are getting beyond the range at which the Betz-Prandtl-Goldstein vortex theory is known to be reliable. Of most interest are the Madera class giant-scale racers and the international pylon racing class, F3D. It is with the latter class that the author has most experience, so we will start there.



The model characteristics in F3D are quite the reverse of those expected in a classical racer, which has the smallest possible wing consistent with landing. The FAI rules for F3D require a wingspan of 1150mm, with a section thickness at the root of 22mm. Total projected area of the flying surfaces is a minimum of 34 dm², with a minimum weight less fuel of 2200 g. Maximum engine capacity is 6.6cm³, tuned pipes being permitted, but no nitro methane: they are true alky burners.

F3D model aircraft are powered gliders, pure and simple. The sink rate is so low that landing is their most hazardous manoeuvre. With a bit more section camber they would do well in F3B glider.

Their flat-plate drag is something less than 2 square inches, so that by the time you put 3 HP in the nose, these are going to be VFPG's (very fast powered gliders). Despite this low frontal area, we will see that all is not well, especially in regard to the propeller.

The problem is that the 3 HP mentioned above is produced by very low torque Schneurle-ported engines operating at 29000 RPM. With the VFPG's racing at about 200 MPH, this translates to ridiculously small propellers. Indeed, anything much over 7.5" diameter is in trouble with high Mach numbers (>.8). Also, the propeller only protrudes past the full depth of the engine cowling by about half an inch, which is not very much. More of this anon.

Also curious about the configuration of the propeller is that the pitch required is up around 8". That is, the pitch is greater than the diameter. One could say that the

propeller is "over-square". This is fairly unusual for model aircraft, if one recalls for example the ubiquitous 10X6 which was the maid-of-all-work in the 1960's.

However, in modern times, F2C team race and F3A aerobatics are looking at 6x6.5's and 14x14's. Recalling the Supermarine S6B Schneider Trophy racing seaplane of Chapter 2, the pitch was nearly 20' for a diameter circa 9'. Now that's what you call over-square! The Rolls-Royce "R" engine, which was later developed into the 2300 HP "Griffon", really had something to chew on! While things are still irrelevant, note that the Supermarine Aviation company originated in WW1, originally started by Noel Pemberton-Billing. The name was adopted circa 1916, when PB sold out to his co-directors.



Clearly over-square propellers are acceptable, the question being as to what price is paid in terms of efficiency. Since airspeed is determined by pitch, and diameter by critical Mach number at the tip, the designer does not have much room to move. Nature had better be smiling.

Thus 2 possible problem areas are present in pylon race. These are:

1. the presence of a bluff body immediately behind the propeller, and
2. the over-square condition of pitch-to-diameter ratio.

Be reassured reader, these are real problem areas, so tuck them away in your memory banks. But before we tackle them head on, let us examine a conundrum (a sort of riddle turning on some odd resemblance between things quite unlike: Cambridge English dictionary, 1990).

In the early days of F3D, wood 9x6 propellers cut down to 8x6 were the way to go. Times were around 1:40 and would have been better if the motors didn't keep breaking. Then composite propellers were allowed, provided they only had 2 blades (!!?). Motors improved, times went down to 1:25, and anybody under 1:20 was a God. At this point, an extra-ordinary non-event took place.

The '95 Australian Nationals, held at Hawkesbury race-course, was favoured with some 35 hopefuls in F3D. They had the most motley collection of propellers ever to escape from Pandora's model box; from cut down woods to the latest carbon fibre specials. And here's the rub: they all went at about the same speed. Only the flying skills made the difference, and in those days going 50m past #1 pylon was all too common. Now surely this was wrong. Surely one of those propellers could have been a standout. The conundrum is this: either all of those propellers were duds or they were all good. Believe what you like, but by a law of physics laid down Murphy-Newton, they were all duds.

Now we are getting somewhere: what was needed then was a propeller designer to step forward and save the world. At last, a place in the sun for yours truly. But the black cloud of insufficient knowledge darkened the sky, and evolution by file and Carborundum continued.



It was slowly realised that propellers with extra pitch at the tips were performing very well. Considering that some of these propellers were reworked by fliers who didn't even own pitch gauges, this was a minor miracle. However, tests using airborne telemetry confirmed the observations, the results being very positive indeed. A typical expert's opinion on this result went something like this: "We used to put extra pitch on the woods to allow for them flattening out, so we kept on doing it with the carbon fibre props". Or from a well known engine designer "Ah don't know about that. Ah just get more power. Someone will come up with a propeller to use it". Also from the dreaming, it was found that reduced pitch and chord at the root helped get the engine on the pipe. At last, 2 hypotheses that could be tested, maybe even proved.

Better still, now we can hunt around for a theory to match the evidence. But now the times are down to 1:06, and the theorists are sadly in arrears. If only the theorists can get a propeller under 1:00, before the empiricists, then their honour may yet be saved. Return now to the present, and the bluff-body problem. The effect of the fuselage and cowling on the propeller must be determined and allowance made in the propeller design.

The effect of the bluff body is to reduce the axial free-stream velocity of the air entering the propeller disc. The reduction in axial velocity is not small: on full size aircraft the reduction at 70% radius may be by 35%, whilst even at the tip the inflow velocity may be only 90% of the free stream velocity. This is drastic.

The propeller sees slowly moving air, and this is equivalent to an increase in pitch, and hence load. Furthermore, this load change varies everywhere across the propeller disc.

To compensate for this effect, the pitch near the roots must be reduced in some average way to control both profile and induced losses. Because the cowl may be present at only one sector of the propeller disc, this average can never compensate fully for the effect of the cowl on the free-stream.

For completeness, the effect of the bluff body on the tangential and radial inflow velocities must also be analysed. The curves of the spinner and cowling induce radial and tangential components of the inflow velocity. The radial component of flow runs down the along the blade, not across it, and so does not contribute to the forces on the aerofoil.

The cowling splits the stream into left and right tangential components, which the propeller sees in turn as axial flows. However, since these flows are oppositely sensed, the effect on the airfoil is balanced and may be considered to have no net effect.

In a previous chapter, it was noted that rising pitch was necessary to compensate for the change in zero-lift angle of propellers with radially-graded airfoil sections. The effect above is additive to this, and may be as great if not greater, depending on just how bulky is the cowling.

One may speculate that some compensation for this bluff body effect may arise if the number of propeller blades is varied. For example, a single-bladed propeller will experience a considerable arc where its performance is totally degraded. A 2-bladed propeller will experience 2 occasions during one rotation when each blade is in the cowling shadow, but in both situations at least one blade remains fully efficient. Perhaps this is better. If so, then 3-blades would be better still.



We leave the bluff body problem here, and return to concerns about the over-square propeller. Now is a good time to re-read chapter 5, its only a page and a half, and we are going to revisit its concepts now.

The thrust produced by a propeller is equal to the increase in momentum of the air crossing the propeller disc. These are the words used by physicists: they just mean the air has been speeded up, and that this produces thrust. Any idiot knows that. The question of interest is, just how does the propeller produce this change in momentum? If one looks at a blade, it is pretty apparent that this blade is in close interaction with the air passing over it. Indeed, the air is pushed away from the blade as a down-washed column of air; or more elegantly, as a rotating helicoidal vortex sheet.

That is OK for the air at the blade. But what about the air passing in between the blades? Well the helicoidal vortex sheet is sure as hell going to collide with it, so that this air becomes entrained and is pushed rearward along with the rest of the slipstream. In this process, the entrained air gains in velocity and so contributes its share to the total change in momentum, and hence to thrust.

Now a propeller is most efficient when all the air in the slipstream has much the same axial velocity. If

the entrained air has a lower velocity than that downwashed at the blade surface, then efficiency is lost. This is indeed the case, and for some crazy long-forgotten reason the loss in efficiency is called “tip-loss”. This has nothing whatsoever to do with tip vortices, so do not be misled.



The ability of the downwashed air to entrain the free-stream air between the blades is an important consideration in propeller design. Prandtl, and later Goldstein, developed an expression to account for this entrainment. It was found to be a function of the advance per revolution, the radial distance along the blade and the number of blades. The higher the advance ratio, the closer to the tip and the fewer the blades, the weaker the entrainment.

One can picture these processes by means of the Archimedian screw (like a deeply cut wood-screw). The more closely set the screw teeth, the more closely they interact with the fluid between the teeth. At low advance ratios, the helicoidal vortex sheets are close together and the entrained air strongly impressed into movement.

The same goes for the number of blades. The more blades, the more helicoidal vortex sheets and the closer they are together. This is the reason that induced losses fall as the number of blades is increased. Return now to F3D pylon propellers. These operate at high advance ratios (high is anything greater than .5) and the vortex sheets are a long way apart. Since the entrainment effect reduces radially toward the tip, the ability of the blade to transfer momentum is lessened: the loss in thrust is then called “tip loss”, although a more inappropriate term would be harder to find. Indeed, some authors totally ignore the entrainment effect, and correct for it later in their theories as an effective reduction in diameter. N.A.V. Piercy gives an interesting expression which is worth noting here:

$$De/D = 1 - 1.386 \cdot J / (B \cdot \sqrt{\pi^2 + J^2})$$

where De = effective diameter
D = actual diameter
J = advance ratio
B = number of blades
PI = 3.14159

For an F3D model, J is not too different from unity. The change in effective diameter going from 2 to 3 blades is then about 8%, which is a pretty handy number to have

up your sleeve when you’ve already got sonic tip problems. The point to be made here is that over-square propellers reflect high advance ratios, with the concomitant drop in efficiency associated with the so-called “tip losses”. Piercy makes the telling point that the profile loss arising from the narrow chords of a 3-bladed propeller may be less than half the gain in induced efficiency resulting from the effective increase in diameter.

One wonders if the Supermarine S6B would have done better with 3 blades, considering its ridiculously high advance ratio. Indeed, its contemporary, the Macchi M-67 had 3, but was in 1929 defeated by engine trouble. The even more impressive Macchi-Castoldi MC-72 had 4 blades, but these were in contra-rotating pairs. I guess any air sneaking past the front 2 blades had it coming from the rear 2: that 1932 world airspeed record of 440 MPH didn’t just come from the 3100 HP Fiat engine. Also, 8-blade propeller units on the TU-95 Bear, with their vast pitch, make a lot of sense when you analyse them this way.

Collecting the foregoing facts for F3D, it would appear that a case exists for the use of 3-bladed propellers.

Such a propeller would require a unique pitch and chord distribution, especially near the roots. To provide the same power absorption as a 2-blade propeller, the mean chord must be reduced by 30%. This is a long skinny blade, which could run into structural and Reynolds number problems. The former is a technicality, but Reynolds number must always be taken seriously in any analysis. F3D props typically run a Reynolds number around 200000 at the 70% station; this will fall to 130000 for a 3-blader, a value at which airfoil performance is somewhat degraded. Inboard of this, the numbers become worse until at the hub they are bad. The result is a fall in profile efficiency; however, taking into account the hoped-for increase in induced efficiency, this is by no means disastrous. The bluff body effect on the root section will be far worse, with the blade angle lucky to be optimum for 70% of the rotation arc.

The situation at the tip is rather different. Even though the Reynolds number is low, it may be irrelevant. The section lift and drag characteristics at transonic speeds are dominated by compressibility effects; they become functions of the thickness-to-chord ratio, rather than just the chord alone. In the absence of low Reynolds number, high Mach number, data, one must speculate.

An analogy may be drawn between flow at transonic speeds and the flow in a pressurised wind tunnel. In the latter, Reynolds numbers are increased as a result of the high pressure in the tunnel. In model testing, this is a useful expedient if one wishes to keep the Mach number constant. Unfortunately, the effect of compressibility is the same as low Reynolds numbers, delaying flow separation and yielding high drag on separation (NASA Oshkosh 1995).

Whatever, the amount of lift from a given section at a given angle of attack increases, this being a favourable compressibility phenomenon. More power may be pumped into the propeller without increasing the diameter, thus

avoiding a premature entry into the compressibility stall. At the tip, Reynolds number effects may reasonably be neglected, with due care being taken in airfoil selection. The concept of a 3-bladed F3D propeller consequently survives as a worthwhile concept. So what does this 3-bladed propeller look like now?

Well, its a pretty ratty old piece of hardware. Geometrically, the pitch and chord are low at the root, both rising toward the tip. Along a blade length of about 3", the inboard 1" is more or less useless, serving mainly to join the tip to the crankshaft. The next 1" has bad Reynolds numbers and moderate bluff-body effects; however, the induced efficiency is not too bad, giving strong entrainment and perhaps even a modicum of thrust.

The final 1" seems to be where it all happens. Entrainment is weaker, but not as bad as a 2-blader. Thrust is good as a result of compressibility, and the bluff-body losses are the least of any station along the blade.



This prop looks more and more like a bumble-bee's wings. This cheerful aviator gains lift by sweeping its wings fore and aft, thus shedding vortex rings on which it suspends itself in space. On a frame of reference fixed to the airframe, it is hard to avoid the mental picture of a donut shaped vortex ring sitting on the arc of that last inch of the F3D propeller.

As with the bumble bee, it never pays in propeller analysis to accept the intuitively obvious. If one did, then the poor bumble bee would be walking. Assume now that everything discussed so far is at least half true.

The evidence relating to pitch at the tip is "the more the better". Fast props have high pitch at the tips. Could it be that the tip loss effect is in some way mitigated by the compressibility found at the tips? That is, that the momentum transfer to the entrained air between the blades is better than that predicted by Prandtl. If so, then the requirement for constant slip may also be met by wider tip sections, rather than just more pitch. Now what did that prop of Maxim's look like again?



This leaves the analysis of the Madera class pylon racers open for discussion. Clearly, all that said earlier for F3D applies to this class, as the laws are quite general.

However, the option of 3 blades may not be available, especially for the Formula 1 class. The power loadings are just not high enough to yield a practical 3-blader. Thus induced efficiency gains may not be available, other than by the conventional process of optimising radial chord distribution and blade angle.

This leads back to the bluff-body problem, which in the case of scale model racers is sure to be severe. It must be bad enough on the full size Formula 1's.

E.R. Jones has provided a quantitated approach to the bluff-body situation in PDAP, his propeller design and analysis suite. As mentioned previously, this provides an averaged correction to the axial inflow velocity, which is substantial and cannot be neglected. Jones' data for a Cessna 140 spinner and cowling appear at first glance quite radical.

The axial fraction of free-stream velocity at the 20% station is 23%. At 50% it is 59% and at the tip still only 90%. No wonder Hamilton Standard don't lose too much sleep over their round-shanked variable pitch propeller blades. These figures may even flatter the inflow to the Madera and F3D classes, at least at some points in the propeller arc. The corresponding required reductions in pitch are large indeed.

Due to the roughly axially-symmetric disposition of the spinner and cowling on most Madera F1's, plus their sheer bulk, the method of Jones for inflow correction looks to be promising. If no allowance is made in the propeller design for the presence of the cowl bluff-body, then propeller efficiencies fall to around 65% or less. With the Jones correction applied, this improves quite markedly to be in the 75-80% class. The improved propeller has reduced pitch at the root, and a slightly increased chord.

Consider F3D in more detail. With a single cylinder cowl, there is considerable asymmetry, which in consequence will limit the accuracy of Jones' method (which works best for an axially symmetric body). Neglecting this, a reasonable figure for the equivalent F3D cowl/spinner is a circular body of cross-section 3.5 sq.in., with a 1.75" spinner. Then the axial fraction of the free-stream velocity at the 20% station is 73%, at 50 % it is 94% and at the tip 99%. These figures apply at an airspeed of 190 MPH.

The corresponding pitch reduction adjacent to the spinner is about .5", reducing very rapidly to negligible proportions at the 50 % station. It must be doubted as to whether this is meaningful. In respect of small racing aircraft, Larrabee has even suggested that the pitch at the root be increased by 5%, the increase blending out after 1.5 spinner diameters. The reason appears to be to compensate for the increase in velocity along the streamlines tangential to the spinner.

Diagrams in this chapter show the flow streamlines and velocity profile for a "typical" F3D propeller. The low speed diagrams illustrate the loss of thrust due to radial flow arising the near static freestream inflow. The stream tube is narrowed, so that a small volume of air is accelerated to high speed, resulting in wasted power. At 190 MPH, by contrast, the radial flows are negligible, while the axial inflow variations arise from the presence of the spinner and cowling bluff-bodies. Correctly modelled propeller pitch distributions can largely eliminate losses due to this effect.

Further reading:

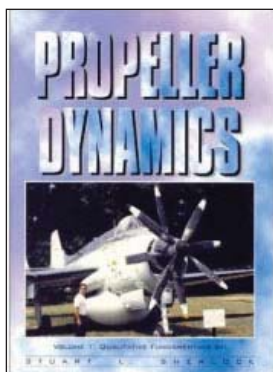
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Want more? Get the book
PROPELLER DYNAMICS



Vol 1, Qualitative Fundamentals.
by Stuart Sherlock, AKA Joe Supercool
\$US 25.00
(inc Air Postage to anywhere)

<http://www.supercoolprops.com/bookshop.php>

Essential reading for model aircraft contest fliers. This is the only book on the market explaining propeller theory in non-mathematical terms. A rattling good read, he should know, he wrote it.

A Close Call

Tim Stone

In the last issue we had some interesting discussion on the physical aspects of piloting in our sport, for one of our readers Tim from the USA, it was particularly fortuitous, here he provides his own personal postscript to that article

In October 2006 I had a near fatal heart attack.

From the onset of symptoms until I passed out & had to be defibrillated was less than 30 minutes. Luckily I was near an ambulance so I survived it. My physician told me that people seldom survive the type of artery blockage that I had.

I am 47 years old, 6'5" tall, 230 lbs and had no previous history of heart problems.

I had been working out for 1 hour, 5 days a week when this happened, including 20 minutes on a Nordic track. I never felt a chest pain during any physical workout or during any flying session including back to back 140 lap races in 90 degree heat with the 'Slow Rat' event that has 2 ½ lb planes going 120+MPH.

While I never had any chest pains during a race, I had felt them for years during times of stress. While I appeared to be in excellent shape,

I smoked and had a diet high in sodium, high in fat (I ate fast food hamburgers, Taco Bell 5 times a week) and work in a high pressure job. My blood pressure was high as well. All these were factors that I could have controlled, but I ignored the risks.

Two c/l racing Pitmen have died from heart attacks over the years at the U.S. Nationals. Cardiac health is something that we should be very concerned with as racers.

I highly recommend a stress test, heart scan or some type of cardiac testing to any racers age 40 and up that have any significant risk factors.

Tim, that certainly was a Close Call, we all hope you are back on the healthy road. It sure shows that it doesnt hurt to be too careful. ED



Fast and furious F2C action - WA State Champs (Note nice flying site)

Bits & Bobs

This little piece from an American Modeller summed up what our sport is all about. Other than being known as Rich and allowing the printing of his piece, I know nothing about him, but he seems a nice chap and who knows he might even get to Croydon one day! Nice one Rich.

Our sport / hobby is all about having fun

There are people who take things waaay too seriously. we all do this for the same basic reason, for the fun of it all!

It doesn't matter if you're an expert PA pilot, a hot dogg'n combat pilot, or a weekend sport flyer, its the same satisfying fun.

And its not like we are going to contests to win some large amount of money or anything, just to compete and have a good time.

I try to diversify myself so I can participate in any contest I am able to attend.

I don't always finish very well, but I was able to enjoy the event and BS with fella's anyway. also, don't be afraid to run an event, (or part of an event) at a contest once in a while. it makes the CD's job so much easier, and helps ya appreciate contests in the future.

So bring out those planes gathering dust in the shop!

Remember that profile scale job that ya spent all the hours gently layering all the many coats of dope on? show it off! enter it in the contest next time the event comes up!

What about that class 1 carrier plane you happened across 20 years ago?

When was the last time you flew that mouse racer hanging in the corner? remember flying that 4 up sport race in hurricane wind? (heh heh heh! well, hopefully we have better weather next time...)

My point is no matter how you are involved, (pilot, mechanic, spectator, vendor) the basic idea of a fun time is the common link here.

I have fun anytime I get to fly, and I know that everyone else does too.

Hope to see you all at the next (contest, swapmeet, hobby shop, fun fly event, or just testing at your local field on a warm afternoon) , and may all your flights be smooth!

happy landings!
~Rich

A bit of History



Caption - "Modellers of the Russian Motherland gather outside Moscow to prepare for Competition"

Found in a 2nd Hand Shop in Glasgow!

Keep The Circle Burning

Windy Urtnowski

I've built many ships over the years, and as many other people do, I've given many away or sent them out on loan to keep other pilots active until they finished their own ships. That's my own philosophy, but I choose it for myself and freely accept that other people are more comfortable selling airplanes.

What's the lesson? I think it's that many of us get life from ships donated to us, and in turn, we complete the circle when we donate them back into the sport and help keep people active who might otherwise drop out or not be able to compete.

Lets keep our hobby alive by helping each other.
<http://www.windyurtnowski.com>

Life's a DRAG

Duncan Bainbridge, *after reading Martin Simons*

We all know life can be tough, and we all know that the other guy has the faster aircraft, but why? The answer is simple, he does! His plane is faster because it has less drag!

Watching the 2006 Red Bull Air Races revealed some interesting observations. Firstly, the larger more powerful open class aircraft were not necessarily faster than the smaller, lighter and lower powered classes.

The fastest aircraft had low frontal area (inline engine cowl) and were smaller in overall dimensions.

But it was noticeable that the heavier of the larger class aircraft were clearly faster in a straight line than the lighter models.

So what makes a fast flying aircraft?

- simply low drag. But how do we get it?

But what is drag?

All parts of a model exposed to the air flow contribute drag. Even the insides of cowlings add drag as the air passes through them. As with lift, the actual drag force generated depends on velocity and density of air, size and shape of model. The drag coefficient, like the lift coefficient, sums up all the features of the model and is a measure of its aerodynamic 'cleanliness'. The formula is the same type as that for lift.

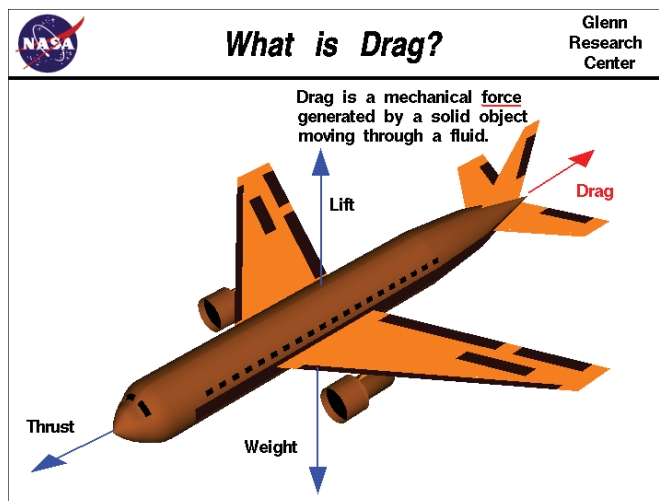
$$D = \frac{1}{2} \times \rho \times V^2 \times S \times C_D$$

Put basically

In terms of a solid object moving through a fluid or gas.

Drag is the sum of all the aerodynamic or hydrodynamic forces in the direction of the external fluid flow.

It therefore acts to oppose the motion of the object, and in a powered vehicle it is overcome by thrust.



Drag is divided between profile or form, parasitic and induced.

Profile

Profile drag relates to the size of the frontal area including attached fittings (undercarriage, struts etc.). Minimise frontal area and you minimise the profile drag.

Parasitic

Parasitic drag relates to surface features on the airframe. Any protrusion disturbs the airflow and results in drag-creating turbulence.

Small items such as foot steps, panel joints, surface finish, junctions of airframe components (undercarriage legs, struts, tail surfaces, wings, control surfaces,

canopy, aerals), rivets and even paint lines all contribute to parasitic drag.

Parasitic drag can be minimised by attention to detail and careful craftsmanship. All airframe junctions should be filleted and the fillets should be as large as practical.

Any change in surface profile should be in the thickening direction rather than thinning, i.e. at a control surface joint, the control surface itself should be slightly thicker than the frame it is hinged on.

All airframe components should be streamlined, i.e. tear drop sections. Control surface gaps should be carefully constructed to maintain smooth airflow.

Induced

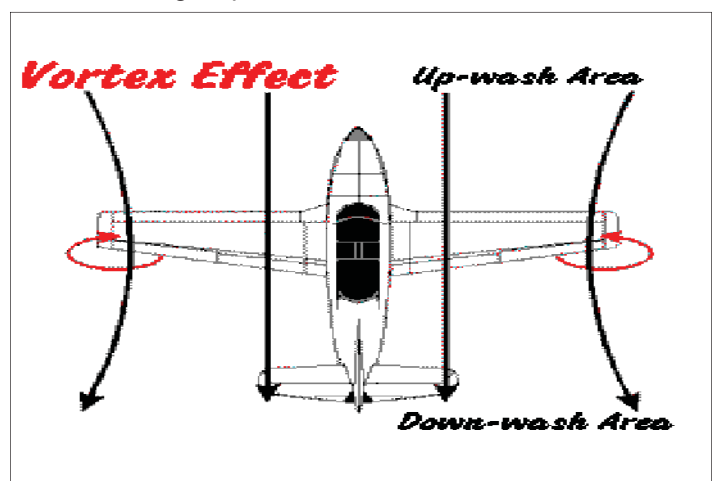
Induced drag is that drag component generated by the lifting effort of the wing. Such drag is divided between section and planform.

Section drag can be minimised by using the thinnest possible (in the order of 6 - 9 percent thickness) together with a wing loading that utilizes the 'Drag Bucket' between 3 and 5 degrees angle of attack. Lightly loaded sections will operate well below these angles at speed and suffer a very poor lift/drag ratio.

Flat bottom sections are not at all suitable. Symmetrical section is perhaps the best for model use.

Wing loadings will need to be as high as possible (40 or 50 oz/sq.ft.). Such wing loadings will result in higher than usual stall speeds so that landing and takeoff may become difficult without high lift devices (flaps or slots).

Planform governs the strength of tip vortices which contribute to induced drag, particularly at high angles of attack. High angles of attack will occur at slower speeds and high G manoeuvres. This may not be a serious concern during a speed event.



Tip vortices can be reduced by high aspect ratios and tapered wing forms at the expense of manoeuvrability. Tip shape will also contribute to the strength of vortices generated.

So if you want to go fast, build it slim and clean with a high wing loading and maybe with a powerful engine, although the latter is the least important.

Gallery Pages



Weathermen Vintage Speed Models at Croydon



John Catlow overtakes Neville Eyre Brit GY Croydon 2006



Thetford Mini GY Marathon 2006



Polecat Mini Goodyear - Thetford Mini GY Marathon 2006



Adrian Moore's Provisional Goodyear Nelson 15

Can you name these engines?



Obviously very small and beautifully made, it has an amazing pedigree, I know what it is but does anyone else?



Looks like a K & B, but no?



Absolutely no idea?

**Steve and Mike's World Champs Photo Journal Valladolid, Spain,
16-24 July 2006 as seen by Steve and Mike Waller**



F2D Launch - Ukraine



F2D Pilots



F2D Business end



Going for it!



F2B Processing



F2A Launch



Aussie F2C Pitman Ray Harvey & Observer Mark Ellins



More F2D Pit action



Former Jnr F2A WChamp now F2C Pilot Aussie Hugh Simons



GBR's John Broadhead Launches in F2C



Fill, Flick...



GO!



A young pilot concentrates - Hugh Simons made it to 5th Place



F2D Models ready for the final Launch



Portable F2B Models possibly Yatsenkos?



The Russians celebrate Igor Trifinov's win in F2D

Final Amended VTR Calendar

Team Race 2007

Day	Month	Event	Venue
1	April	3 Kings Team Racing F2CN, Brit GY	Old Croydon Aerodrome, Purley Way, Surrey Pre entry essential 15/03
29	April	BMFA Centralised VTR, PVA	RAF Cottesmore Oakham, Rutland Pre entry essential 10/04
12	May	Barton Bash F2CN, BGY, MGY, Peacemaker, Vintage Stunt Club Speed, Classic 15 and Barton B Heats, Carrier	Barton Aerodrome, Barton Moss Road, Barton
13	May	Barton Bash VTR, F2B, Classic 15 and Barton B, Carrier workshop	Barton Aerodrome, Barton Moss Road, Barton
13	May	Weatherman Speed	Old Warden Aerodrome Nr. Biggleswade, Bedfordshire
27	May	3 Kings VTR, PVA	Old Croydon Aerodrome, Purley Way, Surrey Pre entry essential 15/05
3	June	BGY, OGY	Barton Aerodrome, Barton Moss Road, Barton
10	June	Festival of Flight VTR, PVA, F2C, BGY, F2CN	RAF Barkston Heath Grantham, Lincs
10	June	VTRSIG Speed Day Vintage, Weatherman, Phantom Speed	Frank F Harrison Community School, Bloxwich, Walsall
23	June	SAM 35 Gala Vintage Speed, PVA	Old Warden Aerodrome Nr. Biggleswade, Bedfordshire
24	June	SAM 35 Gala VTR Cup, A & B SAM Rules	Old Warden Aerodrome Nr. Biggleswade, Bedfordshire
30	June	South Bristol MAC VTR Gala VTR, Oliver Rat, PVA, Vintage Speed, Weatherman Speed	Berkeley Power Station Bristol
1	July	South Bristol MAC VTR Gala VTR, Oliver Rat, PVA, Vintage Speed, Weatherman Speed	Berkeley Power Station Bristol
8	July	Rolls Royce VTR Gala	Rolls Royce

		VTR, PVA, Weatherman Speed, Vintage Speed	Hucknall, Notts
5	August	BGY, OGY	Barton Aerodrome, Barton Moss Road, Barton
5	August	BMFA Centralised VTR, PVA	RAF Cottesmore Oakham, Rutland Pre entry essential 15/06
25	August	Nationals All disciplines	RAF Barkston Heath Grantham, Lincs
26	August	Nationals	RAF Barkston Heath Grantham, Lincs
27	August	Nationals	RAF Barkston Heath Grantham, Lincs
7	September	Wings Of Portugal VTR, F2CN, BGY, TQR, M GY, Phantom	Portugal
8	September	Wings Of Portugal VTR, F2CN, BGY, TQR, M GY, Phantom	Portugal
9	September	Wings Of Portugal VTR, F2CN, BGY, TQR, M GY, Phantom	Portugal
16	September	Northern Gala F2C, M1/2A, VTR	MOD Dishforth, Thirsk, North Yorks
23	September	Vintage, Weatherman, Phantom Speed	Frank F Harrison Community School, Bloxwich, Walsall
30	September	1000 Lap BGY	Barton Aerodrome, Barton Moss Road, Barton
7	October	VTR, PVA,	Barton Aerodrome, Barton Moss Road, Barton
14	October	3 Kings TR F2CN, Brit GY	Old Croydon Aerodrome, Purley Way, Surrey
14	October	BGY, OGY	Barton Aerodrome, Barton Moss Road, Barton
21	October	1000 Lap BTR V, Open B	MOD Dishforth, Thirsk, North Yorks
29 - 6	December January	61 st Australian Nationals All disciplines, CL, FF, RC, Space	West Australia

Information, Addresses and Contacts

Pre Entry Events

For VTR held at RAF Cottesmore and MOD Dishforth they are pre-entry events only and the date for the receipt of pre-entry is listed on the calendar.

**When you pre enter you must provide me with the following information:
Vehicle make, model, colour, reg no, driver & passenger names.**

Anyone that is not on the list I send to the RAF station will not be allowed on the airfield.

The same applies for Three Kings events except that I only need names and car types.

Duncan Bainbridge 07956 370 648 or duncan@east-two.co.uk

All VTR Events

VTR President Dave Finch dfinch@waitrose.com
VTR Chairman Mick Orchard 01923 448072
Profile Vintage A Roger Reese rojreese@yahoo.co.uk

BMFA Centralised Events

Cottesmore, Oakham, Rutland, LE15 7BL
CLTC Sec Jo Halman 01582424398 or jo@halman.f9.co.uk

Croydon 3 Kings Events

Duncan Bainbridge 07956 370 648 or duncan@east-two.co.uk
Old Croydon Aerodrome, Purley Way, Surrey

Bristol Events

John Mealing 0117 9478758 or johnmealing460@hotmail.com
Nuclear Sports and Social Club at Berkeley Power Station, Berkeley Gloucestershire

Barton Events

Tony Eifflaender 01625 616054 or Martin Worgan 01684 295655
Barton Aerodrome, Barton Moss Road, Barton

Vintage Speed and SAM Events

Dick Roberts 01858 466419 or rwandmroberts@btinternet.com
Old Warden Aerodrome Nr. Biggleswade, Bedfordshire
Bilston Frank F Harrison Community School, Leamore Lane, Bloxwich, Walsall

Dishforth Events

Barrie Pickles 01535606307
MOD Dishforth, Thirsk, North Yorks

Portugal Events

Julio Isidro julio.isidro@iol.pt
Evora, Portugal

Hucknall Events

Terry McDonald 01332510150 or vtrterry@yahoo.co.uk
Rolls Royce Hucknall, Notts

2007 Vintage Speed Competitions, SAM 35 Etc.

Listed below are the known events for 2007. Events to be held are needed from Barton.

12/13 th May	Barton	Not known
13th May	Old Warden,	Weatherman Only.
10th June	Bilston	All Vintage Classes, Weatherman, Phantom.
23/24th June	Old Warden (SAM35 Gala)	Weatherman, Phantom, Vintage Class 2.
30June/1 July	South Bristol	All Vintage Classes, Weatherman, Phantom.
8th July	Hucknall	All Vintage Classes, Weatherman, Phantom.
23rd September	Bilston	All Vintage Classes Weatherman, Phantom.

Bilston, September 23rd will be the final event of 2007 for Weatherman Speed at which Brian Lever will be present to make the awards.

This is a very thin calendar in the absence of Oakington or a replacement venue, we really need another Vintage Speed Event in July or August to make the season more balanced.

Dick Roberts. 15th February 2007.