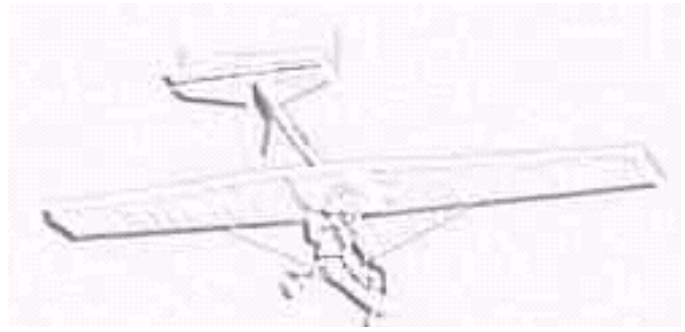




A member of the General Aviation
Awareness Council



Shadow Owners' Club Newsletter Summer 2001

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New Members

I'd like to welcome the following new members, who've joined in the last 12 months:-

Peter Lynch, Farnborough
Paul Avery, St. Johns Fen End
David Burton, Brighton
Mark Bennett, Barton
Jamie Ingram, Canada
Donald Hendry, Craobh Haven
Nicholas Tyne, Northampton

Once again, if I've forgotten anyone, then please accept my apologies. Let me know and I'll make sure you get a mention in the next newsletter.

Fly-ins 2001

Old Warden. 27th May

The imposition of the inspection requirement of Service Bulletin 14 meant that I thought I wouldn't be able to attend the fly-in; not ideal when I had been the one to organise it. Then things looked more promising. On the Sunday before I took my tailplane over to Danny Crosbie's, for him to do the work. It had been arranged that our inspector, Peter Sturgeon, would visit Danny, and inspect both our tailplanes at the same time. Unfortunately, Peter ended up in the A&E ward of the Norfolk and Norwich hospital, with a broken back, following an engine failure in a Stearman. The latest news I have is that he still has the use of all four limbs, so the prognosis is good, although obviously not in the short term.

Danny is considering having a fly-in at his strip, just south of Sudbury, perhaps to take the place of the PFA rally at Cranfield, although on a somewhat smaller scale. It will be just as enjoyable, though. No details as yet.

Deepak Mahajan is intending to take a party to France in September. The duration of the trip will be about a week. Participants will stay in B&B, the cost of which will be approximately £25 per person per day. Anyone interested should contact Deepak on 020 8325 0197 or 0973377710

deepak@microlightsport.co.uk
www.microlightsport.co.uk

The Lea Valley strut are having their annual fly-in at Horsey Island on 21st/22nd July

We have been invited to the Swordfish strut fly-in at Sherburn on 15th/16th September. Contact John Ridalls on 01977 681632, or Sherburn Aero Club on 01977 682674.

john@jridalls.flyer.co.uk

Rougham has fly-ins on:- 22nd July, Classic Cars & fly-in. Fly-in on 15th Sept. End of season fly-in 14th Oct. Rougham Radio is on 130.67 The airfield is open from 09:00 to 16:30 local and you can PPR on the day on 07946 093599, or in advance on 01206 298317
duncan.r.skeels@btinternet.com

News of CFM

A member recently visited CFM where Steve and another person were working on an aircraft. They seemed to be the only people there at the time.

I visited the factory myself recently. I spoke to David Moore's wife, who introduced me to James, the new engineering chap. As soon as we get the information from CFM there will be a small piece to introduce James to you all.

Website

Some time ago the website moved from one Internet Service Provider to another. Unfortunately, I haven't got the password

to enable me to change the old site, so it is many months out of date. I have managed to get the PFA and the BMAA to alter the links on their sites, leaving CFM's site as the only one I know of with the wrong link on it. The current site, which I update at least every two weeks, is at www.shadowowners.flyer.co.uk

As always I am interested in anything suitable for the website or newsletter. Many thanks to Peter Walker and Richard Fendick for the articles in this and the previous newsletter.

One person who contacted me about the club asked why the recent newsletters were not available for download from the website. The answer is that I haven't got a way of converting from Word to Acrobat format, and they are far too large to load onto the website as they are.

Tailplane problem

You should all be very familiar with Service Bulletin 14, which requires a dye penetrant crack test of the leading and trailing edge tubes of the tailplane. I have heard a number of rumours about the likely causes of the original problem, which was a cracked tube, the crack starting at a rivet hole. Among the rumours was one that the problem was caused by elongation of the rivet hole, leading to the crack. If this was the case, then the problem would have been due to wear and tear, rather than fatigue cracking, as was originally thought. While I was at the factory James showed me the offending tailplane. I'm not a metallurgist, but I studied a small part of the subject as part of my physics degree. The hole where the crack started showed no signs of elongation, as far as I could see. CFM are of the opinion that the crack was caused by fatigue, and having seen the physical evidence, I see no reason to disagree with them. As I write this there have been no further problems

found as a result of the inspection process. CFM believe that the problem was a one-off, and once all the fleet have been inspected, if no more cracks are found, they are hopeful that the CAA can be persuaded to downgrade the repeat time from 100 hourly intervals to 500 hours. They don't think the CAA will agree to stop the inspections altogether, or that they will agree to change the number of hours until all the fleet have been successfully inspected. If you are putting off the inspection hoping it will all go away I think you'll have a long wait.

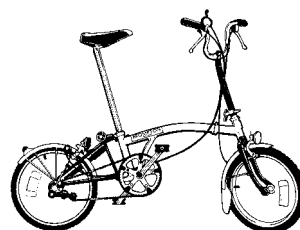
Warning about fuel cans

I have come across a number of people who carry fuel cans in the backs of their aircraft, either full or having been used to carry fuel in the past. I'm sure I have seen a warning from the CAA that this is illegal. You may only carry a fuel can in the cabin of your aircraft if it has never had fuel in it.

In the Shadow of a Brompton

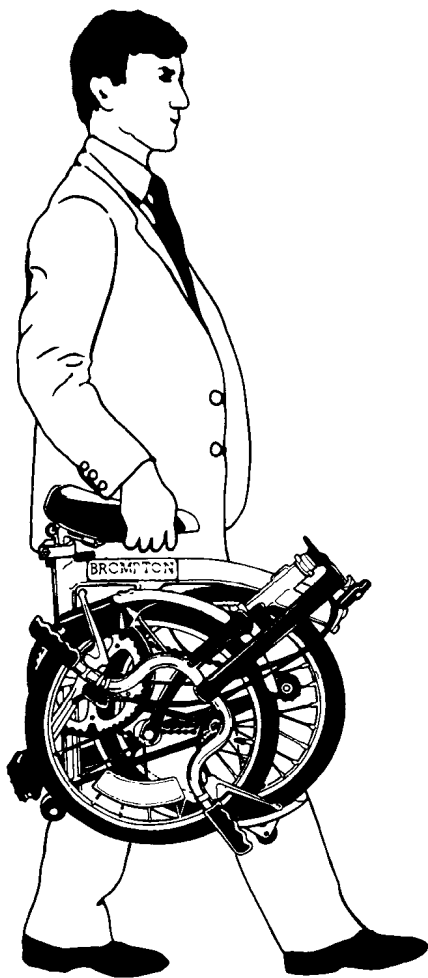
We all have our favourite way to spend a flying day. For some its tootling around the clouds, for others it's a fly-in and for some it's competitions. I have had a go at all of those over the years but now I enjoy days out of a different style.

You know the problem - it's great fun to land at a new strip but it's usually miles from anywhere and that tempting country pub is too many miles away to get to. Tantalising isn't it? Well, I found the perfect solution when I bought my trusty Brompton folding bicycle.



Fetch the Brompton out of the rear cockpit of my CD Shadow, unfold, strap on the saddlebag, on with the safety helmet, flip out the reflector "lollipop" and I'm off into the lovely countryside for a few hours. I usually plan a 15 to 25 mile trip circular tour with a country pub as an essential waypoint. As a keen contributor to the Good Pub Guide I always send in a report on each pub and with luck find a good new one to recommend. The GPG is as important as the air charts and ordnance surveys I use to plan each fly-cycle trip !! (And contributors get offered each new edition at a special discount).

And when you get to your destination you can fold it up and carry it with you !

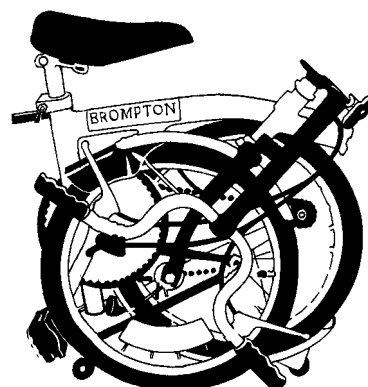


In the counties surrounding Somerset I am often recognised at fly-ins as "that bloke in a Shadow with a bicycle who came last year" - but amazingly no-one seems to take up the idea and put a bike in their plane !! I am writing this to encourage you to give it a go as it really gives a most satisfying rounded day out.

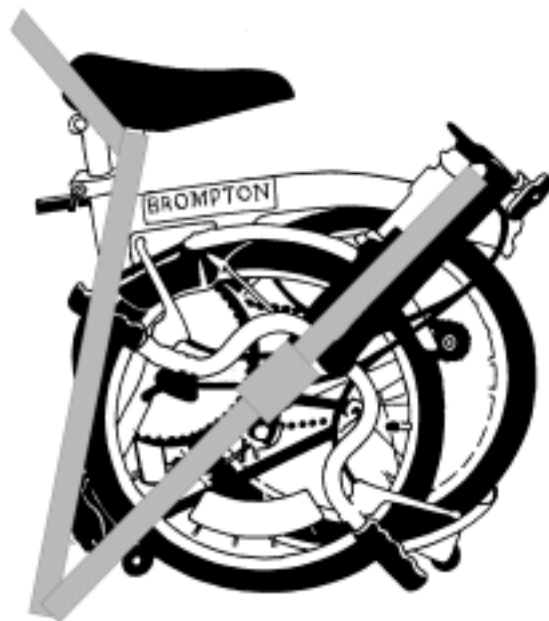
There is only one thing better than a Brompton - two Bromptons ! I have bought my better half one as well and we have enjoyed a couple of cycling holidays and many days out in the great British countryside. (Wouldn't it be great if there were a four seat microlight so I could take two Bromptons and a passenger ??!). Nevertheless, for our non-flying holidays we can fit two Bromptons AND two small suitcases (just) in the boot of our Escort. No need to manhandle bikes up on top of car roof racks or strapping them on the back of the car on monstrous racks - just put them in the boot with the suitcases where they will not be seen by villains. Anyway I digress onto cars and we are all much more interested in Shadows !

So how do I safely fit a bicycle into the rear cockpit of a CD Shadow I hear you ask. Getting the P2 control column entangled into the spokes of a bike on short finals could spoil your whole day.

First, lets have a look at a folded Brompton - a wonder of engineering design.



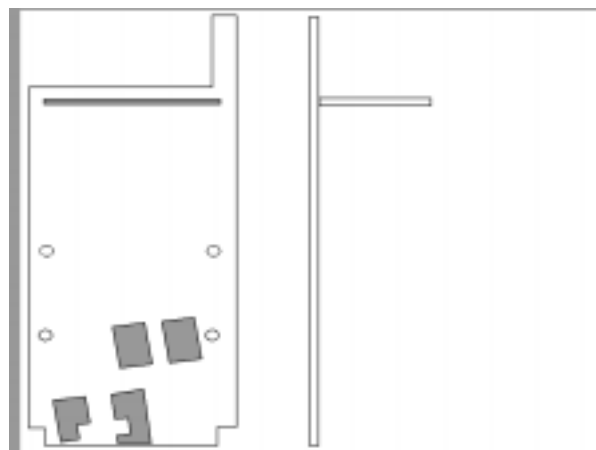
I have evolved a method of locating and securing it firmly in place to avoid both the control column and the throttle handle. There is not much room to spare so accuracy is vital. I know that Shadow cockpit dimensions tend to vary between planes so if you decide to have a Brompton I recommend that you find a helpful bike dealer with one in stock who is happy to let you take it away on sale or return whilst you nip off to your strip and make sure it will actually fit in your Shadow. It was essential that I had a folding pedal on the left hand side. This is also an indispensable feature when cramming two bikes and luggage into the car boot for a holiday trip.



I will describe my fitting system next but it is essential that you work out your own system to suit your plane as a mistake leading to a jammed control column or throttle could mean a fatal accident !!

I designed a board to fit snugly the full length and width of the floor of the rear cockpit. It has blocks to trap each of the bike wheels and align it accurately to avoid both the throttle and joystick. The bike had to be angled slightly towards the throttle side as the joystick has a wide movement zone and still only misses by an inch. I cross the rear seat belts under the bike seat and using the whole length of the belt slot it through a gap at the front of the folded frame/handlebars of the bike and snap it together beside the bike. That holds the back of the bike in place laterally and vertically. To hold the front in place to stop it swinging left or right I lash the front of the bike both left and right to the upright tubes holding the front seatbelt using stout woven nylon cord. The bike is then held very securely unable to move in any direction.

The figure below shows details of my baseplate. The rear two blocks have little cut-outs for the small rollers which the Brompton sits on when folded up. The base plate has six holes drilled or notched in it around the edges where the undercarriage bolt heads come up through the cockpit floor. You will notice that there is only one "finger" going up past the rudders as I found it impossible to slide the board in place with two "fingers".



I have fitted an upright board with angle brackets to the base board to seal off the rudder pedals so that the area around and in front of the bike can serve the dual purpose of providing a small luggage area for the saddlebag and a fuel can tied

down with more good quality nylon cord run through a number of heavy duty eyebolts screwed into the base board.

So, have I whetted your appetite ??

Bromptons come as standard with either a 3 speed hub gear or the 5 speed hub gear. They are not cheap - base model starts at around £450 but to me worth every penny. I have heavily modified my Bromptons in the last few years with help of a major local cycle dealer (St John Street Cycles in Bridgwater, Somerset; website sjscycles.com). The work was not cheap but made a brilliant difference. I had the rear wheel rebuilt with a 7 speed Shimano hub gear system (with flipper gear change) and a very small chainwheel. This was prompted by the early discovery that a lot of the strips I visit are almost inevitably on the top of a steep hill and low gearing was important. The lack of a fast top gear is of no great consequence if you want to tootle around the countryside and enjoy it. I believe that a 9 speed hub may now be available. If you do not want to go the full monte at first I would recommend the 5 speed not the 3 speed and perhaps have a smaller chainwheel to get the hill climbing ratios I prefer.

So what are they like to ride ? Well, you may take a few miles to get used to the lower stability of the smaller wheels (less gyroscopic effect) but after a while you won't think about it. Just one safety tip - do not look over your shoulder on busy roads when you first ride one as you may wobble a bit - I did at first. (*I wouldn't be without the mirror on my bike - Ed*) Stop at the verge and then cross the road. Don't let me put you off though, they are brilliant little bikes.

I have done quite a few other mods too but hesitate to describe them in any more detail as this Newsletter should actually be about Shadows - perhaps in a future Newsletter if anyone wants to hear more

details - please let the editor know. In particular my custom saddlebag system, safety lollipops and flashers, high pressure tyres, puncture repair system (probably also suitable for getting a Shadow home after a puncture as well although I have not had to try this yet) etc.

That should give you enough to get started. Happy fly-cycling !

Richard Fendick
shadow.73@virgin.net

Dahon folding bicycle

Danny Crosbie has recently invested in a Dahon folding bicycle. I nearly bought one myself, at Cranfield a few years ago. It folds down to a similar size to the Brompton, and is somewhat cheaper. I believe Danny paid less than £300 for his, including the carry bag. It takes seconds to change from folded to unfolded, and feels really sturdy when ridden. It has indexed gears, making gear changing ridiculously easy and quick. Danny's bike is really useful as he has a dodgy knee; cycling putting much less strain on the knee than walking.

Engine Misfire

At 294 hours I had replaced the 447 Rotax in my Shadow with a dual ignition Rotax 503 which ran without fault until a 50 hour check at 57 hours. The carburettor check showed that the front needle had been spinning and the diameter at the bottom of the groove had been reduced to less than 0.010 inch. This was particularly disturbing since in the previous 5 hours I had crossed the channel twice plus the Thames and the Wash at their widest parts. Both needle and jet were replaced in the front carburettor and "O" rings were fitted to both needles. The rear carburettor showed no signs of wear.

(There was supposed to be a picture of the worn needle at this point, but I can't find it, so you'll just have to imagine what it looked like).

Following that work the engine performed faultlessly until 321 hours when it started what could only be described as a "hesitation". It had run perfectly for about 4 hours that day. Over the next 66 hours of flying I tried changing plugs and closing and opening the plug gaps and at times the problem seemed to be cured. It only reappeared toward the end of a long run; typically after 80 miles of continuous running.

I spoke to Ken Rigley of K & M Products at length about this and he said it sounded almost as if it was 4 stroking. When did I last change the needles and jets?. If they had never been changed they certainly should be as the engine had now done 387 hours. A set of needles and jets were ordered for each carburettor and fitted. The result was that I had never had the problem since and the engine has now done about 440 hours.

Perhaps I ought to have had a refresher course on my Rotax handbook because there it was: **At 150 hours change needles and needle jets.**

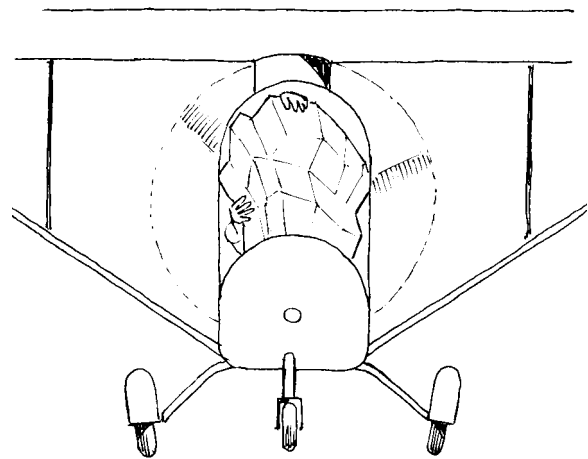
Two points of note came out of this series of events

- 1 The front carburettor must be subject to more vibration wear because the front carburettor jet was noticeably more worn than the rear. Remember also that only the front needle was badly worn at the 50 hour check.
- 2 The fuel consumption has improved so perhaps the front cylinder was running unnecessarily rich causing the 4 stroking.

Pete Walker
G MYNA

Enquiries

I've just had an email from someone interested in buying / building a Shadow. He lives in Port Stanley, on the Falkland Islands. He wants it to visit his father, who lives on the other side of the island. Apparently, it's 130 miles away. I'm afraid geography was never my strong point, but I'd no idea the Falkland Islands were that big.



*IFR under VMC
or, the smaller your flight deck
the better map folder you
need to be.*

Young Eagles

Congratulations to Dave Grint, who flies G-RINT. He has notched up his one hundredth Young Eagle flight. I've so far managed only thirteen (and so far I've only been credited with 4, but that's another story).

If anyone else has flown Young Eagles, please let me know. It would be

interesting to find out how many we've flown as a club.

Planning matters

The strip where I keep my Streak is under threat from a company which wants to erect a 300 feet high wind turbine 13 seconds from the end of one runway. We've had help from the owner of a nearby strip who's familiar with planning. The company say that our objection is hyped, and that they've spoken to 'aviation bodies', who say that it will be no problem. We have lodged an airfield safeguarding map with the local council, who are on our side. If we suffered an engine failure after takeoff the only suitable field is the other side of where the turbine would be. On top of that a friend of ours has flown behind one of the turbines in north Norfolk, and he says that the turbulence off the back of the blades is severe; just what you don't need as you slow down to land.

Thanks

Thanks again to Peter Walker and Richard Fendick, for their contributions to the newsletter.

Thanks also to Kevin Creed and Mark Hayward, for responding to a request on the website, regarding the wiring of the electric elevator trim.

Thanks to John Wighton, who responded to a request for information regarding a change from a 477 engine to a 582.

If you haven't yet seen it, we have a 'request for information' page on the website. If you have any queries, be they technical or otherwise, let me know, and I'll see if anyone out there can help.

Autumn Newsletter

The Autumn newsletter is due out in the last week of September. The smart among you will have realised that this newsletter is late. Apologies for that. I'll try to do better next time.