

FLIGHT LINE

magazine of the BMAA

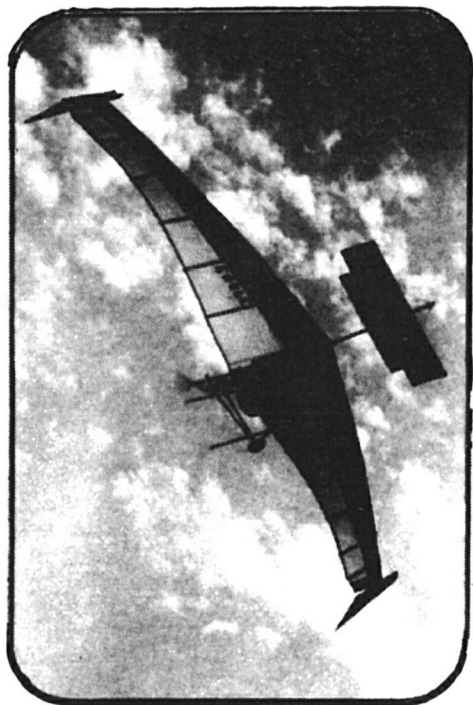


No 3 May-June 1980

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EDITORIAL

It is now my solemn duty to remind you of the existence of LAWS relating to all things flying (birds and insects excepted). To familiarise ourselves with those aspects of Air Law which affect us, there is available a publication known as CAP 85 or 'Aviation Law for Applicants for the PPL'. The price is 45p, and it is obtainable from almost any Flying Club or direct from the Civil Aviation Authority, Printing and Publication Services, Greville House, 37 Gratton Road, Cheltenham, Glos, GL50 2BN. This does not mean that we shall have to obtain PPLs before we can fly our type of machine, but we MUST observe air law generally.

On a lighter note, the Wellesbourne Fly-In was, undoubtedly, a great success. Our sincere thanks to all at Wellesbourne Airfield who worked so hard at its preparation and running.

Everybody is clamouring for another similar meeting. Are there any volunteers to lay it on? We cannot assume that we will always be able to make use of Wellesbourne,

Opinions expressed by the authors and correspondents are not necessarily those of the Editors or the Committee of the British Minimum Aircraft Association.

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Front Cover: The Eipper Quicksilver.
Long known as a hang glider, a
motorised version is now available.

so what about it, all you private strip and land owners? One thing that was clearly demonstrated at Wellesbourne was the fact that large props driven by reduction systems coupled with engines having adequate silencers produced an acceptably low noise level. On the other hand, small-diameter high-revving machinery was, at times, deafening. Aspiring designers and constructors could do well to take note of this since noise could obviously one day become something of an issue.

This Flight Line is, again, largely Trike. I make no apologies for this, since certain other promised non-Trike articles failed to appear, despite constant reminders from myself. I shall not name these guilty men - they know who they are! My thanks to those who have contributed, but again, I must have YOUR contributions in order to produce the mag. If you are doing, or even *thinking*, something interesting, tell us all about it - even if it didn't work. Remember it's your magazine, not mine!

Dave Thomas

CONTACT!

ANNOUNCEMENTS

It has been proposed to hold a Minimum Aircraft Rally round an Isle of Wight circuit, to be sponsored by the Shanklin Hoteliers Association, on the Spring Bank Holiday 1981. There would also be backing from the Isle of Wight Tourist Board and the local council. It is hoped that the event would last for the week or a long weekend. No details have yet been worked out, and the prizes are not definite, but it is hoped to offer cash assistance with ferries. Other activities are planned in order to open the holiday season and extend it. Pilots who think that this event would be of interest and are thinking about attending, please contact Pete Scott on Seaview (098 371) 2334, Russ Patten on Brighstone (0983) 740597, or any IWHGC member.

WANTED: Volunteer minimum aircraft owners to participate in video filmed flying sequences. Date and venue to be organised. Contact Bill Machin, 01-340 7036.

The London Minimum Aircraft Club is soon to be formed. Will anyone interested please contact Bill Machin, 9 Hornsey Lane, London N6.

ACCIDENT INVESTIGATION OFFICER

John Hunter has officially volunteered to act as BMAA Accident Investigation Officer and we are most grateful to him. John has acted in this capacity for many years for the BHGA.

MEDICAL ADVISER

We also note with gratitude that Dunstan Hadley, again known to those from hang gliding, has volunteered to act as the BMAA's Medical Adviser. Thank you!

SMALL ADS

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- half page	£10.00
- full page	£20.00

Good-quality black-and-white photographs will be accepted at any time and will be used at the Editor's discretion.

IN THE NEXT ISSUE: Eric Clutton on propellers; report on Hiway's first Dealer Skytrike Seminar; Paul Baker on Training.

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CHAIRMAN'S *air waves* *air waves*

After our first and, in my opinion, very successful fly-in, it is obvious that we have in our control the beginnings of a new type of aviation sport. It is entirely different from any other branch of aviation and its development, public image and ability to co-exist with other types of aviation are in our hands - EACH AND EVERY ONE OF US. As a page in this issue shows, there is more to crossing the Channel than enlarging the fuel system of your aircraft. Mr Grange's letter illustrates what one fellow member thinks of this exploit; imagine how six incidents of this nature would affect our chances of gaining reasonable long-term operational freedoms for our aircraft.

On another day there were two incidents of note; the first was a minimum aircraft pilot flying into power lines - fortunately unhurt, and the power lines undamaged. The second was an MP sitting in a recently-landed minimum aircraft at the opening of a factory, eulogising about the future of powered flying being with these new minimum aircraft. Only the first of these made the national press. But why did the press know about them? Simple - because both pilots were doing airshows. One lot of publicity was good; the other lot can't have helped.

All three pilots involved in these stunts had one thing in common - virtually no experience. Certainly none of them had anything like the amount of experience to tackle complicated tasks AND put up with the added hassle and strain of needing to guarantee results for the press who were watching.

Wellesbourne proved something else: there are many of us who can take off, fly around and

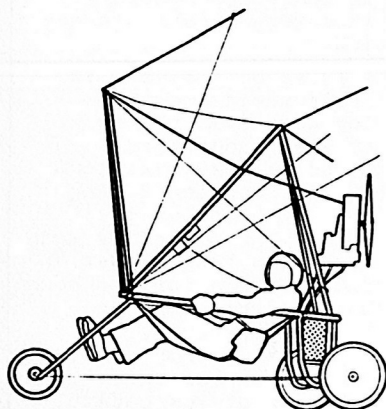
land, but discipline? What's that, I hear many shout, and well they might! Even flying a simple circuit seemed totally beyond some people!

Right now you can choose from a few types of minimum aircraft and enrol on a training course to teach you to fly it, but whatever your background, ranging from one day's hang gliding to 20 years' PPL, when you leave the school you will only just be competent to fly the aircraft. You should by then know a little about air law and how to keep out of controlled airspace by navigation and map-reading, but the way you use these skills, and whether you manage to keep flying without incident even in emergency situations, is going to relate to *AIRMANSHIP*.

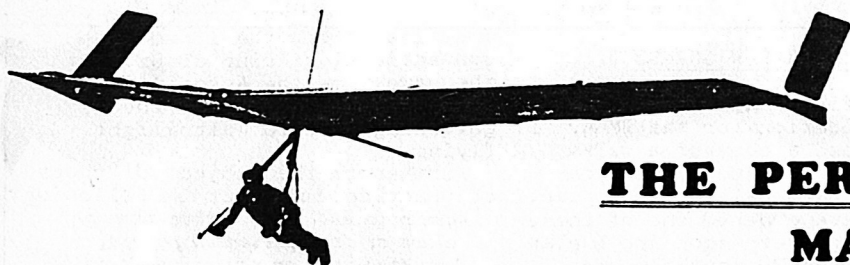
The more you fly on your own (eg from a local field), the more difficult this is going to be but you must persevere. Short-field landings, picking weather and wind changes on cross-countries, engine failures (even at 10'-40'), gaining permission before flying into airfields, flying an accurate and predictable circuit, and REALLY learning how to handle your aircraft - not just how to cruise in straight and level flight - are all going to help you continue to fly safely and all these skills are learned by actually flying a large number of hours and actively trying to develop pilot skills from the experiences that happen. Most important are the times when you fly near or with other air users; here especially, good airmanship and common courtesy are going to lead to acceptance of minimum aircraft as part of the scene on ordinary airfields. In these places, discourtesy and bad airmanship will see us banished to be forever looking for another field from which to fly.

THINKING OF POWER?

Fledge 2

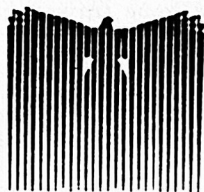


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WEEDHOPPER OF UTAH, USA

KIT CONSTRUCTION AND FIRST FLIGHTS

When I first arrived at Popham airfield with my roofrack crammed with aluminium tubes and assorted hardware, I half-expected the pilots of "conventional" aircraft to laugh their heads off when I announced that I was about to make an aeroplane. Well, I was wrong - most of them laughed their ... well, never mind, suffice it to say that among them were a few men of vision, from whom I received tremendous help and advice.

The construction of the Weedhopper is all aluminium (or should I say *ALUMINIUM*); tubes are supplied bent to shape but not cut to length or drilled. The tubing is 'hang glider' type 6061 seamless drawn. A good set of plans show drilling and cutting dimensions: I suggest that anyone building a kit reads the plans once - twice - and three times before drilling any holes.

This is the first time I have built anything like the Weedhopper, but once I got used to using the drilling tool (supplied) I found it very accurate and easy to manage. The tool enables a hole to be drilled accurately through the centre of a tube. Wooden dowels are inserted into a tube wherever a bolt passes through; this stops the tube distorting and also seals the tube.

Weedhopper say you can build a kit in 40 hours. Well, it took me at least three times that, but I did take my time and double-checked each measurement before drilling.

The tubing fitted together very well using aircraft-quality bolts, and the basic fuselage and frame are very rugged.

The double-skinned wing fabric fitted correctly; this is pre-

sewn at the factory, in your own colours, and is 3.8 oz Dacron.

Final assembly of undercarriage, rudder and elevator went smoothly but constant reference to the photographs supplied as well as the plans is essential.

I have added rudder bracing cables - not essential when flying but helps to keep vibration down when taxiing over bumpy ground. I also added a tail skid - again not essential. In addition I used turnbuckles on the rudder cables to compensate for tolerances when making up the rudder cables which are swaged on with a hand tool (also supplied).

The fuel tank fitted well but the polythene tank does not look very professional and I will probably fit a metal or fibreglass one.

The engine (mounted up front) started easily and has auto advance timing. The coil ignition needs a 6V motor-cycle type battery or dry lantern battery. Engine power drops quite sharply when the voltage gets below 4V. Battery duration is 20 hours and I have fitted a voltmeter.

Taxiing trials went very well and the aircraft behaved as per the flight manual. I spent about two or three hours taxiing and getting used to the feel of the thing.

My first 'hop' was quite exhilarating and I found the aircraft very easy and predictable to fly. My flying experience is virtually nil on aircraft (although I have spent several hours flying aerofoil parachutes) and I read and thoroughly digested the flight manual before and after each 'hop' and the aircraft flies as they say it should. I found it very 'natural' to fly. Power is ade-

quate from the 20 HP engine, and take-off speed is approximately 27 mph. To date I have about two hours flying the Weedhopper, and the only major problems have been a main wheel seize-up (this item requires thorough pre-flight examination for plenty of grease on the bushes), and also a severe loss of power owing to the air filter inlet being partially blocked with its own polythene liner. This power loss occurred at 30 ft in a climb-out but the aircraft recovered immediately I put the nose down, and in fact gave me a great deal more confidence in its ability to dead-stick land.

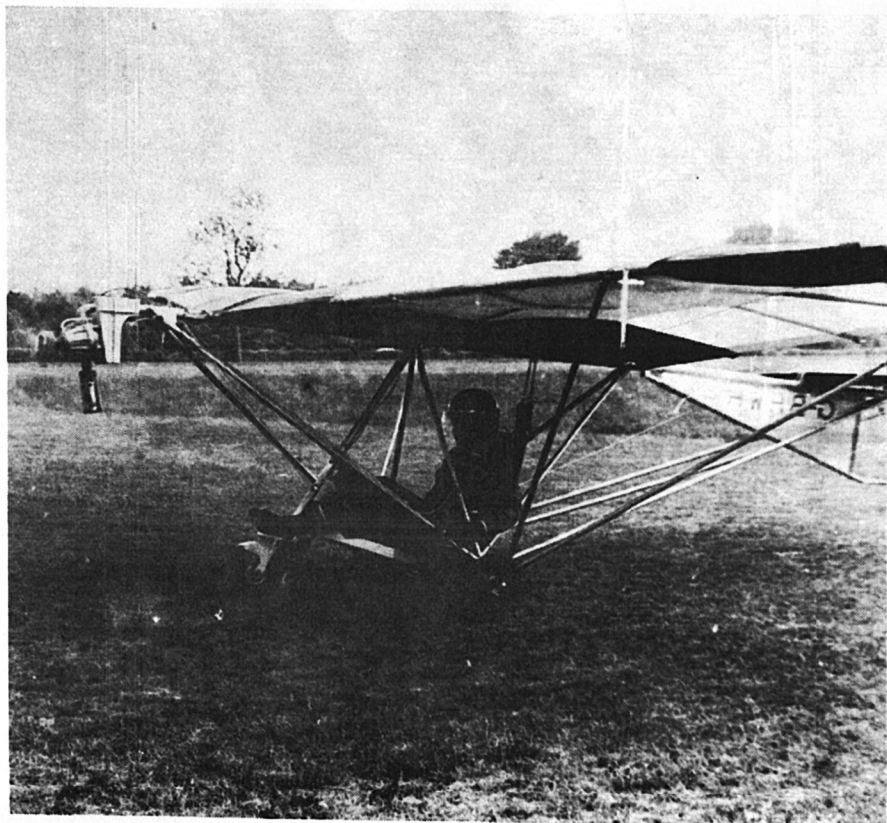
One final suggestion - learn by my mistakes - don't be impatient and take off in ANY kind of cross-wind until you can handle S-turns in the air, and make your first extended 'hops' in still air. My thanks to all at Popham airfield for their help and encouragement, especially Jim and Trevor Espin.

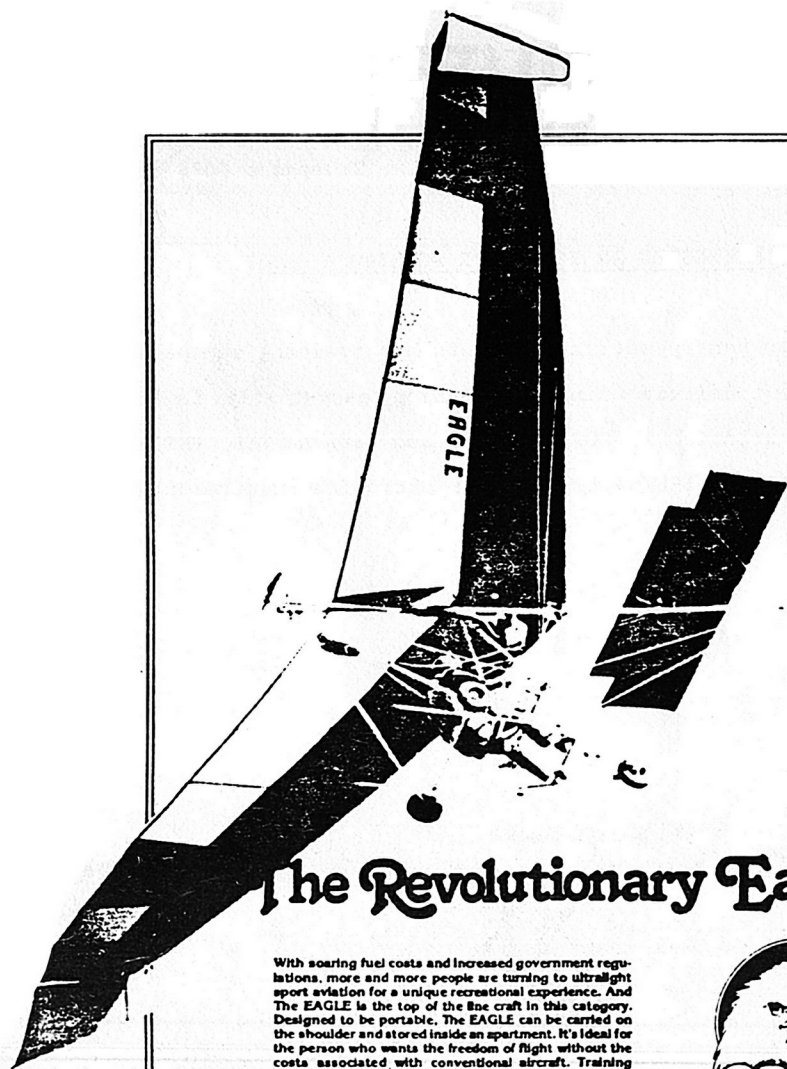
So if you want somewhere to build and test-fly your aircraft-Pop into Popham!

Happy Landings.

Gordon Clephane

Gordon Clephane with his weedhopper





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SECOND MEET AT

WELLESBOURNE — FIRST IMPRESSIONS

I was invited by Mike Hibbit to attend the power "fly-in" at Wellesbourne, and having missed the original impromptu one because of the BHGA AGM, I was only too pleased to accept.

On arrival at the airfield, I was gripped by nostalgia, having spent nine years in the Royal Air Force, and the scene before me could have been the location of the shooting of "Those Magnificent Men in their Flying Machines"! An assortment of machines stood around and one by one more were arriving. The weather was on and off like the proverbial lady's nightie, and a hot-dog stall would have been more welcome than a ruddy ice-cream van, but perhaps next time some enterprising punter will provide!

The machinery was as exciting as it was varied, some being very well thought out and extremely well put together, and some as if they were the give-away with a packet of cornflakes. Flying and general marshalling was unhurried and reasonably orderly.

Flying was in progress for most of the day, and again varied from the sedate to the spectacular. I am not naming any names or firms as this is an unbiased and general impression of someone who is interested, and seeing this part of hang gliding for the first time; it was very well worth a visit and extremely interesting. Powered microflite (or call it what you will) is still in the birth throes and surely must be at the most exciting stage. Anyone who is at all interested in flying in any of its forms - powered microflite is the way forward.

A friend who was still not particularly impressed at the end of the day said, as against hang gliding,

"What do you do after motoring up to 1000 ft - there just isn't any challenge". This poor mixed-up guy just can't have heard of pylon racing, formation flying, and other good things one can do when powered as against ordinary hang gliding.

All in all I was very impressed by the lack of hassle, the smooth way the fly-in was run, the varied amount of machinery, and the interest shown by all who attended, not least the gentleman who obviously had come straight from the CAA office! I look forward to many more meets and to this sport getting off the ground (HA-HA, 'orrible pun...)

PS - Hands up all those of you who thought that microlite flying began in the U S of A? WRONG! It all began in Germany during the Second World War: Willi Messerschmidt made three Trikes, one for himself, one for Reich Marschall Goering, and the last one he gave to Adolf Hitler. What the ruddy hell is he talking about, I hear you say, prove it! Well, have you never heard of how Hitler was always boasting about his GLORIOUS THIRD TRIKE??!

J H Wadsworth (alias Waddy)

OVERHEARD AT WELLESBOURNE . . .

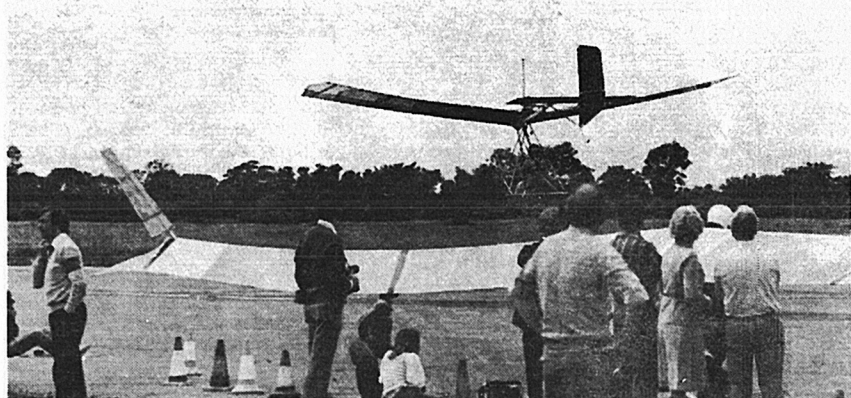
Brian J Harrison (of Hiway, and a hang glider pilot of many years' standing) had an engine failure on the Skytrike and came down in the crops (shhh!) just on the edge of the runway.

BJ (*greatly perturbed*): I don't know what's happened, boss, it just stopped running . . .

Steve Hunt: It hasn't got any petrol left, Beej !

THE FLY-IN

- A BIRD'S EYE VIEW



Airbourne: the Eipper Quicksilver. Foreground: Catto CA 15

The weekend of 7-8 June 1980 will be remembered by most of those attending the BMAA's Fly-In at Wellesbourne as the weekend that put minimum aircraft on the map - to stay!

The Committee had decided that however simple the event, there were some things that were indispensable at the Fly-In. Hence those arriving, after being relieved of a moderate entrance fee, were guided to a parking area; nearby were portable loos, and a camping area with water supply for those staying overnight. At the flying area was a control caravan with PA, radio, and information on the day's circuit pattern, and the flying areas were clearly coned-off and windsocked. Thereafter, it was up to those who attended to entertain each other - and there was no shortage of flying to watch, machines to inspect and people to talk to!

The "Fly-In" was taken literally by Frankie Tarjanyi and Gordon Faulkner who did just that, arriving from the Hiway

factory at Tredegar by Skytrike! (See article). Other craft arrived in what we consider today to be the more conventional way - but perhaps the future will see some changes in our views! There were many trikes of different manufacture - Chargus with their three-bladed props, many Hiway Skytrikes, and home-builts such as Nic Wrigley's two-man trike which generated lots of interest (and quite a few decibels too!) There were Pterodactyls, home-grown on the airfield itself at the High School of Hang Gliding (now renamed The Ultralight Aviation Centre, we note), and piloted in spectacular style in daily 'dogfight' sequences by its directors, Paul Baker and Dave Garrison. Chris Baker's powered Quicksilver had arrived from the USA without its rigging wires, and some hectic rigging activity got it into the air by the Sunday. Eagles were there from Breen Microlite and Euro-Wing, including one rejoicing in the splendid title, "Spirit of East Kilbride", and Catto Aircraft was represented not only by a CA15 with its elegantly-shaped wings, but also by Craig Catto himself,

over from the USA and showing a new straight-wing design constructed in a week at Euro-Wing's workshops. There were some pure powered hang gliders too, either foot-launched or with wheeled undercarriages, and a Soarmaster-powered Fledgeling, all distinguished by the pilots wearing conventional hang gliding harnesses.

The weather was reasonably kind, with warm sunny spells and occasional heavy showers, and the light south-westerlies permitted flying throughout the weekend. There seemed to be some wariness around Saturday lunchtime with only a few trikes aloft, but otherwise the flying was constant except for the periods when the skies were cleared to enable visitors in light aircraft to come and go!

There were one or two incidents resulting in only minor aircraft damage and hurt pride, while on the positive side, Dave Garrison gained over 6,000 ft on his Pterodactyl, and Rodney Nicholl, paralysed in a hang gliding accident some years ago, took to the air again on the two-man trike with the Solar Storm hang glider.

And what of the atmosphere of the meet? Well, flying talk first and foremost, but by the Sunday, it had taken on an almost carnival aspect with about 500 dedicated visitors, an ice-cream van, a

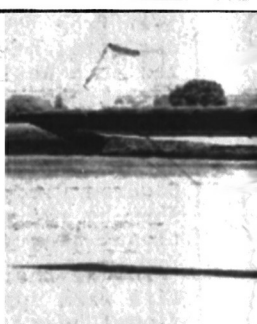
fish-and-chips van, and the untiring representatives of the St John's Ambulance Brigade who were called on only once, I believe, and that was to dispense aspirins for a headache! Loads of faces, many very familiar - people from hang gliding, people met at the November AGM, those commercially involved in manufacturing and teaching, BMAA member 007 (John Long, who flew the James Bond powered hang glider in "Moonraker") and interested officials from here and there. Everywhere was enthusiasm - people were spanning at machines, exchanging information, looking for tips and discussing business deals, and comparing the finer points of machinery and techniques. Cameras clicked and whirled, and local Councillors pointed noise meters and were a little surprised when Steve Hunt got out his meter to compare readings! Katie Thomas slaved in the Control Caravan and did a sterling job providing information and enrolling over 60 new members. (Even Nick Regan joined ...) Marshals marshalled, and the organisers were finally convinced that it had worked out okay. And perhaps it was all summed up by Richard Jansen from Holland: "It's great - just like a mini-Oshkosh. I wouldn't have missed it for the world!"

Joan Hunt

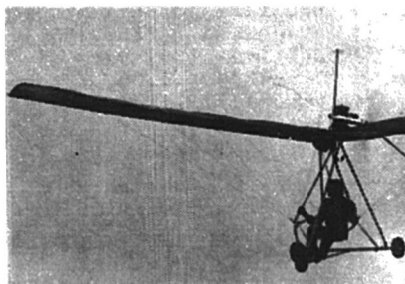
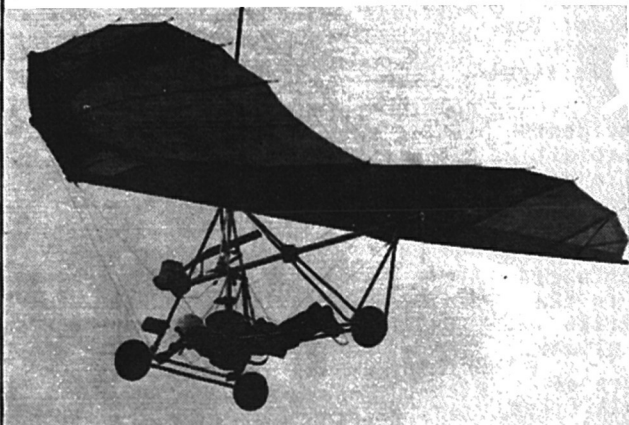


(With apologies to Dr Alan Clarke)

THOUGHT IT WAS A VANDEN PLAS MYSELF - ED



WELLESBOU FLY



Top left: A brace of Eagles (can of 20/50?) (Photo: J Wadsworth)

Top centre: Alan Weeks - must of the Meet Award with his Fledgeling. (Photo: J Wadsworth)

Top right: Paul and Dave's P1 dogfighting!

Middle left: Vortex with home trike which performed very

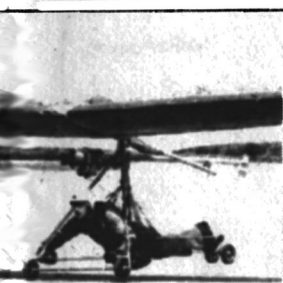
Middle centre: First flight of Baker's Eipper Quicksilver

Middle right: Hiway Skytrike of the rare moments on the (Photo: J Wadsworth)

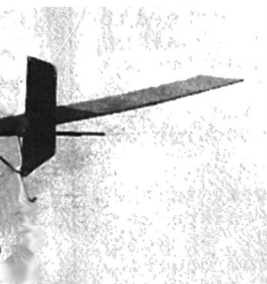
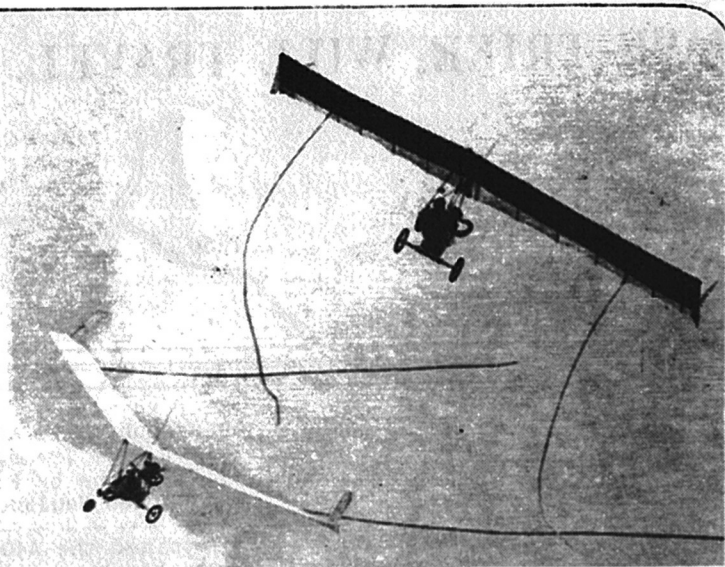
Bottom left: Nic Wrigley's S Buggy - uses 440cc Solo engine and is capable of two-man

Bottom centre: Murray Rose (with his Fuji-powered trike) three-bladed prop.

Bottom right: Our trusty St Ambulancemen.



JOURNE ~IN

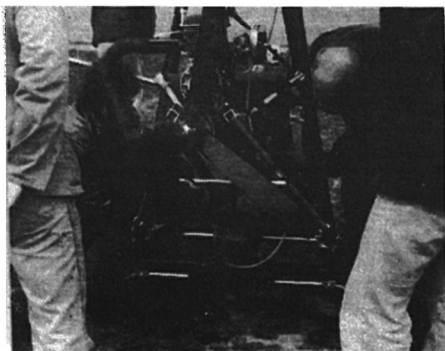
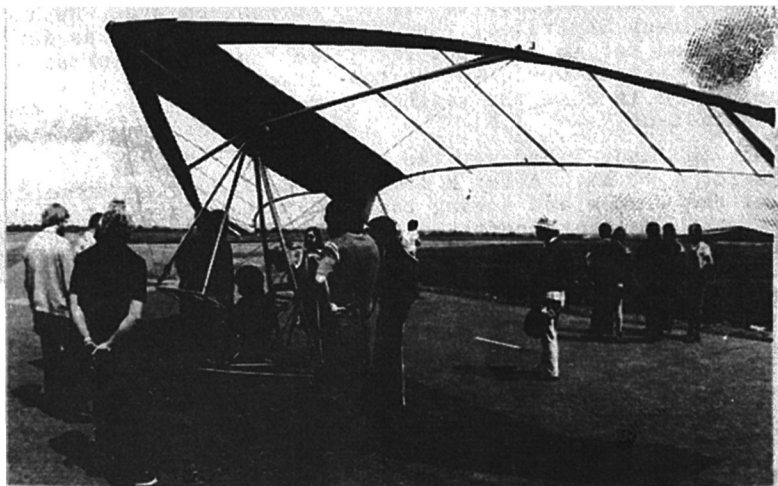


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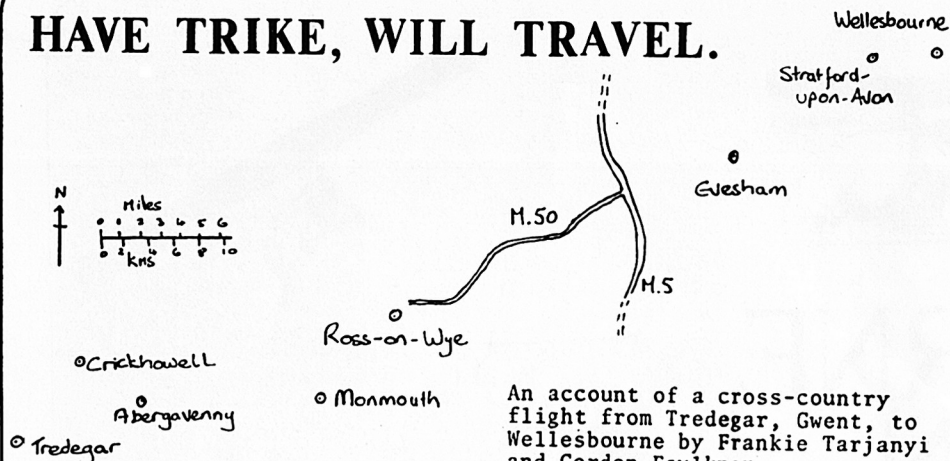
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HAVE TRIKE, WILL TRAVEL.



An account of a cross-country flight from Tredegar, Gwent, to Wellesbourne by Frankie Tarjanyi and Gordon Faulkner.

Three weeks before the Wellesbourne weekend, Gordon and I decided we would attempt to fly there on Hiway Skytrikes. We also decided not to plan too far ahead, so that we would not be too disappointed in case the weather was against us.

Come 7th June, I had set the alarm for 4.40 am. After a look out of the window and seeing that there was a moderate north-west wind blowing and low cloud, I decided to go ahead. We arrived at the Hiway factory at 5.10 am and whilst I rigged up my "C" I sent my wife Barbara round the corner to drag Gordon out! By the time he arrived I was rigged; Gordon had already rigged his Vulcan the night before.

After checking things over, planning our route and arranging signals for landing etc, we finally took off from Sirhowy Hill at 6.30 am waving goodbye to Barbara who followed our progress for the first couple of miles.

We headed off towards Crickhowell avoiding flying down the lee of the mountains in the freshening wind. From Crickhowell we flew to Abergavenny, then between Abergavenny and Monmouth we encountered some vicious turbulence which we thought was due to the Black Mountains.

We joined the A40 at Monmouth (above it, that is!) and carried on to Ross-on-Wye. We had arranged to follow the road as far as possible, so that if one of us should break down, we would just wait by the road for Barbara in the van - as she was driving to Wellesbourne an hour or so later.

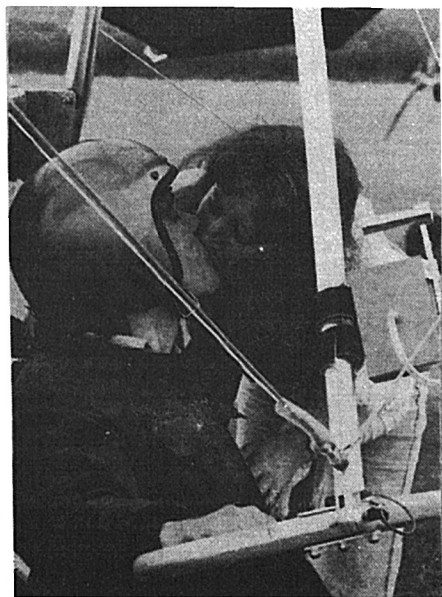
We landed in a field next to the Motorway Cafe near Ross-on-Wye at the beginning of the M50. We went in, had some breakfast and bought some petrol which took about an hour. When we came out the weather had improved and it was now bright, sunny and quite pleasant. We then took off and headed along the M50. The going was nice and smooth except for the odd bumper of a thermal. Two miles from the M5, we saw Jim Bowyer and John Ievers waving to us from the hard shoulder. We crossed the M5 and cut across land to Evesham.

Then I looked behind me and Gordon was gone! I flew round and round in circles but unfortunately I couldn't see him, so I decided to land in a school playing field. I topped up with petrol, got my bearings and then I took off again and circled round a bit more. I then headed off north-eastwards towards Stratford not knowing where Gordon was. Suddenly I caught a glimpse of him several miles to the left of me. I

altered my course to try to rendezvous with him. As we met up, I noticed a glider field just below me and I signalled to Gordon to land. It was Pepworth Gliding Club and we had a chat to the glider pilots who seemed very interested in the Trikes and gliders and they were all very impressed by our nice shiny mahogany props! Gordon and I agreed that the reason we had lost sight of each other was that if there are buildings on the horizon behind the other glider, it is well camouflaged and cannot be seen.

We took off waving goodbye to our friendly fellow aviators and headed off as fast as we could towards Stratford-upon-Avon. We arrived over Stratford in next to no time and from there we could see microlights at Wellesbourne Airfield. So we opened the throttles completely and pulled the control frame right in (this achieved a ground speed of 45mph+).

We arrived over Wellesbourne Airfield a few minutes later at



Frankie's welcoming kiss from Barbara!

Gordon on arrival at Wellesbourne



10.30 am. I made a note of the circuit which was being flown by another Trike flying there, then slotted in behind him and came in to land, feeling really pleased with our achievement.

As I was coming in to land, I saw my van tearing up the runway with Barbara behind the wheel, having just arrived. She then dashed over and gave me a welcoming kiss!

Gordon then landed beside me and we were given a warm welcome by fellow pilots who were surprised and pleased by our successful 80-mile cross-country flight.

The whole trip was tremendously exhilarating, very comfortable and not very tiring. In fact I am looking forward to my next mammoth flight! The trip took 2½ hours in flying time and we used only 2½ gallons of petrol. This was cheaper and more enjoyable than driving down.

Frankie Tarjanyi

As promised, I am going to write about avoiding hitting the ground hard. As a preliminary I will deal briefly with landings.

The primary aim of a landing is to touch the ground as gently as possible with very little vertical descent. (There are secondary considerations such as avoiding hitting anything once you have touched the ground, but you don't need me to tell you that!) The way to do this is to follow the standard procedure for a SIMPLE landing. I advise against COMPLICATED landings as they require enormously more skill and there is far more opportunity for things to go wrong. Beginners almost always seem to bend their

but responsive attitude and the pilot is aware and reacting.

From 20 ft, the pilot is preparing to round out. The excess speed is used to produce more lift as the pilot raises the nose during the round-out. When the pilot has finished rounding out, the aircraft should be flying parallel to the ground with the wheels $\frac{1}{2}$ " above it (while you are practising it is better to give more margin than $\frac{1}{2}$ " just in case you land a bit low). The pilot then lets it settle onto its wheels and brings it to a halt. *{Okay - if you haven't got wheels it's time to start running! I would advise investing in wheels, however - it's much safer, not to mention easier.}* Standard aviation practice is to turn 90°

PAUL BAKER ON TRAINING

machines when they attempt or allow themselves to get involved with complicated landings. The concept of SIMPLE and COMPLICATED manoeuvres or procedures is important. While they are kept simple they are fairly easy to keep under control. This cannot be said of complicated ones.

A SIMPLE landing

Having done his base leg, the pilot is on approach. He is flying the aircraft at an airspeed considerably above the stall. He is pointing straight into wind (no drift). The throttle setting is fairly low so that the descent rate is moderately high (lowish power and highish airspeed give a fairly high descent rate). There is plenty of clear space before and beyond his aiming point (projected touchdown spot). Any change in airspeed, direction or glide path is corrected instantly and precisely, ie the aircraft is in a stable

to the left and stop, and then check for other aircraft before moving off. In a situation where other aircraft are around, this must be adhered to.

Rather than expand on the COMPLICATED part of the simple/complicated concept, which I will keep for next time, I am going to edify you (feed your thoughts). With regard to last time's 'Food for Thought', I want to explain a few things as I see them.

1 The function of power in an aircraft

Power controls whether the aircraft climbs or descends. Maximum power gives maximum climb; no power gives steepest descent (at a given airspeed). As the power is reduced, so is the rate of climb. At a certain stage there is only enough power to overcome the drag of the aircraft now it is only maintain-

ing height. Further reduction in power gives descent until with no power the aircraft is on maximum descent. (This is all at the same airspeed).

Changes in power often change the airspeed due to the position of the thrust line. In Pterodactyls, Quicksilvers, Eagles, Skytrikes and most other ultralight aircraft, increasing the power gives a nose-down effect which increases the airspeed before it starts to climb. Decreasing the power gives a nose-up effect and a loss of airspeed before it starts to descend. Killing the power at the wrong attitude and height can put the pilot in an impossibly 'complicated' situation!

It is essential that the pilot can automatically and immediately compensate for this side effect of power changes.

2 Wind gradient

The strength of the wind can change rapidly with height. This means that as the aircraft encounters air moving at a different speed, so its airspeed changes (in the same way the airspeed changes with gusts). Climbing, the aircraft encounters progressively faster moving air; the airspeed therefore increases and the aircraft can easily get into a very nose-up attitude. Descending, the aircraft encounters progressively slower-moving air, which means that the airspeed drops. It is quite possible to have a very nose-down situation without much airspeed. Nose-down, the aircraft is accelerating and would be picking up airspeed, only this is negated, or partly negated, by the progressively slower-moving air that the aircraft is encountering. The aircraft can also be slower to respond to controls in wind gradient, because the airspeed is often less than the pilot expects.

3 Poor pitch control

Poor pitch control means that

the pilot responds slowly to changes in attitude. The nose goes up and the pilot allows the aircraft to lose airspeed before he corrects it. The nose drops and the pilot lets excess speed build up before bringing the nose back up. In both situations the airspeed has become unnecessarily high or low.

If these three elements - low power, giving a slow climb rate, wind gradient, and poor pitch control - are combined, you have a complicated situation.

The slow climb rate, due to the low power, encourages the pilot to fly slowly to get the most lift from his wing. The airspeed gained climbing through the wind gradient is likely eventually to leave the nose high and the airspeed low. The pilot brings the nose down rather late, so it has to come down further and the aircraft dives somewhat. The speed builds up more than necessary and the excess speed is converted into a steeper climb. This repeats itself with the aircraft going up and down through the wind gradient and the oscillations will tend to build up until the ground gets in the way! A stall at the top of one of the climbs will accelerate the process.

If the machine you were flying started getting into pitch oscillations, how would you cope? Would the oscillations be pilot-induced?

Have I set your minds racing, your imaginations soaring with these thought-provoking situations, or do you just think, "What's he talking about?"

How much flying are all you BMAA members doing, and in what aircraft? In what terms do you see the problems of flight?

I will be very happy to answer your questions in my training column.

Paul Baker

CHANNEL: ATTEMPT FAILS

Daily Mail Picture Special

Wizard prang!



I'M MOST
AWFULLY
SORRY,
SAID
THE
GALLANT
MR KIRKE

Kirke is dropped in

THE plucky lads of the Dangerous Sports Club — those same stout chaps who have savoured the thrills of throwing themselves from the world's highest bridges and who dined for dinner on the crater's edge of an erupting volcano — have been at it again.

It was to have been a daring stunt, worthy of Biggles, Aggy and Chaser — even Channel 5 will be there to film it.

But they let the side down when their aerial acrobats from London to Paris ended in a series of prangs.

It began like a scene from The Blue Man with three intrepid aviators swinging their aircraft over the town of Chichester in Surrey in the early hours yesterday.

Their Pterodactyls — U.S.-made hang gliders with jet engines, headed South and East and disappeared.

Then pilot David Kirke, a 34-year-old tourist member of the Guild of University club, reappeared in a parachute — with a burning landing in a field at Tadfield, Surrey.

Kirke returned again for the day — and missed. At 10.15, Mrs Betty Wilton, of Tadfield, Surrey, saw a pair of feet clad in immaculate puttees and shining boots, sticking beneath the branches of a tree in her garden.

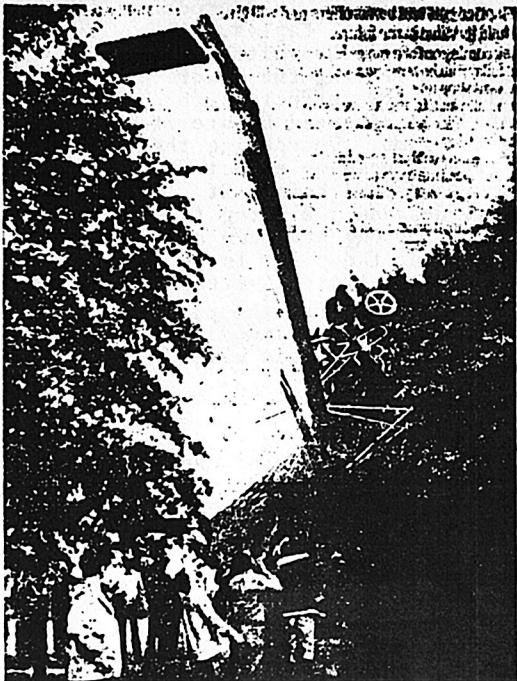
GASTON WOODGATES

The gallant Mr Kirke had dropped in. Mrs Wilton said: 'He looked just like Biggles. He lit a cigar and said, as cool as anything: "I say, I'm most frightfully sorry, I do hope I haven't damaged your tree." He must be mad as a hatter.'

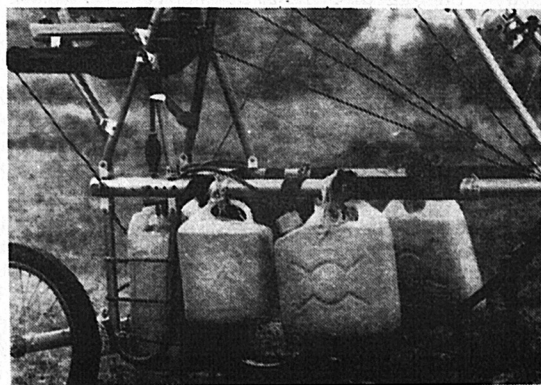
The two remaining hang gliders flew on, then one put down in a field at Haslemere, Kent.

Its pilot got airborne again and sailed up with the third machine. In the distance, glinted the waters of the Channel. But the weather was bad.

Not so intrepid now, the pilot dropped into the playing fields of Rye, near Faversham. It was the end.



An undignified landing for Mr Kirke and the Dangerous Sports Club
Picture by Daily Mail manager AUSTIN O'MALLEY



Above: Daily Mail article,
21 May 1980.

Right: Enhanced Pterodactyl
fuel system for Channel
attempt.

Dear Mr Hunt

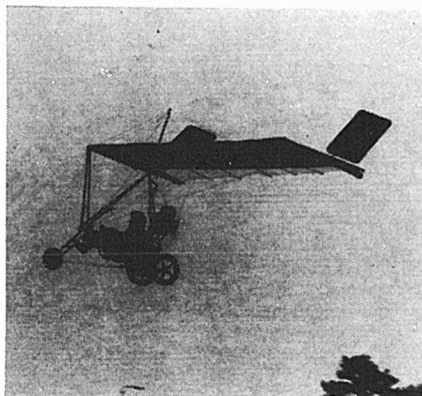
You may have been interested in the story appearing on Page 15 of today's Daily Mail. There's plenty of publicity for the Dangerous Sports Club. It seems to be precisely opposite to the style of publicity advocated in your article on pages 6 and 7 of Flight Line magazine No 1. It projects ultralight aircraft flying as a Dangerous Sport. If members of your committee continue to organise stunts like the attempted cross channel flight and to make such a mess of them, what chance will there be for the negotiations with the CAA?

I'd be grateful if you would bring this matter up at the next meeting of the BMAA, and if you would let me know the date of the meeting so I can try to attend.

Yours sincerely

P W Grange
St Leonards on Sea

One of the Pterodactyls after take-off from Croydon



Editor's Note: David Kirke has now resigned as Secretary of the BMAA.

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THREE MEN AND A TRIKE

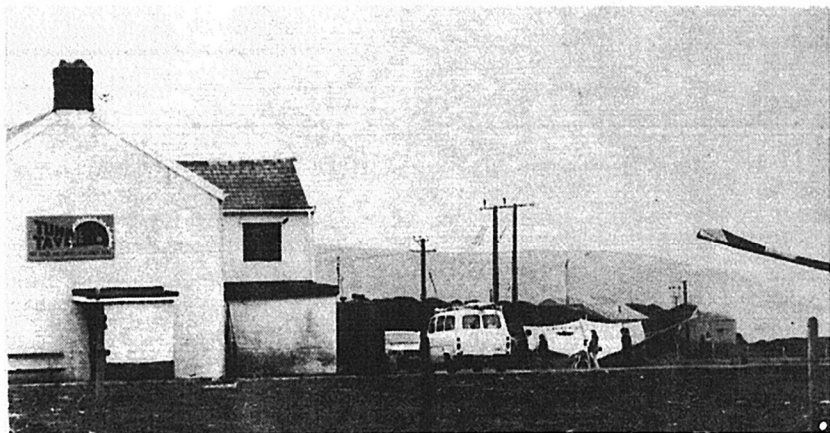
Still fast asleep, I picked up the phone and said, "There's no wind!" "I know," said Pat King, "Tony and I are going up to Merthyr, I've arranged with Steve to have a go on the Skytrike." I woke up! Should be interesting, I thought, not powerful or big enough for my 161 stone but worth watching. "I'll be ready in half an hour - call by, we'll go in mine."

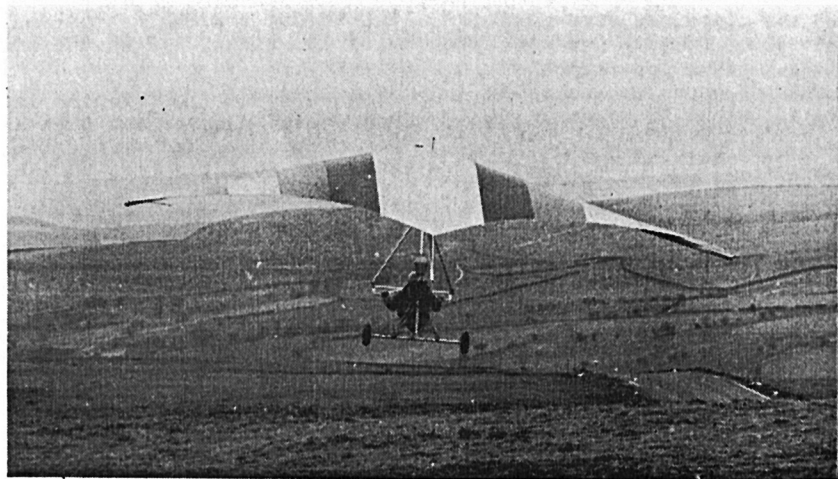
An hour later, we were approaching Bedlinog, the arranged meeting point. Nobody there. They must still be at the factory. Over the hill via Abertysswg, a stop to watch a couple of hang gliding pupils do a "straight down" as though we'd never seen a hang glider before, then down on into Tredegar. There was nobody at the factory either. So we backtrack! (Typical, isn't it?) Then, there they are! Eyes searched the sky, ears picked up the faint waspish note of the motors and there at 1,000 feet heading west were the two Skytrikes, all wheels, wings and podfulness. Very nose-up, proceeding slowly across the sky.

We lost them behind buildings and ridges as we made for the high ground. Coming out onto the common below Bedlinog we saw that one had landed. We walked over for a chat; it was Gordon Faulkner, cheerful, no problems! We were full of questions - could you take off on ground as rough as this? (it was all typical mountain grazing, all tufts and tumps); how long a run did you need?

We were interrupted by the arrival of Frank Tarjanyi in the other machine: we indicated the wind direction, about south-west, 5-8mph. Frank made a circuit then throttled back for a neat two-point touchdown alongside us with a landing run of five or six yards!

Steve arrived with the van. It was near lunchtime - retiring to the pub (for a lemonade) was suggested. I wondered what they would do about the Trikes ... silly me! Engines revved and one after the other they taxied, gathered speed and leapt into the air in the length of a cricket pitch. If I hadn't seen it with my own eyes I wouldn't have believed it. Frank's take-off was more like a jet; at





Above: the Skytrike at Bedlinog. Opposite page: Just dropped in for lunch!

'roll speed' he fair shot into the air and didn't pull the nose down until he had 20-30 feet.

More was to follow. We reached the pub to find both had landed in the pub car park - about 30 yds wide and 40 yds long, surrounded on three sides by various telephone and power lines within 60 or 70 yards. (*Experts only please - ED*)

Two lemonades later (I lie) we were treated once again to the amazingly short take-off of the two, from a convenient dirt track near the pub.

At last we were all assembled on the top of Bedlinog and Steve uttered the magic words ... "Does anyone want a go?" Yes, said five voices, and I was very surprised to find that one of them was mine. Steve took me to one side. "You'd better fly Gordon's. The power's a bit better" etc etc. I didn't get all of it - something about propellers was mentioned but it was rather cut short by some problem with a bolt. I gathered a bolt had broken. The same one. The one that usually goes. My confidence bottomed out at zero on the scale. Suddenly I knew too much. I was privilege to the conversation of manufacturers and

test pilots about prototypes. I was not prepared: I needed reassurance: none was forthcoming!

We walked over to Frank's Trike (the less powerful one). I managed to insert a few judicious questions but never to the same person. No, this one doesn't break bolts at all (*a relief*); yes, Steve Hunt (nearly as heavy as me) does fly it (*better*); there wasn't much difference in the power (*almost good*).

Pat King (12 stone) was getting strapped in; he opened up and, slightly downhill, sped across the rough grass. The climb was less spectacular. Pat was holding her down (he's flown jets and doesn't trust these propeller jobs). He eases the bar out at 100 feet and climbs steadily away. Ten minutes was the agreed duration.

Twenty minutes later we had been treated to power turns, power variations in level flight, figure eights (don't turn too fast or you will fly through your own wash, Frank was telling me), power-off glides etc. The whole test flight schedule. (Well, King is a "thinking" pilot and after all he has ordered one). Don't get

behind the ridge, we were told. There's a lot of sink, we were told. Pat does, and we lose sight of him, but not *sound* as the power is poured on and he comes in to land just a shade further back than he intended and uphill! Don't put your foot down when you land, he tells me excitedly, it's great, you'll love it! And I BELIEVE him!

Tony goes next, a shorter flight in the same vein which I don't watch so avidly because I'm asking Frank what he thinks about me going. Should be okay, he *seems* to indicate. I would have liked to hear it with more confidence since my turn is next and I have this nervous tension thing in my stomach. I ask Steve. He asks Frank! My guts tie themselves in a knot. Tony comes in for a neat landing and puts his foot down. I must remember not to do that.

I'm pulling the strap tight enough to cut me in half. "You won't fall out!" says Steve. Frank shouts, "Clear the prop!" - she fires!

Old habits die hard and I want to check the ailerons, rudder bar, elevators and switches. There aren't any - and there's only one switch! All nerves have settled so we make sure we have a wing on each side, we are into wind and go, go, GO! She trundles forward swinging 'cos I'm pressing the throttle pedal too hard on the right-hand footrest. I elect to take off a bit out of wind (it's only 6-8 mph); the grass is racing under me - if we aren't off by the time I reach that bump I'll throttle back and ... The nose wheel lifts and we are airborne! All 16½ stone! That quickly! Keep the bar in, airspeed, airspeed! 50 feet and climbing nicely, passing over Trevor Meacham and his school operation, ease the bar a little, the climb improves. Control is finger-light, the bar finds its own position and I concentrate on keeping her straight. NO TURNS

TILL WE GET 300 FEET - remember 1G is 16½ stone, 1½G is 24½ stone etc etc.

I'm well out from the top in about three minutes and into a little bit of ridge lift. I'm surprised that you feel the surges just like when gliding. She pitches up (or seems to) quite sharply and I can't quite make up my mind whether this is an illusion caused by the very reclining body attitude or real response from the wing. I don't take chances and keep the bar in.

A gentle turn to the right is easily initiated but she wants to steepen it so I hold off bank. My right leg is aching: I've been trying to shove the throttle pedal through the nose wheel since take-off. I relax a bit and try a left turn; she doesn't seem to want to tighten that way. Pilot problem more likely since she'll virtually fly hands off - well, not actually *hands off* but holding very gently - I'm no bloody hero! A big, big 360 (don't fly through your wash) about ½-mile diameter brings me back over take-off about 300 feet above it. It's tempting to keep her up a bit longer so I reckon on another circuit to lose height playing with the power. It doesn't make all that difference to the attitude as you vary it. Damn! I'm behind the ridge! Turn crosswind and pour on the power. Good, I can maintain height nicely and turn in when I'm lined up downwind of the landing strip. I've got about 150 feet as I turn gently into wind and line her up. Ease off the power - no drift - up comes the ground - check - hold her off - trundle..trundle..trundle, we're down and I *keep my feet up!*

- - o o o - -

PS: "Were you at all worried, Frank, with my weight in it?" "Well, I had my fingers crossed."

Now he tells me!

Rob Mackay

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ORIGINS?

SO YOU THINK HANG GLIDERS WERE THE FIRST AIRCRAFT? WRONG - NOT EVEN THE MONTGOLFIER!

Most histories say the first human flight was by the Montgolfier brothers in a hot air balloon in 1783.

But they've got it wrong, reckons Americal author and explorer Jim Woodman in "NAZCA - THE FLIGHT OF CONDOR I" (John Murray, £6.95).

He claims that the first aviators in history were Peruvians - around the year 500 AD.

How else to explain two long-standing puzzles? First, the numerous drawings of balloons left by the Incas and, second, the incredible earth designs, sometimes miles long, etched upon Peru's barren Nazca plains.

"They are so big that on the ground they look like a muddle of stones. You can only pick out quaint bird-like and humanoid figures from the air", says Woodman. "And that's where I believe ancient man appreciated them from."

KWEERIE KORNER

No response at all to the last Kweerie - the answer is that you would find A.A.B.F. on the instrument panel of many Tiger Club aircraft - it stands for All Aircraft Bite Fools!

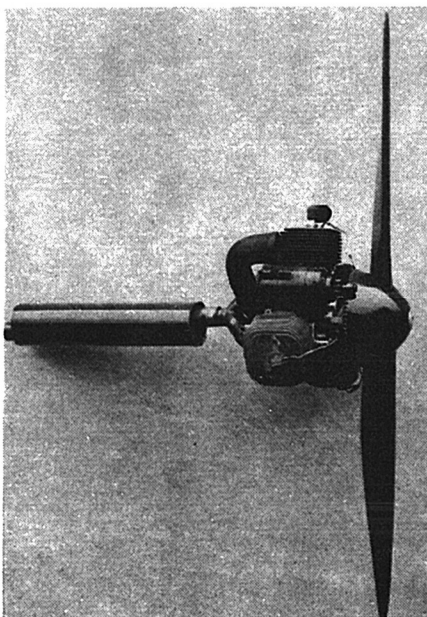
This time's is about an astronomer who had a facility whereby he could scan his telescope across the Heavens. "Ah", he thought, "now I can measure the diameter of the moon!" He scanned his telescope across the moon and measured the time required to pass from one side to the other. Multiplying this time by the velocity of his telescope, he deduced the diameter of the moon to be 4320 miles. Being a careful man, he double-checked by scanning the moon in the other direction -

INFO:

A SPECIAL ENGINE AT LAST?

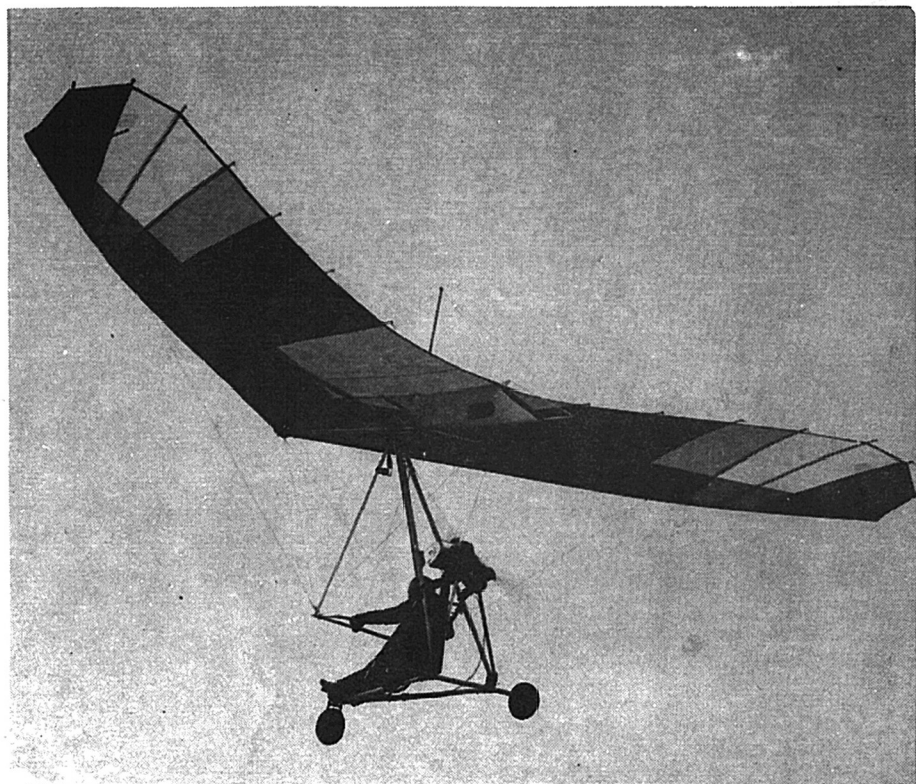
KONIG is an engine manufacturer from Berlin, Germany, and Dieter Konig, the managing director, is very keen on promoting the idea of minimum aircraft in Germany. His solution for the ideal engine is illustrated here; it is a 340 cc, three-cylinder radial developing about 26-30 BHP at 4000-4500 rpm. It is supplied complete with propeller and gives a thrust of 64 kgs.

It looks as if it could be a very useful engine but there is only one problem: the ex-works price is close to £800.



and to his surprise, the diameter this time came out to be 1440 miles! Then he remembered that the earth rotates, and with a little arithmetic he had the answer. Can you get it? £2 for the first correct one to Dave Thomas.

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