

Web Site www.ddsc.org.au OR www.gogliding.org.au

Chaotic

Darling Downs Soaring Club

Winter Newsletter June/July 2008

Club Thanks

Many thanks to the Hennessys and Hooks. Graham and John who spent 7 days last week rebuilding the engine on the tractor. For those unfamiliar with tractors this is a MAJOR task and involves cranes, jacks, rollers, all manner of tools and much heavy lifting etc. All up the repairs have cost the club around \$1000 and Graham & John's labour has saved the club many, many hundreds of \$s.

While the men laboured on the tractor, Kay and Narelle have worked hard around the club house and when I walked in on Saturday morning it positively sparkled! Cupboards and fridges have been thoroughly cleaned, old outdated members food has been dumped, lounge and briefing room tidied and vacuumed and the mice have been decimated (at least!).

Many thanks from all of us to the four of you

Bob Flood

Club Promo at Grand Central

DDSC had the opportunity to display one of the Clubs Gliders and promote the sport and ourselves on 17 to 19 April 2008.

After a summer of poor weather and low activity, the committee was looking at ways to publicise the club.

We have very few local members, although there are 100,000 people in Toowoomba, and many more in the local towns, so we decided to put on a display in the Grand Central Shopping Mall in Toowoomba. I went to see the manager

at Grand Central, and his immediate response to the idea was positive.

I don't think he realised just how big a glider is!

He was willing to provide the space free of charge, provided 1. We were a non profit organisation, 2. He didn't have a commercial booking for the space, and 3. He could justify it as a community benefit?

I asked him to confirm the availability of the space 4 weeks ahead of the event, because people were arranging to take days off work. He could see the sense in this and agreed, so we knew for certain 4 weeks ahead that it was on.

The club members gave great support for the event, with more than 15 people helping, and some staying for the entire three days. You need at least 4 people on stand, and we had never less than 6 or 7.

The manager asked for a high quality presentation. Mike Codling made some wonderful posters, we had laptops with flight simulator (Condor) running, and gliding videos. We had flyers printed. Most people wore a distinctive DDSC shirt. The Ventus GH, with its very good finish, looked splendid under the bright lights.

The only expense to the club was the printing and laminating of posters, and printing flyers. Mike also had the idea of printing a colouring-in book of glider pictures, which disappeared like hot cakes to all the children.

There were hundreds of children lifted into the cockpit. We sold over 20 TIFs, and generated a lot of interest in membership. Above all, everyone who

helped out had a great time. It was fun, and we plan to do it again next year.

Pam Kurstjens

CFI REPORT from Ralph

A lot has happened in the last two months despite it being the middle of winter.

Early in June I spent a day in Melbourne at the national operations panel meeting trying to push them along to adopt the now not-so-new training proposal. I think we made reasonable progress but unfortunately some of the RTO/ops had limited knowledge of coaching. We are a little ahead of the game having already changed to a Training Panel and it is good to see Kingaroy follow suit. Peter Trotter is now chair of their Training Panel with Peter Summerfeldt as CFI.

Jenny also attended the ops panel meeting trying to push the safety agenda. I have offered DDSC's assistance with the trialing of the proposed safety management system.

More recently Grant Harper paid us a visit for the weekend and undertook our 2 yearly operations status check. The full report is on the website and while most areas were satisfactory there are a few areas we can improve on. Grant took the opportunity to fly with a number of instructors and a post solo and pre solo pilot.

If you have a look at the August roster you will notice some changes. We are now rostering all available members of the training panel, including coaches, level 1, 2 and 3 instructors and air experience instructors. This is designed to reflect the changing role of the panel with less pre-solo activity and the aim of using our talented panel members across the full pilot training and development spectrum.

The aim is to roster a coach every Saturday to better develop our pilots soaring and cross country abilities. Sometimes the coach will also be the level 2 instructor on duty. On these days we have rostered a level 1 instructor as well so that the coach can be free to fly cross country either in a two seater or as a lead and follow. We are doing this on Saturdays so that in the event that a 2-seater lands out, as I believe has been done more than once recently, there will be people available for the retrieve. Landing a 2-seater in a paddock on Sunday afternoon has never been a good way to maintain friendships.

The other part of the roster change is that where there is no level 1 available to assist the level 2, an AE instructor has been rostered to try to share the load.

I would encourage all members to make use of the greater availability of coaches to improve your soaring skills. If you are encouraging friends to visit for a flight and you can't fly with them yourself and need the help of an AEI, then Sunday is the better day.

The weekend that Grant was here we had the training panel AGM. I was re-elected as CFI, thank you for the vote of confidence, I think! We also decided on the award recipients and these will be announced at the club AGM in September.

One last request to all club members. It is winter but it is not unflyable. Currency is extremely important for all of us, so please visit the club as often as you can and keep your flying skills current. That way you will be a safer pilot and a more skilled pilot, and ready for summer when it arrives.

Cross Country Frequencies – Changes!

Those of you who fly cross country will all be familiar with the problems we have had with radio chat on 122.9.

We have reached agreement with Kingaroy and Warwick clubs to divide up our cross country area and use 3 separate frequencies in separate areas.

For us at DDSC our prime cross country frequency will now be 122.7. This is effective immediately.

If we go south of the Toowoomba - Pittsworth - Millmerran we change to 122.5

If we go north of the great dividing range we change to 122.9. This line runs along the top of the Bunyas and as this is a high traffic area, the change over line is nominally 5kn south of the top of the range. This means that if you are running along the top of the range you should be on 122.9.

The attached map shows the boundary lines. This is an interim map and we will do up a proper one and circulate it and put it on the noticeboard.

The effect of this is that we should only have Kingaroy chatter on "our" frequency when they come south on to the downs.

Everyone should also be aware that the Kingaroy CTAF frequency is now 126.7 the same as most other airfields.

Cheers - Ralph

Tugmaster Reports – Thanks Pam

Both MLR and SWR have been running well for the last three months. With oil at a record price, Mogas and Avgas prices are skyrocketing, and this will have to be reflected in increased towing fees.

MLR has some areas of deteriorating fabric on the upper surfaces of both wings, and this will be repaired in August. After that, SWR will have its annual check, and both tugs will be ready for the busy times ahead. There will be several weeks of flying at DDSC, Warwick and Kingaroy in September and October, and the tugs will have plenty of work:

Coaching week (DDSC) 23rd to 26th September
QLD State Championships (Warwick) 27th Sept 4th Oct
Club Class Nationals (Kingaroy) 5th to 17th Oct
Caboolture Week (DDSC) 20th to 24th October
Kiwi Week (DDSC) 27th to 31st October

It is with great pleasure that I welcome two new tug pilots. Scott Merrick flies F111s at Amberley, and has done some gliding at Williamtown, where he may not have encountered too many thermals. We'll soon put that right. Brad Anstey is a commercial pilot with 2000 hrs experience, including flying in New Guinea. He is now hooked on gliding and learning fast. I expect he'll soon work his way through our fleet and into cross country soaring.
Pam Kurstjens

Treasurers Report Apr/ May 08

1) There has been a small increase in the GFA fees, effective from May 1st 2008. GFA full subs are now \$205.00 a year, family \$165.00, & student \$87.50

2) GFA TIF flights have also increased from \$10.00 to \$20.00, and the student rate of \$5.00 has been discontinued. However, we can use the \$10.00 book (in caravan) until it is used up. Then the Club will have to purchase the forms at \$20.00, and the TIF fees increased by \$10.00

3. The fee for MLR/SWR for hire/retrieves has been increased to \$300.00 per tacho hour.

Cheers - Fran

TLC for Gliders – Graham Hennessy

The weather in recent months has not been very conducive to cross country flying, however, when the weather is poor it is a great time to get those little maintenance jobs done on your favourite glider.

I have noticed that this is happening in the privately owned glider fleet.

When I look at the maintenance releases in the minor defect section many of the reported defects could have been attended to on the day they were reported. As I have written many times unless the defect relates to a flying surface or the system controlling those surfaces the repair can generally be effected by most pilots. So if the weather looks to be a bit suspect at the weekend and you need a break from home how about doing a few little jobs on your favourite glider so it is all good to go come the good weather.

We have started on the annual maintenance checks on the club fleet, XOW is complete, GRI starts week beginning 21st July and will continue 1 per month until December. If you want to see the inner workings of a glider your help is always appreciated.

I am resigning from the committee at the next election and therefore the position of airworthiness officer becomes vacant. Please consider nominating for this position.

Five Minutes with Chad Nowak! What Brought you to flying?

I had always loved flying since I was young. Living near the East Sale RAAF base in Victoria helped grow this passion and I started flying Control Line planes and RC gliders. I wanted to fly powered RC planes but couldn't afford it so I figured learning with RC gliders would be cheaper and then when I could change once I could afford it. These plans soon died when I found gliding to be more fun the powered flying. I flew serious competition with

RC gliding for a couple of years until a friend of mine came over from NZ and asked if I wanted to learn to fly fullsize gliders with him. The rest is history.....

How long in Club?

Almost four years.

How many Hours?

Almost four hundred.

What is it that caught your attention most about gliding?

I already had the bug from RC gliding but the thought of being up there actually doing it couldn't be resisted.

Favourite Moment ?

There are so many to choose from. One that always springs to mind is taking a thermal bottom to top with a wedgie right on my wing tip, each looking at one another and both giving the same signal. "Isn't this awesome!". Another is taking someone up for the first time and seeing them "click" and watching for the first time as they "get it".

Best Achievement So far or Highlight?

Being told by a student that I was a good instructor.

Goals Next Season ?

To do a 750km flight. To improve my competition results.

What are you reading at the moment?

Anything with gliders in it. Preferably more pictures than words :-).

Favourite Food?

Chicken Vindaloo from the Indian restaurant in Toowoomba.

Favourite Drink?

A bottle of V..... Nah, just kidding. Like I need it!

Favourite Ship - What are you flying?

I've managed to get my head around the club LS7 and am very much enjoying it but am looking at fly the Ventus B a bit more learn it's secrets. Oh, and Fran, I'll never knock back a flight in KYF :-).

Most enjoyable aspect of gliding?

The challenge. The Freedom. Even after this long it still blows me away what I am doing. The wonderful people involved in this sport are a bonus too.

Dream Ship?

After flying one definitely an ASG 29 but a realistic one would be an ASW 20.

GFA Decentralised Results from Jenny

		Best 3 flights Score	Total Points in Summer Season	DCE category
1	George Lee	1645	8582	Cat I
2	Allan Barnes	1532	9486	Cat I
3	Jenny Thompson Pam Kurstjens-	1409	5452	Cat II
4	Hawkins	1409	4939	Cat II
5	Gerrit Kurstjens	1367	7757	Cat I
6	Ralph Henderson	1233	7684	Cat II
7	Robert Hart	1210	5318	Cat II
8	Chad Nowak	1166	3705	Cat II
9	Jo Davis	1098	6840	Cat II
10	Michael Codling	1089	2534	Cat II
11	Jeremy Thompson	962	1055	Cat II
12	Richard Hoskings	953	4918	Cat II
13	Peter Bell	874	1529	Cat II
14	Fran Ning	757	1175	Cat II
15	Barry Daniel	709	709	Cat II
16	Dave Holbrook	583	805	Cat IV
17	Lars Zehnder	533	533	Cat I
18	pez mitchell	437	967	Cat II
19	Anton Grishin	392	392	Cat IV
20	Andrew Huggins	227	227	Cat II
21	Bob Flood	213	439	Cat II
22	John Moore	207	207	Cat II
23	Tony Cavanna	180	180	Cat II

AGM and Trophy Time Again

Dear Member,

Our Annual General Meeting is on the 6th September 2008 at McCaffrey Field. The cost of the AGM dinner is yet to be decided but is expected to be no more than \$25 per head. Committee position nomination forms, nomination forms for the Rex Teakle award and other relevant documents are available from the club notice board and from the club's website at <http://www.ddsc.org.au/AGM/default.asp>. All committee positions (except CFI) are up for election so don't be shy this is your chance to make a bigger contribution. A summary of the areas of responsibility of various committee positions can be found in the clubs' strategic plan which can be found via the following menu options on the website: Members -> Online Documents.

The AGM isn't just dry club business which doesn't normally take very long, it's also a social event where we also present club awards.

All club documents are available from the secretary so please ask if you can't obtain a document you require from the website.

Please contact me if you are coming to the AGM so that I can give the caterers an estimate of numbers expected and if you have any dietary requirements let me know.

Tony Cavanna, Club Secretary.

Notice of 5th Annual General Meeting

Saturday 6th September 2008

The fifth annual general meeting of the Darling Downs Soaring Club Incorporated will be held on Saturday 6th September 2008, commencing at 8.00pm, at McCaffrey Field.

Agenda

Ordinary Business

1. Apologies
2. Minutes of the First General Meeting
3. Presentation of Annual Reports:
 - i. President
 - ii. Treasurer
 - iii. Chief Flying Instructor
 - iv. Airworthiness Officer
 - v. Tug Master
4. Notices of Motion
5. Appointment of an Auditor
6. Election of Committee members
 - i. President
 - ii. Secretary
 - iii. Treasurer
 - iv. Airworthiness Officer
 - v. Tug Master

vi. 4 Committee members

7. Presentation of Awards

Nominations from persons prepared to serve on the Committee are hereby called for each Committee position.

Nominations and notice of motions should be made in writing and are to reach the Secretary, Tony Cavanna, by 5.00 pm on Saturday 30th August 2008 to be included on the list tabled at the meeting. Nominations and notices may be faxed to 3377 6701, posted to the address at the top of this notice or handed to the secretary in person.

Tony Cavanna -Secretary

Rex Teakle Trophy

Eight years ago the Teakle family donated a trophy in memory of long time member Rex. It is a silver eagle, mounted and cased. The trophy is awarded to the most popular, worthy, contributing member over the last 12 months. Trophy winners to date have been:

2000 Murray Knight

2001 Shane McCaffrey

2002 Bob Keen and Ralph Henderson (joint winners)

2003 Allan Latemore

2004 Bob Keen

2005 Tony Cavanna

2006 Jenny Thompson

2007 John Hook

This is an anonymous member-vote trophy. Each member is entitled to one vote and votes should be sent to Tony Cavanna, 0419 918 962 or letter prior to the AGM. Nominations will close on 30th August 2008.

NOTES ON HANGAR SPACE - PEZ

PROPOSED GUIDELINES FOR NEW PRIVATE HANGARS

Please note that the following are just ideas to be embellished and worked on, and are the works of yours truly alone.

The first consideration for any new hangers is the most efficient use of any land that is suitable, and more control by the club in the design.

The only site that I can see being suitable without huge amounts of fill would be between the exiting private hangars to the west and the entrance drive way (basically the trailer tie down).

Trailer tie downs could be moved to the south side of the road at an angle at the east end of the strip as required.

My thoughts would be to have two glider module hangar that would take the gliders sideways and be able to be extended onto sideways as the demand required.

Due to the fall of the land at the back unfortunately the access would only be one sided.

These could have the rear extended to take larger gliders but the front would be uniform and would have tilt or roller doors rather than sliding to keep access to each hangar individual.

I think the club should get a design from a shed manufacturer that suits this purpose and that is easy to acquire and duplicate.

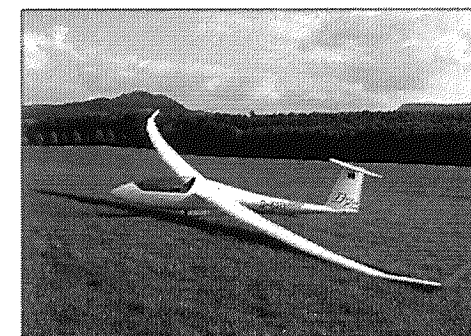
Here are some ideas on costing:-

- (1) Any interested parties would pay a deposit on application (this amount would be decided after consultation on cost of fill) to go towards fill for the site (which will still be considerable) and this fill would be done on a commercial basis to achieve a faster outcome.
- (2) The full cost of the hanger plus a commission of say \$5000 to go to DDSC would be borne by the applicants.
- (3) A yearly rental of the hanger site of say one third to a half of the existing club hanger rates to go towards power, council rates etc. (Some thoughts should be made to make this retrospective to existing private hangerage).
- (4) Ownership and the rights of on selling needs to be more carefully laid down by better minds than mine, but we need a completely transparent arrangement that is fair to all parties.
- (5) Council approvals are also a problem, and maybe we could get the whole site done at the same time to avoid applications every time a module was added. The Council charges would also need to be borne by the applicants.

Cheers

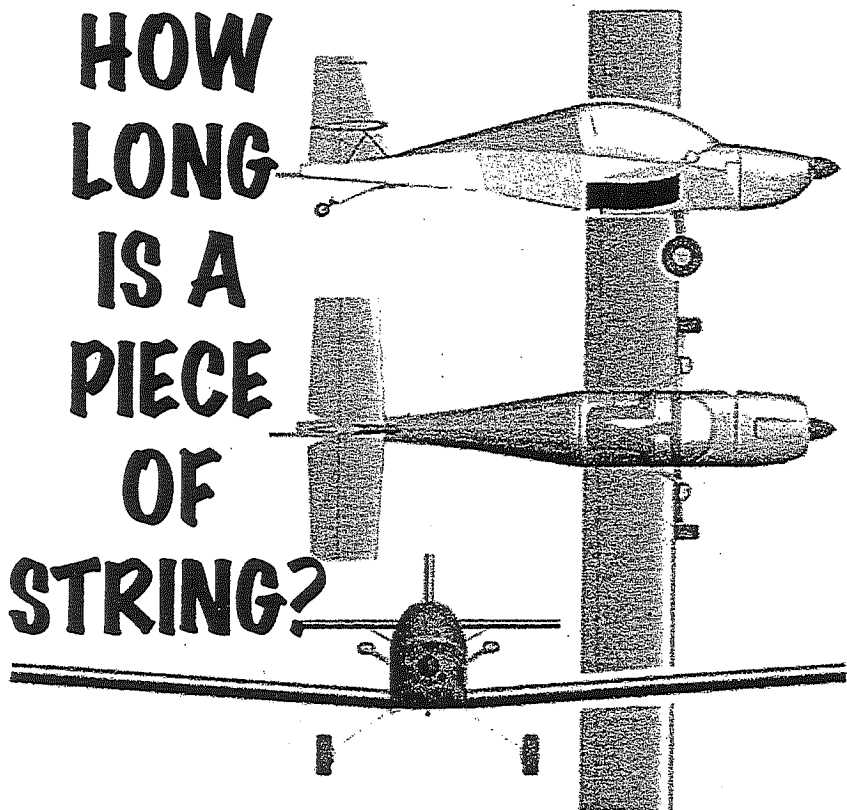
Pearce Mitchell (THN)

July Roster



END

HOW LONG IS A PIECE OF STRING?



Is this the answer?

When Gliding International heard that a PIK-27 was to be built as a homebuilt in Australia, we were pleasantly surprised to learn that our old friend Bob Ward was the man holding his hand up to say "Yes! I'm the builder".

Anything to do with a cheaper tow aircraft is news today, so we asked Bob if we could follow his progress and report to our readers the whole story - from A to Z - from first enquiry regarding building to a finished tug - one having done 100 tows. An interesting challenge for us (and Bob).

A towplane is the work horse of any gliding centre. Although it might be fun to fly, its main purpose is to serve glider pilots. A good towplane should be economical

- reasonably priced to acquire, moderately inexpensive to operate, safe to operate, and have an available source of spare parts.

From what he had read, Bob decided that the PIK-27 came pretty close to meeting that criteria, so he packed his bags, and headed for Helsinki, Finland, and then on to LAHTI, about 100 km north.

Bob writes - "It was unfortunately a non flying day, so I missed the offer to fly it.

Firstly, I had to appreciate that I would need to build the steel tube fuselage from plans, which are available to me in English on a secure part of the designer's web site.

It is very early days as I am only just beginning. Making jigs is time consuming but I am well on the way. I have made a start to



Bob Ward in his workshop

build the front left and right hand sides of the fuselage as you can see from the above photograph.

I expect it will take about a year to finish the fuselage - then one buys the ready-made wings and the tail components to fit to the fuselage. The wings and tail feathers are complete except that ailerons have to be hinged and fitted so that part should be no worse than a glider refinish and of course a lot smaller.

The only big-ticket item work wise is the fuselage. I have built in wood, glass and my RV is metal, but steel tube will be a new experience. I have adequate mentoring close by though and TIG welding skills available.

I built my RV in two years from a scratch build kit, but please note that the PIK-27 is by no means a complete aircraft kit plane. For example, the canopy will need to be sourced locally. No real problem as there are people blowing canopies in Australia now. All hardware is standard and available from Australian sources or can be imported from the likes of Spruce and Speciality

Warehouse in California. Wheels and undercarriage are available off the shelf from Grove.

I am serial No. 2 on the purchase/build list. I believe the factory now has several people signed up to build them in Finland and there is interest for a limited series production for the USA.

The prototype did 150 tows last Finnish summer and is turning in the same tow times

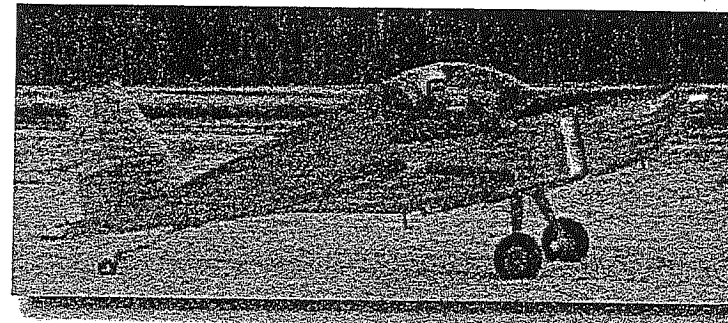
as the Pawnee 235, but with a Rotax 914 which develops 115 HP.

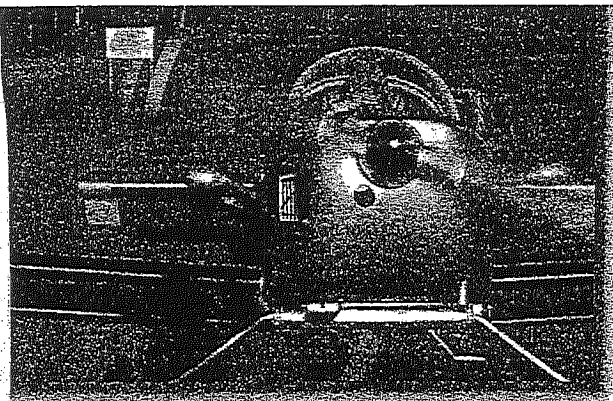
The proposal I have for utilisation is that I am prepared to take the risk and build the Australian prototype, which my club is prepared to operate. If everything goes to plan, they can either buy it or operate it on a hire basis.

I firmly believe that the PIK-27 will be the answer to the gliding movement's prayers. I think it is also likely that the six cylinders Jabiru engine would be a suitable power plant for the aircraft. I'll make a decision on which to install further down the track.

I have purchased only the plans and licence to build (Eur2000.00) at this stage. I get No.2 wing piece kit. I will order that about two months or so before the fuselage is ready.

My budget and schedule shows that the work will involve around 1000 hours which





Weight includes a 70m towrope (attached to the wind-in winch).

Length	6.125 m
Span	9.1 m
Wing area	9.0 sq.m.
Wing profile	LS (1)-0417
Horizontal tail span	2.92 m
Horizontal tail area	2.24 sq m
Empty weight	410 kg
Maximum take-off weight	595 kg
Maximum glider weight	850 kg
Load factors	+4.7 g -2.0 g
Fuel tank volume	90 litres (24 USg)
C. of G. range	20% ... 41%
Engine Rotax	914, (proto type).

Structure - Fuselage welded tube construction of 4130 chrome moly steel as used on Pawnees.

Wings composite structure. Common glider structures, with glass fibre reinforcement, PCV foam sandwich, carbon spars.

Fuel tanks in the wings.

Landing gear main wheel components are the same as a Cessna 172.

Brake units are also the same as a Cessna 172.

is realistic, with a total cost excluding my labour of near to \$Aus100,000.00 (\$US95,000). The wings/tail plane etc has been quoted at Eur15,000. But really "How long is a piece of string".

The aircraft fits into the new Australian LSA category, which specifically allows glider towing but prospective builders in other countries may not have the same concessions."

Bob is not new to aircraft home-builts. He has already built two, so he well knows the pitfalls that could encompass this project. But nevertheless, he fits into the picture we have of someone who will see this project through to a successful conclusion.

So why the name PIK-27. The name PIK comes from Finnish words "Polyteknikkojen Ilmailukerho ry" = The Aviation Club of Helsinki University of Technology. The club was established in the year 1931. The number 27 is the aircraft design number 27. Design numbers are granted to aircraft designs filling rules of the club. All the members of the PIK-27 team were involved in the design of the PIK-20 glider many long years ago.

Starting with a clean sheet of the paper, the club set out what they wanted to achieve.

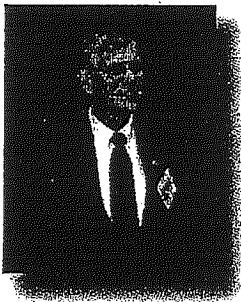
- * Operational cost must be kept reasonable
- * No compromise to safety
- * Specifically a tow plane - nothing else
- * Systems as simple as possible
- * As little maintenance as possible.

Like all prototypes, the empty weight is heavier than planned, like 30-40 kgs heavier.

Engine Rotax 914 may not seem to offer much more than 912S, but it is turbo-charged, meaning that it does not lose power when density altitude rises. The 912S has 100 hp at sea level at 15 C. When is a gliding airport at sea level and when it is that cold? Rotax 914 will maintain 115 hp up to FL150.

As the landing gear is quite high, we use a propeller optimised for low speed. Diameter is 1.95 metres, large prop disk area means high static thrust.

So readers- watch this space - there is a lot more to come.



Why Checklists?

Thomas Knauff writes about the history of the Pilot Checklist

- An experienced aerobatic pilot bails out of his crippled airplane, opens his parachute and falls to his death. Before takeoff, he failed to fasten the leg straps.

- The canopy opens at the beginning of a glider launch.

The pilot loses control of the glider as he struggles to close it.

- A glider is seen very low in the landing pattern. The result of failing to correctly set the altimeter before launch.

These and countless other accidents would not have occurred had the pilot used a simple checklist before the flight. Ever wonder when the first aviator checklist was developed and used?

There is a fascinating article about checklists in the Dec. 10, 2007 issue of *The New Yorker* magazine, written by Atul Gawande, a medical doctor. One might think checklists are as old as aviation, but they are not. Serious interest in checklists dates back only to 1935, and was spurred by a fatal accident of the first Boeing Model 299 bomber, which went on to become the legendary B-17. Dr. Gawande mentions this briefly in his article, but before moving on to that let's consider the aviation history in more detail.

HOW THE PILOT'S CHECKLIST CAME ABOUT

by John Schamel, Instructor, FAA Academy (Reprinted with permission)
October 30, 1935, Wright Field, Dayton, Ohio

The final phase of aircraft evaluations under U.S. Army specification 98-201 (July 18, 1934) was to begin. Three manufacturers had submitted aircraft for testing. Martin submitted their Model 146, Douglas submitted the DB-1, and Boeing submitted their Model 299.

Boeing, a producer of fighters for U.S. Navy aircraft carriers, had little success in commercial airliners or bombers for the U.S. Army Air Corps.

Boeing's entry had swept all the evaluations, figuratively flying circles around the competition.

Many considered these final evaluations mere formalities. Talk was of an order for between 185 and 220 aircraft. Boeing executives were excited — a major sale would save the company.

At the controls of the Model 299 this day were two Army pilots. Major Ployer P. Hill (his first time flying the 299) sat in the left seat with Lieutenant Donald Putt (the primary Army pilot for the previous evaluation flights) as the co-pilot. With them were Leslie Tower (the Boeing Chief Test Pilot), C.W. Benton (a Boeing mechanic), and Henry Igo, a representative of Pratt and Whitney, the engine manufacturer.

The aircraft made a normal taxi and takeoff. It began a smooth climb, but then suddenly stalled. The aircraft turned on one wing and fell, bursting into flames upon impact. Putt, Benton, and Igo, although seriously burned, were able to stagger out of the wreck-

age to the arriving safety crews. Hill and Tower were trapped in the wreckage but were rescued by First Lieutenant Robert Giovannoli, who made two trips into the burning aircraft to rescue both men.

Both men later died of their injuries. Lt. Giovannoli was awarded the Cheney Medal for his heroism that day, but he died in an aircraft accident before receiving it.

The investigation found "Pilot Error" as the cause. Hill, unfamiliar with the aircraft, had neglected to release the elevator lock prior to take off. Once airborne, Tower evidently realized what was happening and tried to reach the lock handle, but it was too late.

It appeared that the Model 299 was dead. Some newspapers had dubbed it as "too much plane for one man to fly." Most of the aircraft contracts went to the runner-up, the Douglas DB-1. Some serious pleading and politicking by Air Corps officers gave Boeing a chance to keep the Model 299 project alive. Thirteen aircraft were ordered for "further testing." Douglas, however, received contracts for 133 aircraft for active squadron service. The DB-1 became the B-18.

Twelve of those Boeing aircraft were delivered to the 2nd Bombardment Group at Langley Field, Virginia, by August, 1937. The 2nd Group's operations were closely watched by Boeing, Congress, and the War Department.

Any further accidents or incidents with the Model 299 would end its career.

Commanders made this quite clear to all the crews. The pilots sat down and put their heads together. What was needed was some way of making sure that everything was done; that nothing was overlooked. What resulted was a pilot's checklist. Actually, four checklists were developed — Takeoff, Flight, Before



Landing, and After Landing. The Model 299 was not 'too much airplane for one man to fly', it was simply too complex for any one man's memory.

These checklists for the pilot and co-pilot made sure nothing was forgotten. With the checklists, careful planning, and rigorous training, the twelve aircraft managed to fly 1.8 million miles without a serious accident.

The U.S. Army accepted the Model 299, and eventually ordered 12,731 of the aircraft they numbered the B-17. The idea of the pilot's checklist caught on. Checklists were developed for other aircraft in the Air Corps inventory.

How important are checklists? As it turns out, they are very important. Taking the time to use simple checklists in our daily flying routines proves to be a life and death decision.

Here is the link to a fascinating article written by Dr. Atul Gawande — not about aviation checklists, but as used in medicine: <http://www.newyorker.com/reporting/2007/12/10/071210fa_fact_gawande>

The essence of the article is this: Because of infections, a simple checklist was proposed for doctors to use in a hospital Intensive Care Unit (ICU) for inserting ("setting") intravenous lines.

The checklist includes: a total of five simple steps starting with the obvious ones of

washing hands and cleaning wounds.

Surprisingly, the use of the checklist was strongly resisted by doctors. But after one year, with the insistence and supervision of nurses, IV line infections fell from 11% to Zero! At the John Hopkins Hospital, the average length of an ICU patient stay dropped by 50%.

Conclusion: the use of checklists for this one simple procedure prevented 43 infections, eight deaths, and saved two million dollars — in a single hospital!

Reviewing recent glider accidents reveals several common, often repeated omissions to pilot responsibilities that are easily prevented by the use of simple checklists:

- Canopy Unlocked
- Dive Brakes Unlocked
- Tow Plane Running Out of Gas
- Altimeter Set Wrong
- Tail Dolly Still On
- Controls Not Connected
- Flaps in Wrong Position
- Flat Tire
- Knot in Tow Rope
- Seat Belts Undone
- Pitot Cover On
- Control Locks On
- CG Out of Limits

Glider pilots are encouraged to use checklists. There are several common checklists.

1. Assembly checklist
2. Critical Assembly Check
3. Preflight checklist
4. Pre-takeoff checklist
5. Pre-landing checklist

As indicated by Dr. Gawande, using checklists saves lives, and are simple to use. Glider pilots need to be educated on the simple process of using checklists, and should encourage fellow pilots to take the time to perform the checklist before and during each flight.

Not all checklists are created equal. It is common to see checklists omitting important items, or are poorly organised.

Your glider probably has a manufacturer's written checklist in view of the pilot. This checklist may or may not be adequate. Here is an example of the entire pre-launch check from a popular training glider's official flight manual:

"Before every takeoff check canopy and airbrakes for complete locking."

Here is another, far more complete checklist:

Wing and tailplane connections checked?

Full and free movement of controls?

Parachute secured?

Straps tight and locked?

Brakes closed and locked?

Trim correctly adjusted?

Altimeter adjusted?

Canopy locked?

Cable on correct hook?

The second one is much more complete, isn't it? You would likely make some additions to this list.

Probably the most commonly used, memorised pre-takeoff checklist in the English language is the following, which has been modified over the years. It is suggested all glider pilots should memorise this or a similar one to use in the event you are flying a glider with an inadequate checklist.

C – Controls

B – Ballast (weight & balance)

S – Straps

W – Wind

I – Instruments

F – Flaps

T – Trim

C – Canopy

B – Brakes

E – Emergency plan

As an instructor, I often notice pilots who use the manufacturer's checklist, which only mentions the altimeter, and fail to check other important instruments before takeoff. Also, I notice many glider pilots who were trained in gliders with the

less common ABC checklist actually fail to commit it to memory, so it can be recalled for gliders without a posted checklist.

In my case, I have added items I consider important and easily forgotten. "Remove wallet" is one of those items. Sitting on my wallet during a long flight can cause severe back pain. "Unzip fly" is another important preflight item, as it is difficult to accomplish during flight.

Computer systems are far more complex than the good-old-days. Without a checklist, it is easy to forget to enter crucial preflight information.

The checklist I use in my personal glider is a modestly lengthy one, and includes setting the flight computer, data logger, and other important items, any one of which might prevent a successful flight.

Nearly 20% of all fatal glider accidents occur during the launching phase of flight. Even more dramatic, is the fact that launching accidents usually occur during the first 20 seconds. Nearly all of these accidents would have been prevented with the simple use of checklists!

Each of us can help. We need to watch out for one-another. Pay attention. When you see someone assembling a glider without using a checklist, or failing to perform a critical assembly check, or hurrying through the pre-takeoff checklist, politely offer to help and suggest taking a few moments before the launch to ensure the glider is really prepared and safe for flight. It will have a big impact on glider safety. It will save lives.

In the hospital scenario, nurses interact with doctors and thereby help ensure the proper use of checklists. With this personal quality control method, hospitals and doctors are performing their duties to a higher standard, reducing accidents and preventing deaths.

The soaring community can use this model to good advantage to reduce glider accidents.

Tom Knauff