Fly About

Northam Aero club (Inc.) Newsletter Vol. 50 Issue No. 1 February 2019

A Message from the President

Hi all

Its been a while since you've heard from me. I hope you all had a Merry Christmas and a Happy New Year.

For those that fly, Karin and Adam Price have installed a Skycam system at the Northam Airfield. They have kindly funded, installed and will maintain the Skycam. Many, many thanks to them. This improves pilot situation awareness in regards to weather at YNTM.

I know from experience that fog is a serious problem in winter time. I have quite often departed from Goomalling with no fog to find Northam is fogged in. While on the topic of safety, on Sunday 10th Feb, after I flew to Northam I tied JXI down with the tie downs. At around 15.30 as we were leaving the club rooms a large willie willie formed over near the windsock. It passed through the windsock spinning that around then headed across the taxi apron and across our lawn. Lucky for Dave McFarlane it went over his plane but did not flip it. I would hate to think what may have happened if it was a high wing plane, so in hot weather remember to tie down.

We were notified of the passing of Mrs Sabina Dempster recently, Sabina was the wife of Peter Dempster one of our founding members. The Dempster family farm is still in Grass Valley and the airstrip had been used for decades as a spot for students and members to practice forced landings. Our deepest sympathy to the Dempster family.

On a happier note we had one of our life members turn one year older. He doesn't like his name mentioned but has flown around the world solo, broken records, built aeroplanes and pilots a helicopter. Oh and he lives in Grass Valley. Many, many happy returns to him.

Hot weather hasn't deterred many pilots and at times doesn't seem as bumpy as you would think.

Once again, Happy Flying

Cheers, Errol

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Vice President's & Airside Report

Dear NAC members

Here's hoping that you had a happy and safe Christmas and new year and no doubt your year has begun in earnest just like mine has with visits to Sydney, Chile, Brazil, New Zealand, Indonesia, Wagga Wagga, Melbourne, Kalgoorlie and Learmonth already completed.

We have had a couple of improvements to the airfield since our last Fly About with two hangars being completed on the back row and a hangar under construction on the western side of the field. Well done to Neil and Lillian, Nick and Malcolm on their good looking hangars. The NAC has sent a letter of support to the Shire with regard to a government grant and we are just waiting to hear whether or not we have been successful with this application.

This month's Close Calls and Crash Comics focusses on forced landings and energy management in these situations, please have a read of these articles and keep them forefront in your mind whilst flying, particularly when over hostile terrain.

Saturday nights at the club are becoming very popular, please come along and enjoy the comradery of our members and friends - we look forward to seeing you there..

Adam Price—NAC Vice-President

Page 3 Plane

OWNER: Howie Pietersie & Ashley Smith

REGISTRATION: VH-CEU

TYPE: PA28—235

YEAR OF MANUFACTURE: 1965

SEATS: 4

TOTAL TIME: 3,400

ENGINE TO RUN: 1780 hours

PROP TO RUN: 6 years

CRUISE SPEED: 138 knots

STALL SPEED: 48 knots

CRUISE FUEL FLOW: 55 litres/hour

HANGARED: Hangar 8, Northam

AIRCRAFT NAME: Cutie or Guzzlebox

Club Captain's Report - February 2019

Sunday 10th February

Two circuits with nominated times where each pilot nominated his own individual time—so not a race. Just a very interesting and safe competition.

Judges—James and Lachie, thank you

"Scores were close, all pilots well up to speed…"

Results:

First: Adam & Jesse Price, who flew really well and only 3 seconds off their nominated time!

Second: The evergreen Ian Berry, well done Ian!

Third: Peter Hill, 5 seconds and a forgettable touchdown further back.

Fourth: Nick Kostov (the speedy one!) in his shiny Jabiru, welcome to TEAM NAC Nick….

THANK YOU ALL ON TEAM NAC ! ESPECIALLY OUR LADIES FOR MORNING TEAS!

NEXT TEAM NAC FLYING COMP IS SUNDAY 10th MARCH

"AVON GOLF TOUR RECONNAISANCE"

A nice little cross country air trial

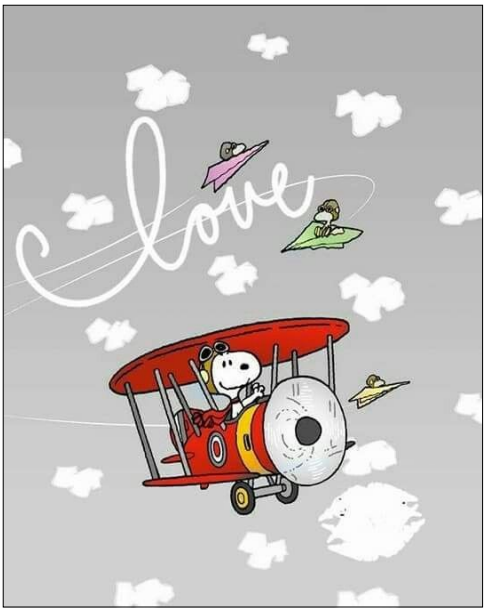
All Team NAC Pilots have full comp sheets and have 30 days to read / fly a practice run….

Hope to see all Team NAC Pilots at Northam, Sunday 10th March 9am

For a nice easy fly and catch up in the Clubrooms over tea and cake etc….

Best Wishes, Peter Hill Club Captain 0450415947

Editor's Broadcast



Hello Fellow Aero Club Members

Happy New year to you all! Personally, it's been a great start to the year and I hope it has been for you also. So…..Xmas has come and gone, and so has the new year! So much is going on behind the scenes at the club and we are all fired up for an exciting year ahead.

I am hoping to add some new articles in the newsletter. Firstly, I would like to have a section "Flying High" Please email me stories and photos of your flying trips—we are a flying club and would love to hear about them! Also I am introducing a "Get to Know Each Other Page". I'm would like to feature a different club member each month. Check you're emails for your invitation to participate in this section if you would like - participation optional but I know we would all like to get to know you better!

Lastly, I would l like to thank those that are contributing articles to our newsletter. I have had so much positive feedback from members, particular thanks goes to the guys at Northam Air Services (Ian & Trevor) for their Maintenance Corner articles, Kevin Lathbury for your monthly contributions and of course I can't forget Adam who helps me with the newsletter and articles behind the scenes !

Looking forward to seeing more of you, and meeting those of you I haven't met yet at one of our, hopefully frequent, club get togethers .

Karin
NAC Fly About Editor
northamaeroclubsocialdirector@gmail.com

Can you help????

The aeroclub has had an enquiry from a tourist. Approximately 45 years ago the tourist was heading from Kalgoorlie to Perth, cutting across the land when he came to a T Junction and saw a silver and white plane on the corner with a row of windows (it wasn't an overly big plane). He is wanting to find the original location of where he saw this plane as he is trying to locate some long lost relatives that lived in the area. It was suggested that the plane at McDonald's in Midland could be it but he was adamant that it wasn't that plane. While this is like looking for a needle in a haystack, someone just might have an idea. Any leads that anyone can think of, could they please contact Lee-Ellen Edmonds at the Shire of Northam. Phone - 9622 2100. Email - tourist@northam.wa.gov.au .

A Visit to the Aeroclub de Paraná

Aeroclube do Paraná

A recent work trip took me to Curitiba in Brazil which is approximately 200nm to the south west of Sao Paulo. Whilst working at the airport I came across the Aeroclub de Peraná. This is a large facility with multiple aircraft and a hive of activity. The clubs primary role is flight training for interested persons in the state of Peraná.

Of interest, all the aircraft are owned by the Governor of the state who provides them to the aeroclub who manage the aircraft and conduct flight training.

The club at the time of my visit operated the following aircraft:

- Aeroboero AB-115 x 11
- Cessna C-152 x 4
- Paulistinha CAP-4 (essentially a Brazilian built Piper J3 Cub) x 1
- Corisco Turbo - Embraer 711 ST (A Brazilian built Piper Arrow IV) x 1
- Cherokee 140 - PA-28A x 3
- Fairchild (Fabrica do Galeao) PT-19A Cornell x 1
- Seneca-II - Embraer 810C x 1

Another interesting fact is that Embraer, for many years, produced Piper aircraft under license in Brazil.

The club also conducts training for Flight Attendants and Aircraft Maintenance Engineers as well as having an aircraft simulator. Flying training is from private pilot to commercial IFR.

The Aeroboero tailwheel aircraft took my fancy as I watched it conducting circuit training all week. This aircraft was manufactured in Argentina and looks like something between a Piper Cub and a Maule.

It has a fabric fuselage with metal wings and with only 115hp (Lycoming 0-235) it was certainly very sprightly. Unfortunately work and time got the better of me and I didn't manage to get my hands on it despite my best efforts. The aircraft goes out with instructor for around $150 per hour.

A very friendly and welcoming bunch of aviation enthusiasts. I spoke with the Club Manager and they happily accept reciprocal aeroclub memberships, so if you ever find yourself in Curitiba on a Friday or Saturday night you are most welcome at the Aeroclub de Paraná.

Aeroclub de Peraná

Aeroboero

Fairchild

Brazilian Piper Cub

Club Rooms

Aeroclub de Peraná Hangar

Front Office - Aeroclub de Peraná

Aeroclub de Peraná

Close Calls

Tiger Country—by Owen Zupp

Reprinted with courtesy of Flight Safety Australia Magazine

On a June afternoon in 1993 I was tasked with a commercial pre-licence test for an overseas candidate who was champing at the bit to return home and join his national carrier. Clear skies, an aeroplane fresh from its 100-hourly and a diligent student set the tone for a pleasurable flight; well, for the first couple of hours anyway …

Azlan possessed a very quiet manner that somewhat belied the fierce determination with which he approached his flying training. As he leaned over the wing of the Aerospatiale TB20 Trinidad and re-calculated his endurance and performance figures, he was a picture of concentration. We had successfully navigated our way from Bankstown to Goulburn and northwest to our present port of call, Cowra. He had flown smoothly and countered the periodic 'examiner-induced challenges' that inherently crop up during a test flight. From here it was on to Mudgee, then a return to Bankstown and hopefully a recommendation for the fully-fledged licence test. His preparation and planning had been superb and his chosen routing reflected his comprehension of my perennial pre-cursor; ' … bearing in mind that this is a single-engined aeroplane'. That's a philosophy highlighting the advantages of a few extra track miles over topographically friendly territory, presenting a pilot with fields and features that can assist in navigation and provide options should things go quiet up front.

With the paperwork completed and more than adequate fuel evenly distributed between the two wing tanks, we fired up and launched once more into the beautiful skies over western NSW. Once established in the cruise, I adopted the role of employer and advised Azlan that the 'passengers' at Mudgee had cancelled their flight and he was now to return to Bankstown, 'bearing in mind that this is a single-engined aeroplane'.

In the only tarnished point of the flight, Azlan guesstimated a heading and wheeled the aircraft eastward to point in the general direction of Bankstown. The proposed route was relatively featureless and characterised by the mountainous 'tiger country' of the Great Dividing Range. While seemingly a poor option, he was not breaking any rule and was acting in command under supervision (ICUS). At worst it was a questionable technique and a point for the de-briefing, which after all, is what training is all about.

I was midway convincing myself of this fact when a flickering of light caught my eye. The digital fuel flow gauge was hopping around without rhyme or reason, while the engine continued to purr and the good old-fashioned analogue fuel flow needle sat like the Rock of Gibraltar. New-fangled gadgetry, maybe, but either way it prompted me to look outside for a potential forced landing field; just in case. As luck would have it, a lone small clearing was just off the right and I asked Azlan to enter a gentle turn toward it. He had still not noticed the 'Digi-Flow' jumping around when I drew it to his attention and started to talk him through the trouble-shooting process.

When the analogue needle started to reflect the readings of its digital counterpart my interest heightened and we completed an FMOST check without delay. The engine now began to surge in company with the cockpit indications, so at this point I took over and called up Sydney Flight Service. I had gone from 'fat, dumb and happy' to 'rather concerned' in about ninety seconds.

Our lone paddock approached below, and the surges were becoming so significant that maintaining our height was becoming increasingly difficult. I advised Flight Service that we were 55DME on the Sydney 255 radial while I still could, as VHF had been 'in and out' at this height. I was contemplating a precautionary landing with the remaining sporadic power when total engine failure made the decision for me. I trimmed for the glide, and knowing VHF was at a premium, alerted Sydney of our worsening predicament and manually switched on the emergency locator transmitter (ELT). Again through the checks; no luck. Fortunately I had already decided upon the field and a course of action. I briefed Azlan and told him that when we were on the ground, he was to exit and get clear of the aircraft without delay.

Assured of making the field, I started configuring the gear and flaps and advised Flight Service that I would shortly be going 'no-comms' as I switched the electrics off in an attempt to minimise the chance of post-impact fire. The world was getting very big in the window, and as I aligned myself with the field, I decided that it was way too short to make it over the trees on the approach and still pull up by the far end. As I had done at airstrips in the outback and Papua New Guinea, I slipped the aircraft down between the trees in an effort to maximise the effective length. The foliage rushed by, there was a short squeak of the stall warning horn and then the wheels hit. Thump!

Seventy knots or so across an unprepared surface is a wild ride. I was on the brakes, keeping straight and hoping for the best when a sizeable rock jutted up ahead. Unable to swerve to any great degree, I braced, thinking 'this is going to hurt'.

I tensed my guts and for a nanosecond thought of the control column spearing into me. Bang! The right gear struck the rock and we were OK-hurtling across the paddock, but OK. With not enough room for my liking, I heaved back on the stick and kicked in right boot, effectively 'groundlooping' a nosewheel aeroplane. The right gear seemed to give at this point and we slewed sidewards, shuddering to a halt short of the trees. I swung around to tell Azlan to get out. With the disturbed dust still suspended in the late afternoon air, I was looking at an empty seat, an open gull-wing door and the northbound end of a southbound student.

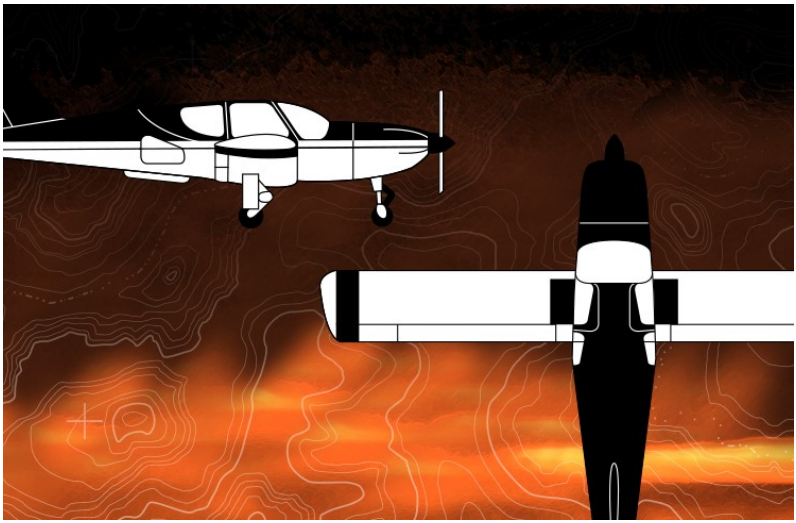
I joined my breathless candidate and having taken a moment, returned to a rather forlorn aircraft. Paranoia forced me to inspect the Trinidad's tanks, which revealed adequate fuel both sides. Phew! I tried calling up on VHF, and thankfully established contact with an approaching Cessna 310 who had already been diverted to the area. I advised the pilot that we were all OK and he relayed our exact position to Flight Service. (He had one of those new fangled GPS things.) It was getting dark, and with the temperature dropping, we threw on our jackets and gathered kindling in case we were there for the night. Fortunately, Careflight was on the job from Westmead Hospital and making a beeline through the night sky to our position. Strapped in, the rotors spun up and we rose into the absolute darkness. Slowly the glow of Sydney's lights became a visible horizon. It was at this point I think I stopped to draw a breath.

Twenty years have passed and I have applied lessons I gleaned from the experience ever since. First and foremost, my philosophy of track selection in single-engined aircraft was upgraded to a personal doctrine. Whilst recognising it is not *always* possible, the trade off of track miles must be made where friendly terrain is on offer. Be aware of terrain, lowest safe altitudes, airfields and navaids in the planning phase when you have the time available for consideration.

I have always had one eye out the window for a field when I've been flying single-engined aeroplanes. Those thousands of hours of looking probably only really made a difference for me on this one occasion, but it was a life full of difference. Being aware of my only option, deciding to turn towards it and formulating a potential plan *before* things turned totally to worms, probably saved my neck. My actions weren't the hallmark of exceptional skill; they were simply the application of the training we all receive as licence holders.

Another reason that we walked away that day was that I was current on practice forced landings, and I had a fair amount of experience on short strips with no asphalt and touch-down markers. My currency at the time was due to my job as an instructor, but ever since I have insisted on a dual check in my private flying to ensure I'm still up to speed on unexpected occurrences such as engine failures and go-arounds. Bush flying also gave me an appreciation of speed control and the feel of an aeroplane at that slower speed and of the performance envelope. It gave me a greater sense of an approaching stall than is necessarily offered by the warning devices fitted to aircraft. Again, it was an issue of currency. Even if your flying is always out of long, sealed strips, integrate some short field arrivals and departures into your comings and goings. You never know when you may need to call upon these skills.

Personally, I lost a degree of innocence in the Blue Mountains that afternoon. I had always looked upon *every* patch of urban clearing as a potential forced landing field, which in retrospect was a little naïve and over-confident. These days I'm a little more selective. Notwithstanding, I have continued to fly, own, and enjoy single-engined aeroplanes ever since. The experience in no way deterred me from 'singles': it merely reinforced my belief in how they should be operated.



NORTHAM AIRPORT SKYCAM

Northam Airport now has a Skycam:

http://www.northam.skycam.net.au/

The Skycam system at the Northam Airport has been installed to improve pilot situational awareness with regard to the weather. This webcam is funded and will be maintained by Air Safety Navigators as part of our commitment to aviation safety, the local flying community and in support of our home airfield. Images are now available on Ozrunways and Avplan

South East View

North West View

AIR SAFETY NAVIGATORS

Bar Roster

February 2019

23rd February	Howie

March 2019

2nd March	Peter Hill
9th March	Adam Price
16th March	Mick Clements
23rd March	Matt Bignell
30th March	Peter Scheer

April 2019

6th April	Ashley Smith
13th April	Crofty
20th April	Howie
27th April	Peter Hill

May 2019

4th May	Adam Price
11th May	Mick Clements
18th May	Matt Bignell
25th May	Peter Scheer

June 2019

1st June	Ashley Smith
8th June	Crofty
15th June	Howie
22nd June	Peter Hill
29th June	Adam Price

July 2019

6th July	Mick Clements
13th July	Matt Bignell
20th July	Peter Scheer
27th July	Ashley Smith

New Members!

The NAC would like to welcome Sharna Wedding. We look forward to seeing more of you around the club Sharna!.

We hope you enjoy the friendship, fellowship and flying at the NAC.

Bar Hours - Saturday 5pm - 7pm

If unable to do your rostered days, please make arrangements to swap with someone.

Congratulations

Happy 60th Ashley Smith!!!!!

Ashley Smith turned 60 years young in January. The party was thrown in the club rooms surrounded by Ashley's family and friends.

On behalf of the NAC happy birthday Ash, thanks for your hard work and commitment over all these years and a couple of weeks ago we had the fourth generation of Smiths in the club rooms—what an achievement!

NORTHAM AERO CLUB Inc.

PO Box 247

NORTHAM WA 6401

Dear Member,

Your membership to the Northam Aero Club expires on the 31st December 2018 and therefore membership fees for 2019 are due. There is no increase to the annual membership fees. Please also ensure that your contact details are updated and correct as this will enable us to keep our records and membership details current. Membership may be paid in person at the Northam Aero Club bar on Saturday nights from 5-7pm, by cash and cheque or paid directly into the:

NAC Bank Account
Westpac Bank
BSB 036-107
Acc No 69-2937

* **Please include your name on the Netbank deposit or we will be unable to process your membership.***

If you no longer wish to be a member of the Northam Aero Club please complete the form below, tick 'Not Renewing' and return the form in the stamped and addressed envelope provided.

The Northam Aero Club offers members the opportunity to purchase a personalised club polo shirt and or cap. Please see the enclosed flyer and if you wish to order a polo shirt and or cap complete the required details below. Payment must be included with your membership fees. Orders will be processed in February. Gift vouchers and or Trial Introductory Flight vouchers are also available for purchase and are a great Christmas gift for flight enthusiasts. We are also asking members to indicate their preference in how they receive the monthly 'Fly About' magazine. Email is preferred, however a paper copy is still available.

A reminder to members that the Northam Aero Club is a family orientated club and that the bar is open each Saturday night from 5-7pm, with a pilot's competition held once a month, on the second Sunday, commencing at 9am. Members and families are invited to attend to participate as passengers in the flights as well as to enjoy the sausage sizzle, which are both complimentary. All members also receive, either by post or email (preferred) a copy of the 'Fly About' each month which highlights the previous month's activities, upcoming events and other flight information.

For any queries, regarding membership information or apparel please contact Peter Scheer
Mob 0408 802 955.

Yours Sincerely,

Peter Scheer

Honourable Secretary

Northam Aero Club Membership & Apparel Order Form

Name: _____ ◯ Not Renewing

Address: _____

Phone: (Home) _____ (Mobile)_____(email) _____

Type of Membership: ◯ **Adult ($55)** ◯ **Junior ($10)**

Apparel: ◯ **Club Polo Shirt ($35) – Size** _____ **Name on Shirt:** _____

100% breathable polyester jersey knit, snag resistant. Knit collar with contrast tipping.

Mens sizes S M L XL 2XL 3XL or 5XL . (185 GSM standard 3 button)

Womens sizes 8 10 12 14 16 18 20 22 or 24 (Ladies 215 GSM with open V with 2 press studs)

◯ **Club Cap ($20) plus $8 postage.** (* Caps are also available from the bar)

Total Enclosed $ _____

If you would like to receive an Invoice please tick ◯

'Fly About' Magazine: Yes ◯ I would like to receive it by ◯ email (preferred) ◯ post

No ◯ I do not wish to receive it

Many thanks,

Northam Aero Club Committee

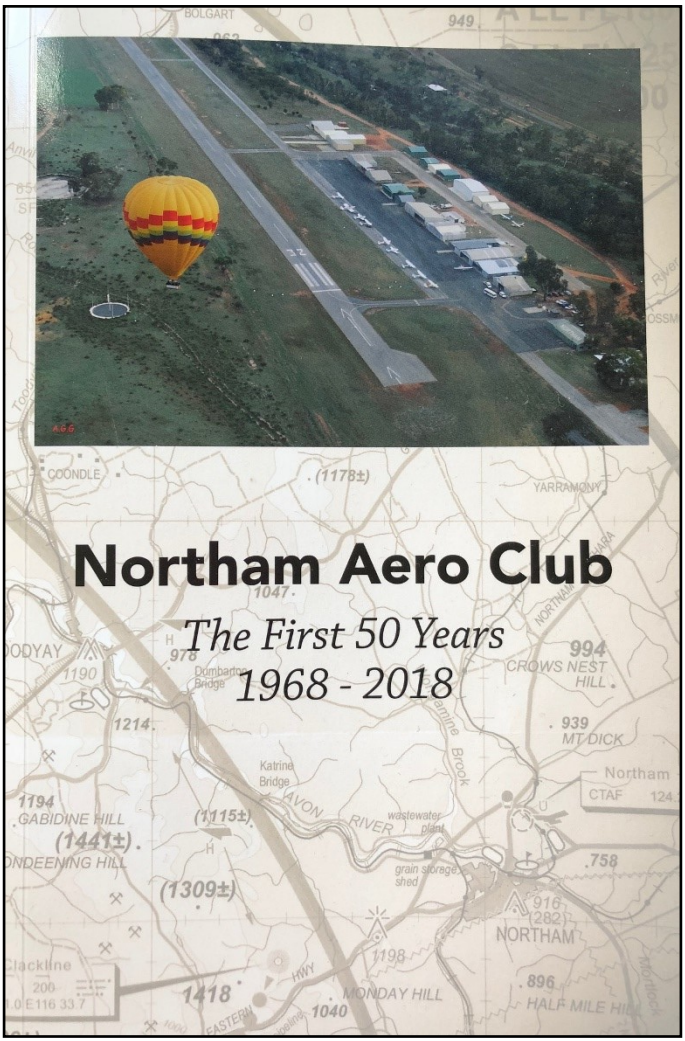
Northam Aero Club Cap $20

Northam Aero Club Polo Shirt $35 (Personalised)

Northam Aero Club

"The First 50 Years"

1968—2018



Copies of this wonderful read can be purchased for $20 for members or $25 for non members from the Aero Club Bar or $25 from the Northam Visitors Centre.

Seen About the Field

Two of our committee members up in arms!

Neil's hangar under construction

Weather cam installation by Hangar 10 Hans

Quiz! - Pick the odd one out!

Good company and pizzas—a regular event on Saturday nights at the Aeroclub

March 2019

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
				1	2 Bar— Peter Hill	3
4	5	6	7	8	9 Bar— Adam Price	10
11	12	13	14	15	16 Bar—Mick Clements	17
18	19	20	21	22	23 Bar—Matt Bignell	24
25	26	27	28	29	30 Bar— Peter Scheer	31

April 2019

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
1	2	3	4	5	6 Bar— Ashley Smith	7
8	9	10	11	12	13 Bar— Crofty	14
15	16	17	18	19	20 Bar— Howie	21
22	23	24	25	26	27 Bar— Peter Hill	28
29	30					

Alternatives Kevin Lathbury - NAC

How many times have you gone flying and got back to earth safely because you had a Plan B? It may be carrying some food, water and survival gear if you're flying over a remote area, having a lifejacket on if you're flying to Rotto, or keeping your NVFR rating current in case you find yourself still in the sky when the sun is not.

One type of Plan B that is required by the rules in certain circumstances is, of course, an alternate. Here's a refresher on some of those circumstances. They're all in Air ENR 1.1 Paragraph 11.7.

The first one that's relevant, and which I often find people are unaware of, is this one: *When an aerodrome forecast is not available or is "provisional", the pilot in command must make provision for a suitable alternate that has a firm forecast.*

An aerodrome forecast is never available for Northam – it doesn't get TAF's. And anyone who's flown on winter mornings in Northam knows that it's an excellent example of why you can't rely on the area forecast to determine your aerodrome weather. How often does the area forecast say the fog will clear by 0900, but because Northam is in a hole, the fog sits there until 1100.

So in short, according to the rules, you must have fuel to get to a suitable alternate every time you fly from Northam. Thankfully, the nearest aerodrome that gets a TAF is only 28 miles east.

Other than that rule, which applies to all flights, the rules about alternates can be broken into three parts: weather, navigation aids and lighting.

Weather

If you're flying day VFR within 50 nm of the departure point, you can ignore this bit. Otherwise, please read on.

The conditions that require an alternate are:

- More than SCT cloud below 1500 ft AGL;
- Visibility less than 8 km;
- Percentage probability of anything that reduces visibility below 8 km, such as fog or mist;
- Crosswind above the aircraft limit (or, more practically, the pilot's limit).

So BKN015 is okay, SCT012 is okay, but BKN012 requires an alternate.

Also, cloud amounts below 1500 ft are cumulative. FEW plus SCT equals BKN, and SCT plus SCT is BKN, so FEW010 SCT014 means BKN014, and you need an alternate.

The rest of the rules about weather and alternates are about when you need that extra fuel.

Firstly, if the weather is below alternate minima, but is forecast to improve at a certain time, you don't need an alternate if you carry enough fuel to hold until the FM time plus 30 minutes (or 30 minutes after the end of a BECMG period). The 30-minute buffer is because a FM in a forecast is to the nearest hour. So if the forecast says "32020KT 5000 SHRA BKN012 *FM0400* CAVOK", you expect the improvement will come sometime between 0330 and 0430. Since pessimistic pilots live longer, you plan for it to get better at 0430. (As a smart private pilot, you would of course just delay your departure so you don't arrive before 0430.)

If the FM scenario is the other way around – good weather followed by bad – you assume the bad weather will come half an hour early, and plan accordingly. "CAVOK *FM0600* 5000 SHRA BKN010" means you expect it to turn bad at 0530, so you plan an alternate if you're arriving after that time.

If the forecast includes and INTER or a TEMPO, there will be something in the INTER or TEMPO that is below the VFR alternate minima, so you know you'll need an alternate or, more practically, holding fuel. The holding fuel requirements are 30 minutes for an INTER and 60 minutes for a TEMPO and, like the requirements when there's a FM or BECMG, they apply from 30 minutes before until 30 minutes after the INTER or TEMPO period.

TAF AMD YCUN 030844Z 0308/0318
02014G25KT 9999 -SHRA BKN080
BECMG 0310/0312 VRB05KT CAVOK
TEMPO 0308/0312 VRB25G50KT 1000 TSRAGR BKN010 SCT080CB

The TEMPO has everything: wind, (lack of) visibility, cloud, and thunderstorms. You'd need an hour's holding fuel, and the requirement applies if your ETA is between 0730 and 1230 (unless your ETA is, say, 1215, in which case you'd carry 15 minutes fuel to see you through to the end of the holding fuel requirement at 1230, or you'd just delay your flight by 15 minutes).

Navigation aids

For a NVFR flight, the alternate requirements due to navaids are pretty easy. You need either:

An NDB or VOR at the aerodrome, and an ADF or VOR on board, or
Since NDB and VOR are increasingly rare entities, a GNSS receiver suitable for NVFR, meaning it must meet the specifications of one of the appropriate US Technical Standard Orders (TSO), which are listed in the table in AIP GEN 1.5 Section 2.

Lighting

In 12 years teaching aviation theory, I found no topic as poorly understood or articulated as the alternate requirements due to lighting. The reason was invariably pilots trying to deal with two questions at once – about PAL and standby power – instead of one at a time. The three questions you need to deal with are:

Question 1: Is the lighting portable? If so, you need an alternate unless you have a responsible person at the aerodrome. Pretty logical: portable lights can't wheel themselves out to the runway and they can't turn themselves on. In most cases, this question is irrelevant since we prefer to fly at night to aerodromes that have fixed lighting.
Question 2: Is it PAL? If so, your VHF might fail to turn it on, so you need an alternate or someone there to turn it on for you.
Question 3: Does it have standby power? If not, the power supply may fail and leave you in the dark, so you need an alternate unless you have backup portable lights and someone there to turn them on.

It's easy to get confused if you try to answer Questions 2 and 3 in the same breath. If you have PAL but no one in attendance, your aerodrome "fails" the test and you need an alternate. You don't even need to go on to Question 3. But if you have someone there to turn the lights on manually, then you can move on to Question 3 and worry about (lack of) standby power.

The other little rule about lighting and alternates that people often get confused about is the little rule about 2 VHF's or VHF and HF and 30 minutes holding. If your aerodrome has PAL and no one there, you need an alternate. 2 VHF's or VHF and HF and 30 minutes holding doesn't exempt you. What this little rule applies to is your choice of alternate.

One of the basic rules for nominating an alternate is that your choice can't require an alternate itself. Having 2 VHF's or VHF, HF and 30 minutes holding fuel gives you an exemption from that rule. So if you're going to Cunderdin, which has PAL, and you don't have anyone available to turn the lights on manually, you need an alternate. But Cunderdin, despite needing an alternate, can be suitable as an alternate if you have 2 VHF's or VHF and HF and 30 minutes holding.

But of course, if you have any doubt, order blue skies for the entire day, load as much fuel as you can, and if it's a daytime flight, plan to get to Point B well before last light.

Videos of the Month

Click on the title links to watch this month's videos

(only available for email recipients of the Fly About)

Sky Fighters

French Mirage 2000 aircraft in Chad

Oshkosh 2009

A fantastic music video highlighting the spectacle of Oshkosh

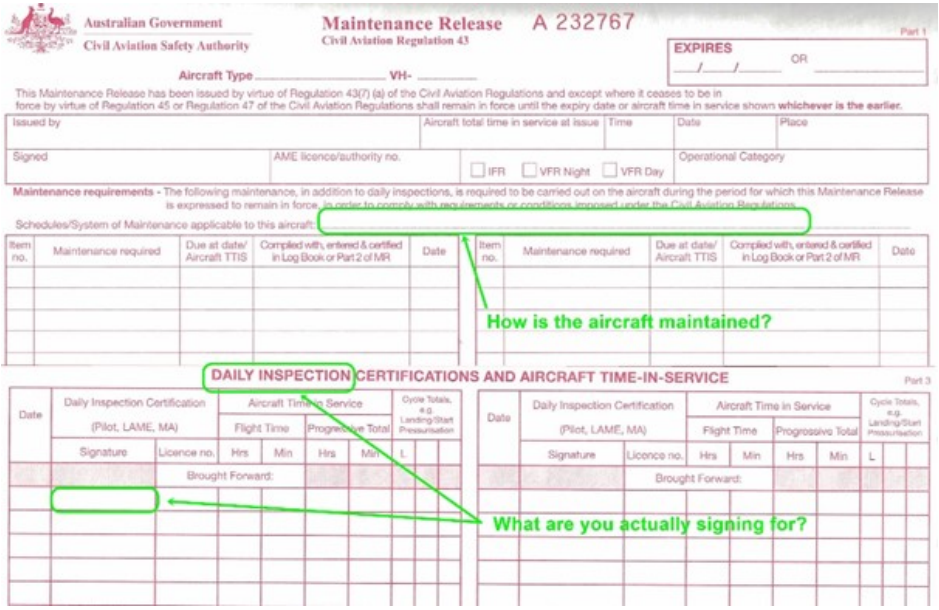
Maintenance Corner by Ian Bristow Stagg

Hi Aviators,

This month's article is about Daily Inspections, This was prompted by a conversation with a commercial operator with whom I queried about how they carried out daily inspections. I was told that it was done the way they were shown, and that was how they were teaching others.

I was a little amazed at this response! As maintainers we must follow a maintenance schedule (basically it is a check list) and we certainly don't just hand me down teach people how to maintain the aircraft. We teach them to follow the aircraft's nominated maintenance schedule, and how to carry out each of the set tasks. The reason being so that we don't miss something, which of course could lead to a safety issue or premature wear or failure.

A daily inspection is exactly the same in that there is a set schedule that is supposed to be followed. This schedule is more often than not in the flight manual, but depending on the elected maintenance program it may not be the correct schedule to use.



So how do you determine what Daily Inspection Schedule to use? If you check the front sheet of the maintenance release there is a spot where the issuer writes down how the aircraft is maintained. The full detailed version of this statement is in the front of the aircraft's log book. More often than not you will see 'Log book statement' or 'LBS' written here, this is usually because the logbook statements can be elaborate, with bits and pieces of different schedules. So if you see this you need to see the statement to be sure how the aircraft is maintained.

Many aircraft are maintained using CASA schedule 5, and as part of this schedule there is a Daily inspection schedule and of course this is to be used if the aircraft is maintained to Schedule 5.

All aircraft that are maintained to schedule 5 also require daily recording of any oil added to the engine. So it is handy to know how many people have added of the course of the day. These extra daily requirements if any are recorded on the front sheet of the MR.

So next time you are doing a daily inspection, stop and think about what you are signing for, and have you covered everything in the schedule?

Happy flying,

Ian Bristow-Stagg

Myth: I can fully deflect the controls below maneuvering speed!

WRONG! BELIEVE THIS AND DIE!

The wing structure in light planes is usually certified to take +3.8 G's, -1.52 G's (plus a certain safety factor). Put more load on the wing than that and you should consider yourself dead.
But here is the nice part: Below a certain speed, the wing simply cannot put out a full 3.8 G's of lift! It will **stall** first! This speed is called **Maneuvering Speed** or **Va**.

Maneuvering Speed is defined as the maximum speed the plane can be flying at and still **stall** before the **wing breaks** no matter how much you pull back on the stick. If you are going **slower** than the **Va** and you pull the stick all the way back, the wing will stall **without braking physically**. If you are going **faster** than the **Va** and you pull the stick all the way back, the wing can put out **so much lift** that it can be expected to **break**. Therefore people think they can deflect the stick as much as they desire below Maneuvering Speed and stay alive.

Wrong! The Maneuvering Speed is based on pulling back on the stick, not pushing it forward!

Note what was said above: The Va is defined as how fast you can fly and not be able to put out more than 3.8 G's of lift. But while the plane is certified for **positive 3.8 G's**, it is only certified for a **negative G-load of 1.52 G's!** In other words, **you can fail the wing** in the negative direction **by pushing forward** on the stick well **below the Va!** Few pilots know this.

Also, for airliners, certification basis require that the rudder can be fully deflected below Maneuvering Speed, but only if the plane is not in a sideslip of any kind! (e.g. crab method of approach) Does this make sense at all? Why would you need to fully deflect the rudder if not to re-establish rightened flight?

In a wonderfully-timed accident shortly after Sept. 11th, 2001 of which everybody thought might be an act of terrorism, an Airbus **pilot stomped the rudder** in wake turbulence while the plane was **in a considerable sideslip**. The **combined loads** of the **sideslip** and the **deflected rudder** took the vertical stabilizator to it's **critical load**. A very simple numerical analysis based on the black box confirmed this. The airplane lost it's vertical stabilizator in flight and you know the rest.

Also, if you are at your **maximum allowable g-limit** (e.g. 3.8) and you **deflect the ailerons** even **slightly**, you are actually asking for **more lift from one wing than the allowable limit! Therefore combined elevator and aileron deflections can break the plane, even if the elevator is positive only!**

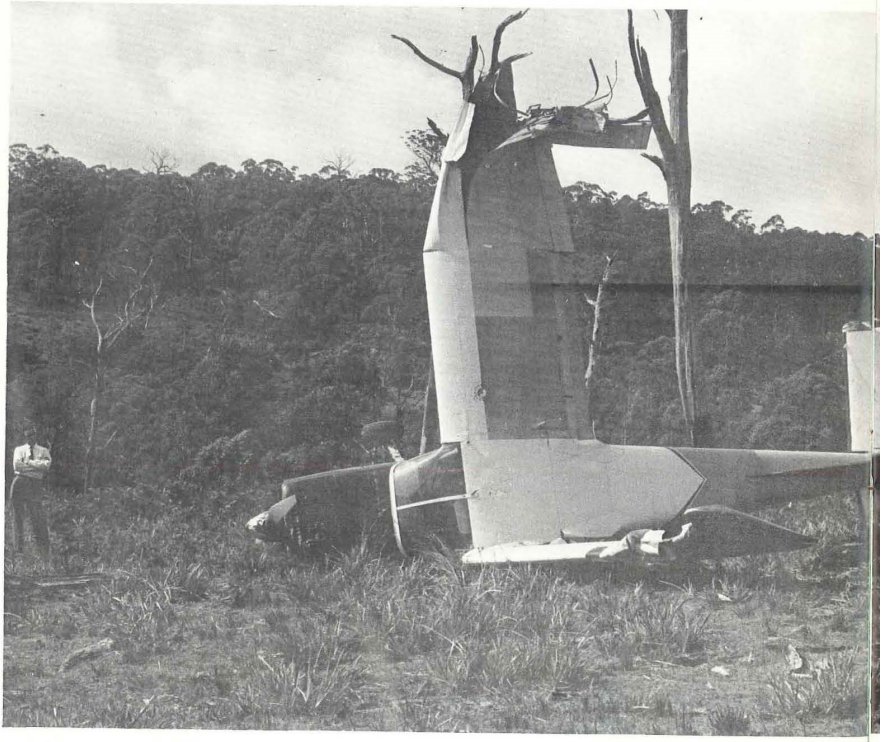
SO, WHEN YOU THINK THAT YOU CAN DO AS YOU PLEASE WITH THE CONTROLS BELOW MANEUVERING SPEED, YOU ARE WRONG!

Please reconsider this myth and also look at the Vg diagram and the aircraft's limitations to prove it to yourself.

AFTER THE FALL

Energy conversion and all that!

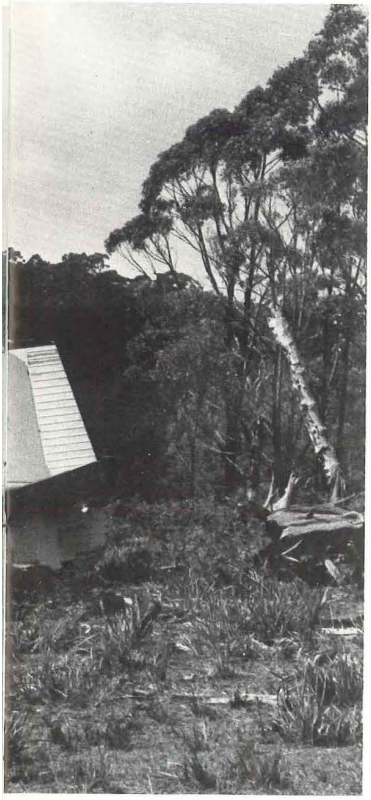
With acknowledgement to *Air Progress* U.S.A.



A good example of 'how to crash without hurting yourself'. The occupants of this Cessna 180 escaped almost unscathed.

A recent National Transportation Safety Board Study on light aircraft emergency landings, underscore an important fact that's too often ignored: in off-field landings, speed kills. An 85 mph crash is twice as severe as one at 60 mph — which means that you're twice as likely to get killed. A pilot may be faced with a choice of approaches to a marginal emergency field — a clear approach with the wind or a difficult, obstructed one into the wind. And while it's far better to roll into the trees than drop into them, it may still be better to put highest priority on low groundspeed and make the more difficult approach into the wind.

All other things being equal, the severity of a crash depends mainly upon the energy that must be dissipated to stop the aeroplane. As you learned in High School, kinetic energy is proportional to the mass and the square of the speed — the formula is $E = \frac{1}{2} M V^2$. Double the speed and you quadruple the kinetic energy, and hence quadruple the violence of the crash. Remember that energy is not momentum, which is directly proportional to speed. There's an old joke about a canopy manufacturer who proudly tells a potential customer that his canopy can withstand the impact of a 10 pound chicken at 600 mph. To which the customer of course replies. 'Yeah, that's great, but what about a 600 pound chicken at 10 mph?' The two chickens have the same momentum, but the small, speedy pullet has 60 times the energy and is therefore 60 times as likely to break the canopy. So the customer needn't have worried!



There are numerous ways to transfer an aircraft's kinetic energy into other forms of energy, thereby bringing it to a stop. In a crash, the primary kinetic energy outlet is the crumpling, bashing and ripping of all that sheet metal, with miniscule amounts of energy dissipated through heat and sound. (Theoretically, it's possible to convert most of the aircraft's kinetic energy to sound energy, bringing the plane to a halt without a scratch. But that would also deafen people for miles). Kinetic energy can also be dissipated by imparting motion to other objects, like dirt or trees or water. Back in the 1950's, Colonel John Stapp's famous rocket sled was slowed from 600 mph to about 30 mph in seconds, by a water brake that scooped up tons of water and sent colossal fusillades of spray into the air. Stapp pulled 40g's, but he survived because the energy was converted at a fairly constant rate. In theory, a Cherokee could stop in its own length from 70 mph and never subject itself or its passengers to more than 8g's of deceleration. It wouldn't be comfortable, but if you were wearing a shoulder harness you'd certainly survive. Does that mean you could fly into a haystack and walk away from it? Probably. And a good healthy stand of hay or corn will stop you almost as quickly and smoothly as an arresting cable.

So students, it's a simple matter of energy conversion, $E = \frac{1}{2} M V^2$. Land slowly and run into something soft. Keep it into the wind, overshoot, and head for those amber waves of grain, and above all, don't be afraid to crumple your aeroplane instead of yourself!

Comment

Though not quite in our 'style', the case made out in this article has a great deal to be said for it. The philosophy it expresses has certainly been borne out in practice in some Australian accidents, which at first sight might be judged 'non-survivable'.

Many years ago, the pilot of an Auster flying from Bankstown, N.S.W., to a destination west of the Great Dividing Range, became caught in cloud a few miles south of Katoomba. He became disorientated and lost control but, more by good fortune than good management, succeeded in reducing the diving aircraft's speed from almost 140 knots to 60 knots. At this point the aircraft emerged from cloud, but too late to avoid flying into heavy timber, which covered the floor of the valley into which the aircraft had descended while in cloud. Indeed, so thick were the trees where the aircraft crashed that the pilot, who was the only occupant and had escaped unhurt, was unable to find the aircraft again. It took him four days to 'walk out' to civilization! Some of our older readers may recall that this accident was recorded in *Aviation Safety Digest* No. 6 in January 1956.

Other more recent instances have been the Cessna 205 which crashed in the Weddin Range near Grenfell N.S.W. ('Anatomy of an Accident', *Digest* No. 65) and the Cessna 172 which was deliberately 'ditched' into tall timber in a valley near Moss Vale, ('I had no Fears about Flying in Cloud!', *Digest* No. 75). In both these cases too, the several occupants escaped, seemingly miraculously, with comparatively quite minor injuries.

There was another instance several years ago, also in N.S.W., in which a Cessna 180 lost power while flying over heavily timbered hilly country near Mittagong. The only area remotely resembling a forced landing ground was a small, extremely rough paddock on a hillside, surrounded by high trees. The aircraft was only about 1500 feet above the ground when the engine lost power and there was little time for manoeuvring, but the pilot planned the approach so that, just before the aircraft touched down at about 40 knots, he could deliberately fly the starboard wing into the trunk of a tree on the approach path. A moment before this initial impact, he applied starboard rudder to skid the aircraft. The result was that the aircraft pivoted 90 degrees to the right around the tree, and struck the ground skidding sideways. The port undercarriage collapsed during the rapid deceleration and though the aircraft fell on its port side before it came to a stop, the four occupants escaped virtually unscathed.

It is significant that in all these cases the airspeed at the time of impact had been reduced almost to the point of stall, and the 'appendages' of the aircraft's structure — wings, undercarriage, tail surfaces etc., absorbed most of the remaining kinetic energy.

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December's Answer :

- *Beech AT10 "Wichita"modified for "V"tail flight tests*

Just for fun……

Phoentic Alphabet

Y K H
C X O K A P V M Q
H X T P C H M H S X u I u
T K V J A V u V E K O E E G X O Z
V Y C P u C J F C R N A T B D E E Q N
Z A H P F A Q G O u P F X K E O I M O u F
C T R J Z D P K X C N I I V C L H O S V G
F J L R D X P X A T H B C B Q H I T R C u D B
M A E O V Q S u H R T S O J J W K P X A E X E
V O R D u W N S u u O V G R O T Z V R X R P K X N
u F F X Y B F J N L T Z J O Y K Q S F P J A I R Z
N M T L E B N C K J O M C T X A C K H L M u Y O I
R u M P B K J Y F P Z E A V C E S V N L F O R T Z D W
R N X Z M S M Z T O u E X D I u E E B J R M G I L I N
D K N T K I K Q W T Y K M L V S I E R R A D T I N u B
E E H K H G L F A Y N R Z G X u T Q L A D C N X Z
X L E Z W M P I J F A M Q O B I F Q D u L A F J X
u W G I P I D O R H Y u P L E R W C N N Q P u N O
O I O S N Y Y C N H N I O C T A I O G A L H H
T G E I B B L A M u B L Y H L F V Z C I I u A
X N C N L W P J A H I D O O E W O E J Q H
R K A R Q Z G C M E M u R M V I T S G F S
R C T C E A S I Z A M B C L T W D X E
D Z u L u H N S C E Z R E S M A Z
L D N R D J R X Y K X B B
K A N L B X A H I
B H D

ALPHA
BRAVO
CHARLIE
DELTA
ECHO
FOXTROT
GOLF
HOTEL
INDIA
JULIETTE
KILO
LIMA
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