AUSTRALIAN MOONEY PILOTS ASSOCIATION

AMPA

NEWSLETTER

Volume 3 No 2
August 1993

REPORT FROM THE PRESIDENT

August 1993

Hello fellow Mooney Pilots,

Well, contact with you all has been very light since our Fly-in to Narooma, apart from that brilliant and new format newsletter produced by Robyn Kelly which brought you up to date at that time with all the activities of the association and what you missed if you did not go to Narooma.

As you are aware I have sold the beloved "Sierra Golf Juliet" but fortunately she was bought by a young couple who live in Brisbane and it only meant a change of airfield from Archerfield to Redcliffe. I still enjoy flying her, although reduced in hours. Some 100 hours since Christmas. I am happy to report that SGJ is still very well and still enjoys flying looking forward to the next Fly-in to the Flinders Ranges.

At the Brampton Island Fly-in and again at the Narooma fly-in there was considerable discussion on having the association incorporated for the protection of the office bearers and members, against any possible legal actions. I do report that this matter is in the hands of a Brisbane solicitor and hopefully within the next month or so we'll be able to circulate to you the draft of the Articles of Association for your consideration. The matter can then be discussed and approved at the Annual General Meeting in October.

There seems to be still quite a considerable amount of discussion in Mooney circles about 3-bladed props and I read recently yet another article on the performance of these "not standard items". It seems to confirm the article in MAPA Log earlier this year that there are only two benefits in going to a 3-bladed prop. There being slightly better climb performance and a great reduction in noise. From what I understand from these articles, is that you do not get any extra prop clearance as the 3-bladed prop is reduced in width and maintains the same circumferential arc as the 2-bladed prop. Several of our members have indicated that they are looking at 3-bladed props at their next prop change. If anybody has any experience please write an article for the newsletter.

In the June edition of the MAPA Log there was an article concerning engine life in the USA. It seems, if true, to be quite different to the Australian situation. The article is clear that apparently the FAA in USA allow aircraft not involved in commercial operations, to have extended time. In this era of rising costs and user pays, it may be worthwhile to investigate this matter further. If anybody has any personal experience or knowledge of this US ruling, please write an article for the newsletter.

At the Narooma Fly-in, Alan Currie advised of a new Mooney problem - leaking fuel tanks between the divisions within the wings themselves. On reading the June MAPA Log, this seems to be the case in the US as well. There are 2 articles on leaking fuel tanks and several ads giving details on external sealants, and bladders. Apparently the seal in the partition running parallel to the main spar, fails on the bottom joint to the wing skin, and fuel escapes to the aft side of that partition. Alan Currie advised that on a recent inspection he found several litres of fuel in an aircraft in that location.

The next coming event of course is the Fly-in to Flinders Ranges over the NSW Labour Day weekend, being the 2nd,3rd,4th October.

Our Annual General Meeting in accordance with our constitution, will be held at the October Fly-in. Notices will be sent to you concerning that event. As you may recall I did indicate prior to the Brampton Is. AGM, that I felt it was time for somebody else to become President and inject new life into the Association. I did, reluctantly, accept the position of president for a further year. I find it difficult to keep up the input of producing articles for the newsletter and the momentum of the association. For these reasons and pressures of business I will not be standing for President at this meeting. I ask you all to give this due consideration and hopefully one of you Mooney enthusiasts will take over the stick and take the Association to further heights, hopefully in better economic conditions.

Please give the Flinders Ranges Fly-in consideration as I understand that it is beautiful in spring. It offers unique scenery, in the air and on the ground, and the wildflowers are something to be seen. Enclosed with this newsletter is a registration form, with a brief list of accommodation and activities arranged.

Look forward to seeing you all there,

Gordon Grant - President AMPA

NOTICE OF MEETING

The Annual General Meeting

of the

Australian Mooney Pilots' Association

will be held on

Saturday 2nd October 1993

at the

ARKAROOLA FLY-IN

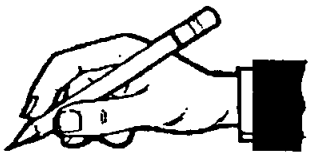
Commencing at 8.30pm

Gordon Grant

President AMPA

Business: Accept the President's Report; Accept the Treasurer's Report; Election of Office Bearers.

Hans' On



I am amazed that NO ONE had any questions to ask about their Mooney. Isn't there something that has been bothering you, that you have meant to ask but never remember at the right time. Well here is your chance. A little bit of time to write it, then post or fax it.

I look foward to receiving lots of faxes, letters and phone calls.
Fax (03) 699 3239 BH Phn (03) 690 9399
AH (03) 347 2897 WE (060) 723632
Postal: AMPA Newsletter 318 Station St Carlton North VIC 3205

LEANING - A REVIEW

The subject of leaning is one which never seems to get enough attention. There are many misunderstandings and misconceptions about when, why and how of adjusting the fuel/air mixture for operation of Lycoming opposed series aircraft engines. A brief review may be helpful; to many Flyer readers.

References which may be used to study the information on leaning include the Engine Operator's Manual and Lycoming Service Instruction No.1094. The following paragraphs are based on these references, but attempt to put the material in a form which will allow easier reading and understanding. Because each aircraft and engine combination is different, the Pilot's Operating Handbook will be the final authority on this subject when it is different from the general information provided in this article.

Perhaps, it would be appropriate to examine why it is necessary to lean the air-cooled aircraft engine. To keep aircraft weight and drag to a minimum, airframe manufacturers have usually chosen to reduce cooling drag by providing enough cooling air to do a good job in the cruise mode where the aircraft is operated most of the time. When power above the cruise range is used, additional cooling is achieved by increasing the flow of air through cowl flaps, and the introduction of excess fuel. Leaning the mixture in aircraft engines is also required because of the decrease in air density with an increase in altitude. Mixture strength will increase as the aircraft climbs and must be compensated for by leaning; proper leaning will insure that an appropriately combustible mixture is maintained at all operating altitudes.

With this background regarding why the air-cooled piston aircraft engine must be leaned, let's look at some general recommendations concerning the why of leaning which will apply to all Lycoming piston engines.

1. Most carburettors or fuel injectors are intentionally adjusted to be capable of operating slightly on the rich side - this calls for leaning at any altitude when operating at the manufacturer's recommended cruise power.
2. Proper leaning mean economy of fuel, which results in lower cost of operation.
3. Excessively rich running engines cause roughness - proper leaning makes them smooth. Smoothness protects engine mounts and engine accessories from undesirable vibration and possible failure.
4. Leaning at cruise extends the range of the aircraft - a safety factor.
5. Proper leaning means less spark plug fouling and longer life for plugs - also a safety factor, as well as lower maintenance cost.
6. Correct leaning means cleaner combustion chambers and less likelihood of preignition from undesirable combustion deposits.
7. Proper leaning at cruise power results in more normal engine temperatures in cool weather or at the cooler temperatures of altitude. Rich mixtures at cruise power cause undesirable cool engine temperatures. As an example, oil temperature should be a minimum of 165°F in order to reduce moisture forming vapours and acids in the engine oil.

As we continue the discussion of leaning with respect to the type of fuel metering device or type of engine, there is some additional general information to keep in mind. Although leaning is highly recommended, it is possible to damage an engine by excessive leaning at power settings above the manufacturer's recommended cruise power (usually above 75% of rated engine power). Very small aircraft, such as the typical GA trainer, usually are built with limited engine instrumentation. Therefore, the operator must follow certain basic rules for leaning to protect the power plant and yet operate it efficiently.

More complex engines with higher horsepower are usually installed in aircraft equipped with adequate engine instrumentation. The airframe manufacturer will establish parameters for safe engine operation which can be quickly determined by reference to instruments which measure fuel flow, exhaust gas temperature, or turbine inlet temperature. These give immediate indications of the effect of leaning. After a period of time for temperatures to stabilise, initial indications may be cross checked against oil temperature and cylinder head temperature. The Pilot's Operating Handbook will list temperature limits for each item.

During the decade of the 1980s, Lycoming engines have been built with one of two fuel metering systems - the float type carburettor or a Bendix fuel injection system. when operating at Manufacturer's Recommended Cruise Power, engines utilising either of these devices may be leaned.

Engines with a float type carburettor are leaned until engine roughness begins, then the mixture is richened just enough to obtain smooth running. The engine roughness induced by leaning is a result of imperfect mixture distributions and the leanest cylinder reaching a mixture level which will not support combustion. At the cruise power levels, the roughness incurred briefly during the leaning process is not harmful to the engine. Remember that when carburettor heat is applied it will

HOW SLOW CAN YOUR MOONEY GO?

I've flown through icing on several occasions - only light, however, & no big hassle to SXU. Last time 3 POB, luggage & plenty of fuel & ice 100mm back from leading edge produced a drop of 25kts at 9000' in S/CU cloud tops. One weekend enroute (COM- MGGB-ELW) I encountered NIMBO STRATUS covering the main range approx north - south up to 15/16,000'. After a smooth entry @ 10,000 ice formed 100mm back from the leading edge producing an immediate reduction in air speed to 100kts - a little surprising as we were 2 up & luggage & full fuel. After a couple of minutes with the OAT still -3°, the following sequence of events took place in a relatively short space of time:

1. the A/P begins to trim back in an attempt to hold altitude, things get quieter. A glance at air speed shows 80kts coming up, wing leading edge ice streaks now back 350mm but stall strips clearly shaped.
2. Altitude begins to drop - climb power set - engine begins to sound ever so slightly rough - eyes flash to instruments. Temp approaching top of green - cowl flaps open wide - (ice probably on prop & maybe cowl cooling inlets are reduced). Air speed now 77kts GPS says wind is not 330/50 kts but more like 270/50 as it showed 24kts. As we told MEL of our intended abortion of flight, the proverbial hit the fan & my passenger hit the roof (strapped in too!). Then we were showered with the contents of my flight bag, lunch box etc. Meanwhile as I prepared for the most difficult task - ie doing a 180 in an ice box with wings (fortunately strong ones).
3. The A/P had to be disconnected due severe turbulence (not forecast either) & the resultant rate 1 turn with stall warning going had to be more a series of straightish lines to arrest the sink rate of 500/1,000' min. We were in the "washing machine type simulator".

We eventually stabilised out heading of 050° & an altitude of 8,400 (LS) & headed for home.

Moral: A fully iced Mooney is not a delight to manoeuvre & nowhere in my training have I been advised on minimum speeds on iced aircraft. Subsequent discussion with Alan Currie concluded a minimum recommended drop in air speed of 25% so KIAS -25% = 105kts, lets say 100kts for round figures. My next instrument will be a stormscope which maps turbulence as well as lightening so I am told.

Can any member get me a deal on a WX1000?

Come on summer. Dave Morgan.

This newsletter is for the interaction of Mooney owners & pilots, for mutual benefit.
Annual membership fee is only $30, you may well find useful technical information, or even have your problems solved by Hans On, for free!

LOOK FORWARD TO SEEING YOUR NAME ON THE PERMANENT LIST.

Send your membership fee to the Treasurer,
Dave Morgan at: Shop 9 Southfield Plaza,
NAROOMA NSW 2546 (044) 737214

PRICING YOUR USED MOONEY

Model	Name	YearsProduced	PriceRange ($,000)
M20B	Mark 21	1961-1962	20-30
M20C	Mark 21	1962-1967	21-40
	Ranger	1968-1971	30-50
	Ranger	1974-1978	35-55
M20E	Super 21	1964-1967	20-32
	Chaparral	1969-1971	25-37
	Chaparral	1974-1075	30-40
M20F	Executive	1967-1971	50-80
	Executive	1974-1977	60-85
M20G	Statesman	1968-1970	30-50
M20J	201	1977-1989	90-120
	205	1987-1989	106-130
M20K	231	1979-1985	90-130
	252	1986-1989	130-185

Based on market prices over the past 12 months. Information to update this table would be appreciated.

MOONEYS

FOR SALE

Peter Petroni's **M20K** (231) **VH-MYV** is for sale in Ian Baillie's lot at MB airport - price around $105k. 269 hours to run on the engine. First registered in Aust 23.10.79

Fred Blake, also at MB has **VH-CMO**, an **M20J** for sale at $117. First registered in Aust 10.9.81 .- ph 03-5804400 if interested.

If you know of any Mooneys for sale, or future Mooney owners who would like to put in a request, please call Robyn Kelly bh(03) 690 9399 ah (03) 347 2897
or fax (03) 699 3239

For the non licensed "FO's".

Anyone going to go and have a few lessons with an instructor?

Tip for nervous passengers:
Don't you find that whenever you take a novice on board, the weather is always terrible, turbulence, strong head winds and usually plenty of angst on behalf of the FO as to how quickly you can reach the little bag, tucked out of sight, if you have to.

I've found a way of short circuiting their fears - "Look at the cat, she's not worried, why should you be?" Makes them feel more at ease instantly. I'm not sure what the cat thinks about them.

AUTO PILOT MALFUNCTION

Recently I was on a flight in another aircraft - not Sierra Golf Juliet - which is fitted with a century 2000 Auto Pilot (ap). I found this ap quite difficult to handle, particularly when changing from one mode of operation to another. For example, at top of climb and when changing from climb attitude to straight and level, and changing at top of descent from straight and level to descent attitude.

On several occasions on the flight when changing altitudes, I found that the ap did not hold the new altitude, and at time tended slightly off course. Once I got it locked on, however, in any particular configuration, it seemed to work very well. As such however, I monitored the conditions of flight much more rigorously than I would have with an ap that wasn't showing any sign of problems.

On the return flight, which was at night, the ap seemed to be behaving itself quite well and I reported overhead at Tamworth, set up our new course for the next waypoint, and the ATC asked me a particular question which involved doing a calculation and I suppose I had my head down for some half a minute or so. When re checking the instruments , having not finished the calculations, I just could not believe the readings given by two VOR's and the GPS, and for quite some seconds, I was quite disoriented as to what was happening.

The DG was locked on the bug and centred, however both needles of VOR's were indicating off scale to the right, which had been previously set up centered. As you can imagine I immediately checked headings and all the information that I had put in my flight plan, and couldn't find any fault there. I then checked the DG with the compass to find that at that stage there was some 180° error. I might add that we were in IFR conditions which assisted with the disorientation process.

My immediate concern of course was that now I was flying south at a northern quadrantal altitude. I immediately reported the situation to Tamworth as there was quite a bit of traffic approaching at that time. Obviously I disengaged the ap, reset the instruments and flew the aircraft manually.

It is hard to imagine that neither Gwen nor I felt the wing drop to initiate a turn and neither the AH nor the turn co ordinator indicator gave any indication that we were in a turn. Obviously what had happened was that the ap had misbehaved, put us into a turn and for some reason the bug had locked onto the dial of the DG giving me a false heading reading.

Needless to say I didn't use the ap on that trip. I reported the situation to the owner of the aircraft who didn't take the matter too seriously and I have since found out from inquiries from electronic workshops that Century 2000's can't be repaired in Australia

Auto Pilots are great things but I tell when one plays up the way it did on me, it certainly gives you some nervous moments.

Good Flying,

Gordon Grant.

WING TIPS

Did you hear the one about the bloke taxiing out chatting to his mate? The pilot was not taking a great deal of notice of his surroundings, and possibly skipped one or two minor items on his check list.

His mate said "That's a funny noise, does it always sound like that?" "Oh don't worry about that, they all sound like that" replied the pilot.

A little extra power was required on take off, but other than that all went well. I don't know at what stage the chatting pilot realised that he still had the concrete tie down blocks attached....

Would have been a great landing to watch!

Perhaps this is a "Ensure brain is in gear before engaging throttle" type of incident.

Always listen for differences in engine sounds and airflow and keep a feel out for odd vibrations.

AN INTERESTING YARN TO LISTEN TO ——

Recently Gwen and I were flying at about 4,000' AGL over country new to us and we were enjoying some very spectacular ruggard features on decent for a landing at an ALA.

During this decent I experienced a strange and unusual feeling on my neck, under the chin. I initially scratched and rubbed and settled down to flying at circuit height, however the strange feeling persisted.

As a reaction I rubbed my neck again and continued my hand around under my ear to find a hot sticky wetness. My immediate thought was - "blood". On looking at ny hand both Gwen and I were shocked as the liquid was clear. Gwen made a joke that I am not a "Blue Blood" but a "Clear Blood".

All mirth aside, the liquid kept coming and we eventually solved the problem when a radio call came over the air waves. The oil cushion on my headset had punctured and filled up my ear wihtout me realising it and the overflow ran down my neck.

Luckily I had a spare headset and Gwen and I still have a laugh about my "Clear Blood".

GG

HOW ABOUT SOME OF YOUR FLYING YARNS?

I NEED ALL THE TALL STORIES I CAN GET.

GIVE ME A CALL, OR DROP ME A LINE OR FAX.

I'LL HAPPILY START AN "ANON" COLUMN IF YOU HAVE A NEED!

FASCINATING ARKAROOLA

Just to get you all interested.
In 1840 the explorer EJ Eyre wandered through on his way to Mt Hopeless and beyond. Some years later Babbage came gold prospecting, only to find copper instead. The first pastoral selection in the area was made in 1857. This was followed by a copper mine, a drought and abandonment of many leases, then rubies and sapphires were discovered. A copper smelter was built but never achieved anything, uranium was found in 1910 and given up in 1914. The hot springs were established and closed within a year and radium was discovered between 1923 and 1924. The history goes on with sheep and many feral animals, to then change to a historical reserve.
This area of the Flinders Ranges is west of Lake Frome, which is quite a sight to fly across, or near.
There are many long or short walks for those who want the exercise, with things like euros, wallabies, the endangered yellow footed rock wallaby, kangaroos and emus. Smaller birds are also about, I have a very long list I won't be able to add here. The flora is quite special, and with some luck we will be able to see some spring wild flowers.
The Village caters for a large number of visitors with vastly differing interests. We have accommodation in either the Greenwood or Mawson Lodge, or you can have The Shearer's Quarters if you're feeling Spartan. There is also a licensed restaurant for catching up with other Mooniers in the evenings. A General Store caters for most other needs, and a service station, but I don't think anyone runs their Mooney on MOgas...do they? For the browsers there is a museum, a photographic gallery and a pioneer cottage.
If there are any star gazers out there, or mad amateur geologists or anthropologists, there is plenty to interest you too. Or if you prefer, just yarn away the hours by the pool.
The Observatory was opened in 1986 by Sir Mark Oliphant, not that far from the Village. A Mizar 150mm f.10 Catadioptic telescope was the first, to be followed by several more. the latest been a computer aided version which stores the position of thousands of deep space objects and the planets. We hope to be able to visit this one night.
There are a number of 4 wheel drive tours, hopefully we will go on the Ridge Top one, it was originally a mining exploration access track and the trip is via the ridge tops. Spectacular views, in particular of Lake Frome then on to a waterfall, old uranium prospecting site culminating at the Sillers Lookout.
Don't bring your formal gear, this is a relaxed place. A good pair of walking boots will be handy, maybe a day pack, and a good jumper.

Just as a matter of interest, I don't believe there is AVGAS available, so make your fuel stop somewhere else.

LOOK FORWARD TO SEEING
MANY OF YOU AT
ARKAROOLA
IN OCTOBER

DON'T
MISS OUT ON THIS ONE!

AIRSTRIP DETAILS - ARKAROOLA

THERE ARE 3 AIRSTRIPS NEAR ARKAROOLA
Please asses which one is going to best suit your requirements.

Arkaroola
Situated west of main entrance road, 6nm due west of Wooltana Homestead and strip, approximately 6nm south of Arkaroola Village, identifiable by 2m high letters (not the Homestead).

Details:

Lat 30° 24" 5'S
Long 139° 20" 5'E
Length:2200' (650 metres)
Width:200' (60 metres)
Altitude:800' (240 metres)
Surface: shale
Direction: 030/210° (210 m.n.)
Windsock at intersection.

CROSS STRIP UNSERVICEABLE, marked with wwhite crosses at either end.
NOTE: Airstrip named in whitewashed rocks "ARKAROOLA".

Balcanoona
Situated 1.5nm east of Balcanoona Homestead.

Details:

Lat 30° 31" 5'S
Long 139° 21"E
Length:4600' (1400 metres)
Width:200' (60 metres)
Altitude:300' (100 metres)
Surface: consolidated malle soil
Direction: 040/220°
Windsock opposite centre NW side.

Subsidiary strip:
090/270
Length:3000'
Width:100
NOTE: Strip 150/330 ABANDONDED.

In case of cross winds making landings at Arkaroola or Balcoona unsafe, Wooltana Strip may be used as third alternative.

Wooltana
Situated 1nm east of Wooltana Homestead

Details:

Lat 30° 25" 20'S
Long 139° 26" 30'E
Length:3300' (1000 metres)
Width:150' (45 metres)
Altitude:280' (85 metres)
Surface: natural
Direction: 090/270° (090 m.n.)
Windsock opposite centre NW side.

Homestead roof marked "WOOLTANA".

HOW SAFE ARE MOONEYS ?

It is said that Mooneys are one of the safest aircraft to fly so I set about to try and prove the point by obtaining accident data from Australia and USA. On the surface the exercise looked simple - just compare the number and cause of accidents between both countries. Not so !. The collection methods are substantially different in each country as is the definition of what constitutes an accident or incident.

The MAPA (USA) Safety Foundation study of USA accidents in 1991 indicated that "66% of all fatalities, 24% of all injuries and 30% of all accidents in Mooneys resulted from adverse whether or faulty pilot judgement". To summarise the findings -

M20 ACCIDENTS/FATALITIES/INJURIES BY PRIMARY CAUSE

Primary Cause	Accidents		Fatalities		Injuries	
	No.	%	No.	%	No.	%
Adverse Weather	47	16	77	48	10	8
Faulty Judgement	42	14	27	18	21	16
Poor Maintenance	42	14	15	9	19	14
Loss of Control	35	12	5	3	17	13
Airspeed Management	31	11	8	5	13	10
Gear Management	23	8	2	1	7	5
Undetermined	20	7	9	6	10	8
Fuel Management	20	7	3	2	17	13
Improper Preflight	18	6	7	4	10	8
Other	16	5	7	4	7	5
TOTAL	294	100%	160	100%	131	100%

The pilot profile is even more dramatic - there is a strong relationship between recent experience (or lack of) and accidents with the average experience being 8 hours for the past 90 days compared with 34 hours average for all Mooney pilots. Not only that but 57% of pilots in weather related accidents were IFR rated !

The Aussie Mooney pilot flies around 135 hours per year (about the same as the US equivalent) in considerably better weather conditions which may account for the noticeable absence of weather related accidents in the Mooney.

My analysis of accidents (as supplied by BASI) for the past 10 years shows:

Loss of control		6
Mechanical:	Undercarriage	3
	Baggage Door	2
	Other (Vac pump)	1
Gear management		3
Faulty Judgement		2
Fuel Management		2
Ground accident		1
Other (bird strike		1
	Total	21

The first surprise is that one in seven Mooneys are likely to have an accident during a ten year period.

Secondly, NO weather related accidents were recorded at all, but thirdly, the high incidence of loss of control type incidents compared with USA data. I will detail some of these accidents in subsequent editions of this magazine however there appears to be a relationship between low Mooney hours and low recent experience and loss of control accidents.

Bar talk anecdotes often reflect the strength of the Mooney one-piece wing or the +g and -g capabilities yet none of the accidents during the past 10 years would have been influenced by the "strength" of the aircraft.

The mechanical problems with the undercarriage nearly all appear to be due to poor maintenance and/or daily inspection by the pilot rather than any inherent defect in the system itself.

Russell Kelly

WAKE TURBULENCE

During our training and from time to time as experienced pilots, we hear about wake turbulence and luckily very few of us experience it.

On return from the Narooma Fly-in, Gwen and I went over to Canberra and spent a day there which was enjoyable, then on Tuesday night did a night flight from Canberra to Archerfield.

We got to the plane at early dusk, loaded and were taxiing in darkness and I was surprised at the busyness of the airport at that time, particularly as Parliament was not sitting. I had done my run-ups at a suitable place in the GA parking area as I was not sure of the layout of the airfield. I then proceeded with taxi guidance to the duty runway and indicated that I would accept an intersection departure. At this stage there had not been any take-offs for some several minutes and on reporting "ready" to the tower, I was told to hold and wait for the taxiing Friendship which was some distance behind me. I was to allow it to proceed to the end of the runway.

I mentioned to Gwen that the Fokker would be a nuisance being a heavy plane and would produce some turbulence. "I suppose it will be alright, I'll just watch the situation as I take off". My decision to proceed with the take-off was influenced by the fact that 3 wide bodied jets were at that time taxiing and if I did not take off then, I would certainly have had a good 15-20 minutes wait to get clearance to take off as I would not have been keen on following those aircraft down the runway.

In due course the Friendship took off and I was instructed by the Tower to immediately line up as soon as that aircraft passed. Which I did and within seconds of lining up I was given a clearance to take off with modified instructions to the SID departure. The take-off roll went according to the book and we got to about 70' on a very dark night and therefore on instruments, when we experienced initially, a slight vibration which was immediately followed by the right wing dropping 90° very suddenly and tremendous turbulence. As you can imagine, Gwen got quite a fright and before I knew where we were, the plane or I, I don't know which, had righted itself and we experienced further mild to medium turbulence with the left wing tending to drop, then completely smooth out.

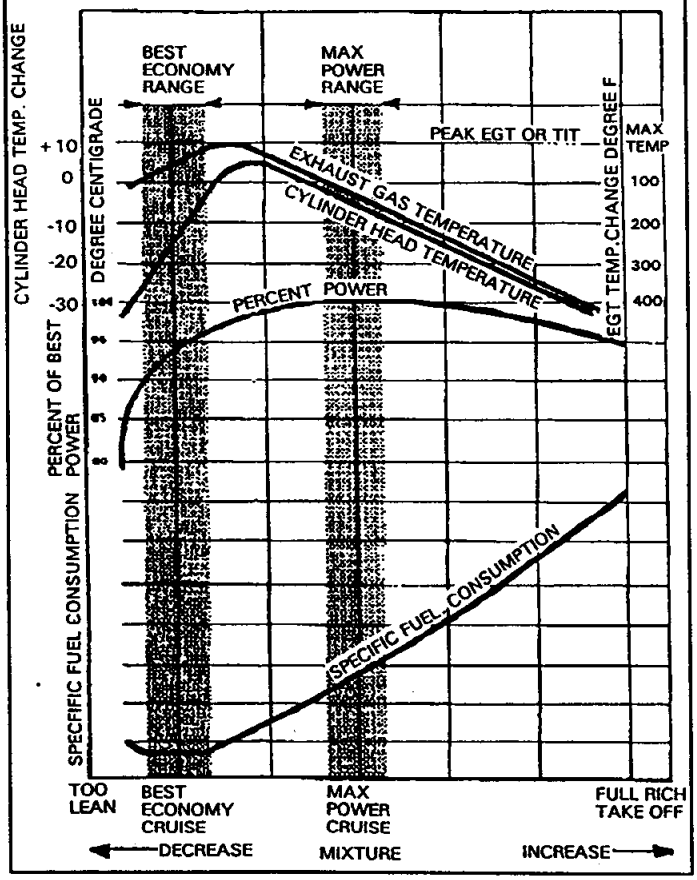
Obviously what has happened is that I had rotated and taken off prior to the Friendship's rotation point and had a lower climb rate than the Friendship, and had flown through its climbing flight path and experienced wake turbulence. I reported this situation to ATC in the tower saying that we had experienced severe wake turbulence; to be advise by the controller that Fokker Friendships don't produce any wake turbulence, as it is not recorded in the book.

What could you say to that!

from Gordon Grant.

Leaning cont..
tend to richen the mixture; this may require the mixture to be adjusted leaner. Because of the wider spread in mixture distribution which is characteristic of the float type carburettor, leaning using the engine roughness method discussed will produce results just as effective as those obtained by using an exhaust gas temperature (EGT) indicator. Should there be an EGT gage in an aircraft with carburettor equipped engine, operation at peak EGT is approved if the engine runs smoothly. A general rule of thumb which many pilots observe is to cruise with mixture set at 50°F on the rich side of peak EGT; this does not

REPRESENTATIVE EFFECT OF LEANING ON CYLINDER HEAD TEMPERATURE, EGT (EXHAUST GAS TEMPERATURE), ENGINE POWER & SPECIFIC FUEL CONSUMPTION AT CONSTANT ENGINE RPM & MANIFOLD PRESSURE.



achieve best economy, as the chart shows.
When operating an engine with fuel injection at cruise power setting, it is often possible to lean initially by reference to fuel flow. Since fuel injection provides more precise mixture distribution than a carburettor, the EGT is very helpful. After initial leaning by fuel flow, lean to peak EGT and continue to operate at peak. In some cases, it may be preferable to use the general rule of thumb for operation at 50°F on the rich side of peak if this produces smoother engine operation.
With this brief discussion of the minor differences encountered in the leaning of carburetted as opposed to fuel injected engines, it leads to items of consideration when operating different types of Textron Lycoming engines. By type, we refer to normally aspirated or turbo charged. These are recommendations for leaning each one.

1. Textron Lycoming direct drive, normally aspirated engines (carburetted or fuel injected).
a. May be leaned at any altitude, at manufacturer's recommended cruise power (usually 75% or less).
b. In climb from sea level through 5,000' density altitude, mixture must be full rich. For continued climb above 5,000', mixture may be leaned to prevent an excessively rich mixture and to obtain smooth engine operation.
DO NOT confuse the 5,000' reference for climb with the cruise configuration.
c. Operation at higher than 75% power without reference to fuel flow, cylinder head temperature, and without knowledge of specific power, required full rich mixture
d. Lean to the MAXIMUM POWER RANGE (see chart) for take off from high elevation airports.
2. Textron Lycoming turbocharged engines.
a. the turbine inlet temperature gage (TIT) is a required instrument with turbocharging.
b. During manual leaning, the TIT must not exceed the temperature limit specified in the POH. Although a few specify a higher temperature limit, 1650°F (900°C) is the limit for most installations.
c. When leaning the mixture at cruise power, if TIT limit is reached before reaching peak, do not exceed the limit to find peak.
d. Operation may be at peak during cruise provided TIT does not exceed red line maximum and cylinder head temperature is at or below the 435°F (224°C) recommended for continuos operation. Mixture may be adjusted anywhere on the rich side of peak provided CHT, fuel flow and TIT all remain within limits defined in the POH.
e. All full throttle operation, including all takeoffs, with turbocharged powerplants must be at full rich mixture regardless of operating altitude or airport elevation. Excess fuel is needed for cooling and detonation suppression because of the high induction air temperatures created by turbocharging.
f. Always consult the POH for variations of procedure and limitations which apply to the engine installation of each specific aircraft model.
To summarise, service instruction No.1094, the Engine Operator's Manual. and the Pilots Operating handbook give specific leaning information for the engine or aircraft model. These additional summary items also apply to the leaning of Lycoming engines. Proper leaning is a factor in keeping CHT in the specified temperature range. the engine should be operated at a lean setting during descent from cruise altitude to traffic pattern altitude. The mixture control should be placed in rich before increasing power. Normally aspirated, direct drive Lycoming engines should be leaned for cruise (75% power or less) at any altitude. Because leaning techniques vary, the POH for each aircraft should be carefully studied. Finally, a thorough checkout in the aircraft will help leaning as well as all other operating techniques.

Thanks to Hans Bannink for providing the article, and thanks to the Lycoming Corporation for writing it & allowing it be be printed here.

LORD HOWE ISLAND IN A SINGLE

Legally one could check the weather at each end and enroute and take off from Moruya, set course of 049° and 520nm later, 3000' Mt Gower would be a welcome sight, and the mighty Mooney would still have reserves.
Reserves for what? the nearest alt is PMQ 317 nm away - you would need some friendly winds to make a more attempts, & if unsuccessful head west.
It was a casual comment I made to Alan Currie about direct flight which quickly brought me to my senses and not take LHI lightly.
On referring to my Jeppeson charts, extreme caution is to be taken in free winds over 12 kts (quite common apparently). Accordingly I took up his suggestion to contact an Oxley airlines captain (this one having 5 yrs experience) for a briefing. After checking my limited experience he offered to send me a fax of company protocol when landings & takeoff from LHI saying he had both his most relaxing and most hairraising flying experiences. The latter including being flicked almost inverted on final!
I received 8+ faxed pages on how to best manage safe landings & takeoffs in 6 or 7 different wind directions. Hair raising stuff.
Armed with this valuable (& at one time compulsory info & incidentally I feel should still be) I re flight planned via PMQ.
Since reading an article in Dick Smith's Aust Geo on this spectacularly beautiful island, I've had the hots to go there & hopefully to nearby Balls Pyramid where some of Australia's best and biggest kingfish can be caught.
We blasted off to PMQ Fri night, off from MRY at about 1620 & climbed into clear skies to 7000'leaving a benign looking cloud bank approaching from the south west. After Nowra I noticed the winds were not as forecast, from a cross wind to a tail, with the GPS showing 170kts. I wasn't phased by this & 2 hr15 min later we were refuelling at PMQ. Calm balmy night & the friendly Oxley refueller offered us a lift into town to a motel for the night & 2 "free" life jackets - but as he had no keys we'd pick them up in the morning.
The motelier was also a friendly man, and we arranged for early departure. Saw the news & weather looked ok for early Sat dept. Woke about 0300 to the sound of palm trees slapping against the windows & saw patches of cloud. Back to sleep until 0500 & woke to find wind & some rain. Forecast very ordinary with SW increasing & an INTER between 02 & 08. route forecast wasn't too bad & LHI was SW @ 10kts, 19° @ 0500. Deep thought & an executive decision - not easy before dawn, but I bit the bullet & went for it. The calculated risk being to out run the front which passed through earlier.
Bolted breakfast, no time for a shower & off to the airport. Bashed on the door of the sleeping refuellers van (freight run @ 0300), borrowed 2 life jackets & we were in the air by 0615.
Climbed through cloud between 3000 - 6000 to cruise 7,500' VFR, no HF. Over 8/8 & through the occasional hole I noticed heavy whitecaps below. the goods news was 180 on the GPS, the bad news, the cloud stretched forever into the rising sun. I asked Syd for an update on LHI & got the 0700 report at the WX station there before flying out of radio range. Still 19° & SW wind, 12 kts. Cloud still building up as we passed the 1/2 way mark & into silent radio flight. Still long whitecaps below.
Precy checked her finger nails for colour (remember Alan Curries' lecture at Brampton Is?). At Gander 200nm out a few holes below, & called up Oxley's discreet frequency to see if anyone was in the air for advice. 1 unreadable reply, so pressed on into the rising sun & then @ 250nm the cloud peaked & became scattered up front, so pushed the nose down @ 500'/min & got 200kts on descent. Sea less ruffled & soon talking to LHI marine on 126.7, wind now SW @ 20kts.
More deep thought, checked the 3 wind socks to see that I did have a tail wind both ends & decide into the wind on 28 & risk turbulence & sheer or down wind on 10. LHI marine kindly contacted a local "expert" to confirm 10 as the best option. Other than some minor turbulence in final passing Rabbit Is, a perfect & easy landing.
Geronimo! on the ground at 0820, not even breakfast at "Pinetrees" where we were staying. As we tied the plane down, the wind increased to 25kts & 2hrs later was gusting up to 45kts in parts of the island. It blew for 2 or 3 days, just as well we left when we did. Even the Kingairs & Dash 8's looked a bit awkward crabbing in.
What a wow of a week we had, riding, hiking, swimming,feeding fish & finally got out catching them on the 2nd last day. The first was a groper, took 2 of us to land ! , followed by a few energetic winter kings & 6 sharks.
Not to mention our marriage performed by Judy Mortlock, first lady of the island. this was performed at beautiful Settlement Beach.
Reluctantly we had to leave Sat morning. Just as well we were in the mighty Mooney & had sufficient fuel left to do a local flight around the island & spectacular Balls Pyramid rising vertically out of the Pacific to 1,900'. Back to PMQ with designated reserves. The Island sent us on our way with a nor easter but this gradually faded with altitude. The return flight taking about 2 hrs 40 mins. We chose econ cruise of 21ins & 2,300 RPM & returned 35 L/hr needing only 164 litres to fill SXU up at PMQ. AVGAS IS $1.25/L on the Island. Climb out was only 650'/min with full tanks & a few souvenirs - 15 kentia palms.
But MRY came up after only 2 hrs 30 min, yes we even got light north easterlies to blow us home, landing about 1530. As my instructor says "Another successful mission without damage to man or machine"
To sum up:- a clean, well run, well regulated island & definitely worthy of consideration as a future Mooney fly away. Sadly though we have recently been pipped at the post by the Bonanza Society. I wonder if they had as good a time as Precy and I had? I'll bet some of them had to take on fuel at the Island.
Yours in Mooneying
Dave Morgan.

WHAT A SNEAKY PAIR !

Ran away with their Mooney & got married.
CONGRATULATIONS DAVID & PRECY
from all Mooniers & their Mooneys.