

February 2004
Newsletter No.109

AIRTOURER ASSOCIATION



Dedicated to the preservation and continued airworthiness of VICTA and AESL Airtourer Series Aircraft



NEWSLETTER

<http://www.Airtourer.asn.au>

Queensland Air Museum takes delivery of Airtourer

The Queensland Air Museum (a member of the Airtourer Association) held a re-enactment of the Wright Brothers first powered flight on 17th December 2003.

Following the re-enactment there was another ceremony to hand-over to QAM, Victa Airtourer 100 VH-CFE, which has been lovingly restored by Tank McPherson and his staff and students from the Queensland Institute for Aviation Engineering at Caloundra Aerodrome. Three years earlier, the derelict Airtourer had been delivered to Tank in pieces. When it was first acquired by QAM, many parts were missing and the airframe was dam-

aged and corroded in several places. Work performed by Tank and his students included the manufacture of missing parts and the complete re-skinning of one wing.

QAM records its gratitude to Tank McPherson and the Queensland Institute for Aviation Engineering. The Australian designed and built Airtourer is a most prized exhibit and one which QAM will display with pride.

The handing-over of a Victa 100 is an entirely appropriate means of commemorating 100 years of powered flight.



Tank McPherson (left) presenting CFE to QAM Secretary David Bussey.

Victorian Christmas Fly-In

6th & 7th December 2003

Mungo National Park

John Treble

The weekend may have been arranged as a Fly-In by Wendy and Hector Blemings but in the end they drove. So also did Bob and Pat Peak arriving on the Friday. The bulk of the flyers were packed and tied down behind the Lodges in time for lunch on Saturday.

The afternoon was an interesting bus journey to the National Park display area plus the over 100 year old large shearing shed. The guide gave us an informative history of the area followed by a 10 kilometre drive across the dry lake bed to the Walls of China. A one hour walk around the sand dunes gave us a good insight into how the people lived here all those

years ago. Sunday morning was taken up within the lodge with plenty of general talk and aeroplanes in particular.

Stan and Andy took the new managers formation flying for about 45 minutes, their first flight we believe!

Doug and Sue flew in to join us for Sunday lunch then by mid afternoon all had departed for home.

A good place for a stopover, good accommodation and meals.

A pleasant fly-in enjoyed by everybody in the good old Airtourer Association.



The Lakes

The lakes were filled with water from Willandra Creek, a distributary of the Lachlan River, during the last period of glacial activity. They dried up about 15,000 years ago. Lunettes (crescent-shaped sand dunes), which formed on the eastern margins of these large, shallow lake basins, survived relatively intact. It is the internal structure of these lunettes that holds information relating to past climates, environments, and Aboriginal occupation.

When the lakes dried up, the Aborigines depended more on food products derived from seed grinding and hunting. Large grinding dishes have been found on the lake floor and these serve as evidence of seed grinding practices.

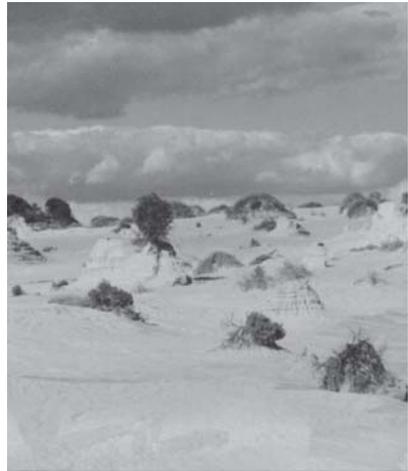
The ancient human skeletons found at Mungo are remarkable in that their physical structure is very similar to that of modern people. The first significant skeleton found was that of a young woman. It revealed the earliest known use of ritual burial practices. Called the "Mungo I" cremation, the ceremony involved cremating the body, smashing the charred bones and then burying them in a small conical depression. This event took place approximately 26,000 years ago.

The "Mungo II" finding was loose human bone embedded in calcrete. It is still being studied but archaeologists estimate that it is probably the same age as Mungo I.

Discovery of the "Mungo III" burial revealed the earliest known use of ochre. The skeleton found was that of a tall male estimated to have lived about 28,000 or 30,000 years ago. The body had been placed in an extended position within a shallow grave, the upper portion being covered in ochre. This was further evidence of some form of ritual being associated with burial. The extent of ochre enabled

archaeologists to determine the grave edges.

Australian National University in Canberra has revealed that the lakes were filled about 45,000 years ago and remained full for at least 15,000 years. However, there were periods of low water levels. The sediment types found on the lunettes and lake floor reflect water levels – and hence environmental conditions – at the time they were deposited.



Mungo Attendees

MTI Gerry & Pam Lawson
 BNV Mike Fisher & Dot Ross
 WHO Peter & Bernadine Hupfeld
 FVV Andy & Jane Morris
 MTL Stan & Bonnie Tilley
 CTM Doug Stott & Sue White
 CRK John & Doreen Treble
 MVI Stuart Krickhauff
 CND Allan Dalrymple
 Car Bob & Pat Peak
 Car Hector & Wendy Blemings

Use of GPS in VFR Navigation

John O'Halloran



GPS has proven to be one of the most useful developments for general aviation in recent years. It provides a wealth of accurate information at an affordable price. Yet the authorities continually warn of its dangers despite actual experience of reliable operation and accuracy measured in metres.

This article will look at some of the dangers of relying too much on GPS and develop a technique to integrate GPS into the normal VFR navigation routine.

GPS can provide incorrect information. Errors can develop from two broad sources, the GPS system and human error. The system errors are beyond the scope of this article. Suffice to say that the number and geometry of the satellites are a factor. The receiver will often give an estimate of its accuracy using a term such as Estimated Position Error (EPE). The EPE value is a distance and usually means that there is a high probability (usually 95%) that the computed position is within the EPE distance of the actual position. This value is usually small (<10M) and should be checked before using the GPS for navigation.

Human input errors are recognised as a major problem with automation systems in modern airliners and has been a contributing factor in accidents. Whenever data is entered into a GPS some form of crosscheck or gross error check must be made. Such a check could be a comparison with an independent source of data such as the flight plan.

Most modern GPSs have built in

databases of airports, nav aids and waypoints etc. They are updated frequently and a current database is a requirement if GPS is used as a sole means of navigation. Realistically the GA VFR pilot does not need and cannot justify the cost of these updates. Nevertheless errors can develop over time as nav aids, routes and waypoints change. The changing airspace situation in Australia renders the GPS generated airspace boundaries unreliable. In fact over reliance on GPS has been identified as a factor in violations of controlled airspace.

Integrating the GPS into conventional navigation.

The basics of VFR navigation should not change with the use of GPS but rather the GPS should be integrated into the proven navigation routines.

Planning. The first step is to plan the flight. In the most basic form this means creating a navigation log with a minimum of tracks and distances. This may simply be a line on a map with annotations. If the route is entered into the GPS unit then the data entry errors should be checked by comparison with the conventional log. Differences of greater than 2NM or 2 degrees should be investigated. One possible source of error is the waypoint, is it the town, airfield or nav aid?

After Start / Before Takeoff. Prior to departure, the GPS should be checked in a similar manner to other aircraft systems. Once

it has sufficient satellites to operate in 2D or 3D navigation mode, check the EPE and present position. The position could be confirmed by Lat/Long but this is probably a bit tedious. Alternatively a DIRECT TO or GOTO the current airfield or relevant navaid should yield a sensible bearing and distance. If operating from a non plotted airfield then a GOTO the first waypoint should give a bearing and distance that cross checks with the log.

Tracking. Most GPSs have an enroute tracking page with a Course Deviation Indicator (CDI) to display distance off track. It would be reasonable to use this display for tracking once the initial checks were satisfactory.

On departure the normal orientation and checks should be made to once again confirm that the GPS is taking us in the right direction. The normal tasks of updating the log with the departure time and first ETA obviously must be completed although the GPS ETA will be incorrect due to the slower climb speed.

GPS Confidence Checks. There are a couple of basic confidence checks of the GPS that should be incorporated into the navigation routine. The GPS information should be reasonably consistent throughout the flight.

We do not encounter jetstreams at our altitudes so the heading should be reasonably close to track and consistent with the forecast wind. If the drift changes from 5 degrees to 20 degrees over a short time then the reason should be investigated. Similarly the ETA should be consistent with the log and not change more than a couple of minutes depending on the leg length.

Routine Fixes. A normal cross country routine involves position checks every 10 to 15 minutes. The starting point is the clock to determine the distance from the last fix to estimate the present position. A new fix is obtained by starting with the estimate present position and checking map to ground. With GPS it would be reasonable to use it's distance to go information as the starting point for the map to ground check. Once a positive fix is obtained from the ground it would be reasonable to continue tracking on the GPS. If there is any uncertainty then go back to time as the starting point.

Turning Points. Based on the foregoing would you expect any major differences in the turning point checks?

If the GPS turning point coincides with the ground feature then the GPS accuracy is confirmed. The GPS track, distance and ETA



for the next waypoint is crosschecked against the log and the tracking is continued on the GPS.

Conclusion. The GPS can be a great aid to the VFR pilot BUT ONLY if the information it provides is accurate. The danger lies in not recognising erroneous information and it's ironic that the usual GPS system accuracy and reliability heightens the danger of missing

these errors. A suitable way to use the GPS for VFR navigation is to incorporate it into the normal navigation tasks just like other aids like the map, ADF or VOR. The normal navigation routines should crosscheck the GPS information against the conventional log. So long as the GPS information is shown to be accurate it would be reasonable to continue to use it for tracking and ETA.

Summary of GPS in VFR Normal Procedures.

Preflight.	Cross check the GPS tracks and distances against the Navigation Log.
Before Departure.	Check GPS in Navigation mode. Check accuracy by EPE and present position.
Departure.	Set track using GPS CDI function. Ignore initial GPS ETA.
Enroute.	Normal 10 minute checks GPS to MAP to GROUND. If conflict then revert to CLOCK to MAP to GROUND. Monitor GPS for sensible drift/ground speed/ETA
Turning Point.	Check GPS position to the ground feature. Cross check track/distance/ ETA against the log.

Flight Manual Supplements

Very little has changed since the report in the last Newsletter. The Supplements were sent to CASA in May and they are still awaiting review and approval by them. As the current exemption expires at the end of February the Association has written requesting an amendment to when the exemption stops. We are requesting the hard date of the "end of February" be removed and the "four weeks after a supplement is approved" remain. The justification being that the supplements have been written and CASA is the reason why the February deadline cannot be met.

Co-Op News

Type Certificate Court Action.

As reported in the last Newsletter the various parties were to appear in court on 10 December. The Co-Ops lawyers received a notice of Motion and Affidavit from MAI's lawyers the day before this hearing. While this was outside the timetable originally laid down by the Court little could be achieved by pursuing the point. The Notice of Motion will now be heard on 6th February.

This action is once again seen as a delaying tactic.

The Directors should have more to report at the Co-Op AGM.

Co-Op Annual General Meeting.

Notice of the AGM is included elsewhere in the Newsletter. This meeting will be a little different as it is the first under the structure of a Co-Operative without Share Capital. When the conversion was made all shareholders automatically became members of the newly structured Co-Op. However the rules refer to "Active Members" being members who have paid the annual subscription and avail themselves of the services of the Co-Op. Only active members are eligible to vote at the AGM.

Heard at the Hangar Door.

Doug Stott is off on a five week contract with IATA (International Air Transport Assoc) to attend the IATA Safety Committee Classification Working Group meeting in Paris. This will be followed by a month in Montreal to assist with the writing of their annual safety report. He will be back in Australia during the week of 28th February. Sue will join him in Paris but has foregone Montreal as recently it was minus 27 degrees C!!

Ron Stebiel had been unwell for some of last year but the doctors have declared him healthy at present. Good news Ron. Last year he spent some time fishing with Pat & Cath Kelly and has now bought a boat.

Stan Tilley reported in the last Newsletter how his new engine was running very well. At that point he had not turned the Airtourer upside down. Unfortunately when he did the oil pressure was lost and the propeller caused the engine to overspeed. It turned out that two of the oil lines to the inverted oil system were transposed. Stan now finds himself in the unfortunate position of having to strip and reinspect his newly reconditioned engine. Then of course there's the discussions on who is going to pay. Let's hope it's all sorted out by Temora.

Every now and again the Secretary receives returned mail and appears to "lose" a member. Long time member and past Secretary **Barry Gray** was a case in point. After having Barry's mail returned for some time we received an update from him this month. He is working about 200km inland from Port Headland on a three weeks on, one week off pattern. He lives in Perth near Jandakot airport during the week off and is still asking after MOI.

AGM 2004

Temora

26th, 27th & 28th March 2004

Have you booked your accommodation?

Motels will hold rooms until the end of January, see notification sheet sent out in December for accommodation details or contact the Editor.

WEEKEND ACTIVITIES

An information sheet will be provided when registering on arrival at Temora.

- Friday** Dinner at the Terminus Hotel.
- Saturday** Museum flying from 10.30am to 2.30pm.
Sausage Sizzle lunch at the Aero Club.
Local flying, formation and swapping rides after museum flying.
- Saturday Night:** AGM Dinner at the Golf Club.
- Sunday** 9:00am Airtourer Association AGM at the Aero Club
9:45am Airtourer Co-Op AGM at the Aero Club.
Museum flying 10.30am to 2.30pm.
Lunch provided by the Aero Club.
Early departures & local flying.
- Sunday Night:** Barbeque Dinner provided by Aero Club.

There will be a couple of 22 seat buses provided for shuttle services from Friday to Monday morning. At least one bus will be available to travel to local attractions for those not wishing to spend the whole time at the airfield.

NOTAM: Do not plan any arrivals, departures or local flying during 10:30 am to 2:30 pm due to Museum flying.

The Oil And Your Engine

Reprinted from the Lycoming Flyer

There are two basic types of FAA approved aviation oils used in general aviation aircraft piston engines.

1. Straight mineral
2. Ashless dispersant (AD)

Many Lycoming engines use straight mineral oil for “break-in” purposes with a new, remanufactured, or overhauled engine. The operators should then switch to AD oil after “break-in” has been accomplished. In those engines that use straight mineral oil beyond the normal break-in period (25 to 50 hours), a later switch to AD oil should be done with caution as loosened sludge deposits may clog oil passages. Oil screens must be checked after each flight until clots of sludge no longer appear.

Those Lycoming engines that are to be broken-in with AD oil include all turbocharged models, the O-320-H, and the O/LO-360-E

Since modern FAA approved Ashless Dispersant oils already include additives that make them superior to straight mineral oil, the use of additional oil additives in Textron Lycoming engines has been very limited. The only additive approved by Textron Lycoming is Lycoming part number LW-16702, an anti-scuffing, anti-wear oil additive. The policy governing use of this oil additive is spelled out in the latest revisions of Service Bulletins 446 and 471, and in Service Instruction 1409. These publications approve the use of LW-16702 for all Lycoming reciprocating engines except those that utilize a friction type clutch and a common engine oil system for the transmission and clutch assembly. The use of LW-16702 is re-

quired in certain engine models. These models are the O-320-H, O-360-E, LO-360-E, TO-360-E, LTO-360-E, TIO and TIGO-541.

Clean engine oil is essential to long engine life, and the full flow oil filter is an added improvement over older methods of filtration. Generally, service experience has shown that the use of external oil filters can increase the time between oil changes provided filter elements are replaced at each oil change. **However, operation in dusty areas, cold climates, and where infrequent flights with long idle periods are encountered, will require proportionately more frequent oil changes despite use of the oil filter.** The oil and oil filter element should be routinely replaced after each fifty hours of engine operation, and the filter should be cut open in order to examine the material trapped in the filter for evidence of internal engine damage. In new or recently overhauled engines, some small particles of metallic shavings might be found, but these are not dangerous. Metal found after the first two or three oil changes should be treated as an indication that a serious problem is developing and a thorough investigation should be undertaken. The oil filter does not remove contaminants such as water, acids, or lead sludge from the oil. These contaminants are removed by changing the oil.

The oil filter is even more important to the high compression or higher power engine. Some of the aircraft manufacturers have had good success in the small, lower compression, four cylinder engines without using a full flow filter. Generally speaking, these engines are also

able to achieve their expected overhaul life, as long as oil is consistently changed, and operation and maintenance is accomplished in accordance with the airframe and engine manufacturers recommendations.

The latest revision to Textron Lycoming Service Instruction 1014 gives recommendations for lubricating oils, oil change intervals, and engine break-in. Pilots and mechanics should know what weight, type, and brand of oil is being used in the engine being serviced. At each oil change, this specific information should be recorded in the engine logbook. Except as a temporary measure in an emergency, different oils should not be mixed. Consistent indiscriminate mixing of oils may create high oil consumption problems, or clogged oil control rings and oil screens.

Oil consumption is a very important engine health trend to monitor. The operator

and maintenance people should know the general history of oil consumption during the life of the engine. It is typical of an engine during seating of new piston rings that oil consumption may be erratic or high; but after the rings are seated, generally within the first 25 to 50 hours, oil consumption should level off below the maximum limits established by the manufacturer. Later, during the life of the engine, if there is a noticeable increase of oil consumption within a 25 hour period, this could be a possible danger signal and calls for an investigation. The oil screens and filter should be carefully observed for signs of metal. Maintenance personnel should take a compression check of the cylinders, using differential pressure equipment, and also look inside the cylinders with a borescope or gooseneck light to detect any unusual conditions.

Calendar of Events

Annual General Meeting Fly-In

Temora 26-28 March 2004

Details this Newsletter

Mount Gambier Fly-In

6th & 7th March 2004

General Aviation Fly-In to demonstrate to the Mount Gambier community the great variety of options available to the budding or ex-aviator.

No landing fees. For additional information and accommodation details contact

Airtourer Association member Chris Hamilton.

PH (08) 8723 4000 FAX (08) 8723 4111

Email: chris@hamiltonslawyers.com

THE SHERIFF OF LOCKINGTON INTERROGATES.....

Debbie Evans

(Interrogated on 3rd August 2003 in the confines of her lovely home in Cairns, while Debbie machine embroidered Mickey Mouse on a towel, and suffered interruptions by husband Rick.)



1. Your occupation? Manager of Ray Hall Turbo Charging, and the only female in the Industry. Have worked there 11 years. This job takes me to Papua New Guinea at times, and I went to a conference in Los Angeles for 2 days then spent 2 weeks in Disneyland. Once I went to a conference in Sydney and was the only female there, but that didn't worry me when I could coincide it with the "Stitches and Craft" show. I've a great boss who treated me to a business class ticket around the world in 2001 - London, Cairo, New York, Washington, Florida, L.A., Sydney and Cairns. The only problem was when I got back I had 6 weeks of mail and invoices to attend to!

2. Where were you born? Sydney, my father was a builder.

3. Where have you, and do you live? Bateau Bay, near Gosford; Sydney; Canberra; Cairns.

5. Aircraft Type & Registration? AT 115hp - VH-IOF.

6. What got you interested in flying? My Great Uncle learned to fly with Kingsford Smith. I came home from school and announced, "I want to fly" - later I was able to take Uncle Jack flying. I learned to fly at Warnervale at School as an HSC subject in Year 11. To pay for my flying I worked in a fruit shop, baby sat for a Policeman, and worked part time at McDonald's. For 2 years I never spent a cent, and got my PPL just before I turned 17. I moved to Sydney and lived with Grandma to finish school and do my Commercial, and worked as a Store Manager of White & Brown goods. Started my Unrestricted then joined the Airforce for 6 years where I worked as a Pay Clerk, and got posted to Canberra, not by choice, but then I wouldn't have met Rick who later was posted to Canberra. I became Captain of the Canberra Aero Club - competitions



every weekend. I got to fly IOF but couldn't land it - finally Control Tower got to go home. Thus started the 13 year relationship with Rick. (*Who in the back-ground moaned, "Look where it got me!"*)

7. Total hours flown? 600

8. What was one of the most memorable flights you have done? Our Honeymoon to Longreach, a nice trip. I'm not into Outback flying and camping, been there done that. Rick and his mates can go.

9. Other interests? Patchwork, Embroidery,

Porcelain Dolls, Competitive Ice Skating. I'm a member of the Australian Women's Pilot Association, and have been for 22 years, as long as I've been flying. The 2002 AGM was held here in Cairns which was great.

Thanks Debbie for a great insight into your interesting life. Thanks also for the great hospitality you extended to Lindsay and myself, for a 'prison' it was extremely comfortable and welcoming, and worthwhile the stay. "The Sheriff".

For Sale

Victa parts, fuses, U/C legs, ailerons, flaps, tail planes, canopy, instruments, far too many parts to mention. Parts of 3+ aircraft. Lots of parts serviceable.

Also Lycoming O 235-L2C engineso so many parts!

Also old Maurane Saulhier "Rallye", Turbulent, Soneraï.

Ring, visit, look and see, ask questions to express interest.

Bill (Gunnar) Miller Ph: 03 53904230 Fax: 03 53904216

AESL Airtourer T6 For Sale

AESL Airtourer T6-24 VH-OVV

\$73,000

Roy Riddel 02 6653 6050

For Sale - Victa 100 VH-MFN

This a/c is extensively improved with new canopy, cleveland brakes, new seats, belts, flight control linkages, battery, and much more. 6 year wing inspection completed at last 100 hourly, being Aug. 8000TTIS, 1400 ETR, 400 PTR. So, it has a lot of life left in it and only now could do with a paintjob. No corrosion, always hangared.

P.O.A. Ph Tony Renshaw (02) 94821986 or e-mail victa100@optusnet.com.au

NOTICE OF ANNUAL GENERAL MEETING Airtourer Association Inc.

The Annual General Meeting of the Airtourer Association will be held at the Temora Aero Club, Temora Airport at 0900 on 28th March 2004.

Agenda:

- Presentation of Minutes of the previous Annual General Meeting (Published in the May 2003 Newsletter.)
- Business Arising from the Minutes.
- Presentation of Reports
- Election of Office Bearers
- Other Business

NOTICE OF ANNUAL GENERAL MEETING Airtourer Co-Operative Ltd

The Annual General Meeting of the Airtourer Co-Operative will be held at the Temora Aero Club, Temora Airport at 0945 on 28th March 2004.

Agenda:

- Presentation of Minutes of the previous Annual General Meeting.
- Business Arising from the Minutes.
- Election for retiring Board Members
- Other Business

Note: Only active members may vote at an AGM.

Committee Elections

The Rules governing an Incorporated Association lay down the following requirements for election of the Committee:

- The Committee shall consist of a President, Vice President, Secretary, Treasurer and 3 Ordinary Members.
- Nominations must be submitted in writing to the Secretary.
- There must be 2 Proposers and the Nominee must state acceptance of the nomination.
- A member can be only nominated for one position.

Nominations are called for all positions on the Committee to be elected at the AGM as notified in this Newsletter. Nominations are to be sent to the Secretary at the following address on the attached or similar form.

Secretary: John O'Halloran
 P.O. Box 778
 Tewantin QLD 4565
 FAX: 07 54425180

Airtourer Association Nomination for Election to the Committee

I nominate _____
 for the position of: *(mark appropriate position)*

- President**
- Vice President**
- Secretary**
- Treasurer**
- Ordinary Members (three positions)**

Nominated by (Signature) _____

(Name) _____

Seconded by (Signature) _____

(Name) _____

I agree to being nominated for the above mentioned position.

Signature of candidate: