

# Carb Heat

Hot Air and Flying Rumours Vol 35 No. 02

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# February 2005

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Next Meeting:

# Thursday, February 17th. 7:00 PM National Aviation Museum BUSH Theatre

**Feature Presentation** 

**Aircraft Owner Responsibilities** 

Presented by Wayne Juniper of Transport Canada

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#### President's Page

The start of Winterlude heralds the mid point of our long winter, and a time to work on projects and plan for a return to the flying season. **Martin Poettcker** has been busy on the new and improved version II of his torsional vibration dampener for his Subaru conversion on his CH601. **George Elliott** has been busy on the rebuild of his recently acquired Lazair, and an ignition system upgrade to his twin power plants. **Grante Estes** has been finishing off engine work on his re-engined Pelican. **Curtis Hillier** has been working on his Davis fuel tank mods for his planned flight north to James Bay this summer. While **Bill Reed** chases his elusive vibration problems on his Lycoming O-320 powered CH250, when he isn't helping Ted Slack build skis for the rescue toboggans of the Ski Marathon. The chapter hanger has never been busier, despite the recent bitter cold; drop by some time to say hello!

#### February 20th Rib Building at the NAM:

Sunday, February 20<sup>th</sup> marks a special Silver Dart 96<sup>th</sup> Anniversary at the NAM. To help mark the occasion, **Russ Robinson** and a small band of volunteers will be hosting a hands on rib building exercise for youngsters attending. The trial run last weekend with **Sean Hillier & Megan Montgomery** was very successful and dare I say, the fair sex triumphed? Russ could use some more volunteers, particularly a bilingual one, for our francophone guests, if possible.

#### Mo's Saturday February 26th Fly-In:

Saturday Feb 26<sup>th</sup> marks **Maurice Prudhomme's** annual **ski** Fly-In / Drive-In held on the Ottawa River 8 Km NW of Aylmer on the Quebec side; near the VOR and across from Pinhey's point. Contact Maurice at 819-682-5273 for latest conditions. Maurice tells me his chilli is famous, drop by and give it a try.

GPS Coordinates: 45° 26' 57" N; 75° 55' 48" W. Communications 122.75 monitored. Land at your own risk.

#### Membership Renewals:

Just a reminder, that John Montgomery will continue taking membership renewals for the 2005 season at our February meeting. Please ensure that you provide your EAA membership number and renewal date. Also check that your email address is correct. March will be the last chance for renewals, and continued receipt of the newsletter & chapter privileges.

#### January 20th meeting summary:

**Charlie and Gwen Martel** gave an excellent presentation on their trip out west in their trip out west to a full house as usual for our favourite flying family! Of particular note was the extreme importance of proper flight planning and weather briefings once you start on serious cross countries. Charlie is seriously considering working towards an instrument rating to increase safety on these long journeys. Having attempted a similar journey in my Lancair in 1993 I understand the challenges; particularly after having to leave the aircraft in Calgary and proceed to BC via car because of unrelenting rain.

#### Upcoming meetings/Events.

Mar 17th	Claude Roy/Andre Girard: Challenger flight trip to North Shore Quebec/Labrador area.
Apr 21 <sup>st</sup>	Adam Hunt / Simon Garrett (RockCliffe CFI): Regaining Currency.
May 19th	Gary Loubert: Electonic instrumentation updates. Last NAM meeting till September
June 18th	Oshkosh Bound: Our annual Oshkosh flight planning video session Saturday at Chapter clubhouse

#### Thursday February 17th 7:00 PM: "Transport Canada's Wayne Juniper".

**Wayne Juniper** of Transport Canada will present a session on **Aircraft Owner Responsibilities**. Topics discussed include, An Overview of the CAR's, Elementary Work, Maintenance Schedule, Owner responsibilities/ AME responsibilities and Airworthiness Directives; and will qualify for a **currency sticker** for licensed pilots. Note the meeting will **start an hour earlier at 7:00 PM at the Bush Theatre**, running to the normal departure time of 10:00 PM

Gary

#### Carb Heat

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# News from around the PATCH

#### From the COPA website: http://www.copanational.org/

#### **AIP Now Available On-Line**

The AIP is now available on the TC website as an Adobe Acrobat PDF document. It can be downloaded in sections or as one big document. It can be found at

<u>http://www.tc.gc.ca/CivilAviation/Regserv/Affairs/AIP/pdf.htm</u> in English and at <u>http://www.tc.gc.ca/aviationcivile/Servreg/Affaires/AIP/pdf.htm</u> in French.

TC has indicated that an HTML version will follow next year so that the AIP can be downloaded in smaller sections and that will also meet the Federal Government's accessibility requirements. More information is available at the COPA website: <u>http://www.copanational.org/non-members/index.htm</u>

#### **Our Next meeting**

The last two pages of the newsletter contain a Transport Canada Checklist that Wayne Juniper will discuss during our next meeting. Wayne suggests that we all fill out the form and bring it to the meeting. If you have all the information/paperwork required to complete the form then you will be able to pass a ramp check provided you have the backup documentation with you. Have an interesting time checking the CARs and filling out the form. I know I found some gaps in my documentation which I have since filled in.

#### <u>Please Note</u>

The email addresses have been altered in this newsletter to help resist spam scanners. The "<u>@</u>"has been replaced by " at ": and the last "<u>.</u>" replaced by " dot "

### News from EAA HQ

#### **EAA's Aviation Services**

EAA members are one call, email or letter away from a wide range of technical aviation services available from the Aviation Services Department at EAA. First and foremost, the Aviation Services Team is responsible for answering member technical inquiries relating to pilot and aircraft issues. This one-on-one consulting covers everything from "How do I register my homebuilt?" to "What's involved in the A&P exam" to "How do I convert my ultralight for the new sport pilot rule?" and more.

Experienced pilots, aircraft owners, homebuilders, ultralighters and sport pilot specialists staff the department. Their personal and professional experience enable them to field just about any technical aviation question that comes their way. And if they can't answer your question right away, they'll do the research needed to help guide you to the right resource or solution. EAA's in-house library is an additional resource the Aviation Services team counts on for information and the library is also available to members visiting the Oshkosh headquarters offices.

The Aviation Services Department supplies a great deal of the technical information found on the Members Only portion of EAA's website at <u>www.eaa.org</u>. The Homebuilders Headquarters section on the site provides a wealth of information on building, maintaining and flying an experimental amateur built aircraft. A significant amount of the content on EAA's Sport Pilot website page is also developed by the Aviation Services team.

Two of the most popular "hands on" offerings from the Aviation Services Department are the Technical Counselor and Flight Advisor programs. There's a network of over 1,000 EAA members across the US who are registered EAA Technical Counselors that will come to your homebuilding location to provide in-progress inspection of your project. The Flight Advisor program has several hundred EAA members who will provide EAA 245 Newsletter

advice and assistance on taking that first flight in your new homebuilt aircraft.

FAA Medical assistance is one of the individual offerings also available from the department. If a member needs assistance receiving a special issuance from the FAA, Aviation Services personnel will track the application all the through the process until approval to ensure that nothing derails your application. In addition, we have a network of doctors that are AMEs and EAA members who volunteer their services to help other members retain or regain their medical.

For more information on your EAA Technical Services offerings please call 1-800 –EAA-INFO. They're ready for your questions!

#### Feature Article submitted by Curtis Hillier

# **Flying In the Deep Freeze**

By <u>Jeff Pardo</u> originally published in iPilot.com: *1/24/2005* 

Since it's January, and I happen to be in northern New Jersey where evening temperatures have been dropping into the single digits this week, I'm feeling particularly motivated to bring up the subject of winter flying. If you're feeling a bit cramped and compromised by cold weather though, take heart, because it could be worse: you could live up in Frostbite Falls.

These folks could teach us a thing or two (besides being thankful that if we do have single digit temperatures, at least they're probably not preceded by a minus sign). I think it might be especially apropos to accentuate the subject of winter flying with a real-life introduction to what to most of us would consider to be the penultimate caricature of winter, which is what flying in northern Minnesota makes abundantly clear. (And no, there isn't really a Frostbite Falls in Minnesota—or Maine, either. But it was probably the inspiration for the supposed home turf of that now-famous genre cartoon featuring a certain moose and flying squirrel.)

Seriously, the point is that there are some very illuminating things regarding pre-flights, piloting techniques, and caring for aircraft that we can learn from the pilots who regularly brave wind-chills that effectively bring Antarctic air to the middle of America. And there's no dishonour in learning by extrapolation, if it brings the point across. So what's it like in a place like International Falls, where pilots regularly experience temperatures of 30 degrees below zero, and wind-chills that can approach one hundred degrees below zero?!

For one thing, there's no shortage of snow up there.

They get somewhere around eight feet of the stuff each year. But snow or even ice is not the principal problem. The most confounding enemy is simply the cold itself. When it's 15 below, you probably want a snowsuit or mukluks (and don't even think about starting your engine without a preheat). But your plane needs a few things, too. Here are a few other things to think about:

\* In such extremely cold temperatures, the engine breather tubes for piston aircraft (especially the end portion) can freeze over completely. When blocked, the crankcase can become pressurized, and engine oil is literally blown overboard. Operators in these northern climes use insulating material around the breather tubes and also drill holes in the side, which permits continued venting, if the ends of the tubes still freeze up. The message here, for the rest of us: when it's really cold, check that the breather tubes are still able to (breathe, that is).

\* Pilots flying in extremely cold air have also learned to use a couple of different techniques when it comes to the mixture control and carburetor heat. First, they have learned to leave the carburetor heat on during taxi, and during at least part of takeoff, as well. It isn't because of carburetor ice, though; the air is usually quite dry. It's simply because the induction air can be so cold (having a greater density) that introducing this unheated heavy air can result in a mixture that is actually too lean for the engine to operate properly. (Think about that: We lean out the mixture when the air gets thin, but we don't often stop to think that since we can't enrich the mixture beyond the default "full rich" of sea level, that the only recourse might be to artificially thin out the air, when it gets too thick!)

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\* Also, once an airplane is shut down, it has sometimes proven helpful to immediately return the mixture to the full rich position, as well as leaving the carburetor heat on full, because when they come back again to start the engine another day, the controls might be frozen and simply be too stiff to move.

\* Another related aspect of mixture control in very cold air is to remember you can have a higher than normal fuel consumption, simply because the mixture is richer than needed.

\* It is often advised for pilots to leave the power on during the entire descent, to prevent the blasting cold from chilling an idling engine into quitting altogether.

\* Another reason for pilots to learn to fly by sound and feel rather than always relying upon gauges is that in extremely cold air, tachometers can fail or give erroneously high indications.

\* When they leave an airplane out in the cold, they often tie it down with the tail of the airplane pointed into the wind to help shield the engine from flash freezer winds, and help postpone its otherwise inevitable return to frozen dormancy. (I myself would feel comfortable doing this only if there were a guaranteed means for preventing any buffeting of the more exposed empennage, however.)

\* Airplane owners up there have also found that replacing any flush-mounted sump drains with a type that allows them to be pulled shut by hand is very useful, should they get frozen in the open position.

\* Continental polar air such as that in the central United States below the Canadian border can reach temperatures low enough where crystals will actually begin forming in fuel (although 100LL is less likely to have this problem than 80-octane fuel or automotive fuel), and some pilots keep a handy supply of an isopropyl alcohol based fuel drying agent, as well as antifreeze additives.

\* Above all else, the most important measure is still

a proper engine preheat. Surprising to some, it happens that limbering up and heating the engine oil from its sluggish molasses-like state is actually less critical than what can happen to the engine cylinders and the crankshaft themselves, in a subzero environment. The reason is that aluminium shrinks and expands at twice the rate that steel does. When an engine is manufactured, the tolerances used between its various internal moving parts are calibrated in reference to much warmer temperatures. Now imagine an aluminium crankcase, cooling and contracting around a steel crankshaft; or aluminium pistons, heated and expanding inside their cooler surrounding steel cylinders...and you might wince, merely at the thought. Many owners fly aircraft having internally installed pre-heating systems such as the ones manufactured by Tanis, which only require the user to have a spare electrical outlet to provide the necessary trickle of heat to keep hibernation at bay. Interestingly, this imperative isn't just confined to aircraft, but applies to the everyday automotive world as well; many offices, motels, and public buildings in these locales provide outdoor outlets for the installed preheating systems of their customers' cars.

\* Living and flying where it is extremely cold, pilots routinely carry extra cold weather clothing such as snowmobile suits and insulated footwear. (Most aircraft heaters apparently work quite well, but when the temperature drops below zero, that isn't the case.) This should apply to all of us, though, always. Wherever you fly, you should always dress (or bring the proper clothing along) so that you could, in effect, "walk home".

\* And as you might guess, these pilots check their ELTs before every cross-country flight. The reasons are probably obvious, of course.

Just as many of these pointers were probably no great surprise, a few of them were, to me, when I had first heard of them. Being that pilots usually prefer to err on the side of caution, some of these things might be handy to remember, one frigid day. May your flights all be warm ones.

# Mark your Calendars:

Some items have been copied from the COPA Flight and the RAA website.

**Feburary 12, 26 and 27, ST-LAZARE, QUEBEC:** Aero Propulsion Technologies announces Rotax 2 and 4 stroke Aircraft Engine maintenance training. The authorized Rotax Aircraft Engines Service Center for Eastern Canada invites recreational aircraft pilots to familiarize themselves with the operation, maintenance, repair and adjustment of their engines. Cost is CAN\$180+tax for each day and includes a meal and all documentation. Pilots from Eastern Canada and the North-eastern US are welcome. For more information, visit <u>www.rotaxservice.com/training</u>, email training@rotaxservice.com or call (450) 510-1551.

**Feb. 12, Westport (CRL2), Ontario (Rideau Lakes Flying Club) :** Ski Fly <u>Sand Lake conditions are unpredictable due</u> to construction on the Dam. Please use the Aerodrome subject to conditions. Chilifest at the field from 10:00 am till 2:00 pm. Communications on 123.2 for advisory. Call Jim at 613 273 5201 or Mendal at 613 273 2682 for a surface condition report.

<u>Feb. 16, Toronto, Ontario:</u> Transport Canada Aviation Safety Seminar - Decision-Making in Aviation – Part II. The second installment in this three-part program considers judgment, fatigue, stress and your overall fitness. For more information, please contact: Transport Canada System Safety at Tel: 416-952-0175; www.tc.gc.ca/OntarioRegion/civilaviation/system/seminars.htm.

**Feb. 20, Cobden Ontario: COPA Flight 124, Champlain Flying Club Ski** fly-in 5th annual "Ski only" fly-in, from 10:00 until 14:00hrs. No winter maintenance. Pine boughs mark the runways. 123.2 radio advisory. Beans, chilli and refreshments. PF4 in the CFS. Contact Larry Buchanan, 613 638-2792. <u>lbuchan@nrtco.net</u>

**Feb. 26, Outaouais area, Quebec: Moe's February Fly-In** from 10am, Ottawa River, 8km north/west from Aylmer, on the Quebec side near VOR - across from Pennie's Point. Coordinates: 45 26-57N; 75 55-48W. Host Maurice Prud'homme. Important Note: Landing on skis weather permitting. One (1) way will be ploughed. LANDING AT YOUR OWN RISK. Contact Maurice Prud'homme on frequency 122-75 or by telephone at 819-682-5273 for additional information including last minute weather reports and landing on wheels. Come down, enjoy and most importantly, come meet the pilots!

<u>March 5, KARS ONTARIO (Kars Rideau Valley Airpark)</u>, RAA chapter 4928 4th annual Ski fly-in on, Fly drive or walk in. Excellent food for a small donation. Dilworth Road off Highway 416. An all day event, food served from 11 am to 3 pm. This is not an airshow. Contact Dave Stroud (613) 226-7889 for more information.

<u>March 16</u>, Toronto, Ontario: Transport Canada Aviation Safety Seminar - Decision-Making in Aviation – Part III. The final installment of this three-part program examines the use of safety nets and other solutions to help you with your decision-making processes. For more information, please contact: Transport Canada System Safety at Tel: 416-952-0175; www.tc.gc.ca/OntarioRegion/civilaviation/system/seminars.htm.

<u>August 7th 2005 (Sunday) EAA 245 Annual Breakfast</u> from 8 AM to 11:30 AM at the Carp Airport (CYRP). Visit: <u>http://eaa245.dhs.org/FlyIn.html</u> for more links to the airport. We are hoping for great weather for both fly-in and drive in visitors. Persons requiring more information can contact Curtis Hillier at 613-831-6352 or send an email to the\_hilliers at yahoo dot com

#### Newsletter Deadlines

Deadlines for articles and for sale/wanted ads will normally be 2 weeks before the next meeting. The deadlines for 2005 follow:

February – Feb 3 <sup>rd</sup>	August – No newsletter
March – Mar 3 <sup>rd</sup>	September – 1 <sup>st</sup>
April – Apr 7 <sup>th</sup>	October – 6 <sup>th</sup>
May – May 5 <sup>th</sup>	November – 3 <sup>rd</sup>
June – Jun 2 <sup>nd</sup>	December – Jan 2006
July – Jul 7 <sup>th</sup>	Jecomber Juli 2000

# FOR SALE

#### Place your ads by phone with Bill Reed 613-831-8762 or e-mail to bill at ncf dot ca

Deadline is first of the month. Ads will run for three months. You may request a two-month extension. Please let me know if any of the articles have been sold. The space is becoming crowded

For Sale:	BEST	For Sale:	Price
GPS GARMIN 96 COLOUR ALMOST NEW, ALL ACCESSORIES	OFFER OVER \$800	Trimble Flightmate GPS in leather case with all attachments & manual.	\$100
02/05 Garry Fancy (613) 836-2829 <u>cherokee at mag</u>	<u>ma dot</u>	ICOM-IC-A20 handheld nav/com in leather case with charger.	\$150
		09/04 Bill Wilton 613-259-2605	
For Sale:	Price		
Mazda RX7 engine, new still in box	\$3,600.	For Sale:	Price
Reconditioned starter motor 4 x LS1 coils Many other extras.	t.com	NARCO transponder, Model AT50A-TSO Overhauled "Green Tagged" and can be used in certified aircraft	\$1050.
For Sale:	ice	FALCON ALTITUDE ENCODER, made by Rosetta Micro Systems NEW Never used	\$150.
Engine mount for a Rotax 503 (inverted) bulkhead mount \$10	00.	The above two items can be bought together for02/05Evangelos Bakas 613-744-7631 ivanbakas at	\$1150.
Engine mount for a Rotax 582 (upright) bulkhead mount \$20	00.	<u>sympatico dot ca</u>	
180 deg exhaust system for a Rotax 582 \$1	50.	For Sale:	Price
Warp drive prop- 3 blade 68" dia. CCW rotation	\$500	SKY-Tec lite weight starter model 122-12 approved for most Lycoming 4 cylinder engines "NEW in the box" cost \$496 CDN tax incl.	\$400
ignition system and many carb parts. neg 02/05 Grantley Este 613-832-1797 este at co	gotiable ompmore	Cleveland Brake discs (two) model 164-17 for 500-5 main wheel assemblies "NEW in the box" cost \$304 CDN tax incl.	\$250
		INFINITY (right hand) military style pistol grip (3/4 size copy of that used in F-16) Pre-wired and shielded with 4-way hat switch, PTT trigger switch, plus 3 other push button switches. Can handle 8 functions as wired, but can handle 13 functions with switch changes. "NEW" Cost \$235 CDN tax incl.	\$185.

sympatico dot ca

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# EAA Chapter 245 Membership Application

A COLTAWA 243
EAA Chapter 245 Membership Application
NEW: RENEWAL: DATE:/   EAA NUMBER:
OTHER AVIATION AFFILIATIONS: COPA: RAA: OTHER:
Annual Dues: January 1st to December 31st. (porated after March31st for new members/subscribers). Associate Member: \$30.00 Newsletter plus Chapter facilities Full Member:: \$55.00 Newsletter, hangar, workshop, tiedowns. (Note: there is a one time \$200 initiation fee when you become a Full Member) Newsletter subscriber: \$30.00 Newsletter Note Associate and full members must also be members of EAA's parent body in Oshkosh WI, USA

Make cheque payable to: EAA Chapter 245 (Ottawa) Mail to - P.O. Box 24149, Hazeldean R.P.O., Kanata, Ontario, K2M 2C3

# **Articles wanted**

I am always interested in receiving submissions for this, your Newsletter. You may bring articles to the monthly meetings, or mail information to the post office box, or email <u>bill at ncf dot ca</u>

Transport	Transports
Canada	Canada

# **PILOT/AIRCRAFT DOCUMENTATION/EQUIPMENT CHECKLIST**

Date\_\_\_\_\_

#### **<u>Pilot Information</u>**

Pilot License/Permit Number:	Issue Date:	
Туре:	Medical Valid to: _	
Recency Date: (2yr)		

#### **Aircraft Information**

Registration:		
(Record the following in	formation from the Aircraft Identified	cation Plate)
ID Plate location:	Aircraft Manufacturer:	
Model:	Serial Number:	Type Cert. No(Certified aircraft only)
CAR 202.26 Certificate	of Registration Date of Issue:	( <b>)</b> /
CAR 605.03 Certificate	of Airworthiness Date of Issue:	

Review Certificate of Registration and Certificate of Airworthiness to insure that the information identified on these documents is the same as the Aircraft Identification Plate

Note findings:

		Available	
CAR 605.92 Technical Records	Journey Log Book	Yes/No	
	Airframe Log Book	Yes/No	
	Engine Log Book	Yes/no	
	Propeller Log Book (V/P only)	Yes/No	
Weig	nt & Balance		
Date Original Aircraft Weight & Ba	lance/Equipment List comple	ted:	
Latest Amendment Number:	Date:		
Empty Weight:	_Empty Weight C of G Locat	ion:	
(Airworthiness Manual 571 Append	ix C)		
CAR's 605.94 Schedule 1 (2)			
Empty Weight/Empty Weight C of	G Log Book Entry Date:		
CAR 606.02 Proof of Insurance			
Insurance certificate valid to:			
	04/10/14		

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# **Aircraft Equipment**

		Installed or available
CAR 602.60	First Aid Kit	Yes/No
	Checklist (Normal & Emergency)	Yes/No
	Fire Extinguisher	Yes/No
	Time Piece	Yes/No
	Flash Light (night only)	Yes/No
CAR 602.144	Interception Signals, Interception of Aircraft	Yes/No
	and Instructions to Land (CFS)	
CAR 605.04	A/C Flt Manual (Pilot Operating Handbook)	Yes/No
CAR 605.05	Markings & Placards	Yes/No
CAR 605.14	** Altimeter **	Yes/No
	Airspeed Indicator	Yes/No
	Compass/Compass Card	Yes/No
	Tachometer	Yes/No
	Oil pressure	Yes/No
	Oil temperature	Yes/No
	Fuel Quantity	Yes/No
	Radio Communication (where required)	Yes/No
CAR 605.22	Seat Belt installation (metal/metal buckle)	Yes/No
CAR 605.24	Shoulder Harness	Yes/No
CAR 605.38	ELT	Yes/No

#### CAR 605.86 Maintenance Schedule

Maintenance Schedule identified in Journey Log Book

Book Date: \_\_\_\_

Example: Aircraft C-FABC shall be maintained in accordance with Standard 625 Appendix B & C Signed by Owner and indicate pilots license no.

Standard 625 Appendix "B"

Date of last Annual Inspection completed: \_\_\_\_\_

Date Annual Inspection Due:\_\_\_\_

#### Standard 625 Appendix "C" Out of Phase Tasks

**Engines** Information Note: No hard time, including calendar time, between overhauls need be observed in the case of small aircraft reciprocating engines in non-commercial private operation.

#### AN BO41 Piston Engine On-Condition Maintenance Program Requirements (for Commercial Aircraft)

Variable Pitch Propellers	10 years or Manufacturers Recommended hours	10 year due: Hours Due:
Fixed Pitch and Ground Adjustable Propellers	Corrosion and defect Inspection 5 years	5 year Inspection Due:
Tachometers	Due 12 months	Due:
Non-stabilized Magnetic Direction Indicators (Compass)	Due Calibration 12 months	Due:
Survival and Emergency Equipment	Due Overhaul at Manufactures Recommendation	Due:
Emergency Locator Transmitters (ELT) Approved List of ELT's Airworthiness Notice B014	Inspection Due 12 months Batteries Due Manufactures Recommendation	Insp. Due: Batteries Due:
Altimetry Devices	Calibration Due 24 months	Due:
Air Traffic Control (ATC)Transponders	Test Due 24 months	Due: