

DOCUMENT GSM-G-CPL.022

GENERAL OPERATIONS, FLIGHT PLANNING AND PERFORMANCE

CHAPTER 21 - AIRCRAFT ADMINISTRATION AND SAFETY

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CHAPTER 21 AIRCRAFT ADMINISTRATION AND SAFETY



GENERAL OPERATIONS, FLIGHT PLANNING AND PERFORMANCE

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AIRCRAFT ADMINISTRATION AND SAFETY PRECAUTIONS

AIRCRAFT ADMINISTRATION

AIRCRAFT DOCUMENTS

Like a motor car, an aircraft requires registration and some documentation which proves that the aircraft is airworthy and safe for flight. These documents are:

- The Certificate of Registration (CoR)
- The Certificate of Airworthiness (CoA)
- The Maintenance Release
- Airframe, engine, propeller and radio Log Books

THE CERTIFICATE OF REGISTRATION

The Certificate of Registration (CoR) certifies that the aircraft is on the Australian register of aircraft. The CoR contains the following information:

- Nationality and registration lettering (VH-YTK)
- Manufacturer and the designation for the aircraft
- Aircraft serial number
- Name of certificate holder
- Address of certificate holder
- Date of entry on the register and Issue date of the certificate

THE CERTIFICATE OF AIRWORTHINESS

The Certificate of Airworthiness (CoA) certifies that the

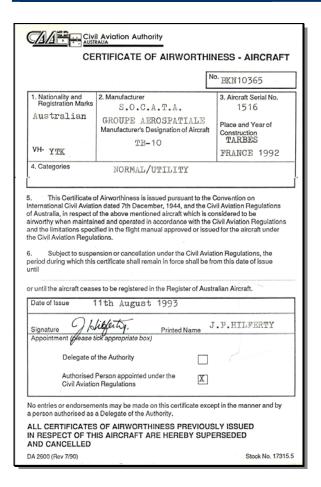
aircraft has been examined by an approved authority and has been found airworthy at the time of inspection.

The CoA is issued when it is proven that the aircraft complies with the airworthiness certification standards and remains valid for an unlimited period unless suspended.

A valid CoA does not mean that the aircraft is safe for flight. It is the pilot's responsibility to ensure the aircraft's flight safety. The CoA certifies safety only in regard to design and structural integrity of the aircraft. It does not certify that all required maintenance has been carried out.

Civil	Aviation SafetyAuthority	
CER	TIFICATE OF REGISTRAT	TON
Nationality and Registration Mark	Manufacturer and Manufacturer's Designation of Aircraft	Aircraft Serial Number
VH-YTK	S.O.C.A.T.AGroupe Aerospatiale TB-10	1516
4. Name FLIGHT TRAININ	G ADELAIDE PTY LTD	,
5. Address HANGAR 54 KIT PARAFIELD AIRI		
Australian Civil Air	If that the above described aircraft has been overaft Register in accordance with the Convol 17th December 1944 and the Commonwealt is.	ention on International
11/03	93 12	/07/05
Date first register	ed in Australia Registration holde	r commencement date
12/07	05	
Date of issue of t	his certificate Expiry date	of this certificate
Date of issue of the For the Civil Aviation S Ricardo I Registrar, Civil A	his certificate Expiry date afety Authority,	
Date of issue of t For the Civil Aviation S Ricardo I Registrar, Civil A Note: This certificate is no property interest in t This certificate must international air not The registration hold	his certificate Expiry date aftery Authority, innactio, creatification of the conclusive evidence of the existence of a le ne nirraft.	of this certificate Capal or beneficial segaged in writing about changes
Date of issue of t For the Civil Aviation S Ricardo Registrar, Civil A Note: This certificate is no property interest in t This certificate must international air navi to the particulars reco	his certificate Expiry date aftery Authority, innacio, commande, commande, commande, commande, commande, commande, commande, communication, conclusive evidence of the existence of a le naircraft.	of this certificate





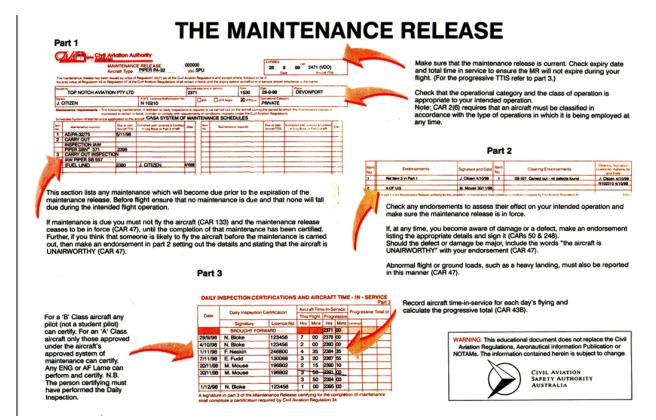
THE MAINTENANCE RELEASE

The document which shows that scheduled and required maintenance has been carried out is called the Maintenance Release.

The Maintenance Release (MR) is issued by a Licenced Aircraft Maintenance Engineer (LAME) and is valid for a certain number of operational hours (usually to the next 100 hourly inspection), or to a certain date, whichever occurs first.

The MR includes the following:

- MR Certification
- Scheduled Maintenance
- Daily Inspection Certificate
- Damage and Defect Report

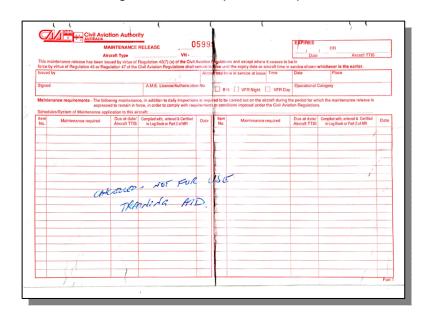


Maintenance Release Certification

The MR Certification section contains general data of the aircraft and the name and licence number of the LAME who issued the MR.

This section contains the date and the maximum hours in operation by which the MR becomes invalid and the aircraft needs to undergo another inspection.

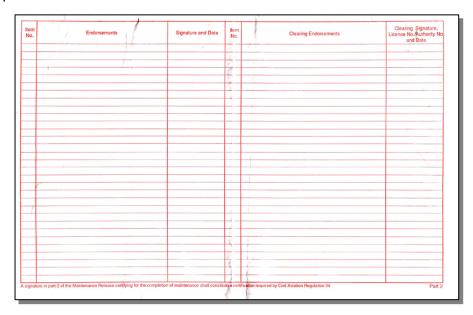
It is the pilot's responsibility to ensure that the aircraft is not flown after the date shown in the MR. Before conducting a flight the pilot must ensure that the aircraft can be flown on the proposed trip without exceeding the maximum permitted operation hours as shown in the MR.



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SCHEDULED MAINTENANCE

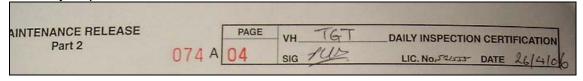
This section shows what maintenance is to be done during the validity of the MR and by which date/hours in operation.



After the scheduled maintenance has been carried out satisfactorily, the maintenance release must be signed by a suitably qualified and authorised person to certify that all requirements have been met. An unsigned MR is invalid.

DAILY INSPECTION CERTIFICATION

Before the first flight of the day a Daily Inspection must be carried out. The pilot who conducts the daily inspection should enter the date of the inspection in the MR and he or she should also sign the daily inspection certificate.



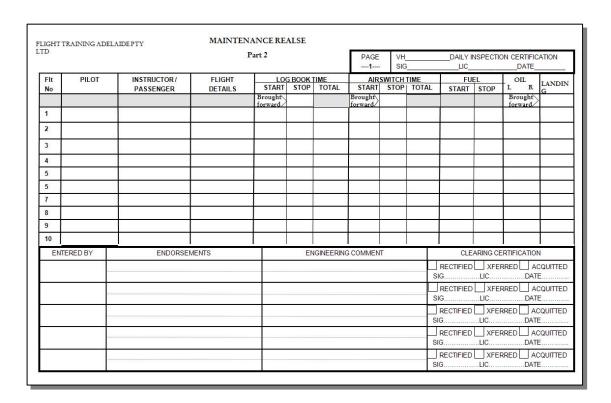
The Daily Inspection must be signed on the Maintenance Release before the aircraft can fly each day.

It must be noted that the daily inspection can be signed out ONLY by a LAME, the holder of a PPL or higher pilot's licence, or a person specially approved for this purpose.

After the day's flying is finished the pilot in command must fill in the columns showing the aircraft time in service and the number of landings.

Subtracting the Progressive Total Time in service from the Total Aircraft Time in Service in Part 2 of the MR shows the operational time left until the MR expires.

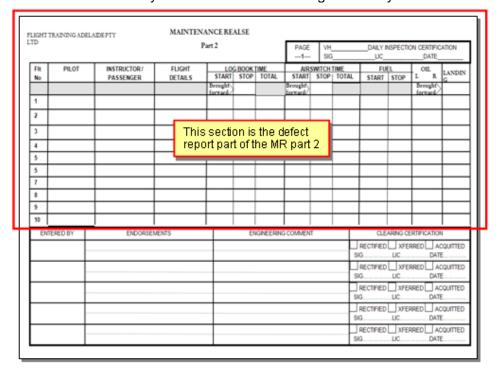
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DAMAGE AND DEFECT REPORT

If a pilot detects a problem while operating an aircraft that could render the aircraft unserviceable, the fault must be entered into Part 2 of the MR and the entry initialled.

Unless the unserviceability is a "permitted unserviceability" as per CAO, the aircraft is not to be operated until the unserviceability has been cleared and signed out by a LAME.



LOG BOOKS

Records as to maintenance and modifications are kept for:

- Airframe.
- Engine(s)
- Propeller(s)
- Radio(s).

THE OPERATIONS MANUAL

All organisations and persons involved in aviation for business purposes must have an Operations Manual.

The Operations Manual is a document in which all company operating procedures are documented. This document is kept for easy access for all operational staff thus assuring standardised and safe flight operations.



The Operations Manual must at least require operations according to the current air navigation legislation but an operator is permitted to require more stringent rules.

Notice that the Operations Manual must be approved by the Civil Aviation Safety Authority thus making it a legal document.

THE MANUFACTURER'S MANUAL

When a person is buying a motor car, a manual is issued with operating instructions for the car. This manual details the general specifications for the model bought but does not show exactly the details of the individual car.

When purchasing an aircraft, the manufacturer issues a manual similar to that of a car. This Manufacturer's Manual states all the common details valid for the aircraft type and gives details for the operation of this particular type.

THE FLIGHT MANUAL

The Flight Manual is a book which contains details about a specific and individual aircraft. It is approved by the authorities for that individual aircraft and must be carried in the aircraft at all times. The Flight Manual contains eight sections:

Section 1 General Aircraft Particulars

- Engine and propeller data
- Fuel and oil grade and capacity
- Other general data



Section 2 Operating Limitations

- Speed limitations
- Permitted manoeuvres
- Max. crosswind component

Section 3 Emergency

- Electrical and Mechanical Failures
- In-flight Emergencies

Section 4 Normal Procedures

- Inspections
- Checklists
- Speeds for Safe Operations

Section 5 Performance

- Performance charts
- Performance limitations

Section 6 Weight and Balance

- Aircraft empty weight and empty C of G position
- Loading system tables and graphs

Section 7 Description

- Airframe and Flight Controls
- Instrument Panel
- Engine and other Aircraft Systems

Section 8 Airplane Handling, Service and Maintenance

- Inspection Services
- Alterations and Repairs
- Handling
- Cleaning and Care

Section 9 Supplements

- Special operations
- Limitations
- Emergency and Normal Procedures

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CASA MAINTENANCE SCHEDULE

Part 1- Daily Inspection (Schedule 5 in the CAR)

- An inspection (in this Part called a Daily Inspection) must be carried out on the aircraft before the aircraft's first flight on each day on which the aircraft is flown.
- A daily inspection consists of making of checks as set out in the table at the end of this Part, as are applicable to the aircraft.

Table of Checks included in a Daily Inspection

Section 1 - General

- Check that the ignition switches are OFF, the mixture control is lean or idle cut off, the throttle is closed and the fuel selector is on.
- Check that the propeller blades are free from cracks, bends and detrimental nicks. Check that the propeller spinner is secure and free from cracks and that there is no evidence of oil or grease leakage from the propeller hub or actuating cylinder. Check the propeller hub where visible, has no evidence of any defect which would prevent safe operation.



- Check that the induction system and all cooling air inlets are free from obstruction.
- Check that the engine, where visible, has no fuel or oil leaks and that the exhaust system is secure and free from cracks.
- Check that the oil quantity is within the limits specified by the manufacturer for safe operation and that the oil filler cap, dipstick and inspection panels are secure.
- Check that the engine cowlings and cowl flaps are secure.
- Check that the landing gear tyres are free from cuts or other damage, have no canvas exposed and, by visual inspection, are adequately inflated.
- Check that the landing gear oleo extensions are within normal static limits and that the landing gear doors are secure.
- Check that the wing and fuselage surfaces are free from damage and that the inspection panels, flight control surfaces and flight control devices are secure.
- Check that the interplane and centre section struts are free from damage and that the bracing wires are of the correct tension.
- Check that the pitot heads and static ports are free from obstruction and that the pitot cover is removed or is free to operate.



After visually checking fuel contents, pilots should make sure that the fuel caps are done up securely.

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- Check that the fuel tank filler caps, chains, vents and associated access panels are secure and free from damage.
- Check that the empennage (tail) surfaces are free from damage and that the control surfaces, control cables and control rods where visible, are secure.
- Check that the canard surfaces are free from damage and that the control surfaces, control cables and control rods where visible, are secure.
- Check that the flight controls, the trim systems and the high lift devices operable from the ground have full and free movement in the correct sense.
- Check that the radios and antenna are secure and that where visible, radio units and interwiring are secure.
- Check that the drain holes are free from obstruction.
- Check that there is no snow, frost or ice on the wings, tail surfaces, canards, propeller or windscreen.
- Check that each tank sump and fuel filter is free from water and foreign matter by draining a suitable quantity of fuel into a clean transparent container.
- Check that the windscreen is clean and free from damage.
- Check that the instruments are free from damage, legible and secure.
- Check that the seat belts, buckles and inertia reels are free from damage, secure and functioning correctly.

Pilot maintenance may be carried out on a Class 'B' aircraft by the holder of a pilot licence (other than a Student Pilot Licence), that is valid for the aircraft.

Pilots have certain responsibilities as to maintenance of aircraft, aircraft acceptance and unserviceability reporting.

Pilot Conducted Repairs (Schedule 8 in the CAR)

The repair type maintenance items a pilot may do are listed below:

- Removal or installation of landing gear tyres, but only if the removal or installation does not involve the complete jacking of the aircraft.
- Repair of pneumatic tubes of landing gear tyres.
- Servicing of landing gear wheel bearings.
- Replacement of defective safety wiring or split pins, but not including wiring or pins in control systems.
- Removal or refitting of a door, but only if:
 - no disassembly of the primary structure or operating system of the aircraft is involved, and
 - if the aircraft is to be operated with the door removed, the aircraft has a flight manual and the manual indicates that the aircraft may be operated with the door removed.



- Replacement of side windows in an unpressurised aircraft.
- Replacement of seats, but only if the replacement does not involve disassembly of any
 part of the primary structure of the aircraft.
- Repairs to the upholstery or decorative furnishings of the interior of the cabin or cockpit.
- Replacement of seat belts or harnesses.
- Replacement or repair of signs and markings.
- Replacement of bulbs, reflectors, glasses, lenses or lights.
- Replacement or cleaning of spark plugs or setting spark plug gaps.
- Replacement of batteries.
- Changing oil filters or air filters.
- Changing or replenishing engine oil or fuel.
- Lubrication not requiring disassembly or requiring only the removal of non-structural parts, or of cover plates, cowlings and fairings.
- Replenishment of hydraulic fluid.
- Application of preservative or protective materials, but only If no disassembly of the primary structure or operating system of the aircraft is involved.
- Removal or replacement of equipment used for agricultural purposes.
- Removal or replacement of glider tow hooks.
- Carrying out of an inspection under regulation 42G of a flight control system that has been assembled, adjusted, repaired, modified or replaced.

UNSERVICEABILITY REPORTING

After a flight has been terminated the pilot is compelled by the CARs to report all defects on:

- Aircraft
- Aerodromes
- En route aids
- Aeronautical facilities

FUEL SYSTEM INSPECTION

The operator and pilot in command shall ensure that the inspections and tests for the presence of water in the fuel system of the aircraft are made before the commencement of each day's flying and immediately after each refuelling. Many pilots check their fuel before each flight.



There is a possibility that minute water droplets are suspended in the fuel. In that state they would not have any effect on the engine at all.

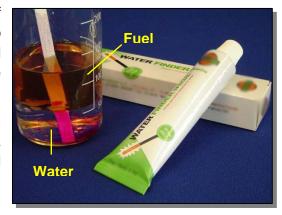
GSM-G-CPL.022 12 of 17 Version: 1.1 © FTA 2005 Date: Oct 13 The CAO states that you must use a positive method to check the fuel for water. The most positive method is a water detecting chemical.

When an aircraft climbs and the temperature drops, water which has remained suspended in the fuel, may condense and run to the bottom of the tank and collect there. Water could be fed to the engine IN FLIGHT, resulting in an engine failure.

CHECKING THE FUEL PRE-FLIGHT FOR THE PRESENCE OF WATER

It is important that, checks for water contamination of fuel drainage samples be positive in nature and do not rely solely on sensory perceptions of colour and smell, both of which can be highly deceptive. The following methods are acceptable:

 Fuel may be checked by chemical means such as water detecting paper or paste, where a change in colour of the detecting medium will give clear indication of the presence of water.



THE MOST COMMON METHOD OF CHECKING FUEL PRE-FLIGHT



- Place a small quantity of fuel into the container before taking samples from tank or filter drain points.
- With the aircraft standing on a reasonably level surface, drain some more fuel from each fuel tank into a clear transparent container. The presence of water will be revealed by a visible surface of demarcation between the two samples of fuel in the container.
- On such aircraft types as may be specified by the Director-General, a pilot should extend the foregoing inspection to fuel system filters and collector boxes. It is recommended that all aircraft fuel system filters and collector boxes be checked for water contamination at frequent intervals.

SAFETY PRECAUTIONS WHEN REFUELLING

Safety precautions which must be observed when refuelling an aircraft are outlined in CAO 20.9 (Subsection 4)

Pilots should carefully read and memorise these precautions, particularly the minimum distance from other aircraft, buildings and areas, in detail because it is unlikely that they would have the time to look up the requirements in CAOs every time they refuel.

GROUND OPERATIONS OF ENGINES

When intending to start an engine or run an engine on the ground, pilots must observe the provisions of CAO 20.9 - Subsection 5.

It is important to familiarise carefully with this CAO.

HANDLING DRUM STOCKS OF FUEL

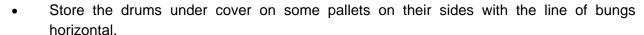
RECEIVING DRUM STOCK

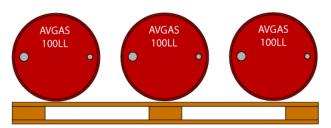
When receiving fuel drum stock a pilot should:

- Ensure that the correct release note accompanies the drums.
- Check the details on the drums against the details on the release note.
- Check that the drums are completely sealed.
- Check that the drums are not leaking.



When storing the drums the following points must be observed:







- Store drums in a defined area away from other products.
- Use drums in strict sequence of rotation according to the age of the fuel as indicated by the batch number.
- Check that the drum content is less than 18 months old, by reference to the batch number. If the stock is older, contact your fuel agent.





REFUELLING FROM DRUM STOCK

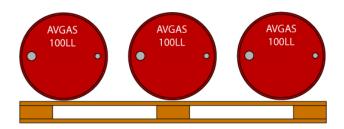
Example of a release / indemnity note

INDEMNITY REQUEST TO FILL EMPTY DRUMS WITH AVIATION FUEL				
This is a customers rec	quest to fill into customer supplied drums.			
Site:	Person mai	king request:		
No. of drums:		Date:		
No. of drums:	Type of aviation fuel:	Date:		
_			_	
	FUEL TYPE	QUANTITY REQUIRED		
	AVGAS			
			7	
	AVIATION GASOLINE	LITRES		
1				
BATCH NUMBER:				
		2000		
	IMPORT	TANT		
When BP is requested	d to fill empty drum(s) with aviation fuel, the	e following risks may arise:		
· Contamination of the	aviation fuel by substance in the drum;			
· Explosion or fire when	n aviation fuel is mixed with substance in the d	irum;		
	of aviation fuel from the drum resulting in conta			
Improper use of the a				
	fill the empty drum(s), you agree to:			
	im(s) is clean and safe to use;			
A CONTRACTOR OF THE PARTY OF TH	ctices in the handling and use of the drum(s) are			
	over the quality of the fuel in the drum(s) and i			
	all claims, loss, damage, injury or death suffer			
Except to the extent re	quired by law, BP will not be liable for the qua	lity of the fuel delivered into the drum(s)	or its subsequent use.	
I have read the above	and agree to these conditions:			
111010100001010	and agree to tribbe containents.			
	Customer Signature)	(Witness Signature)		
	occurred organization	(This or		
	stative for and on behalf of			
as aumonsed represen				
as autionsed represen				
as autionsed represen				

AIR BP	
BATCH No :_	<u> </u>
FILL POINT :	
DATE :_	BPD017023

Label attached to drum





Correct storage

Incorrect storage

DISPATCH

Compile and forward with drums a release note showing number of drums, grade, batch number, test report number.

BATCH NUMBER SYSTEM AND FILLING CENTRE REFERENCE

The Batch numbering system ensures that there is no possibility of duplication of products under one batch number.

The Shell company batch numbers consist of a series of letters and numerals as follows:

- The letter **S** indicating SHELL and thus differentiating the identification system from that used by other suppliers.
- A letter indicating the state in which the batch number is issued or location of product in case of Islands areas.
 - N New South Wales
 - V Victoria
 - Q Queensland.
 - S South Australia
 - W Western Australia
 - P Pacific Islands
- Numerals indicating the serial number of the batch, the series recommencing on the first day of each month.
- A letter indicating the month:

G - July **A** - January

B - February **H** - August

C - March **J** - September

D - April K - October

E - May L - November

F - June M - December

A numeral indicating the year, the last figure of the year only being used.

Example: SW 54 L5 - means Shell Company batch no. 54 issued in Western Australia in November, 2005.

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AIRCRAFT TIEDOWN AND SECURITY PROCEDURES

GENERAL

When an aircraft is parked, it should be tied down. Generally the following general procedures should be observed:

- Park the aircraft into the wind (consider the forecast).
- Place chocks fore and aft of the main wheels.
- Tie wings and tail down to rings in the ground. Leave ropes a little slack as moisture can over-tighten them.
- Install control locks or tie controls down with the seat belt to prevent the controls "snatching" in gusty wind conditions.
- Make sure the flaps are in the UP position.

Before leaving the aircraft unattended, always make sure that doors and controls are locked, and the aircraft is secured with a cable in accordance with College operating procedures.





Cables shown in the picture on the left, or a clamp, used on the nosewheel (shown on the right), are approved methods of securing

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