1. G E N E R A L

1.1. INTRODUCTION

Validity:
This FLIGHT MANUAL applies only to the aircraft identified by production number on the page 0 - 1.

CAUTION:
THE PILOT OF THE Z 142C AIRCRAFT MUST BECOME FAMILIAR WITH THE CONTENTS OF THIS FLIGHT MANUAL BEFORE THE FLIGHT.

1.2. CHANGES

1.2.1 All changes or supplements of this FLIGHT MANUAL are performed as follows:

/1/ The Aircraft Manufacturer will send the Mandatory Bulletin including changes or new (revised) pages of the FLIGHT MANUAL to the holder of the FLIGHT MANUAL.

/2/ The holder of the FLIGHT MANUAL is obliged:
a) To carry out the change or replace original pages by new ones (marked with the new date of revision) according to Bulletin instructions.
b) To insert a new List of effective pages.
c) To record the performed change into the LOG OF CHANGES - item 1.2.2.

NOTE
The changed or supplemented parts of the text are marked by vertical black line along the outside of the page.

1.2.2. Log of Changes

Change No.:	No.of Bulletin ordering the change:	Pages affec-ted:	Date of Revision:	Performed on/ signature:
1	Z 142C/2	0-5,2-5,2-7,2-8, 4-8,4-9,4-10, 4-11,4-13,4-15, 4-16,4-18	2. 2. 1993	
2	Z 142C/6a	0-5,2-26,3-1, 3-10	28. 4. 1994	
3	Z 142C/5a	0-5,1-4,1-10, 1-13,1-14,1-15, 2-1,2-3,2-3a, 2-3b,2-4,2-5, 2-5a,2-5b,2-6, 2-9,2-17,5-5, 6-1,6-6,6-21	1. 7. 1994	
4	Z 142C/8a	0-5,1-4,1-8,2-20 2-21,2-22,2-23, 2-24,2-25,2-26	1.11. 1994	
5	Suppl. No. 1 Z 142C/8a	0-5,1-4,1-8	24. 3. 1995	
6	Z 142C/10a	0-5,1-4,2-11	31. 8. 1995	
7	Z 142C/24a	0-5,1-4,1-8, 2-16,2-17,2-18, 2-19,2-20,2-21, 2-22,2-23,2-24, 2-25,2-26	31. 1. 2002	

NOTES:
/1/ The holder of the FLIGHT MANUAL is obliged to do this record in accordance with 1.2.2. - Changes
/2/ All changes and supplements in this FLIGHT MANUAL issued before the date of issue, stated on page 0-1, are carried out by the Manufacturer.

1.5 TECHNICAL SPECIFICATION

1.5.1 General

/a/ The Z 142C aircraft is designed for an elementary and advanced training, training and practising aerobatics, training of night and IFR flights and for towing gliders.

/b/ The Z 142C aircraft is a two-seat, single-engine, low wing cantilever monoplane, equipped with a six-cylinder in-line inverted M 337 AK engine with a hydraulic controlled constant-speed V 500 A propeller.

1.5.2. Fuselage

The fuselage is of a mixed construction. The central fuselage structure welded of steel tubes is covered with a fibre-glas fairing. The rear part is light alloy riveted semimonocoque. The occupants seats arrangement enables the use of back-type parachutes. The seats in "side-by-side" arrangement are longitudinally adjustable to 4 positions. The main pilot s seat is the left one. Behind the seats there is the baggage compartment. The canopy is opened by sliding forward and is provided with emergency release system. It may be locked in partly opened position.

1.5.3. Wing

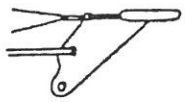
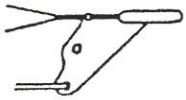
The oblong shaped wing is of all-metal two-spar structure hinghed to the fuselage central part. The wing skin is of light-allog aluminium-clad sheets. The wing flaps and ailerons are slotted, all-metal,equally sized parts.

1.5.4. Tail Surfaces

Tail surfaces are of a cantilever all-metal structure, covered with light-alloy skin. Both the rudder and the elevator are partially mass- and aerodynamically balanced. The elevator is equipped with one aerodynamic - balance tab and one controllable trim tab. The rudder has a fixed trim tab.

APPLICABLE ONLY FOR AIRCRAFT TO 16th SERIES INCL.

NOTES:
(1) The control lever of the elevator aerodynamic-balance tab has two holes.
(2) There are two alternatives of the pull rod attaching to the elevator balance tab:

Pull rod attachment	Balance tab deflection (up and down)	Effect	Application
	$30^{o} \pm 2^{o}$	Lower forces in elevator control	Recommended for advanced aerobatics
	$20^{o} \pm 2^{o}$	Higher forces in elevator control	Recommended for training flights

(3) In case of pull rod attachment change there is necessary to adapt its length in accordance with the Z 142C Maintenance manual.

1.5.5. Control System

The aircraft is provided with dual controls. The control system includes elevator and aileron stick-type control, rudder control coupled with nose wheel control, wing flaps control, trim control, engine and propeller control. The rudder control is of a pedal type and provided with a main wheel brake actuators. Elevator and ailerons are rod controlled, rudder is rod and cable controlled. Wing flaps and longitudinal trim tab are mechanically controlled. The engine is actuated by a throttle push-pull rod, a mixture handle and a supercharger rod. The propeller speed is controlled by a push-pull rod.

2.25. ANNUNCIATOR LIGHTS

Annunciator Lights display is located on the upper part of the instrument panel.

(1) (Amber) L. FUEL LOW LEVEL	(2) (Amber) R. FUEL LOW LEVEL	(3) (Amber) GENERATOR	(4) (Amber) INVERTOR (optional)
(5) (Red) OIL PRESS. LOSS	(6) (Amber) STALLWARN. FAILURE	(7) (White) PITOT TEST	8)

Display annunciation:

(1) L FUEL LOW LEVEL — Starts flashing when the fuel content in L E F T fuel tank reaches the level, enabling approximately 5 minutes of safe operation.

(2) R FUEL LOW LEVEL — Starts flashing when the fuel content in R I G H T fuel tank reaches the level, enabling approximately 5 minutes of safe operation.

(3) GENERATOR — Amber Light ON - generator is out of service (electric power is supplied by the battery)-

(4) INVERTOR (optional) — Amber Light ON - AC NAV supply invertor is out of service (26V 400Hz)

(5) OIL PRESS. LOSS — Red Light ON - oil pressure is below minimum operating limit - 120 kPa (17 P.S.I.).

(6) STALLWARN. FAILURE — Amber Light ON after take-off - the signalling system of stalling speed is out of operation or it doesn't work properly.

NOTE: Warning is automaticelly ON on ground.

(7) PITOT TEST — White Light ON - After pressing the SIGNALLING CHECK button means that both Pitot and Stall warning probe heating units are operative.

2.26. PLACARDS

Following placards are located in the aircraft cockpit:

2.26.1. Limitations, Prohibitions, Warnings

(1)

EXCEPT AS MAY BE OTHERWISE INDICATED ON A PLACARD THE MARKINGS AND PLACARDS INSTALLED IN THIS AIRPLANE CONTAIN OPERATING LIMITATIONS WHICH MUST BE COMPLIED WITH WHEN OPERATING THIS AIRPLANE IN THE ACROBATIC CATEGORY. OTHER OPERATING LIMITATIONS WHICH MUST BE COMPLIED WITH WHEN OPERATING THIS AIRPLANE IN THIS CATEGORY OR IN THE UTILITY AND NORMAL CATEGORY ARE CONTAINED IN THE AIRPLANE FLIGHT MANUAL.	APPROVED ACROBATIC MANEUVRES AND RECOMMENDED ENTRY SPEEDS IAS LOOP MIN. 130 kts IMMELMAN TURN MIN. 135 kts HALF - ROLL AND DIVE OUT MAX. 80 kts STALLED TURN MIN. 97 kts ROLL MIN. 97 kts SPIN 59 kts OUTSIDE LOOP FROM THE NORMAL FLIGHT MAX. 59 kts OUTSIDE LOOP FROM THE INVERTED FLIGHT MIN. 140 kts INVERTED SPIN 75 kts NOTE: NO BAGGAGE
SNAP FIGURES ARE PROHIBITED	
INTENTIONAL SPINS WITH WING FLAPS EXTENDED ARE PROHIBITED. SPIN RECOVERY: 1. APPLY FULL RUDDER OPPOSITE TO THE DIRECTION OF ROTATION 2. PUSH CONTROL STICK FORWARD CLOSE TO STOP END	
FLIGHT INTO KNOWN ICING CONDITIONS IS PROHIBITED	

(2)

SMOKING PROHIBITED

(3)

NO AEROBATICS ARE ALLOWED WITH FUEL IN WING TIP TANKS. TAKE OFF AND LANDING ON RIGHT TANK ONLY. AEROBATICS MUST BE CONDUCTED WITH FUEL SELECTED TO LEFT TANK.

NOTE:
Placards No. (1), (2) and (3) are located in the cockpit and are in direct pilot s view.

(4)

DESIGN MANEUVERING SPEED V_A IAS 127 knots NORMAL CATEGORY

NOTE:
Placard No. (4) is located on the upper part of instrument panel close to the Airspeed Indicator.

(5)

VFR DAY

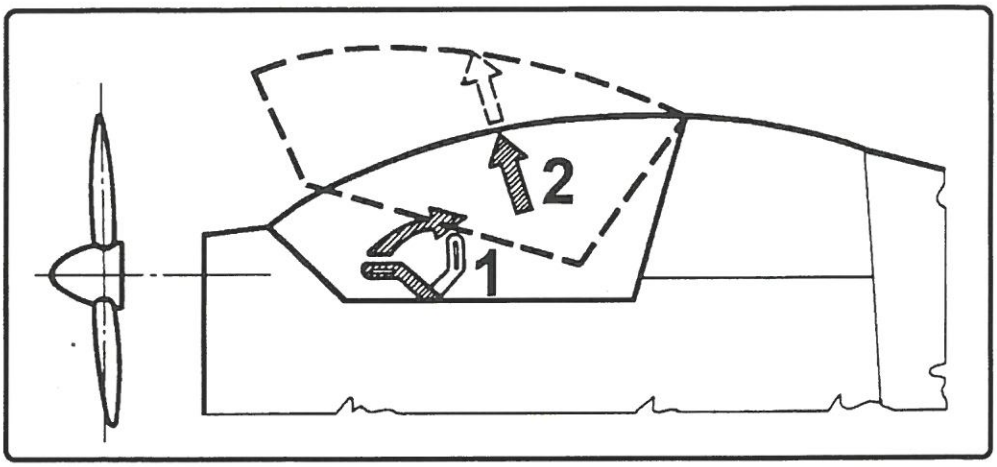
VFR NIGHT

IFR DAY

IFR NIGHT

NOTE:
One of placards No. (5) is located on the instrument panel acc. to instrument equipment and approved aircraft for this operation.

(6)



NOTE:
Placard No.(6) is located on both canopy sides close to the Emergency Release Handle.

COCKPIT CANOPY EMERGENCY RELEASE:

a) Pull both left and right handle backwards.
(Canopy rails are released).

b) Push by force the canopy upwards into the airstream.

(7)

ACROBATICS PROHIBITED WITH ANYTHING ON THIS SHELF

NOTE:
Placard No. (7) is located in the baggage compartment.

(8)

CANOPY LOCK

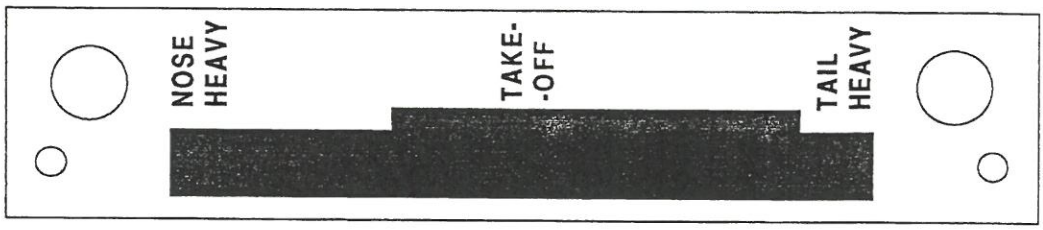
NOTE:
Placard No. (8) is located at canopy locking lever (locking of canopy in open position on the ground).

(9)

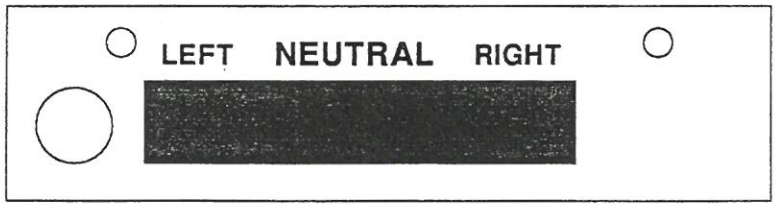
NOTE:
Placard No. (9) is located on the canopy roof frame close to the tool for breaking up the canopy glass case of emergency (turn-over).

2.26.2. Control Markings

(1)



(2)

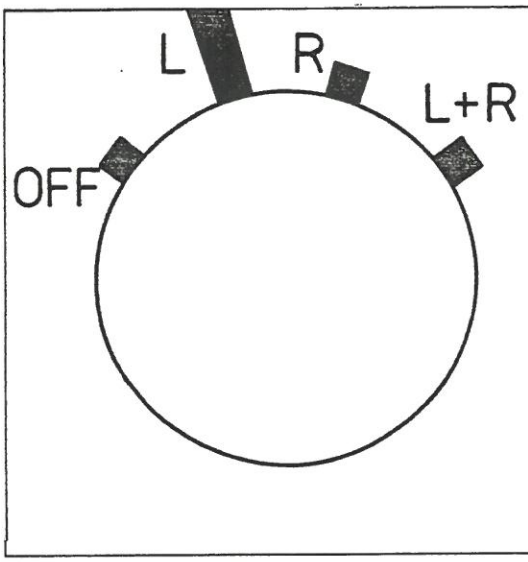


NOTE:
Placards No. (1) and (2) are located close to to the corresponding trim controls between pilot s seats.

(3)

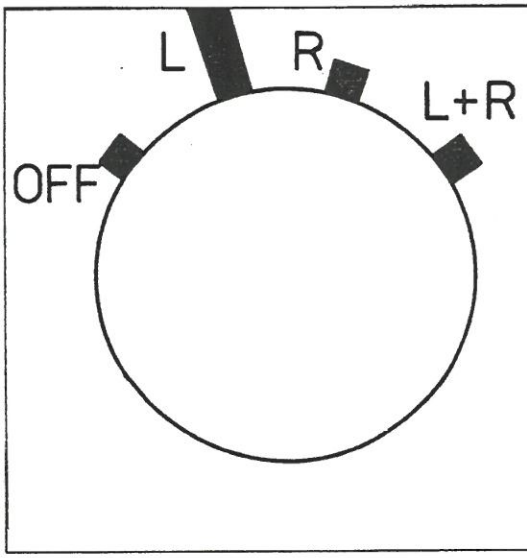
NOTE:
Placard No. (3) is located along the wing flap control leverslit and indicates corresponding postitions of wing flaps.

(4a) FUEL VALVE for aircrafts US Galls equipped



FUEL TANKS	
L	MAIN 16 US Galls LEFT ACRO
L	WING 13 US Galls TIP
R	MAIN 16 US Galls RIGHT
R	WING 13 US Galls TIP

(4b) FUEL VALVE for aircrafts litres equipped



FUEL TANKS	
L	MAIN 60 L LEFT ACRO
L	WING 50 L TIP
R	MAIN 60 L RIGHT
R	WING 50 L TIP

EXPLANATION:

a) Wing-tip fuel tanks are permanently interconncted with main fuel tanks.

b) Fuel valve positions:
OFF - Fuel shut-off
L - Fuel supply from main and wing-tip left tanks
R - Fuel supply from main and a wing-tip right tanks
L+R - Fuel supply from all tanks simultaneously

NOTE:
Placards No. (4a) and (4b) are located at the fuel valve and shows a corresponding position of the fuel valve and capacity of fuel tanks.

(5) MANUAL PUMP

(6) PRIMER

NOTE:
Placards No. (5) and (6) are located at manual fuel pump and fuel priming handle.

(7a) For aircrafts to 16th series incl.

(7b) For aircrafts from 17th series incl.

NOTE:
Placards No. (7a) and (7b) are located at throttle control and mixture control (+rich). (The vertical marking indicates the basal operational setting).

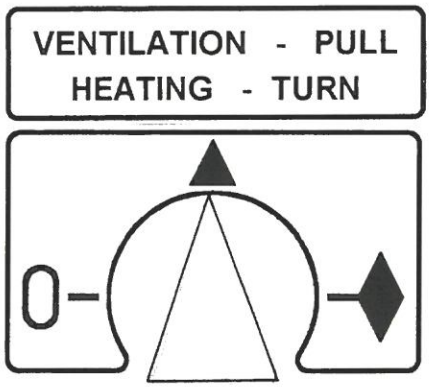
(8) SPAR FLANGE PRESSURE CHECK
NITROGEN FILLED

NOTE:
Placard No. (8) is located at filling valve of spar flange pressure indication.

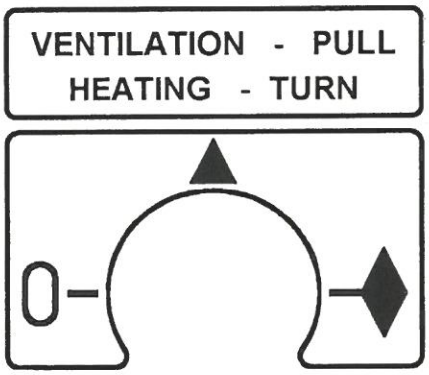
(9) SIGNALLING CHECK

NOTE:
Placard No. (9) is located at pushbutton of annunciator lights/horn check.

(10a) For aircrafts to 16th series incl.



(10b) For aircrafts from 17th series incl.



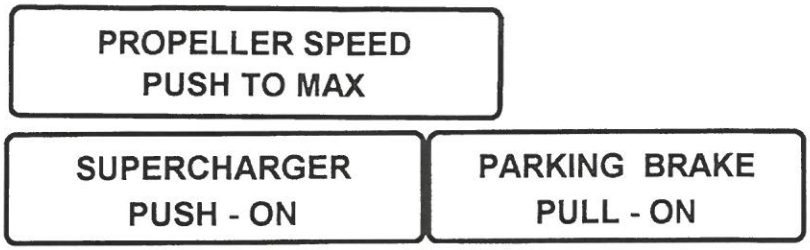
NOTE:
Placards No. (10a) and (10b) are located at ventilation and heating control handle on central vertical panel.

CONTROL INSTRUCTIONS
VENTILATION:
By partial pulling the fresh air is first conducted to the front part of the windshield. In the fully pulled postition the fresh air flows to cockpit showers on the upper part of instrument panel.

HEATING:
Function according to arrow position on the control knob:

No.	ARROW	MARKING ON PLACARD	HAETING FUNCTION
1.	LEFT	O	Shut-off
2.	UP	▲	Front part of windshield
3.	RIGHT	♦	Front part of windshield and occupants legs space
4.	DOWN		Occupants legs spase only

(11)



NOTE:
Placard No. (11) is located at the propeller pitch control, supercharger control and parking brake control handles on central vertical panel.

OPERATION:

a) Propeller
- by pushing the angle of propeller blades setting is decreased /increased R.P.M).
- by pulling the angle of propeller blades setting is increased (decreased R.P.M).

b) Supercharger
- ON - push by force
- OFF - pull

c) Parking brake
- PARKING - pull after pressing both braking pedals
- BRAKE-OFF - release (push)

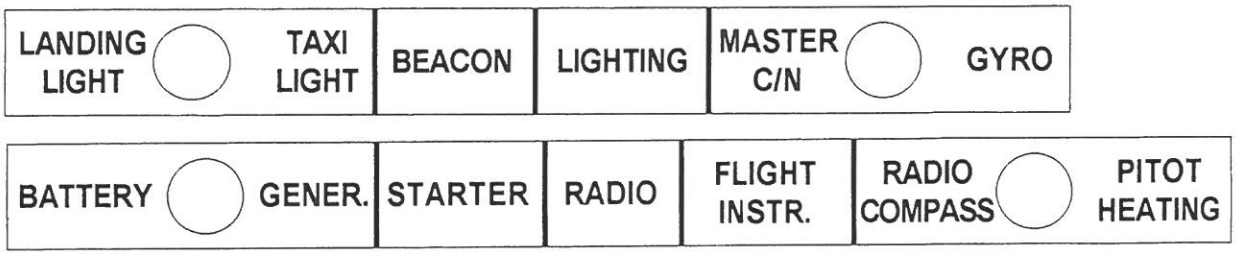
(12)

NOTE:
Placard No. (12) is located at the switch of flashing position lights, if installed.

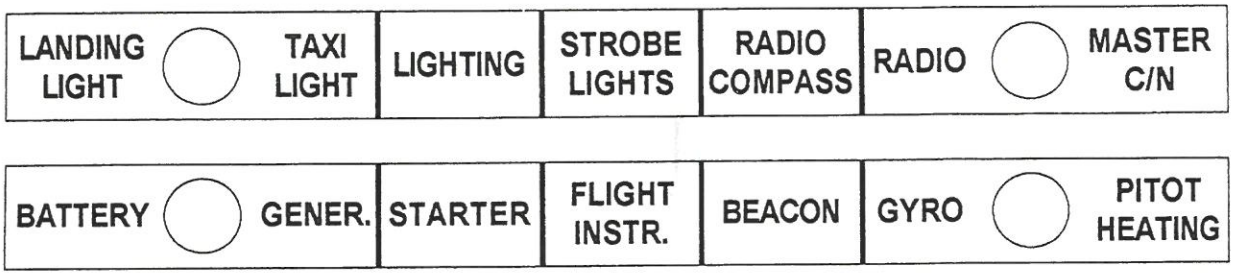
(13)

NOTE:
Placard No. (13) is located at the switch of radar altimeter only in case that the aircraft is optionaly equipped with this instrument.

(14a) For aircrafts to 16th series incl.



(14b) For aircrafts from 17th series incl.



NOTE:
a) Placards No. (14a) and (14b) are located at circuit breakers on the panel between pilot's seats.
b) Circuit breakers excluding MASTER COMM-NAV or MASTER C/N function simultaneously as current - overload switches (bimetall - principle). They automatically disconnect the circuit from the master feeder bus in case of steady current rise over the nominal switch value. The "switched-off" position is indicated by the backward position of the switch lever.

EXPLANATORY NOTES:

a) OPERATING CIRCUITS
BATTERY - Battery (secondary power source): ON - OFF
GENERAT - Generator (primary power source): ON - OFF
STARTER - Engine starter circuit: ON - OFF

b) AIRCRAFT LIGHTING
LIGHTING - Position lights, instrument panel lighting and map light circuit (map light has a separate switch - attennator build in): ON - OFF
BEACON - Anticollision beacon: ON - OFF
TAXI LIGHT - Taxi light unit: ON - OFF
LANDING LIGHT - Landing light unit: ON - OFF
STROBE LIGHTS - Strobe lights: ON - OFF

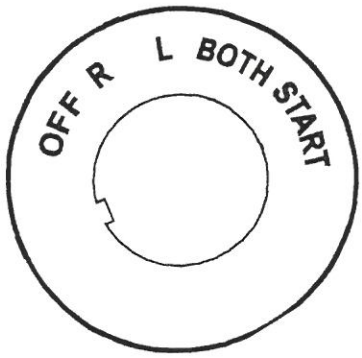
(c) INSTRUMENTS AND AVIONICS CIRCUITS

FLIGHT INSTRUM	- Electrically driven instruments: ON-OFF
GYRO	- Gyroscopic instruments: ON-OFF
PITOT HEATING	- Circuit of Pitot Tube and ram air Pressure Sensing Unit (stall warning system) heating: ON-OFF
MASTER COMM-NAV or MASTER C/N	- Aircraft Avionics Master switch: ON-OFF
RADIO	- Transceiver (s) circuit: ON-OFF
RADIO COMPASS	- Radiocompass circuit: ON-OFF

NOTE:
"MASTER COMM-NAV" or "MASTER C/N" switch controls all installed Avionics circuits. It doesn't work as overload - switch.

CAUTION:
THE "MASTER COMM-NAV" or "MASTER C/N" AND RADIO SWITCH MUST BE OFF BEFORE ENGINE STARTING AND ENGINE SHUT-DOWN - THERE IS A HAZARD OF AIRCRAFT AVIONICS DAMAGE BY CURRENT PEAKS DURING ENGINE STARTING AND SHUTTING-DOWN.
IT IS STRONGLY RECOMMENDED TO SWITCH-OFF AVIONICS DURING THE EXTERNAL POWER SOURCE CONNECTION.

(15)

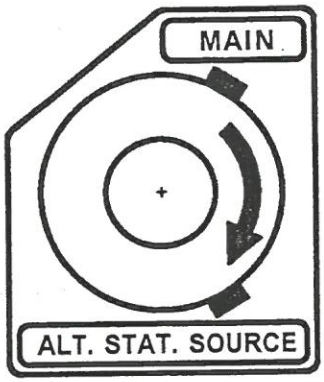


NOTE:
Placard No. (15) is located close to the ignition switch.

EXPLANATION:

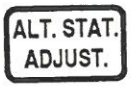
OFF	- magnetos are switched OFF
R	- right hand magneto is ON (L.H. OFF)
L	- left hand magneto is ON (R.H. OFF)
BOTH	- both left and right hand magnetos are ON
START	- engine starting

(16)



NOTE:
Placard No. (16) is located close to the Alternate Static Pressure Valve on the left side of instrument Panel, if applicable

(17)



NOTE:
Placard No. (17) is located on the control valve cover, if applicable.

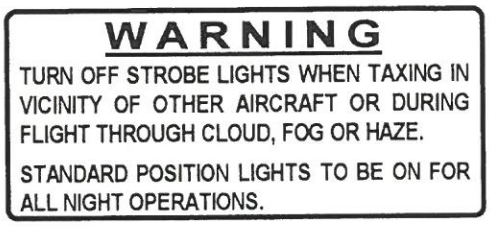
(18)

NOTE:
Placard No. (18) replaces the circuit designation placard in case, that the circuit is not installed.

(19)

NOTE:
Placard No. (19) is located on control stick lock.

(20)



NOTE:
Placard No. (20) is located on centre instrument panel, if strobe lights applicable.