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ROYAL CANADIAN AIR FORCE



INSTRUCTIONS FOR THE PRESERVATION AND DEPRESERVATION OF AIRCRAFT TYPE CARBURETTORS

"REVISION"
NOTICE

**LATEST REVISED PAGES
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INSTRUCTIONS
FOR THE PRESERVATION AND DEPRESERVATION
OF AIRCRAFT TYPE CARBURETTORS

TEMPORARY STORAGE

- 1 Carburetors installed on aircraft that are not prepared for storage and will be inoperable for a period not exceeding sixty days.
- 2 The fuel is to be drained from the carburettor every ten days and refilled with fresh fuel.

SHORT TERM AND LONG TERM STORAGE

- 3 Aircraft carburetors being prepared for Short Term or Long Term storage will be inhibited in accordance with the following instructions.
 - (a) When injection type carburetors are prepared for inhibiting, care is to be taken

when removing or installing the 1/8" pipe plugs as they are made of brass and very easily damaged. Therefore, it is recommended that socket 37C/T-25048 be used at all times.

(b) Always use the oil specified for carburettor preservation. In most cases Spec. 3-GP-901 is called up and is to be used at 70°F (21.1°C) (room temperature). Light oil is used, due to the small bleed size jets within the carburettor fuel section. A heavy oil would only tend to plug these jets, resulting in poor operation to the engine.

(c) The PR-58S2 master control will be inhibited with the above mentioned oil when installed on an engine at the same time as the D9H1 pump is being preserved. The D9H1 pump is to be inhibited with Spec. 3-GP-901 and is to be inhibited through the master control.

INSTRUCTIONS**FOR THE PRESERVATION AND DEPRESERVATION
OF AIRCRAFT TYPE CARBURETTORS****FLYABLE PRESERVATION**

1 Carburettors installed on aircraft that are not prepared for storage and will be inoperable for a period not exceeding sixty days.

2 The fuel is to be drained from the carburettor every ten days and refilled with fresh fuel.

**SHORT TERM AND LONG TERM
PRESERVATION**

3 Aircraft carburettors being prepared for Short Term or Long Term ~~Storage~~ ^{Preservation} will be inhibited in accordance with the following instructions.

(a) When injection type carburettors are prepared for inhibiting, care is to be taken

when removing or installing the 1/8" pipe plugs as they are made of brass and very easily damaged. Therefore, it is recommended that socket 37C/T-25048 be used at all times.

(b) Always use the oil specified for carburettor preservation. In most cases Spec. 3-GP-901 is called up and is to be used at 70 °F (21.1 °C) (room temperature). Light oil is used, due to the small bleed size jets within the carburettor fuel section. A heavy oil would only tend to plug these jets, resulting in poor operation to the engine.

(c) The PR-58S2 master control will be inhibited with the above mentioned oil when installed on an engine at the same time as the D9H pump is being preserved. The D9H pump is to be inhibited with Spec. 3-GP-901 and is to be inhibited through the master control.

Item Number	MA-4-5	A1 48NM & H3M	NA-R9B	NA-9E1	PD-12F5	PD-12H4	PD-16B1	PD-18C1A	PD-12K19	PD-12R1	PR58E5	PR-58T1	PR-58S2	RS-5C	58-CPB11	1685-HA & HB	SUX719	PR-48A4	D9H1 (Pump)	
1					X	X	X	X	X	X	X	X	X	X	X				X	Place carburettor in normal operating position; place the throttle in the open position and the mixture control in the rich position.
2					X	X	X	X	X	X	X	X	X	X					X	Remove the 1/8" pipe plugs from the bottom of the metered and unmetered fuel chambers of the regulator.
3					X	X								X						Remove the 1/8" pipe plug from below the idle valve actuating lever in the fuel control unit. Remove the 1/8" pipe plug from the vapour vent outlet and the plug from the accelerator pump body.
4															X					Remove the 1/8" plug from the vapour vent connection, the three plugs from the fuel chambers and the idle valve drain plug.
5					X	X	X	X	X	X	X	X	X	X					X	Remove the plug from the fuel inlet connection and remove the cover from the fuel outlet connection or loosen the fuel transfer tube.
6	X	X	X	X																Remove drain plugs. Drain fuel from carburettor and replace drain plug.

Item Number	MA-4-5	A1 48NM & H3M	NA-R9B	NA-9E1	PD-12F5	PD-12H4	PD-16B1	PD-18C1A	PD-12K19	PD-12R1	PR-58E5	PR-58T1	PR-58S2	RS-5C	58-CPB11	1685-HA & HB	SUX719	PR-48A4	D9H1 (Pump)	
7					X	X	X	X	X	X	X	X	X	X					X	After all fuel has been drained, replace all plugs.
8															X					After the carburettor has drained, replace the vapour vent plug and the idle valve drain plug.
9																X				Drain any moisture from the air chamber and fuel from the fuel chamber. After draining, install plugs and lockwire.
10																X				Do not require oil flushing.
11	X	X	X	X	X	X	X	X	X	X	X	X	X	X				X		Remove, clean and replace carburettor fuel screen.
12																X				Cover the impact slots and the side venturi slots of the air meter with tape, Ref. 33G/7.
13					X	X	X	X	X	X					X					NOTE Oil in the air chambers would cause carburettor malfunctioning. Drain fuel from accelerating pump and discharge nozzle in the carburettor adaptor by removing the appropriate plugs. (A brief study of the channeling will disclose the correct plugs to be removed).

Item Number	MA-4-5	A1 48 NM & H3M	NA-R9B	NA-9E1	PD-12F5	PD-12H4	PD-16B1	PD-18C1A	PD-12K19	PD-12R1	PR-58E5	PR-58T1	PR-58S2	RS-5C	58-CPB11	1685-HA & HB	SUX719	PR-48A4	D9H1 (Pump)	NOTE
14											X	X							X	Drain the fuel from the throttle actuated accelerating pump by actuating the throttle lever several times.
15	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X		Attach oil line to fuel pressure fitting, or fuel inlet. Use oil spray machine Ref. 2T/318 as described in EO 70-30F-2. Oil pressure is not to exceed the normal operating pressure of the carburetors as listed below (for SU pump, see Note 1).
	X	X	X	X																3 to 5 lbs.
																X				4 to 6 lbs.
															X					8 to 10 lbs.
					X	X	X													12 to 14 lbs.
								X												15 to 17 lbs.
										X										15 to 20 lbs.
									X											15 to 20 lbs.
											X									20 to 22 lbs.
												X	X							20 to 25 lbs.
16																X		X		Install a cover over the fuel inlet connection or the pressure connection.
17																X		X		Inject the preservative oil at a pressure not exceeding the normal operating pressure.

Item Number	MA-4-5	A1 48NM & H3M	NA-R9B	NA-9E1	PD-12F5	PD-12H4	PD-16B1	PD-18C1A	PD-12K19	PD-12R1	PR-58E5	PR-58T1	PR-58S2	RS-5C	58-CFB11	1685-HA & HB	SUX719	PR-48A4	D9H1 (Pump)	
18					X	X	X	X	X	X	X	X	X	X			X	X		Remove 1/8" pipe plugs on top of the metered and un-metered regulator fuel sections and replace them when the oil fills the chambers.
19															X		X			Remove the idle valve drain plug and wait for a steady flow or preservative oil, then remove the plugs from the fuel chamber and replace them as the oil flows out at each point.
20					X	X	X	X	X	X	X	X	X	X				X		Remove plugs from differential type accelerating pumps and replace when chambers are filled with oil:
21	X	X	X	X																Actuate throttle during inhibiting to ensure oil passing through the accelerating pump.
22					X	X	X	X	X	X	X	X	X	X				X		Actuate the throttle lever on throttle operated accelerating pumps to ensure a complete preservation of the pump.
23	X	X	X	X																When inhibiting a carburettor not installed on an engine, invert it during inhibiting to ensure that oil reaches the uppermost part of the float chamber.
24					X	X	X	X	X	X	X	X	X	X				X		Actuate the manual mixture control lever to ensure complete preservation of the fuel control unit and then return the mixture control to full rich.

Item Number	MA-4-5	A1 48NM & H3M	NA-R9B	NA-9E1	PD-12F5	PD-12H4	PD-16B1	PD-18C1A	PD-12K19	PD-12R1	PR-58E5	PR-58T1	PR-58S2	RS-5C	58-CPB11	1685-HA & HB	SUX719	PR-48A4	D9H1 (Pump)	
25					X	X	X	X	X	X	X	X	X	X					X	The oil pressure should be maintained until preservative oil commences to flow out of the manual mixture control or out of the discharge nozzle if attached.
26					X	X	X	X	X	X	X	X	X	X					X	Do not allow any oil to enter the air sections of the carburettor, the venturi or the automatic mixture control unit.
27	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			X	Shut off the oil supply.
28	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Allow the preservative oil to remain in the carburettor for a few minutes so as to remove all air bubbles throughout the fuel sections of the carburettor, then remove all plugs in the same manner as to drain the fuel.
29	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			X	When all oil is drained, replace all plugs and wirelock. Lock the throttle lever in the closed position and the manual mixture control in the ICO position.
30																				Bendix Direct Injection Pump (installed).
														X						(a) Place the manual mixture control in the rich position and the throttle in the open position.
													X							(b) Disconnect the fuel pressure gauge line at the meter control and remove the 1/8" pipe plug located below the idle valve lever in the fuel control unit.

Item Number		
30	MA-4-5	
	A1 48NM & H3M	
	NA-R9B	
	NA-9E1	
	PD-12F5	
	PD-12H4	
	PD-16B1	
	PD-18C1A	
	PD-12K19	
	PD-12R1	
	PR-58E5	
	PR-58T1	
	PR-58S2	X
	RS-5C	
	58-CPB11	
	1685-HA & HB	
	SUX719	
	PR-48A4	
	D9H1 (Pump)	
		(c) Loosen the fuel strainer retaining bolts about three turns.
		(d) Disconnect the vapour vent lines.
		<u>NOTE</u>
		Care must be exercised to
		avoid oil entering the air
		chambers of the regulator
		or to allow oil to contact
		the air metering portion
		of the master control, in-
		cluding the venturi, boost
		venturi tubes, impact tubes
		or automatic mixture con-
		trol.
		X (e) Remove the drain plug from
		each injection pump. This will
		permit most of the fuel to drain.
		X (f) After all fuel has been
		drained from the master control
		and the pumps, install all plugs
		except those from the vapour
		vent connection and lower injec-
		tion pump. Tighten the strainer
		bolt.
		X (g) Connect the oil supply line
		to the carburettor fuel inlet and
		inject preservative oil Spec. 3-
		GP-901 at 14 to 16 psi.
		X (h) Continue the injection of
		preservative oil until a free
		flow is noted at each injection
		pump drain opening. Plug these
		openings and continue the flow
		until the pump bodies are com-
		pletely filled.

Item Number	MA-4-5	A1 48NM & H3M	NA-R9B	NA-9E1	PD-12F5	PD-12H4	PD-16B1	PD-18C1A	PD-12K19	PD-12R1	PR-58E5	PR-58T1	PR-58S2	RD-5C	58-CPB11	1685-HA & HB	SUX719	PR-48A4	D9H1 (Pump)				
30													X							X	(j) Loosen or disconnect the uppermost high pressure line at its highest point. Rotate the engine until fuel free oil is noted at this line. This will ensure complete preservation.		
													X								X	(k) Drain all excessive preservative oil by going through same procedure as described in paragraphs (b), (c) and (e).	
													X								X	(l) Replace all plugs and lock-wire.	
31																						Bendix Direct Injection Pump (not installed).	
																						X	(a) Remove drain plug.
																						X	(b) Completely drain by varying its position so that fuel may drain from the unplugged openings.
																							<u>NOTE</u>
																							The 1/8" pipe connection for the boost section line is to remain plugged to prevent fuel or flushing oil from entering the boost suction chamber.
																						X	(c) Install drain plug. Fill pump by pouring preservative mixture through fuel inlet. Preservative is to be Spec. 3-GP-901, grade 1010.

Item Number	MA-4-5	AI 48NM & H3M	NA-R9B	NA-9E1	PD-12F5	PD-12H4	PD-16B1	PD-18C1A	PD-12K19	PD-12R1	PR-58E5	PR-58T1	PR-58S2	RS-5C	58-CPB11	1685-HA & HB	SUX719	PR-48A4	D9H1 (Pump)			
31																				X	(d) After pump is filled, turn driveshaft until fuel free oil is discharged from the high pressure outlet passages.	
																					X	(e) Disconnect oil supply line; drain all preservative oil and cap all openings (Ca plugs).
																					X	(f) It is necessary that the following parts be lubricated in the following manner:
																					X	(1) Stand the pump on end with the driveshaft upward and fill the drive mechanism cavity (the area behind the drive bearing) with the preservative mixture and turn the driveshaft a minimum of three revolutions. This will ensure that the tappets, wobble plate, bearings, etc., are adequately preserved.
																					X	(2) Stand the pump on end with the shaft downward to allow the excess preservative oil to drain.
																					X	(3) After the excess oil has drained, pack the exposed drive shaft bearing and splined drive shaft with petrolatum, Spec. 3-GP-665, Ref. 34A/165.
32	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Blank off all openings.
																						<u>NOTE</u> All blanking plates and plugs to be metal or plastic (Ca plugs).

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33					X	X	X	X	X	X	X	X	X	X	X	X				X	When engine is being prepared for long term storage ^{preservation} , the carburettor is to be removed and inhibited in accordance with this EO, then placed in Unit stores for re-issue.
34	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			X			The oil to be used for inhibiting purposes is aircraft turbine oil to Spec. 3-GP-901 Ref. 34A/196, except where other is specified.
35	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Packaging of carburettors not installed on an engine shall be in accordance with RCAF Spec. pack II-1. Unless otherwise specified method IID preservation to apply.
36	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	For de-activation , proceed through same manner as to draining the fuel system. Admit fuel under required pressure for the applicable system. Continue fuel flow until oil free fuel is noted. Shut off fuel and plug all openings and wirelock.