DIAMOND AIRCRAFT INDUSTRIES

FLIGHT MANUAL

DA 20-C1

Category of Airworthiness	: UTILITY
Applicable Airworthiness Requirements	: AWM Chapter 523-VLA
Serial No.	:
Registration	:
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This manual must be carried in the aircraft at all times! Scope and revision status can be found in the List of Effective Pages and in the Record of Revisions.
The pages identified as "DOT-appr." in the List of Effective Pages are approved by:

Signature	[redacted]
	for, Chief, Flight Test
	for, Director, Aircraft Certification
Authority	Transport Canada
Date of approval	19 December 1997

This airplane is to be operated in compliance with the information and limitations contained herein.

3.3.5. Icing

Unintentional Flight into Icing Area

1.	Leave icing area (through change of altitude or change of flight direction to reach area with higher outside air temp.).	
2.	Continue to move control surfaces to maintain their moveability.	
3.	Alternate Air	ON
4.	Increase RPM to avoid icing of propeller blades (observe maximum RPM)	
5.	Cabin Heat	ON DEFROST

CAUTION

In case of icing on the leading edge of the wing, the stall speed will increase.

CAUTION

In case of icing on wing leading edge, erroneous indicating of the airspeed, altimeter, rate of climb and stall warning should be expected.

3.3.6. Recovery from Unintentional Spin

1.	Throttle	IDLE
2.	Rudder	fully applied opposite to direction of spin
3.	Control Stick	ease forward
4.	Rudder	neutral, after rotation has stopped
5.	Wing Flaps	CRUISE
6.	Elevator	pull cautiously
	Bring airplane from descent into level flight position. Do not exceed maximum permissible speed (v_{NE})	

4.4.16. Spinning

(a) Spin Entry

1.	Loose Items	stowed
2.	Seat Belts	fastened
3.	Altitude and Airspace	check
4.	Fuel Pump	ON
5.	Wing Flaps	CRUISE
6.	Mixture	FULL RICH
7.	Throttle	IDLE
8.	Entry Speed	trim to 58 KIAS
9.	Reduce speed with elevator	speed reduction rate 2-3 kts per second
10.	When stall warning sounds	apply simultaneously, full aft stick and full rudder

CAUTION

Intentional spinning is only permitted with flaps in CRUISE position.

CAUTION

Depending on CG and spin entry technique, attempts to enter spins may develop into spiral dives. Monitor the airspeed during the first turn and recover immediately if it increases to 65 KIAS.

NOTE

Spins with aft CG may oscillate in yaw rate and pitch attitude. This has no effect on recovery procedure or recovery time

(b) Recovery from Spinning

1.	Throttle	IDLE
2.	Rudder	fully applied in opposite to direction of spin
3.	Control Stick	ease stick forward until spinning stops
4.	Rudder	neutral, immediately after rotation has stopped.
5.	Wing Flaps	check CRUISE
6.	Control Stick	ease stick backward cautiously
		Bring airplane from descent into level flight position. Do not exceed maximum permissible speed (v_{NE})

4.4.17. Idle Power Operations

NOTE

Turn fuel pump on for all low throttle operations, including taxiing and all flight operations when engine speed could fall below 1400 RPM (eg. stalls, descents, spins, landings, etc.)

1.	Fuel Pump	ON
2.	Mixture	FULL RICH
3.	Throttle	IDLE

NOTE

For aircraft with altitude compensating fuel system minimum recommended flight idle is 1400 RPM, during idle power flight conditions and maneuvres.

7.9 POWERPLANT

7.9.1. Engine

DA20-C1 aircraft are equipped with the Continental IO-240-B engine. The IO-240-B is a fuel injected, 4 cylinder, 4 stroke engine with horizontally opposed, air cooled cylinders and heads. The propeller drive is direct from the crankshaft.

Displacement: 239.8 cu.in. (3.9 liters)
Max. Continuous Power: 125 HP / 93.25 kW at 2800 RPM

Additional information can be found in the Engine Operating Manual.

The powerplant instruments are located on the instrument panel on the co-pilot's side. The ignition switch is a key switch located on the instrument panel in front of the pilot. The ignition is turned on by turning the key to position BOTH. The starter is operated by turning the switch against the spring loaded start position. The engine is shut off by moving the mixture control to the idle cutoff position then turning the ignition switch to the off position.

The DA20-C1 may be equipped with an optional altitude compensating fuel pump. A placard on the instrument panel indicates if this system is installed. With this system it is not necessary to manually lean the mixture with altitude.

7.9.2. Engine Controls

The Mixture, Throttle and Alternate Air Control levers are grouped together in the center console. The tension/friction for the controls can be adjusted using the friction knob located on the right side of the center console.

Mixture Lever: right lever with red cylindrical handle and integral lock out lever
lever full forward = Full Rich
lever full aft = Idle Cutoff

The mixture control lever features a safety lock which prevents inadvertent leaning of the mixture. To release, squeeze the safety lock lever and the control knob together.

Throttle: center lever with "T" handle
lever full forward = FULL throttle
lever full aft = IDLE

Alternate Air: left lever with square handle
lever full forward = Primary air intake
lever full aft = Alternate air intake

The alternate air control selects a second induction air intake in case of restriction of the primary air intake (filter).

To check the fuel level:

1. Insert the graduated end of the fuel dipstick into the tank through the fuel filler opening until the dipstick touches the bottom.
2. Withdraw the dipstick from the fuel tank.
3. Read fuel quantity. The dipstick is calibrated in increments of ¼ of useable fuel capacity.

(21.3 US gallons/80.5 liters for Type 1 Fuel System or 24.0 US gallons/91 liters for Type 2 Fuel System).

NOTE

Several readings should be taken to confirm accuracy.

7.10.6. Electric Fuel Pump (Priming Pump) Operation

The DA20-C1 is equipped with a DUKES constant flow, vane type, two speed, electric fuel pump. This pump emits an audible whine when it is switched on.

I. Fuel Prime

The pump's high speed setting is used for priming the engine prior to engine start. The prime setting is selected by turning the FUEL PRIME switch ON. An amber annunciator indicates that FUEL PRIME ON is selected.

II. Fuel Pump

The pump's low speed setting is required for maintaining positive fuel supply system pressures at low throttle settings. This setting is selected by turning the FUEL PUMP switch ON. This setting should be selected for any low throttle operations, including taxiing and any flight operations when engine speed may fall below 1000 RPM (eg. stalls, spins, descents, landings, etc.). The FUEL PUMP may also be **selected ON to suppress suspected vapour formation in the fuel supply system. Smooth engine** operation at high ambient temperatures with heat soaked fuel and up to and exceeding the service ceiling has been demonstrated without use of the electric pump.

NOTE

Turning the priming pump on while the engine is running, will enrichen the mixture considerably. Although the effect is less noticeable at high power settings when the fuel flow rate is high, the effect at low and idle throttle settings is an overrich mixture, which may cause rough engine operation or engine stoppage. **It is therefore recommended that for normal operations, the FUEL PRIME be turned OFF.**

2.9 APPROVED MANEUVERS

This airplane is certified in the UTILITY Category in accordance with Canadian Airworthiness Manual Chapter 523-VLA.

Permissible Utility Category Maneuvers:

a) All normal flight maneuvers

b) Lazy Eight's Entry speed: 116 KIAS

Chandelles: Entry speed: 116 KIAS

Steep turns in which the angle of bank does not exceed 60

c) Spinning NOT approved for aircraft equipped with altitude compensating fuel system.

d) Spinning (with Wing Flaps UP) approved for aircraft NOT equipped with altitude compensating fuel system.

e) Stalls NOT approved for aircraft equipped with altitude compensating fuel system and not in compliance with MSB DAC1-73-05 latest approved revision.

f) Stalls (except whip stalls) approved for aircraft NOT equipped with altitude compensating fuel system

g) Stalls (except whip stalls) approved for aircraft equipped with altitude compensating fuel system in compliance with MSB DAC1-73-05 latest approved revision.

h) Intentional Side Slips, except as required for landings, NOT approved for aircraft equipped with altitude compensating fuel system and not in compliance with MSB DAC1-73-05 latest approved revision.

NOTE

Aerobatics are prohibited.

NOTE

THIS SUPPLEMENT IS APPLICABLE ONLY TO THOSE AIRCRAFT WHICH ARE REGISTERED IN THE UNITED STATES OF AMERICA OR CANADA.