Diamond Eclipse (DA-20)
Normal and Emergency Checklists

Speed references

V_R	44	KIAS
V_R (Short Field)	52	KIAS
V_X (Flaps T/O)	57	KIAS
V_X	60	KIAS
V_Y (Flaps T/O)	68	KIAS
V_Y	75	KIAS
Cruise Climb	90	KIAS

LANDING

Normal	60-65	KIAS
Short field	55	KIAS

Checklist Policy

Checklist usage and standard operating procedures are universally recognized as the basis to safe aviation operations. The NTSB has cited improper use or failure to use a checklist as a leading cause of accidents throughout aviation. Therefore, requires strict adherence to the approved checklist. This ensures a safe environment for you and our customers and will lead to many years of enjoyable flying.

Most checklists are accomplished by flow pattern then verify using checklist. The advantage of this type of checklist is that it allows a backup or redundancy. If an item is missed, it allows a second look to correct the omission. In all cases, a visual verification is made to ensure correct position of a switch.

Abnormal checks are performed by reference to the checklist or manual. These are situations, which do not occur frequently and may require troubleshooting. In addition, time is usually available; therefore rapid completion is not usually required.

Emergency Procedures

Most emergency procedures are critical to maintaining safe flight and returning the aircraft to an airport ASAP. Therefore, emergency procedures require trained flow pattern response, followed by reference to the checklist after completing immediate response items.

Final Note

All checklists require training and a complete understanding of the AFM/POH. If in doubt about any item on the checklist, do not depart without additional training
All Pilots must be familiar with the POH purchased at time of checkout. All pilots must remain familiar with the Diamond AFM as posted on the Diamond web site. Falcon Aviation Academy is not responsible for POH updates. Pilots are responsible for any and all revisions published by the manufacturer.

The POH must be assessable to the pilot during flight for reference to Abnormal and Emergency Procedures.

PREFLIGHT INSPECTION

Canopy	
Battery power	On
Fuel quantity	Check
Strobe Lights	Check
Battery power	Off
Hobbs and Tach times	Record
Control lock	Remove
Baggage area	Secure
Tie-downs & Chocks	Remove
Fuel tank	Fuel level, cap
Fuel sumps	Drain, check
Left Wing	
Lt gear, strut, tire & brake	Check
Step Condition	Check
Stall Warning	Not Blocked
Stall Strip	On & Condition
Pitot Tube	Not Blocked
Landing Lights	Clean & condition
Aileron Linkage & hinges	Checked
Aileron balance weight	Checked
Flap Linkage	Checked
Fuselage	
Canopy	Checked
Skin	Condition
Antennas	Checked
Fuel Tank vent	Checked
Fuel Quantity	Checked
Empennage	
Stabilizer and Controls	Checked
Hinges	Checked
Trim tab & Hinges	Checked
Rudder & Tab	Checked
Tail Skid & lower fin	Checked
Right Wing	
Flap Linkage	Checked
Aileron Linkage & hinges	Checked
Aileron balance weight	Checked
Stall Strip	On & Condition
Step condition	Check
Rt. Gear, strut, tire & brake	Check
Front Fuselage	
Oil Level (4 to 6 Qts.)	Check
Cowling	Check
Air Intakes	Clear
Propeller	Check
Spinner	Check
Nose Gear, strut, & tire	Check
Exhaust (may be hot)	Check

FALCON AVIATION ACADEMY

DA-20 - ECLIPSE

Interior Checklist

- ☐ Airworthiness
- ☐ Registration
- ☐ AFM
- ☐ Weight and Balance
- ☐ Seatbelts

Night Flights

- ☐ Instrument panel lists
- ☐ Map light
- ☐ Nav lights
- ☐ Taxi light
- ☐ Landing light

- ☐ Interior condition

Cruise Performance Chart

Figure 1: Flight Manual Cruise Performance Table, Sensenich Propeller

Press Alt ft	RPM	20 °C Below Standard Temp			Standard Temperature			20 °C Above Standard Temp		
		% bhp	KTAS	GPH	% bhp	KTAS	GPH	% bhp	KTAS	GPH
2,000	2800	87	128	8.8	83	129	8.7	80	130	8.6
	2700	78	123	7.7	74	124	6.8	72	125	6.6
	2600	69	118	6.4	66	119	6.2	64	120	6.1
	2500	61	113	5.9	59	113	5.7	57	114	5.6
	2400	54	107	5.3	52	108	5.2	50	109	5.1
4,000	2800	79	126	8.6	76	127	8.6	74	129	6.8
	2700	71	121	6.6	68	122	6.4	66	123	6.2
	2600	63	116	6.0	61	117	5.9	59	118	5.7
	2500	56	111	5.5	55	112	5.4	53	113	5.3
	2450	53	108	5.3	51	109	5.1	50	110	5.1
6,000	2800	73	125	6.7	70	126	6.5	69	128	6.4
	2700	66	120	6.2	64	121	6.0	62	123	5.9
	2600	59	115	5.7	57	116	5.6	56	117	5.5
	2500	53	110	5.2	51	111	5.1	50	112	5.0
8,000	2800	68	124	6.4	66	125	6.2	65	127	6.1
	2700	61	119	5.9	60	121	5.8	59	122	5.7
	2600	55	114	5.4	54	116	5.3	53	117	5.3
	2550	53	112	5.2	51	113	5.1	50	114	5.1
10,000	2800	64	123	6.1	63	125	6.0	61	127	5.9
	2750	61	121	5.9	60	123	5.8	59	124	5.7
	2700	58	119	5.6	57	120	5.5	56	122	5.5
	2650	55	116	5.4	54	118	5.3	53	119	5.3
	2600	53	114	5.2	51	115	5.1	51	117	5.1
12,000	2800	61	123	5.8	60	125	5.8	59	127	5.7
	2750	58	121	5.6	57	123	5.6	56	124	5.5
	2700	55	118	5.4	54	120	5.4	53	122	5.3
	2650	53	116	5.2	52	118	5.2	51	119	5.1

STRUCTURAL TEMPERATURE INDICATOR

A structural temperature indicator, installed on the spar bridge, indicates when the structural temperature limitation is exceeded (refer to Section 2.17).
The indicator need only be checked if the OAT exceeds 38º C (100º F).
The indicator is accessed by lifting the flap between the two seat-back cushions. The indicator is visible through the cut out in the seat shell backs

At temperatures below the 55º C (131º F) limit, the indicator appears all red with a faint indication of “55” (º C).

At temperatures exceeding the 55º C (131º F) limit, the indicator displays a clearly contrasting red “55” (º C) on a black background

BEFORE STARTING

Rudder pedals	Adjust
Seatbelts	Secure
Circuit breakers	In
Parking brake	On
Fuel shutoff valve	In and locked
Mixture	Cut-off
Throttle	Idle
Avionics master	Off
Fuel pump	Off
Fuel primer	Off
Canopy	Closed/latched
Master switch	BAT On
Generator Warning Light	On
Canopy light	Off

STARTING (Read through, do by flow pattern)

Mixture	Rich
Strobe Light	On
Fuel Pump	On
Fuel Primer	On

COLD START <30^0	
Throttle Full	15 secs
Throttle	CLOSED
Prop area	Clear
Starter	Engage*
Throttle	1000RPM
Fuel primer	Off
Oil pressure	Check

NORMAL START	
Throttle Full	3 secs
Throttle	1" open
Prop area	Clear
Starter	Engage*
Throttle	1000RPM
Fuel primer	Off
Oil pressure	Check

HOT START

Throttle Full	1 sec
Throttle	1" open
Prop Area	Clear
Started	Engaged
Throttle	1000 RPM
Fuel Primer	Off
Oil Pressure	Check

FLOODED START

Fuel Pump	Off
Fuel Primer	Off
Mixture	Cut-off
Throttle	Open 1"
Starter	Engage*

Engine should start and then stop. Return to **STARTING checklist and continue.*

AFTER START

GEN	ON
Oil Pres/Electrics	Green
Mixture	Lean ½"
Avionics Master	On
Radios	Check

PRE-TAXI CHECK

Flight Instruments	Check, set
Transponder	Check Stby
Lights	As required
Parking brake	Off
Brakes	Test

BEFORE TAKEOFF

BEFORE TAKEOFF CHECK

Parking Brake	On
Throttle	1000 RPM
Canopy	Locked, light off
Flight controls	Free, correct
Fuel shutoff valve	In and locked
Flaps	T/O
Trim	Neutral
Mixture	Rich
Oil temp	75° minimum
Throttle	1700 RPM
Suction	Green
Engine Inst	Green
Ammeter	Test
Magneto	L-Both-R-Both
Throttle	1000 RPM
Flight instruments	Check and set
Radios/NAVAIDS	Set
Fuel pump	On
Lights/strobes	As required
Transponder	Alt
Wind sock	Check
Departure Plan	Review
Parking Brake	Off

Takeoff

Flaps	T/O
Mixture	Rich
Pump	ON
Lights	As Req

CLIMB CHECK (1000' AGL)

Flaps	Cruise
Fuel Pump	OFF
Engine Gauges	Check
Lights	As required

CRUISE CHECK

Throttle	Set
Fuel Pump	Off
Mixture	Adjust
Heading Indicator	Check
Engine Gauges	Green

PRE-MANEUVER

Mixture	Rich
Fuel pump	On

DESCENT CHECK

Flight instruments	Check
Radios	Set/Check
Fuel pump	On
Mixture	Adjust
Seatbelts	Secure
Lights	As required

LANDING

Fuel pump	On
Mixture	Rich

AFTER LANDING

Flaps	Up
Mixture	Lean ½″
Lights/strobes	As required
Txp	Gnd

SHUTDOWN

Throttle	Idle
Fuel pump	Off
Avionics master	Off
Electrical equip	Off
Mixture	Idle cut-off
Magnetos	Off
Master switch	Off

Engine Failure After Takeoff

Airspeed	58 kt
throttle	Full
Fuel Pump	On
Mixture	Rich
Alt Air	On
Fue SOV	In
Ignition	Both

RESTART IN FLIGHT

PROP WINDMILLING	
Airspeed	73 KIAS
Mixture	Rich
Fuel valve	In and Locked
Ignition Switch	Both
Fuel pump	On
Fuel primer	On
Throttle	¾" open

PROP STOPPED	
Airspeed	73 KIAS
Electrical Equipment	Off
Master Switch	On
Mixture	Rich
Fuel valve	In and locked
Fuel pump	On
Fuel primer	On
Throttle	¾" open
Ignition switch	Start

AFTER RESTART

Oil pressure	Check
Oil temperature	Check
Fuel primer	Off
Electrical Equipment	On, if required

EMERGENCY LANDING (ENGINE OFF)

Airspeed	
Flaps CRUISE	62 KIAS
Flaps T/O	58 KIAS
Flaps LDG	52 KIAS
Fuel shutoff valve	Out
Mixture	Cut-off
Ignition switch	Off
Seatbelts	Secured
Radio	Call
Flaps	As required
Master switch	Off, after flaps
Brakes	After touchdown

ROUGH ENGINE (IN FLIGHT)

Mixture	Rich
Alternate Air	Open
Fuel shutoff valve	In
Fuel pump	On
Ignition switch	L-Both, R-Both

LOSS OF OIL PRESSURE

1. Oil Temperature check

2. If Oil Pressure drops below Green Arc and Oil Temperature is rising, prepared for engine failure and emergency landing.

Land at Nearest Suitable Airport.

LOSS OF FUEL PRESSURE

1. Fuel Pump ON

2. If fuel pressure is not restored. Land at nearest suitable airport.

Be prepared for engine failure and emergency landing.

Engine Fire during Engine-Start-Up on the Ground

1. Fuel Shut-off Valve CLOSED
2. Cabin Heat CLOSED
3. Mixture IDLE CUTOFF
4. GEN/BAT Master Switch OFF
5. Ignition Switch OFF
6. Evacuate Airplane immediately

B. Engine Fire during Flight

1. Fuel Shut-off Valve CLOSED
2. Cabin Heat CLOSED
3. Airspeed 73 KIAS

NOTE

Airspeed is for best glide with flaps in CRUISE position. If a suitable landing area is available and can be safely reached,
airspeed can be increased in an attempt to extinguish the fire.
Do not exceed airspeeds given for structural limitations.

4. Fuel Pump: OFF
5. Perform emergency landing with engine off according to paragraph 3.3.3. of POH

Electrical Power Failure

A. Total Electrical Power Failure

1. Battery Circuit Breaker If tripped: Reset
2. GEN/BAT Master Switch: Check ON
3. Master Switch OFF if power not restored
4. If Unsuccessful Land at nearest suitable airport

B. Generator Failure

GEN. ANNUNCIATOR ILLUMINATED

1. GEN/BAT Master Switch: **OFF/ON**
2. Generator Circuit Breaker If tripped, **Reset**
3. Generator CONTROL Circuit Breaker If tripped, **Reset**
4. If Generator cannot be brought on-line Switch OFF all non-flight essential electrical consumers.
Monitor Ammeter and Voltmeter.
Land at nearest suitable airport.

NOTE

There is 30 minutes of battery power at a discharge load of 20 amperes when the battery is fully charged and properly maintained.

C. Low Voltage Indication (needle in yellow Arc)

LOW VOLTAGE INDICATION (NEEDLE IN YELLOW ARC) WHILE AIRPLANE ON GROUND

1. Engine RPM Increase RPM until needle is in the Green Arc. This should occur before exceeding 1100 RPM.
2. Non-flight essential electrical consumers Switch OFF consumers until needle is in the Green Arc.
3. If needle remains in the yellow arc and Discontinue flight

LOW VOLTAGE INDICATION (NEEDLE IN YELLOW ARC) DURING FLIGHT

1. All non-flight essential electrical Switch OFF
2. If needle is remaining in the yellow arc and the ammeter is indicating to the left Refer to paragraph 3.3.8.C.in POH

See POH Section 3 for additional Emergency/Abnormal Procedures

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