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SENECA

Checklist PA-34 200T Seneca II

Carenado

NORMAL PROCEDURRES
CHECKLIST PA-34-200T SENECA II

PREFLIGHT CHECK

INSIDE CABIN

Avionics Master Switch -- OFF
Landing Gear Control. -- DOWN
Mixture Controls -- IDLE/CUTOFF
Ignition Switches -- OFF
Master Switch -- ON
Landing Gear Lights -- 3 GREEN
Fuel Quantity -- ADEQUATE plus RESERVE
Master Switch -- OFF
Cowl Flaps -- OPEN
Trim Indicators -- NEUTRAL
Pitot/Static System -- DRAIN
Flaps. -- DOWN
Controls -- FREE
Empty Seats -- FASTEN BELTS
Crossfeed drain -- DRAIN

OUTSIDE CABIN

Crossfeed drains -- CLOSED
Right wing, aileron and flap -- CHECK, NO ICE
Right main gear -- NO LEAKS
Strut -- PROPER INFLATION
Tire -- CHECK
Right Wing Tip -- CHECK
Right Leading Edge -- CHECK, NO ICE
Fuel Cap -- OPEN, CHECK QUANTITY and COLOR, SECURE
Right Engine Nacelle -- CHECK OIL
Right Propeller -- CHECK
Cowl Flaps -- OPEN AND SECURE
Fuel Drains -- DRAIN
Nose section -- CHECK
Nose Gear -- NO LEAKS
Strut -- PROPER INFLATION
Tow Bar -- REMOVED AND STOWED

Landing Light -- CHECK
Forward Baggage Door (keyremovable in locked position only) -- SECURE AND LOCKED
Wingshield -- CLEAN
Left Wing, Engine Nacelle and Landing Gear -- CHECK AS ON RIGHT SIDE
Pitot Tube -- CLEAR, CHECKED
Stall Warning Vanes -- CHECK
Rear Door -- LATCHED
Left Static Vent -- CLEAR
Dorsal Fin Air Scoop -- CLEAR
Empennage -- CHECK, NO ICE
Stabilator -- FREE
Right Static Vent -- CLEAR
Antennas -- CHECK
Navigator and Landing Lights -- CHECK

BEFORE STARTING ENGINES

Seats -- ADJUSTED
Seat Belts and Shoulder Harness -- FASTEN, ADJUST
Parking Brake -- SET
Circuit Breakers -- IN
Radios -- OFF
Alternate Air -- OFF
Alternators -- ON
Cowl Flaps -- OPEN

STARTING ENGINES (*repeat for both engines)

Fuel Selectors -- ON
Mixture -- RICH
Throttle -- HALF TRAVEL
Propeller -- FORWARD
Master Switch -- ON
Ignition Switches -- ON
*Propeller -- CLEAR
*Starter -- ENGAGE
Primer button -- ON AS REQUIRED
*Throttle -- RETARD WHEN ENGINE STARTS
*Oil Pressure -- CHECK
*Alternator -- CHARGING
Gyro pressure -- CHECK

STARTING ENGINE WHEN FLOODED

Mixture -- IDLE CUTOFF
Throttle -- FULL FORWARD
Propeller -- FULL FORWARD
Master -- SWITCH ON
Ignition Switches -- ON
Auxiliary Fuel Pump -- OFF
*Propeller -- CLEAR
*Starter -- ENGAGE

When engine fires:
*Throttle -- RETARD
*Mixture -- ADVANCE SLOWLY

STARTING WITH EXTERNAL POWER SOURCE

Master Switch -- OFF
All Electrical Equipment -- OFF
Terminals -- CONNECT
External Power Plug -- INSERT IN FUSELAGE
Master Switch -- ON – CHECK AMMETER
Oil pressure Switch -- CHECK

WARM-UP

Throttles -- 1000 to 1200 RPM

TAXIING
Chocks -- X-FEED
Taxi Area -- CLEAR
Throttle -- APPLY SLOWLY
Brakes -- CHECK
Steering -- CHECK
Instruments -- CHECK
Heat and defroster -- CHECK
Fuel Selector -- ON, CHECK CROSSFEED
Autopilot -- OFF

BEFORE TAKEOFF – GROUND CHECK

Parking Brake -- ON
Mixture Controls -- FORWARD
Propeller Controls -- FORWARD
*Throttle Control -- 1000 RPM
*Manifold pressure lines -- DRAIN
*Propeller Controls -- CHECK FEATHERING,
300 RPM max. DROP
*Throttle Control -- 1900 RPM
*Propeller Controls -- CHECK GOVERNOR
*Propeller Controls -- FULL FORWARD
*Alternate Air -- ON then OFF
*Magnetos -- CHECK max DROP 150 RPM. Max DIFF.
DROP 50 RPM
*Alternator output -- CHECK
*Gyro Pressure Gauge -- 4.5: - 5.2" Hg
*Throttle -- 800-1000 RPM
Fuel Selectors -- ON
*Alternator -- ON
*Engine Gauges -- IN THE GREEN
Annunciator Panel -- PRESS TO TEST
Altimeter -- SET
Attitude Indicator -- SET
D.G. -- SET
Clock -- WOUND and SET
Mixtures -- RICH
Propellers -- SET IN FORWARD POSITION
Quadrant Friction Lock -- ADJUSTED
Alternate Air -- OFF
Cowl Flaps -- SET
Wing Flaps -- SET
Trim -- SET
Seat Belts and Harness -- FASTEN ADJUST
Empty Seats -- SEAT BELTS FASTENED
Controls -- FREE, FULL TRAVEL
Doors -- LATCHED
Auxiliary Fuel Pumps -- OFF
Pitot Heat -- AS REQUIRED

TAKEOFF

CAUTIONS
Do not exceed 40 in. Hg. Manifold pressure.

Fast taxi turns immediately prior to takeoff run can cause temporary malfunction of one engine during takeoff.

Normal sea level takeoff at 39 in. Hg.
And 2575 RPM.

Adjust mixture prior to takeoff from high elevations. Do not overheat. Do not exceed 40 in. Hg. Manifold pressure.

NORMAL TAKEOFF (Flaps up)

Flaps -- UP
Accelerate to 66 to 71 KIAS
Control Wheel -- EASE BACK TO
ROTATE TO CLIMB
ATTITUDE
After breaking ground, accelerate to best rate of climb speed of 89 KIAS
Gear -- UP

SHORT FIELD TAKEOFF (Flaps up)

Flaps -- UP
Stabilator trim -- TAKEOFF RANGE
Brakes -- SET
Full power before brake release
Accelerate to 66 KIAS
Control Wheel -- ROTATE FIRMLY TO
ATTAIN 71 KIAS
THROUGH 50 ft.

Accelerate to best angle of climb speed of 76 KIAS For obstacle clearance or best rate of climb speed of 89 KIAS.
Gear -- UP

SHORT FIELD TAKEOFF (25° Flaps)

Flaps -- 25° (second notch)
Stabilator trim -- SET
Brakes -- SET
Full power before brake release
Accelerate to 61 KIAS
Control Wheel -- ROTATE FIRMLY TO
ATTAIN 69 KIAS
THROUGH 50 ft.
Gear -- UP

TAKE OFF CLIMB

Mixture -- FULL RICH
Prop Speed -- 2575 RPM
Manifold Pressure -- DO NOT EXCEED 40 in. Hg.
Climb Speed
Best Angle -- 76 KIAS
Best Rate -- 89 KIAS
Cowl Flaps -- AS REQUIRED

CRUISE CLIMB

Mixture -- FULL RICH
Prop Speed -- 2450 RPM
Manifold Pressure -- 31.5 in. Hg.
Climb Speed -- 102 KIAS
Cowl Flaps -- AS REQUIRED

CRUISING

Reference performance charts. Teledyne Continental Operator's Manual and power setting table
Power -- SET.
Cowl Flaps -- AS REQUIRED
Mixture -- ADJUST
Engine Gauges -- MONITOR

DESCENT

Mixture -- ENRICH WITH DESCENT
Throttlesss -- CRUISE SETTING
Cowl Flaps -- CLOSED

APPROACH AND LANDING

Gear warning horn -- CHECK
Airspeed -- 98 KIAS ON DOWNWIND LEG
Seat Backs -- ERECT
Seat belts and harness -- FASTEN ADJUST
Fuel Selectors -- ON
Cowl Flaps -- AS REQUIRED
Auxiliary Fuel Pumps -- OFF
Mixture Controls -- SET
Propellers -- 2250 RPM
Landing Gear -- DOWN, 129 KIAS max.
Flaps -- SET AS REQUIRED
Airspeed -- 97 KIAS ON BASE LEG
87 KIAS ON FINAL
On close final:
Power -- REDUCED
Prop. Controls -- FULL FORWARD

GO-AROUND

Full takeoff power, both engines (40 in. Hg. Max.)
Establish positive climb
Flaps -- RETRACT
Gear -- UP
Cowl Flaps -- ADJUST

AFTER LANDING

Clear of Runway
Flaps -- RETRACT
Cowl Flaps -- FULLY OPEN
Alternate Air -- OFF

SHUTDOWN

Heater -- FAN 2 MIN. THEN OFF
Radio and Electrical Equipment -- OFF
Mixture -- IDLE/CUT-OFF
Magnetos Switches -- OFF
Master Switch -- OFF
Parking Brake -- SET ON

CHECKLIST PA-34 200T SENECA II

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EMERGENCY PROCEDURE PA-34 200T SENECA II

VNE - Never Exceed Speed	195 KIAS
VNO - Max Structural Cruising Speed	163 KIAS
VA - Maneuvering Speed	
4570 pounds	136 KIAS
3068 pounds	121 KIAS
VFE - Maximum Flap Extended Speed	107 KIAS
VLE - Maximum Gear Extended Speed	129 KIAS
VLO - Maximum Landing Gear Extension Speed	129 KIAS
VLO - Maximum Landing Gear Retraction Speed	107 KIAS
VMC - Air Minimum Control Speed (Lowest airspeed at which airplane is controllable with one engine operating and no flaps).	66 KIAS
Best Single Engine Rate of Climb Speed	89 KIAS

MARKING	KIAS VALUE OR RANGE
White Arc	61 - 107
Green Arc	63 - 163
Yellow Arc	163 - 195
Red Line	195

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Emergency procedure PA-34 200T Seneca II

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EMERGENCY PROCEDURES
PA-34-200T SENECA II

ENGINE INOPERATIVE PROCEDURES

DETECTING DEAD ENGINE

Loss of thrust:
Nose of Aircraft will yaw in direction of dead engine

ENGINE SECURING PROCEDURE

(FEATHERING PROCEDURE)

To attempt to restore power prior to feathering:
Mixtures -- AS REQUIRED
Fuel Selector -- CROSS FEED
Magnetos -- LEFT OR RIGHT ONLY
Alternate Air -- ON
Auxiliary Fuel Pump -- UNLATCH. ON Hl. IF
POWER IS NOT IMMEDIATELY
RESTORES, OFF

Feather before RPM Drops Below 800
Minimun control speed -- 65 KIAS
Best S.E.R.C -- 89 KIAS
Maintain direction and airspeed above 76 KIAS
Mixture Controls -- FORWARD
Propeller Controls -- FORWARD
Throttle Controls -- FORWARD (40 in Hg MAX)
Flaps -- RETRACT
Gear -- RETRACT
Modify inoperative engine
Throttle of Inoperative Engine -- RETARD TO VERIFY
Mixture of Inoperative engine -- IDLE, CUT-OFF
Prop control of inop. Engine -- FEATHER
Trim -- AS REQUIRED
Auxiliary Fuel Pumps -- OFF
(EXCEPT IN CASE OFENGINE
DRIVEN PUMP FAILURE)
Magnetos of inop. Engine -- OFF
Cowl Flaps -- CLOSE ON INOP. ENGINE,
AS REQUIRED ON OPERATIVE ENGINE

Alternator of inop. Engine -- OFF
Electrical Load -- REDUCE
Fuel Management -- OFF INOP. ENGINE.
CONSIDER CROSSFEED

ENGINE FAILURE DURING TAKEOFF (Below 85 KIAS)

If engine failure occurs during takeoff and 85 KIAS has not been
Attained:
Throttles -- CLOSE BOTH IMMEDIATELY

Stop straight ahead

If inadequate runway remains to stop
Throttles -- APPLY MAX BRAKING
Master Switch -- OFF
Fuel Selectors -- OFF
Continue straight ahead, turning to avoid obstacles

ENGINE FAILURE DURING TAKEOFF (85 KIAS or above)

If engine failure occurs during takeoff ground roll or after lift-off with gear still down and 85 KIAS has been attained:If adequate runway remains CLOSE both throttles immediately, land if airbone and stop straight ahead. If runway remaining is inadequate for stopping, decide whether to abort or continue. If decision is made to continue, maintain heading and airspeed. Retract landing gear when climb is established and feather inoperative engine prop (see Engine Securing Procedure).

ENGINE FAILURE DURING CLIMB

If engine failure occurs when airspeed is below 66 KIAS:
Rudder -- APPLY TOWARDS OPEARTING ENGINE
Throttles -- REDUCE THROTTLE SETTINGS
AS REQUIRED TO MAINTAIN
DIRECTIONAL CONTROL
Nose -- LOWER NOSE TO ACCELERATE
BEST SINGLE ENGINE RATE OF
CLIMB SPEED (89 KIAS)

Operating Engine -- INCREASE POWER AS AIRSPEED
INCREASES ABOVE 66 KIAS
Inoperative engine Prop.-- FEATHER (SEE ENGINE
SECURING PROCEDURE)
If engine failure occurs when airspeed
is above 66 KIAS:
Maintain directional control.
Adjust airspeed toward the best single engine rate of climb speed (89 KIAS)
Inoperative engine Prop. -- FEATHER (SEE ENGINE
SECURING PROCEDURE)

ENGINE FAILURE DURING FLIGHT (Below 66 KIAS)

Rudder -- APPLY TOWARDS OPEARTING
ENGINE
Throttles (both engines). -- RETARD TO STOP TURN
Pitch Attitude. -- LOWER NOSE TO ACCELERATE
ABOVE 66 KIAS
Operating Engine. -- INCREASE POWER AS AIRSPEED
INCREASES ABOVE 66 KIAS

If altitude permits, a restart may be attempted.

If restart fails or altitude does not permit:
Inoperative engine Prop. -- FEATHER
Trim. -- ADJUST 5° BANK
TOWARDS OPERATIVE ENGINE
Inoperative engine. -- COMPLETE ENGINE
SECURING PROCEDURE
Cowl Flap (Operating Engine) -- AS REQUIRED

ENGINE FAILURE DURING FLIGHT (Above 66 KIAS)

Rudder -- APPLY TOWARDS OPEARTING ENGINE
Inop. Eng. -- IDENTIFY
Operative Eng. -- ADJUST AS REQUIRED

Before Securing Inop. Engine:
Fuel Flow -- CHECK (IF DEFICIENT,
AUXILIARY FUEL PUMP
HI BOOST, IF POWER IS NOT
RESTORED, OFF
Fuel Quantity -- CHECK
Fuel Selector (Inop. Eng.) -- CROSS FEED
Alternate Air -- ON
Mixture -- CHECK
Oil Pressure and Temp -- CHECK
Magnetos Switches -- CHECK
If engine does not start, complete Engine Securing Procedure.

Power (Operative Eng.) -- AS REQUIRED
Mixture (Operative Eng. -- ADJUST FOR POWER
Fuel Quantity (Operative Eng. Tank) -- SUFFICIENT
Auxiliary Fuel Pump (Operative Eng.) -- AS REQUIRED
Cowl Flap (Operative Eng.) -- AS REQUIRED
Trim (Rudder) -- ADJUST 5° BANK
TOWARDS OPERATIVE ENGINE
Electrical Load -- DECREASE TO MIN. REQUIRED
Land as soon as practical at nearest suitable airport.

SINGLE ENGINE LANDING

Inop. Engine Prop. -- FEATHER
When certain of making field:
Landing Gear -- EXTEND
Wing Flaps -- LOWER
Maintain additional altitude
and speed during approach.
Final Approach Speed -- 91 KIAS
Wing Flaps -- 25°

SINGLE ENGINE GO-AROUND (Avoid if at all possible)

Mixture -- FORWARD
Propeller -- FORWARD
Throttle -- OPEN SLOWLY TO 40 in HG
FLAPS -- RETRACT
Landing Gear -- RETRACT

Airspeed -- 89 KIAS
Trim -- SET
Cowl Flap Operating Engine -- AS REQUIRED

AIR START (UNFEATHERING PROCEDURE)

Fuel Selector Inop. Engine -- ON
Aux. Fuel Pump Inop. Engine -- OFF
Throttle -- OPEN ¼ INCH
Prop. Control -- FORWARD TO
CRUISE RPM POSITION
Mixture -- RICH
Magneto Switches -- ON
Starter -- ENGAGE UNTIL
PROP WINDMILLS
Throttle -- REDUCE POWER UNTIL
ENGINE IS WARM
If engine does not start, prime as required.
Alternator -- ON

ENGINE FIRE ON GROUND

If engine has not started:
Mixture -- IDLE CUTOFF
Throttle -- OPEN
Starter -- CRACK ENGINE
If engine has already started and is running, continue operating to try pulling the fire into the engine.

If fire continues, extinguish with best available means
Fuel Selectors -- OFF
Mixture -- IDLE CUT OFF

ENGINE FIRE IN FLIGHT

Affected Engine:
Fuel Selector -- OFF
Throttle -- CLOSE
Propeller -- FEATHER
Mixture -- IDLE CUTOFF
Heater -- OFF
Defroster -- OFF
If terrains permits land immediately, if fire continues.

FUEL MANAGEMENT DURING SINGLE ENGINE OPERATION

CRUISING

When using fuel from tank on the same side as the operating engine:
Fuel Selector Operating Enginer -- ON
Fuel Selector Inop. Enginer -- OFF
Auxiliary Fuel Pumps -- OFF

When using fuel from tank on the side opposite the operating engine:
Fuel Selector Operating Engine -- CROSSFEED
Fuel Selector Inop. Engine -- OFF
Auxiliary Fuel Pumps -- OFF

Use crossfeed in level flight only.

NOTE
Do not crossfeed with full fuel on same
Side as operating engine since vapor return fuel flow will be lost through the vent system.

LANDING

Fuel Selector Operating Engine -- ON
Fuel Selector Inop. Engine -- OFF

ENGINE DRIVEN FUEL PUMP FAILURE

Throttle -- RETARD
Auxiliary Fuel Pump -- UNLATCH on HI
Throttle -- RESET (75% POWER OR BELOW)

CAUTIONS
If normal engine operation and fuel flow is not immediately re-established, the auxiliary fuel pump should be turned off. The lack of a fuel flow indicator while on the HI auxiliary fuel pump position could indicate a leak in the fuel system or fuel exhaustion.

DO NOT actuate the auxiliary fuel pumps unless vapor suppression is required (LO position) or the engine driven fuel pumps fails (HI position). The auxiliary pumps have no standby function. Actuation of the HI switch position when the engines are operating normally may cause engine roughness and/or power loss.

LANDING GEAR UNSAFE WARNINGS

Red light indicates gear is in transit.
Recycle the gear if the indication continues.
Light will illuminate when the gear horn sounds at low throttle settings.

MANUAL EXTENSION OF LANDING GEAR

Check following before extending gear manually:
Circuit Breakers -- CHECK
Master Switch -- ON
Alternators -- CHECK
Navigation Lights -- OFF (DAYTIME)

To extend reposition clip downward clear of knob and proceed as follows:
Airspeed -- REDUCE (85 KIAS MAX)
Gear Selector -- GEAR DOWN
LOCKED POSITION
Emergency Gear Extend Knob -- PULL
Indicator Lights -- 3 GREEN
Leave emergency gear extension knob out.

ENGINE FAILURE IN ICING CONDITIONS

Select alternate air and attempt restart.
If unable to restart engine:
Inop. Prop -- FEATHER
Airspeed -- AT OR ABOVE 89 KIAS
Descend if necessary to maintain airspeed
Electrical Load -- REDUCE
Avoid further icing conditions if possible.
Land as sson as practical.
Maintain at least 89 KIAS on final.

Do not extend gear or lower flaps until certain of making field.
Flaps -- 25°

ALTERNATOR FAILURE IN ICING CONDITIONS

Overvoltage Relay -- RESET
Circuit Breakers -- CHECK AND RESET

If unable to restore alternator:
Avionics -- ALL OFF EXCEPT
NAV COM AND TRANSP
Electric Windshield -- OFF TO MAINTAIN 65A LOAD
If icing continues terminate flight as soon as practical.

Prior to landing:
Electric Windshield -- ON IF NECESSARY
Gear may require free fall extension.

ELECTRICAL FAILURES

ALT annunciator light illuminated
Ammeters -- OBSERVE TO
DETERMINE INOP. ALT.
If both ammeters show zero output, reduce electrical load to minimum.

Turn OFF both alt. switches: then turn them ON momentarily one at a time while observing ammeters. Determine alt. showing LEAST (but not zero) amperes and turn its switch on.
Electrical Loads -- RE-ESTABLISH UP TO 60A

If one ammeter shows zero output, cycle its switch off, then on.
If power is not restored check circuit breakers and reset once if required.
If alternator remains inoperative, reduce electrical loads and continue flight.

WARNING Compass error may exceed 10° with both alternators inoperative.

GYRO PRESSURE FAILURES

Pressure below 4.5 in Hg.
RPM -- INCREASE TO 2575
ALTITUDE -- DESCEND TO MAINTAIN 4.5 in HG
Use electrical turn indicator to monitor Directional Indicator and Attitude Indicator performance.

COMBUSTION HEATER OVERHEAT

Unit will automatically cut-off
Do not attempt to restart.

SPINS

Throttles -- RETARD TO IDLE
Rudder -- FULL OPPOSITE TO
DIRECTION OF SPIN
Control Wheel -- RELEASE BACK PRESSURE
Control Wheel -- FULL FORWARD IF
NOSE DOES NOT DROP
Ailerons -- NEUTRAL
Rudder -- NEUTRALIZE WHEN
ROTATION STOPS
Control Wheel -- SMOOTH BACK PRESSURE
TO RECOVER FROM DIVE

EMERGENCY DESCENT

Throttles -- CLOSED
Propeller -- FULL FORWARD
Mixture -- AS REQUIERED FOR
SMOOTH OPERATION
Landing Gear -- EXTEND
Airspeed -- 129 KIAS

EMERGENCY PROCEDURE PA-34 200T SENECA II

Carenado

Virtual Cockpit **Operation**

Flying a twin engine aircraft requires seeing more instruments at the same time than flying a single engine aircraft. Carenado has recreated an extremely real VC of the PA-34 Seneca II which allows you to fly it as if you were in the real aircraft checking all the instruments at the same time.

Highly detailed instruments with zoom capabilities and a smooth running in terms of FPS make this aircraft completely flyable from the VC, as in real life.

We developed this aircraft focused on creating an extremely realistic experience in terms of flight dynamics, behavior and visual representation.

1.- Clock
2.- Airspeed
3.- Artificial horizon
4.- Altimeter
5.- Test Panel Anuntiator
6.- Autopilot Panel Anuntiator
7.- Gear warning light
8.- Comm1& Nav1
9.- GPS
10.- Copilot instruments
11.- Avionics & Gps/Nav Switch
12.- DME
13.- Adjust ADF
14.- Turn coordinator
15.- HSI
16.- Transponder
17.- Variometer
18.- VOR Radial
19.- Comm 2 & Nav2
20.- ADF
21.- Toggle yoke
22.- Fuel & Oil indicators
23.- Radio controller
24.- Autopilot
25.- RPM E1 & E2
26.- Gear Control & Position gear light
27.- Engine Controls
28.- Brakes
29.- EGT E1 & E2
30.- Fuel Flow
31.- Alternate Air E1 & E2
32.- Manifold pressure
33.- Instruments light
34.- Elevator & Ailerons trim
35.- Cross feed fuel
36.- Engine control panel
- Engine Magnetos
- Primer Left & Right
- Engines Starter
- Landings lights
- Nav lights
- Anti Collision Lights
- Pitot Heat
- Fuel Pumps
- Master
- Alternator Switches

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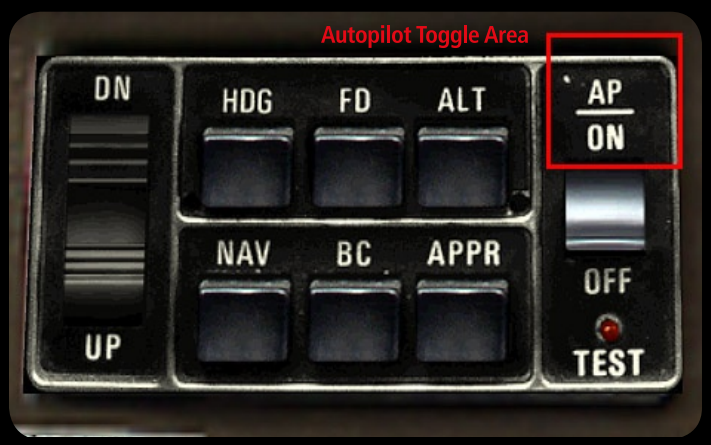
PA-34 200T Seneca II



Autopilot operation:
Before using any autopilot option (HDG, ALT, etc.) you have to turn ON the Autopilot, otherwise the FD will turn ON when pressing HDG, ALT or NAV.

Carenado