



Cessna Caravan 675 Executive version User's manual

For Microsoft® Flight Simulator 2004

© 2006 FriendlyPanels. All right reserved

- TWO CESSNA 675 AND 675 AMPHIBIAN AIRCRAFTS
- TWO DIFFERENT GPS EQUIPMENTS
- THREE LIVERIES FOR EACH AIRCRAFT



Table of Contents

- 1. Introduction**
- 2. Aircrafts Specifications summary**
- 3. Requirements**
- 4. Installing the aircrafts**
- 5. Screenshots**
- 6. Gauges**
 - 6.1 BENDIX KR 87 ADF**
 - 6.2 GARMIN GTX 330 TRANSPONDER**
 - 6.3 ALTITUDE/VS SELECTOR/ALERTER S-TEC ST360**
 - 6.4 S-TEC Fifty Five X AUTOPILOT**
 - 6.5 DAVTRON DIGITAL CLOCK M877**
- 7. Remarks**
- 8. Technical support**

NOTE: Garmin GNS 430 and 530 GPS's Manuals are in separate documents, they are not included in this one.

1. Introduction

Thank you for purchasing these Cessna Caravan 675 Aircrafts. Here you will find the installing instructions of the product, and the description and user instructions of the gauges for the panels included in this Pack for FS2004. Some of these gauges are: GARMIN GNS 530 GPS, GARMIN GNS530 GPS , BENDIX KR 87 ADF, S-TEC Fifty Five X AUTOPILOT, ALTITUDE/VS SELECTOR/ALERTER S-TEC ST360 and DAVTRON DIGITAL CLOCK M803.

This pack includes two Cessna Caravan 675 and 675 Amphibian aircrafts, two different GPS equipments (two Garmin GNS430, or one GNS530 and one GNS430) and three liveries for each aircraft.

We have developed the 2D panels for these planes under a simple philosophy: panels in which you can see, read and handle as many gauges as a medium quality monitor screen allows, using the minimum number of windows, with a gauges layout as real as possible.

A pleasure to fly with these panels, no need of complementary windows spoiling your maneuvering or views. See the screenshots ahead to have a look of every view.

Concerning the aircraft 3D model, you'll find realistic movements of essential parts (ailerons, flaps, rudder, elevator, gear, doors, etc...) and a complete VC (in which you can manage all the gauges too) and passengers cabin. We try to avoid things not very useful which reduce substantially the frame rate in their respective views.

Please, read this document entirely.

---oOo---

3. Aircrafts specifications summary

With the same horsepower as the Grand Caravan, Cessna's Caravan 675 offers you all the excellent performance, rugged durability, and legendary reliability that have made Caravans great. With a maximum useful load of 4,110 pounds and a cruise speed of 186 knots, the 675 will move mountains in record time.

With as few as four passengers, Caravan can beat the cost of airline travel. That makes it a natural for personal use or transporting company personnel.

Cessna Caravan 675

Cruise Speed (10,000 ft) kts/km: 186/344
Engine: PT6A-114A
Propeller: 3-Bladed, Constant Speed, Full Feathering, Reversible
Maximum Range (10,000 ft): 932 nm / 1726 km
Certified Ceiling ft/m: 25,000/7,620
Fuel Capacity gal/lbs: 335/2,248
Standard Empty Weight lbs/kg: 3,990/1,810
Maximum Weights lbs/kg:

- Ramp 8,035/3,645
- Takeoff Weight: 8,000 lb / 3,629 kg
- Landing Weight: 7,800 lb / 3,539 kg

Cabin (Aft of Pilot Area):

- Length ft/m 12.7/3.7
- Height ft/m 4.3/1.3
- Width ft/m 5.2/1.6
- Volume cu ft/cu m 254/7.2

Length: 37.6'
Wingspan: 52.1'
Height: 14.8'
Max Seating FAR 23/Other: 11/14
Maximum Useful Load lbs/kg: 4045/1835
Takeoff S.L. ISA:

- Ground Roll ft/m 1,100/335
- 50-ft Obs. ft/m 2,000/610

Landing S.L.:

- Ground Roll ft/m 745/227
- 50-ft Obs. ft/m 1,655/504

S.L. Rate of Climb fpm/mpm: 1,234/376
Stall Speed (Ldg) kts/km: 61/113
SHP: 675

Cessna Caravan Amphibian

Cruise Speed (10,000 ft) kts/km: 163/302
Engine: PT6A-114A
Propeller: 3-Bladed, Constant Speed, Full Feathering, Reversible
Maximum Range (10,000 ft): 855 nm / 1,583 km
Certified Ceiling ft/m: 20,000/6,069
Fuel Capacity gal/lbs: 335/2,248
Standard Empty Weight lbs/kg: 4,895/2,220
Maximum Weights lbs/kg:

- Ramp 8,035/3,645
- Takeoff: 8,000/3,629
- Landing: 7,800/3,538

Cabin (Aft of Pilot Area):

- Length ft/m 12.7/3.7
- Height ft/m 4.3/1.2
- Width ft/m 5.2/1.6
- Volume cu ft/cu m 254/7.2

Length: 38.9'

Wingspan: 52.1'
Height: 18.2'
Max Seating FAR 23/Other: 11/14
Maximum Useful Load lbs/kg: 3,140/1,424
Takeoff S.L. ISA:

- Ground Roll ft/m 1,920/585
- 50-ft Obs. ft/m 3,455/1053
- Water run ft/m: 2,025/617

Landing S.L.:

- Ground Roll ft/m 1,045/319
- 50-ft Obs. ft/m 1,935/590
- Water run ft/m: 1,045/319

S.L. Rate of Climb fpm/mpm: 823/251
Stall Speed (Ldg) kts/km: 59/109
SHP: 675

3. Requirements

This software requires Windows XP with at least SP1 and .Net Framework 1.1 and a screen resolution of 1024 x 768 or higher (1240 x 1024 recommended). No other special requirements are needed, if your PC can handle the default planes, it can handle these ones.

---oOo---

4. Installing the aircrafts

Run the installation program and follow the indicated steps. You'll find your new planes under Manufacturer: FriendlyPanels.

---oOo---

5. Some Screenshots



Cessna 675 2D panel



Cessna 675 Virtual cockpit at night



Cessna 675 Amphibian 2D panel



Cessna 675 Amphibian Virtual cockpit at night

6. Gauges

This section shows, explains and describe (when necessary) the new FP gauges features included in this pack.

6.1 BENDIX KR 87 ADF



The Bendix KR 87 ADF has two knobs and five buttons. It displays active and stand by frequencies and integrates two timers.

6.1.1 Clicking areas



1. ADF / ANT modes. This version displays ADF station ident.
2. BFO mode (just the letters)
3. In frequency mode transfer stand by frequency to active. Returns to frequency mode from timers modes.
4. Go into timers mode.
- 5 and 6. Controls timers modes (described below).
7. On Off
- 8, 13, 14. Decrements frequency
9. Increments fractal frequency
- 10, 11, 12. Increments frequency

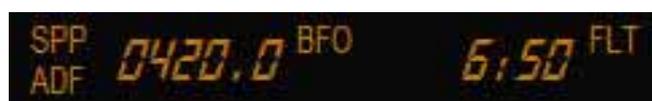
6.1.2 Display modes

Frequency mode



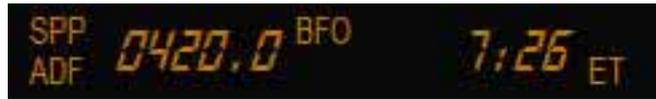
Use knob and swap button to manage this screen.

FLT timer Mode



From frequency mode push FLT/SET button once to go into this mode. This timer begins to count when you turn on the gauge and stops when you turn it off.

ET timer Mode



From frequency mode push FLT/SET button twice to go into this mode. This timer starts to count when you turn on the gauge, but you can control it. Clicking on SET/RST button once stops the timer. When it is stopped clicking again reset the timer and starts to count from zero. Clicking to the right of the button (area 7 above) will reset it to zero and ET begin to blink, you can use the knob to set a countdown (up to 59 minutes and 59 seconds), push SET/RST to start the countdown. After the countdown timer reaches zero, the counter will come up, whatever the mode you are in, and will begin to count upwards indefinitely while flashing for a few seconds, returning then to the mode you were before, if it was different. The Audio Alert is then sounded

6.2 GARMIN GTX 330 TRANSPONDER



The Garmin GTX 330 Transponder has twenty buttons.

6.2.1 Clicking and display areas

The click areas correspond to the buttons

IDENT. Ident Pushbutton

VFR. VFR Button

ON. Turns on the GTX 330

ALT. Alt mode

STBY. Stand by mode

OFF. Turns off the GTX 330

0 to 7 . Code Selector Knobs

FUNC. Function Selector Knob. Selects what you see in the right side of the screen.

CRSR. Cursor

START/STOP. Set timers

CLR. Reset timers or clear code figures

6.2.2 Operation

OFF

Powers off the GTX 330. Pressing STBY, ON or ALT key powers on the transponder displaying the last active identification code.

STBY

Selects the standby mode.



ON

Selects Mode A. In this mode, the transponder replies to interrogations, as indicated by the Reply Symbol . Replies do not include altitude information.



ALT

Selects Mode A and Mode C. In **ALT** mode, the transponder replies to identification and altitude interrogations as indicated by the Reply Symbol .



CODE SELECTION

Is done with eight keys (0-7) providing 4096 active identification codes. Pushing one of these keys begins the code selection sequence. The new code is not activated until the fourth digit is entered. Pressing the **CLR** key moves the cursor back to the previous digit. The numbers 8 and 9 are not used for code entry only for entering a Count Down time, and contrast and display brightness.



IDENT

Pressing the **IDENT** key activates the Special Position Identification. The word IDENT will appear in the upper left corner of the display and Reply Symbol  won't blink for 18 seconds, identifying your transponder return from others on the air traffic controller's screen. The word IDENT will appear in the upper left corner of the display while the IDENT mode is active.



VFR

Sets the transponder code to the pre-programmed VFR code selected in Configuration Mode (this is set to 1200).



FUNC

Changes the page shown on the right side of the display. Display data includes Pressure Altitude, Flight Time, Altitude Monitor, Count Up and Count Down timers, contrast and brightness.

START/STOP

Starts and stops the Count Up and Count Down.



CRSR

Initiates starting time entry for the Count Down timer

CLR

Resets the Count Up and Count Down. Cancels the previous keypress during code selection.

8

Reduces Contrast and Display Brightness when the respective fields are displayed and set the Count Up figures (decreasing)

9

Increases Contrast and Display Brightness when the respective fields are displayed and set the Count Up figures (increasing)

6.2.3 Function Display

PRESSURE ALT: Displays the altitude data supplied to the GTX 330 in hundreds of feet.



Altitude Trend Indicator

When the 'PRESSURE ALT' page is displayed, an arrow may be displayed to the right of the altitude, indicating that the altitude is increasing or decreasing. One of two sizes of arrows may be displayed depending on the vertical speed rate.

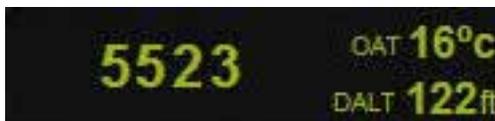
FLIGHT TIME: Timer start is configured as Automatic the timer begins when take off is sensed.



ALTITUDE MONITOR: Controlled by **START/STOP** key Activates a voice alarm and warning annunciator when altitude limit is exceeded (not implemented, just data displayed).



OAT/DALT: Displays Outside Air Temperature and Density Altitude.



COUNT UP TIMER: Controlled by **START/STOP** and **CLR** keys.



COUNT DOWN TIMER: Controlled by **START/STOP**, **CLR**, and **CRSR** keys. The initial Count Down time is entered with the 8 and 9 keys.

CONTRAST: Contrast is controlled by the 8 and 9 keys.



DISPLAY: Backlighting is controlled by the 8 and 9 keys.

6.2.4 Timer Operation

To operate the Flight Timer:

1. Press the FUNC key until "FLIGHT TIME" is displayed.
2. In this version the GTX 330 is configured with automated Airborne Determination, the timer begins automatically when the unit senses that the aircraft has begun to take off (ground speed greater than 30 knots). The timer will stop when ground speed less than 30 knots, and will reset to zero and begins again if a new take off has place.

To operate the Count Up timer

1. Press the FUNC key until "COUNT UP" is displayed.
2. If necessary, press CLR to reset the Count Up timer to zero.
3. Press START/STOP to begin count up.
4. Press START/STOP again to pause the timer. Pressing again will resume from the time paused.
5. Press CLR to reset the timer to zero.

To operate the Count Down timer

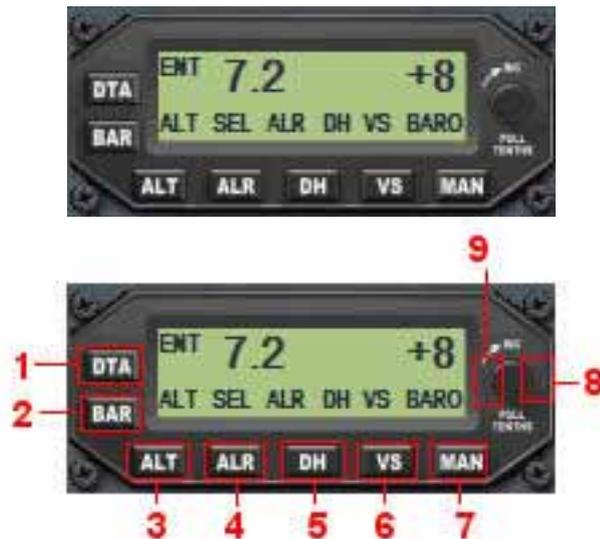
1. Press the FUNC key until "COUNT DOWN" is displayed.
2. Pressing CRSR will move the cursor under hours, minutes or seconds. Use the 8 and 9 keys to set the initial time.
3. Press START/STOP to begin count down.
4. Press START/STOP again to pause the timer.
5. When the Count Down timer expires, the 'COUNT DOWN' banner is replaced with a flashing "EXPIRED".
6. Press CLR to reset the timer.

Automatic ALT-GND Mode Switching

if the GTX 330 is configured with Automated Airborne Determination, normal operation begins when take off is sensed. When the aircraft is on the ground the screen automatically displays GND. The transponder does not respond to ATCRBS interrogations when GND is annunciated.



6.3 ALTITUDE/VERTICAL SPEED SELECTOR/ALERTER S-TEC ST360



The Altitude Selector/Vertical Speed Selector/Alarmer (ASA) enables the pilot to preselect altitudes and rates of climb or descent to be used by the autopilot.

6.3.1 Clicking areas

1. Data Entry - Operate Switch
2. Barometric Calibration Knob (BARO) Mode Switch
3. Altitude Read Out/Altitude Selector
4. Alert (ALR) Alert Mode Switch
5. Decision Height (DH) Alert Mode Switch
6. Vertical Speed Selector
7. Manual Mode Switches
8. Input Selector Knob

6.3.2 Data (DTA) Entry – Operate

The DTA (Data) Switch button is used to select between data entry and operate modes. When the DTA button is selected, the display will show “ENT” to indicate entry mode and the SEL annunciator will flash to indicate that an entry will change the value selected. To change Baro, Decision Height or Vertical Speed, simply push the desired switch button, and rotate the selector knob clockwise to increase or decrease the number. When the system is in entry altitude mode it is decoupled from the autopilot, however, the autopilot will hold the last altitude commanded. After the required altitude value is selected push DTA to remove the “ENT” annunciation and return the system to operate mode. The altitude entry will not be accepted unless the data field is closed by the second push of the data key. In mode entry, the bottom line will show the parameter you can modify. In operate mode you will see what is being displayed and the alarms annunciators.



NOTE: In entry mode, only the altitude select mode annunciator will be active when “ALT” is selected - the actual altitude can not be called up to the display.

NOTE: It is not necessary to select DTA Mode to enter vertical speed changes. Vertical speed inputs can be made directly in operate mode by simply rotating the selector knob.

When the system is initially powered up, the baro mode will be displayed in entry mode immediately after the test cycle. At other times, it will be necessary to select the DTA (Data) button for Data Entry (ENT will be displayed) and then select “baro” which will display the last baro setting. Repeated pushes of the baro button will cause the displayed baro units to alternate between displaying the setting in inches of mercury or millibars. When baro is displayed in millibars, the first two digits are omitted: 1013.2 would display as 13.2 and 1036.9 would show as 36.9.



6.3.3 Adjustment Baro Calibration

Simply rotate the input selector knob, in entry mode, to display the desired baro calibration.



6.3.4 Vertical Speed (VS) Selector

This version allow a maximum +/- 1600 FPM.

After power up, push the VS button to display the vertical speed and enable the vertical speed selector mode. Click the selector knob to input the desired vertical speed in 100 FPM increments. The maximum climb vertical speed available is + 1600 FPM which will be displayed as + 16. The maximum descent vertical speed is -1600 FPM which will be displayed as -16.



The vertical speed display is the only function that can be accessed directly in the operate mode, therefore, vertical speed changes can be commanded by simply rotating the selector knob. If you are in the “Entry” (ENT) mode you can access the VS Mode by selecting the VS button and then rotating the selector for the desired vertical speed. Pushing VS while in operate mode will hide/display de vertical speed selected.

6.3.5 Altitude (ALT) Select Function

The ALT Mode switch has two functions. When selected in entry mode it will address the altitude selector function as indicated by the “SEL” annunciator flash. Select the desired altitude by rotating the selector knob to input the altitude in thousands and hundreds, i.e. 5500 ft. would be 5.5 (x1000). Reselect “DTA” to return to operate mode - the “SEL” will stop flashing and remain steady with the “ALT” annunciated.



6.3.6 Altitude Read Out

When the “ALT” switch is pushed in operate mode, the “SEL” annunciator will extinguish and the display will show “ALT” and display the current altitude. While in operate mode, repeated pushes of the “ALT” button will alternately display the current or the selected altitude.



6.3.7 Altitude Alert (ALR) Mode

The Altitude Alert Mode switch enables the altitude alert system in conjunction with the selected altitude displayed in ALT SEL Mode. Activation of the ALR switch will display "ALR" indicating arming of the alert mode. The alert mode will cause a chime throughout the cabin audio system and flashing of the “ALR” annunciator when the aircraft is 1000 ft. from the selected altitude and again at 300 ft. from the selected altitude. The alert will also activate if the aircraft deviates from the selected altitude by more than 300 ft. The alert function can be alternately enabled and disabled by pushing the ALR switch. When alert is enabled, the “ALR” annunciation will be visible on the display.

6.3.8 Decision Height (DH) Alert Mode

The Decision Height (DH) Alert Mode will provide altitude alerting at the set DH altitude by activation of the chime and flashing of the DH annunciator. The chime will sound entering and leaving a 100 ft. window at the DH. To set, push DTA for entry, select DH Mode. Rotate the selector knob to obtain the desired DH in meters. After setting the desired DH, push DTA to enter the selected DH. The display will show the selected DH for approximately 5 seconds and will then revert to altitude mode and display the altitude until the DH is reached in the descent. At the set DH window, the DH alert will activate. The alert will sound/flash at 50 ft. above and again at 50 ft. below DH, alerting the pilot that he is at or near the set decision height. The DH Mode can be disabled by pushing the DH switch causing the DH annunciator to extinguish, It is necessary to select DTA and ENT mode to display or enter the DH value or change a DH value, once you have returned to operate mode (ENT extinguished). Repeated activation of the DH button in operate mode will alternately enable or disable the DH mode, without changing the display.



6.3.9 MAN switch

In this version, pushing the “MAN” (Manual) switch which will cause the autopilot to disconnect, showing the display below.



6.4 S-TEC Fifty Five X AUTOPILOT



The System Fifty Five X is a rate autopilot that controls the roll and pitch axes of the aircraft. As the pilot enters the desired mode by pressing the appropriate mode selector switch, the computer acknowledges the mode, causing the appropriate annunciator to illuminate.

When power on all segments of the Programmer / Computer display and annunciators illuminate for 5 seconds during test (shown above). Satisfactory completion of the **SELF-TEST** is indicated when the ready (**RDY**) annunciator remains on at the end of the 5-second self-test.



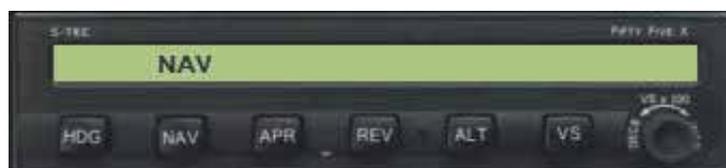
6.4.1 Heading Mode

Set the heading bug on the **DG** or **HSI** to the desired heading, and press the **HDG** button. The **HDG** annunciator will illuminate. New headings can be selected simply by repositioning the heading bug.



6.4.2 NAV Intercept and Tracking / GPS Steering (GPSS) Mode

To intercept and track a **VOR** course, select the desired course with the **HSI** Course Pointer and engage the NAV Mode, **NAV** will be displayed on the annunciator. If an external switch NAV/GPS is in GPS position, pressing NAV switch will engage this mode and the autopilot will automatically steer the aircraft on the **GPS** path, and **NAV GPSS** will be displayed on the annunciator.



6.4.3 Approach (APR) Mode

To engage this mode press the **APR** switch. **APR** will be displayed on the annunciator.



Glide-slope arming will occur when Glide-slope signal be valid. Illumination of the **GS** annunciator will occur, indicating arming has been accomplished.



The **ALT** annunciator remains on. Glide-slope capture is indicated by extinguishing of the **ALT** annunciation.



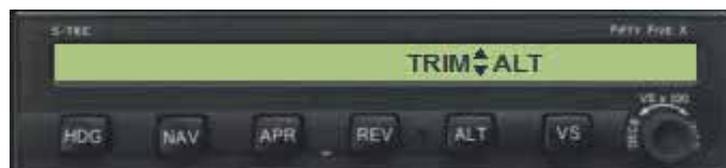
6.4.4 Reverse (REV) Mode

The Reverse Mode provides roll commands for intercept and tracking the localizer back course inbound or localizer front course outbound. **APR** and **REV** will be displayed on the annunciator.



6.4.3 Altitude (ALT)

The Altitude Mode, **ALT**, may be engaged with any roll mode displayed by pressing the **ALT** Mode switch. The aircraft will capture the altitude selected in the Altitude Selector/Alerter. When the elevator trim is in motion, **TRIM** and the **up** or **down** symbol will annunciate indicating trim in motion and the direction of travel.



6.4.6 Vertical Speed (VS)

In this version, if Altitude Mode is active this switch hide/displays the **VS** announcement and the current Vertical Speed.



6.5 DAVTRON DIGITAL CLOCK M877



6.5.1 Operation

The SEL button selects what is to be displayed, and the CTL button controls the timers.

Pressing SEL sequentially selects to display Local Time, GMT, Flight Time, Elapsed Time, and back to Local Time. In the bottom segment of the display a dot points to the selected display LT, GMT, FT or ET.



FT starts counting when a valid groundspeed was first greater than 30 knots (typically during takeoff) and it will stop when that speed come down to less than 30 knots. ET starts counting when you click on control button while ET is selected (the red dot is above ET)

When FT is being displaying ((the red dot is above FT) clicking twice the CTL button resets Flight Time, FT, back to zero. One more click will start it again. The CTL button also stops, resets and starts again Elapsed Time when clicked sequentially, if ET is selected.

Flight Time and Elapsed Time counts up to 59 minutes, 59 seconds, and then switches to hours and minutes.

7. Remarks

THESE AIRCRAFTS MUST BE LOADED FROM 2D COCKPIT FOR THE FIRST TIME, TO ALLOW FLIGHT SIM VARIABLES ARE INITIALIZED IN THE RIGHT WAY. FLIGHTS MUST BE SAVED FROM THIS VIEW AS WELL. IT IS HIGHLY RECOMMENDED TO USE THE MOUSE TO OPERATE DE GAUGE, INSTEAD OF KEYBOARD

To see the complete VC illumination at night Landing Lights must BE ON

If you don't like to use VC, you can pan around in the 2D cockpit view with this trick. Edit fs9.cfg (make a backup first in case something went wrong) with notepad located in:

(your drive):\Documents and Settings\administrator or user name)\Program data\Microsoft\FS9\fs9.CFG

If you cannot see that folder and file go to menu bar, Tools, Folder Options, See Tab and click on See Hidden Folders and Files. Then you should see the file you're looking for (My Windows is XP Pro Spanish Version, so I don't know the exact names in the menus, but they will be more or less like that).

Look for a line like this "pan_rate=400" and add a new line "pan_in_cockpit_mode=1" (without the quotes) after the pan_rate line. Save fs9.cfg. Now, when you start FS2004 you should be able to pan around from 2D cockpit view.

---oOo---

8. Technical support

If you have any question, please contact FriendlyPanels at:

fpanels@arrakis.es

Web page:

www.friendlypanels.arrakis.es