

# BLUESTEEL®

To be completely aware of the controls of this Aircraft, we have compiled a set of directions/instructions/information to help.

These are the ACTIVE FUNCTIONS AVAILABLE IN FS2002 Global Express™  
Designed and assembled for your enjoyment by: Bluesteel Flight Simulators. ®

1. USING MSFS 2002 FLIGHT PLANNER
2. USING THE RADAR / TCAS
3. USING GPS
4. SETTING AUTOPILOT
5. PFD CONTROLLER
6. SIMICONS INFORMATION
7. PEDESTAL
8. USING FSNAVIGATOR
9. EICAS (Engine Instrument Crew Advisory System)

1. USING MSFS 2002 INTEGRATED FLIGHT PLANNER:

It is advisable to read the documents for this provided by Microsoft,™ it does work well and is linked to the GPS

2. USING THE RADAR with all its applications:

Radar: While it is not transparent, and does blank out certain features provided by the MFD, Most of the required flight data is supported on the HSI/ARC on the lower half of the PFD selectable with the HSI Button on the PFD Controller

- The radar is selected by using the Radio icon on the EMS-CDU and Mode & Range buttons on the overhead panel.
- This fully integrated Air-to-Air Radar, acting as TCAS just click on any target. Readout of Vertical Speed; Flight Level; Range NM; I.D. with Flight Number; & Relative Speed
- There are 3 Modes, MAP; ARC; Vertical (VER), and 5 Ranges 5nm, 10nm, 20nm, 30nm & 40nm.
- Map. Displays a 360 deg. Plan view. Arrows indicate Targets and direction & range
- ARC. Displays a 120 deg. Plan View (fwd) Arrows indicate Targets and direction & range
- VER. Displays a Vertical matrix. Horizontal lines are 1000 ft apart, and display vertical separation. Vertical lines are 1nm apart and display horizontal separation. Targets are shown as dots

### 3. USING THE GPS.

This selected from the 'FMS' button on the PFD Controller. This is a simple device and fully integrated with the MS Flight Planner. Nine active buttons on the lower panel will provide you with all the data options you will ever need.

- Mode.
- GPS Direct.
- Menu.
- Enter.
- Clear data.
- Arrows - 6,7,8,9 are to select specific data from any page, or to set range Zoom.

### 4. SETTING THE AUTOPILOT - FLIGHT GUIDANCE CONTROL PANEL:

No effort has been spared to provide you with the most complete and accurate function of the Autopilot, however, there are still 2 buttons that are idle, and one of those has been used for a secondary function.

- 'AP'- Far right of panel, AUTOPILOT COMMAND toggles ON/OFF (z).
- 'YD'- Sets the YAW DAMPER. Must be on whenever the Autopilot is in use.
- 'CPL'- Dummy button displays the autopilot is coupled to the Left Side.
- 'ALT'- Selects ALTITUDE HOLD.
- 'ALT SET'- Sets the ALTITUDE displayed above the ALT tape on the PFD.
- 'LVL'- ATTITUDE HOLD.
- 'VS'- Allows you to set the VERTICAL SPEED and will HOLD automatically.
- 'PITCH'- Sets the ELEVATOR PITCH (pictorial and DIGITAL readout on. -lower right side of the EICAS (Display Unit No3).
- 'BANK'- No application available at this time. Non-functional.
- 'HDG'- HEADING HOLD.
- 'HDG SET'- Sets the desired heading on all the Heading Bugs.
- 'NAV'- Locks to NAV SOURCE. (when tuned).
- 'BC'- 'BACK COURSE' Locks to Nav Source. (When tuned).
- 'APR'- 'APPROACH' Locks to ILS for Approach. (When tuned).
- 'FLC'- Flight Level Change. This is a VNAV feature, and not available in this program. The Button is now used to toggle 'SPEED HOLD'.  
Note: SPD HOLD is only active when A/T is set engaged (see Throttle Quadrant information).
- 'SPD SET'- Pre-Sets the KIAS seen at top of the Speed tape on the PFD.  
Note: Mach is visible at the bottom of the Speed tape.
- 'FD'- FLIGHT DIRECTOR COMMAND BARS, sometimes called FLY-UP BARS. Also sets 'LVL' as default when other Nav Sources are not set.
- 'CRS SET'- Sets the COURSE HEADING on the HSI/ARC indicators.

### 5. PFD CONTROLLER:

There are 5 separate function buttons on the PFD Controller.

- Left side 'BRG' Toggles the VOR/GPS Mode
- 'V/L' Toggles the VOR 1 + VOR 2 (normally VOR/ILS select).
- 'FMS' Switches between Normal MFD Mode and GPS.
- 'HSI'. Will toggle the HSI on the PFD to ARC Mode.
- 'BARO SET' will adjust the Barometric setting for the Altimeters. Visible at the lower edge of the Altitude tape on the PFD.

## 6. SIMICONS INFORMATION:

- CHECKMARK Icon-selects the KNEEBOARD, Notepad.
- N/S Icon-Selects View/Hide the Magnetic Compass.
- THROTTLE QUADRANT Icon-selects the Center Pedestal complete.
- RADIO STACK Icon-selects View/Hide Radar.
- ATC Icon-selects ON-SCREEN ATC DATA with Speech.
- FLIGHT MAP Icon-selects MS Flight Planner Map.

## 7. PEDESTAL:

Here you will find the Non-functional FMS CDU. An FSUIPC independent version of this Instrument is available from: <http://www.Projectmagenta.com>. This has been used to provide GPS Data, and to house the FS Navigator Flight Planner Selector Buttons; 'HOLD', 'M1/M2', 'PLAN', 'NEXT', 'PREV'. These functions are explained in the Section 8.

Below that is the 'RDU' Radio Display Unit. Which is fully integrated with the ATC Function, but can be tuned manually if required.

At the bottom of the left side are the Aileron and Rudder Trim Switches.

The Right half of this panel has been slightly modified for functionality.

1. Slat/Flap Selector (all functions controlled from (F5, F6, F7, F8)
  - Key 1 (F7) sets the Slats to out. No movement of the selector handle)
  - Key 2 (F7) sets FLAPS to 6 degrees. (Handle moves to 6 deg)
  - Key 3 (F7) sets FLAPS to 16 degrees. (Handle moves to 16 deg)
  - Key 4 (F7) sets FLAPS to 30 degrees (DUMP) (handle moves to 30 deg)
2. LIFT/DUMP AUTO is the AutoSPLR Controller. Can be set from 0 to 100%
3. SPOILER LEVER can be infinitely adjusted or use (/) to toggle Max/Off.
4. GEAR selector Raises/Lowers the Undercarriage. Indicators are located on the EICAS. (DU No3), showing UP/Locked, Travel, & DN Locked.
5. AUTOBRAKE: Be set to assist you during a landing operation.
6. L/R Throttles With REVers Thrust capability.
7. ENG. START/CUTOFF Switches. Throttles must be set Above Idle before the ignition will occur. They are Automatic, once the Throttles are set and the switches are toggled. There are two ENG. Start/Shutoff Buttons located on the Overhead panel. The Quadrant switches must be set before the Engines will start from the O/Head.
8. AUTO-THROTTLE: A very useful tool when flying long range. It must be set before the SPD HOLD function will operate. Once the A/T switch is engaged, the SPD HOLD is automatic, so DO NOT set KIAS SPD before you are ready to use it.

## 8. USING FSNAVIGATOR:

First you will need to purchase a copy of FSNavigator, which is compatible with FS2002. Ver. 4.51 or higher. You will also need FSNavDBC, which is the database with all the SIDS, STARS, VOR, and AIRWAYS. This comes as part of the original download from FSNavigator. These are updated monthly from <http://www.FSNavigator.com>.

This Program does not interface with the GPS, but does integrate with the VOR/ILS MFD systems in FS2002. Select the (F9) key to set up your flight plan. On the FMS located on the Pedestal (Throttle Quadrant Icon), You will find the buttons to make selections for your FMS function of your FSNavigator Flight Plan:

- 'PLAN'- Will toggle the feature ON/OFF.
- 'M1 / M2'- selects one of the 2 working modes of the FMS explained in the Help file for the product.
- 'HOLD'- will allow you to fly a holding pattern that you have previously programmed into the flight plan.
- 'NEXT'- Will skip to the next waypoint.
- 'PREV'- Will double back to the previous waypoint.

It is easy to use this FMS feature in the inserted minimized window mode.

It also allows you to skip through, 'MAP', 'PLAN' & 'FMS', freely to check on your data.

The airport information in the 'MAP Mode' can provide you with the same information as Approach Plates. You will need to read and understand the entire operation of FSNavigator before you can use it to your best advantage

## 9. EICAS:

This is the information nerve center of the Aircraft. This a Primary display and is powered from three different sources.

- The Essential Battery Bus
- The Battery Direct Bus
- The Essential TRUE DC Bus 1.

All the data on this screen is collected from all parts of the aircraft and sorted via Data Acquisition Units and analyzed then fed to the Integrated Avionics Computers which further analyses the data and sends it to the Various display units. In the event of a piece of faulty data, it is sent to the Fault Warning Computer which stores the data and decides what action to be taken then via the CAS Message box on the EICAS, lets the Aircrew know that they have a problem.

ENGINE GAUGES: Have been substituted with functional gauges,  
EPR. ENGINE POWER RESERVE. Substituted with N2 Turbine % RPM Gauge.  
FAN % (N1) Substituted with ITT Gauge.  
ITT (Inter Turbine Temp.) Substituted with FAN % (N1) Gauge.

Digital read outs: N2 Turbine RPM. Substituted with Digital N1 data.  
FF (Fuel Flow) % PPH. Substituted with Left/Right Main Fuel Quantity.  
Oil Temp. And Oil Pressure Digital read out. Substituted with % Thrust read out.

The next gauge, which is not available in any digital form, would be the Fuel L/R and Total Remaining. Substituted with TOTAL FUEL Remaining in kg. (Full is 19,663kgs)

At the top right of this Display unit, is the Fault Warning Message Box.

This usually is in the form of a list, showing the most recent message at the top of any of the four type sections. Since I have not had the time to create such a program, and it would be extensive, there are over 300 data callouts for this function; I have used several devices already available to give some indication of standard failures or advisories you might expect from this type of program. I shall endeavor to create the correct program for this. (Please wait a while)

By way of explanation, the 4 categories of failure would be:

**RED** - WARNING Message. A Primary Concern. e.g. Engine Failure.

**AMBER** - CAUTION Message. A Precautionary Concern. e.g. Icing.

**CYAN** - ADVISORY Message - Low Priority. e.g. Auto Throttle Fail.

**WHITE** - STATUS Message - Normal Function Active: e.g. Fuel Transfer.

Below that is the GEAR Indication: there are 3 conditions for these indicators:

**Green Square**= Down & locked.

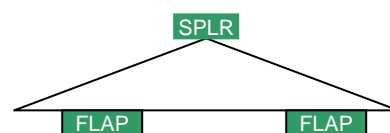
**Red/Black Stripe**=Gear Unlocked or in Travel.

**UP**= Gear is UP and Locked.

Flight Control Indicator:

Flashing Green Light, Center top= Spoilers active/extended.

Flashing Green Lights L/R= Flaps Active/extended.



PITCH ANGLE is shown with a Vertical line & Arrow also Digital read out.

AILERON TRIM is shown with a rotating needle and white pointer arrow.

RUDDER TRIM is shown with a lateral graduated line and arrow.

Display Unit No4: is known as the Synoptic Page, and displays various system data such as BLEED AIR Management, DC POWER Distribution, AC POWER Distribution, All FLIGHT CONTROLS, HYDRAULIC PUMPS and Flow lines, Valves, Pressures. FUEL SYSTEM Status, Pumps, Flow lines, Valves, Qty. CABIN & COCKPIT AIR CONDITIONING Air Cycle unit status/Temps etc. and finally the Partial Page shown here, which is the Default Page: It displays: Cabin/Cockpit Temp. Pressurization/Outflow valve status, APU Data, OXYGEN QTY and PRESSURE. BRAKE TEMPERATURES and Last, All EXIT Doors and Hatches Status.

With NUM LOCK Selected, and in the Cockpit View Mode, it is possible to scan the various Views around you.

7= 45deg Left Fwd View.

4= 90deg Left View.

9= 45deg Right View.

6= 90deg Right View.

2= Cabin View (This is an actual Cabin arrangement photo, compliments of Bombardier Aerospace Inc.

5= (In Flight) shows Map View below the aircraft.

5= (On Ground) Fwd Up View of the overhead Control Panel.

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