



# **FIRSTLANDINGS**

**TECNAM P2004 BRAVO**

**N639BV**

**GENERAL INFORMATION**

**NORMAL PROCEDURES**

**TIME SENSITIVE**

**EMERGENCY**

**TECNAM P2004 BRAVO**  
**CHECKLIST**

*[FLIGHT PLAN DESIGNATION IS "BRAV"]*

**EMERGENCY CONTACT**

The following are First Landings' emergency contact telephone numbers. We ask that you call the numbers in the order listed. In addition, please continue down the phone list until you reach someone. Please do not assume a voice message left on one of the numbers will be immediately received.

<b>Office</b>	<b>(407) 886-7612</b>
<b>Jose Diaz Reyes</b>	<b>(407) 413-3330</b>
<b>Adam Valencic</b>	<b>(407) 557-7909</b>

**AIRCRAFT INFO:**

Engine.....Bombardier-Rotax 912  
.....4 cylinder horizontally opposed-twins with overall displacement of 1352cc, mixed cooling (water-cooled heads and air-cooled cylinders), twin carburetors, integrated reduction gear with torque damper

Rated HP ..... 100hp BHP @ 5800 RPM

Coolant.....50/50 water ethylene glycol coolant (Dex-Cool)

Oil Type.....Synthetic 10W-40 or 20W-50

Oil Capacity.....3.2 qts.

Propeller.....Fixed Pitch, Wood with Composite Laminar

Fuel..... 100LL or Auto Fuel 91 Octane or greater  
.....Dual Tanks, 13.2 Gal per side  
.....26.4 Gal total, 0.25 Gal unusable

Ignition .....Dual Ignition  
.....solid state, breakerless, capacitive discharge, interference suppression system

Electrical ..... 12 Volt DC

## AIRCRAFT V SPEEDS & LIMITATIONS

### KIAS

**V<sub>R</sub>..... 48-53**

**V<sub>X</sub>..... 60**

**V<sub>Y</sub>..... 68**

**V<sub>NE</sub> ..... 138**

**V<sub>NO</sub> ..... 110**

**V<sub>A</sub>..... 96**

**V<sub>FE</sub>..... 67**

**V<sub>S1</sub>..... 39**

**V<sub>S0</sub>..... 26**

**V<sub>G</sub>..... 68**

**Max demonstrated cross wind ..... 15 Kts**

**Gross Weight ..... 1320 lbs**

**Max ceiling (gross) ..... 13,110'**

**Take-off run (@SL gross) ..... 590'**

**Landing run (@SL gross) ..... 430'**

**Take-off run 50ft (@SL gross) ..... 985'**

**Landing run 50ft (@SL gross) ..... 918'**

### **WARNING**

**Intentional Spins - Prohibited**

## PREFLIGHT INSPECTION

Preparation: Remove gust locks, Tie Down Ropes, Pitot Tube Cover, Other Plane Protection Items/Covers.

### CABIN

- ⊗ Documents - AROW
- ⊗ Ignition Switches - Off
- ⊗ Master - On
- ⊗ Hobbs - Check and Record
- ⊗ Aux Generator - On
- ⊗ Fuel Pump - On, Verify Sound/Pressure, Off
- ⊗ Fuel Quantity - Verify
- ⊗ Flaps - Full Down
- ⊗ Trim - Check
- ⊗ Lights - On, Visually Check, Off
- ⊗ Stall Horn - Check
- ⊗ Master - Off
- ⊗ Flight Controls - Free and Correct

### WARNING

For Flight Safety, Pilot Should Verify Actual Fuel Quantity Visually in Tanks Before Takeoff.

## EXTERIOR CHECK

- ⊗ Right Cowling - Open
- ⊗ Oil Level - Burp Check
- ⊗ Engine Mounts - Check
- ⊗ Hoses/Connections - Check
- ⊗ Right Cowling - Bracket Secured
- ⊗ Left Cowling - Open
- ⊗ Coolant Level - Check
- ⊗ Hoses/Connections - Check
- ⊗ Engine Mounts - Check
- ⊗ Left Cowling - Bracket Secured
- ⊗ Fuel Quality - Sump
- ⊗ Prop/Spinner - Check
- ⊗ Air Intakes/Radiators - Check
- ⊗ Nose Gear/Tire - Inflation, Wear
- ⊗ Left Static Port - Check Clear
- ⊗ Left Gear/Tire - Inflation, Wear
- ⊗ Brakes - Check, Verify No Leaks
- ⊗ Fuel Cap - Secure
- ⊗ Left Leading Edge - Check
- ⊗ Stall Warning Tab - Check
- ⊗ Nav/Strobe - Check
- ⊗ Ailerons/Flap - Check
- ⊗ Antennas - Check
- ⊗ Stabilator/Trim Tab - Check
- ⊗ Rudder - Check
- ⊗ Flap/Aileron - Check
- ⊗ Right Strobe/Nav - Check
- ⊗ Pitot Tube - Check
- ⊗ Right Leading Edge - Check
- ⊗ Fuel Cap - Secure
- ⊗ Right Gear/Tire - Inflation, Wear
- ⊗ Brakes - Check, Verify No Leaks
- ⊗ Right Static Port - Check

### ENGINE START

- ⊗ Passenger Briefing
  - ⊗ Seat Belt use
  - ⊗ Door Operation
  - ⊗ Emergency Equipment
  - ⊗ PIC for Flight
  - ⊗ 3 Step Control Process
  - ⊗ Purpose of Flight
  - ⊗ Taxi Brief
- ⊗ Tow-Bar - Removed/VERIFY
- ⊗ All Seats, Belts, Door - Secure
- ⊗ Parking Brake - Set
- ⊗ Fuel Selectors - Verify Both On
- ⊗ Throttle - Full Idle
- ⊗ Cold Engine - "Feed" Choke On During Cranking
- ⊗ Warm Engine - Choke Off
- ⊗ Master - On
- ⊗ Strobes - On
- ⊗ Fuel Pump - On
- ⊗ Ignition Switches - On
- ⊗ Prop Area - CLEAR!
- ⊗ Starter - Engage
- ⊗ Oil Pressure - Green

### WARNING

If Oil Pressure Doesn't Rise Within 10 Seconds, Shut Down Engine.

- ⊗ Avionics - On
- ⊗ Choke - Verify Off
- ⊗ Fuel Pump - Off
- ⊗ RPM - 1800 Minimum
- ⊗ Engine Gauges - Check

### CAUTION

If Engine Kicks Back During Starting, Please Advise First Landings.

### PRE-TAXI

- ⊗ Altimeter - Set
- ⊗ GPS - Set
- ⊗ Transponder - STBY
- ⊗ Flaps - Up
- ⊗ Lights - Landing/Nav (Night)
- ⊗ Brakes - Test
- ⊗ Radio - Call
- ⊗ Control Stick - Wind Correction

### ENGINE RUN-UP

- ⊗ Parking Brake - Set
- ⊗ Oil Temp - 122F/50C Minimum
- ⊗ Throttle - 4000 RPM
- ⊗ Ignition Right-Left
  - ⊗ 300RPM Max Drop Each
  - ⊗ 120RPM Max Differential
- ⊗ Throttle - Idle
- ⊗ Engine Gauges - Check
- ⊗ Flight Controls - Free and Correct

## ENGINE FAILURE BRIEF

### Engine Failure During Takeoff Roll

- ⊗ Throttle - Idle
- ⊗ Brakes - Full Stop

### Engine Failure After Rotation With Available Runway

- ⊗ Throttle - Idle
- ⊗ Land On Remaining Runway
- ⊗ Brakes - Full Stop

### Engine Failure After Rotation with No Remaining Runway

- ⊗ Throttle - Idle
- ⊗ Pitch for Best Glide
- ⊗ Landing Site Select, no more than 30 Degrees either way
- ⊗ Prepare for Forced Landing

## BEFORE TAKEOFF

- ⊗ Seat Belts - Secure
- ⊗ Transponder - ALT
- ⊗ Trim - Set for Takeoff
- ⊗ Landing Light - On
- ⊗ Flaps - Takeoff
- ⊗ Doors - Latched
- ⊗ Engine Gauges - Check
- ⊗ Radio - Call

## TAKEOFF

- ⊗ Full Power
- ⊗ RPM - 4900 Minimum
- ⊗ Rotate Vr - 48Kts
- ⊗ Climb Vx - 60Kts
- ⊗ Above Obstacles Vy - 68Kts
- ⊗ Flaps - Up

## CRUISE

- ⊗ Throttle - 4800-5200 RPM
- ⊗ Engine Gauges - Check
- ⊗ Avoid 4000 RPM Cruise
- ⊗ Fuel Pump - Off
- ⊗ Lights - As Needed

## CAUTION

Check Fuel Gauges Frequently  
With One Tank Shut Off To  
Prevent Fuel Starvation.

## DESCENT AND LANDING

- ⊗ Seat Belts - Secure
- ⊗ Landing Light - On
- ⊗ Fuel Pump - Off
- ⊗ Fuel Selectors - Verify Both On
- ⊗ Approach - 60Kts

## GO AROUND

- ⊗ Throttle - FULL
- ⊗ Climb - 60Kts
- ⊗ Positive Rate of Climb
- ⊗ Climb - 68Kts

## AFTER LANDING

- ⊗ Runway - Clear
- ⊗ Radio Call - Clear
- ⊗ Flaps - Up
- ⊗ Transponder - STBY
- ⊗ Trim - Set to T/O

## SECURING AIRCRAFT

- ⊗ Parking Brake - Set
- ⊗ Throttle - Idle
- ⊗ Lights - Off
- ⊗ Avionics - Off
- ⊗ Ignition - Left/Right Off
- ⊗ Master - Off
- ⊗ Hobbs - Record

## EMERGENCY PROCEDURES

Emergency procedures shown in bold faced type are immediate action items which should be committed to memory.

### ENGINE FAILURE DURING TAKEOFF ROLL

- ⊗ Throttle - IDLE
- ⊗ Brakes - **APPLY AS NEEDED**
- ⊗ Ignition Switches - OFF
- ⊗ Master Switch - OFF
- ⊗ Fuel Selector Valves - OFF
- ⊗ Electric Fuel Pump - OFF

### ENGINE FAILURE IMMEDIATELY AFTER TAKEOFF

#### **NOSE DOWN!**

- ⊗ **Airspeed - 60 KIAS**
- Find Suitable Landing Site off Nose, No more than 30° either way**
- ⊗ **Flaps - AS REQUIRED**
- ⊗ AT TOUCHDOWN
- ⊗ Throttle - IDLE
- ⊗ Ignition Switches - OFF
- ⊗ Master - OFF
- ⊗ Fuel Selector Valves - OFF
- ⊗ Electric Fuel pump - OFF

### ENGINE ROUGHNESS OR RPM LOSS

- ⊗ Throttle - CHECK
- ⊗ Engine Gauges - CHECK
- ⊗ Fuel Quantities - CHECK
- ⊗ Electric Fuel Pump - ON
- ⊗ Fuel Valves BOTH - ON
- If Roughness Continues Land As Soon As Possible**

## ENGINE FAILURE DURING FLIGHT

- ⊗ Establish Glide - 68 KIAS
- ⊗ Select Emergency Landing Site
- ⊗ Electric Fuel Pump - ON
- ⊗ Fuel Valves - BOTH ON
- ⊗ Throttle - MIDDLE POSITION
- ⊗ Ignition Switches - ON
- ⊗ Master Switch - START
- ⊗ If Restart Fails, Procedure for Forced Landing

**IF ALTITUDE PERMITS, TRY RESTART CONTINUOUSLY**

### FORCED LANDING WITHOUT ENGINE POWER

- ⊗ **Declare Emergency, 121.5, Squawk 7700**
- ⊗ Fuel Selector Valves - OFF
- ⊗ Fuel Pump - OFF
- ⊗ Ignition Switches - OFF
- ⊗ Safety Belts - Tighten
- ⊗ Doors - Unlatched
- ONCE LANDING ASSURED**
- ⊗ Flaps - As Necessary
- ⊗ Master Switch - OFF
- ⊗ Touchdown - 42Kts (Full Flaps)

### LOW OIL PRESSURE

- ⊗ Oil Temp - CHECK
- Above Green or Rising; LAND as soon as possible and be alert for impending engine failure**
- ⊗ Throttle - **REDUCE IMMEDIATELY**
- If stable within the green arc; LAND as soon as practical**
- ⊗ Oil Temp/PSI Monitor

### ENGINE FIRE WHILE PARKED

- ⊗ Fuel Selector Valves - OFF
- ⊗ Electric Fuel Pump - OFF
- ⊗ Ignition Switches - OFF
- ⊗ Master Switch - OFF
- ⊗ Parking Brake - SET
- ⊗ EVACUATE AIRCRAFT

### ENGINE FIRE DURING TAKEOFF

- ⊗ Throttle - IDLE
- ⊗ Brakes - AS NEEDED
- ⊗ Fuel Selector Valves - OFF
- ⊗ Electric Fuel Pump - OFF
- ⊗ Cabin Heating - OFF
- ⊗ Ignition Switches - OFF
- ⊗ Master Switch - OFF
- ⊗ Parking Brake - SET
- ⊗ EVACUATE AIRCRAFT

### ENGINE FIRE IN-FLIGHT

- ⊗ Cabin Heat - OFF
- ⊗ Fuel Selector Valves - OFF
- ⊗ Electric Fuel Pump - OFF
- ⊗ Throttle - FULL IN, Until Engine Stops
- ⊗ Cabin Vents - OPEN
- ⊗ Ignition Switches - OFF
- ⊗ Air Speed INCREASE, DO NOT EXCEED  $V_{NE}$  138KTS

### DO NOT Attempt An In-Flight Restart

- ⊗ Procedure For a Forced Landing

### ELECTRIC FIRE IN CABIN IN FLIGHT

- ⊗ Cabin Heat - OFF
- ⊗ Cabin Vents - OPEN
- ⊗ Doors - Open If Necessary
- ⊗ Master Switch - OFF
- ⊗ Try to Choke Fire, Direct Extinguisher at base of flames
- ⊗ Procedure for forced Landing

### WING FIRE

- ⊗ LDG Light - OFF
- ⊗ NAV Light - OFF
- ⊗ STROBE Light - OFF
- ⊗ Sideslip to Keep Flames Away from the Fuel Tank and Cabin
- ⊗ Land as Soon as Possible

### PRECAUTIONARY LANDING WITH ENGINE POWER

- ⊗ Descent - Establish
- ⊗ Best Glide - 68KTS
- ⊗ Flaps - As Necessary
- ⊗ Selected Field - FLY OVER
  - ⊗ Noting Terrain & Obstacles
- ⊗ Safety Belts - Tighten
- ⊗ Doors - Unlock

### ONCE LANDING ASSURED

- ⊗ Flaps - As Necessary
- ⊗ Fuel Selector Valves - OFF
- ⊗ Electric Fuel Pump - OFF
- ⊗ Ignition Switches - OFF
- ⊗ Master Switch - OFF

### LOW FUEL PRESSURE

If Fuel Pressure Indicator Falls Below the 0.15 Bar Limit

- ⊗ Fuel Quantity - CHECK
- ⊗ Electric Fuel Pump - ON
- ⊗ Fuel Valves - ON

If Low Fuel Pressure Condition Continues, Land As Soon As Possible



### **LANDING WITH A FLAT NOSE TIRE**

- ⊗ Pre-landing checklist..... COMPLETE
- ⊗ Approach ..... NORMAL
- ⊗ Flaps ..... FULL
- ⊗ Land and maintain aircraft NOSE HIGH attitude as long as possible

### **LANDING WITH A FLAT MAIN TIRE**

- ⊗ Pre-landing checklist..... COMPLETE
- ⊗ Approach ..... NORMAL
- ⊗ Flaps ..... FULL
- ⊗ Directional Control..... MAINTAIN
- ⊗ Land the airplane on the opposite side of runway to the side with the defective tire to compensate for change in direction, which is to be expected during final rolling.
- ⊗ Touchdown with the GOOD TIRE FIRST and hold flat tire off the ground as long as possible.

### **TRIM FAILURE**

- ⊗ Fuses/Breakers ..... CHECK
- ⊗ LH/RH Switch ..... CHECK
- ⊗ Airspeed ..... Adjust to control without
  - ⊗ excessive force
- ⊗ Seat Belts..... CHECK
- ⊗ LAND ..... AS SOON AS PRACTICAL

