



Flying the BAe 146 – 200/300

Version 2.1

by
Greg Whiley
Flight Simulation Australia

INTENTIONALLY LEFT BLANK

Version	Date	Revision
Version 1.0	25 June 2014	Original version
Version 1.1	27 July 2014	Addition of approach and landing profile
Version 2	27 April 2016	URL change to aussiestarfs.com A5 to A4 format
Version 2.1	3 August 2020	URL change to Flight Simulation Australia



This publication is based on the Just Flight Operations Manual provided with the boxed version

Statement of copyright

Copyright © 2014, Greg Whiley, Flight Simulation Australia. ALL RIGHTS RESERVED.

This publication, Flying the *BAe 146 – 200/300 v1.3*, is released under the terms of the Creative Commons licence accessed through the following link: <http://creativecommons.org/licenses/by-nc-nd/3.0/>. In short this allows you to use the publication without payment but for non-commercial purposes only and no adaptation or use in other works is permitted.

Please read the Creative Commons Licence in full before downloading or otherwise making use of the publication.

When using this publication you must attribute *Aussie Star Flight Simulation* and any identified author in accordance with the terms of the Creative Commons Licence.



Aussie Star Flight Simulation publications are products of
Flight Simulation Australia
www.flightsimaus.com.au
info@flightsimaus.com.au



BAe 146-200 Aircraft Specifications

<p>Dimensions Length: 28.60m Wingspan: 26.21m Height (to top of fin): 8.59m Wing area: 77.30m²</p>	<p>Performance VMO: 350 knots / 0.72 Mach Service ceiling: 31,000 feet Range: 1,200 nautical miles Crew: Two plus cabin staff Passengers: 109 seat capacity</p>
<p>Powerplants 4 x Textron Lycoming ALF 502R 5 turbofans Static thrust: 6,970 lbs per engine</p>	<p>Weights Maximum takeoff weight: 42,184 kg (92,998 lb) Maximum landing weight: 36,740 kg (80,997 lb) Empty weight: 23,897 kg (52,683 lb)</p>

Limits chart

	N1%	N2%	EGT (°C)	Oil (°C)
Take off	97	98.8	632	133
Transient (max to 10seconds)	100	100	685	160
Maximum Continuous	97	96.9	613	133

Flap Setting	IAS
18	215
24	180
30	170
33	150

Takeoff profile

Vr: 140 knots

Gear UP. Pitch to maintain 230 knots

2,000 feet: Retract flaps

2,500 feet: Engage AUTOPILOT

Press **ALT ARM + IAS** button* (see below)

Press **HDG** button for runway heading

Maintain thrust for 230 knots (95% N1)

Press **L NAV** for GPS activation

* **IAS button** – Engages indicated airspeed hold. This should not be confused with the auto-throttle or VNAV systems on board other modern airliners. The autopilot will not alter the throttle position; it will simply alter the aircraft pitch to maintain the current airspeed at the current throttle position. The aircraft will either climb or descend to hold the airspeed when the IAS button is pressed. For this reason it is essential to monitor both airspeed and throttle position when using the autopilot mode.

Reference: Just Flight (2012) *146 – 200/300 Jetliner Operations Manual*

Engine Start Procedure

The red numbers in the right column of the following engine start checklist correlate to the annotated overhead panel cards found at the end of this publication.

Pre-flight (cold and dark)

BATT 1 & BATT 2 switches ON Press MWS caution light on glareshield to cancel alarm	44
STBY INV switch to ARM	36
LEFT INNER fuel pump ON	27
APU Gen switch ON	30
APU MASTER switch to START	48
AVIONICS MASTER switches ON	1 - 3
ANTI-SKID switch ON	8
LIFT SPLRS switches ON	9
AC and DC BUS-TIE switches ON	35
STBY GEN SWITCH TO arm	37
APU AIR switch ON	79
PACK 2 switches ON	77
DC PUMP switch to BATT	13
GALLEY/SHED switch to GALLEY	29
NO SMKG sign switch ON	90
FASTEN BELTS sign switch ON	101

Before start

FUEL PUMPS ON	27
APU AIR switch OFF	79
PACK 2 switch OFF	77
ENG ANT-ICE switches (4) ON	60
WING LTS switch ON	88
CABIN ALT Set knob to 8 (8,000 ft for FL290 cruise)	67
AUTO PRESS RATE knob to 600 (600 fpm)	66

Engine Start

ROTATING BEACON switch ON	92
START MASTER switch ON	54
START SELECT knob to position 4 (Engine 4)	53
ENGINE STARTER switch to START	58
Monitor engine instruments for stabilisation (N1 24% and N2 55%).	
Repeat engine start for Engines 3, 2 & 1.	

After Start

START MASTER switch OFF	54
START SELECTOR switch OFF	53
GENERATORS 1 & 4 ON	28 & 31
HYDRAULIC PUMPS 2 & 3 ON	12 & 16
BRAKE FANS Auto	6
APU AIR & PACK 2 ON	79 & 77
DC PUMP OFF	13
ENGINE ANTI-ICE ALL OFF	60
SCREEN HEAT, AUX & L.VANE, PITOT HTRS and R.VANE ALL ON	69 – 71

BAe 146 – 200/300

Normal Procedure Checklists

Pre-flight	
External checks.....	COMPLETE
BATT 1 & BATT 2.....	ON
Standby Inverter.....	ARMED
Parking Brake.....	SET
Fuel Pump 2 (inner left).....	ON
APU GEN.....	ON
APU.....	START
Emergency Lights.....	ARMED
Master Switches.....	ALL ON
Anti-Skid / Lift Spoilers.....	ON / ON
Bus Ties.....	BOTH AUTO
Standby Generator.....	ARMED
APU Air.....	ON
Pack 2.....	ON
DC Pump.....	BATT
Galley.....	ON
No Smoking Sign.....	ON
Fasten Seat Belt Sign.....	ON
Take-off trim.....	SET
GPS.....	Initialised
Fuel.....	CHECKED
Pre-flight Briefing.....	COMPLETED

Fuel Flow Meters.....	RESET
Altimeters.....	SET

Engine start	
Rotating Beacon.....	ON
Thrust Levers.....	FUEL ON
Start Master.....	ON
Start Selector.....	ENGINE 4
Engine.....	START
Oil Pressure.....	CHECK
N1 & N1.....	STABLE
Repeat for engines 3, 2 & 1	

After start	
Start Master.....	OFF
Start Selector.....	OFF
Generators 1 & 4.....	ON
Hydraulic Pumps 2 & 3....	ON & ON
Brake Fans.....	AUTO
APU Air / Packs 2.....	ON / ON
DC Pump.....	OFF
Engine Anti-Ice.....	ALL OFF
Heaters.....	ALL ON

Before start	
Electrical Fuel Pumps.....	ALL ON
Pack 2 / APU Air.....	OFF / OFF
Engine Anti-Ice.....	ALL ON
Wing Lights.....	ON
Pressurisation.....	CHECKED
Air Conditioning set at 8,000 feet.....	CHECKED & SET

Taxi	
Taxi Lights.....	ON
Nav Lights.....	ON
Flaps.....	SET
Yaw Damper.....	ON
Nav Aids & Flight Director.....	SET
Transponder.....	SET
Flight controls for movement	CHECK

Continued

Before takeoff	
AC Pump.....	ON
Landing Lights.....	ON
Strobe lights.....	ON
WX Radar.....	ON

After takeoff	
Gear.....	UP
Flaps.....	UP
Engine Air.....	ALL ON
APU Air.....	OFF
Packs.....	BOTH OFF
AC Pump.....	OFF

Climb	
APU.....	STOP
Landing Lights.....	OFF at 10,000'
Fasten Seat Belts Sign.....	AS REQUIRED
Pressurisation.....	CHECKED

Descent	
Pressurisation.....	RESET to ground level
Fasten Seat Belts Sign.....	ON
Landing Lights.....	ON at 10,000

Approach	
APU.....	START
Altimeters.....	CHECKED

Landing	
Gear.....	DOWN / 3 GREENS
APU Air.....	ON
Pack 1.....	OFF
Engine Air.....	OFF
Lights.....	AS REQUIRED
Flaps.....	SET FOR LANDING
210 knots – 18 degrees	
180 knots – 24 degrees	
170 knots – 30 degrees	
150 knots – 33 degrees	


After landing	
Strobes / Landing Lights.....	OFF / OFF
Taxi Lights.....	ON
Airbrakes / Spoilers.....	IN
WX Radar.....	OFF
Flaps.....	UP
Heaters.....	ALL OFF

Shutdown	
Thrust Levers.....	FUEL OFF
Generators.....	1 & 4 OFF
Hydraulics.....	ALL OFF
Fuel Pumps.....	1 / 3 / 4 OFF
Fasten Seat Belt Sign.....	OFF
Taxi Lights.....	OFF
Beacon	OFF
Wing Lights.....	OFF

Leaving the aircraft	
Parking Brake.....	ON
Master Switches.....	OFF
Anti-skid & Lift Spoilers.....	OFF
Emergency Lights.....	OFF
Pack 2 / APU Air.....	OFF / OFF
APU.....	STOP
APU Generator.....	OFF
Fuel Pump 2.....	OFF
Galley.....	OFF
Lights.....	OFF
Batteries.....	OFF
Battery Selector.....	OFF



BAe 146 – 200/300 overhead panel

<p>MISC</p> <ol style="list-style-type: none"> 1. Yaw damper master switches 2. Autopilot master switch 3. Avionics A master switch 4. Avionics B master switch 5. Ground ignition selector 6. Brake fan selector 7. Anti-skid & lift spoiler caution lights 8. Anti-skid switch 9. Lift spoiler switches (hydraulic systems) 10. Hydraulic pressure & quantity (hydraulic systems) 11. Yellow and green hydraulic system caution lights 12. Engine 2 pump switch 13. DC pump selector switch 14. AC pump selector switch 15. Power transfer unit (PTU) switch 16. Engine 3 pump switch 	<p>ENGINE FIRE DETECT</p> 			<p>GROUND TEST</p> <p>86. Ground test switches</p>	<p>LIGHTS & NOTICES</p> <ol style="list-style-type: none"> 87. Panel flood switch 88. Wing lights switch 89. Logo light switch 90. No Smoking switch 91. Cabin emergency notice switch 92. Rotating beacon switch 93. Strobe light switch 94. Navigation light switch
<p>FUEL</p> <ol style="list-style-type: none"> 17. Fuel tank quantity gauges 18. Fuel system caution lights 19. Fuel temperature gauge 20. Tank selector mode switch 21. Cross-feed switch 23. Left common feed switch 24. Right common fuel switch 25. Right fuel standby fuel switch 26. Fuel pump caution lights 27. Engine fuel pump switches 	<p>ELECTRIC</p> <ol style="list-style-type: none"> 28. Generator 1 switch 29. Galley / Shed switch 30. APU generator switch 31. Generator 4 switch 32. Generator caution lights 33. Generator current gauges 34. External AC master switch 35. AC/DC bus-tie switches 36. Standby inverter master switch 37. Standby generator master switch 38. Electrical system caution lights 39. AC amps gauge 40. AC selector knob 41. Hertz (Hz) gauge 42. DC volts gauge 43. DC selector knob 44. Battery master switches 45. Transformer rectifier gauges 46. Battery current gauge 	<p>APU</p> <ol style="list-style-type: none"> 47. APU RPM gauge 48. APU start/stop switch 49. APU caution lights 50. APU exhaust gas temperature gauge (TGT) 51. APU caution lights <p>ENGINES</p> <ol style="list-style-type: none"> 52. Starter mode switch 53. Start selector switch 54. Start master switch 55. Engine start/ignition caution lights 56. Flight start switch 57. Continuous ignition A & B switches 58. Engine starter switch 59. Ice protection caution lights 60. Engine anti-ice switches <p>101. Fasten seat belt switch</p> <p>102. Taxi & Landing lights switches</p>	<p>PRESSURIZATION</p> <ol style="list-style-type: none"> 61. Discharge value selector knob 62. Discharge valve 1 & 2 position indicators 63. Manual pressure rate knob 64. Pressurisation auto/manual button 65. Cabin and flight altitude gauge 66. Auto-pressurisation rate knob 67. Cabin altitude knob <p>ICE PROTECTION</p> <ol style="list-style-type: none"> 68. Heater caution lights 69. Screen heat switches 70. Auxiliary and left vane heat switches 71. Pitot heat and right vane switches 72. Anti-ice valve caution lights 73. Outer wing anti-ice switch 74. Inner wing anti-ice switch 75. Tail anti-ice switch 	<p>76. Cabin air mode switch</p> <p>77. Pack 1 & 2 switches</p> <p>78. Ram air switch</p> <p>79. APU air switch</p> <p>80. Left & right wing loop switches</p> <p>81. Air supply caution lights</p> <p>82. Engine air switches</p> <p>83. Packs and cabin air caution lights</p> <p>ANNUN</p> <p>84. Instrument light switch</p> <p>85. Overhead annunciator test switch</p> <p style="color: red; text-align: center;"><i>Switches indicated in red relate to engine start procedure</i></p>	
<p>AIR CONDITIONING</p> <ol style="list-style-type: none"> 95. Flight deck temp control 96. Flight deck duct temperature select switch 97. Flight deck fan switch 98. Cabin fan switch 99. Cabin duct temperature select switch 100. Flight deck automatic temperature selector 					



www.flightsimaus.com.au