King Air B90

Speeds (KIAS)

V_{MCA}	92	
V_{SSE}	(101)	Derived from C90
V_X	101	
V_Y	114	Down to 103 @ 30 000’
V_{XSE}	101	
V_{YSE}	110	Down to 101 @ 24 000’
V_A	169	
V_R	92	
V_1	101	
V_{MO}	208	
V_{FE}	174	35%
	130	100%
V_{LE}	156	
	130	Retraction only
Other		
	92	Balked landing climb
	(125)	Glide: From C90
	(161)	Turbulent air: From C90
Cruise climb		
	140	To 20 000’
	120	Above 20 000’

Note: V_{MCA} and V_Y are not indicated on ASI.
Note: Figures in brackets do not appear in the B90 manual. They were extracted or calculated from comparable figures for the C90.

Landing Reference Speeds (full flap)

Weight (lbs)	V_{REF} (KIAS)
9168	94
8000	88
7000	82
6000	76

King Air B90 Normal Checklist

Before starting engines

Exterior inspection: Completed
Cabin door: Locked
Load and baggage: Secure
Weight and CG: Checked
*** Emergency exit:** Latched
Control locks: Remove
Seat belts and harnesses: Fastened
Parking brake: Set
Pedestal circuit breakers: In
Overhead panel: Check
Oxygen control: Pull on, check mask flow, push off
R sidepanel fuses: Check
*** Oxygen system pressure:** Check (1800 PSI is full)
*** Emergency static air valve:** Normal
R subpanel CBs: Check
Cabin Temp Mode: Off
Landing gear handle: Down
Condition levers: Cut off
Propeller levers: High RPM
Power levers: Idle
L subpanel switches: Off
Fuel panel: Check
    * **CBs:** In
    * **Firewall valves:** Closed
    * **Crossfeed:** Open, check ann., close
    Boost pumps: On (check sound)
    Battery switch: On
    Inverter: On (to activate engine instruments)
    Fuel pressure: Check low
    Firewall valves: Open
    Fuel pressure: Check in green
    Inverter: Off
    Transfer pumps: On (check sound), Off
    If no Xfer pump: Xfer test, no annunciator
    Fuel quantities: Checked
Fire detectors: Check (if installed)
Voltmeters: Check
Annunciators and Warnings: Test and Extinguished
Cabin signs: FSB or Both

Engine Start

R ignition/start: On
RH IGN IND: Check illuminated
Stable N_1 > 12%: Wait 5 s after stable
R condition lever: Low idle
ITT and N_1: Monitor (1090°C max., rise in 10 s)
R oil pressure: Check (note prop unfeathering)
R condition lever: High idle
Wait: N_1 > 50%
R ignition/start: Off
R generator: Reset, On
Charge battery: Load < 0,5, max. 5 min.
Battery: Test condition
    Loadmeter: Observe
    Battery switch: Off, observe load diff < 0,025
    Battery switch: On
(**R generator:** Off)
L ignition/start: On
LH IGN IND: Check illuminated
Stable N_1 > 12%: Wait 5 s
(**R generator:** On)
L condition lever: Low idle
ITT and N_1: Monitor (1090°C max., rise in 10 s)
L oil pressure: Check (note prop unfeathering)
Wait: N_1 = 50%
L ignition/start: Off
L generator: On
Inverter: Test both, On
Oil & Fuel pressure: Check L&R
R condition lever: Low idle

After start

Avionics: On
Cabin temp/mode: As required (Check N_1/ITT/load)
Fuel control heat: Heat
Lights: As required
Transfer pumps: On
Crossfeed: Auto
Annunciators: Test, clear
Instruments: Check

Taxi

Brakes: Check
Gyros: Check

Before takeoff (Runup)

Boost pumps and auto crossfeed: Test
- **L Boost:** Off (LH BOOST FAIL, XFEED on)
- **L Boost:** On, annunciators out
- **Crossfeed:** Closed, then Auto
- **R Boost:** Off (RH BOOST FAIL, XFEED on)
- **R Boost:** On, annunciators out
- **Crossfeed:** Closed, then Auto

DC Voltage/Load: Check
Prop synchronisation: Off
Electric trim: Check (tab control, wheel switch)
Trim: Set
Flaps: Check, up
Pressurisation: Check, set (alt.+500/cabin 500agl, rate)
Autopilot: Check, then Off
*** Overspeed governors:** Test
- **Propellers:** Full forward
- **Power levers:** Below 1900 rpm
- **Overspeed governor test:** Hold to On
- **Power:** Increase to limit, watch ITT/Tq
- **Power:** Reduce to 1900 rpm
- **Overspeed governor test:** Release

*** Primary governors:** Exercise at 1900 rpm
*** Engine ice protection:** Pull, push; check Tq
Deice switch: Single, check pressure, check boots
*** Secondary low pitch stops:** Test
- **Condition levers:** High idle
- **Power levers:** Idle (read prop. rpm)
- **Prop. Test switches:** Sec Low Pitch Stop Test
- **Power levers:** Align aft edge with beta marks
- **Secondary low pitch lights:** Check On
- **RPM:** Check approx. 210 above previous
- **Prop. Test switch:** Release
- **RPM:** Check increase

Power levers: Idle
Condition levers: Low idle
*** Autofeather:** Check
Power: 500 ft-lbs
Autofeather: Hold to test
Power levers: Retard each (400: ann. 260: fthr)
Power: Retard (both ann. out, no feather)
Autofeather: Arm
Propellors: Check feathering
Condition levers: High idle
Suction and deice pressure: Check
Flight & engine instruments: Check (oil temp!)
Ice protection: As required
Boost pumps: Check on, operative
Engine frictions: Set
Avionics and Radar: Check
Flight controls: Full, free, correct

Before takeoff (ready to go)

Supercharger: On, firewall shutoff open
Annunciators: Out/considered
Pitot heat: As required
Transponder: On
Prop synchrophaser: Off
Strobes: On
Auto-ignition: Armed

During takeoff run

Autofeather annunciators: Check illuminated
Ignition On annunciators: Check extinguished
Engines: Check ITT/Tq in limits

After takeoff

Landing gear: Up
Flaps: Up
Autopilot: On if required
Engines: Climb power set, check limits
Auto-ignition: As required
Props: Set 2000 RPM
Synchrophaser: On
Autofeather: Off
Engine instruments: Monitor
Cabin sign: As required
Cabin pressurisation: Check

Descent

Pressurisation: Set cabin altitude (table), Rate
Altimeter: Set
Cabin sign: As required
Windshield anti-ice: As required
Power: As required

Pressurisation Settings:

QNH	970	980	990	1000	1010	1020	1030	1040	1050
Above	1800	1500	1200	900	600	300	0	-300	-600

Interpolate or use next lower QNH. Default 500'.

Before landing

Cabin sign: Both
Prop synchrophaser: Off
Flaps: As required
Landing gear: Down
Lights: As required
Pressurisation: Check
Prop autofeather: Arm
Radar: Standby or off
Condition levers: High idle if required
Auto-ignition: On
Props: High RPM before touchdown
After touchdown:
    Power: Beta or reverse if required
    Reverse: Remove at 40 kts

Balked landing

Power: Maximum
Props: Full forward
Airspeed: 92 kts until clear of obstacles
Flaps: Up
Gear: Up

After landing

Flaps: Up
Landing and taxi lights: As required
Auto-ignition: Off
Ice protection: Off
Pitot heat: Off
Electrics: Reduce load
Condition levers: Low idle if load allows
Trim: Set
Transponder and radar: Off
Strobes: Off

Shutdown

Parking brake: Set
Transfer pumps: Off
Crossfeed: Closed
Inverter: Off
Autofeather: Off
Cabin temp mode: Off
Subpanel and avionics switches: Off
Overhead panel switches: Off
Oxygen supply: Off
Battery: Charged, checked
ITT: Below 610°C for 1 min
Props: Feather
Condition levers: Cut-off
Wait: $N_1 < 10\%$
Boost pumps: Off
DC Volt/Load: Check voltage
Battery/Gen bar: Off
Control locks: Install
Park brake: As required
External covers: Install

King Air B90 Abnormal Checklist

Air start (Starter)

Cabin temp, Blower: Off
Radar: Standby or Off
Windshield heat: Off
Power lever: Idle
Condition lever: Cut-off
Fuel panel: Check
- **Fuel firewall valve:** Open
- **Boost pump:** On
- **Transfer pump:** On
- **Crossfeed:** Auto

Other engine: ITT < 700°C
Ign./engine start: On, check IGN annunciator
Wait: 8 s
Condition lever: Low idle
Wait: N_1 > 50%
Ign./engine start: Off
Power, Propeller: As required
Fuel control heat: On
Electrical equipment: As required

Air start (windmilling)

Cabin temp: Off, **Blower:** Auto
Radar: Standby or Off
Windshield heat: Off
Power lever: Idle
Propeller: 2200 rpm
Condition lever: Cut-off
Fuel panel: Check
    Fuel firewall valve: Open
    Boost pump: On
    Transfer pump: On
    Crossfeed: Auto
Generator (inop. engine): Off
Airspeed: 140 kts minimum
Altitude: Below 20 000 ft
Auto-ignition switch: Arm
Wait: 8 s
Condition lever: Low idle
Wait: ITT peaks
Power, propeller: As required
Generator: On
Auto-ignition switch: Off
Fuel control heat: On
Electrical equipment: As required

Landing gear manual extension

Airspeed: 120 KIAS
Ldg Gr circuit breaker (copilot panel): Pull
Landing gear handle: Down
Emergency engage handle: Lift, clockwise
Extension lever: Release clip, pump until 3 greens

Landing gear up after manual ext.

Emergency engage handle: CCW, push down
Extension lever: Stow
Ldg Gr circuit breaker: Push in
Landing gear: Up

Zero thrust (C90)

Propeller: 1800 rpm
Power lever: Set Tq = 100 ft-lbs

B90 Emergency Checklist

Engine shutdown

Power lever: Idle
Condition lever: Cut-off
Prop lever: Feather
Fuel firewall valve: Closed
Fire extinguisher: Actuate if required
Clean up (inop. engine):
- **Bleed air valve:** As required
- **Engine auto ignition:** Off
- **Boost pump:** Off
- **Fuel transfer pump:** Off
- **Crossfeed:** Closed
- **Generator:** Off
- **Supercharger firewall valve:** As required
- **Synchrophaser:** Off
- **Fuel control heat:** Off
- **Autofeather:** Off
- **Electrical load:** Monitor

Engine fire on ground

Condition lever: Cut-off
Fuel firewall valve: Closed
Starter switch: Starter only
Boost pump: Off
Fuel transfer pump: Off
Crossfeed: Closed
Fire extinguisher: Actuate (if required)

Engine failure during ground roll

Power levers: Idle
Brakes: As required
If insufficient runway for stopping:
- **Condition levers:** Cut-off
- **Fuel firewall valves:** Closed
- **Master switch:** Off with gang bar
- **Boost pumps:** Off

Engine failure after lift-off (can't land)

Power: Max. allowable
Prop RPM: Full increase
Airspeed: Maintain (takeoff speed or above)
Landing gear: Up
Flaps: Up
Power lever (inop. engine): Idle after autofeather
Propeller (inop. engine): Feather
Airspeed: V_{YSE} (after obstacles cleared)
Clean-up (inop. engine):

- **Condition lever:** Cut-off
- **Auto-ignition:** Off
- **Fuel firewall valve:** Closed
- **Boost pump:** Off
- **Fuel transfer pump:** Off
- **Crossfeed:** Closed
- **Generator:** Off
- **Supercharger firewall valve:** As required
- **Synchrophaser:** Off
- **Fuel control heat:** Off
- **Electrical load:** Monitor
- **Autofeather switch:** Off

2nd engine flame-out

Power lever: Idle
Condition lever: Cut-off
Propeller: Do not feather
Air Start: Conduct

Smoke and fumes: Electrical (C90)

Oxygen: Handle On, Connect/don masks
Cabin temp mode: Off
Vent blower: Off
Avionics master: Off
Nonessential electrical equipment: Off
If fire or smoke ceases:
Individually turn on equipment to isolate
If fire or smoke persists:
Cabin pressure switch: Dump
Land as soon as practical

Smoke and fumes: Environmental

Oxygen: Handle On, Connect/don masks
Cabin temp mode: Off
Vent blower: Off
Supercharger shutoff valve: Closed

Emergency descent

Power levers: Idle
Prop controls: Full high RPM
Wing flaps: Approach
Landing gear: Down
Airspeed: 156 KIAS (V_{LE})

Glide (C90)

Landing gear: Up
Wing flaps: Up
Restart: Attempt before feathering both
Propellers: Feather
Airspeed: 125 KIAS

Boost pump failure

Identified by CROSSFEED, BOOST PUMP FAIL
Crossfeed: Momentarily off
Failed pump: Identify
Inoperative pump: Off
Consider continued flight:
Lower power setting
Lower altitude
Cool fuel
10 h maximum

Crossfeed

Fuel boost pumps, transfer pumps: On
Crossfeed: Open, check CROSSFEED ann. on
Boost pump (non-feeding side): Off, check ann.

Crossfeed Off

Fuel boost pumps: Both on
Crossfeed switch: Closed
Fuel boost pump (inop. eng.): Off

Circuit breaker tripped

Nonessential circuit: Do not reset in flight
Essential circuit: Push to reset, once only
Subpanel feeder circuits: Do not reset in flight

Cracked windshield (C90)

Outer panel: No action required
Inner panel: Descend or < 3 PSI differential in 10 mins.

Secondary Low Pitch Stop Failure

LOW PITCH STOP warning illuminates:
If below 110 kts and below 400 ft-lb:
Do not pull breaker
Do not attempt reverse on landing
If above 110 kts and/or above 400 ft-lb:
Power lever: Reduce as required
PROP GOV IDLE STOP: Pull CB
Power lever: Return to desired setting
Repair before next flight

