BE58 FCOM

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BE58 Normal Checklist Revision 3

Introduction

The Baron 58 Normal Checklist is updated to Revision 3 and is now available in DocStore under OMB -> BAVirtual Flying Club -> Baron 58.

This revision incorporates substantial changes to Normal Procedures. The aims of these changes have been:

- Remove items which were not relevant/unable to be checked/operated in the sim
- Improve the sequencing of items to make more logical sense
- Improve consistency of wording and procedures
- Greater emphasis on briefings and TEM
- Update procedures to be more in line with current real-world operational practices in MEP training aircraft
- Inclusion on the checklist of useful reference items and aide-memoires
- Improved clarity to enhance standardisation
- Better harmonisation with C172 and BA mainline procedures where appropriate

A full summary of changes is enclosed below. Particularly significant changes include:

- Engine Start and Before Takeoff checks divided in to 'above the line' and 'below the line' portions
- Approach and Landing checks reworked and now split in to Initial Approach, Landing and Final checks for harmonisation with OEI procedure.
- Addition of standardised briefings

A full customised BAVirtual BE58 FCOM incorporating full expanded procedures is in production and will be released in the coming months to accompany these checklists.

Normal Checklist Usage

In multi-crew flying SOPs establish tasks for each crew member – the Pilot Flying, or PF, and the Pilot Monitoring, or PM. Tasks are generally associated with calls and actions (for example, the PF may call "gear up" and the PM raises the gear and responds "gear up").

In most cases, PF and PM duties are independent of who is Pilot in Command (PIC), i.e. the Captain, or Co-pilot, e.g. the First Officer, with PF and PM duties switching between Captain and Co-pilot on each leg.

During multi-engine training it is not the role of the instructor to function as either PF or PM. However, training can still be conducted in a fashion which best prepares students for an airline-style multi-crew operation. Accordingly, the procedures laid out in this manual are PF-focused, with no procedural responses or inputs from a PM. The PF is, in effect, the student acting as PIC.

As a rule, pilots should never deviate from SOPs; it has been clearly established through research that when deviation occurs there is a much greater probability of an incident or accident. The BAV Beech Baron SOPs must be memorised and practiced during all training flights.

Checklist Layout and Usage
There are two checklist formats used in BAVirtual multi-engine training: "flow checks" and "self-challenge/response".

Flow Checks
The Flow Checks method requires that the checklist sequence is first completed from memory, and then the checklist reviewed to ensure that all items contained on the checklist for the specified phase are double-checked: the items are read from the checklist and physically or visually confirmed.

In BAVirtual BE58 operations, the **Taxi Check** and all airborne checklists from **Before Takeoff (Below the Line)** up to and including **Final** are completed as flow checks. The items are completed silently and then the checklist read aloud, with each item physically or visually confirmed, to verify the appropriate actions have been completed.

The checklists to be conducted using the Flow Checks methods are headed with a blue background.

Self-Challenge/Response
In the Self-Challenge/Response method, all items are sequentially completed as the checklist is read aloud. In BAVirtual BE58 operations, the **Before Start, Engine Start, After Start** and **Before Takeoff (Down to the Line)** checks, plus **After Landing** up to and including **Shutdown** are conducted as self-challenge/response checklists.

The checklists to be completed using the Self-Challenge/Response method are headed with a yellow background.

It is BAVirtual Flight Training policy that in single-pilot operations the aircraft is stopped with the park brake set prior to reading any self-challenge/response checklist. If an instructor or other competent pilot is occupying the right hand seat and expediency is required or desirable (e.g. to avoid an unacceptable delay to other airfield users) they may elect to carry out the checklist whilst the student/LHS pilot taxies the aircraft or vice versa.

~~Before Start Check~~	Before Start Check
~~Seats & harness.....Position & locked~~	Merlin..... Initialised
~~Park brake ..... Set ON~~	Seats & Harnesses.....Position & Locked
~~Avionics ..... All OFF~~	Park Brake .....ON
~~Oxygen .....Checked~~	Gear Handle .....DOWN
~~Emerg. Static Source …. Drained & NORMAL~~	Cowl Flaps .....OPEN
~~Gear Handle ..... DOWN~~	Fuel Valves .....ON
~~Cowl Flaps .....OPEN~~	Circuit Breakers. ..... IN
~~Fuel Valves .....ON~~	Magneto Switches..... OFF
~~Circuit Breaker's..... ALL IN~~	External Lights..... OFF
~~Switches ..... As Req'd~~	Avionics ..... OFF
~~Ancillary Equipment Controls ..... Check~~	Prop Sync ..... OFF
~~Battery & Alternator s/w's..... ON~~	Ice Protection..... OFF
~~(*If using ext pwr, Alt s/w's..... OFF*)~~	NAV/GPS Selector .....NAV
~~Fuel Quantity.....Checked~~	Fuel Boost Pumps..... OFF
~~Gear pos[n] lights .....3 Greens~~	Flap Selector & Flap Position ..... Agree
~~Flight Controls.....Check~~	Battery & Alternator s/w's.....ON
~~Trims .....SET~~	*(If using ext pwr, Alt s/w's..... OFF)*
~~Emerg Gear Crank ..... Stowed~~	Fuel Quantity ..... Verify
~~BAV Merlin ..... Configured~~	Gear Position Lights .....3 green
~~Briefing ..... Completed~~	Flight Controls..... Check
	Trims .....Set
	Departure Briefing ..... Complete

The usual start sequence is right, then left.

~~Engine Start Check~~	Engine Start Check
~~Beacon & Nav Lights .....ON~~	Beacon & Nav Lights .....ON
~~Engines.....Clear~~	Mixtures ..... Full RICH
~~Mixture.....Full Rich~~	Pitch Levers .....Full FINE
~~Pitch levers.....Fully Fine~~	---START APPROVED---
~~Throttle .....Full Open~~	Avionics ..... OFF
~~Fuel Boost Pump ..... Hi~~	Propeller Area ..... Clear
~~(*until fuel flow peaks, then .....OFF*)~~	Throttle .....Full OPEN
~~Throttle ..... Close~~	Fuel Boost Pump ..... Hi
~~Magnetos/Start S/w.....START~~	(*until fuel flow peaks, then .....* OFF)
~~(*release to* BOTH *when engine starts*) Throttle .....Set 900 to 1,000 rpm~~	Throttle .....CLOSE, then OPEN ½ Inch
~~Oil Pressure ..... 10 psi within 30 secs~~	Magneto Switch .....START
~~External Power (if used)..... Disconnect~~	(*release to* BOTH *when engine starts*)
~~Alternator (*if ext pwr used*)..... ON~~	Throttle ..... 1,000 rpm
~~Electrics.....28 volts and Charging~~	Oil Pressure .....10 psi within 30 secs
~~START Annunciator ..... Extinguished~~	External Power (if used)..... Disconnect
	Alternator (*if ext pwr used*).....ON
	Electrics..... 28V and Charging
	START Annunciator ..... Extinguished
	Repeat for second engine

Commence the After Start Check once both engines are running.

~~After Start Check~~	After Start Check
~~Avionics ..... ON, tune as req'd~~	Avionics ..... ON
~~Flight Instruments .....Set & Checked~~	Radios ..... Tune
~~Engine Instruments .....Check~~	Flight Instruments ..... Set & Check
~~(*Do NOT operate above 1,200 rpm until oil temp is 24^{0} C min and oil press in green arc*)~~	Engine Instruments .....Check
~~Mixture..... Lean for taxy~~	External Lights ..... As Req'd
~~Taxy Area..... Clear~~	
~~External lights..... As req'd~~	

The taxi check is completed by scan flow once taxi clearance has been received.

~~Taxying Check~~	Taxi Check
~~Brakes.....Check~~	Taxi Area..... Clear
~~Flight Insts ..... Check~~	Brakes.....Check
	Flight Instruments .....Check

Commence the Before Takeoff Check once the aircraft is stopped at the engine run-up area with the parking brake set.

~~Before Take-Off Check~~	Before Take-Off Check
~~Park brake .....ON~~	Park Brake ..... ON
~~Seat harness(es)..... Secure~~	Cabin .....Secure
~~Fuel Pumps..... OFF~~	Fuel Boost Pumps..... OFF
~~(*If OAT 32^{0}C or above .....LOW*)~~	*(If OAT 32^{0}C or above.....LOW)*
~~Engine insts .....Normal~~	Engine Instruments .....Check
~~Fuel quantity indicators .....Check~~	Fuel Quantity.....Verify
~~Mixture..... Full rich~~	Mixtures ..... Full RICH
~~Fuel valves..... ON~~	Fuel Valves ..... ON
~~Start annunciator .....OFF~~	Start Annunciator..... OFF
~~Throttles.....2,200 rpm~~	Throttles.....2,200 rpm
~~Pitch levers.....Check~~	Pitch Levers .....Check
~~(*Retard to 2,000 rpm ONLY*)~~	Throttles.....1.700 rpm
~~Throttles.....1.700 rpm~~	Magnetos .....Check
~~Magnetos .....Check~~	Throttles.....1,500 rpm
~~Throttles.....1,500 rpm~~	Pitch Levers .....Feathering Check
~~Pitch levers..... Feathering Check~~	*(retard to max drop of 300 rpm)*
~~(*retard to max drop of 300 rpm*)~~	Throttle .....IDLE, then 1,000 rpm
~~Throttle .... Set IDLE, then 900 – 1,000 rpm~~	Flaps .....UP
~~Flaps ..... As req'd and checked~~	Flight Controls .....Check
~~Flight controls .....Checked~~	Ice Protection ..... As Req'd
~~Ice Protection..... As req'd~~	Windows and Doors .....Locked Closed
~~Windows and doors .....Locked Closed~~	Takeoff Briefing ..... Rwy/Intx/SID/Extras
~~Strobe light..... ON~~	---ENTERING RUNWAY---
	Approach.....Check Clear
	Strobe Light ..... ON
	Landing Light ..... ON
	Transponder ..... Mode C

Carry out the After Takeoff Check passing 1,000ft aal.

~~After Take-Off Check~~	After Take-Off Check
~~Landing gear..... Up~~ ~~Flaps .....Zero~~ ~~(*Clear of obstacles and min* IAS 85 *kts*)~~ ~~External lights..... As req'd~~ ~~When in steady initial climb:~~ ~~Throttles.....Full~~ ~~Pitch levers..... 2,700 rpm~~ ~~Mixture.....Lean to schedule~~ ~~Cowl flaps..... OPEN~~ ~~IAS ..... 105 kts~~	Landing Gear ..... UP Flaps ..... UP External Lights ..... As Req'd Cowl Flaps ..... CLOSE

Carry out the Cruise Climb check once the After Takeoff Check has been completed and when initiating any enroute climb.

~~Cruise Climb Check~~	Cruise Climb Check
~~Pitch levers..... 2,500 rpm~~ ~~Throttles.....Full~~ ~~Mixture.....Lean to schedule~~ ~~IAS ..... 136 kts~~ ~~Eng Temps.....Monitor~~ ~~Cowl flaps.....As req'd~~ ~~Fuel pumps.....As req'd~~	Pitch Levers ..... 2,500 rpm Throttles .....Full OPEN Mixture..... As Req'd Eng Temps ..... Monitor Fuel Boost Pumps..... As Req'd

Carry out the Cruise Check when level at the initial cruising altitude and after levelling off at any subsequent new cruising altitudes enroute.

~~Cruise Check~~	Cruise Check
~~Cowl flaps..... Closed~~ ~~Power ..... Set~~ ~~Fuel pumps..... As req'd~~ ~~Mixture.....Lean using EGT~~	Power ..... Set Fuel Boost Pumps..... As req'd Mixture..... Lean using EGT Prop Sync..... As Req'd

Carry out the Before Descent check at least 5 minutes prior to top of descent (IFR) or 10-15 NM from the destination airfield (VFR)

~~Pre-Descent Check~~	Before Descent Check
~~Destination weather ..... Obtain~~ ~~Briefing..... Rwy, App, Alternate~~ ~~Altimeter ..... Setting~~ ~~Mixture..... Rich~~ ~~Cowl flaps..... Closed~~ ~~Flaps .....As req'd~~ ~~Windshield Defrost ..... As req'd~~	Destination weather.....Obtain Briefing .....Complete Navigation Aids ..... Set Minimum Safe Altitude .....Check Fuel..... Check Qty Mixtures ..... Full RICH

Carry out the Initial Approach Check when beacon outbound or being vectored toward late downwind/base (IFR) or prior to joining the circuit (VFR)

~~Approach Check~~	Initial Approach Check
~~Brakes..... OFF~~	Taxi Light .....ON
~~Undercarriage .....As req'd~~	Landing Light .....ON
~~Mixture ..... Full Rich~~	Prop Sync ..... OFF
~~Pitch levers.....Full fine~~	Mixtures ..... Full RICH
~~Fuel.....Check~~	Pitch Levers .....Full FINE
~~Flaps .....As req'd~~	Radios..... Tuned and Identified
~~*(Max IAS 152 kts with 15^{0} flap set)*~~	Altimeter ..... Set and Checked
~~Hatches & Harness(es)..... ..... Secure~~	Approach/Minimum ..... State
~~Seats..... Landing position~~	Cabin .....Secure
~~Cowl flaps.....As req'd~~	
~~Briefing ..... Completed~~	

Carry out the Landing Check at half-scale GS deflection or 1 NM prior to the FAF (IFR) or abeam the landing threshold (VFR)

Landing Check
Brakes..... OFF
Landing Gear ..... DOWN, 3 green
Flaps .....APH
Mixtures ..... Full RICH
Pitch Levers ..... Full FINE

Carry out the Final Check once descending on final approach and landing assured, or at Asymmetric Committal Height with landing assured when OEI.

~~Landing Check~~	Final Check
~~Undercarriage ..... Down, 3 greens~~	Pitch Levers .....Full FINE
~~Flaps .....Full (30^{0})~~	Landing Gear ..... DOWN, 3 green
~~Speed .....Landing speed~~	Flaps ..... FULL
~~*(Max IAS 122 kts with 30^{0} flap set)*~~	
~~Landing Lights .....ON~~	

Carry out the After Landing Check once clear of the active runway.

~~After Landing Check~~	After Landing Check
~~Landing & taxy lights..... As req'd~~	Flaps ..... UP
~~Flaps .....UP~~	Landing Light ..... OFF
~~Cowl flaps..... OPEN~~	Strobe Light ..... OFF
~~Fuel pumps..... As req'd~~	Transponder ..... STANDBY
~~Trims .....Set to zero~~	Cowl Flaps ..... OPEN
	Fuel Boost Pumps.....As Req'd
	Trims ..... Set to zero

~~Shut-Down Check~~	Shutdown Check
~~Park brake .....ON~~ ~~Pitch levers.....Full fine~~ ~~Throttles.....Set 1,000 rpm~~ ~~Fuel pumps..... OFF~~ ~~Electrical & avionic equipment .....OFF~~ ~~Throttles.....Set 1,700 rpm~~ ~~Magnetos .....Check~~ ~~Throttles.....Set idle, then 1,000 rpm~~ ~~Mixture .....Idle Cut-off~~ ~~Magnetos .....OFF~~ ~~Alternators .....OFF~~ ~~Battery .....OFF~~ ~~Flight controls .....Locked~~ ~~Merlin PIREP ..... Check Filed~~	Park Brake ..... ON Pitch Levers .....Full FINE Throttles.....1,000 rpm Fuel Boost Pumps..... OFF Avionics ..... OFF Throttles.....1,700 rpm Magnetos .....Check Throttles.....IDLE, then 1,000 rpm Mixtures ..... Idle Cut-off Magnetos ..... OFF Alternators ..... OFF Battery..... OFF Flight Controls ..... Locked Merlin PIREP..... Check Filed ***Note:*** *If aircraft to be parked for extended time, ensure wheels are chocked and park brake released.*