

G-BULL



AL14 SEP 17

BULLDOG SERIES 120 FLIGHT CHECK LIST G-BULL



This checklist must not be taken as authoritative and must be used in conjunction with the Pilots Operating Handbook, issued as part of the Aircraft C of A as amended. The requirements of current documents for EASA, CAA, AIP, ANO, AICs, training Syllabi, LFC Operations Manual and ATC instructions must be adhered to.

Checks in DARK RED should be committed to memory.

OUT BRIEF - Away from Base

Authorised for sortie – call Owners or Instructor?
Met Situation—TAFs at Dest and Diversion, Latest METAR at Departure airfield
Temp airspace upgrades/reclassifications: Tel 01489 887515
NOTAMs to affect sortie
Flight Plan / Gen Dec submitted or Destination informed
Booked out with ATC, PPR obtained for destination(s)
Paid landing fees
Fuel /Oil Uplifts — receipts retained
Passenger paperwork completed (LFC Temporary membership form)
Aircraft Log Sortie details entered
Aircraft fuel state - sufficient for trip
Current Map(s) + PLOG completed with updated winds
Aircraft keys located
Mobile Phones AIRCRAFT MODE / OFF
If parking overnight: Consider taking aircraft cover, Claw tiedown kit

Changes from AL13

Page 3..... Oil qty limits
Page 6..... After landing run-up procedure
Page 7..... Cockpit exit— clean windscreen and wipe down front cowlings



DEPARTURE from KEMBLE

Pre Start: Kemble Info, G-BULL Radio Check

G-BULL Kemble Information, Strength x

G-BULL, Strength... Bulldog at ..., POB,
Request airfield information and Start for a
"Local Flight" if landing back at Kemble +
direction of Departure (e.g. South)

or Flight to <Destination> and whether re-
turning today, Duration (airborne)

G-LL Cleared Start, Runway ... QNH ...

G-LL (*Read back info*).

G-LL Request Taxi

G-LL, Taxi to...

Once run-up and pre take-off checks com-
plete, G-LL, ready for Departure

G-LL, Kemble Information Hold / cleared
line-up / Take off at your discretion

DEPARTURE – ONCE CLEAR OF THE ATZ

G-LL, Departing the Zone. G-LL, Cotswold

G-LL, Cotswold, remaining with you for
Basic Service / changing to

RECOVERY to KEMBLE (local flight)

Kemble Information, G-LL, recovering from
the N/E/S/W, request airfield information

RECOVERY to KEMBLE (different Dep a/f)

Standard Initial call

G-LLLL, Kemble Information Using Runway
XX, QFE XXX, Traffic

G-LL (*READ BACK Rwy, QFE*)

G-LL, <Intention; For Overhead Join / Down-
wind / L/R Base etc)

G-LL, Downwind / Base, Touch & Go / Full
Stop.

G-LL, Surface Wind, xxx/xx knots.

G-LL. Roger

G-LL, Final.

G-LL, Continue / cleared touch & Go/ Land at
your discretion / Go-Around. Wind xxx

G-LL Continue or Roger.

JOINING a CLOSED AIRFIELD WITH NO RADIO SERVICE

Use callsign YYY Traffic,
G-BULL, intentions

EMERGENCY SQUAWKS

Distress 7700
Radio Failure 7600

REQUESTING A SERVICE AL14 SEP 17 15

YYY Radar, this is G-BULL

G-BULL, YYY Radar, pass your message

G-BULL, request BASIC /TRAFFIC

Bulldog

Departure point + destination

Present Position

Level

Additional information / request:

e.g. Routing relevant to ATC unit

Service Issued (to be read back!)

JOINING AT AN AFIS AIRFIELD

YYY Information, G-BULL, BULLDOG,

...POB, presently X miles to the N/E/S/W,
XXXXft on XXXX Hp, request airfield infor-
mation.

G-LL, YYY Information, Runway XX, QFE
XXX, Reported traffic info.

Runway XX, QFE XXX, Joining overhead/
downwind/base leg, G-XX.

G-LL, Roger, Report downwind/overhead/
base leg.

Wilco, G-LL.

ZONE CROSSING / MATZ Penetration

YYY Radar this is G-BULL

G-BULL, YYY Radar, pass your message

YYY Approach, G-BULL, request

Zone crossing / MATZ penetration

G-BULL Bulldog

Departure point + destination

Present Position & Level on xxxx Hp

Routing

Request Zone Crossing

e.g. Routing relevant to ATC unit

G-LL Squawk ZZZZ

G-LL (*Readback and set Squawk*)

*Once Radar identified - Clearance Issued
(to be read back!)*

EMERGENCY

'MAYDAY' or 'PAN-PAN' x 3, G-XXXX,
PA28

Nature of Emergency

Intentions

Position

Pilot Quals if relevant (e.g Student)

POB xx

*VFR Radio failure: Join through dead-
side to 500ft, waggling wings or flash-
ing landing light to get attention. Join
circuit and wait for flare or light signal
on finals – Green flare = cleared to land
Red flare = do not land, give way and
continue circling*

Complete Bold Face actions from memory—use checklist to complete others.

ENGINE FIRE in FLIGHT

1. Fuel Boost Pump OFF
2. Reduce IAS.... GLIDE at 75kt
3. Throttle..... CLOSED
4. Magnetos..... OFF
5. Fuel Selector..... OFF
6. Sideslip to keep flames from fuselage
7. Alternator OFF
8. Cabin Heat & DEMIST OFF
9. **If under control MAYDAY**
Reduce electrical loads, land ASAP
9. **If fire continues MAYDAY and BALE OUT above 1500 ft AGL**

CABIN FIRE in FLIGHT

1. Cabin Heat and DEMIST .. OFF
2. Fuel Boost Pump OFF
3. Alternator OFF
4. Reduce IAS GLIDE at 75kt
5. Canopy OPEN below 113kt
6. Fire Extg . OPERATE at BASE of FLAMES
7. **If under control MAYDAY**
8. Reduce electrical loads, .. land ASAP
8. **If fire continues MAYDAY and BALE OUT above 1500 ft AGL**

CABIN SMOKE / FUMES in FLIGHT

1. If suspected from Engine.....
Go to ENGINE FIRE IN FLIGHT DRILL
2. Cabin Heat..... OFF
3. Airflow lever..... SCREEN
4. Windscreen Demist PULLED ON
5. If Electrics suspected . Alternator OFF
6. " " " Non ess electrics
OFF(See ALTR FAILURE drill overleaf)
7. Canopy OPEN below 120kt
until smoke/fumes cleared
8. Declare Emergency, LAND ASAP
9. **PERFORM EMERGENCY LANDING**

FIRE on the GROUND

1. Mixture CUTOFF
2. Stop using FOOTBRAKES
3. FUEL TANK SELECTOR.. OFF
4. **R/t Call "G-LL Fire on the Ground"**
5. MAGS..... OFF
6. ALTERNATOR OFF
7. FUEL BP OFF
8. Unless A/c will roll away Brake OFF
9. Fire Extinguisher Release and carry
10. Assist passenger
11. Depart a/c to rear, go 100m Upwind

ENGINE FAILURE AFTER TAKEOFF

1. **If enough Runway . FULL FLAP, LAND**
2. **If not..Choose field within 45° of nose**
3. **If time permits, check:**
4. Fuel BP **ON**
5. Mags..... **BOTH**
6. Mixture..... **FULL RICH**
7. Fuel Selector **BOTH or Fullest Tank**
8. Throttle **CLOSED**
9. **MAYDAY Call Transmit**
10. Magnetos..... OFF
11. Fuel Selector OFF
12. FLAP..... **FULL**
13. **BATTERY (after flap selected) OFF**
14. **PERFORM FORCED LANDING**

ENGINE FAILURE in FLIGHT

1. Trim for Glide at 75kt, choose field
2. Throttle..... ½ OPEN
3. Fuel levels CHECK Contents
4. Fuel tank . Change to highest tank
5. Fuel Boost Pump ON
6. Mixture..... FULLY RICH
7. Propeller FULLY FINE
8. Magnetos..... BOTH
9. If prop stopped, use RE-STARTING
IN-FLIGHT Drill overleaf
10. If engine does not start, carry out
FORCED LANDING Procedure

INITIAL

Centre panel:

- Battery Master OFF
Alternator..... OFF
Magneto Key OUT
Mixture FULL LEAN (Back)
RPM Lever..... FINE
Throttle CLOSED
Centre glove box Closed, secured

Cockpit area:

- Fuel LEFT
Trimmers Visually Check connected and moving
Canopy Jettison Pins IN & wire-locked
Fire Extinguisher Secured & Velcro strap tight + in Date

Rear Cockpit:

- No loose articles
1st Aid Kit (Rear LHS) Secured + in Date

"A" CHECK (Additional checks for 1st Flt of day only)

Centre panel:

- Battery Master ON
Fuel gauges (min 20 gals total indicated on gauges)

Switches panel:

- Pitot Heater ON
Lights..... Switch ON: Anti Coll, Strobe (UP), Land, Taxi Lights

Walk around outside and physically check

- Lights,..... Strobe, Anti-Coll, Nav, Taxi and Landing Illuminated
Stall Warning Buzzer operating
Pitot Heater Warming

Return to cockpit

- All lamps and pitot heater OFF
Strobe Switch STROBE to centre position
Battery Master OFF

During Walkaround..... Complete fuel sediment/water drain check

WALKROUND (Before EVERY sortie)

Complete a physical walk around the aircraft, checking the following points:
Aircraft sitting evenly on main wheels with nosewheel 8 cm or more oleo extension

Check fuel levels in tanks, ensure caps properly secured

Check:

- Oil qty (min 5.5 ltr max 7 ltr—for aerobatics max 6.5 ltr)
No oil or fuel leaks under aircraft apart from fuel tank vent (rear left u/c strut)
Engine intakes and filter clear of debris, etc.
Propeller is secure, no loose screws on spinner
check for dents, leading edge clean, no large abrasions, Alternator belt tight
Engine cowling: 4 rear fasteners each side tight, 3 latches each side locked
All wing, fuselage surfaces for dents, distortion, particularly leading edges
Control surfaces (ailerons, rudder and tailplane) – hinges, security, condition
Pitot cover Removed—Stow in centre armrest
Battery cover (Right fuselage) —Dzus fasteners all fastened
Tyres Condition, No cuts to the cords or Creep, valves square to wheels)
Brake lines and units, no leaks
Safe position for starting, chocks removed, if LFC parking, ac off metal PSP
Towbar removed

Park Brake..... Reset, ON
 Chocks, Wing pickets, Towbar CONFIRM removed
 Harnesses All straps secured
 Controls Stick, Full & Free and Correct
 Trimmers Checked, Rudder: 0 / Elevator: in TO Band
 Tacho Noted
 Alternator OFF
 Battery Master ON
 Headsets Connected, lead free of straps, not under armpit
 Intercomm ON (Left inner rotary switch), Squelch and volumes adjusted
 V/A switch..... Select Volts - Check above 21v for start, Select Amps
 Circuit Breakers..... ALL IN
 Instruments..... VSI, T&S, RPM at Zero, condition of: ASI, AH, T&S, Altimeter
 G meter Note + Reset, if in limits +6 -3g otherwise leave—do not fly
 Cabin Heating Heat OFF and Demist ON
 Eng Heat knob OFF (in)
 Canopy Open or Closed but NOT latched
 * *Start Clearance.. ATIS Copied, Obtained (if required)*

ENGINE START

Starter limit: 12 sec ON, 5 min OFF. Use continuously for 6 sec max

COLD (oil temp less than 25°C)

Anti Coll Light ON
 Avionics Switches Both OFF
 Throttle FULL
 Mixture..... FULL RICH
 BP ..ON 3-5sec (fuel flow reads) OFF
 Mixture..... Cut-off
 Throttle Open ½cm
 RPM Lever FULL FINE
 Prop Area Call "CLEAR PROP"
 Magneto switch LEFT
 when engine fires, Mixture FULL RICH
 Magnetos..... BOTH
 RPM Set 1150

HOT (oil temp 25°C or more or Fuel Flow indicated when mixture advanced)

Anti Coll Light ON
 Avionics Switches ... Both OFF
 Mixture..... Cut-off
 Rpm Lever..... FULL FINE
 Prop Area..... Call "CLEAR PROP"
 Magneto switch LEFT
 Throttle Open 1cm
 when engine fires, Mixture FULL RICH
 Keep cranking (6 sec) until engine runs
 Magnetos..... BOTH
 RPM Set 1150

FLOODED ENGINE: Mags OFF, Throttle FULL OPEN, Mixture Cut-off,
 TURN Starter for 6 sec, then try HOT Start.

NO START: MAGS OFF, Mix ICO, Batt OFF (probably over-fuelled) Allow
 5min for starter to cool, then try HOT start, followed by COLD start
 procedures using a 1/2 sec prime only. If still no start, shut down and
 investigate fault.

AFTER START

Magnetos.....BOTH
 RPM1150 rpm
 Oil PressRising (more than 25 psi within 30 sec)
 Start Light.....OUT
 AlternatorON, Warning Light OUT Volt/Amp switch: more than 24v
 Magnetos.....BOTH—LEFT—BOTH—RIGHT—BOTH

Complete Bold Face actions from memory—use checklist to complete others.

ROUGH-RUNNING in FLIGHT

If normal running resumed with any of the above actions, retain those settings and land as soon as practicable.

1.Mixture FULL RICH
 2.Eng Heat knob ON (pull out)
 3.Throttle Idle then ½ Open
 4.Propeller ..Below 100 kt.. FULL FINE
 5.Fuel Levels CHECK Contents
 6.Fuel tank Select highest tank
 7.Fuel Boost Pump ON
 8.MAGS Check on BOTH
 9.If rough-running continues.....
 LAND ASAP

RE-STARTING in FLIGHT

1.Trim for Glide at 75kt
 2.Throttle ½ OPEN
 3.Fuel..... Select Highest Tank
 4.Fuel Boost Pump..... ON
 5.Mixture..... FULLY RICH
 6.Propeller FULLY FINE
 7.MAGNETOS..... BOTH
 8.to assist prop rotation, if enough
 Height, DIVE (max 169kt).

**OPERATE START Switch ONLY if
 Prop STOPPED**

ALTERNATOR FAILURE

SYMPTOMS:..... Alternator FAIL Lamp illuminates
 Amps below Zero, Voltage below 24v

ACTIONS

1.Alternator OFF
 2.Pitot, Nav Lights, Anti Coll Light, Landing & Taxi Lights OFF
 3.NAVS, GPS, BP, Transponder OFF
 4.ALTR c/b If OUT, push IN (1 attempt)
 5.If c/b stays IN..... ALTERNATOR ON
 6.V/A Switch CHECK VOLTS / AMPS

a. **If VOLTS LESS than 29v**
 Restore NECESSARY electrics 1 at a time

after 1 min, if AMPS still charging

FUEL LEAK

Consider using fuel from the leaking side as fast as possible (full power?)
 Climb to overhead destination or diversion (depends on usable fuel remaining).
 Switch tanks before fuel runs out in leaking tank.
 Inform ATC of possible fuel spillage on runway / taxiways.

Complete Bold Face actions from memory—use checklist to complete others.

COMMS FAILURE

Intercomm Fail: Pilot ISO Switch Check not on ISOLATE
Audio c/b If tripped, reset, (1 attempt)

TX/RX Fail: Check correct freq
VOL knob turned UP
Audio c/b If tripped, reset, (1 attempt)
Mic/tel leads Check connected
Transmit Switch Check not stuck in

Try other Transmit Switch (need to use other headset), other Radio, other freq.

If no TX or RX: Transponder 7600
Use Full radio fail procedure (OHD join, fit into cct,
if no Green from ATC Tower on final:
fly by at 500ft waggle wings, flash lights, power changes,
Rejoin downwind, look for Green downwind,
land on Green when on final, report to ATC

If no TX only: Transponder 7600 & Use Speechless Procedure

HIGH FUEL FLOW

1. Power..... REDUCE
2. Contents..... CHECK for LEAK
3. Visual check behind for fuel stream
4.ABORT MISSION

FLAP FAILURE

1. Flap c/b If OUT, push IN
..... (1 attempt)
- IF MALFUNCTION PERSISTS**
2. Land Flapless
..... Finals IAS 80kt, VAT 70kt

PROPELLER GOVERNOR FAIL

1. Prop Lever .. COARSE (back)
2. Manifold Pressure.... Initially set 25"
3. IAS... Adjust to keep RPM within
1300-2700
1. LAND with INTER FLAP

OIL PRESSURE HIGH or LOW

1. Power setting CHANGE SLOWLY
2. Climb to overhead destination
3. Consider PFL profile in case engine stops
4. If normal limits cannot be maintained
LAND ASAP

OIL TEMPERATURE HIGH

1. Power setting..... REDUCE
2. If temperature does not reduce into limits, LAND ASAP

CYLINDER HEAD TEMP HIGH

1. Power setting..... REDUCE
2. Mixture FULLY RICH
3. If CHT does not reduce into limits,
LAND ASAP

PRE-TAXY Checks marked * Full ATC environment only AL14 SEP 17 5

Avionic Master Switches Both Switches ON
Vacuum 3-5 in
Mixture Leaned to centre console rivets —note RPM increase c50 rpm
Fuel Set RIGHT
Flap Check Operation + visually and flap gauge
Instruments: DI-Compass Synch, AH erect, Altimeter—set Airfield Elev / 0
GPS & Radios ON, Tuned, Identified
Transponder STBY (press 2 sec), Press CRSR pause Press CRSR
Before Rpm over 1150 Wait until Oil Temp > 30° & CHT > 100°
Canopy Closed or Latched
Time off Chocks Noted
Taxi Clearance Obtained—Altimeter SET
Taxi Light ON

DURING TAXY

Brakes Checked
Instruments Checked
Rudder Left & Right Full & Free Movement

RUN-UP Set 1150 rpm, parked within 30° of 10kt+wind, Clear behind, Restrained stick

Park Brake ON (cover footbrakes)
Fuel Set BOTH
Oil Temp/CHT Oil More than 30°C and CHT more than 100°C
Mixture FULL RICH
Throttle Set 1750 Rpm (brakes holding)
RPM Lever (1st Flt of the day - 3 x check, otherwise 1 x check)
Set COARSE until Rpm approaches 1300 then FINE
Throttle Set 2050 Rpm, Check Mag drop: 175 max, 50 between
Eng Heat knob Pull OUT 30-50Rpm drop, push IN Rpm restored
Vacuum 4.5 - 5.5 in
Alternator Charging (0-5 amps)
Ts & Ps All in "green" sectors
Throttle Check Idle RPM: 700-800 then set 1150 RPM

PRE-TAKEOFF

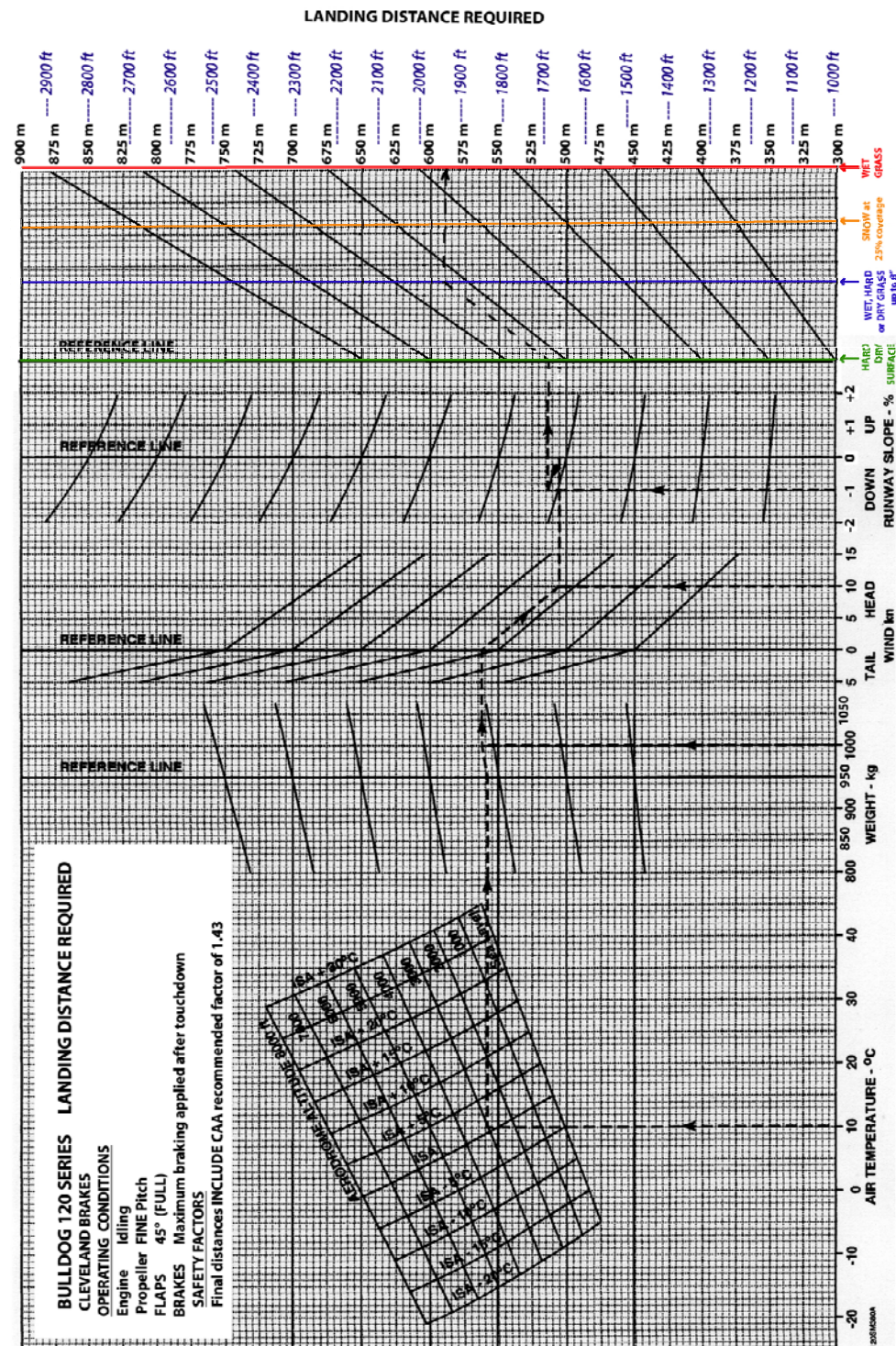
* ATC Departure Clearance Obtained
Trims Rudder 0—2R / Elevator Middle of TO Band
Flap 10° (Inter)
Friction Lever Applied
Mixture FULL RICH
Prop Lever FULL FINE
Eng Heat knob IN
Mags Both
Fuel BP ON, Gauges contents sufficient, Feed from BOTH tanks
Alternator ON, Light OUT, Charging or 0
T&Ps In "green" sectors
Instruments DI-Compass Synch, Altimeter set, AH Erect
Controls Full & Free
Canopy Closed & locked
Harnesses All straps tight—both pilots
T/O Time Noted
T/O Brief Rotate IAS, Takeoff Emergencies briefed
Departure Clearance Obtained

WHEN CLEARED ONTO RUNWAY:

Approach Clear
Transponder ALT—Code Set
Pitot Head ON (if required)
Lights Landing ON, Strobe ON

TAKEOFF RUN

1. T&Ps "green" 2. RPM 2600-2700 3. Fuel Press 16 GPH min 4. ASI Rising



SHUT DOWN

Park Brake ON
 Fuel LEFT
 Taxy Light OFF
 R/T (if required) Call Closing Down
 Alternator OFF
 Mixture Full LEAN
 When Prop has stopped:
 Magnetos OFF—Key OUT
 Throttle Idle
 Avionics Master Switches...Both OFF
 Battery Master OFF
 Strobe OFF (switch centre)
 Lights Panel: All switches DOWN
 Friction Lever OFF
 Trims TO Band/ Rudder 0
 Tacho Noted
 Time on Chocks Noted
 AC Straps ALL Lengthened
 QRBS LOCK (Red Arrow UP)
 Parachutes Leg straps re-linked

COCKPIT EXIT

Fuel LEFT
 All switches .. DOWN, except -
 Strobe MIDDLE position
 Throttle Idle
 RPM Lever ... Full FINE (Forward)
 Mixture Cut-off
 Footwells &
 Rear Cmpt.. No loose articles
 Keys Removed
 Straps Lengthened, QRB Lock
 Parachutes ... Remove from aircraft
 CANOPY Closed
 Stall Warner . Checked—no sound
 Windscreen .. Cleaned
 Front cowls ... Oil streaks Removed
OUT OVERNIGHT
 Chocks Fitted
 Brakes OFF
 Fuel LEFT
 Controls Locked
 Wing pickets Fitted
 Pitot cover Fitted
 Canopy Cover Fitted

QUICK-START (less than 15 min since shutdown e.g. after refuel)

Straps Fitted - check no straps loose outside the cockpit
 Battery Master ON
 Alternator OFF
 Brake Park Brake ON
 Fuel LEFT
 Anti Collision Light ON
 Avionics Switches Both OFF
 - NO PRIMING REQUIRED -
 Throttle 1cm open
 Call PROP CLEAR and START
 Magnetos LEFT
 Start Button PRESS
 Once engine fires:
 Mixture FULL RICH, throttle immediately reduce to 1200 Rpm
If No Start Mixture to FULL RICH, Prime for 1 sec ONLY, restart
MROSAM Completed
 Alternator ON
 Avionics Switches .. Both ON
 Taxy Light ON before moving off
 Taxy Clearance Obtained

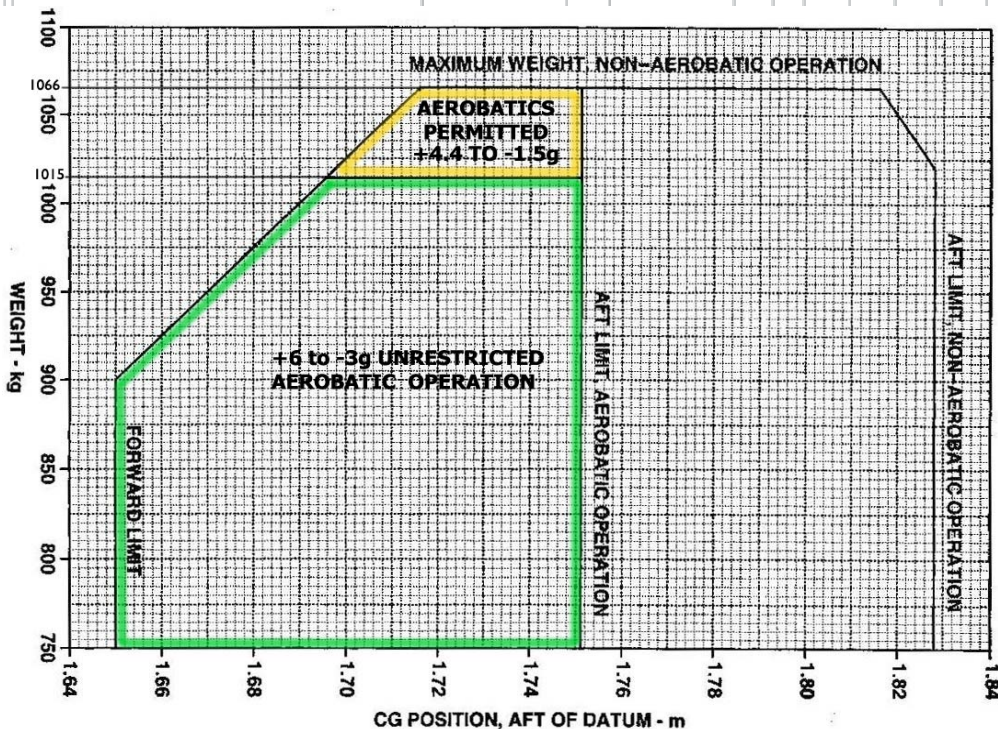
Note: GROUND USE ONLY - if flight intended, do full after start checks

BULLDOG 120 G-BULL WEIGHT & BALANCE

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Basic Weight includes 4.5ltr unusable fuel & 7.6 kg Oil

	WT Kg	ARM mtr	MOMENT				
Basic Wt:	742	x	1.675	=	1	2	4 2
Pilot 1:		x	1.98	=			
Pilot 2:		x	1.98	=			
Parachutes 7kg ea:		x	1.98	=			
Fuel@0.72kg / ltr- max 104.5kg:			1.65	=			
or 3.275 kg / ImpGal:		x	1.65	=			
Rear Baggage - max 100kg:		x	2.87				
TOTALS							
METHOD:	Enter any rear seat/baggage wts Add up Wts - compare with Max AUW Calculate moments <i>Note: moment = Arm x Wt</i> Add up moments - put in TOTAL Calculate ARM = Total Moment / Total Wt Plot value on Wt & Balance Graph						



BULLDOG 120 G-BULL LIMITATIONS

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ENGINE LIMITATIONS

CHT: Maximum 246°C
 Min In Flight 50°C
 Before exceeding 1200rpm 100°C
 Maximum before shutdown 180°C

OIL PRESSURE

Min at idling rpm 25 psi
 Max on ground 100 psi
 Normal Op band 55 to 95 psi
 Green band 60 to 90 psi
 Momentary Inverted min 25 psi
 Min in flight (desc, 1200rpm) 40 psi

OIL TEMPERATURE

Max in flight 118°C
 Minimum for continuous Op 60°C
 Min before exceeding 1200rpm 30°C

RPM Maximum permissible 2750 rpm
 Normal Max 2650 rpm
 Climb/ manoeuvre 2550 rpm
 Idling in 75kt descent 12-1300 rpm
 CSU oil starvation/pump fail 1300 rpm

FUEL PRESSURE

Takeoff Min 16 GPH

SOME ENGINE SETTINGS

	Throttle MAP "hg	Propeller RPM	Mixture psi
CLIMB	Full	2550	Set 15GPH at FULL THROTTLE
CRUISE	24"	22-2350	as set in climb
ENDUR	20-22"	18-2300	Leaned
AEROS	24-25"	2550	as set in climb
DESCENT	as reqd	23-2550	Full Rich
CIRCUIT	17-18"	Full Fine	Full Rich
BASE LEG	1750 rpm	Full Fine	Full Rich

AIRFRAME LIMITATIONS

WEIGHT

Max TOW, Land 1066 kg
 Max for Aerobatics 1066 kg
 Max g +4.4 to -1.8g
 If Wt 1015kg or below:
 Max g +6 to -3g

For no frame deformation:
 Max g +3.8 to -1.52g

SPEED

Rotate IAS 55kt
 Climb < 5000ft / >5000ft 80 / 75kt
 VNE (never exceed) 185kt
 VNO (Max normal op speed) 135kt
 Max full control movement 142kt
 Max canopy open (2 notches) 120kt
 Taxying max wind 50kt
 Glide for best range 75kt

STALLING

Clean Stall Pwr off 1066kg 53kt
 45° Flap Stall pwr off 900kg 48kt
 Flt in turbulent conditions 85kt
 Final Appr (Full Flap) 70kt
 VAT Full flap 1066kg 65kt
 (Reduces by 1kt per 50kg)

VAT flapless = VAT Normal + 5kt
 SHORT Landing VAT 60-55kt
 CROSSWIND limit 35kt
 Taxying, total wind strength 45kt
 FLAP 10° Inter (in green arc) 135kt
 45° Full (in White arc) 100kt

AEROBATICS (flaps must be UP)

Flick Roll 65—80kt max
 Ail, Barrel, Slow Roll, Stall Turn 120kt
 Loop, Horizontal 8 & Cuban 8 130kt
 Reverse Stall Turn,
 Roll off top & Avalanche 145kt
 Inverted Flight momentary ONLY
 Fuel Boost Pump OFF
 unless engine falters then ON

SPINNING Entry 60kt/Stall warner

LH / RH (approx) 20kt / 50kt
 Ht loss PER turn 350ft
 MAH (min abandon ht) 3000ft AGL
 Min ht to start Recovery MAH+1500ft