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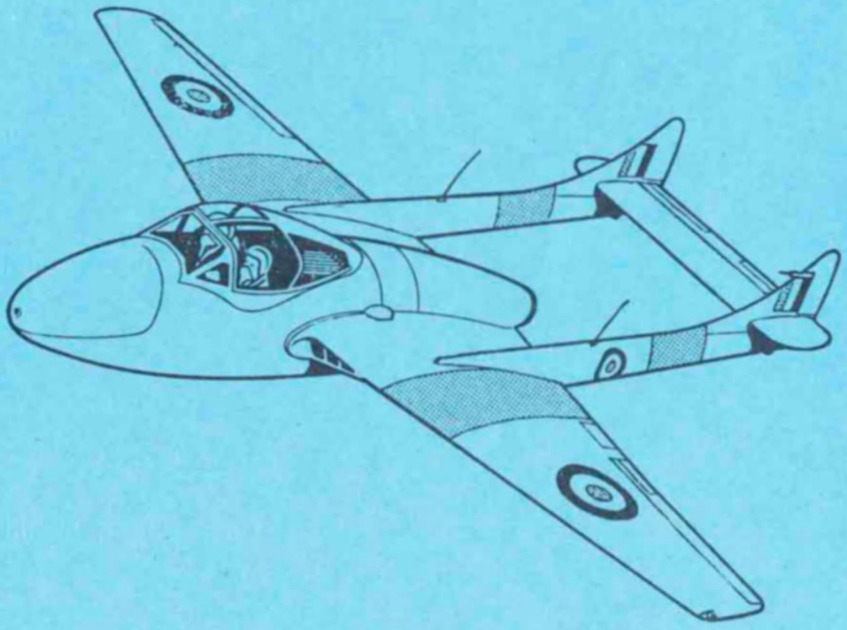
PILOT'S NOTES

VAMPIRE T.11



Prepared by Direction
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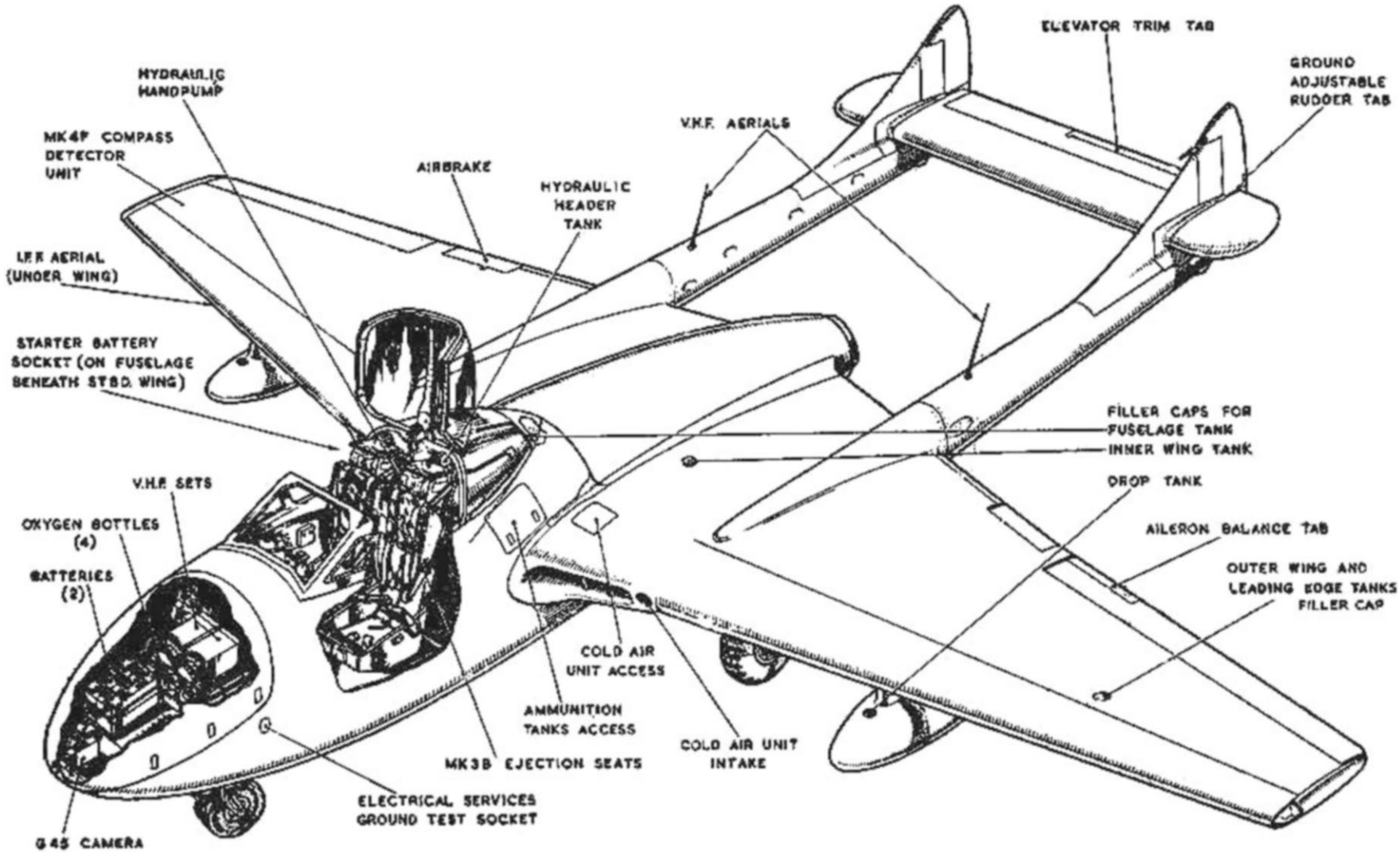
of the
Air Council

PRINCIPAL DIMENSIONS;- SPAN 38 FT. 0 IN. LENGTH 34 FT. 5 IN. HEIGHT 8 FT. 7 IN.



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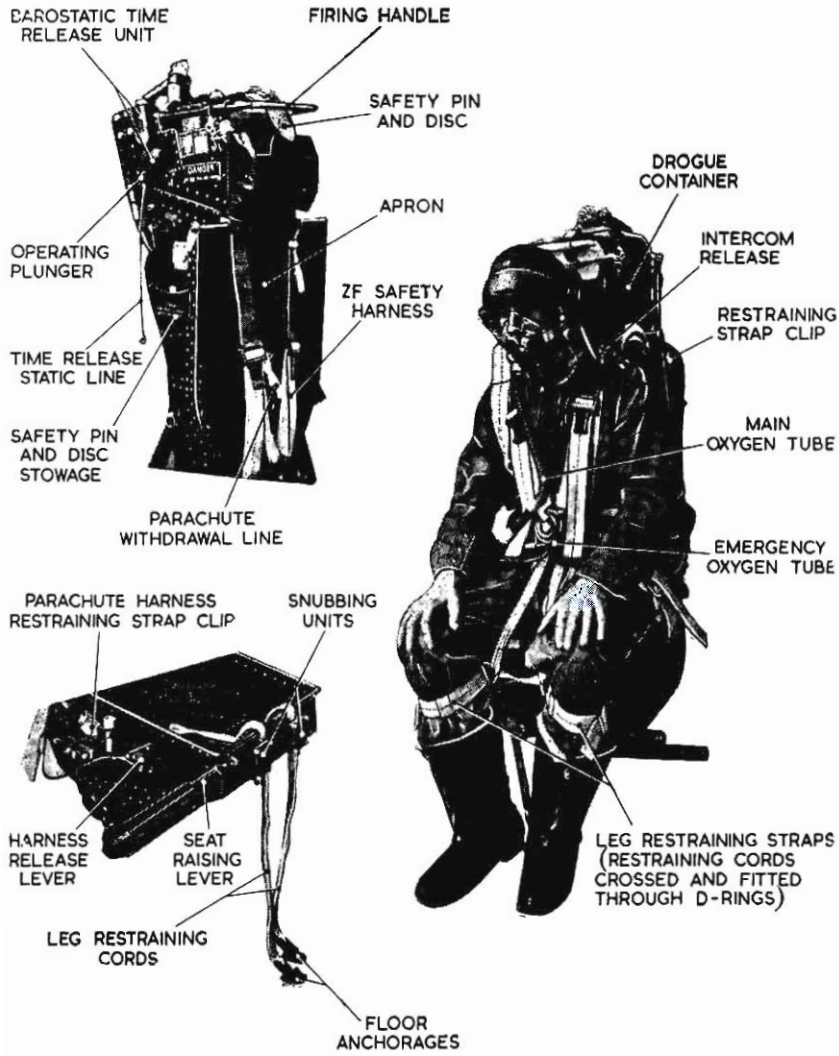

EJECTION SEAT MK.3B

PART IV

HANDLING

STARTING, TAXYING AND TAKE-OFF

57. External checks

(a) *Before checking aircraft:—*

Form 700	Check and sign
Position of aircraft	Suitable wind dir. for start
Chocking	Correct
Fire extinguishers	In position
Starter trolley acc. of correct voltage	Available.

DELETED

(b) *Starboard intake*

Boundary layer fairing	Condition.
Air intake	Condition, loose objects, compressor undamaged, check for oil leak from front bearing.
Upper starboard rear fuselage	Condition, cowlings fastened, ammo. bay doors.
Generator cooling, gun heating and B.P.C. intake	Clear, B.P.C. pipe undamaged.
Lower starboard rear fuselage	Condition, cowlings fastened.
Fuel and oil vents	Condition.

(c) *Starboard undercarriage*

Fairing and door	Condition and security, check door knuckle pads for signs of damage.
Oleo leg	Condition and extension.
Tyre	Cuts, cracks, creep, condition of tread, inflation, freedom of valve, walls for signs of rubbing.
Brake pipes	Condition and security.
Undercarriage bay	Clean, no oil leaks from hydraulic pipe and jack, micro switch clean, hydraulic pipe wrapping for chafing.
	deleted **A.L.1**
	Door locking pin not showing.
Ground lock	Removed.
Flaps	Condition of lower skin.

(d) *Starboard mainplane*

Lower surface	Condition, panels secure
I.F.F. aerial	Secure.

Leading edge	Condition.
Upper wings	Condition and panels.
D.M.E. aerials	Secure.
Navigation light and wing tip	Condition.
Aileron	Condition of surfaces, hinge and linkage. Full and free movement, position of balance tab, reset aileron to neutral. Check for distortion.
Fuel filler caps	Secure.
Airbrakes	Condition.
Flaps (outboard of boom)	Condition of upper skin, security, lines and jacks for leaks and interconnection of inboard and outboard sections. Aileron control cables—position and condition.

(e) *Starboard boom*

Boom	Condition.
V.H.F. Aerial	Security.

(f) *Tail unit*

Fins and tailplane	Condition and surfaces.
Tail fairing covering rudder mass balance	Condition.
Tail bumpers	Undamaged.
Elevator and rudders	Condition of surfaces, hinges and linkages. Full and free movement of each control surface, check free position of rudders and bias tabs for security. Check clearance between the rudder and elevator with the elevator neutral.
Elevator mass balance	Condition and security.

(g)	*Engine*	
	Engine cowlings	Condition and secure.
	Centre fuel tank panel	Secure.
	Jet pipe and pyrometer	Condition.
	Turbine	Condition.
(h)	Hydraulic filler cap	Flush.
(j)	*Flaps*	
	Flaps (inboard of boom)	Condition, security, check fire extinguisher bottle for security and connections.
(k)	*Tail unit*—continued	
	Tail navigation lights	Condition.
	Pressure head	Cover off and secure.
		Condition.
(l)	*Port boom*	
	As for starboard.	
(m)	*Port mainplane*	
	As for starboard, with	
	Landing lamp	Condition and fitting.
(n)	*Port undercarriage*	
	As for starboard, with	
	Undercarriage safety lock micro switch	Condition and clean.
(o)	*Port intake*	
	As for starboard with	
	Cold air unit	Condition and clear.
	Cold air unit panel	Secure, dipstick secure.
(p)	*Front fuselage (Port)*	
	Canopy external handle	Flush.
	Rear hood perspex fairing	Condition.
	Gun bay panel	Secure.
	Fuel vent pipe	Condition.
	Hinged nose fairing	Secure, thumb press locks flush, condition of cine camera or nose light window.

(q) *Nose wheel bay*

Nose wheel	Cuts, cracks, creep, inflation, freedom of valve and wear of tyre.
Hinged leg fairing	Condition and security.
Nose oleo	Condition and extension (approximately 3½ in.)
Bay	Clean, no oil leaks from hydraulic pipes or jack.
Nose wheel door	Condition, secure.

(r) *Front fuselage (Starboard)*

As for front fuselage, port.

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(s) *At the cockpit*

Before entering the cockpit check that the ejection seat safety pins are engaged through the face screen lock. Check the windscreen and canopy for cleanliness and condition and that the First Aid Kit is secure.

(t) *Ejection seat*

Facing rearwards, commence a left to right check as follows:—

Time release mechanism	Pin attaching static line to guide rail secure.
Top latch	Flush, safety pin fully home
Scissor shackle	Lying flat.
Gun firing sear	Connected to face blind.
Drogue withdrawal line	Routed over lifting line.
Drogue gun.	Drogue piston and restraining split pin in position. Safety pin removed. Static rod connected to drogue gun and to guide rail.

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(u) *Parachute and dinghy assembly*

In each seat:—

Check both rip cord handles are secure in their pockets.

Ensure that the parachute and dinghy assembly is correctly fitted in the seat.

Ensure that the emergency oxygen bottle does not overlap the seat pan. Check emergency oxygen bottle safety pin removed

(w) Before strapping in, check:

Leg restraint straps connected to floor beneath seat

Pneumatic pressure above 200 p.s.i.

Fire extinguisher secure

Crowbar secure

No loose articles

58. **Cockpit checks**

(a) When flying solo ensure all straps, harnesses and quick release boxes in the 2nd pilot's seat are secured and that the emergency oxygen quick release cable is secured against detachment from the seat unit.

(b) *Strapping in*

Strap in, ensuring that the dinghy connections are made as appropriate to the mark of equipment.

Ensure that the safety harness Q.R.B. is below and clear of that of the parachute harness so that the parachute override ' D ' ring is accessible. Don headgear, connect main and emergency oxygen tubes, pass the emergency tube under the parachute waist webbing to ensure that it does not foul the parachute override ' D ' ring.

Have R/T connected.

Adjust seat for height and rudder pedals for extension.

Put the brakes ON and then have the safety pin removed from the seat.

Check this visually and have it stowed.

(c) Check the hood is closed and locked with the seal inflated.

Test the controls for full and correct movement, and check brakes for correct functioning. Then:

Ground/Flight MASTER SWITCH	ON—Rate of turn indicator functioning.

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Begin the checks at the extreme left of the cockpit and work from left to right:—

Cockpit pressure control	OFF.
Oxygen auto-line valve switch	ON.
Undercarriage selector lever	Fully DOWN.
Flap selector lever	UP.
Airbrakes	OFF selected. Both selectors synchronised.
Cockpit air ventilator	As required.
Throttle	Full and free movement, synchronised with centre pedestal throttle, set SHUT.
H.P. cock	Press the relight button with the cock in the open position (if serviceable an irregular clicking sound is audible). Set closed.
Elevator trim	Full and free movement, synchronised with centre pedestal control. Set neutral.
L.P. cock	ON.
Oxygen	Wired on, check contents, emergency switch OFF, check high flow, both flow Ind. showing connections and supply at mask.
Cockpit lighting switches	As required.
U/C override switch	Down and guarded.
Windscreen wiper control	In " Parked " position.
Brake gauge	Total pressure above 200 lb./sq. in.
Port clear vision panel	As required.
Accelerometer	Set to + 1G.
Second altimeter	Serviceability. Set 0 feet for subsequent check against Q.F.E.

R.P.M. indicator	Serviceability.
D.M.E. Range meter	Serviceability OFF.
J.p.t. gauge	Serviceability.
Clock	Correct and working.
G.G.S. selector dimmer	As required.
Fuel gauge	Contents and serviceability.
Fuel pressure warning light	On.
Guns/R.P. selector switches	As required.
Inverter circuit breakers	Closed.
R/T mute switch	As required.
E.2 compass	Serviceability.
Cabin altimeter	Zero.
Machmeter	Serviceability.
Fire warning light.	Out, test with FIL. TEST button.
Port G.G.S. switch	Test if required, switch OFF.
Undercarriage position indicator	Three green lights on, Check bulb changeover.
Cabin pressure warning light	Out.
Generator warning light	On. (Pre-mod. F.T.C. 104)
Flap position indicator	Note flap position.
Starboard G.G.S. switch	Test if required, switch OFF.
Undercarriage warning light	Out.
Flight instruments	Check serviceability, set 0 ft. on altimeter for subsequent check against Q.F.E. Set approximate heading on Mk.4F compass.
No. 1 R/T set	Off.
Hood jettison handle	Wired in.
V.H.F. changeover switch	As required.
WINDSCREEN DE-ICER PUMP	In.
No. 2 R/T set	Off.
Undercarriage override switch	Down and guarded.

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Starter master switch	ON.
Flight instruments switch	ON. Check artificial horizon. OFF flag disappears.
Inverter magnetic indicator	White.
Booster pump switch	On, check fuel pressure warning light goes out and generator warning light comes on. (Post F.T.C. 104).
F.P.I. switch	OFF.
Downward identification and emergency cockpit light switches.	As required.
Pitot head heater	ON.
Navigation lights	As required.
Starter circuit breaker	Closed.
D.M.E. control panel	OFF.
Landing Lamp	OFF.
G.45 camera switches	As required.
G.G.S. circuit breakers	Closed.
Bomb and R.P. switches	As required.
G.45 camera test switches	Test if requried.
Instructor/pupil G.G.S. changeover switch.	As required.
Oxygen	Check emergency switch OFF, check high flow, both flow indicators showing, connections and supply at mask.
Cockpit ventilator	As required.
Undercarriage selector lever	Fully DOWN.
Flap selector lever	UP.
I.F.F. switches	As required.
Stbd. clear vision panel	As required.
Hood locking handle	Locked and secured by catch.
Hydraulic handpump	Check operation against flap position indicator. Return lever to uppermost position.

Pass the hand between the seats to ensure that they are not inter-connected.

Drop tank jettison lever	Forward.
Emergency hydraulics lever	Forward.

59. Starting the engine

Check that the area around the aircraft is clear, and that the fire extinguishers are available.

Have the controls set as in the check lists, i.e.:

Parking brake	On.
Ground/Flight MASTER SWITCH	On.
H.P. cock	Set closed.
Throttle	SHUT.
L.P. cock	ON.
STARTER and FLIGHT INST. Circuit breakers	Closed.
STARTER MASTER and FLIGHT INST. switches	On. Mk. 4F compass and Art. hor. erecting. Magnetic indicator white.
Booster pump switch	ON. check aurally.—Fuel pressure warning light out. Generator warning light on (Post F.T.C. Mod. 104)
F.P.I. switch.	OFF.

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(a) Press the starter button for two seconds, then release.

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(b) After 15 seconds open the H.P. cock fully and allow the engine to accelerate to 3,000 ± 200 r.p.m. Check that the j.p.t. does not exceed 710° C. (except momentarily) and settles below 600° C. max. Constantly check fire warning light during start up. If F.T.C. Mod. 101 is embodied check that the inverter indicator goes black.

(c) When the engine is running smoothly switch off the STARTER MASTER switch and have the ground supply battery disconnected.

(d) Should the engine fail to light up, or accelerate to the idling r.p.m. or should the j.p.t. exceed 710° C. (except momentarily) SHUT the H.P. cock. Ensure that all surplus fuel is drained before attempting a further start.

Should excessive fuel have drained onto the ground, have the aircraft moved. Wait until the impeller has stopped rotating before attempting a restart.

(e) If after a second attempt the engine fails to start, the cause should be investigated before any further attempts are made.

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60. Checks after starting

(a)	Fire warning light	Out
	Idling r.p.m.	3,000 ± 200.
	J.p.t.	600° C. Max.

(b)	R.p.m.	Increase to 4,000.
	F.P.I. switch	ON.
	R.p.m. increase	1,000 r.p.m. pre-mod. 1130. 800–900 r.p.m. post-mod. 1130.

If the desired increase is not achieved the system is unserviceable and the aircraft must not be flown.

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(c)	Inverter magnetic indicator	Black.
	Generator failure warning light	Out.
	F.P.I. switch	Off and check r.p.m. drop to original figure.
	V.H.F.	Select Set/Frequency as required.
	Throttle	Close. Check idling R.P.M.
	Artificial Horizon	Erect if necessary.
	Mk. 4F compass	Synchronise and compare with E.2.
	D.M.E.	STANDBY.

(d)	Flaps	Up, indicated up.
	Airbrakes	Test.
	Brake pressure	Min. 200 lb./Max. 450 lb. sq. in.

61. Taxying

(a) The brakes are very effective and the nose wheel is self centring. Consistent with safety, it is better to taxy the aircraft boldly, moderate use of brakes then giving good steering qualities.

(b) Rapid throttle opening at low r.p.m. should be avoided as it may cause excessive j.p.t. and resonance. Use of excessive power when the aircraft is stationary may melt tarmac surfaces due to the downward inclination of the jet efflux.

62. Checks before take-off

Trim	Neutral.
Airbrakes	In.
Fuel	H.P./L.P. cocks fully ON.
	Fuel pressure warning light out.
	Contents.
	Booster pump ON.
	F.P.I. switch OFF (but see para. 53 (c)).
Flaps	Up, indicated up (or 30° if drop tanks are fitted).
Instruments	A/H Off flag away, erected, Mk. 4F compass synchronised, annunciating. T. & S. OFF flag away, correct functioning Magnetic indicator—Black, Pitot head heater—ON.
Oxygen	Fully ON.
	Contents.
	Emergency OFF.
	High flow.
	Connections checked.
Hood	Closed and locked.
	D.V. Panels shut.
Harness	Tight and locked.

63. **Take-off**

(a) Align the aircraft and nose wheel, then open the throttle smoothly and fully. Check:—**max. permitted for T/O**

R.p.m.	
J.p.t.	Below 710° C.
Fire warning light	Out.

(b) Keep straight initially by the use of gentle braking until the rudders become effective at 50–55 knots.

(c) Raise the nose wheel at 80–85 knots, maintain this attitude and fly the aircraft off at 110–115 knots at typical service load. At maximum all-up weight raise the nose wheel at 105–110 knots, the aircraft then becomes airborne at 120–125 knots.

(d) When safely airborne

Brake wheels.

Retract undercarriage.

Flaps UP.

Check undercarriage red lights out before 175 knots.

(e) When wing drop tanks are carried, if the undercarriage is not retracted before a speed of 130 knots is reached, the airflow will prevent the undercarriage doors from closing. For this reason 30° of flaps is recommended to reduce acceleration. If the indicator shows that the undercarriage is not fully retracted, yawing the aircraft at about 140 knots should enable it to lock up. Where this is unsuccessful select undercarriage down and climb to a safe height, then reduce speed as far as is practicable and reselect undercarriage up.

(f) At a safe height

FPI switch (if used for take-off)	OFF (at full throttle).
R/T	Airborne call.
	Change frequency as required.
	Check call.
Pressurisation	ON.

HANDLING IN FLIGHT

64. Climbing

Page 50 Para. 64 (a) A.L.3

(a) Climb within the j.p.t. limitations at the max. permitted r.p.m. up to 25,000 ft. and at 10,350 r.p.m. thereafter. With or without drop tanks fitted climb at 250 knots until 0·60 M is reached, then maintain 0·6 M for the remainder of the climb.

(b) If maximum rate of climb is not essential climb at 10,250 r.p.m. using the same airspeeds.

(c) During the climb the r.p.m. will increase slowly, and it is necessary to reduce power to avoid exceeding the climbing r.p.m. It may also be necessary to reduce r.p.m. in order not to exceed the maximum permissible j.p.t.

65. General flying

(a) At all loads the aircraft is pleasant to fly. The ailerons are light and remain effective down to the stall. The elevator is light but comes more sensitive at high speed and should be used with care. Up to 25,000 ft. the aircraft is easy to trim, but above this height the trimmer is less effective. The airbrakes are moderately effective and produce a general airframe buffet at all speeds.

(b) *Changes of trim*

Undercarriage UP or DOWN	No change.
Flaps DOWN	Marked nose-up.
Flaps UP	Nose-down.
Airbrakes out	Nose-up.
Airbrakes in	Nose-down.

The nose-up change of trim on selecting airbrakes out becomes more pronounced with increase of speed. When wing drop tanks or 1,000 lb. bombs are carried the change of trim in very pronounced.

66. Flying at reduced speed

Reduce speed to approximately 140 knots. Flaps may be lowered 30° if desired. The D.V. panels can be opened up to a recommended maximum speed of 240 knots.

67. **Flying in conditions of severe turbulence**

The recommended speed is 230 knots.

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68. **Pre-stall, spinning and aerobatic checks**

Height	Sufficient.
Airframe	Undercarriage and flaps as required, Airbrakes test and as required.
Security	No loose articles. Harness tight and locked.
Location	Clear of built-up areas, airfields and restricted airspaces.
Lookout	Clear of other aircraft and cloud.

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69. **Stalling**

(a) Due to the positioning of the pitot head there is considerable fluctuation of the airspeed indicator at the stall. The following table of stalling speeds in therefore only approximate.

	Typical Service Load	Max. A.U.W.
	Knots	Knots
Undercarriage and flaps UP	95	105
Undercarriage and flaps down	85	95

(b) Warning of the approach of the stall is given by slight elevator buffeting commencing about 15 to 20 knots before the stall and increasing as speed is reduced. At the stall the nose drops gently. There is little tendency for a wing to drop at lower altitudes, but at heights above 20,000 feet this tendency becomes more marked and if the aircraft is held in the stall it will roll in either direction into an inverted position.

(c) The position of the airbrakes or the presence of external stores makes no noticeable difference to the stalling characteristics.

(d) In a steep turn warning of a stall is given by elevator buffeting which occurs immediately before the stall. At the stall the aircraft may drop a wing suddenly.

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70. Spinning

(a) Intentional inverted spinning is prohibited and is unlikely to occur unless the stick is forcibly held forward. An accidental spin from inverted flight will usually be an erect spin. Practice erect spinning is permitted up to four turns. The minimum recommended entry height is 25,000 feet A.G.L.

(b) To ensure positive entry into the spin, yaw in the required direction should be induced at about 115 knots, i.e. slightly in excess of the stalling speed, by applying full rudder and stick hard back. The elevator trimmer should be neutral.

(c) With the stick held fully back and full rudder applied, the aircraft will then spin or flick roll for one or two turns before adopting a nose-down attitude. For several turns there is marked yawing and pitching with variations in the rate of rotation. After about four turns a further steepening in attitude occurs accompanied by a reduction of the yawing and pitching tendencies and an increase in the rate of rotation.

(d) The standard spin recovery action is:—

(i) Check throttle closed and aircraft clean.
(ii) Confirm that roll (determined visually) and yaw (as indicated by the needle) are in the *same* direction.
(iii) Apply full rudder to oppose the yaw.
(iv) Pause.
(v) With the ailerons neutral move the stick steadily forward until the spin stops. This may require full forward movement of the stick.
(vi) Centralise all controls immediately the spin stops.
(vii) Recover to normal flight.

(e) If the roll and yaw are in *opposite* directions (i.e. the spin is inverted):

(i) Apply full rudder to oppose the yaw.
(ii) Pause.
(iii) With the ailerons neutral move the stick steadily backward until the spin stops. This may require full backward movement of the stick.
(iv) Centralise all controls immediately the spin stops.
(v) Recover to normal flight.

Both erect and inverted spins will sometimes continue for one or two turns after full recovery action has been taken. If the aircraft fails to recover after three turns with full standard spin recovery action applied, carry out the following supplementary spin recovery actions:—

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(f) The supplementary spin recovery action is:—

(i) Check that *correct full* anti-spin control has been applied, ensuring that the rudder is opposed to the indicated yaw.

(ii) Apply full aileron in the direction of roll.

The recovery with aileron in the direction of roll may be characterised by a sharp increase in the rate of rotation for about three turns before the spin suddenly changes to a spiral dive. The ailerons should be centralised immediately to avoid the development of a tight spiral with rapidly increasing airspeed.

(g) If an unintentional spin is entered recover in the incipient stage by centralising the controls and closing the throttle. If this is ineffective full spin recovery action must not be applied until the spin has developed in a downward direction.

Note:—1. If at 15,000 feet the aircraft is still spinning, jettison the canopy. This may aid recovery.

2. If the spin is not under control at 10,000 feet the aircraft must be abandoned. (Altimeter errors and fast rate of descent leave no time for hesitation).

3. The risk of disorientation may be reduced by looking at the horizon through the canopy instead of the ground through the windscreen.

71. Aerobatics

(a) Until experience is gained, the following speeds, in knots, are recommended:—

Roll	250–270
Loop	300–320
Roll off the top ..	340–360
Vertical roll	370 and above

(b) The centre tank collector box should ensure a supply of fuel for approximately 15 seconds flight under negative G conditions.

(c) Aerobatics are not permitted when carrying external stores.

72. High speed flying

(a) The high speed characteristics vary with altitude and individual aircraft, and machmeter errors may be considerable. The following compressibility effects are therefore quoted against approximate indicated mach numbers and reliance should be placed more on the behaviour of the aircraft than on machmeter readings. It is recommended that the performance of the aircraft

is investigated with care until pilots are aware of the high speed characteristics.

(b) *Clean aircraft or with RP's*

At high altitudes the first sign of compressibility is given by a slight lateral rocking at about 0·78M. At this speed there is generally slight airframe buffet and the ailerons are very sensitive. Compressibility effects are, however, not marked, but as speed is further increased porpoising commences reaching a maximum at 0·84M giving considerable stick force as the nose rises. Below 20,000 ft. the symptoms are similar but occur at slightly lower mach numbers and are less marked. When flying with RP's the high mach number characteristics are similar, but become apparent at lower speeds. At high indicated airspeeds the controls become noticeably heavier, and the aircraft must be trimmed into the dive.

(c) *With drop tanks or bombs*

The onset of compressibility is denoted by lateral unsteadiness at about 0·74M and may be accompanied by rudder buffet. As speed is further increased a general airframe buffet becomes apparent. When 1,000 lb. bombs are carried there is a noticeable aileron buffet and increased lateral rocking. Porpoising commences at about 0·76M. Lateral rocking and aileron buffeting is also encountered at indicated airspeeds in excess of 360 knots when aiming 1,000 lb. bombs.

(d) *Recovery*

Recovery is effected by extending the airbrakes and throttling back. Use of airbrakes at high mach numbers or airspeeds produces a sudden nose-up change of trim and an increase in general airframe buffet. When drop tanks are carried the airbrakes are not to be extended above 0·70M.

CIRCUIT PROCEDURE AND LANDING

73. **Circuit procedure**

(a) Join the circuit with sufficient fuel for a landing and possible overshoot, i.e. approx. 450 lb. Select the correct V.H.F. frequency and unmute. Airspeed should be

below 175 knots. A setting of approximately 7,000 r.p.m. will give a circuit speed of 170–175 knots with undercarriage and flaps UP.

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(b) *Downwind vital actions*

Airbrakes	IN.
Undercarriage	DOWN (below 175 knots).
Fuel	Contents.
Harness	Tight and locked.
Brakes	Check U/C—3 green lights.
	Pressure—On—Off—Exhausting.
Flaps	As required (below 155 knots for 30°, below 145 knots for full flap).

(c) *Finals checks*

Airbrakes	In.
Undercarriage	3 green lights

NOTE.—These checks should be completed as soon as possible after starting the final turn, after which the R/T call "Finals, three green" should be made. The call should be completed by the 90° position. Lower flaps as required.

74. **Approach and landing**

(a) *Approach*

(i) The approach should be commenced at 140 knots with approximately 6,000 r.p.m. depending on prevailing wind conditions.

(ii) Lower full flap when required.

(iii) At 400 ft. the airspeed should not be less than 125 knots, and to ensure rapid engine response should it be necessary to increase power, r.p.m. should not be reduced below 5,500 until it is certain that the runway can be reached.

(iv) The roundout should be commenced at the following speeds:—

Typical service load	.. ..	100 knots
Maximum landing weight	..	105 knots

NOTE.—When lowering full flap a marked nose-up change of trim occurs necessitating a large forward movement of the control column. The counteracting force required is not great and should be provided by movement of the control column rather than by retrimming, as the nose-up tendency largely disappears when the flaps are fully down and speed is reduced on the final part of the approach.

(b) *Landing*

The aircraft should not be stalled onto the ground, but the rate of descent checked, and when the main wheels touch, the control column moved gently backwards to keep the nose-wheel off the ground and to provide maximum aerodynamic braking. The elevator remains sensitive at low speeds and coarse movements of this control must be avoided. When the nose-wheel is firmly on the ground, the brakes should be used gently at first as it is possible to cause nose-wheel shimmy by harsh usage. Continuous or intermittent braking may be effected.

NOTE.—Should it be necessary to land with the isolating switch ON the landing run will be longer as the idling r.p.m. will be higher.

75. **Going round again**

(a) Open the throttle fully. Application of power produces a nose-up change of trim, which can be held without retrimming.

(b) Retract the undercarriage.

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(c) Climb at 120 knots. The aircraft has a tendency to sink as the flaps are raised and they should not be retracted below 200 ft. As the flaps raise allow speed to build up to normal climb speeds.

76. Instrument Approach

Instrument approach settings:—

Stage	Approx. engine settings (r.p.m.)	Airspeed (knots)	Action	
C.D.T.C. ..	7,000	250	Airbrakes out	
Level ..	7,800 to 8,000	140	Flap and A/B retracted	Under-carriage down
Glide path	7,800 to 8,000	120/130	One-half flap	

77. Checks after landing

When well clear of the runway:—

Stop the aircraft and check:—

Pressurisation	OFF.
Flaps	UP.
Brake pressure	Sufficient for taxying.
No. 2 radio	OFF.
Pitot head heater	OFF.
D.M.E.	OFF.

78. Stopping the engine

Allow the engine to idle for 30 seconds to stabilise engine temperatures. During this period check:—

Booster pump	OFF.
Flight instrument switch	OFF.
Oxygen	OFF, or line valve (if fitted) OFF.

After 30 seconds:

H.P. cock	OFF.
Flaps	Lower fully when engine r.p.m. are less than 1,000.
Radio sets	Off.
Ground/Flight switch	Ground.
Ejection seats	Firing handles safe.
Chocks	In position.
Brakes	Off.

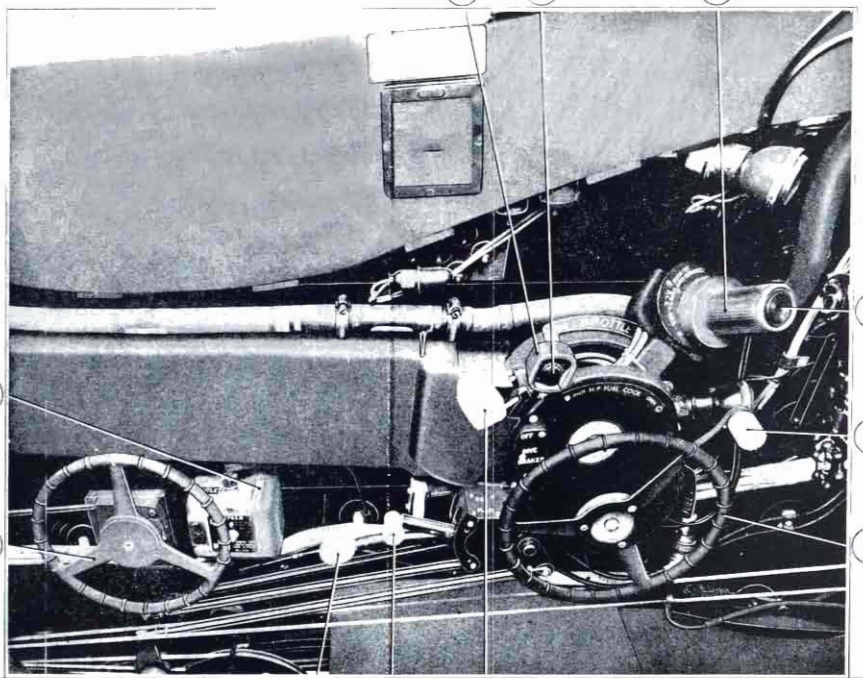

FIG 1

COCKPIT-PORT SIDE

FIG 1

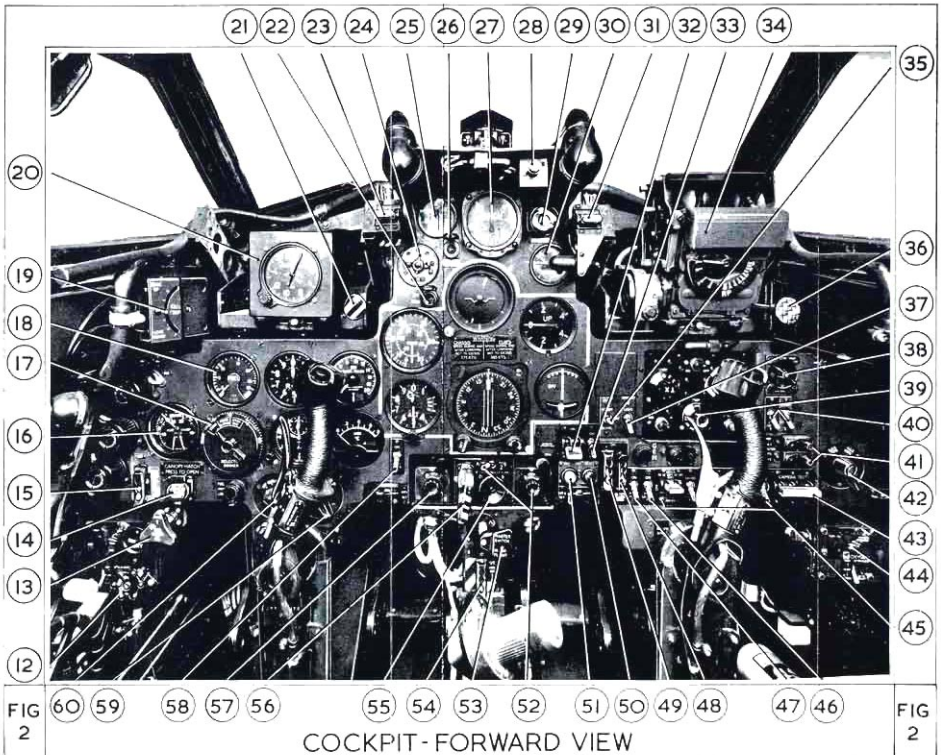

FIG 2

COCKPIT - FORWARD VIEW

FIG 2

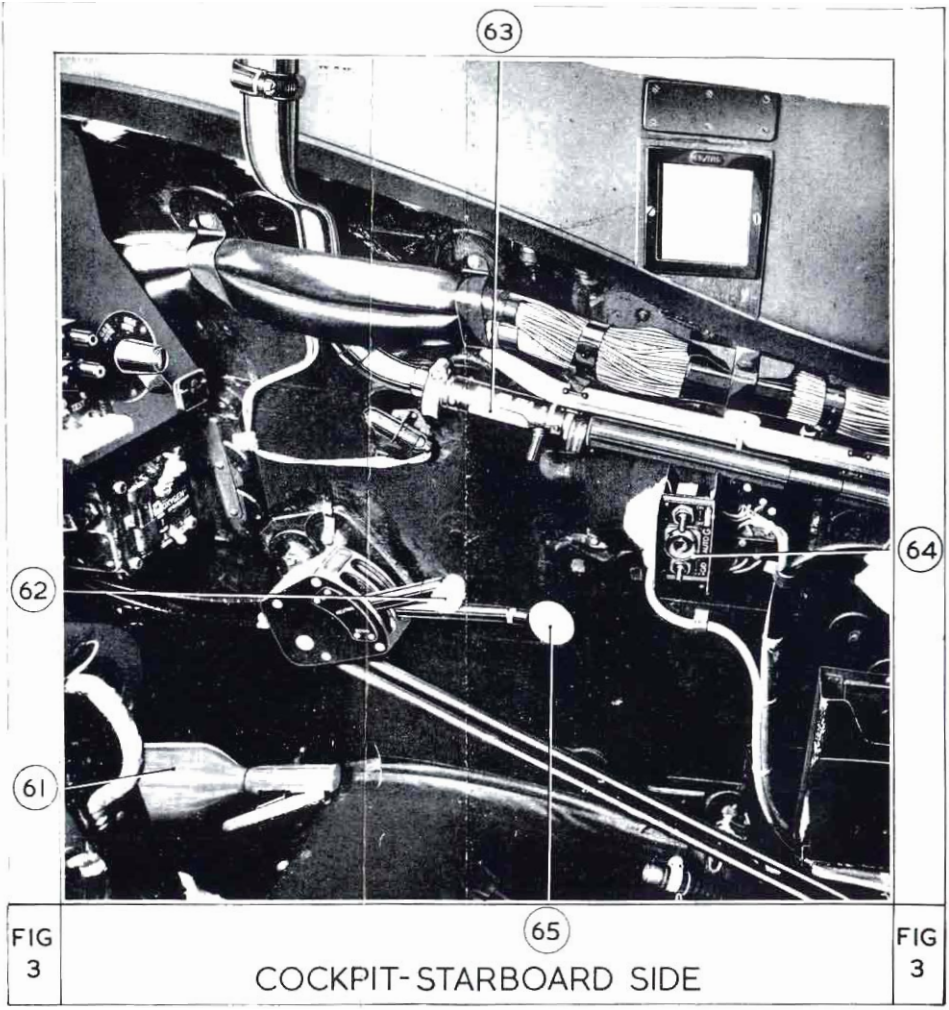

FIG 3

COCKPIT-STARBOARD SIDE

FIG 3

CHECK LISTS

CHECKS BEFORE TAKE-OFF

Trim	Neutral.
Airbrakes	In.
Fuel	H.P./L.P. cocks fully on. Fuel pressure warning lights out. Contents. Booster pump ON F.P.I. switch OFF (see para. 53 (c)).
Flaps	UP, indicated up (or 30° if drop tanks are fitted).
Instruments	A/H OFF flag away, erected. Mk. 4F compass synchronised, annunciating. T. & S. OFF flag away, correct functioning. Magnetic indicator black. Pitot head heater—ON.
Oxygen	Fully ON. Contents. Emergency OFF. High flow. Connections checked.
Hood	Closed and locked D.V. panels shut.
Harness	Tight and locked.

CHECKS BEFORE LANDING

Airbrakes	In.
Undercarriage	DOWN (below 175 knots).
Fuel	Contents.
Flaps	As required (below 155 knots for 30°, below 145 knots for full flap).
Harness	Tight and locked.
Brakes	Check U/c—Three green lights. Pressure–ON–OFF–Exhausting.

THRESHOLD SPEEDS

Max. weight	105 knots.
T.S.L.	100 knots.
Flapless	115 knots.

Outside rear cover A.L.3

INSTRUMENT APPROACH

	R.P.M.	Speed	Action
C.D.T.C.	7,000	250	A/B Out
Level	7,800-8,000	140	u/c Down
Glide Path	7,800-8,000	120/130	½ flap

Outside rear cover A.L.3

ENGINE LIMITATIONS

Take-off and operational necessity (15 mins.)	*†10,750 r.p.m. 710°C
Intermediate (20 mins.)	10,350 r.p.m. 660°C
Max. continuous	10,250 r.p.m. 650°C
Ground Idling	3,000±200 r.p.m. 600°C

*10,350 r.p.m. above 25,000 ft. †RAF users restricted to 10,650 r.p.m.

EMERGENCY DRILLS

ENGINE FAILURE

(a) Mechanical

Throttle	SHUT
H.P. & L.P. Cocks	SHUT
Booster pump	Off
Non-essential electrics	Off

Do not attempt to relight.

(b) Drop in engine speed. Throttle back and put isolating switch ON within 4 secs. Leave switch at ON until after landing. Use throttle carefully.

(c) Flame-out

Throttle	SHUT
H.P. cock	SHUT
Non-essential electrics	Off

RELIGHTING

Altitude	Below 25,000 ft.
Airspeed	170–180 knots
Throttle	SHUT
H.P. cock	SHUT
Non-essential electrics	Off
Isol. switch	ON (if defective fuel system)
Booster pump	ON

Press relight button and open H.P. cock simultaneously keeping button pressed. When relit dive aircraft if possible to reduce j.p.t. Use throttle carefully.

If relight fails try again after 60 secs. (30 sec. in emergency). If several relight attempts are unsuccessful, try with throttle OPEN.

Close throttle immediately after relight.

ACTION IF FIRE OCCURS

1. Close throttle immediately.
2. Turn off H.P. and L.P. cocks.
3. Switch off booster pump.
4. Reduce airspeed to 150 knots and press extinguisher button.
5. Set oxygen to emergency and turn off cockpit pressure.
   If fire persists—abandon.

Inside rear cover ... L.3

ABANDONING (min. height/speed—200 ft./120K) (level flight)

1. Reduce speed to 200 knots if possible.
2. Set parachute container fully aft.
3. Lower seat and visor.
4. Retract GGS and jettison hood.
5. Feet from rudder pedals.
6. Grasp firing handle.
7. Head back hard on rest.
8. Pull handle over face.
   Drogue fires automatically—auto-separation below 10,000 ft.

Failure of auto-separation.

1. Pull override D-ring.
2. Operate seat harness quick release.
3. Raise and grasp parachute D-ring.
4. Fall clear and pull D-ring.

Failure to eject.

1. Retract airbrakes.
2. Pull override D-ring.
3. Invert aircraft.
4. Release safety harness (captain last).

UNDERCARRIAGE AND FLAPS EMERGENCY A.L.1

Select service and use the handpump or, if Mod. 3627 embodied, move EMERGENCY HYDRAULICS lever aft.

Flaps neutral and windscreen wiper OFF before lowering undercarriage.

CRASH LANDING

1. Jettison hood and external stores.
2. If power available make normal approach with u/c as required.
3. Power off-glide 160 knots. Manoeuvre at 140 knots.
4. Lower flap as required.
5. Cross threshold at 105 knots.

DITCHING

1. Jettison hood and external stores.
2. Lower flaps 10° and use engine approach if possible.
3. Touch down 10 knots above normal. Avoid nose-up attitude.
4. Keep rate of descent at touchdown to a minimum.