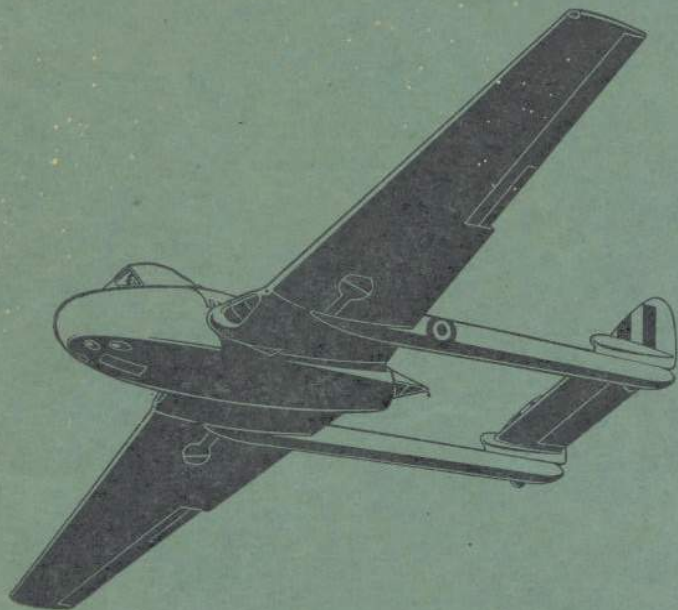


PILOT'S NOTES FOR SEA VAMPIRE F.20



PREPARED BY DIRECTION OF THE MINISTER OF SUPPLY

A. J. Poulton

PROMULGATED FOR INFORMATION AND GUIDANCE OF
ALL CONCERNED BY COMMAND OF THEIR LORDSHIPS

J. G. Lang

AMENDMENTS

Amendment lists will be issued as necessary and will be gummed for affixing to the inside back cover of these notes.

Each amendment list will, where applicable, be accompanied by gummed slips for sticking in the appropriate places in the text.

Incorporation of an amendment list must be certified by inserting date of incorporation and initials below.

A.L. NO.	INITIALS	DATE	A.L. NO.	INITIALS	DATE
1			7		
2			8		
3			9		
4			10		
5			11		
6			12		

NOTES TO USERS

THESE Notes are complementary to A.P. 2095 Pilot's Notes General and assume a thorough knowledge of its contents. All pilots should be in possession of a copy of A.P. 2095 (*see* A.F.O. 3467/44).

Additional copies may be obtained from Head of Military Branch (Books), Admiralty Block C, Station Approach Buildings, Kidbrooke, by application on Royal Navy Forms S134D or D397. The number of the publication must be quoted in full—A.P. 4269A—P.N.

Comments and suggestions should be forwarded through the usual channels to the Admiralty (D.A.W.).



SEA VAMPIRE F Mk. 20

LIST OF CONTENTS

PILOT'S CHECK LIST

Pages 6 to 10

PART I—DESCRIPTIVE

INTRODUCTION

FUEL AND OIL SYSTEMS

	Para.
Fuel tanks	1
Fuel gauges	2
Fuel booster pump	3
Fuel cocks	4
Oil system	5

MAIN SERVICES

Pneumatic system	6
Electrical system	7
Hydraulic system	8

AIRCRAFT CONTROLS

Undercarriage controls	9
Flaps control	10
Air brakes control	11
Arrester hook control and warning light	12
Flying controls	13
Flying controls locking gear	14
Elevator trimming tab control	15
Wheel brakes	16

ENGINE CONTROLS

Throttle control	Para. 17
Engine starting system	18

OPERATIONAL CONTROLS

Guns, and gyro gunsight	19
Catapult hooks and hold back gear	20
Radio equipment	21
Other controls	22

COCKPIT EQUIPMENT

Canopy	23
Cockpit heating and ventilation	24
Cockpit sealing and pressurising	25
Seat adjustment	26
Oxygen system	27
Windscreen de-icing	28
Cockpit lighting	29

PART II—HANDLING

Management of the fuel system	30
Starting the engine	31
Taxying	32
Take-off	33
Climbing	34
General flying	35
Flight planning charts	36
Position error correction	37
High altitude flying	38
Diving and high speed flying	39
Stalling	40
Aerobatics	41
Approach and landing	42
Deck landing	43
Mislanding and going round again	44
After landing	45

PART III—LIMITATIONS

Engine data Goblin 2	46
Flying limitations	47

PART IV—EMERGENCIES

Undercarriage and flaps emergency operation... ..	Para. 48
Flapless landing	49
Wing drop tank jettisoning	50
Canopy jettisoning	51
Engine fire-extinguisher	52
Crash landing	53
Ditching Parachute and ditching drill	54
Emergency equipment	55

PART V—ILLUSTRATIONS

Cockpit—Port side	Fig. 1
Cockpit—Centre	2
Cockpit—Starboard side	3

PILOT'S CHECK LIST**(Excluding Items of Operational Equipment)**

ITEM	CHECK	ITEM	CHECK
1. Weight and balance.	Within permissible limits.	11. Starboard mainplane.	Condition of leading edge. Condition of under surface. External aerial secure. External stores secure. (If carried.)
External checks.		12. Starboard navigation light.	Condition.
N.B.—Start at the port side of the nose and work clockwise around the aircraft.		13. Starboard aileron.	Condition. External control lock removed.
2. Canopy (port side).	Security. Condition. Absence of cracks.	14. Starboard air brake.	Condition.
3. Port fuselage.	Gun panels secure.	15. Starboard flap.	Position and condition.
4. Nose wheel.	Extension of oleo. Condition of doors. Tyre for cuts and creep. Valve free.	16. Starboard mainplane.	Condition of upper surface. Tank covers secure.
5. External fire-extinguisher.	In position.	17. Starboard upper fuselage.	Condition. Engine cowling buttons secure.
6. Starboard fuselage.	Gun panels secure.	18. Jet pipe.	Blanking plate removed.
7. Canopy (starboard side).	Security. Condition. Absence of cracks.	19. Hook.	Condition. Securely locked up.
8. Starboard air intake.	Blanking plate removed.	20. Starboard fin.	Condition. Leading edge.
9. Starboard lower fuselage.	Panels secure.	21. Starboard rudder.	Condition. Trimmer. External control lock removed.
10. Starboard undercarriage.	Condition of doors. Extension of oleo leg. Brake lead secure. Tyre for cuts and creep. Valve free. Locking pins in position. Chock in position.	22. Tailplane.	Condition. Leading edge.
		23. Elevator.	Condition. Trimmer. External control lock removed.

ITEM	CHECK	ITEM	CHECK
24. Port rudder.	Condition. Trimmer. External control lock removed.	37. Port lower fuselage.	Panels secure. Condition of downward identification light.
25. Tail light.	Condition.	38. Port air intake.	Blanking plate removed.
26. Port fin.	Condition. Leading edge.	39. Dispersal area.	All clear round aircraft.
27. Pressure-head.	Cover removed.	Internal checks.	
28. Port tail boom.	External aerial secure.	40. Footstep.	Retracted.
29. Port upper fuselage.	Condition. Engine cowling buttons secure.	41. Internal control locks.	Removed and stowed.
30. Port mainplane.	Condition of upper surface. Tank covers secure.	42. Canopy.	Security and operation.
31. Port flap.	Position and condition.	43. Undercarriage lever.	Down.
32. Port air brake.	Condition.	44. Undercarriage locking pins.	Removed by ground crew.
33. Port aileron.	Condition. External control lock removed.	45. Pilot's seat.	Adjust for height.
34. Port navigation light.	Condition.	46. Rudder pedals.	Adjust for length.
35. Port mainplane.	Condition of leading edge. Condition of under surface. Condition of landing lamp (if fitted). External stores secure (if carried).	47. Flying controls.	Gun firing button safe. Full and correct movement.
36. Port undercarriage.	Condition of doors. Extension of oleo leg. Brake lead secure. Tyre for cuts and creep. Valve free. Locking pins in position. Chock in position.	48. Crowbar.	In position.
		Cockpit checks. N.B.—Work from left to right.	
		49. Master switch.	Flight.
		50. Wing drop tank jettison lever.	Down.
		51. Hydraulic handpump.	Pump flaps down and up.
		52. Arrestor hook lever.	Up.
		53. Hook selector training switch.	Off.

ITEM	CHECK
54. Undercarriage emergency retraction switch.	Off.
55. Cockpit light switches.	Off.
56. Flap lever.	Up.
57. Air brakes.	Off.
58. Throttle lever.	Closed. Adjust friction nut.
59. High pressure fuel cock.	Open.
60. Low pressure fuel cock.	On.
61. Elevator trim control.	Full and correct movement.
62. Undercarriage indicator.	Operation.
63. Flap indicator.	Reading.
64. Fuel pressure warning light.	On.
65. Undercarriage warning light.	Out.
66. Altimeter.	Set.
67. Direction indicator.	Caged.
68. Fuel gauges.	Contents.
69. Fire warning light.	Out.
70. Generator warning light.	On.

ITEM	CHECK
71. Oxygen.	Delivery.
72. Air pressure gauge.	Supply. Delivery to each wheel brake.
73. Windscreen de-icer.	Operation.
74. Cockpit pressurising lever.	Off.
75. Canopy jettison lever.	Forward.
76. Canopy seal cock.	Off.
77. Auxiliary start switch.	Off.
78. Combined starter master switches.	Off.
79. Booster pump switch.	Off.
80. Pressure-head heater switch.	Off.
81. R.I. compass switch.	Off.
82. Navigation light switch.	As required.
83. Camera gun switch.	Off.
84. Gunsight switch.	Off.
85. Identification lights.	As required.
86. Landing lamp switch.	Off.
87. ZBX.	Off.
88. Mixer box.	R/T.
89. Very pistol.	Secure.

ITEM	CHECK
90. Cabin blower heater.	As required.
91. Pilot's harness.	Adjust. Test lock.
92. Brakes.	On.
Start the engine (See para. 31).	
93. Generator warning light.	Out.
94. Fuel pressure warning light.	Out.
95. Pneumatic pressure.	Supply increasing.
96. Flaps.	Operation.
97. R.I. compass.	Switch on.
98. Direction indicator.	Set with R.I. compass. Uncage.
99. Radio.	Test V.H.F. and Beacon. Check altimeter setting with control.
100. Cockpit pressure warning light.	Out.
101. Chocks.	Clear.
102. Taxiing.	As soon as possible test brakes. Direction indicator for accuracy. Artificial horizon for accuracy. Check temperature and pressure. Check brake pressure. Pressure-head heater on if required. Check accuracy of R.I. compass against a known heading.

ITEM	CHECK
Checks for take-off.	
103. Trim—Elevator.	Neutral.
104. Fuel.	Contents. Both cocks fully on. Booster pump on.
105. Flaps.	30° for airfield or deck take-off. 45° for catapult take-off.
106. Air brakes.	Off.
107. Direction indicator.	Set with R.I. compass and uncage.
108. Canopy.	Closed and securely locked.
109. Harness.	Tight and locked.
110. Pneumatic supply.	Minimum 240 lb./sq. in.
Checks in flight as necessary.	
Checks before landing.	
Reduce speed to 175 knots.	
111. Fuel.	Contents.
112. Harness.	Locked.
113. Brakes.	Off. Check pressures.
114. Cockpit pressurising lever.	Off.
115. Canopy seal.	Off.
116. Undercarriage.	Down and locked.
117. Arrestor hook (if applicable).	Down.
Reduce speed to 155 knots.	
118. Flaps.	Fully down on final.

ITEM	CHECK	ITEM	CHECK
119. Air brakes.	Off.	125. Low pressure fuel cock.	Off.
After landing —Clear runway.			
120. Pneumatic pressure.	Supply sufficient for taxiing.	126. Direction indicator.	Caged.
121. Flaps.	Up.	127. Chocks.	In position.
122. Pressure-head heater.	As required.	128. Brakes.	Off.
On reaching dispersal—stop the engine (see para. 45 (iii)).			
123. Booster pump.	Off.	129. Master switch.	Off.
124. Electrical services.	All off.	130. Internal control locks.	On.
When the impellor has stopped turning.			
		131. Undercarriage locking pins.	In position.
		132. Pressure-head.	Cover on.

A.P. 4269A—P.N.
Pilot's Notes

PART I DESCRIPTIVE

- NOTE.—(a) The numbers quoted in brackets after items in the text refer to the illustrations in Part V.
- (b) Unless otherwise stated all speeds quoted are indicated airspeeds.
- (c) Words in capital letters indicate markings on the controls concerned

INTRODUCTION

The Sea Vampire F. Mk. 20 can be used as a fighter or interceptor for duty in tropical or temperate climates. It is a jet-propelled, single-seat aircraft with clipped wings. It has a pressure cabin and four 20 mm. guns. The power plant is a Goblin Mark 2, straight-flow-combustion, turbine-jet engine.

FUEL AND OIL SYSTEMS

1. Fuel tanks

- (i) Nine permanent self-sealing tanks are fitted, one in the fuselage and four in each wing. In addition a drop tank can be suspended from each wing.

The tank capacities are as follows :—

Fuselage tank	... ..	96 gallons
Two inner wing tanks, 52 gallons each	...	*104 gallons
Two sets of outer wing tanks (comprising 3 separate cells in each outer wing), 65 gallons each set	... ..	*130 gallons
Two wing drop tanks (100 gallons each)	...	200 gallons
Total	...	530 gallons

* See para. 36 (ii) NOTE (b).

- (ii) The fuel from all the permanent tanks passes to a collector box which also acts as a negative "g" reservoir and incorporates negative "g" valves, affording a fuel supply for ten seconds inverted flight. The tanks, which

PART I—DESCRIPTIVE

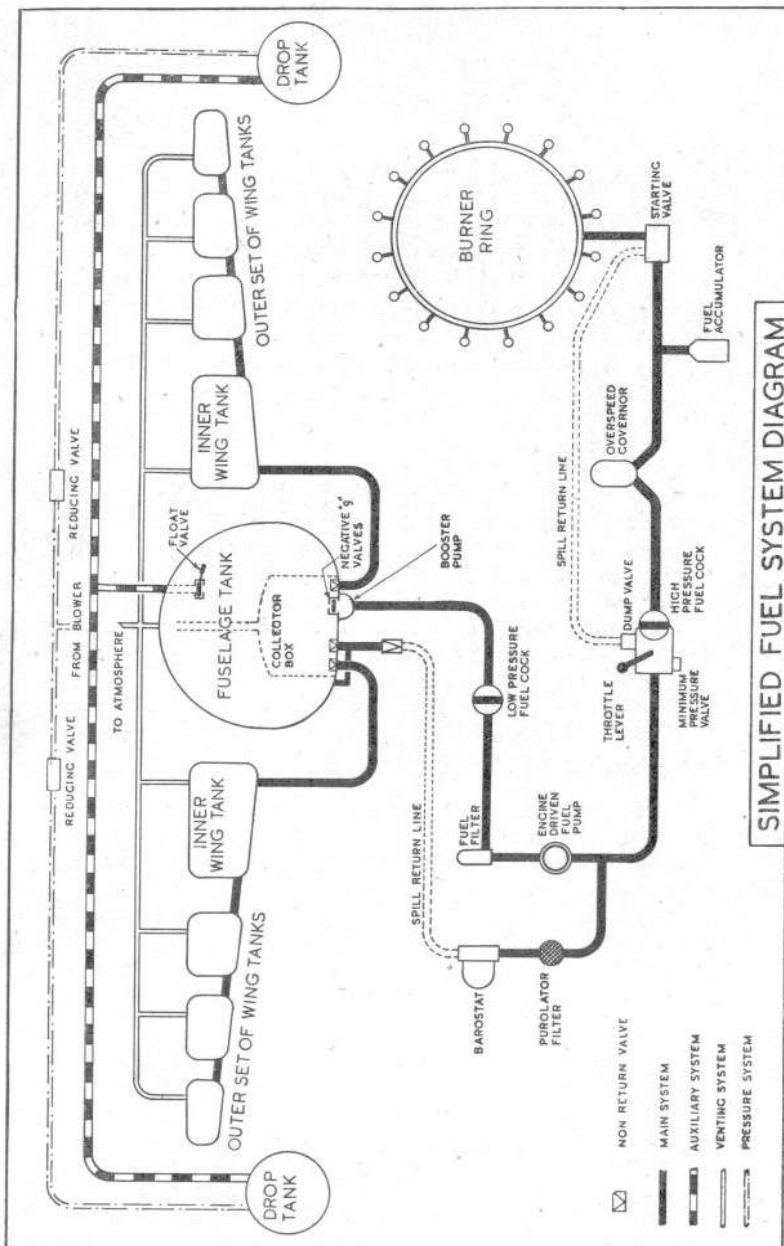
are not pressurised, are vented to atmosphere. A satisfactory delivery pressure at altitude is ensured by a booster pump, immersed in the fuselage tank.

- (iii) The flow of fuel from the wing drop tanks to the fuselage tank is controlled by a float valve mounted at the top of the fuselage tank. The wing drop tanks are pressurised from the engine blower casing. Mod. 591 incorporates a reducing valve for each wing drop tank, thus ensuring that fuel can be drawn from one tank should the other be holed.
- (iv) Fuel from the booster pump passes through a low-pressure cock and a filter, to an engine-driven pump capable of maintaining a constant fuel pressure throughout the power range. An aneroid-operated barostat, fitted to the delivery line of this pump controls the fuel supply by returning surplus fuel to the collector box as height is gained. The engine r.p.m. therefore remain substantially constant at any selected throttle opening. From the engine-driven pump fuel passes to the throttle (fuel control valve) and the high-pressure cock. A minimum pressure valve is fitted in parallel with the throttle. This ensures that at altitude, regardless of the throttle setting, sufficient pressure will be maintained at the burner ring to prevent flame extinction, providing the booster pump is ON. Maximum pressure at the burner ring is controlled by an overspeed governor. From the overspeed governor fuel passes to the starter valve, and the line is tapped to supply a fuel accumulator. The purpose of the accumulator is to provide a fixed quantity of fuel at a known pressure at the moment of starting. When starting the engine, a dump valve drains any fuel present in the system, before the pressure builds up. When shutting down the engine it prevents free fuel draining into the combustion chambers after the pressure has fallen.

2. Fuel gauges

- (i) Contents gauges.

Five fuel contents gauges (44) are mounted below the centre instrument panel. The top left and right-hand gauges represent the contents of the inner port and starboard wing tanks respectively, the lower left and right-hand gauges the outer port and starboard sets of tanks and the centre gauge the fuselage tank. The gauges will indicate the contents of their respective tanks when the



PART I—DESCRIPTIVE

MASTER SWITCH (4) is at FLIGHT. There are no fuel gauges for the wing drop tanks, which are the only tanks pressurised. Fuel transfer from the wing drop tanks to the fuselage tank will commence when the centre gauge reads 80 gallons. The centre gauge will commence to show a drop below this figure when the wing drop tanks have been emptied.

- (ii) A burner ring pressure gauge (53), which is calibrated in hundreds of pounds and records the fuel pressure at the burner ring, is fitted on the left-hand side of the instrument panel. The scale on this gauge is such that accurate reading is difficult, furthermore, the burner pressure will be influenced by height and r.p.m. and thus it is not possible to lay down definite readings for given conditions of flight. This gauge will be deleted by Mod. 680.

3. Fuel booster pump

- (i) The booster pump is controlled by an ON-OFF switch (55) on the electrical panel.
- (ii) A fuel pressure warning light (54) is on the top left-hand side of the instrument panel. This light will come on when the booster pump ceases to deliver fuel; normally, when the booster pump is switched on, the warning light should go out. The light will be on at all times when the booster pump is switched off.

A.L.3
Para. 3
(ii)

4. Fuel cocks

The low-pressure fuel cock is controlled by a lever (21) which is mounted under the engine control box on the cockpit port wall. It has two positions, marked FUEL OFF (down and back) and FUEL ON (forward and up). The high-pressure fuel cock is controlled by a lever (12) mounted outboard of the throttle lever, which must be moved forward for fuel ON and back for fuel OFF. It is held in the forward position by a spring catch. There are no separate fuel cocks for the wing drop tanks, but a jettison lever is fitted (see para. 50).

5. Oil system

- (i) There is no oil tank, but the power unit has a sump which contains about 1½ gallons of oil for lubricating the engine-

PART I—DESCRIPTIVE

driven accessories and the impeller bearings.

- (ii) The oil pressure gauge (46) and the oil temperature gauge (16) are fitted on the left-hand side of the instrument panel.

MAIN SERVICES

6. Pneumatic system

- (i) An engine-driven compressor charges a bottle for the operation of the brakes. The pneumatic system and brakes triple pressure gauge (73) on the right-hand side of the instrument panel, shows the available pneumatic pressure, which when fully charged should be 450 lb./sq. in. and should give a pressure of 150 lb./sq. in. at each brake.
This pressure will still be available for the brakes should the pressure in the bottle fall as low as 240 lb./sq. in.
- (ii) An engine-driven vacuum pump provides suction for the blind flying instruments and for deflating the canopy seal.

7. Electrical system

- (i) An engine-driven generator charges two 12-volt batteries connected in series. These in turn supply the whole of the electrical system at 24 volts, except the automatic engine starting.
- (ii) A generator warning light (36) at present mounted on the top right-hand side of the instrument panel will be removed later by a retrospective Mod. 850 to a position on the left-hand instrument panel level with the fuel pressure warning light (54) and as far inboard as possible. This warning light indicates when the voltage of the generator falls appreciably below the voltage of the batteries. It is wired directly to the batteries and will, therefore, be on continuously whilst the engine is not running, irrespective of the position of the master switch.
- (iii) The master switch, with GROUND and FLIGHT positions, is fitted on the cockpit port wall. Two external sockets are fitted, one on each side of the fuselage, below the wing. The port socket is for normal ground test purposes, and is marked RADIO TEST SOCKET. The socket on the starboard side is marked 24-VOLT GROUND STARTER SOCKET, and is wired only to the automatic engine starting system.

A.L.1
para. 7 (ii)

PART I—DESCRIPTIVE

- (a) When the master switch is set to GROUND, the electrical services are isolated from the generator and aircraft batteries. The system (except the automatic starter) can be connected to a ground battery if this is plugged into the port socket.
- (b) When the master switch is set to FLIGHT, all the electrical services, except the automatic engine starting system, are connected to the aircraft batteries. The automatic engine starting system can be operated if a 230-ampere-hour, 24-volt ground starter battery is plugged into the starboard socket, but only when the master switch is at FLIGHT.

8. Hydraulic system

- (i) Hydraulic pressure, supplied by an engine-driven pump, is stored in a pressure accumulator, for the operation of the following :—
 - Undercarriage
 - Flaps
 - Dive brakes
- (ii) Sufficient pressure will be available in the accumulator for one complete one-way operation of the undercarriage or of the flaps after failure of the engine-driven hydraulic pump.
- (iii) A handpump (24) is provided on the left of the pilot's seat for use when accumulator pressure is not available. Operation of the handpump will transmit hydraulic fluid direct from a reserve supply in the reservoir to the jacks concerned, without going through the accumulator, under sufficient pressure to operate the undercarriage and flaps at a reduced rate.

AIRCRAFT CONTROLS

9. Undercarriage controls

- (i) The undercarriage selector lever (26) is the longest of three levers extending from the rear face of the engine controls box, and has two positions only, UP and DOWN. When the wheels are on the ground it is locked in the DOWN position by a solenoid. In an emergency the solenoid can be over-ridden to permit UP to be selected on the ground by a switch (1), marked U/C EMERGENCY RETRACTION, fitted on the cockpit port wall.

PART I—DESCRIPTIVE

- (ii) A standard undercarriage position indicator (14) is on the bottom left-hand side of the instrument panel. The indications are :

Wheels locked UP	...	No lights
Wheels between UP and DOWN		Three red lights
Wheels locked DOWN	...	Three green lights

There is no warning horn but an additional red light (31), is positioned on the top centre of the instrument panel on the right of the elevator trim indicator and comes on if the wheels are not locked down and the throttle is less than a quarter open.

10. Flaps control

- (i) Operation of the flaps is controlled by the selector lever (23) marked FLAPS next to the undercarriage selector lever. It has three positions : UP—NEUTRAL—DOWN. Any angle up to 80° can be obtained by returning the selector lever to neutral when the desired setting has been reached. The selector should be left in the up position when the flaps are up.
- (ii) A flaps position indicator (47) is fitted next to the undercarriage position indicator.

11. Air brakes control

A lever (22), is the shortest of three, extending from the rear face of the engine control box, and has two positions ON and OFF. The air brakes cannot be operated by the handpump.

12. Arrestor hook control and warning light

- (i) The arrestor hook control (27) is mounted on the port side of the cockpit and is pulled down to lower the hook, which cannot be re-engaged in the up position during flight. Should the lever be accidentally pulled a normal landing can be made without damage to the hook or the structure.
- (ii) A green indicator light (32) is above the undercarriage warning light and the attitude lights beneath the aircraft come on when the hook is down.
- (iii) A switch marked TRAINING SWITCH is mounted below the arrestor hook lever. When carrying out

PART I—DESCRIPTIVE

A.D.D.L's. the switch should be placed in the ON position to simulate the lowering of the deck hook ; when the switch is on, the deck hook indicator light and the aircraft attitude lights all come on.

13. Flying controls

- (i) The control column is of the spade-grip pattern and incorporates the brake lever, the gun firing pushbutton (49), and cine-camera control (48) and a spring-loaded PRESS-TO-SPEAK switch (50).
- (ii) The rudder pedals can be adjusted for length by lifting them from one slot to another.

14. Flying controls locking gear

The flying controls locking gear consists of a V-shaped fitting, which joins a peg in the floor near the control column to the port rudder pedal, and of a Y-shaped tubular fitting which joins the control column spade-grip to the coaming above the instrument panel. A stowage is fitted on the bulkhead behind and to the left of the pilot's seat.

15. Elevator trimming tab control

The elevator trimming tab control wheel (19) is on the side of the engine control box. The indicator (30) is on the top left-hand side of the instrument panel.

16. Wheel brakes

The brake control lever and parking catch are on the control column. Differential control of the brakes is obtained by movement of the rudder pedals.

ENGINE CONTROLS

17. Throttle control

- (i) A throttle lever (10), which moves in a quadrant, marked SHUT—THROTTLE—OPEN, extends from the engine control box. The friction adjuster (20) is on the side of the engine control box, above the elevator trimming tab control wheel.

PART I—DESCRIPTIVE

- (ii) A rear bearing temperature gauge (51), a jet pipe temperature gauge (52), a burner ring pressure gauge (53) and an r.p.m. indicator (45) are mounted on the lower left-hand side of the instrument panel. The rear bearing temperature gauge will be disconnected by Mod. 685.

18. Engine starting system

- (i) The electrical starter motor is controlled by an automatic system operated by the engine starting pushbutton (75), and interlinked starter and master switches (76) on the electrical panel on the cockpit starboard wall. This pushbutton, which should be pressed for about two seconds and then released, sets in motion the timing switch which automatically operates the starting sequence, giving first, a turning period sufficient for the attainment of the correct r.p.m. for the "light-up," and then a further period to accelerate the engine to idling r.p.m. before the starter motor is cut out.

An auxiliary starting switch (74) is introduced which is fitted forward of the master and starter switches. It should be operated as soon as the burners light up so as to cause a third relay to function, allowing full current for the starter motor thus assisting the engine to attain idling

A.L.2
Para. 18
(i)
Line 17

r.p.m. On some aircraft a modified system excludes the use of an auxiliary starting switch, in which case the switch will be wired in the OFF position.

- (ii) The engine cannot at present be re-started in flight.

OPERATIONAL CONTROLS

19. Guns, and gyro gun-sight

- (i) The gun firing mechanism is electrically operated. The guns selective firing pushbutton on the control column spade-grip is fitted with a spring-loaded safety flap. When the flap is at SAFE and the camera master switch (60) is ON, the cine-camera can be operated independently by pressing the camera push-switch. When it is set to FIRE the gun firing pushbutton will fire the guns and operate the cine-camera simultaneously, providing the camera master switch is ON.
- (ii) The gyro gun-sight master switch (61) is on the electrical panel, the combined dimmer and selector control (35) is on the top right-hand side of the instrument panel, and

PART I—DESCRIPTIVE

the ranging control (11) is incorporated in the throttle grip. A camera recorder can be fitted on the gun-sight.

- (iii) The stowage for a cine-camera footage indicator (72) is on the lower right-hand side of the instrument panel.

20. Catapult hooks and hold-back gear

Two catapult hooks, one under each wing, are provided for attachment of the catapulting strop

A strop for the attachment of the hold-back gear is enclosed by a spring door in the underside of the tail cone fairing: the door will spring closed when the hold-back gear is released.

21. Radio equipment

The type 89 and 90 controller units for R3121 are fitted on the lower right-hand side of the instrument panel, whilst the controller type 295 for TR1520 (18) is on the lower left-hand side of the instrument panel, next to the G switch (15), and the AUTO MANUAL control (17). The ZBX controller (66) is fitted on the electrical panel on the starboard side of the cockpit.

22. Other controls

- (i) The identification lights are controlled by a three-position selector switch (64) and operated by a pushbutton (65) both on the electrical panel.

A.L.1
para. 22
(ii)

- (ii) Switches for the pressure-head heater (56), R.I. compass (57), navigation (58), (59) and landing lamp (68) are also on the electrical panel. Mod. 475 introduces an E.2A compass.

COCKPIT EQUIPMENT

23. Canopy

- (i) The canopy is opened and closed by the crank handle (41) mounted on the cockpit starboard wall. A spring-loaded plunger locks the canopy in any desired position when the crank handle is released.
- (ii) When closing the canopy fully, the crank handle should be rotated as far forward as possible to ensure that the plunger engages in the last locking hole, thus providing

PART I—DESCRIPTIVE

for the efficient working of the canopy seal

- (iii) The canopy can be jettisoned in flight by operating the lever marked CANOPY JETTISON (39) forward of the crank handle on the cockpit starboard wall.
- (iv) A pushbutton on the outside of the fuselage, marked PRESS TO SLIDE CANOPY, permits it to be opened from outside.

24. Cockpit heating and ventilation

- (i) The cockpit heating is controlled by a lever (63) marked HOT—CABIN BLOWER AIR—COLD, mounted on the cockpit starboard wall, to the rear of the electrical panel. Cockpit heating can only be used with the cabin blower in operation.

A.L.3
Para. 24
(ii)

- (ii) An adjustable cold air ventilator (28) is fitted on the cockpit port wall, beneath the coaming. The ventilator embodies a non-return valve to prevent leakage of air when the cockpit is pressurised. On later aircraft this ventilator will be positioned further aft.

25. Cockpit sealing and pressurising

- (i) A canopy seal cock is mounted on the right-hand cockpit wall forward of the crank handle. The cock admits air pressure to the rubber seal from the engine blower casing when turned to ON, or deflates the seal through a connection to the suction side of the vacuum pump when turned to OFF. The seal must only be inflated when the canopy is closed and *must be deflated before it is opened*.
- (ii) The cockpit pressurising lever marked ON—CABIN BLOWER—OFF is mounted forward of the canopy seal lever. This lever should be moved down for pressurising and up when pressure is not required. The CABIN BLOWER is engine driven and supplies air through the cockpit air regulator. The cockpit pressure is automatically controlled by a valve which starts pressurising the cabin at about 15,000 ft. and progressively increases the differential pressure to a maximum of $2\frac{3}{4}$ lb./sq. in. at 35,000 ft.
- (iii) The cockpit altimeter (40) on the right-hand side of the instrument panel will show the altitude corresponding to the cabin pressure, and the pilot should regulate his oxygen supply to correspond with this altitude. A cockpit

PART I—DESCRIPTIVE

pressure gauge (38) and warning light (42) are also provided. The warning light glows when the cockpit pressure is $\frac{1}{2}$ lb./sq. in. below the standard ; this light may flicker on and off during the climb.

26. Seat adjustment

A lever (67) on the right-hand side of the seat provides adjustment for height.

27. Oxygen system

A Mk. 11C oxygen regulator (43), high-pressure control and indicator, are mounted together on the right-hand side of the instrument panel. Access to the charging valve is gained through the starboard ammunition door.

28. Windscreen de-icing and de-misting

A handpump (71) with a regulator is mounted on the bottom right-hand side of the instrument panel, for de-icing. Mod. 650 will be introduced in later aircraft and will supply hot air for de-misting controlled by means of an ON—OFF cock on the cockpit port wall.

29. Cockpit lighting

- (i) The master switch at (8) for the instrument panel lamps only is outboard and above the emergency lamp switch.
- (ii) The emergency lamp switch (8) for the emergency lamp is positioned below the master switch.
- (iii) The u/v dimmer switch (5); instrument panel lamps dimmer switch (6) and flood lamps dimmer switch (9) (for the electrical panel only) are on the cockpit port wall.

FINAL CHECKS FOR TAKE-OFF

TRIM ... NEUTRAL

FUEL ... L.P. COCK ON
H.P. COCK ON
BOOSTER PUMP ON

FLAPS ... 30° DECK AND AIRFIELD
45° CATAPULT

AIR BRAKES ... OFF

FINAL CHECKS FOR LANDING

FUEL ... CHECK CONTENTS

BRAKES ... OFF. CHECK PRESSURES

WHEELS ... LOCKED DOWN

HOOK ... DOWN

FLAPS ... FULLY DOWN ON FINAL

AIR BRAKES ... OFF

PART II HANDLING

30. Management of the fuel system

- (i) The internal and wing drop tanks all feed the engine, when the low and high pressure fuel cocks are in the ON position.
- (ii) The booster pump should be switched on for starting and left on at all times when the engine is running.

31. Starting the engine

A.L.3
Para. 31
(i)

- (i) After carrying out the external, internal and cockpit checks detailed in the Pilot's Check List, confirm:—

Master switch	...	FLIGHT
Throttle	...	Fully closed or "1" open
Low-pressure fuel cock	...	On
High-pressure fuel cock	...	On
Booster pump	...	On (fuel pressure warning light out).

*When Mod. 921 is incorporated. The throttle should be closed as soon as idling r.p.m. have been attained.

- (ii) Have a 230 ampere-hour, 24-volt ground starter battery plugged in and switched on. It is essential that the starter battery be fully charged; otherwise, it will not accelerate the engine to idling speed after "light up."
- (iii) Switch in the interlinked starter-master switches and press the engine starting pushbutton, releasing it after two seconds.

A.L.3
Para. 31
(iv)

- (iv) As soon as the burners light up, indicated by a flick of the burner pressure gauge needle and a rise in the jet pipe temperature, switch on the auxiliary starting switch, if necessary. The engine r.p.m. should then accelerate to the idling setting ($3,000 \pm 200$), the throttle should then be closed if previously opened.

- (v) When the engine is running steadily at the idling setting, check that the jet pipe temperature settles down to not more than 600°C . Have the ground starter battery switched off and disconnected, switch off the interlinked starter master switches and if applicable the auxiliary starting switch.

PART II—HANDLING

(vi) If the burners fail to light up or the r.p.m. do not accelerate to the idling setting, the engine should be shut down as follows :—

(a) Close the high-pressure fuel cock. (If the cock is not in the fully closed position, fuel will leak past the starter valve, giving insufficient pressure for the next start.)

(b) Switch off the auxiliary starter switch, if applicable.

(c) Switch off the interlinked starter-master switches.

(d) Have the ground crew remove any surplus fuel from the jet pipe. A wait of at least four minutes or until the impeller stops turning, whichever is the longer, must follow before a second attempt is made. Should the engine fail to start at the second attempt, it must be shut down and the cause investigated.

(vii) If the aircraft is facing into a high wind, difficulty may be experienced in starting.

(viii) While idling the engine, carry out the checks detailed in the Pilot's Check List, items 93 to 100.

32. Taxiing

(i) Before taxiing, carry out the checks detailed in the Pilot's Check List, items 101 and 102.

(ii) Turns of short radius should be avoided as they may cause undesirable stresses on the tyres and oleo legs ; sudden application of brake in such a turn may also cause the nose wheel fairing door to strike the nose wheel.

(iii) Rapid and unnecessarily frequent opening and closing of the throttle should be avoided or engine surging and excessive jet pipe temperatures may result.

33. Take-off

(i) Carry out the checks detailed in the Pilot's Check List, items 103 to 110.

(ii) Taxi forward a few yards to straighten the nose wheel and open the throttle smoothly to take-off r.p.m.

NOTE.—(a) When carrying external stores or when conditions make the use of the shortest take-off run essential, the brakes should be applied when the aircraft is aligned on the runway

PART II—HANDLING

and the throttle opened slowly to take-off r.p.m. Then release the brakes.

(b) If for any reason it is necessary to check any of the engine instruments, this should be done against the brakes prior to take-off.

(iii) Keep straight by gentle use of the brakes, then as speed is gained, by coarse use of the rudder.

(iv) Ease the nose wheel off the ground at 70-75 knots (a fairly strong pull force will be necessary when carrying two wing drop tanks). Care must be taken not to get the nose wheel too high or the booms may touch the ground. The aircraft should be flown off at about 95 knots, 100 knots when at maximum all-up weight.

(v) When comfortably airborne brake the wheels and retract the undercarriage.

(vi) (a) When carrying wing drop tanks the airflow at high speed may prevent the undercarriage doors closing; the undercarriage should, therefore, be retracted as soon as the aircraft is comfortably airborne and before a speed of about 130 knots is attained. If the indications show that the undercarriage is not fully retracted, gentle yawing and/or use of the handpump at about 130 knots should succeed in locking it up. If this is unsuccessful climb to a safe height, keeping the speed below 175 knots and select undercarriage down ; then reduce speed as far as is practicable and reselect undercarriage up.

(b) If the solenoid lock sticks and prevents the selector lever from being raised, it can be overridden by operating the undercarriage emergency retraction switch.

(vii) Raise the flaps and turn on the canopy seal.

(viii) (a) Before a catapult take-off the pilot should check the following, in addition to the normal items shown in the Pilot's Check List.

Main oleo pressure	...	...	350 lb./sq. in.
Main tyre pressure	...	...	86 lb./sq. in.
Nose oleo pressure	...	...	500 lb./sq. in.
Nose tyre pressure	...	...	75 lb./sq. in.

(b) For a catapult take-off use 45° flap and neutral elevator trim. The control should be held central with the right arm held firmly braced against the hip

PART II—HANDLING

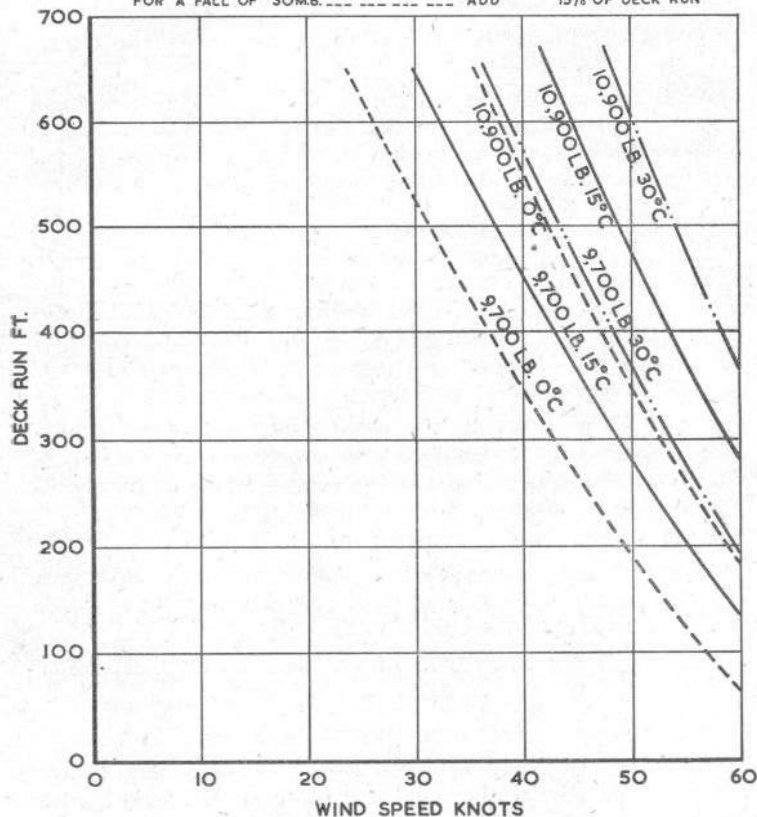
SEA VAMPIRE 20

1 X GOBLIN 2 (3000 LB. S.T.)

VARIATION OF DECK RUN WITH ATMOSPHERIC TEMPERATURE AND PRESSURE

AFTER FINDING DECK RUN AND CORRESPONDING WINDSPEED FROM THE FOLLOWING CURVES THE RESULT SHOULD BE CORRECTED FOR BAROMETRIC PRESSURE AS STATED HEREUNDER

FOR STANDARD PRESSURE 1013 M.B. ----- NO CORRECTION
FOR A RISE OF 30 M.B. ----- SUBTRACT 15% OF DECK RUN
FOR A FALL OF 30 M.B. ----- ADD 15% OF DECK RUN



PART II—HANDLING

joint as there is a tendency for the control column to move back during the launch. Should the control column move back despite this braced position, the nose wheel will be raised from the deck; as the aircraft leaves the catapult the stick should be eased forward to reduce any excessive angle of attack thus imparted during the launch.

- (ix) For carrier take-off use 30° flap and open the throttle to 10,200 r.p.m. against the brakes.

The UNASSISTED TAKE-OFF CURVES show the minimum winds speed required in knots over the flight deck which will allow a safe unassisted take-off at weights of 9,700 and 10,900 lb.

34. Climbing

- The speeds for maximum rate of climb at 10,200 r.p.m. are 260 knots at sea level decreasing by about 15 knots for every 10,000 ft. increase in altitude up to 30,000 ft. Above 30,000 ft. decrease speed by about 45 knots for every 10,000 ft. increase in altitude. With external stores slightly lower speeds should be used.
- If for any reason maximum power cannot be used without exceeding jet pipe temperature limits, the r.p.m. should be reduced accordingly.
- During the climb the cockpit pressure warning light will come on at approximately 17,000 ft. The cockpit pressurising lever should then be turned on and the warning light should go out. If desired, the pressurising lever can be turned on after take-off. If above 17,000 ft. the cockpit pressurising system fails, indicated by the cockpit altimeter reading the same as the aircraft altimeter and/or the warning light coming on, the climb should not be continued above 35,000 ft.

35. General flying

- At all loads stability is satisfactory at all altitudes and in all conditions of flight, except that when carrying wing drop tanks, or flying without ammunition longitudinal stability is slightly decreased and there is a tendency to tighten in turns at high altitude.
- Changes of trim.
Operation of the flaps and undercarriage in either direction, promotes little change of trim, but on lowering the

flaps there is a progressive forward movement of the stick for a constant attitude of the aircraft.

Opening the dive brakes produces marked buffeting and a slight nose up change of trim. At high speeds, when carrying wing drop tanks, buffeting is less marked but the nose up change of trim becomes violent.

(iii) Controls.

All controls are light and well harmonised. The elevator is powerful and effective throughout the speed range; the ailerons become less effective at low speeds and the rudder is the least powerful of the three main controls. The elevator trim is only moderately effective at low speeds but becomes powerful and sensitive at high speeds.

(iv) Flying at reduced airspeeds.

Close the dive brakes to reduce speed to 155 knots, lower 30° of flap and close the air brakes. Fly at about 140 knots.

(v) Throttle manipulation.

Movement of the throttle should be made slowly to avoid engine surging and high jet pipe temperatures. Engine response to throttle opening is slow below 7,500 r.p.m. In an emergency the throttle may be opened rapidly.

A.L.3
Para. 35
(vi)

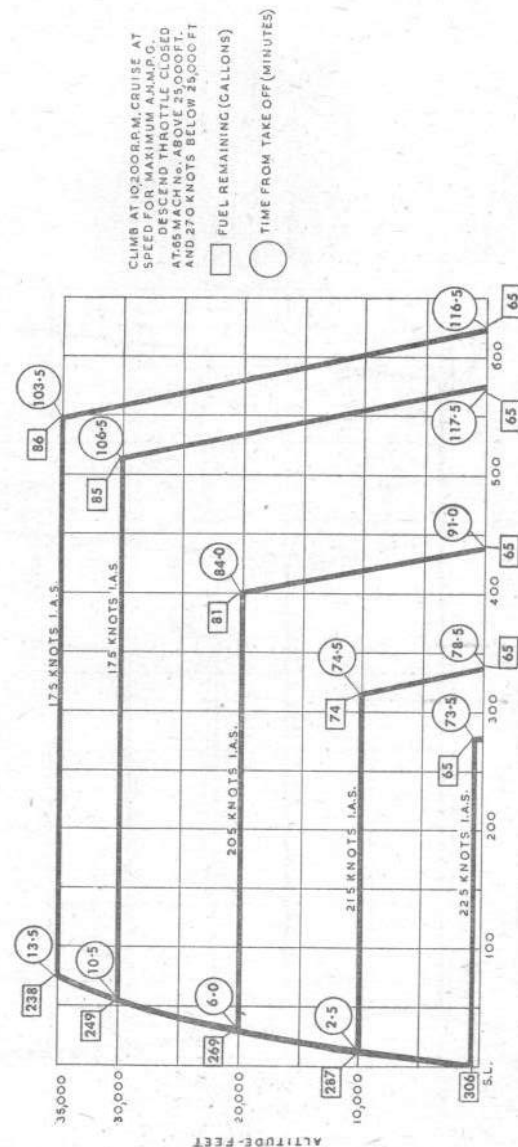
(vi) Flight in turbulent conditions

Speed in conditions of severe turbulence is 220 knots.

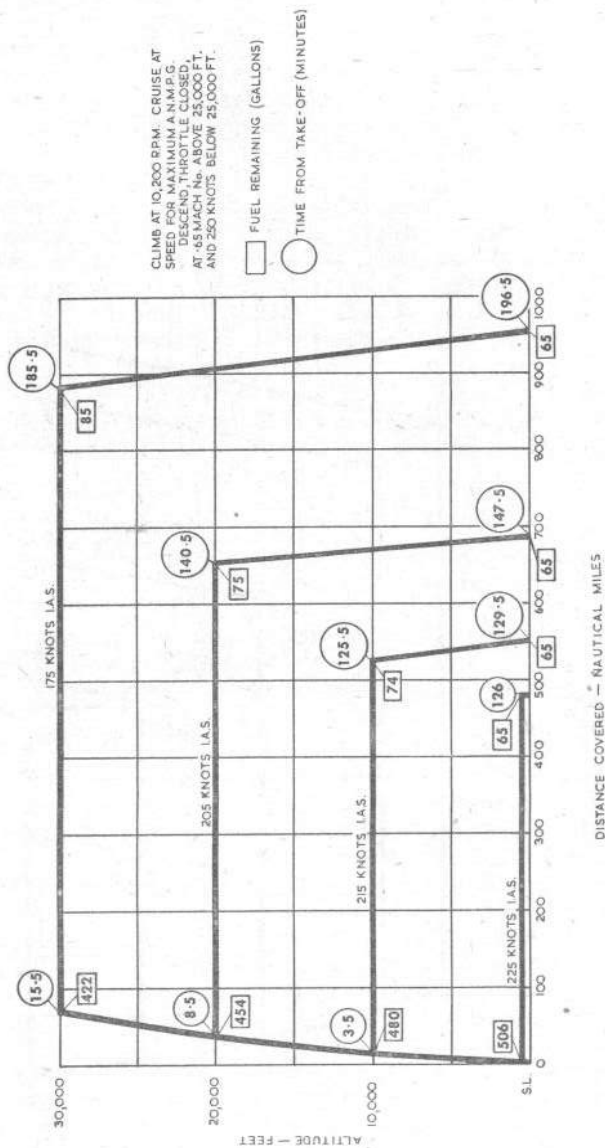
36. Flight planning charts

- (i) The following flight planning charts for the aircraft, with and without drop tanks and external stores, show the range obtainable at various altitudes as well as the quantity of fuel remaining in the tanks, the time taken and the distance covered from the take-off at any stage of the flight. Charts 1 and 2 are optimum range charts and give the recommended level flight I.A.S. Chart 3 shows the range and other corresponding data obtained when flying without external stores at a higher over-all speed, the level flight stage being carried out at maximum continuous r.p.m. and increasing I.A.S. as fuel is used. In this case approximate mean cruising I.A.S. is shown against each curve. These charts illustrate the advantage of flying at a high altitude.

NO EXTERNAL STORES

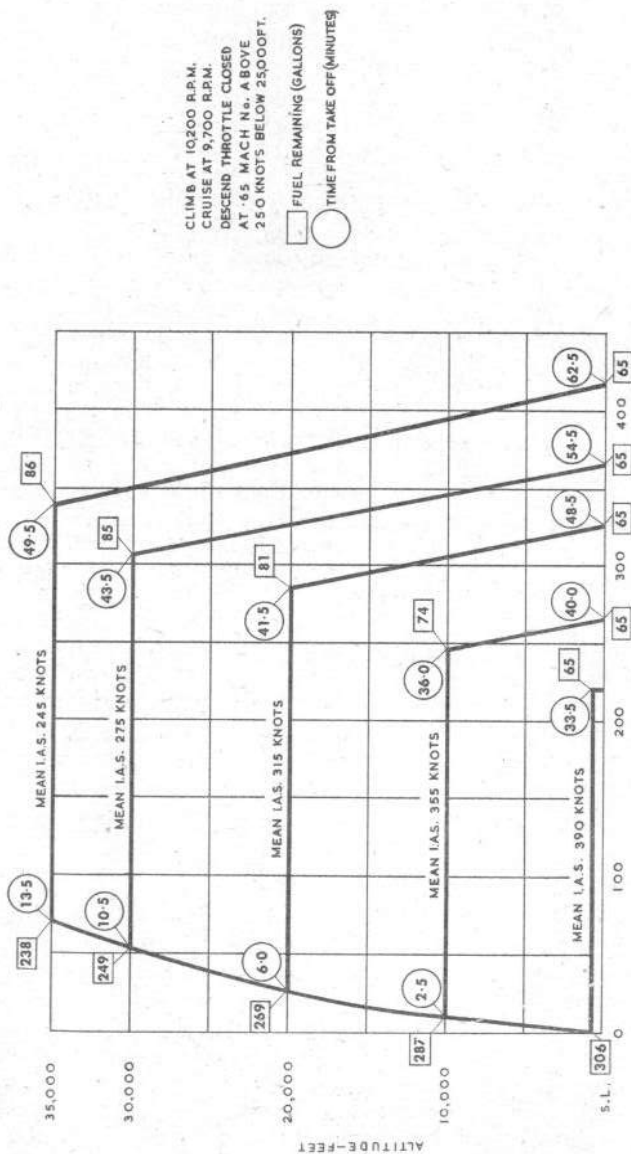


DISTANCE COVERED—NAUTICAL MILES
CHART 1



DISTANCE COVERED — NAUTICAL MILES

CHART 2

NO EXTERNAL STORES
(CRUISING AT MAXIMUM CONTINUOUS RPM)

DISTANCE COVERED — NAUTICAL MILES

CHART 3

PART II—HANDLING

- (ii) The following table shows the allowances made in the charts and how the fuel is used for each stage of the flight.

Taxying and take-off	...	24 gallons
In flight	...	241 (441) gallons
Landing 30	...	65 gallons
Unavailable 35	...	
Total		330 (530) gallons

NOTE.—(a) The figures in brackets apply with 2×100 gallon wing drop tanks.

- (b) Pending the introduction of modified wing tanks the 35 gallons shown above as unavailable should be deducted from the total of the wing tank gauge readings to ascertain at any time the total available quantity of fuel remaining, because the construction of the wing tanks prevents the final 35 gallons draining from them to the fuselage tank at all but very low angles of attack. Provided, however, a minimum of 30 gallons is indicated by the fuselage tank gauge on joining the circuit, ample fuel will be available for going round again if necessary and completing the landing.

37. Position error correction

From 140 to 440 knots, the error increases gradually from 1 to 7 knots.

38. High altitude flying.

- At 35,000 ft., at all loads, stability remains satisfactory but harsh use of the rudder causes a marked wallowing effect.
- Stick forces are light, making it easy to stall the aircraft in a turn. There is a tendency to tighten in turns when carrying wing drop tanks and/or when flying without ammunition.
- The minimum pressure valve in the fuel system is barometrically operated. It will insure that the burner pressure does not fall too low to support combustion at high altitudes providing the booster pump is on. Thus, regardless of throttle setting a certain minimum r.p.m. will be obtainable. The minimum r.p.m. will increase with altitude

PART II—HANDLING

and should be approximately 8,000 at 35,000 feet. If engine surging is experienced at high r.p.m. the engine should be throttled back until it ceases.

- Should the fuel pressure warning light come on above 20,000 ft., height should be reduced below this altitude as quickly as possible. Below 20,000 ft. the booster pump is not essential to maintain adequate fuel pressure to the engine and flight may be continued safely.
- If a rapid descent is anticipated, it is advisable to use the dive brakes. An adequate amount of fuel should be left for the descent and landing, see para. 36, flight planning charts, as the windscreen may become iced-up on descending and it may be necessary to allow time for de-icing or de-misting.

39. Diving and high speed flying

- The aircraft becomes progressively tail heavy as speed is increased up to 415 knots but above this speed up to the maximum permissible I.A.S. the stick force lightens considerably.
- The elevator is light and powerful and should be used with care during a recovery.
- Compressibility characteristics may vary between different aircraft but no difficulty in control should be experienced if the limitations are not exceeded.
- The indications of the onset of compressibility effects vary with altitude but warning should be given by one or more of the following:—
 - At high altitude* (i.e., with a high indicated mach number at a relatively low I.A.S.).
A progressive nose up change of trim from a mach number of .71 to .76.
Above .76 a backward movement of the stick for a constant angle of dive.
Lateral buffeting and very light aileron forces with a tendency for a wing to drop.
 - At low altitudes* (i.e., with a high indicated mach number and high I.A.S.).
The nose up change of trim is not so pronounced as at high altitude and lateral buffeting and a tendency for a wing to drop are the first warnings to occur, together with very light aileron forces, at a mach

number of about .77. These effects tend to mask the backward movement of the control column which will recur at about .78.

- (v) At mach numbers of about .8 to .81 the aircraft will break away in a series of sharp pitching oscillations in an upward or downward direction.
- (vi) When carrying wing drop tanks the aircraft remains unaffected up to the limiting mach number, in this condition, of .65. Above this figure lateral buffeting increases progressively.
- (vii) Recovery from compressibility is almost immediate on opening the air brakes and/or throttling back. Use of the air brakes promotes considerable buffeting and a slight nose up change of trim.
When carrying wing drop tanks the nose up change of trim is violent.
- (viii) It is recommended that the elevator trimmer should not be used to counteract the trim changes described in (iv) (a) as it may suddenly become effective in reducing speed and impose excessive loadings.

40. Stalling

- (i) The approximate stalling speeds in knots are :—
Undercarriage and flaps up ... 90-95 knots
Undercarriage and flaps down ... 80 knots
The stalling speed in the clean condition is not very well defined as the A.S.I. fluctuates before the aircraft stalls. The use of medium power reduces the stalling speed by 2 to 3 knots.
- (ii) When carrying external stores the stalling speeds are increased by 5 to 10 knots.
- (iii) The stalling characteristics are similar for all loads.
 - (a) With the undercarriage and flaps up, warning of the approach of a stall is given by a slight elevator buffeting some 20 knots before it occurs, becoming more pronounced as the stall is approached. At the stall the nose drops and the A.S.I. fluctuates widely. If the control column is held back, there is pronounced longitudinal pitching and a tendency for either wing to drop. With power on there is less warning of the stall but an increased tendency for either wing to drop.

- (b) With the undercarriage and flaps down, there is general airframe vibration at all times but some warning is given by slight buffeting which commences about 15 knots before the stall. At the stall there is pronounced buffeting, the nose and either wing may drop sharply and the A.S.I. fluctuates widely. Continued backward pressure on the control column results in stronger buffeting and an increased tendency for either wing to drop. With power on, there is less warning of the approach of the stall but the characteristics are unaffected.
 - (c) The air brakes do not noticeably affect the stalling speeds or characteristics.
 - (iv) At all loads, warning of the approach of a stall in a steep turn or in recovery from a dive is given by elevator buffeting and at the stall the aircraft may flick in either direction. Stick forces are light and it is relatively easy to stall the aircraft at low speeds in a steep turn, particularly at high altitudes with loadings near the aft C.G. limit.
 - (v) Recovery in all cases is normal and immediate.
- #### 41. Aerobatics
- (i) The following speeds in knots are recommended :—

Roll	...	...	...	...	...	230-250
Loop	...	...	...	...	...	300-320
Half roll off loop	...	...	...	...	...	320-340
Climbing roll	...	...	...	...	...	340 plus
 - (ii) Aerobatics are prohibited when carrying wing drop tanks (either full or empty).
 - (iii) In manoeuvres in the looping plane stick forces are light. Much height may be lost or gained and an ample margin should be always allowed for recovery to normal flight. Use of the air brakes on the top of a loop considerably reduces the height needed to recover.
 - (iv) The negative "g" valves in the fuel collector box ensure a supply of fuel for not more than 10 seconds inverted flight.

42. Approach and landing

- (i) Carry out the checks detailed in Pilot's Check List, items 111 to 119.

- (ii) At the maximum airfield landing weight 10,900 lb. (with or without external stores) the recommended final approach speed with full flap is 95 knots, at lighter weight 90 knots is recommended.
- (iii) The initial approach should be made 15-20 knots above these figures.
- (iv) It is recommended that a powered approach be made, especially when landing with external stores in order to obtain a better engine response in the event of having to go round again.
- (v) Make a normal tricycle landing holding the nose wheel clear of the ground.

43. Deck landing

- (i) The recommended approach speed is 90-95 knots.
- (ii) Engine r.p.m. of about 8,000 will be required on the approach to maintain a constant height with undercarriage and flaps down.

44. Mislanding and going round again

- (i) Always use full power.
- (ii) Open the throttle slowly to take-off r.p.m. Raise the undercarriage as soon as possible and retrim.
- (iii) Climb initially at 115 knots increasing to about 140.
- (iv) Raise the flaps.

45. After landing

- (i) Before taxiing, carry out the checks in the Pilot's Check List items 120 to 122.
- (ii) Ensure that the canopy seal is OFF before the canopy is opened.
- (iii) On reaching dispersal, stop the engine by closing the throttle and then turning off the high pressure cock.
- (iv) Carry out the checks detailed in the Pilot's Check List items 123 to 132.

PART III
OPERATING DATA**46. Engine data Goblin 2**

The principal engine limitations are as follows:—

	R.P.M.	Max. Temperature Jet Pipe	°C. O.I
TAKE-OFF, CLIMB, and OPERATIONAL NECESSITY (30 MIN. LIMIT)	10,200	720	70° *
MAX. CONTINUOUS	9,700	620	
IDLING	3,000 (± 200)	600	

* Minimum for opening up MINUS 5°C.

OIL PRESSURE

Normal at 9,700 r.p.m. ... 40/45 lb./sq. in.
Emergency minimum (5 min. limit) 25 lb./sq. in.

47. Flying limitations

- (i) The aircraft is designed for the duties of a single-seat fighter, although the spinning characteristics are considered to be satisfactory for recovery from an incipient spin, intentional spinning should not be carried out. If a spin occurs, normal recovery action should be initiated immediately, but care must be taken when moving the control column forward to avoid excessive negative acceleration and a very steep nose down attitude. The rudder should be centralised immediately rotation ceases, to avoid flicking into a spin in the opposite direction, and in the initial stage, the pull out from the ensuing dive should be made gently.
- (ii) Maximum speeds. The maximum permissible speeds are:—

(a) Without wing drop tanks

Sea level to 5,000 ft.	...	455 knots
5,000 to 10,000 ft.	...	.75 mach number
10,000 ft. to 15,000 ft.	...	.76 mach number
Above 15,000 ft.	...	.78 mach number

PART III—OPERATING DATA

- (b) With wing drop tanks
Sea level to 5,000 ft. ... 390 knots I.A.S.
At heights above 15,000 ft. an indicated mach number of .65 must not be exceeded.

NOTE.—When carrying wing drop tanks (full or empty) above 15,000 ft., full ammunition or ballast in lieu, must be carried and the guns must not be fired. Below this height full ammunition or ballast in lieu, need not be carried and the guns may be fired. Gentle manœuvres only are permissible when carrying wing drop tanks.

(c) Dive brakes open ... Up to max. permissible diving speed

Undercarriage down ... 175 knots

Flaps down ... 155 knots

(iii) Maximum weights

For free or catapulted take-off and gentle

manœuvres only ... 12,700 lb.

All forms of flying ... 10,900 lb.

Landing on airfields ... 10,900 lb.

Deck-arrested landings ... 9,700 lb.†

† Obtained by having full ammunition and 185 gallons of fuel, or no ammunition and 230 gallons of fuel. Arrested landings must not be carried out with wing drop tanks.

(iv) Jettisoning of wing drop tanks.

The wing drop tanks may be safely jettisoned in level flight at speeds up to 260 knots.

PART IV EMERGENCIES

48. Undercarriage and flaps emergency operation

In the event of failure of the engine-driven hydraulic pump and exhaustion of the accumulator pressure, the handpump on the left of the seat can be used to operate the undercarriage and flaps through the normal pipe lines with the appropriate selector in the required position.

49. Flapless landing

The aircraft requires a long run for a flapless landing and the approach should be low and fairly flat. Make the initial approach at 120 knots aiming to cross the airfield boundary at 105 knots. Speed drops off slowly and very little power is required.

50. Wing drop tank and bomb jettisoning

To jettison the wing drop tanks or bombs and carriers, the pilot should pull up the lever (25) marked JETTISON DROP TANKS positioned on the left of the pilot's seat.

51. Canopy jettisoning

Before pulling the jettison lever, the speed should be reduced as far as practicable, the seat should be lowered fully, and the pilot should keep his head well down.

52. Engine fire-extinguisher

The engine fire-extinguisher is operated by a shielded pushbutton on the electrical panel. An engine fire warning light is positioned on the instrument panel, either to the left, or in place of the generator warning light. The latter is then repositioned inboard and above the r.p.m. indicator. On some aircraft the fire warning light may indicate either a split in the air casing or a fire in the nacelle. If, however, the engine is throttled, the light should go out in 3 to 4 seconds indicating a split air casing, in which case it is safe to use the engine to continue the flight although when power is increased, the light will come on again. If on closing the throttle the light does not go out after 3 to 4 seconds, it indicates a fire in the nacelle independent of a split air casing, and the normal fire action should be taken.

53. Crash landing

- (i) Open the canopy.
- (ii) Tighten and lock the safety harness.
- (iii) Keep the undercarriage retracted.

PART IV—EMERGENCIES

- (iv) Maintain a speed of 130 knots while manœuvring with the flaps up.
- (v) Do not lower the flaps fully until it is certain that the landing ground can be reached under full control.
- (vi) Make the final approach under power, if available.
- (vii) If time permits before the impact and if not already done, turn off the high-pressure cock.

A.L.3
Para. 54

54. Parachute and ditching drill

- (i) Whenever possible, the aircraft should be abandoned by parachute rather than ditched, since model tests indicate that, in any but the calmest seas, the ditching qualities will be poor.
- (ii) If the aircraft is to be abandoned, the following drill should be carried out.
 - (a) Initiate the distress procedure on R/T.
 - (b) Check dinghy pack secure, emergency oxygen supply connected and on (if applicable).
 - (c) Lower seat, and keeping head well down, jettison canopy.
 - (d) Detach R/T lead, main oxygen supply, and stow leads away.
 - (e) Reduce speed as much as possible, trim nose heavy, invert the aircraft and release the safety harness.
- (iii) If ditching is inevitable :—
 - (a) The canopy should be jettisoned.
 - (b) Wing drop tanks and external stores should be jettisoned.
 - (c) The undercarriage should be kept retracted, but the flaps should be lowered 40° to reduce the touch down speed as much as possible.
 - (d) The safety harness should be tightly adjusted and the R/T and oxygen leads disconnected.
 - (e) If power is available, it should be used to help make the touchdown in a taildown attitude at as low a forward speed as possible.
 - (f) Ditching should be along the swell or into wind if the swell is not steep.
 - (g) When contact with the water is made, the tailplane will probably break off and the aircraft will tend to bounce.

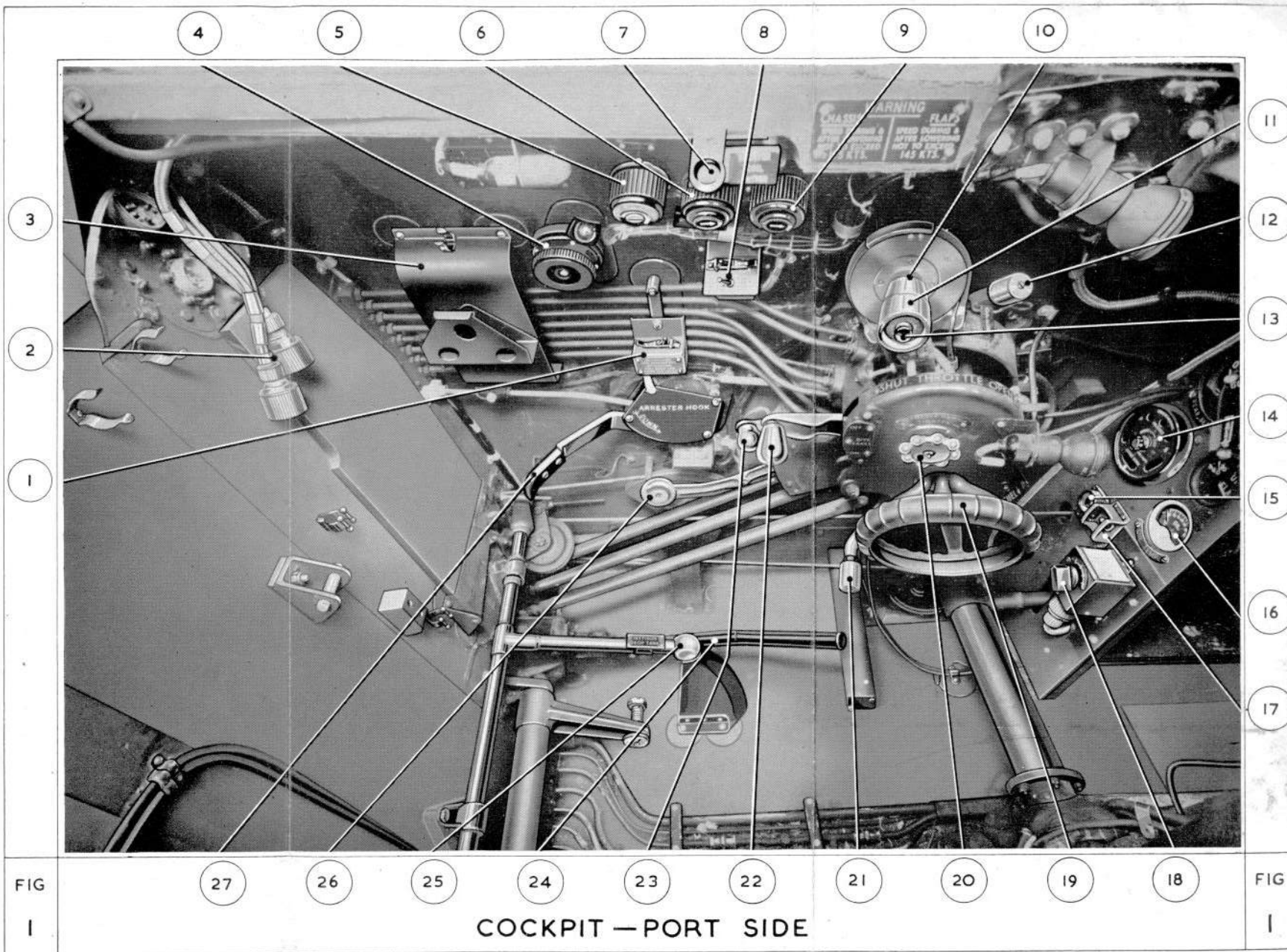
55. Emergency equipment

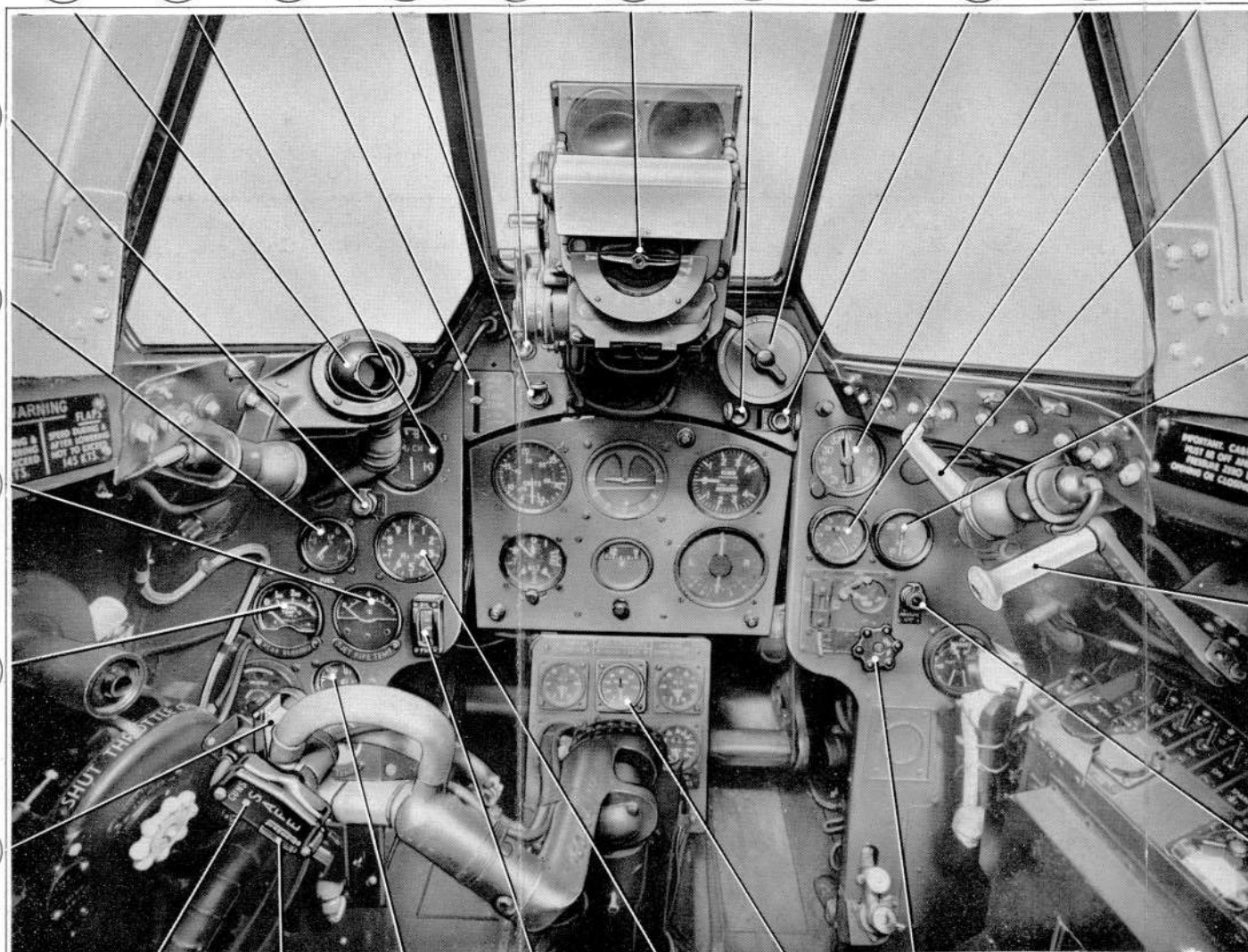
- (i) A crowbar is stowed in spring clips on the port side of the bulkhead behind the pilot's seat.
- (ii) A signal pistol is located in a bayonet fitting on the floor to the right of the pilot's seat. The cartridges are stowed to the left of the pilot's seat.

PART V ILLUSTRATIONS

KEY TO Fig. 1. COCKPIT—PORT SIDE

1. Undercarriage emergency retraction switch.
2. Connections for TR1520 controller.
3. Stowage for camera recorder.
4. Master switch.
5. U/V lamps, dimmer switch.
6. Instrument panel lamps, dimmer switch.
7. Booster-coil pushbutton. (Inoperative.)
8. Emergency lamp switch for lamp on left of gyro gunsight (lower) and master switch for instrument panel lamps (higher).
9. Flood lamps dimmer switch.
10. Throttle lever.
11. Gunsight ranging control.
12. High-pressure fuel cock lever.
13. R.P. and bombs firing press switch.
14. Undercarriage position indicator.
15. G switch.
16. Oil temperature gauge.
17. Auto manual switch.
18. Controller for TR 1520.
19. Elevator trimming tab control.
20. Friction adjuster.
21. Low-pressure fuel cock lever.
22. Air-brakes selector lever.
23. Flaps selector lever.
24. Hydraulic handpump.
25. Wing drop tank jettison lever.
26. Undercarriage selector lever.
27. Deck arrester hook operating lever.





KEY TO Fig. 2.

COCKPIT—CENTRE

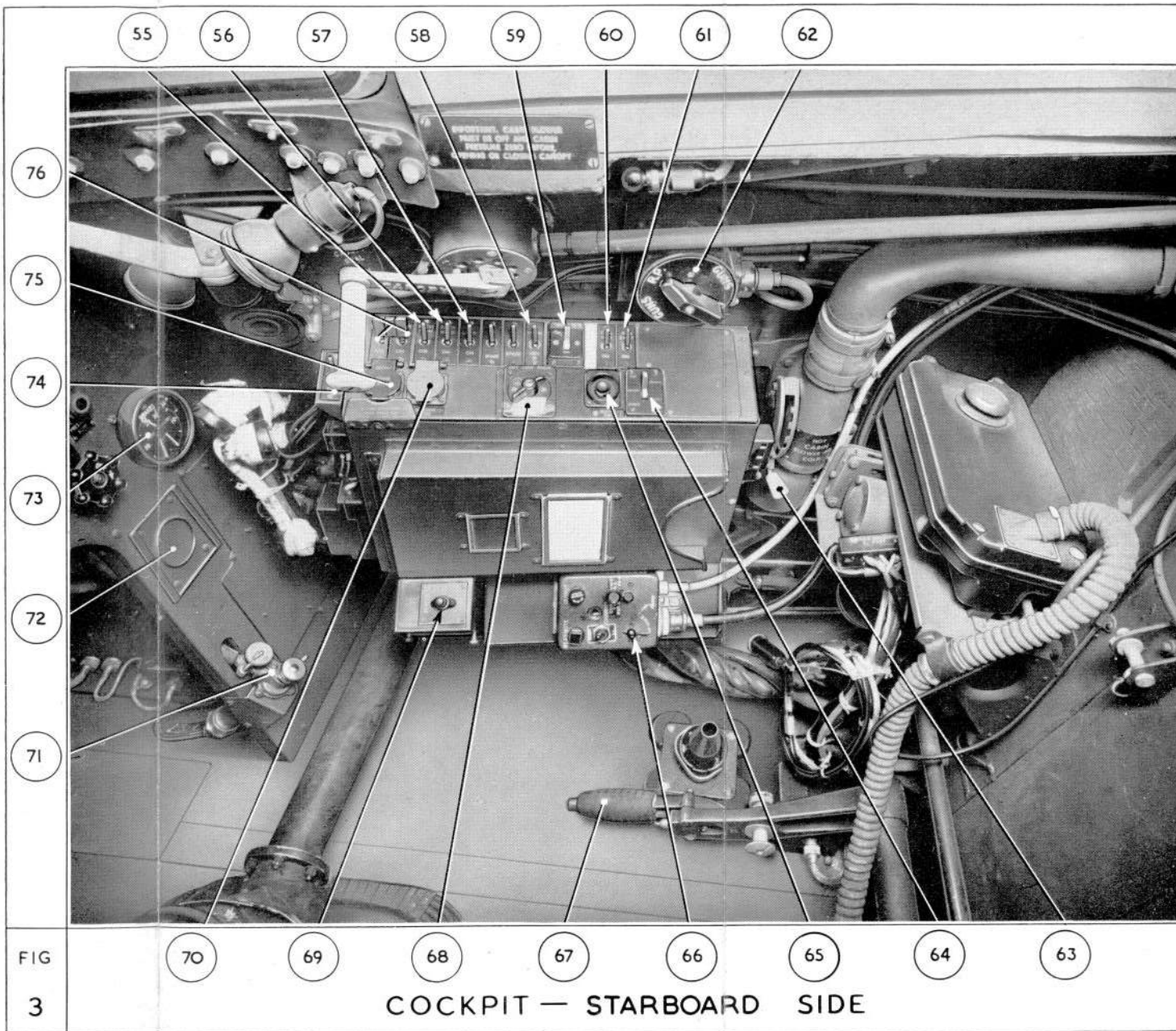
28. Cockpit ventilator
29. Machmeter.
30. Elevator trim indicator.
31. Undercarriage warning light.
32. Deck arrester hook indicator light.
33. Gyro gunsight.
34. Fire-warning light.
35. Gunsight selector dimmer control.
36. Generator warning light.
37. R.I. compass indicator.
38. Cockpit air pressure gauge.
39. Canopy jettison lever.
40. Cockpit altimeter.
41. Canopy winding lever.
42. Cockpit pressure warning light.
43. Oxygen regulator.
44. Fuel contents gauges.
45. R.p.m. indicator.
46. Oil pressure gauge.
47. Flaps position indicator.
48. Cine-camera press switch.
49. Gun-firing switch.
50. Press-to-speak switch.
51. Rear bearing temperature gauge.
52. Jet pipe temperature gauge.
53. Burner fuel pressure gauge. (To be deleted in later aircraft.)
54. Fuel pressure warning light.

COCKPIT — CENTRE

KEY TO Fig. 3.

COCKPIT—STARBOARD SIDE

55. Fuel booster pump switch.
56. Pressure-head heater switch.
57. R.I. compass switch.
58. Navigation lights switch.
59. Navigation lights dimmer switch.
60. Cine-camera master switch.
61. Gyro gunsight switch.
62. R.P. guns selector switch.
63. Cockpit heating control.
64. Identification lights selector switch.
65. Identification lights pushbutton switch.
66. ZBX controller.
67. Seat raising lever.
68. Landing lights control.
69. Mixer box (radio).
70. Fire-extinguisher shielded pushbutton.
71. De-icer pump.
72. Stowage for cine-camera footage indicator.
73. Triple pressure gauge.
74. Auxiliary starting switch.
75. Engine shielded starter pushbutton.
76. Engine starter master switch.



ADMIRALTY
March, 1951

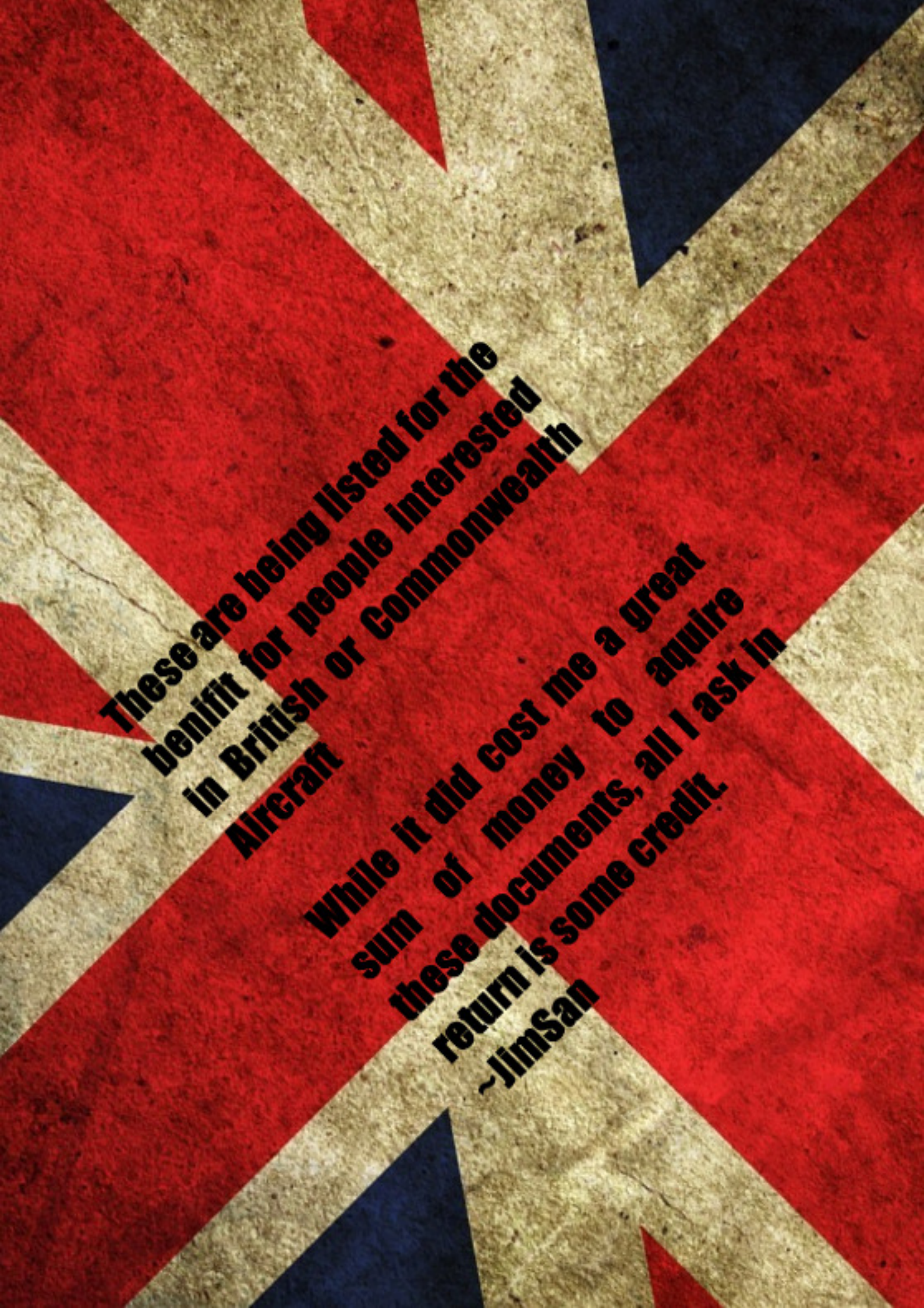
Amendment List No. 3
to A.P. 4269A—P.N.

SEA VAMPIRE F MK. 20.

Incorporation of this Amendment List must be certified by inserting date of incorporation and initials in the spaces provided on the inside front cover of the Pilot's Notes.

PART	PARA.	AMENDMENT
LIST OF CONTENTS		
I	3 (ii)	Para. 54. <i>Delete "Ditching" and substitute "Parachute and ditching drill". Amend by gummed slip herewith.</i>
I	24 (ii)	<i>Amend by gummed slip herewith.</i>
II	31 (i)	<i>Amend by gummed slip herewith.</i>
II	31 (iv)	<i>Amend by gummed slip herewith.</i>
II	35 (vi)	<i>Add by gummed slip herewith.</i>
IV	54	<i>Amend by gummed slip herewith.</i>

Affix this Amendment List to the inside back cover of the Pilot's Notes retaining A.L.1 and 2.



**These are being listed for the
benefit for people interested
in British or Commonwealth
Aircraft**

**While it did cost me a great
sum of money to acquire
these documents, all I ask in
return is some credit.
~JimSan**