

PILOT'S NOTES
FOR
**BRISTOL
BEAUFIGHTER**

MK.VI AND MK.X



PROMULGATED BY ORDER OF CBFS DESIGNS

RESTRICTED
(FOR OFFICIAL USE ONLY)

BRISTOL BEAUFIGHTER Mk.VI / X

OPERATING DATA

Engine data

- (a) Fuel : 100 octane
(b) Engine limitations for Hercules VI, XVI or XVII

	RPM	Boost lb/sq.in	Temp °C	
			Cylr	Oil
MAX TAKEOFF TO 1000ft	2900	+8½ (+10)*		
MAX CLIMBING ONE HOUR LIMIT	2500	+6	270 (290)	90
MAX RICH CONTINUOUS	2400	+6	270 (290)	80
MAX WEAK CONTINUOUS	2400	+2	270 (290)	80
COMBAT 5 MINS LIMIT	2900	+8½ (+10)*	280 (300)	100
Use of the higher cylinder temperatures in brackets is permitted if operational conditions make observance of the lower temperatures impracticable.				
OIL PRESSURE				
NORMAL			80 to 90 lb/sq.in	
EMERGENCY MINM (5 MINS)			70 lb/sq.in	
MINM. TEMP FOR TAKE-OFF			OIL 5°C	
DIVING				
MAXIMUM BOOST			8¼ lb/sq.in	
MAXIMUM RPM			3050	

Flying limitations

- (i) This aircraft is designed for the duties of a long-range reconnaissance fighter and intensional spinning and aerobatics are not permitted.
- (ii) Maximum I.A.S. (Speeds in brackets are in knots):-
- | | |
|--|---|
| Diving | 400 (345) (with torpedo slung, 300 (260)) |
| Lowering Flaps | 150 (130) |
| Flaps fully down | 135 (116) |
| Undercarriage down | 150 (130) |
| Dive brakes (if fitted) | 280 (240) |
| V _{Si} - Clean Stall Speed | 105 (91) |
| V _{so} – Stall Speed with flaps | 80 (69) |
- (iii) Recommended minimum speed with dive brakes on : 140mph (120) I.A.S.
- (iv) Maximum Weights:-
- | | |
|------------------------------|---------------------------|
| Take-off and straight flying | 24000lb (25500lb on Mk.X) |
| Landing and all other flying | 22100lb |

Maximum Performance

Climbing:

The speeds for maximum rate of climb are as follows:

150mph (130kts) I.A.S. from sea level to 12000ft

145mph (126kts) I.A.S. from 12000ft to 16000ft

140mph (122kts) I.A.S. from 16000ft to 20000ft

135mph (117kts) I.A.S. above 20000ft

Maximum Range

Climbing: As for maximum performance

Cruising: The recommended speeds are as follows:

200mph (174kts) I.A.S. up to 15000ft

190mph (165kts) I.A.S. between 15000ft and 20000ft

180mph (157kts) I.A.S. between 20000ft and 25000ft

Fuel Capacities

Fuel capacity in gallons:

Main tanks inner	376	
Main tanks outer	<u>174</u>	
	550	550
Long range tanks(if fitted)		<u>132</u>
Total all tanks		682

BRISTOL BEAUFIGHTER Mk.VI / X

OPERATIONAL PROCEDURES

Aircraft Weight, loaded: 24000lb (25500lb on Mk.X)

Crew: 2

Maximum fuel load: 682 Gallons

On entering the aircraft, set or check the following:

- | | | |
|-------|-----------------------------|-----------------|
| (i) | Hydraulic power lever | ON |
| (ii) | Undercarriage lever | DOWN |
| (iii) | Switch on battery and check | DOWN |
| (iv) | Check brake pressure | Min 100lb/sq.in |
| (v) | Brakes | ON |
| (vi) | Check fuel contents | |

Starting the engines and warming up:

- | | | |
|--------|-----------------------|-----------------------|
| (i) | Engine cutoffs | OPEN |
| (ii) | Fuel cocks | INNER TANKS ON |
| (iii) | Throttles | 1 inch open |
| (iv) | Mixture | NORMAL (if operative) |
| (v) | Propeller | Fully forward |
| (vi) | Air intake | COLD |
| (vii) | Gills | OPEN |
| (viii) | Master battery switch | ON |
| (ix) | Magnetos | BOTH ON |
| (x) | Starter button | PRESS |

After start:

- | | | |
|------|--------------|----------|
| (i) | Throttle | 1000 rpm |
| (ii) | Oil pressure | Check |

Before take-off checklist:

- | | | |
|---|-------------------------------|---|
| H | Hydraulic power lever | ON |
| T | Trimming tabs:
Elevator | One inch nose down on indicator
(slightly more with torpedo slung) |
| | Aileron | NEUTRAL |
| M | Mixture | NORMAL |
| P | Propeller controls | Fully forward |
| F | Fuel | Check contents of tanks and cock settings to
INNER TANKS ON |
| F | Flaps | Up or 15° down |
| G | Gills | One third open |
| T | Tailwheel lock
(if fitted) | Locks (after turning into wind) |

Note:- Under normal conditions the use of flaps for take-off is unnecessary, but 15° may be used for taking off from restricted spaces.
With torpedo slung, 15° flaps is recommended.

Take-off

- (i) Taxi forward a few yards into the wind to straighten the tail wheel
- (ii) To ensure that both engines are responding evenly, open up slowly to about 2,000 r.p.m. and then open up fairly quickly to the TAKE-OFF position.
- (iii) Any slight tendency to swing to starboard can be easily checked by leading slightly with the starboard throttle until the rudder becomes effective.
- (iv) Raise the tail early to lessen the tendency to swing. Hold the nose in a constant attitude and let the aircraft fly itself off.

After Take-off

- (i) Safety speed is 160 m.p.h. (140 knots) I.A.S
 - (ii) Raise the undercarriage as soon as safely airborne, the thumb catch on the operating lever should not be disengaged; it does not lock the lever unless the wheels are on the ground.
 - (iii) If down, raise the flaps at a safe height. With a torpedo slung leave the flaps at take-off setting until a speed of 160 m.p.h. (140 knots) I.A.S. is reached.
- Note :- This must not be taken to imply that flaps may be lowered at speed in excess of 150 m.p.h. (130 knots) I.A.S. .

Climbing

- (i) The recommended climbing speed is 160mph (140 kts) I.A.S.
- (ii) For ease of control, especially as high take-off weights in conditions of poor visibility, a higher speed such as 170mph (150 kts) I.A.S. – 180mph (157 kts) I.A.S. on Mark X at 25500 lb take-off weight – will be found desirable.

Approach and landing

- (i) Preliminary approach:- Undercarriage lowering may begin at 170mph (150 kts) I.A.S. and flap lowering at 150mph (130 kts) I.A.S. Speed must be reduced to 135mph (116 kts) I.A.S. as soon as possible after the undercarriage is fully down and before the flaps are fully down.

Checks before landing

B	Brakes	Check pressure (100 lb/sq.in min)
H	Hydraulic power lever	ON
U	Undercarriage	DOWN
M	Mixture	NORMAL
P	Propeller	Speed controls fully forward
F	Fuel	Tank contents and cock settings
F	Flaps	20° (fully down after final turn into wind)
T	Tailwheel lock	LOCKED

Recommended I.A.S. for final approach at 21000lb are:

	Flaps down	Flaps up
Engine assisted	100 (87kts)	120 (105kts)
With torpedo slung	110 (95kts) plus	
Glide	115 (100kts)	135 (118kts)

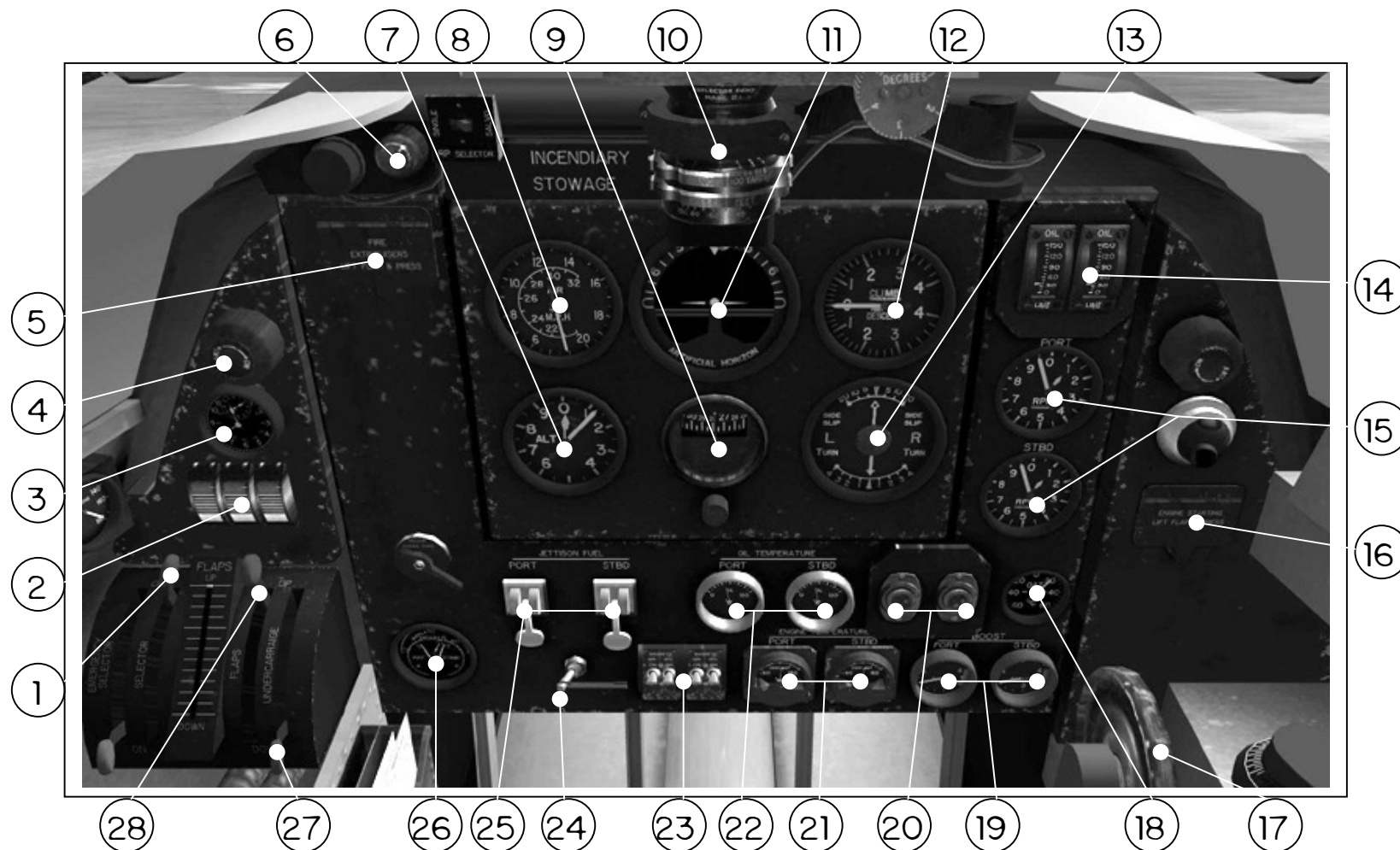
Mislanding

- (i) the aircraft will climb easily at climbing power with flaps and undercarriage down.
- (ii) Raise the undercarriage immediately.
- (iii) Climb at 120mph (115kts) I.A.S. (if torpedo is slung 132mph (115kts) I.A.S. and raise flaps at not less than 300 to 400 ft.

After landing

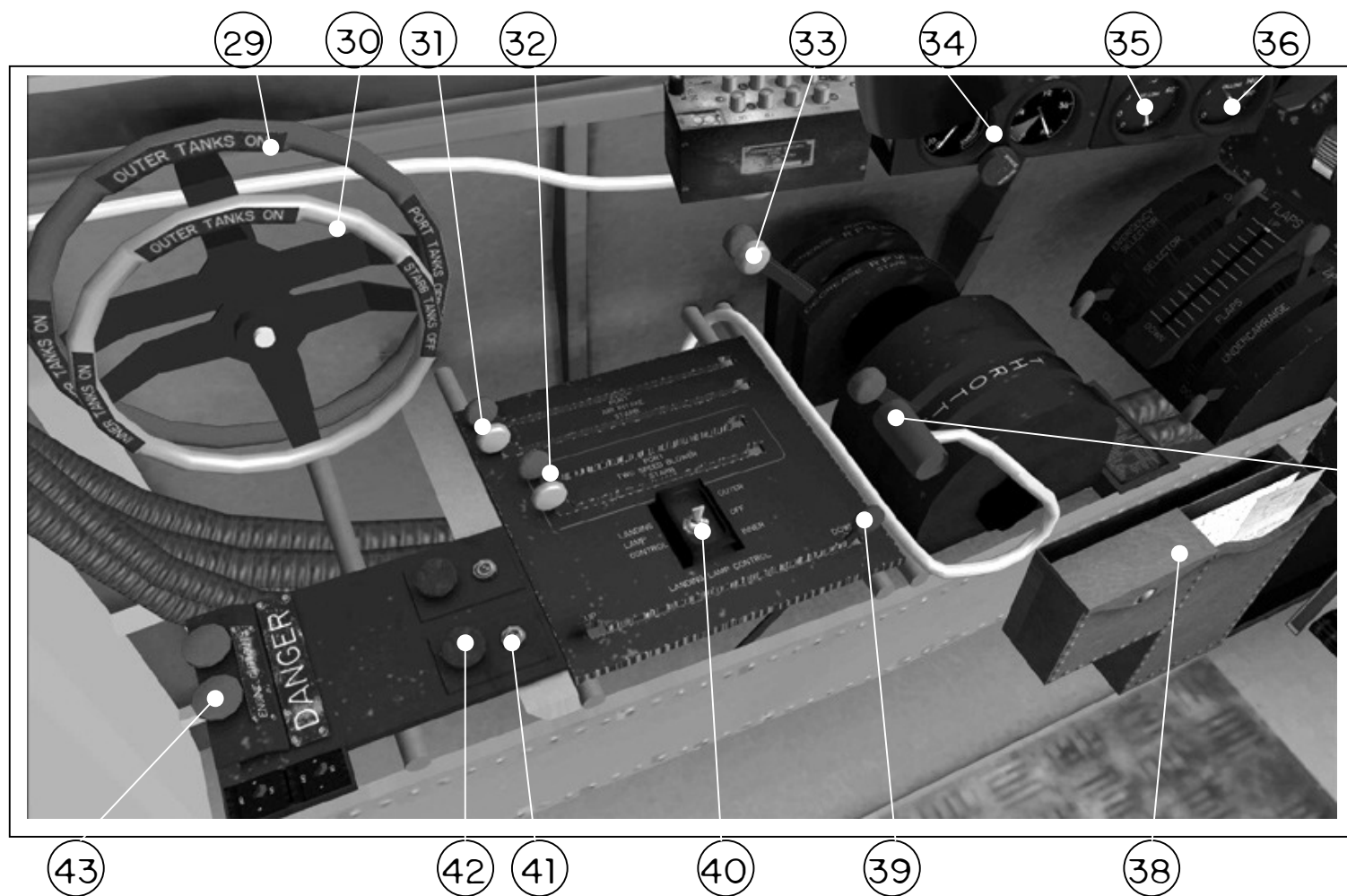
- (i) Open gills, raise flaps, and if a tailwheel lock is fitted – unlock – before taxiing.
- (ii) Leave hydraulic power lever ON.
- (iii) Run engines for two minutes at 800 to 900rpm and then stop by pulling the engine cut-outs, and shut the throttles. After engines have stopped, switch off ignitions and all electrical services and close fuel cocks.

COCKPIT GENERAL VIEW



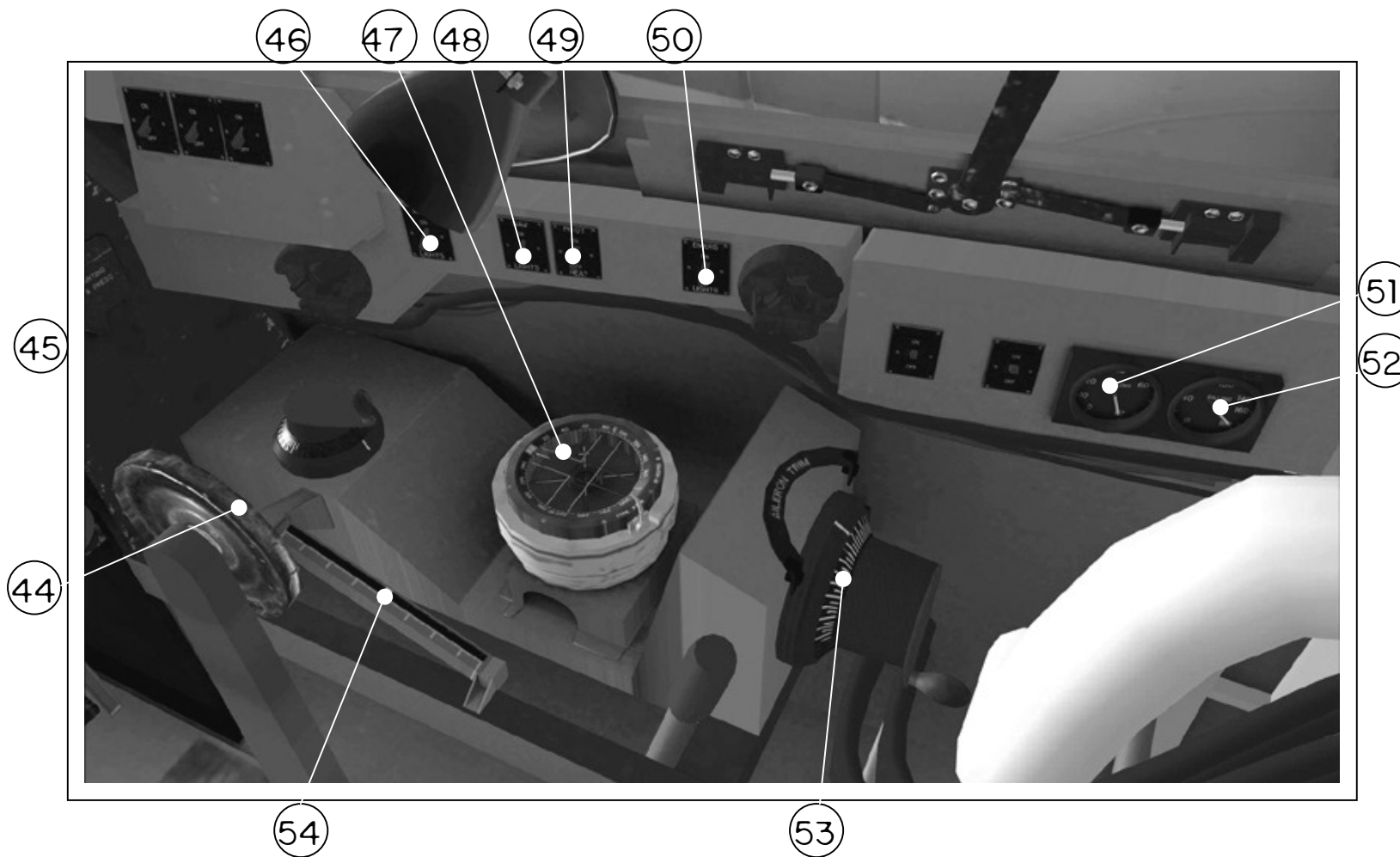
1. Hydraulic power lever
2. Undercarriage position indicators
3. Clock
4. Yoke hide control
5. Fire extinguishers under panel
6. Gunsight reticule
7. Altimeter
8. Airspeed indicator (mph)
9. Compass
10. Gunsight (click to stow)
11. Artificial horizon
12. Vertical speed indicator
13. Turn and slip indicator
14. Oil pressure gauges
15. Engine RPM gauges
16. Starter buttons under panel
17. Elevator trim wheel
18. Outside air temperature
19. Boost gauges
20. Fuel pressure warning lights
21. Coolant temperature
22. Oil temperature
23. Magneto switches
24. Master battery switch
25. Fuel dump switches
26. Brake pressure gauge
27. Undercarriage lever
28. Flap lever

COCKPIT – PORT SIDE



- 29. Fuel cock control – port
- 30. Fuel cock control – starboard
- 31. Air intake controls
- 32. Supercharger controls
- 33. Propeller speed controls
- 34. Pilot oxygen supply
- 35. Fuel contents – port outer
- 36. Fuel contents – port inner
- 37. Throttle controls
- 38. Map case
- 39. Landing lamp control
- 40. Landing lamp switch
- 41. Cowling gills indicator lamp
- 42. Cowling gills control
- 43. Engine cut-out switches

COCKPIT – STARBOARD SIDE



- 44. Elevator trim wheel
- 45. Rudder trim control
- 46. I.D. light switch
- 47. P8 compass
- 48. Nav light switch
- 49. Pitot heat
- 50. Cockpit light switch
- 51. Fuel contents – starboard outer
- 52. Fuel contents – starboard inner
- 53. Aileron trim control
- 54. Elevator trim indicator