

PART I—DESCRIPTIVE

83. Miscellaneous emergency equipment

(a) The following equipment is stowed on the cabin starboard wall just aft of the entrance door:—

- A crash axe
- A pair of asbestos gloves
- A first-aid kit

A.L.1  
Page 46  
Para. 83  
(b), (c)

(b) Five pressure cabin leak stoppers may be provided in suitable stowages at the navigator's station.

(c) *Survival pack stowages*

Mod. 2186 introduces three survival pack stowage crates in the rear of the fuselage, access to which is through the camera hatch.

A.P.4326F—P.N.  
Pilot's Notes

PART II  
LIMITATIONS

84. Engine limitations—Avon Mk. 109

Power rating	Time limit	R.p.m.	J.p.t. °C.
Max. take-off and operational necessity	10 mins.	7,950±50	680
Max. intermediate	30 mins.	7,750	620
Max. continuous	Unrestricted	7,500	575
Idling on the ground	Unrestricted	2,750±100	530

*Oil pressures:*

Minimum at 7,500 r.p.m. and above .. 15 lb./sq. in.  
Normal at 7,500 r.p.m. .. .. 20 lb./sq. in.

NOTE.—1. At low air temperatures the engines may underspeed to as low as 7,800 r.p.m. at full throttle, but they will still maintain maximum thrust.

2. The ground r.p.m. will vary with a change in fuel density from that at which the engine settings were made. A higher density will cause a drop in r.p.m. and a lower density a rise. Every 0.01 change in density will cause a corresponding difference of 50 in the ground r.p.m.

85. Flying limitations

(a) The aircraft is designed as a light bomber and is cleared for normal bombing, loft bombing and, for the B.(I)6 only, interdiction. Intentional spinning and aerobatics, other than the loft bombing manœuvre, are prohibited.

NOTE.—Recovery from the loft manœuvre under instrument flight conditions is prohibited unless a Mk. 4C artificial horizon is fitted and Mod. 2515 is embodied.

PART II—LIMITATIONS

(b) Speed and mach. number limitations

Airframe limitations:—	Max. I.A.S.	Max. I.M.N.
Clean and with gunpack	450	0.75M below 15,000 ft. 0.79M 15,000 to 25,000 ft. Above 25,000 ft. limited by compressibility effects. The speed at which a nose-up change of trim occurs, i.e. about 0.84M must not be exceeded.
With Mk. 6 or Mk. 7 pylon bombs		As above.
With wing tip tanks	365	0.79M below 25,000 ft. 0.80M above 25,000 ft.
For the operation of:—		
Bomb doors	350	0.75M up to 40,000 ft. 0.80M above 40,000 ft.
Airbrakes MID	No limit	No limit.
Airbrakes OUT	400	0.75M 12,500 to 25,000 ft. 0.79M above 25,000 ft.
Undercarriage	190	
Flaps	160	

NOTE:—The speed for the operation of a service also applies for flight with the service in the extended position.

(c) Maximum weights

For take-off and all permitted forms of flying—	B.6	.. .. .	55,000 lb.
	B.(I)6	.. .. .	56,000 lb.
For landing (both roles)	.. .. .	.. .. .	40,000 lb.

In emergency the aircraft may be landed at higher weights but greater care will be required, particularly when braking (see para. 113 (d)).

(d) C.G. limits (inches aft of datum)

(i) In flight and landing

Without wing tip tanks	.. .. .	14.8 to 36.7
With wing tip tanks	.. .. .	14.8 to 33.7

(ii) When taxiing over uneven surfaces the aft limit should not exceed 34.7 inches.

PART II—LIMITATIONS

(e) G limitations

The strength factors of the B.(I)6 are lower than those required for pure ground attack aircraft. Therefore, violent manoeuvres are not to be attempted at aircraft gross weights exceeding 52,000 lb. Below this weight the following limitations of maximum indicated G must be observed:—

Without wing tip tanks	4G
With wing tip tanks	3G in straight pull-outs only. (Rolling pull-out is not permitted.)

86. Armament limitations—Interdictor role

(a) Gunpack

- (i) Mods. 1755, 1761 and 1764 must be embodied.
- (ii) The ammunition load per gun is not to exceed 525 rounds.
- (iii) Firing is to be confined to bursts not exceeding 3 seconds duration with a 1 second interval between bursts. After every 3 bursts a cooling interval of 1 to 2 mins. is to be allowed before firing is recommenced.
- (iv) Firing may be carried out at any speed within the airframe limitations.

(b) Pylon bombs

Any one of the following bomb loads may be carried on each of the two underwing bomb pylons. They may be released singly or simultaneously within the normal aircraft limitations provided that the angle of dive does not exceed 20° and that bombs fused V.T. are not released below 5,000 feet A.G.L.

- (i) One 1,000 lb. Mk. 6 bomb.
- (ii) One 1,000 lb. Mk. 7\* bomb.
- (iii) Two 25 lb. practice bombs.

(c) Flares

Any number of 4.5 reconnaissance flares, up to the total capacity of 16, may be carried in the flare bay subject to the embodiment of Mods. 1767, 1963 and 2331. The following limitations apply:—

- (i) The flare doors must not be opened, nor the flares released, at speeds above 280 knots or at heights above 10,000 feet.

PART II—LIMITATIONS

- (ii) Release is to be in straight and level flight or in dive angles not exceeding 20°.
- (iii) Jettisoning may be carried out in straight and level flight  $\pm 5^\circ$  at speeds up to 280 knots and heights up to 10,000 feet.

(d) Bombs carried in flare bay

Two 1,000 lb. M.C. Mk. 7 bombs may be carried in and released from the flare bay subject to the following limitations:—

- (i) Carriage with the flare doors open is to be restricted to speeds up to 350 knots or 0.75 M. at heights up to 40,000 feet and to 0.80 M. above 40,000 feet.
- (ii) Release is to be in straight and level flight or in dive angles not exceeding 15° at speeds not exceeding 270 knots and at heights up to 20,000 feet.

87. Armament limitations—Bomber role

- (a) When the aircraft is used in the bomber role, the following stores carried in the bomb bay, may be released within the limitations stated. Unless otherwise stated the limitations in the carriage of the stores with the bomb doors open are the same as those quoted for release.

Store	Maximum Speed	Altitude (ft.)		Flight Conditions
		Min.	Max.	
5,000 lb. H.C. bomb	300 knots or 0.75M	—	40,000	In straight and level flight.
4,000 lb. H.C. Mk. 4 bomb	300 knots or 0.71M	—	25,000	In straight and level flight.
1,000 lb. M.C. Mk. 6 and Mk. 9 bombs	350 knots or 0.75M	—	Max. attainable	In straight and level flight.
1,000 lb. M.C. Mk. 7 bombs	350 knots or 0.80M 0.80M	—	40,000	In straight and level flight but in any event the maximum roll angle is not to exceed 6°.
With No. 100 tail units		—	Above 40,000	
With No. 37 tail units		270 knots	—	

PART II—LIMITATIONS

Store	Maximum Speed	Altitude (ft.)		Flight Conditions
		Min.	Max.	
1,000 lb. No. 1 Mk. 1 T.I's. 3 at No. 5 station	350 knots	800	2,500	In straight and level flight. In dive angles not exceeding 40°.
6 at No. 2 and No. 5 stations	350 knots or 0.75M	High altitude only		
1,000 lb. B25 Mk. 1 T.I's. 2 at No. 5 station	350 knots	—	10,000	In straight and level flight or in dive angles not exceeding 40°.
250 lb. Mk. 1 T.I's. 2 at No. 5 station	300 knots	800	3,000	In straight and level flight or climb angles not exceeding 25° or dive angles not exceeding 40°.
500 lb. M.C. Mk. 4 or Mk. 9 bombs 6 at stations No. 1, 3 and 6	230 knots	2,500	10,000	In straight and level flight or in dive angles not exceeding 30° (see also NOTE 2).
12 x 100 lb. practice bombs 4 x 100 practice bombs	300 knots 300 knots or 0.71M 0.75M	20,000 25,000	25,000 30,000 Above 30,000	In straight and level flight (see also NOTE 3).

PART II—LIMITATIONS

Store	Maximum Speed	Altitude (ft.)		Flight Conditions
		Min.	Max.	
25 lb. practice bombs Full load of smoke-and-flash or smoke bombs	280 knots	—	20,000	In straight and level flight.
16 smoke - and - flash bombs only at stations No. 1, 4, 5 and 6	280 knots or 0.72M or 0.74M	—	40,000	
16 at stations No. 1, 2, 5 and 6 for T.I. training	300 knots	—	Above 40,000 3,000	In straight and level flight or in dive angles not exceeding 40° (see also NOTE 4).
4.5 in. reconnaissance flares At stations No. 1, 3 and 5	280 knots	—	10,000	In straight and level flight or in climb and dive angles not exceeding 5° (see also NOTE 5).
2×1,000 lb. B25 Mk. 1 T.I's. at No. 5 station and 8×4.5 in. reconnaissance flares at stations No. 1 and 3.	350 knots	—	10,000	In straight and level flight or in dive angle up to 40° but not before flares at No. 3 station are released.
Target indicators				
Reconnaissance flares	280 knots	—	10,000	In straight and level flight (see also NOTE 6).
2×250 lb. Mk. 1 T.I's. at No. 5 station and 8×4.5 in. reconnaissance flares at stations No. 1 and 3	The same limitations as for the 2×1,000 lb. T.I's. and 8×4.5 in. reconnaissance flares above, apply.			
2×25 lb. practice bombs at No. 6 station and 8×4.5 in. reconnaissance flares at stations No. 1 and 3.	300 knots	—	10,000	In straight and level flight or in dive angles not exceeding 40°.
25 lb. practice bombs				

PART II—LIMITATIONS

Store	Maximum Speed	Altitude (ft.)		Flight Conditions
		Min.	Max.	
Reconnaissance flares	280 knots	—	10,000	In straight and level flight or in climb and dive angles not exceeding 5° (see also NOTE 7).
4×250 lb. Mk. 1 T.I's. at stations No. 2 and 5	350	—	10,000	In straight and level flight or in dive angles not exceeding 30° from No. 2 and 40° from No. 5 station (see also NOTE 8).
3×1,000 lb. M.C. Mk. 6 or Mk. 9 at No. 2 station and 2×250 lb. No. 28 Mk. 1 T.I's. at No. 5 station	350 knots	—	10,000	In straight and level flight or in dive angles not exceeding 40°.
Target indicators				
1,000 lb. bombs	350 knots or 0.75M	—	—	In straight and level flight. (The restrictions at NOTE 8 also apply when carrying these stores.)
2×2,000 lb. Mines A. Mks. 6, 9 or 12 at No. 7 station	217 knots	—	15,000	In straight and level flight ±5° with maximum acceleration of 4G.
Mk. 6 with No. 13 Mk. 5, 6 or 7 parachutes				
Mk. 9 with No. 13 Mk. 7 parachute				
Mk. 12 with No. 13 Mk. 7 parachute				
	260 knots or 0.75M		35,000	
	300 knots or 0.75M		35,000	

PART II—LIMITATIONS

Store	Maximum Speed	Altitude (ft.)		Flight Conditions
		Min.	Max.	
4×1,000 lb. B.25 Mk. 1 T.I's. at stations No. 2 and 5	350 knots	—	10,000	In straight and level flight or in dive angles up to 40°.
3×1,000 lb. M.C. Mks. 6 or 9 bombs at No. 2 station and 2×1,000 lb. B.25 Mk. 1 T.I's. at No. 5 station. 1,000 lb. bombs	350 knots or 0.75M	*	—	In straight and level flight. *When V.T. fused, not to be released below the minimum height required for the V.T. fuse to function. (See also NOTE 9.)
Target indicators	As for 4×1,000 lb. T.I's. above.			

- NOTE.—1. Carriage of 6×1,000 lb. No. 1 Mk. 1 T.I's. with the bomb doors open is restricted to straight and level flight or in dive angles not exceeding 40° at speeds up to 350 knots or 0.75 M.
2. Carriage of 6×500 M.C. Mk. 4 or Mk. 9 bombs with the bomb doors open is to be restricted to speeds up to 300 knots and heights up to 10,000 feet.
  3. Only 12 or 4×100 lb. practice bombs may be carried. When 12 are carried, the centre 4 bombs may be released under the conditions shown for the 4×100 lb. bombs, but the front 4 and rear 4 may only be released under the conditions shown for the 12×100 lb. bombs.
  4. Carriage of 16×25 lb. practice bombs with the bomb doors open is to be restricted to speeds

PART II—LIMITATIONS

up to 350 knots or 0.75 M. at heights up to 40,000 feet or 0.80 M. above 40,000 feet.

5. Carriage of 4.5 in. reconnaissance flares with the bomb doors open is restricted to speeds up to 280 knots and heights up to 10,000 feet; the aircraft must be in straight and level flight or in angles of climb and dive not exceeding 5°.
6. The same restrictions as at 5 above apply when carrying 4.5 in. reconnaissance flares but the speeds may be increased up to 350 knots when only the target indicators remain; the height restriction of 10,000 feet remains the same.
7. Carriage of 4.5 in. reconnaissance flares only or a mixed load of flare and 25 lb. practice bombs with the bomb doors open is restricted to speeds up to 280 knots or 0.75 M. and to heights up to a maximum of 40,000 feet. When carrying 25 lb. practice bombs only or having dropped the flares when carrying a mixed load, carriage of the practice bombs with the bomb doors open is restricted to speeds up to 350 knots or 0.75 M. at heights up to 40,000 feet and 0.80 M. above 40,000 feet. The practice bombs are not to be released until all the flares have been dropped.
8. Carriage of 4×250 lb. Mk. 1 T.I's. with the bomb doors open is restricted to speeds up to 350 knots or 0.75 M. at heights up to 40,000 feet and to 0.80 M. above 40,000 feet.
9. Carriage and release of 4×1,000 lb. B.25 Mk. 1 T.I's. and a combined load of 3×1,000 lb. M.C. and 2×1,000 lb. B.25 Mk. 1 T.I's. is only permitted in cases of *operational necessity*. When either of these loads is carried, flight with the bomb doors open is to be restricted to speeds up to 350 knots or 0.75 M. at heights up to 40,000 feet and 0.80 M. above 40,000 feet.

(b) *Jettisoning*

With the exception of the 25 lb. practice bombs which may be jettisoned in emergency up to the maximum speed stated for the bomb doors, all loads quoted in the above table may be jettisoned up to the limitations stated for

## PART II—LIMITATIONS

release. However, it should be noted that there is no provision for salvo release of the 25 lb. practice bombs, and, in consequence, with large loads, scatter will be extensive.

### 88. Armament limitations—Loft-bombing role

- (a) Subject to the limitations given below and the relevant instructions issued on Canberra fatigue life, aircraft which have Mods. 2197 and 2198 embodied are cleared for level flight and loft bombing with 1,650 lb. H.E. M.C. bombs and their associated training version. With Mods. 2199 and 2365 (or authentic equivalent) also embodied these aircraft are further cleared for loft bombing with 25 lb. No. 1 Mk. 1 practice bombs. (See also NOTE preceding para. 64).
- (b) The use of bomb-bay baffles in this role allows the bomb doors to be opened at speeds exceeding the limitation quoted at para. 85 (b). With bomb bay baffles appropriate to the store(s) being carried, the maximum speed for opening the bomb doors is 430 knots or the I.M.N. quoted at para. 85 (b) for the aircraft "clean and with gunpack".
- (c) If a Mk. 4C artificial horizon has not been fitted the loft manoeuvre is not to be performed in conditions which would involve recovery under instrument flight conditions.
- (d) *1,650 lb. H.E. M.C. bombs and associated training version.* These bombs may be released subject to the following conditions:—
- (i) *In level flight.* Not exceeding 370 knots or 0.78 M.
  - (ii) *In the loft manoeuvre*
    1. The speed of entry into the half loop is to be between 400 and 430 knots.
    2. Release is not to be made at aircraft pitch angles greater than 60°.
  - (iii) *Jettisoning*
    1. *Ram pressure "on".* Not exceeding 370 knots or 0.78 M.
    2. *Gravity release.* Between 280 and 300 knots and in the height band of 5,000 to 10,000 feet.

## PART II—LIMITATIONS

- (e) *25 lb. No. 1 Mk. 1 practice bombs.* Four of these bombs may be carried and released in the loft manoeuvre subject to the following limitations:—
- (i) The speed of entry into the half loop is to be between 400 and 430 knots.
  - (ii) The applied acceleration up to the point of release is not to exceed 3G.
  - (iii) The bombs are not to be released at aircraft pitch angles of less than 40° or more than 120°.
- NOTE.—The bombs are not to be jettisoned at speeds exceeding 375 knots or 0.78 M.
- (f) *25 lb. No. 1 Mk. 1 practice bombs.* In association with Simulator, Weapons Response Type 101, Mk. 1, four of these bombs may be carried and released in the loft bombing manoeuvre subject to the following limitations:—
- (i) The bomb doors must not be opened above 4,000 feet or at a speed above 420 knots.
  - (ii) The speed of entry into the half loop must not exceed 420 knots.
  - (iii) The applied acceleration up to the point of release is not to exceed 3G.
  - (iv) The bombs are not to be released at aircraft pitch angles of less than 40° or more than 120°.

### 89. Pilot limitation

Pilots having a thigh length in flying clothing of more than 26.5 inches must not fly the aircraft. This restriction is imposed because personnel with a greater thigh length are liable to injury due to the knees fouling the coaming if the ejection seat is used. All pilots should press the legs back as far as possible if the ejection seat is to be used.

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