PART 2

LIMITATIONS

LIST OF CHAPTERS

PART 2

Chapter 1 — ENGINE LIMITATIONS

Contents

1 Engine limitations — Avon 122

(*a*)

Power rating	*Time limit*	RPM	JPT °C
Take-off and operational necessity	10 mins. (combined)	8,100 ± 50	690
Intermediate	30 mins.	7,950	655
Maximum continuous	Unrestricted	7,700	625
Ground idling	Unrestricted	3,000 ± 200	525

(*b*) *Oil pressures*

Normal at 7,700 RPM and above	20 PSI
Minimum at 7,700 RPM and above	15 PSI
Minimum at 3,500 RPM	10 PSI

◀2 Fuel specifications

The use of the following fuels is permitted.

Designation	*NATO Code No.*
AVTUR/FSII	F-34
AVTAG/FSII	F-40
*AVTUR	F-35
*AVCAT	F-44

*These fuels may be used provided that fuel system icing inhibitor (D.Eng.RD. 2451) is added in the proportion of 0·10 to 0·15 per cent by volume. ▶

PART 2

Chapter 2 — AIRFRAME LIMITATIONS

Contents

1 General — all configurations

(*a*) The Hunter T7 and T7A are cleared for Service use, as a training aircraft, by day and night. The T Mk. 7 is cleared for use in temperate and tropical climates and the T Mk. 7A is cleared for use in temperate climates only.

(*b*) Intentional spinning is prohibited. Deliberate stalling is prohibited and practice approaches to the stall must not be continued beyond the buffet stage. The minimum altitude for practice approaches to the stall with landing gear and flaps up is 25,000 feet. With the landing gear down, practice approaches to the stall are to be carried out at about 25,000 feet (the landing gear indicator may not function above that height). When demonstrating approaches to the stall with landing gear and flaps down recovery must be complete by 22,000 feet.

(*c*) The following accelerometer readings must not be exceeded at any height:

Positive	+7G
Negative	$-3\frac{3}{4}$G

These limitations apply to the clean aircraft or when fitted

with drop tanks, provided the outboard tanks are empty. With fuel in the outboard drop tanks, the positive limit is +3G.

(*d*) Maximum speeds for the operation of and flight with the service in the extended position:

Landing gear	250 knots
Flaps lowered to any position between 0° and 38° ...	300 knots/0·9M
Flaps lowered to any position beyond 38°	250 knots

(*e*) The aircraft approach limitations (AAL) subject to the standard conditions of pilot proficiency, airfield approach lighting, minimum visibility and accurate height information are:

GCA precision radar	200 feet
Search radar	400 feet
ILS (Mk. 7A aircraft)	250 feet

(*f*)

Max. AUW for take-off and all permitted forms of flying	25,000 lb.
Max. AUW for landing, except in emergency	18,500 lb.

NOTE: Particular care is necessary when landing at or near the maximum landing weight on rough or semi-prepared surfaces or in conditions likely to create high landing gear loads.

(*g*) Aerobatics are permitted with fuel in the drop tanks if:

(i) Inboard pylons are to Mod. 463 standard.

(ii) Rolling manoeuvres, with fuel in the outboard tanks, do not exceed 360°.

(*h*) Armament stores may be carried within the limitations for the clean aircraft, subject to any additional limitations imposed by the carriage of drop tanks and those limitations given in paras. 9 to 14.

2 Clean aircraft — in Power

Max. speed — 620 knots; no mach limit but see Part 3, Chap. 2, para. 14.

3 Drop tanks — in Power

(*a*) *Max. speed with drop tanks*

Inboard tanks ...	...	620 knots, no mach limit
Outboard tanks ...	...	0-10,000 ft. — *0·86M
		10-20,000 ft. — *0·87M
		Above 20,000 ft. — *0·88M

*or the onset of buffet, if earlier

(*b*) *Drop tank jettisoning*

Jettisoning of 100-gallon drop tanks should be carried out (without yaw or sideslip) as follows:

(i) In straight and level flight, without yaw or sideslip between 200 and 450 knots.

or

(ii) In a dive of up to 10° maximum angle, between 300 and 450 knots.

4 Manual flying

Maximum speeds in Manual

Below	15,000 ft.	0·75M
Above	15,000 ft.	0·85M

5 Crosswind Take-off/landing limitations and use of braking parachute

The maximum permissible crosswind component for take-off and landing is:

25 knots on a dry runway

20 knots on a flooded runway

The braking parachute is not to be streamed until touch-down.

6 Canopy

The canopy must not be opened on the ground if the wind

speed is above 40 knots. The taxying strut, on the front of the canopy, allows the canopy to be left partially open for taxying or towing.

7 Aircraft Arrester gear

The aircraft is cleared for unrestricted trampling of the following tensioned arrester gears whether supported or unsupported:

RHAG — Rotary hydraulic arrester gear
SPRAG Mk. 1 — Spray arrester gear
CHAG — Chain arrester gear
PUAG Mk. 21 — Purpose use arrester gear
BLISS — BAK 9, BAK 12 and 500s

8 UHF

Limitations on the use of UHF below 5,000 feet are as follows:

(*a*) *Temperate conditions — standby set*

Not to be used at speeds above 250 knots. Restricted to 25 minutes use at speeds below 250 knots.

(*b*) *Mediterranean summer conditions — main set*

Restricted to 45 minutes from the commencement of the flight at speeds in excess of 250 knots.

(*c*) *Tropical conditions*

(i) *Main set*

Restricted to 40 minutes from the commencement of the flight at speeds in excess of 250 knots.

(ii) *Standby set*

Not to be used at speeds above 250 knots. Restricted to 8 minutes use below 250 knots.

9 Gun firing

(*a*) The gun may be fired on the ground.

(*b*) In flight, gun firing is permitted at speeds above 180 knots and at heights up to 48,000 feet.

(*c*) In buffet conditions, engine throttle opening time should not be less than two seconds.

10 Rocket projectiles

(*a*) Carriage and release of either of the following RP loads is permitted with or without drop tanks on the inner pylons:

(i) 24 × 3 in. No. 1 Mk. 5 or Mk. 6 rockets fitted with 12 lb., 18 lb. or 25 lb. heads in single, double or triple tier combination.

(ii) 8 × 3 in. No. 1 Mk. 5 or Mk. 6 rockets fitted with 60 lb. heads in single tier.

(iii) 6 × 5 in. HVAR's fitted with 35 lb. and 52 lb. heads in single tier (three rockets only per wing in positions 1, 3 and 4).

(*b*) The following additional limitations are imposed:

(i) Maximum permissible speed is 590 knots.

(ii) Dive angle is not to exceed 60° when firing.

(iii) When it is necessary to fly in Manual control in turbulent conditions, RP are to be fired where practicable before landing.

11 Two-inch rocket launchers

(*a*) Carriage and firing of 2 in. rockets from launchers No. 3 Mk. 1 fitted to the inboard pylons is permitted with or without drop tanks on outboard pylons, provided that Mods. 697 and 1191 are embodied.

(*b*) The following additional limitations are imposed:

(i) Not more than 12 rockets are to be carried in each launcher.

(ii) Maximum speed is 550 knots.

(iii) Dive angle is not to exceed 30° when firing.

(iv) Firing is not permitted above 36,000 feet.

(*c*) Fired or unfired launchers may be jettisoned in straight and level flight at speeds between 180 knots and 450 knots/0·85M at heights up to 36,000 feet.

12 Sneb Matra rocket launchers

(*a*) *Matra Type* 116M *launcher*

The 116M launcher is cleared for carriage, firing and jettison from the outboard pylons, with or without drop tanks on the inboard pylons, subject to the conditions below. Launchers with unmodified nose cones are restricted to OAT up to 15°C.

(i) In OAT up to 15°C, the speed limitations are:

Below 10,000 feet	...	520 knots/0·84M	or the onset of buffet
10,000 - 20,000 feet	...	0·86M	
Above 20,000 feet	...	0·88M	

Nose cones are limited to three flights.

(ii) In OAT up to 30°C (modified nose cones only), the speed limitations are:

Below 10,000 feet	...	450 knots/0·84M	or the onset of buffet
10,000 - 20,000 feet	...	0·86M	
Above 20,000 feet	...	0·88M	

Nose cones are limited to one flight only.

(iii) Firing is permitted up to 450 knots at dive angles up to 30°.

(iv) The launchers may be jettisoned in straight and level flight at speeds up to 450 knots/0·85M.

(*b*) *Matra Type* 155 *launcher*

The 155 launcher is cleared for use on the outboard pylons in temperate conditions subject to similar speed limitations as given for the 116M launcher in (*a*) above. In tropical climates (up to 40°C) the maximum permitted speed is 490 knots.

13 25 lb. and 28 lb. Practice Bombs

The carriage and release of 25 lb. and 28 lb. No. 1 Mk. 1 practice bombs from the inboard and outboard

pylons is permitted subject to the following limitations.

(*a*) *Carriage*

At speeds up to 500 knots or 0·9M whichever is less (or the onset of buffet if earlier).

(*b*) *Release*

(i) At speeds up to 450 knots or 0·9M whichever is less (or the onset of buffet if earlier).

(ii) Bombs may be released in straight and level flight or in angles of dive up to 60°.

(iii) 25 *lb. Practice Bomb*

The minimum height in any release manoeuvre is 50 ft.

(iv) 28 *lb. No.* 1 *Mk.* 1 *Inert Practice Bomb*

The minimum height in any release manoeuvre is 100 ft.

(v) 28 *lb. No.* 1 *Mk.* 1 *Smoke or Flash Practice Bomb*

The minimum height in any release manoeuvre is 500 ft.

(*c*) *Mixed loads*

Carriage of mixed loads of bombs and drop tanks is only permitted when the tanks are on the inboard pylons.

14 CBLS and 4 lb. Practice Bombs

The carriage and release of 4 lb. No. 1 Mk. 1 retarded, smoke and flash practice bombs from inboard and outboard pylons is permitted subject to the following conditions:

(*a*) *CBLS on Inboard Pylons only*

(i) *Carriage*

Up to the maximum permitted height, speed and manoeuvre limitations of the aircraft.

(ii) *Release*

Height: Up to 1000 ft. ASL/AGL
Speed: Up to 600 knots or 0·99M
Attitude: Straight and level flight ±5°

(iii) *Jettison*

Jettison of the CBLS is not recommended.

(*b*) *CBLS on Outboard Pylons with either* 100-*gallon tanks or CBLS on Inboard Pylons*

(i) *Carriage*

0·84M up to 10,000 ft.	
0·86M between 10,000 and 20,000 ft.	or the onset of buffet if earlier
0·88M above 20,000 ft.	

(ii) *Release*

Height: Up to 1000 ft. ASL/AGL
Speed: Up to 0·84M
Attitude: Straight and level flight $\pm 5°$

(iii) *Jettison*

Jettison of CBLS is not recommended.

NOTE: When CBLS is carried in conjunction with another store, then the limits appropriate to that store must be used if more restrictive than those for the CBLS.