

PART 2**LIMITATIONS****List of Chapters**

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PART 2

CHAPTER 1 — AIRFRAME LIMITATIONS

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The Limitations given in this Part are taken from the Combined Release to Service, Lightnings Mk 3 and 5, Issue 5 to AL1. The Release to Service Document must be consulted to ascertain the latest release standard.

1 General

The Lightning F Mk 3 is designed for duties appropriate to an interceptor fighter. Intentional stalling and spinning are prohibited. The aircraft is cleared for use in temperate and tropical conditions, by day and night.

2 Maximum Speeds

With or without missiles	2.0M/650 knots, whichever is first attained
With a single missile ...	1.8M/650 knots, whichever is first attained
With the AAR probe fitted	625 knots
When Red Top operational missiles are carried below 10,000 feet in peace-time ...	550 knots
Airbrake operation and flight with airbrake extended	1.3M/650 knots, whichever is first attained
Undercarriage selection	250 knots
Flight with undercarriage down	280 knots (but see FRC— Undercarriage Fails to Lower)
Flap operation and flight with flaps down ...	250 knots
Parachute stream ...	150 knots (normal) 170 knots (emergency)

Note: Streams above 150 knots must be reported.

3 Minimum Speeds

Flaps and undercarriage up	180 knots
Flaps and undercarriage down	140 knots

In all configurations higher minimum speeds must be maintained with g applied.

4 G Limitations

The maximum permissible normal accelerations are:

(a) Negative

Minus 3g. Negative g should not be applied for longer than 15 seconds. Use of the ejection seat in negative g conditions should be avoided. ▶

(b) Positive

<i>Speed</i>	<i>Ventral Empty</i>	<i>Fuel in Ventral</i>	<i>With Single Missile</i>
Up to 0.9 M ...	6g	6g	4g
0.9 M to 1.8 M ...	6g	5.5g	4g
Above 1.8 M ...	4g	4g	—

Note: Above 1.8 M, with two wingless Red Top missiles fitted, the limit is +3 g.

(c) With Red Top Missiles

From missile wing strength and fatigue considerations the following limits apply:

- (i) Ready use missiles ... 4g (except in operational necessity)
- (ii) Drill/acquisition missiles with wings ... 2g

5 Weight Limitations

The maximum permissible weight for take-off and all forms of flying is 36,000 lb. The maximum permissible landing weight, except in emergency, is 34,500 lb.

6 CG Limitations

The take-off CG limits are contained in AP 101B-1003/6-1A, Vol 1, Book 1, Section 2, Chapter 3A, and in the Release to Service, Annex A.

7 Aircraft Approach Limitations (Feet True)*(a) 3° Glidepath*

	<i>Runway Aid No Glidepath</i>	<i>Raw ILS</i>	<i>PAR</i>	<i>Auto ILS</i>
<i>In-line localiser</i>	400	300	300	250
<i>Off-set localiser</i>	400	350	—	300

(b) When a $2\frac{1}{2}^\circ$ glidepath is flown, the above AAL are reduced by 50 feet.

(c) The above figures apply to an approach groundspeed of 175 knots. At higher groundspeeds successful landings can still be made but increases in excess of 10 knots, in high weight or tailwind conditions, increase the probability of an overshoot being necessary.

(d) The AAL for approaches on standby instruments is 500 feet.

(e) All Auto-ILS approaches should be PAR monitored.

(f) The Visual Committal Height (VCH) is zero for weights up to the maximum emergency landing weight.

(g) The Engine Out Allowance (EOA) is zero for weights up to the maximum landing weight.

8 Crosswind Limitations

(a) The maximum crosswind component for take-off is 25 knots.

(b) The maximum crosswind component for landing on dry runways is 25 knots, on wet runways 20 knots, and on flooded runways 15 knots.

9 Runway Restrictions

The aircraft should be operated from runways of not less than 2500 yards in length. The LCN is 27 at 36,000 lb. For further information refer to AP 101B-1003/5-16 (ODM) Part 8.

10 Altitude Limitations

The aircraft must not be flown above 60,000 feet. The maximum altitude for which the oxygen regulator and personal equipment have been cleared is:

<i>Personal Equipment</i>	<i>Mk 17F</i>	<i>Mk 21B</i>
P or Q mask	50,000 ft	45,000 ft
P or Q mask with sleeveless jerkin and anti-g trousers	—	56,000 ft

Note: These altitudes do not take into account aerodynamic suck. Cockpit altitude will exceed aircraft altitude by up to 8000 feet if the canopy is lost.

(b) Positive

<i>Speed</i>	<i>Ventral Empty</i>	<i>Fuel in Ventral</i>	<i>With Single Missile</i>
Up to 0.9 M ...	6g	6g	4g
0.9 M to 1.8 M ...	6g	5.5g	4g
Above 1.8 M ...	4g	4g	—

◀ Note: Above 1.8 M, with two wingless Red Top missiles fitted, the limit is +3 g. ▶

(c) With Red Top Missiles

From missile wing strength and fatigue considerations the following limits apply:

(i) Ready use missiles ... 4g (except in operational necessity)

(ii) ~~Drill/acquisition~~
missiles with wings ... ~~2g~~ (AL4 to CA Release)

5 Weight Limitations

The maximum permissible weight for take-off and all forms of flying is 36,000 lb. The maximum permissible landing weight, except in emergency, is 34,500 lb.

6 CG Limitations

◀ The take-off CG limits are contained in AP 101B-1003/6 — 1A, Vol 1, Book 1, Section 2, Chapter 3A, and in the Release to Service, Annex A.

7 Aircraft Approach Limitations (Feet True)**(a) 3° Glidepath**

	<i>Runway Aid No Glidepath</i>	<i>Raw ILS</i>	<i>PAR</i>	<i>Auto ILS</i>
<i>In-line localiser</i>	400	300	300	250
<i>Off-set localiser</i>	400	350	—	300 ▶

- ◀ (b) When a $2\frac{1}{2}^\circ$ glidepath is flown, the above AAL are reduced by 50 feet.
- (c) The above figures apply to an approach groundspeed of 175 knots. At higher groundspeeds successful landings can still be made but increases in excess of 10 knots, ie high weight or tailwind conditions, increase the probability of an overshoot being necessary.
- (d) The AAL for approaches on standby instruments is 500 feet.
- (e) All Auto-ILS approaches should be PAR monitored.
- (f) The Visual Committal Height (VCH) is zero for weights up to the maximum emergency landing weight.
- (g) The Engine Out Allowance (EOA) is zero for weights up to the maximum landing weight. ▶

8 Crosswind Limitations

- (a) The maximum crosswind component for take-off is 25 knots.
- (b) The maximum crosswind component for landing on dry runways is 25 knots, on wet runways 20 knots, and on flooded runways 15 knots.

◀ 9 Runway Restrictions

CAAL
 The aircraft should be operated from runways of not less than 2500 yards in length. The LCN is 27 at 36,000 lb. For further information refer to AP 101B-1003/5-16 (ODM) Part 8. ▶

10 Altitude Limitations

The aircraft must not be flown above 60,000 feet. The maximum altitude for which the oxygen regulator and personal equipment have been cleared is:

<i>Personal Equipment</i>	<i>Mk 17F</i>	<i>Mk 21B</i>
P or Q mask	50,000 ft	45,000 ft
P or Q mask with sleeveless jerkin and anti-g trousers	—	56,000 ft

Note: These altitudes do not take into account aerodynamic suck. Cockpit altitude will exceed aircraft altitude by up to 8000 feet if the canopy is lost.

11 Rolling Manoeuvres

(a) General

(i) At less than 1g, the use of aileron should be kept to a minimum. Transient use of aileron for target tracking at less than 1g is permitted.

(ii) In moderate buffet or other signs of the approach to the stall, particularly above 20,000 feet or at high subsonic speed, rapid application of full aileron (8°) must not be made.

(iii) Airbrake position must not be varied during rapid rolling.

(iv) Before rolling, especially with a single missile fitted, sideslip should be minimised. It is essential to counteract sideslip when the AAR probe is fitted and the only missile is on the port side.

(v) Above 4g, co-ordinated turns using only low rates of roll are permitted.

(b) Rolls up to 180°

Rapid rolling through not more than 180° is permitted, using full aileron, within the range of 1g to the lesser of 4g or the onset of moderate buffet.

(c) Rolls up to 360°

(i) Special Restrictions

For rolls through more than 180° , the configuration must be two or no missiles.

Rolls through more than 180° must be executed smoothly from the upright attitude in 1g flight and must be fully completed before starting any other manoeuvre. Rolls in excess of 360° are prohibited.

(ii) Normal Flight Envelope

1g aileron rolls are permitted between 300 knots and 2.0 M/650 knots using low rates of roll.

(iii) Aerobatic Manoeuvres

For training and display purposes aerobatic rolling manoeuvres are permitted between 300 knots and 0.9M/550 knots below 15,000 feet subject to the following:

Rapid rolls are permitted using aileron control only. Classic slow rolls involving less than 1g are permitted.

Derry turns and hesitation rolls are prohibited.
 The missile load must be symmetrical.
 Winged Red Top missiles must not be carried.

(d) *Air-to-Air Refuelling Probe*

Rapid rolling with the probe fitted is prohibited.

(e) *Red Top Missiles*

Rapid rolling is prohibited above 3g, or the onset of moderate buffet (whichever occurs first), when drill Red Top fitted with Luneberg Lens are carried.

Rapid rolling is prohibited above 1.8 M when wingless Red Top missiles are fitted.

12 Carriage of Missiles

The aircraft is cleared to carry Firestreak or Red Top live, acquisition or drill missiles in pairs or singly except that flight with one wingless Red Top is prohibited. To conserve missile wing life, Red Top missiles should be flown wingless whenever possible. Red Top missiles are cleared for flight with or without Luneberg Lenses.

13 Missile Jettison

Red Top and Firestreak missiles may be jettisoned at speeds up to 300 knots/0.7 M (250 knots with undercarriage down) between +1g and +2g. Sideslip must be minimised before jettisoning.

14 Missile Firing — AAR Probe Not Fitted

Clearance for firing either one or both missiles when the flight refuelling probe *is not* fitted is given as follows:

(a) *Firestreak*. Firestreak missiles may be fired:

(i) ~~At speeds between 300 knots and the maximum IAS quoted in para 2 which lie within the Mach No range 0.6M to 1.7M.~~

(ii) At heights up to 55,000 feet.

(iii) At normal accelerations up to 3g or the onset of moderate buffet, whichever occurs first.

(iv) At low level targets, but to allow for possible

11 Rolling Manoeuvres

(a) General

- (i) At less than 1g, the use of aileron should be kept to a minimum. Transient use of aileron for target tracking at less than 1g is permitted.
- (ii) In moderate buffet or other signs of the approach to the stall, particularly above 20,000 feet or at high subsonic speed, rapid application of full aileron ~~(8°)~~ must not be made.
- (iii) Airbrake position must not be varied during rapid rolling.
- (iv) Before rolling, especially with a single missile fitted, sideslip should be minimised. It is essential to counteract sideslip when the AAR probe is fitted and the only missile is on the port side.
- (v) Above 4g, co-ordinated turns using only low rates of roll are permitted.

(b) Rolls up to 180°

Rapid rolling through not more than 180° is permitted, using full aileron, within the range of 1g to the lesser of 4g or the onset of moderate buffet.

(c) Rolls up to 360°

(i) Special Restrictions

For rolls through more than 180°, the configuration must be two or no missiles.

Rolls through more than 180° must be executed smoothly from the upright attitude in 1g flight and must be fully completed before starting any other manoeuvre. Rolls in excess of 360° are prohibited.

(ii) Normal Flight Envelope

1g aileron rolls are permitted between 300 knots and 2.0 M/650 knots using low rates of roll.

(iii) Aerobatic Manoeuvres

For training and display purposes aerobatic rolling manoeuvres are permitted between 300 knots and 0.9M/ 550 knots below 15,000 feet subject to the following:

Rapid rolls are permitted using aileron control only. Classic slow rolls involving less than 1g are permitted.

Derry turns and hesitation rolls are prohibited.
 The missile load must be symmetrical.
 Winged Red Top missiles must not be carried.

(d) *Air-to-Air Refuelling Probe*

Rapid rolling with the probe fitted is prohibited.

◀ (e) *Red Top Missiles*

Rapid rolling is prohibited above 3g, or the onset of moderate buffet (whichever occurs first), when drill Red Top fitted with Luneberg Lens are carried.
 Rapid rolling is prohibited above 1.8 M when wingless Red Top missiles are fitted.

12 Carriage of Missiles

The aircraft is cleared to carry Firestreak or Red Top live, acquisition or drill missiles in pairs or singly except that flight with one wingless Red Top is prohibited. To conserve missile wing life, Red Top missiles should be flown wingless whenever possible. Red Top missiles are cleared for flight with or without Luneberg Lenses. ▶

13 Missile Jettison

Red Top and Firestreak missiles may be jettisoned at speeds up to 300 knots/0.7 M (250 knots with undercarriage down) between +1g and +2g. Sideslip must be minimised before jettisoning.

14 Missile Firing — AAR Probe Not Fitted

Clearance for firing either one or both missiles when the flight refuelling probe *is not* fitted is given as follows:

(a) *Firestreak*. Firestreak missiles may be fired:

(i) ~~At speeds between 300 knots and the maximum IAS quoted in para 2 which lie within the Mach No range 0.6M to 1.7M.~~ *Rework as D1 in CAR.*

(ii) At heights up to 55,000 feet.

(iii) At normal accelerations up to 3g or the onset of moderate buffet, whichever occurs first.

(iv) At low level targets, but to allow for possible

vertical dispersion, if the target is below 300 feet the fighter must be at or above 300 feet at launch, and if the target is at or above 300 feet the fighter may be below 300 feet at launch.

(v) The breakaway manoeuvre must not exceed 4g (subsonic) or 3g (supersonic) and must strictly adhere to the rolling limitations at para 11.

(b) *Red Top*. Red Top missiles may be fired:

(i) ~~At speeds between 300 knots and the maximum IAS quoted in para 2 which lie within the Mach No range 0.7M to 1.8M.~~

(ii) At heights up to 55,000 feet.

(iii) At normal accelerations up to 4g or the onset of moderate buffet, *whichever occurs first.*

(iv) At low level targets, but to allow for possible vertical dispersion, if the target is below 300 feet the fighter must be at or above 300 feet at launch, and if the target is at or above 300 feet the fighter may be below 300 feet at launch.

(v) The breakaway manoeuvre must not exceed 4g (subsonic) or 3g (supersonic) and must strictly adhere to the rolling limitations at para 11.

15 Missile Firing — AAR Probe Fitted

Clearance for firing one or both missiles when the flight refuelling probe is fitted is given as follows:

(a) At heights up to 55,000 feet.

(b) At normal accelerations between +1g and either +2g or the onset of moderate buffet, whichever occurs first.

(c) (i) ~~*Firestreak*. At speeds between 300 knots and 475 knots which lie within the Mach No range 0.6M to 0.95M.~~

(ii) ~~*Red Top*. At speeds between 300 knots and 475 knots which lie within the Mach No range 0.7M to 0.95M.~~

Excessive sideslip can overload the aircraft fin. Therefore, when one missile is fired the resultant sideslip must be immediately counteracted by the use of rudder. The breakaway manoeuvre may then be initiated and must be limited to 4g (or the onset of moderate buffet) and half aileron. Development of sideslip must be counteracted during the breakaway.

16 Carriage and Jettison of Ventral Tank

The aircraft may be flown with or without the ventral tank. The tank may be jettisoned but because of the large nose down trim change which may occur in certain conditions, jettisoning should not be carried out at speeds exceeding 500 knots.

17 Canopy Jettison

300 knots should not be exceeded for canopy jettison in flight. The canopy may also be jettisoned when the aircraft is stationary on the ground but if the nose undercarriage has collapsed there is a danger that the canopy will fall back onto the cockpit.

18 Flight Control System

(a) The use of the FCS is permitted in the autostabiliser mode subject to the following restrictions:

(i) The autostabiliser may be engaged throughout the flight from before take-off to landing but it is recommended that, with the autostabiliser engaged, speeds above 400 knots should not be used at heights less than 1000 feet above ground level.

(ii) If the autostabiliser is selected on in flight, the selection should not be made whilst the aircraft is in close proximity to the ground or another aircraft lest there be a latent malfunction which then becomes effective.

(b) The FCS is cleared for use in the attitude hold mode (pitch and bank) including the use of the 'little stick', within the following limits:

(i) 250 knots to 400 knots, from 1000 feet AGL to 5000 feet.

vertical dispersion, if the target is below 300 feet the fighter must be at or above 300 feet at launch, and if the target is at or above 300 feet the fighter may be below 300 feet at launch.

(v) The breakaway manoeuvre must not exceed 4g (subsonic) or 3g (supersonic) and must strictly adhere to the rolling limitations at para 11.

(b) *Red Top*. Red Top missiles may be fired:

(i) ~~At speeds between 300 knots and the maximum IAS quoted in para 2 which lie within the Mach No range 0.7M to 1.8M.~~ *Revised as CAR.*

(ii) At heights up to 55,000 feet.

(iii) At normal accelerations up to 4g or the onset of moderate buffet.

(iv) At low level targets, but to allow for possible vertical dispersion, if the target is below 300 feet the fighter must be at or above 300 feet at launch, and if the target is at or above 300 feet the fighter may be below 300 feet at launch.

(v) The breakaway manoeuvre must not exceed 4g (subsonic) or 3g (supersonic) and must strictly adhere to the rolling limitations at para 11.

15 Missile Firing — AAR Probe Fitted

Clearance for firing one or both missiles when the flight refuelling probe is fitted is given as follows:

(a) At heights up to 55,000 feet.

(b) At normal accelerations between +1g and either +2g or the onset of moderate buffet, whichever occurs first.

(c) (i) *Firestreak*. At speeds between 300 knots and 475 knots which lie within the Mach No range 0.6M to 0.95M.

(ii) *Red Top*. At speeds between 300 knots and 475 knots which lie within the Mach No range 0.7M to 0.95M.

◀ Excessive sideslip can overload the aircraft fin. Therefore, when one missile is fired the resultant sideslip must ▶ be immediately counteracted by the use of rudder. The breakaway manoeuvre may then be initiated and must be limited to 4g (or the onset of moderate buffet) and half aileron. Development of sideslip must be counteracted during the breakaway.

◀ 16 Carriage and Jettison of Ventral Tank ▶

The aircraft may be flown with or without the ventral tank. The tank may be jettisoned but because of the large nose down trim change which may occur in certain conditions, jettisoning should not be carried out at speeds exceeding 500 knots.

◀ 17 Canopy Jettison

300 knots should not be exceeded for canopy jettison in flight. The canopy may also be jettisoned when the aircraft is stationary on the ground but if the nose undercarriage has collapsed there is a danger that the canopy will fall back onto the cockpit. ▶

18 Flight Control System

(a) The use of the FCS is permitted in the autostabiliser mode subject to the following restrictions:

(i) The autostabiliser may be engaged throughout the flight from before take-off to landing but it is recommended that, with the autostabiliser engaged, speeds above 400 knots should not be used at heights less than 1000 feet above ground level.

(ii) If the autostabiliser is selected on in flight, the selection should not be made whilst the aircraft is in close proximity to the ground or another aircraft lest there be a latent malfunction which then becomes effective.

(b) The FCS is cleared for use in the attitude hold mode (pitch and bank) including the use of the 'little stick', within the following limits:

(i) 250 knots to 400 knots, from 1000 feet AGL to 5000 feet.

- (ii) 250 knots to 650 knots/2.0M, from 5000 feet to 50,000 feet.
 - (iii) Before attitude hold is engaged, autostabilisers must be engaged and operating.
 - (iv) Bank angle must not exceed 65° at any time.
 - (v) Below 10,000 feet the pilot should have his hand on the control column and monitor the aircraft's behaviour continuously, particularly the doll's-eye indicators, so that immediate recovery action can be guaranteed in the event of a malfunction.
- (c) The system is cleared for use up to 40,000 feet in the FD, ILS and auto-ILS modes subject to the following:
- (i) All approaches should be GCA monitored.
 - (ii) The AAL given at para 7 must be observed.
- (d) The use of the track mode of the auto-ILS as a height and heading lock is permissible within the following limits:
- (i) 250 to 350 knots.
 - (ii) 0.95M must not be exceeded.
 - (iii) Heading change demands must not exceed 40°.
 - (iv) 1000 feet AGL to 40,000 feet.
 - (v) Below 10,000 feet the pilot should have his hand on the control column and monitor the behaviour of the aircraft continuously, particularly the doll's-eye indicators, so that immediate recovery action can be guaranteed in the event of a malfunction.
 - (vi) The undercarriage must be up.
- (e) *Height, Height and Heading Lock*
- The system is cleared for use in the height and height and heading lock modes, including use of the 'little stick', within the following limits:
- (i) From 1000 feet AGL to 15,000 feet — 200 knots to 0.92M/550 knots.
 - (ii) From 15,000 feet to 45,000 feet — 200 knots to 2.0M/650 knots.
 - (iii) With this mode engaged, large power changes

must be made gently when below 10,000 feet and above 450 knots.

(iv) These modes should not be used during transonic accelerations or decelerations between 15,000 feet and 25,000 feet but should be disengaged to prevent possible automatic disconnection of the autopilot caused by g-switch operation.

(v) Below 10,000 feet the pilot should have his hand on the control column and monitor the behaviour of the aircraft continuously, particularly the doll's-eye indicators, so that immediate recovery can be guaranteed in the event of a malfunction.

(vi) With a single missile fitted, turns may not be attempted at supersonic speeds with the autopilot engaged.

(f) The system is cleared in the FD programmed climb mode.

19 Air-to-Air Refuelling

Sorties up to 9 hours duration may be undertaken provided that losses of engine and airframe fluids and oxygen are small. In-flight refuelling is permitted as follows:

(a) From Victor Mk K2 tankers up to 43,000 feet within the following restraints:

(i) Minimum speed for making contact and in contact 250 knots

(ii) Maximum speed for making contact and in contact:

Mk 20 B drogue on wing stations —

stainless steel hose 280 knots/0.88M

carbon steel hose 290 knots/0.88M

Mk 17 HDU on centre station 320 knots/0.88M

(b) From Buccaneer Mk 2 tankers using Mk 20C or Mk 20E refuelling pods at speeds between 250 to 290 knots.

(c) From KC135 tankers between 250 to 270 knots.

(d) If autostabilisers are required they must be engaged before contact.

(e) If it is necessary to use reheat it must be selected prior to contact.

20 Anti-icing and Rain Dispersal System

(a) *Anti-icing System*

(i) Engine anti-icing and duct lip anti-icing are cleared for use.

(ii) The spray-mat system is cleared for use when the engines are running.

(b) *Rain Dispersal*

(i) The system may be used for take-off.

(ii) Rain dispersal may be selected on at any stage of the approach and left on for any subsequent overshoot, circuit and landing. With two engines operating, the number of normal overshoots with rain dispersal switched on is unlimited.

(iii) If the system is used during a single-engine approach, overshoot and landing, the fact should be reported after landing and an inspection of the wind-screen made for bubbling of the vinyl layer.

21 Formation Flying

See Part 3, Chapter 2, para 12 for limitations imposed on high speed formation flying.

22 ILS

The ILS may be used at speeds up to 400 knots and at heights up to 30,000 feet, but erroneous indications may be expected when the Ram Air Temperature exceeds 70°C for more than 20 minutes.

23 AI 23C/D

AI 23C/D is cleared for use (including the S-band homer) subject to the following conditions:

(a) Fast mode attacks are not to be made below 20,000 feet.

(b) Practice attacks against jamming targets may be

◀ carried out provided that aircraft safety can be maintained without reliance on kinematic range data. ▶

24 Arrester Barrier Engagement

The aircraft is cleared for engagement with Mk 6, 12 and 12A arrester barriers.

25 Trampling of Arrester Wires

The aircraft is cleared to trample at any speed the rigged and supported centre span of the following arrester gear hookwires: RHAG, SPRAG, CHAG, PUAG, BLISS BAK9, BAK12 and 500S.

Note: The fin under the ventral tank may occasionally be struck by a wire support.

26 Light Fighter Sight

The Light Fighter Sight is cleared for use in day-time only.

27 Equipment Temperatures

Certain equipment may become unreliable or give false indications in sustained high speed, low altitude flight at high ambient temperatures. Normally therefore, speed should be restricted so as not to exceed the ram temperature/time limit for the equipment as given below:

- (a) Airframe structure 117°C max
- (b) Cabin air conditioning system ... 80°C max below
10,000 feet
- (c) Firestreak missiles armed ... 70°C max
- (d) ILS accuracy Degraded after 20
mins above 70°C
- ◀ (e) Red Top drill missile with
Luneberg Lens 70°C maximum ▶

PART 2

CHAPTER 2 — ENGINE LIMITATIONS

Contents

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1 Engine Limitations

<i>Power Rating</i>	<i>Time Limit per Flight or per Hour</i>	<i>RPM (per cent)</i>	<i>JPT °C (max)</i>
Maximum cold power (or any degree of reheat)	15 mins (combined)	102.5 max	795
Intermediate	30 mins	98 max	755
Max continuous	Unrestricted	97 max	720
Approach	Unrestricted	60 min	—
Slow idle	Unrestricted	31 to 34	750} see
Ground fast idle	Unrestricted	58 min	750} Note 5

Note 1: 800°C must not be exceeded during starts.

Note 2: During climbs at maximum conditions the governed speed may be permitted to rise to 104% RPM but the maximum JPT must not be exceeded. During reheat selections and cancellations, transient overswings (5 seconds) may be permitted up to 106% RPM.

Note 3: During certain engine accelerations, temperatures in excess of the limiting JPT may be experienced. Full control should be established by the JPT controller within 5 seconds. If, due to malfunction, control is not established within this period, temperatures up to 850°C may be tolerated for a further period of 10 seconds whilst manual control is being taken.

Note 4: The maximum continuous reheat running time is 15 minutes; if further time is required the reheat must be cancelled and reselected. This limitation applies to all degrees of reheat and included in this period is any time spent with maximum cold power selected.

Note 5: Under adverse conditions of high ambient temperatures and/or tailwind, the JPT may be allowed to exceed the limit of 750°C but must not exceed 800°C.

2 Oil Pressure

The oil pressure warning lights must be out at 45% RPM and above.

3 Minimum Starting Temperature

The minimum ambient temperature for engine starting is:

Pre-mod Avon 3707	minus 40°C
Post-mod Avon 3707	minus 20°C

In temperatures below these values, the engine must be heated as necessary before starting.

4 Fuel

The following fuels (containing FSII) are approved for use:

AVTUR — NATO Code F34 — JP Equivalent: JP 1

AVTAG — NATO Code F40 — JP Equivalent: JP 4

◀ Note: The following fuels may be used for very limited periods when the above fuels are not available:

F35 (AVTUR)

F44 (AVCAT)

Every effort must be made to add AL-38 (a mixture of FSII and Hitec E515) to these fuels. ▶

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