

# AP0 PARKER

Card 1

October, 1973  
(AL3, Sept 75)

AP 101B-3801-14  
(Issue 1)

Speechless procedure:  
4: Homing  
3: Say again  
2: No  
1: Yes  
X: Further emergency

Fuel asymmetry not to exceed 3 UK gallons for spinning

## FLIGHT REFERENCE CARDS

F.P.  $6\frac{2}{3}$ " at 1000'; reduce by  $\frac{1}{2}$ " per 1000'  
12 max;  $9\frac{1}{2}$  probably blocked inlet needle.

## BULLDOG T Mk 1

### NORMAL DRILLS

Temps during flight: O.P. 60-90 psi  
O.T. 60-118°C  
C.H.T. 50-246°C

Prepared by Procurement Executive,  
Ministry of Defence, in collaboration with  
RAF Handling Squadron

Altimeter failure: UHF -12 min  
VHF -35 min.

### BY COMMAND OF THE DEFENCE COUNCIL

Reduced airspeed: Rpm max  
85 kt.  
INTER

Range: 89-94 kt  
2200 Rpm  
min mix.

Turbulence: 85 kt  
Booster pump on  
Flap up

Bad Vis: 85 kt.

Endurance: 1500 Rpm  
80 kt.  
min mix.

INTER

### NOTES TO USERS

1 These Flight Reference Cards are complementary to the Bulldog T Mk 1 Aircrew Manual (AP 101B-3801-15). The same conventions are used and amendment procedure is similar.

2 Comments and suggestions regarding these Flight Reference Cards should be forwarded to the Officer Commanding, RAF Handling Squadron, Boscombe Down, Salisbury, SP4 0JF.

### LIST OF CARDS

| Card No | Issued by | Card No | Issued by     |
|---------|-----------|---------|---------------|
| 1       | AL3       | 9       | AL1           |
| 2       | AL3       | 10      | Initial Issue |
| 3       | AL3       | 11      | AL3           |
| 4       | AL3       | 12      | AL3           |
| 5       | AL3       | 13      | AL3           |
| 6       | AL3       | 14      | AL3           |
| 7       | AL3       | 15      | AL3           |
| 8       | AL2       |         |               |

## INITIAL CHECKS

### Initial checks

On approaching the aircraft check:

|                          |        |                         |
|--------------------------|--------|-------------------------|
| General position         | ...    | Clear of other aircraft |
|                          |        | No fuel or oil leaks    |
| Ground fire extinguisher |        | Available               |
| Chocks                   | ... .. | In position             |

Before commencing the external checks carry out the following checks in the cockpit:

|                           |        |  |
|---------------------------|--------|--|
| Ignition                  | ... .. | OFF  |
| Battery master switch     | ...    | OFF  |
| Throttle                  | ... .. | Closed   |
| Mixture                   | ... .. | CUT-OFF  |
| Flying control locks      | ...    | Removed and stowed                                   |
| ◀ Starter circuit breaker | ...    | Tripped (aircraft without<br>starter button cover) ▶ |

### EXTERNAL CHECKS

Carry out a systematic check of the aircraft for obvious signs of damage, leaks, loose panels or fairings. In particular, check:

|                            |     |     |                         |
|----------------------------|-----|-----|-------------------------|
| Canopy ...                 | ... | ... | Condition and operation |
| Cockpit transparencies ... |     |     | Condition               |

#### Left landing gear

|            |     |     |                                      |
|------------|-----|-----|--------------------------------------|
| Fairings   | ... | ... | Condition, secure                    |
| Brake lead | ... | ... | Secure                               |
| Tyre       | ... | ... | Examine for cuts, creep and pressure |

*continued*



## External checks — *continued*

### Left mainplane

|                      |     |     |  |
|----------------------|-----|-----|--|
| Flap                 | ... | ... | Up. Linkages secure                    |
| Aileron              | ... | ... | Full and free movement, linkage secure |
| Navigation light     | ... | ... | Condition of cover                     |
| Pressure head        | ... | ... | Cover removed, free of obstruction     |
| Fuel tank filler cap | ... | ... | Access panel flush and secure          |

### Engine

External  
checks

|                   |     |     |                   |
|-------------------|-----|-----|-------------------|
| Cowling           | ... | ... | Fasteners secure  |
| Intakes and ducts | ... | ... | Clear             |
| Spinner           | ... | ... | Condition, secure |
| Propeller         | ... | ... | Condition         |
| Exhaust pipes     | ... | ... | Secure            |

### Nose landing gear

|                      |     |     |                                      |
|----------------------|-----|-----|--------------------------------------|
| Nosewheel straight   |     |     |                                      |
| Steering torque link | ... | ... | Connected                            |
| Shock absorber       | ... | ... | Correct extension                    |
| Tyre                 | ... | ... | Examine for cuts, creep and pressure |

### Right mainplane

As for left mainplane except pressure head  
Landing and taxi lamps Condition

### Right landing gear

As for left landing gear

### Tail unit

|          |     |     |   |
|----------|-----|-----|---|
| Elevator | ... | ... | Full and free movement, linkage secure  |
| Rudder   | ... | ... | Secure, trim tab secure, linkage secure |

**Do not move the rudder by hand**

|             |     |     |           |
|-------------|-----|-----|-----------|
| Tail bumper | ... | ... | Undamaged |
|-------------|-----|-----|-----------|

### COCKPIT CHECKS

On entering the cockpit, check:

|           |     |     |     |   |
|-----------|-----|-----|-----|---|
| Seats     | ... | ... | ... | Backs adjusted and locked                               |
| Harnesses | ... | ... | ... | Condition and security                                  |
|           |     |     |     | Right harness connected and<br>tightened if flying solo |

|  |                    |                   |
|--|--------------------|-------------------|
| ◀ Canopy jettison handle                 | Indicators aligned | ▶                 |
| Hand fire extinguisher,                  |                    |                   |
| first aid kit, axe and                   |                    |                   |
| asbestos gloves                          | ...                | Stowed and secure |
| UHF                                      | ...                | Strap secure      |
| Baggage (if carried)                     | ...                | Secure            |
| Loose articles                           | ...                | None              |
| Adjust and lock the rudder pedals evenly |                    |                   |

*continued*

# Cockpit checks — continued

Strap in

Check or select:

|                       |     |     |   |
|-----------------------|-----|-----|---|
| Propeller             | ... | ... | Clear   |
| Battery master switch | ... | ... | ON  |
| External power        | ... | ... | On (if required)                              |
| CCU                   | ... | ... | On, volumes adjusted                          |
|                       |     |     | Receiver and transmitter switches as required |
|                       |     |     | NORM/FAIL switch NORM                         |
|                       |     |     | NORM/EMERGENCY switch NORM                    |

Internal and external

|                        |     |     |                        |
|------------------------|-----|-----|------------------------|
| lighting               | ... | ... | As required            |
| Parking brake          | ... | ... | On                     |
| Circuit breakers       | ... | ... | All made (in)          |
| ◀ Pressure head heater | ... | ... | OFF                    |
| UHF aerial switch      | ... | ... | As required            |
| Accelerometer          | ... | ... | Reset to +1.0 g        |
| Clock                  | ... | ... | Working, correct       |
| Flap indicator         | ... | ... | Correct indication     |
| Volt/amp selector      | ... | ... | V, check voltage       |
| Fuel contents          | ... | ... | Sufficient and correct |
| Magnetic compass       | ... | ... | Condition              |
| Flight instruments     | ... | ... | Condition              |

Altimeter set to zero

|                     |     |     |                                   |
|---------------------|-----|-----|-----------------------------------|
| Engine instruments  | ... | ... | Condition                         |
| Vacuum gauge        | ... | ... | Condition                         |
| VHF and UHF         | ... | ... | OFF                               |
| Cabin heat controls | ... | ... | As required                       |
| Induction hot air   | ... | ... | COLD                              |
| Fuel booster pump   | ... | ... | OFF                               |
| Alternator          | ... | ... | ON (OFF if external power in use) |

Alternator warning light

On

Starter warning light

Press to test, then out

◀ Throttle/RPM lock lever

Fully forward

Throttle

Exercise, set closed

RPM control

Exercise, set maximum

Mixture

Fully rich

Elevator trim

Full and free movement

Set in TO band

Rudder trim

Full and free movement

Set to TO

Fuel selector valve

LEFT

Flying controls ... Ailerons and elevator — full, free and correct movement

Cockpit  
checks

## STARTING THE ENGINE

### Cold engine

To start the engine from cold, set the anti-collision light on and give the start-up signal to ground crew. When clear, select or check:

|                      |     |  |
|----------------------|-----|--|
| Ignition ...         | ... | OFF  |
| * Starter button ... | ... | Press, count 8 blades of propeller, then release |
| Throttle ...         | ... | $\frac{1}{4}$ inch open                          |
| Fuel booster pump    | ... | ON, then OFF (see Note)                          |
| Ignition ...         | ... | L  |
| Starter button ...   | ... | Press until engine starts                        |

Note: It is easy to overprime the engine. The fuel booster pump should not be ON for more than 1 to 2 seconds.

\* For aircraft's first flight of day only.

*When the engine starts:*

|                       |     |         |
|-----------------------|-----|---------|
| Starter button ...    | ... | Release |
| Starter warning light | ... | Out     |
| Ignition ...          | ... | BOTH    |

### Hot engine

To start the engine from hot, set:

|                      |     |                                    |
|----------------------|-----|------------------------------------|
| Anti-collision light | ... | On                                 |
| Mixture ...          | ... | CUT-OFF                            |
| Throttle ...         | ... | $\frac{1}{4}$ inch open (see Note) |

Note: When CHT is 50°C or above, up to half throttle may be required. ▶

Give start-up signal to groundcrew. When clear, select ignition to L (left) and push the starter button fully in until the engine starts

*When the engine starts:*

|                       |     |            |
|-----------------------|-----|------------|
| Starter button ...    | ... | Release    |
| Starter warning light | ... | Out        |
| Mixture ...           | ... | Fully rich |
| Throttle ...          | ... | Closed     |
| Ignition ...          | ... | BOTH       |

If the starter warning light does not go out the engine should be closed down and the fault investigated



## FAILURE TO START

If the engine fails to start after 10 to 12 seconds, release the starter button. Check the fuel booster pump is OFF, then wait for 5 minutes before making a further attempt to start. If the cause of the failure to start is overpriming, make the next attempt to start as for starting a hot engine.

## AFTER STARTING

|                |     |     |                          |
|----------------|-----|-----|--------------------------|
| Oil pressure   | ... | ... | 25 PSI within 30 seconds |
| External power | ... | ... | Disconnected             |
| Alternator     | ... | ... | On                       |

### Set 1200 RPM

|                          |                                       |
|--------------------------|---------------------------------------|
| Alternator warning light | Out                                   |
| Voltage                  | ... 28 V                              |
| Ammeter                  | ... Positive reading                  |
| Pressure head heater     | ... ON, ▶▶ groundcrew check, then OFF |

Engine  
starting

|                   |     |  |
|-------------------|-----|--|
| Volt/amp selector | ... | <i>Amps</i>                                |
| Vacuum gauge      | ... | Indicating                                 |
| Horizon and DI    | ... | Erecting, DI aligned with magnetic compass |

|             |     |                                    |
|-------------|-----|------------------------------------|
| VHF and UHF | ... | On, frequencies selected           |
| ◀ Ignition  | ... | Check for live and dead mag-neto ▶ |

|      |     |                   |
|------|-----|-------------------|
| Flap | ... | Correct operation |
|------|-----|-------------------|

|                     |     |       |
|---------------------|-----|-------|
| Fuel selector valve | ... | RIGHT |
|---------------------|-----|-------|

|             |     |      |
|-------------|-----|------|
| VHF and UHF | ... | Test |
|-------------|-----|------|

|           |     |         |
|-----------|-----|---------|
| Altimeter | ... | Set QFE |
|-----------|-----|---------|

|          |     |           |
|----------|-----|-----------|
| ◀ Canopy | ... | Latched ▶ |
|----------|-----|-----------|

## TESTING THE ENGINE

|   |     |   |
|---|-----|---|
| Aircraft into wind                                |     |   |
| Parking brake ...                                 | ... | On                                      |
| Control column ...                                | ... | Central                                 |
| Fuel selector valve ...                           | ... | BOTH                                    |
| Oil temperature ...                               | ... | 30°C min                                |
| Oil pressure ...                                  | ... | 25 PSI min                              |
| Cylinder head temp ...                            | ... | 100°C min                               |
| <b>Set 1800 RPM</b>                               |     |   |
| RPM control (three times for first flight of day) |     | Move towards minimum until RPM decrease |

Note: Do not allow RPM to decrease by more than 500 RPM.  
Return to max  
Check RPM restored

### Set 2100 RPM

|                       |     |  |
|-----------------------|-----|--|
| Magnetos ...          | ... | Check max drop 175 RPM                             |
|                       |     | Max drop diff between mags 50 RPM                  |
|                       |     | Check RPM restored at BOTH                         |
| Induction hot air ... | ... | Set HOT — RPM decrease                             |
|                       |     | Set COLD — RPM restored                            |
| Vacuum ...            | ... | 4½ to 5 in Hg                                      |
| Throttle ...          | ... | Close—idling RPM <del>720 to 730</del><br>750 ± 25 |

## TAKE-OFF CHECKS

|                          |     |   |
|--------------------------|-----|---|
| Trims:                   |     |   |
| Elevator ...             | ... | In TO band                                  |
| Rudder ...               | ... | TO  |
| Throttle friction ...    | ... | Adjusted                                    |
| RPM control ...          | ... | Maximum                                     |
| Mixture ...              | ... | Fully rich                                  |
| Induction hot air ...    | ... | COLD  |
| Fuel:                    |     |   |
| Booster pump ...         | ... | ON  |
| Contents ...             | ... | Sufficient                                  |
| Selector valve ...       | ... | BOTH  |
| Flap ...                 | ... | INTER                                       |
| Instruments:             |     |   |
| ◀ Taxi lamps ...         | ... | As required                                 |
| Pressure head heater ... | ... | ON ▶  |
| Vacuum ...               | ... | Indicating                                  |
| Flight instruments ...   | ... | Erect, DI synchronised                      |
| Engine instruments ...   | ... | Temperatures and pressures                  |
| Alternator warning light |     | Out   |
| Harness ...              | ... | Tight                                       |
| ◀ Canopy ...             | ... | Latched ▶                                   |
| Flying controls ...      | ... | Aileron and elevator full and free movement |

Note: The rudder should have been checked for full and free movement during taxiing.

## AFTER TAKE-OFF

|                              |     |                            |
|------------------------------|-----|----------------------------|
| Engine instruments           | ... | Checked                    |
| Flap                         | ... | UP at safe height          |
| *Mixture                     | ... | Adjust for climb           |
| *Fuel booster pump           | ... | OFF at transition altitude |
| * When clearing the circuit. |     |                            |

## CHECKS BEFORE STALLING, SPINNING, AEROBATICS

### Height

Sufficient to recover by briefed height

### Airframe

|               |     |                             |
|---------------|-----|-----------------------------|
| Flap          | ... | UP for spins and aerobatics |
| Elevator trim | ... | In take-off band for spins  |

### Security

|                |     |                   |
|----------------|-----|-------------------|
| Canopy         | ... | Closed and locked |
| Harness        | ... | Tight             |
| Loose articles | ... | None              |

### Engine

|                     |     |                    |
|---------------------|-----|--------------------|
| RPM control         | ... | 2600 RPM           |
| Mixture             | ... | Best power         |
| Induction air       | ... | COLD               |
| Fuel contents       | ... | Satisfactory       |
| Fuel selector valve | ... | BOTH               |
| Instruments         | ... | Indications normal |

Engine test/  
Take-off/  
In flight

### Location

Clear of controlled airspace, active airfields, built-up areas and cloud

### Lookout

Clear of other aircraft

### *Recommended speeds for aerobatics*

|                    |     |        |
|--------------------|-----|--------|
| Roll               | ... | 130 kt |
| Barrel Roll        | ... | 120 kt |
| Stall Turn         | ... | 120 kt |
| Loop               | ... | 140 kt |
| Half Roll off Loop | ... | 145 kt |

## CHECKS AFTER STALLING, SPINNING, AEROBATICS

|                     |     |                         |
|---------------------|-----|-------------------------|
| Fuel selector valve | ... | As required for balance |
| Mixture             | ... | Adjust as required      |
| DI                  | ... | Synchronised            |

## APPROACH PROCEDURE

|                 | Configuration | RPM control | Throttle set to | IAS kt |
|-----------------|---------------|-------------|-----------------|--------|
| Initial descent | Flap UP       | 2400        | 2200 RPM        | 100    |
| Glidepath       | Flap INTER    | Max         | As reqd         | 80     |

When in visual contact with the runway, set FULL flap and reduce to threshold speed + 5 kt. Fly the GCA pattern at 100 kt, flap UP.

### Checks before joining the circuit

|             |     |     |     |  |
|-------------|-----|-----|-----|--|
| Fuel        | ... | ... | ... | Contents sufficient                        |
|             |     |     |     | ◀ Booster pump on below transition level ▶ |
| Instruments | ... | ... | ... | Erect and synchronised                     |
| Radio       | ... | ... | ... | Correct frequency                          |
| Altimeter   | ... | ... | ... | QFE set                                    |

## LANDING CHECKS

### Checks before landing

|                   |     |     |     |                     |
|-------------------|-----|-----|-----|---------------------|
| RPM control       | ... | ... | ... | Max                 |
| Mixture           | ... | ... | ... | Fully rich          |
| Induction hot air | ... | ... | ... | COLD                |
| Fuel              | ... | ... | ... | Booster pump ON     |
|                   |     |     |     | Contents sufficient |
| Flap              | ... | ... | ... | As required         |
| Harness           | ... | ... | ... | Tight               |
| ◀ Canopy          | ... | ... | ... | Latched ▶           |
| Brakes            | ... | ... | ... | Off                 |

*Feet off*      *+ feet off*

Threshold speeds are given on Card 7

*+ Say Threshold & Approach*

*continued*



### Threshold speeds

|               | <i>FULL flap</i> | <i>Flap UP</i> |
|---------------|------------------|----------------|
| Powered       | 65               | 70             |
| Glide         | 75               | 75             |
| Short landing | 55               | —              |

For crosswind and/or turbulent conditions, add 5 knots

### Checks after landing (aircraft stationary)

|                      |     |             |
|----------------------|-----|-------------|
| Pressure head heater | ... | OFF         |
| Fuel booster pump    | ... | OFF         |
| Taxy lamps           | ... | As required |
| Flaps                | ... | UP          |

## SHUTDOWN

Parking brake ... .. On

Set 1000 RPM and allow temperatures and pressures to stabilise. When cylinder head temperature is below 180°C:

|                               |  |
|-------------------------------|--|
| ◀ Ignition ... ..             | Check for live and dead mag-<br>neto                 |
| Throttle ... ..               | Closed ▶   |
| Mixture ... ..                | CUT-OFF  |
| Ignition ... ..               | OFF (when engine stops)                              |
| Fuel selector valve ...       | LEFT or RIGHT  |
| VHF and UHF ... ..            | Off  |
| Alternator ... ..             | OFF  |
| Electrical services ...       | Off  |
| ◀ Starter circuit breaker ... | Tripped (Aircraft without<br>starter button cover) ▶ |
| Intercom ... ..               | Off  |
| Battery master switch ...     | OFF  |
| Chocks ... ..                 | In position  |
| Parking brake ... ..          | Off  |

Approach/  
Landing/  
Shutdown

## AIRFRAME LIMITATIONS

### Maximum speeds

|   |     |     |     |     |        |
|---|-----|-----|-----|-----|--------|
| Never exceed speed                                  | ... | ... | ... | ... | 185 kt |
| Normal operating speed                              | ... | ... | ... | ... | 145 kt |
| For full application of aileron, elevator or rudder | ... | ... | ... | ... | 140 kt |
| Flap: between UP and INTER                          | ... | ... | ... | ... | 135 kt |
| between INTER and FULL                              | ... | ... | ... | ... | 100 kt |
| Canopy open (max 8'87 in)                           | ... | ... | ... | ... | 120 kt |

### Operating limitations

|                     |     |     |     |     |           |
|---------------------|-----|-----|-----|-----|-----------|
| Max altitude        | ... | ... | ... | ... | 10,000 ft |
| Max OAT (sea level) | ... | ... | ... | ... | +35°C     |
| Min OAT (sea level) | ... | ... | ... | ... | -10°C     |

Aerobatics and spinning prohibited when:

|                          |                    |
|--------------------------|--------------------|
| Flaps are extended       | Baggage is carried |
| CG is aft of 68.9 in AOD | A PSP is fitted    |

### Weight

|   |     |     |     |         |
|---|-----|-----|-----|---------|
| Max for take-off and landing  | ... | ... | ... | 2350 lb |
| Max zero fuel weight for operating in area A                          | ... | ... | ... | ...     |
| (card 8)  | ... | ... | ... | 2050 lb |
| Note: If ZFW is above 2050 lb, operation is limited to areas B and C. |     |     |     |         |
| Max load in baggage compartment                                       | ... | ... | ... | 220 lb  |

### Airfield limitations

Max crosswind component (wet or dry runway) 30 kt

Aircraft approach limitations:

PAR ... 200 ft true or indicated AGL

Runway aids without  
glidepath guidance 250 ft true or indicated AGL

Arrester gear trampling:

RHAG ... Erected cable may be crossed at right angles up to 30 kt, no braking applied

SPRAG ... Erected cable should be crossed only at walking pace, with marshaller

**Airframe limitations** (contd.)**CG and Normal-acceleration**

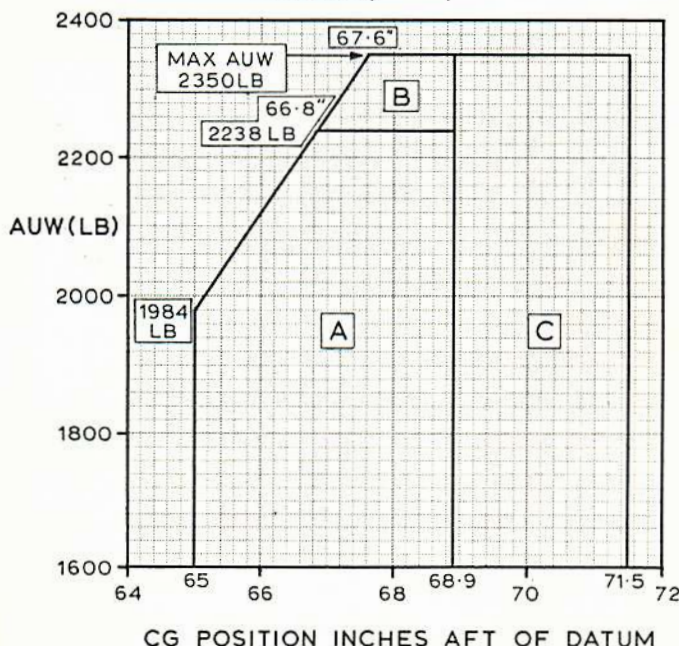
The CG must always lie within the outline boundaries of the envelope shown below.

The normal max permitted positive and negative normal-accelerations are a function of CG position, weight and speed as given below.

Note: Never exceed limits are given in the Aircrew Manual.

**Clean aircraft****1. Symmetric manoeuvres**

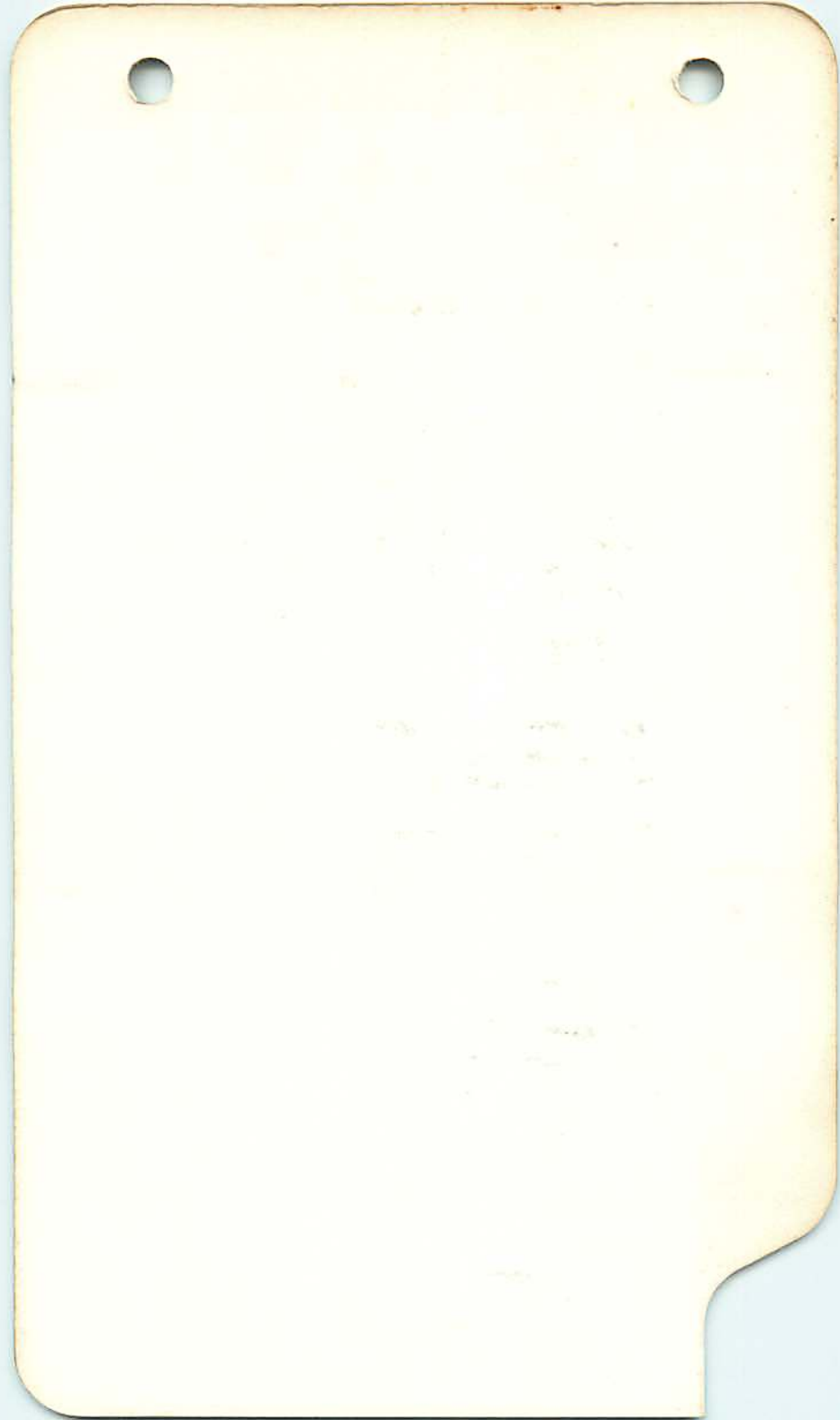
|                    | Aerobatics permitted                    | Non-aerobatic                              |
|--------------------|---|--|
| Normal<br>g limits | A +5.25 to -2.25 (-1.0<br>above 140 kt) | C +3.0 to -0.75<br>(+0.25 above<br>140 kt) |
|                    | B +3.75 to -1.0 (-0.5<br>above 140 kt)  |  |

**Limitations****2. Rolling manoeuvres using full aileron at speeds up to 140 kt**

|                    |                |  |
|--------------------|----------------|--|
| Normal<br>g limits | A +3.5 to +0.5 | C Limited to normal turns using<br>low rates of roll |
|                    | B +2.5 to +0.5 |  |

**Flaps extended at any setting**

Max normal-acceleration ... .. +2.0g





## ENGINE LIMITATIONS

### RPM

|                           |     |     |     |      |
|---------------------------|-----|-----|-----|------|
| Max permissible           | ... | ... | ... | 2700 |
| Max (oil temp below 30°C) | ... | ... | ... | 1200 |

### Maximum manifold pressure (in Hg)

| RPM           | 1800 | 1900 | 2000 | 2100 | 2200 | 2300 |
|---------------|------|------|------|------|------|------|
| Sea level     | 25.0 | 25.6 | 26.3 | 26.9 | 27.5 | 28.2 |
| Reducing to   | 23.2 | 24.1 | 25.0 | 26.0 | 26.9 | 27.8 |
| At (altitude) | 6000 | 5000 | 4000 | 3000 | 2000 | 1000 |
| (See NOTE)    |      |      |      |      |      |      |

NOTE: These altitudes correspond to full throttle height for the associated RPM

### Magneto drop at 2100 RPM

|                      |     |     |     |
|----------------------|-----|-----|-----|
| Max each magneto     | ... | ... | 175 |
| Max between magnetos | ... | ... | 50  |

### Cylinder head temperature (°C)

|   |     |     |     |
|---|-----|-----|-----|
| Max at full throttle  | ... | ... | 246 |
| Max before shutdown (after flight)                                  |     |     | 180 |
| Min before exceeding 1200 RPM<br>(following engine start on ground) |     |     | 100 |
| Min during flight   | ... | ... | 50  |

### Oil pressure (PSI)

|                              |     |     |     |
|------------------------------|-----|-----|-----|
| Min at idling RPM            | ... | ... | 25  |
| Min (normal operation)       | ... | ... | 60  |
| Max (normal operation)       | ... | ... | 90  |
| Max during start and warm up | ... | ... | 100 |

### Oil temperature (°C)

|                               |     |     |     |
|-------------------------------|-----|-----|-----|
| Maximum                       | ... | ... | 118 |
| Min (continuous operation)    | ... | ... | 60  |
| Min before exceeding 1200 RPM | ... | ... | 30  |

### Fuel pressure (PSI)

|         |     |     |    |
|---------|-----|-----|----|
| Maximum | ... | ... | 12 |
|---------|-----|-----|----|

Limitations  
(contd)

# CRUISE PERFORMANCE—BEST POWER MIXTURE

| Pwr<br>% | IAS (Kt)    |      |      |             |      |      | Fuel<br>Consumption |      |      |
|----------|-------------|------|------|-------------|------|------|---------------------|------|------|
|          | 2300 lb AUW |      |      | 1900 lb AUW |      |      | (Gal/hr)            |      |      |
|          | SL          | 4000 | 8000 | SL          | 4000 | 8000 | 2600                | 2400 | 2200 |
| 95       | 134         | —    | —    | 135         | —    | —    | 12·5                | —    | —    |
| 90       | 130         | —    | —    | 132         | —    | —    | 11·8                | —    | —    |
| 80       | 123         | 120  | —    | 126         | 123  | —    | 10·7                | 10·5 | —    |
| 70       | 116         | 113  | 110  | 120         | 116  | 113  | 9·7                 | 9·4  | 9·1  |
| 60       | 108         | 107  | 103  | 113         | 111  | 107  | 8·7                 | 8·4  | 8·1  |
| 50       | 100         | 97   | 95   | 104         | 102  | 101  | 7·7                 | 7·4  | 7·1  |
| 40       | 89          | 86   | 83   | 94          | 91   | 89   | 6·7                 | 6·4  | 6·1  |

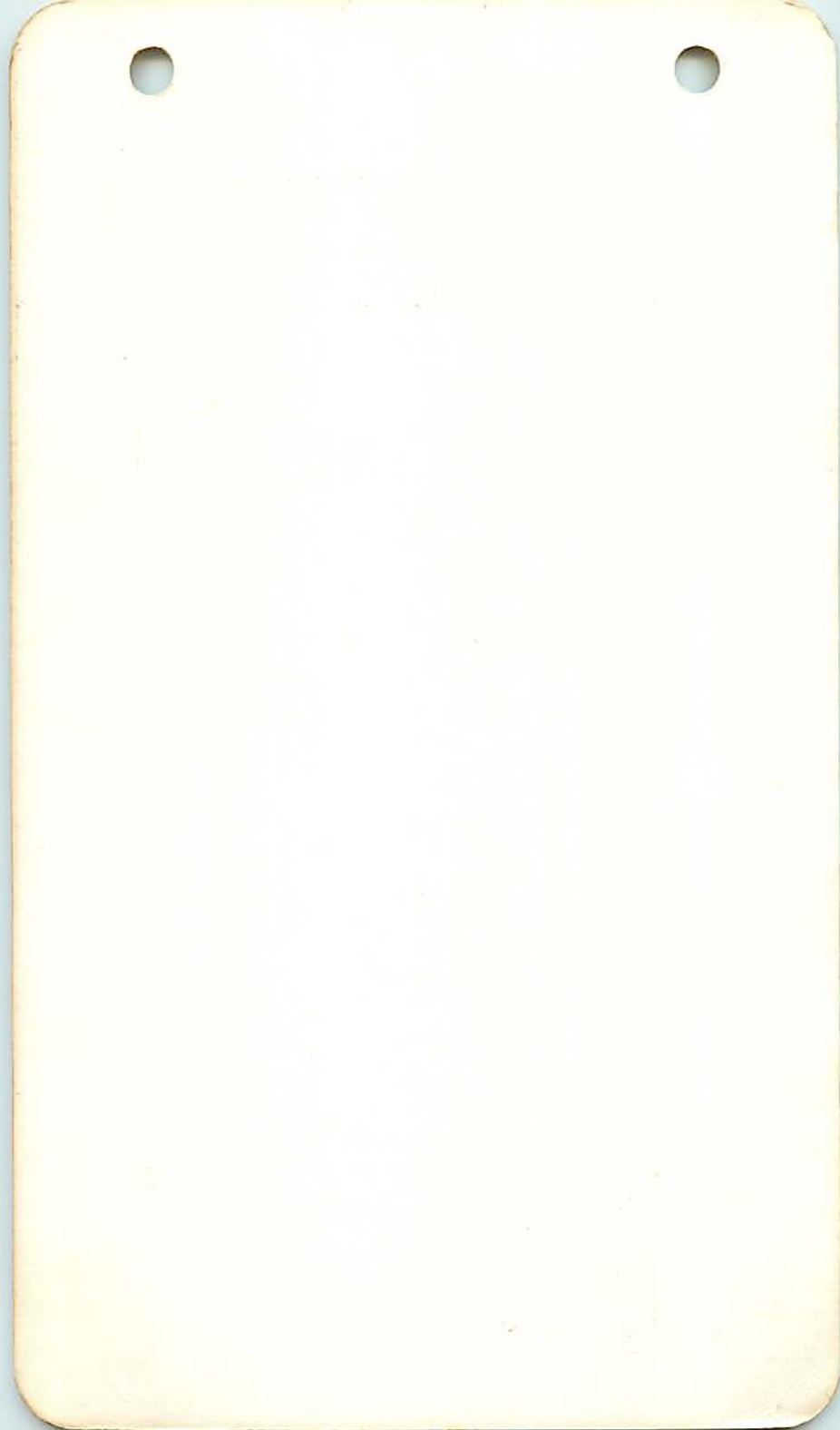
## CRUISE POWER SETTINGS — BEST POWER MIXTURE

| Pwr<br>% | 2600 RPM      |           |      | 2400 RPM |               |           | 2200 RPM |      |               |           |      |      |
|----------|---------------|-----------|------|----------|---------------|-----------|----------|------|---------------|-----------|------|------|
|          | Fuel<br>Press | Man Press |      |          | Fuel<br>Press | Man Press |          |      | Fuel<br>Press | Man Press |      |      |
|          |               | SL        | 4000 | 8000     |               | SL        | 4000     | 8000 |               | SL        | 4000 | 8000 |
| 95       | 6.4           | 28.5      | —    | —        | —             | —         | —        | —    | —             | —         | —    | —    |
| 90       | 5.7           | 27.5      | —    | —        | —             | —         | —        | —    | —             | —         | —    | —    |
| 80       | 4.7           | 25.0      | 24.0 | —        | 4.5           | 27.0      | —        | —    | —             | —         | —    | —    |
| 70       | 3.9           | 22.5      | 21.5 | 20.5     | 3.7           | 24.5      | 23.5     | —    | 3.5           | 26.5      | 25.5 | —    |
| 60       | 3.1           | 20.0      | 19.5 | 18.5     | 2.9           | 21.5      | 21.0     | 20.0 | 2.7           | 23.5      | 22.5 | 21.5 |
| 50       | 2.5           | 17.5      | 17.0 | 16.0     | 2.3           | 19.0      | 18.0     | 17.5 | 2.1           | 20.5      | 19.5 | 19.0 |
| 40       | 1.9           | 15.5      | 14.5 | 14.0     | 1.7           | 16.5      | 15.5     | 15.0 | 1.6           | 17.5      | 17.0 | 16.0 |

# RANGE — BEST POWER MIXTURE

| Fuel<br>(Gal) | Pwr<br>% | Range — NM |      |      |          |      |      |          |      |      |
|---------------|----------|------------|------|------|----------|------|------|----------|------|------|
|               |          | 2600 RPM   |      |      | 2400 RPM |      |      | 2200 RPM |      |      |
|               |          | SL         | 4000 | 8000 | SL       | 4000 | 8000 | SL       | 4000 | 8000 |
| 28            | 95       | 247        | —    | —    | —        | —    | —    | —        | —    | —    |
|               | 90       | 256        | —    | —    | —        | —    | —    | —        | —    | —    |
|               | 80       | 268        | 278  | —    | 274      | —    | —    | —        | —    | —    |
|               | 70       | 283        | 293  | 302  | 290      | 302  | —    | 300      | 312  | —    |
|               | 60       | 298        | 309  | 319  | 307      | 319  | 331  | 319      | 331  | 343  |
|               | 50       | 312        | 321  | 334  | 324      | 334  | 348  | 338      | 350  | 362  |
|               | 40       | 326        | 336  | 346  | 340      | 349  | 360  | 355      | 366  | 378  |
| 21            | 95       | 175        | —    | —    | —        | —    | —    | —        | —    | —    |
|               | 90       | 181        | —    | —    | —        | —    | —    | —        | —    | —    |
|               | 80       | 190        | 197  | —    | 194      | —    | —    | —        | —    | —    |
|               | 70       | 200        | 207  | 214  | 205      | 214  | —    | 213      | 221  | —    |
|               | 60       | 211        | 219  | 226  | 218      | 226  | 235  | 226      | 235  | 243  |
|               | 50       | 221        | 228  | 237  | 230      | 237  | 247  | 239      | 248  | 257  |
|               | 40       | 231        | 238  | 245  | 241      | 250  | 255  | 253      | 262  | 269  |
| 14            | 95       | 103        | —    | —    | —        | —    | —    | —        | —    | —    |
|               | 90       | 107        | —    | —    | —        | —    | —    | —        | —    | —    |
|               | 80       | 112        | 116  | —    | 114      | —    | —    | —        | —    | —    |
|               | 70       | 118        | 122  | 126  | 121      | 126  | —    | 126      | 130  | —    |
|               | 60       | 124        | 129  | 134  | 129      | 134  | 139  | 134      | 139  | 144  |
|               | 50       | 130        | 135  | 140  | 136      | 140  | 146  | 141      | 146  | 152  |
|               | 40       | 136        | 141  | 145  | 143      | 148  | 151  | 150      | 155  | 159  |





## ABANDONING THE AIRCRAFT

The recommended minimum height for abandoning the aircraft is 2000 ft AGL or, in a spin, transition level plus height of ground above sea level

Warn crew  
Make RT distress call  
Jettison canopy  
Release safety harness  
Speed as low as possible  
Disconnect RT lead  
Dive head first towards trailing edge of mainplane

*To jettison canopy*

Pull down jettison handle  
Push canopy away if necessary

Note: Above 75 kt it should not be necessary to push the canopy away.

## DITCHING

If possible, abandon rather than ditch. If ditching inevitable:

|                   |     |     |                        |
|-------------------|-----|-----|------------------------|
| Radio             | ... | ... | Transmit distress call |
| Flap              | ... | ... | As required            |
| Canopy            | ... | ... | Jettison               |
| Parachute harness | ... | ... | Release                |
| Safety harness    | ... | ... | Tight                  |

Approach into wind at normal speed with full flap  
If power available, hold off just clear of water  
Touch down at lowest practicable speed and close throttle  
Land on crest of wave if possible or, if the swell is heavy, along the swell  
Aircraft will probably turn on its back  
Release harness and leave cockpit

## COMMUNICATIONS FAILURE

| <i>UHF ground facilities<br/>available</i>  | <i>VHF ground facilities<br/>available</i>  |
|---|---|
| <p>NORM-FAIL<br/>switch ... FAIL</p> <p>I/C NORM-<br/>EMERG switch EMERG</p> <p>UHF transmission and recep-<br/>tion with intercom using<br/>UHF sidetone</p> | <p>NORM-FAIL<br/>switch ... FAIL</p> <p>Receiver<br/>switches ... All down</p> <p>Speak into microphone<br/>without operating trans-<br/>mit switch and check<br/>if voice audible</p> <p>VHF receiver switch Up</p> <p>Transmitter selector VHF</p> <p>Then:</p> <p><i>Voice audible:</i><br/>Normal VHF TR avail-<br/>able, no intercom</p> <p><i>Voice not audible:</i><br/>Normal VHF receive<br/>Speechless TR available<br/>No intercom</p> |

## ELECTRICAL FAILURES

### Alternator failure

#### Indications

##### Alternator failure warning

|         |     |     |     |                  |
|---------|-----|-----|-----|------------------|
| light   | ... | ... | ... | On               |
| Ammeter | ... | ... | ... | Negative reading |
| Volts   | ... | ... | ... | Low reading      |

#### Actions

##### Reduce electrical load

- ◀ Check alternator CHARGE and FIELD circuit breakers ▶

*Tripped:* Alternator switch OFF, reset c/b, then alternator switch on

*Not tripped:* Alternator switch OFF, then on

If alternator regained, check voltage 29 V max

- If alternator *not* regained or voltage above 29 V, switch  
◀ alternator OFF and trip CHARGE c/b ▶

#### Considerations

- Reduced services are available from an 80% charged  
◀ battery for 45 minutes but satisfactory communications will only be available for 12 minutes (UHF) or 35 minutes (VHF) ▶

For landing, full flap selection and fuel booster pump may not be available

### Flap actuator failure

If flap fails to operate when selected, check flap circuit breaker and if tripped make one attempt to reset

If flap still fails to operate, continue flight with flap in achieved position, observing flap limiting speeds.



## FORCED LANDING

The recommended height for abandoning the aircraft is 2000 ft AGL

Check:

|                     |     |                   |
|---------------------|-----|-------------------|
| Fuel booster pump   | ... | OFF               |
| Throttle            | ... | Closed            |
| Mixture             | ... | CUT-OFF           |
| Ignition            | ... | OFF               |
| Fuel selector valve | ... | OFF               |
| Harness             | ... | Tight             |
| Canopy              | ... | Closed and locked |
| Parking brake       | ... | Off               |

When final flap selection has been made, set battery master switch OFF. Flap operation will be dependent on battery state.

## PROPELLER OVERSPEEDS OR FAILS TO GOVERN

If RPM exceeds 2700 or varies when throttle is moved in the constant speed range:

Set RPM control to minimum  
Close throttle slowly  
Reduce speed as much as practicable  
Open throttle slowly

If governing is restored, reset power  
If governing is not restored, close throttle and make a further attempt to restore

### Persistent failure to govern

Land as soon as possible  
Maintain lowest practicable speed and power



## Engine Failure in Flight — *continued*

### ◀ Non-mechanical Failure

#### Immediate actions

Warn crew

Fuel booster pump ... ON

Throttle ... .. Closed

Gain height if possible while reducing speed to 75 kt for the glide

Select landing area, noting wind velocity

Make RT distress call

Check altimeter setting

Plan descent

#### Subsequent actions

Check for cause of failure

Attempt to restart ▶

## RESTARTING THE ENGINE

**WARNING:** Do not attempt to restart the engine following either an engine fire or mechanical failure

Attempt to restart the engine by setting or confirming:

Fuel selector valve ... BOTH

Fuel booster pump ... ON

Mixture ... .. Fully rich

RPM ... .. Max

Ignition ... .. BOTH

Throttle ... .. Slightly open

Eng.Failure/  
Restarting

Press the starter button and release it immediately the engine fires.

Check the starter warning light goes out

OR

If height is available, dive ▶◀ until the engine restarts

◀ If stationary, the propeller may not start to windmill below 120 knots ▶

This method of restarting may require 1500 feet

Note: If engine failure was caused by intake icing, use induction hot air until clear of icing conditions.

**Forced landing — overleaf**

## FORCED LANDING

The recommended height for abandoning the aircraft is 2000 ft AGL

Check:

|                     |     |                   |
|---------------------|-----|-------------------|
| Fuel booster pump   | ... | OFF               |
| Throttle            | ... | Closed            |
| Mixture             | ... | CUT-OFF           |
| Ignition            | ... | OFF               |
| Fuel selector valve | ... | OFF               |
| Harness             | ... | Tight             |
| Canopy              | ... | Closed and locked |
| Parking brake       | ... | Off               |

When final flap selection has been made, set battery master switch OFF. Flap operation will be dependent on battery state.

## PROPELLER OVERSPEEDS OR FAILS TO GOVERN

If RPM exceeds 2700 or varies when throttle is moved in the constant speed range:

Set RPM control to minimum  
Close throttle slowly  
Reduce speed as much as practicable  
Open throttle slowly

If governing is restored, reset power  
If governing is not restored, close throttle and make a further attempt to restore

### Persistent failure to govern

Land as soon as possible  
Maintain lowest practicable speed and power



## Engine Failure in Flight — *continued*

### ◀ Non-mechanical Failure

#### Immediate actions

Warn crew

Fuel booster pump ... ON

Throttle ... ... Closed

Gain height if possible while reducing speed to 75 kt for the glide

Select landing area, noting wind velocity

Make RT distress call

Check altimeter setting

Plan descent

#### Subsequent actions

Check for cause of failure

Attempt to restart ▶

## RESTARTING THE ENGINE

**WARNING:** Do not attempt to restart the engine following either an engine fire or mechanical failure

Attempt to restart the engine by setting or confirming:

|                     |     |               |
|---------------------|-----|---------------|
| Fuel selector valve | ... | BOTH          |
| Fuel booster pump   | ... | ON            |
| Mixture             | ... | Fully rich    |
| RPM                 | ... | Max           |
| Ignition            | ... | BOTH          |
| Throttle            | ... | Slightly open |

Eng.Failure/  
Restarting

Press the starter button and release it immediately the engine fires.

Check the starter warning light goes out

OR

If height is available, dive ▶◀ until the engine restarts

◀ If stationary, the propeller may not start to windmill below 120 knots ▶

This method of restarting may require 1500 feet

Note: If engine failure was caused by intake icing, use induction hot air until clear of icing conditions.

**Forced landing — overleaf**



## ENGINE FAILURE AFTER TAKE-OFF

### Immediate actions

- ◀ Warn crew
- Select attitude for gliding speed
- Pick a landing area
- Lower flap as necessary

### Subsequent actions

- Make RT call
- Carry out forced landing checks (see Card 13)

Note: Circumstances and time available will determine the least hazardous course of action and which of the drills can be completed.

## ENGINE FAILURE IN FLIGHT

### ◀ Mechanical Failure

#### Immediate actions

- Warn crew
- Gain height if possible while reducing speed to 75 kt for the glide
- Fuel booster pump ... OFF
- Throttle ... ... Closed
- Mixture ... ... CUT-OFF
- Ignition ... ... OFF
- Fuel selector valve ... OFF
- Cockpit heating ... Off
- Alternator ... ... OFF

#### Subsequent actions

- Do not attempt to restart
- Select landing area, noting wind velocity
- Make RT distress call
- Check altimeter setting
- Plan descent
- Carry out forced landing checks (see Card 13)

*continued*

## ENGINE FIRE IN THE AIR

Note: No engine fire extinguisher is fitted.

### Actions

Warn crew and reduce speed to 75 kt for the glide

|                       |     |     |                            |
|-----------------------|-----|-----|----------------------------|
| Fuel booster pump     | ... | ... | OFF                        |
| Throttle              | ... | ... | Closed                     |
| Mixture               | ... | ... | CUT-OFF                    |
| Ignition              | ... | ... | OFF                        |
| Fuel selector valve   | ... | ... | OFF                        |
| Cockpit heating       | ... | ... | Off                        |
| Alternator            | ... | ... | OFF                        |
| Make RT distress call |     |     |                            |
| Battery master switch | ... | ... | OFF when situation permits |

If the fire does not go out, abandon if sufficient height is available (2000 ft AGL)

If the fire goes out or height is not sufficient for abandoning, make a forced landing (see Card 13)

### Fire

**WARNING: Do not attempt to restart the engine**

### COCKPIT FIRE

|                            |     |     |     |
|----------------------------|-----|-----|-----|
| Battery master switch      | ... | ... | OFF |
| Alternator                 | ... | ... | OFF |
| Cabin heating              | ... | ... | Off |
| Use hand fire extinguisher |     |     |     |

Note: If time is sufficient, make RT distress call before battery master switch OFF.

## ENGINE FIRE ON THE GROUND

### Actions

|                       |        |         |  |
|-----------------------|--------|---------|--|
| ◀ Warn crew ▶         |        |         |  |
| Fuel booster pump     | ...    | OFF     |  |
| Throttle              | ... .. | Closed  |  |
| Mixture               | ... .. | CUT-OFF |  |
| Ignition              | ... .. | OFF     |  |
| Fuel selector valve   | ...    | OFF     |  |
| Battery master switch | ...    | OFF     |  |
| Parking brake         | ... .. | Off     |  |

Collect the hand fire extinguisher and vacate the aircraft

## BULLDOG T Mk 1

### EMERGENCIES

#### FUMES IN COCKPIT

CABIN AIR OFF

SELECT SURGEON  
DEMIST

SLOW 120 KV

OPEN CANOPY 2 notches

RT CALL

RTB

Get Medic.

---

ENGINE FIRE ON THE GROUND/  
ENGINE FIRE IN THE AIR/  
COCKPIT FIRE

---

ENGINE FAILURE/  
RESTARTING THE ENGINE

---

FORCED LANDING/  
PROPELLER MALFUNCTIONING/  
ELECTRICAL FAILURES

---

COMMUNICATIONS FAILURE/  
ABANDONING/  
DITCHING