

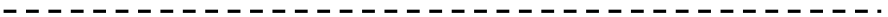
# SLINGSBY FIREFLY T67M MkII

## FLIGHT CHECK LIST



**In Emergency Checklists .**

The Dotted Line below indicates completion of that checklist



Airborne Checks in Dark Red to be completed from memory

**FULL CHECK A****Check Loading and C of G**

Before entering the aircraft check that surfaces are clear of snow, ice, hoar frost or mud. No Leaks apparent.

**COCKPIT PREPARATIONS**

1. Control lock..... Remove from aircraft
2. Rudder pedals ..... Adjusted, matched, secure
3. Fire Extinguisher..... Check
4. First Aid Kit ..... Check
5. Canopy Breaker..... Check
6. Parking Brake ..... ON
7. Magnetos ..... OFF, key out
8. Master switch..... ON
9. Alternator warning..... Cancel Flasher
10. Pitot heater ..... ON
11. Strobe light..... ON, Check, OFF
12. Landing lights \*\* ..... ON, Check, OFF
13. Nav lights \*\* ..... Check
14. Trim..... Neutral
15. Stall warning ..... Check light and horn
16. Pitot heater ..... Check operation, then OFF
17. Structure temp ..... Check below 42°C L and R
18. Master Switch ..... OFF
19. Flaps..... Lower (Max)

\*\* These items may be omitted provided no part of the planned flight takes place at night.

**LEFT WING**

1. Flap..... Condition, play, stiff nut
2. Undercarriage (rear) ..... Tyre, torque link, brake leaks
3. Aileron..... Condition, movement, play, drains, stiff nut
4. Wing surfaces ..... Check condition.
5. Wingtip..... Check condition, security, Nav light
6. Access Panel..... Secure
7. Leading edge ..... Check condition
8. Fuel Cap ..... Correctly fitted
9. Fuel Drain ..... Check for Water contamination
10. Access Panel..... Security
11. Pitot head..... Remove cover, hole clear
12. Undercarriage (front) ..... Condition, oleo 3 inches, Tyre creep/inflation/condition Brakes – leaks/damage
13. Flap underside..... Condition, drains clear

**FRONT FUSELAGE**

1. Fresh air intake ..... Clear
2. Cowling (left) ..... Secure, 2 pins, 7 fasteners, oil leaks
3. Landing lights ..... Undamaged
4. Propeller ..... Condition, Spinner
5. Nosewheel ..... Condition, extension,  
tyre cuts/creep/inflation
6. Engine air inlet ..... Foam filter clean
7. Cowling (right) ..... Secure, 2 pins, 6 fasteners
8. Engine cooling inlets ..... Clear
9. Oil ..... Check, Min 5, Max 8 US Quarts,  
(maintain between 6-7 qts)  
panel secure
10. Fresh air intake ..... Clear. Temp probe secure

**RIGHT WING**

1. Leading edge ..... Check condition
2. Fuel Cap ..... Correctly fitted
3. Fuel Drain ..... Check for water contamination
4. Undercarriage (front) ..... Condition, extension.  
Tyre creep/inflation/condition.  
Brakes damage/leaks.
5. Flap underside ..... Check condition, drains clear
6. Wing surfaces ..... Check condition
7. Access panel ..... Secure
8. Wingtip ..... Nav light
9. Aileron ..... Check condition, play, drains,  
movement, stiff nut
10. Wing ..... Drains clear
11. Undercarriage (rear) ..... Tyre, torque link, brake-leaks
12. Flap ..... Condition, play, stiff nut
13. Aerials ..... Condition, security/undamaged

**REAR FUSELAGE AND TAIL SECTION**

1. Canopy ..... Condition, clean/cracks
2. Static vent (starboard) ..... Plug out, clear
3. VHF Aerial ..... Condition, security
4. Fin Fairing ..... Secure
5. Elevator ..... Condition, movement, play, drains  
clear
6. Inspection Cover ..... Secure
7. Rudder ..... **DO NOT MOVE**. Condition, stiff  
nuts, nav light, lock removed
8. Trim Tab ..... Position, security, play, stiff nut
9. Tail bumper ..... Unmarked
10. Static vent (port) ..... Plug out, clear
11. Canopy ..... Condition, clean, cracks

## TRANSIT PRE FLIGHT CHECKS

(to be done in place of FULL CHECK A on second and subsequent flights of a day)

### COCKPIT PREPARATION

1. Rudder pedals ..... Adjusted, matched, secure
2. Parking Brake ..... ON
3. Magnetos ..... OFF, key out
4. Master switch ..... ON
5. Fuel Contents ..... Check
6. Structure Temp ..... Check below 42°C
7. Master switch ..... OFF
8. Flaps ..... Lower (Max)

### EXTERNAL CHECKS

1. Aircraft Surface/Controls ..... Check
2. Flaps ..... Check
3. Fuel Contents ..... Visual Check
4. Landing Gear ..... Check, Oleos 3 inches
5. Canopy ..... Clean
6. Oil Contents ..... Min 5, Max 8 US Quarts  
(maintain between 6-7 quarts)
7. Propeller and spinner ..... Check
8. Pitot head ..... Unblocked
9. Static vent ..... Clear

**BEFORE STARTING ENGINE**

1. External Check ..... Complete
2. Cockpit ..... Check for loose articles
3. Harness ..... Both fastened (if solo secure other)
4. Headset ..... Plugged in
5. Tacho ..... Note reading
6. Flying controls ..... Elevator/Aileron full, free and correct
7. All Lights and Avionics ..... OFF
8. Master Switch ..... ON
9. Manifold Pressure ..... Reading Ambient
10. Pitot heater ..... OFF
11. Clock ..... Correct
12. Alternator warning ..... Cancel Flasher
13. Instruments ..... ASI, Zero. VSI +/-100ft
14. HSI ..... Slave
15. Emergency static vent ..... Closed
16. Accelerometer ..... Reset
17. Throttle ..... Full, free movement, leave closed.
18. Propeller ..... Check full and free leave max RPM
19. Mixture ..... Full, free movement, Idle/Cut-Off
20. Fuel cock ..... ON (lowest tank)(Pull out to turn on)
21. Fuel contents ..... Check (both tanks)
22. Circuit breakers ..... All in
23. **Parking brake ..... ON (Pump brakes)**
24. Flap ..... Full, check, leave UP
25. Trim ..... Full, free movement Set N
26. Canopy ..... Closed, secure
27. Start Clearance (if required) ..... Obtain
28. Radio ..... OFF
29. Propeller ..... Clear

**STARTER LIMITS:****(a) Max 10 seconds per attempt.****(b) Max total 30 secs in 15 min period.****(c) Allow 15 mins cooling after 30 secs operation.****STARTING ENGINE**

- |                   | <b><u>COLD</u></b>                               | <b><u>HOT</u></b>    |
|-------------------|--|----------------------|
| 1. Throttle.....  | <b>1cm Open</b>                                  | <b>1cm Open</b>      |
| 2. Mixture.....   | <b>Full Rich</b>                                 | <b>Idle/Cut-off</b>  |
| 3. Fuel Pump..... | <b>ON Then</b>                                   | <b>OFF</b>           |
|                   | <b>OFF 2 secs after</b>                          |                      |
|                   | <b>fuel pressure reads</b>                       |                      |
| 5. Mixture.....   | <b>Idle/Cut-Off</b>                              | <b>Idle /Cut-Off</b> |
| 6. Magnetos.....  | <b>LEFT</b>                                      | <b>LEFT</b>          |
| 7. Starter.....   | <b>Press, release shortly after engine fires</b> |                      |
| 8. Mixture.....   | <b>FULLY RICH Promptly</b>                       |                      |

**AFTER ENGINE START**

1. Magneto Switch ..... BOTH
2. RPM (Throttle) ..... Set 1200 RPM
3. Oil Pressure ..... Rising in 30 secs (if not, stop engine)
4. Starter engaged light ..... Out (if not, stop engine immediately)
5. Alternator ..... ON, Warning light OUT
6. Magnetos ..... Drop not stop
7. Fuel pressure ..... Check
8. Radios and Nav aids ..... ON As required
9. Suction ..... Indicating
10. Horizon ..... Erecting – Adjust datum
11. HSI ..... Synchronised
12. Altimeter ..... Check setting
13. Ammeter ..... Positive Charge
14. Mixture ..... Lean off (6 twists back)
15. Taxi clearance ..... Obtained

**TAXYING**

1. Brakes ..... Check
2. Flight instruments ..... Check
3. Rudder ..... Check full movement

**POWER CHECK**

1. Position ..... Safe and clear, no loose stones
2. Parking Brake ..... ON
3. Fuel cock ..... Change to other tank
4. Engine T's and P's ..... Check in green (Min 4 mins after start)
5. Mixture ..... Full Rich
6. Throttle ..... Set 1800 RPM
7. Magnetos ..... Check, Max mag drop 175 rpm  
Differential 50 rpm

8. *Propeller control\*\** ..... *Move toward lower RPM position until RPM starts to drop*
9. *RPM\*\** ..... *See RPM drop, do not allow more than 500 RPM drop*
10. *Propeller control\*\** ..... *MAX RPM*
11. *Propeller control test\*\** ..... *Repeat\*\* items 3 more times from step 9, for first flight of day only.*

X4  
First  
Flight

12. Suction ..... Check in green (4.5 to 5.5 in Hg)
13. Engine T's and P's ..... Check in green
14. Throttle ..... Close, check stable, idling >800 rpm
15. Throttle ..... 1200 rpm

**PRE-TAKE OFF**

1. Trim..... Set N
2. Flaps ..... Take Off (Rotate speed 55kts)
3. Magnetos ..... Both
4. Fuel..... PUMP ON  
COCK ON  
Contents sufficient
5. Mixture ..... Full rich
6. RPM Lever ..... MAX
7. Throttle friction ..... Set
8. Pitot heater ..... ON (if conditions require)
9. Radios and Nav aids..... ON set as required
10. DV Windows ..... Closed
11. Engine Ts&Ps + Ammeter ..... Green (beware parallax on ammeter)
12. Strobe light..... ON
13. Suction ..... Green
14. Flight Instruments ..... Check
15. Harness ..... Tight and locked
16. Controls ..... Full and free movement
17. Canopy ..... Closed and Locked
18. ATC Clearance ..... Obtained
19. Transponder ..... ALT, code as required
20. Emergency Brief ..... Complete

**TAKE-OFF**

1. Full Throttle ..... RPM 2550 minimum
2. Ts & Ps ..... Green
3. ASI ..... Increasing

**AFTER TAKE OFF / MISSED APPROACH**

1. Toe brakes ..... ON/OFF
2. Flaps ..... Raise (not below 73 kts)
3. Climb..... 77kts
4. Engine T's and P's..... Check

**At 1500ft Above Ground Level complete the following**

5. Fuel pump ..... OFF
6. Mixture (Fuel Pressure) ..... Set 5 PSI
7. RPM ..... Set 2600 RPM

**IN-FLIGHT CHECKS**

1. Fuel..... Contents check  
Cock ON  
Pump OFF (ON if changing tanks)
2. Radio ..... Frequency correct
3. Engine..... RPM Check/Ammeter Charging, Mixture  
Set/Alternator Warning Light, Temperature  
and pressure check
4. Direction..... HSI Synchronised
5. Altimeter..... Correctly set

**PRE-LANDING CHECKS**

1. Brakes..... OFF
2. Mixture ..... Fully RICH
3. RPM Lever ..... MAX
4. Fuel..... Pump ON  
Cock set fullest tank  
Contents checked
5. Instruments ..... Set
6. Altimeter ..... Set
7. Engine T&P + Ammeter ..... Green
8. Fuel Pressure ..... Check
9. Harness ..... Tight and locked
10. Flaps ..... As required

**AFTER LANDING CHECKS**

1. Strobe light..... OFF
2. Landing light ..... OFF or as required
3. Pitot heater ..... OFF
4. Mixture ..... Lean off (6 twists back)
5. Fuel Pump ..... OFF
6. Flaps ..... UP
7. Trim..... Neutral
8. Radios and Nav Aids ..... OFF (Except Radio in use)

**SHUT DOWN**

1. Parking brake ..... ON
2. Location ..... Clear Area, no loose stones
3. Throttle..... Set 1800 RPM for 15-20 Seconds
4. Throttle..... Set 1200 RPM
5. Radios and Nav aids..... OFF
6. All Lights ..... OFF
7. Alternator ..... OFF
8. Magnetos ..... Drop not stop
9. Throttle..... CLOSED
10. Mixture ..... CUT OFF

***When engine Stops***

11. Magnetos ..... OFF, key out
12. Master Switch ..... OFF
13. Fuel Cock..... OFF
14. Throttle Friction ..... Loose
15. Flaps ..... Down
16. Tacho ..... Note Reading
17. Parking brake ..... Leave on if aircraft not chocked
18. Control Lock..... Fitted

**PRE-STALLING / SPINNING / AEROBATIC CHECKS**

1. Height ..... Sufficient to recover by 3000ft agl
2. Airframe ..... Flaps up or as required  
No loose articles  
Harness tight and locked  
Canopy Closed and locked
3. Security ..... No Loose articles, Harnesses Secure
4. Engine ..... Temperature and pressures  
Mixture fully rich  
Fuel in balance (max 14 litre diff'nce  
for ideal handling)  
**Set 2600 RPM**
5. Location ..... Clear of airfields, controlled airspace,  
danger areas and built up areas
6. Look Out ..... All clear

**ERECT SPIN RECOVERY**

1. Close the throttle
2. Raise the flaps
3. Check spin direction on turn needle
4. Apply full rudder in opposite direction to turn
5. **Hold ailerons firmly neutral**
6. Move control column centrally and progressively forward until spin stops

**IMMEDIATELY AFTER SPIN STOPS**

7. Centralise rudder
8. Level wings with aileron
9. Recover from the dive

**REMEDY FOR INCORRECT RECOVERY**

1. Check **FULL** anti-spin rudder is applied
2. Move control column **FULLY AFT** then **SLOWLY CENTRALLY FORWARD** until spin stops
3. Centralise the controls and recover to level flight

## FIRE

### ENGINE FIRE

1. Throttle ..... CLOSED
2. Propeller ..... MIN RPM
3. Mixture ..... CUT OFF
3. Fuel Cock ..... OFF
4. Magnetos ..... OFF
5. Fuel Pump ..... OFF
6. Cockpit Heating ..... OFF
7. Radio ..... Emergency Call
8. Master switch ..... OFF
9. Alternator ..... OFF

### **Do Not Attempt to Restart**

**CARRY OUT FORCED LANDING**

**WARNING:** The BCF extinguisher is toxic. Keep use to minimum necessary. Ventilate well.

### ELECTRICAL FIRE

1. Alternator ..... OFF
2. Master Switch ..... OFF
3. Circuit Breakers ..... Trip all
4. Canopy ..... Ventilate using DV Window

LAND AS SOON AS POSSIBLE. The engine will continue to run but all electrical services have been lost.

**NOTE:** After all circuit breakers have been tripped the battery power may be restored to enable selective resetting of circuit breakers if necessary. Should the ammeter show an excessive discharge when a particular circuit breaker is reset then leave that circuit breaker in the tripped position. Finally restore power to the alternator.

## ENGINE FAILURE (1) PROP STOPPED

### ENGINE FAILURE – PROP STOPPED

#### **Mechanical Failure**

If the engine stops with an unusual mechanical noise, DO NOT ATTEMPT RESTART but carry out a forced landing.

#### **NO APPARENT REASON**

1. Throttle..... ¼ open
2. Propeller ..... MAX RPM
3. Mixture ..... Fully rich
4. Fuel contents ..... Check not zero (Both gauges)
5. Fuel Cock..... Set tank with fuel remaining
6. Magnetos ..... BOTH
7. Fuel Pump ..... ON
8. Fuel pressure ..... Green
9. Master switch ..... ON
10. Alternator ..... OFF

#### Either:

Starter button ..... PRESS

#### Or

Dive..... to 115kts

#### When engine starts:

Alternator ..... ON

Throttle..... Increase power slowly allowing  
Engine to warm up

#### **DIVING TO START THE PROPELLER USES AT LEAST 600-800 FEET**

Note: If the propeller stops during aerobatics, the engine may be restarted immediately using the starter button so long as there was no mechanical noise when the engine stopped.

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## ENGINE FAILURE (2) PROP TURNING

### ENGINE FAILURE – PROP TURNING

#### **Mechanical Failure**

If there is no oil pressure or if there is unusual mechanical noise

1. Throttle..... CLOSED
2. Propeller ..... MIN RPM
3. Mixture ..... CUT OFF
4. Fuel Cock..... OFF
5. Magnetos ..... OFF
6. Fuel Pump ..... OFF

CARRY OUT FORCED LANDING

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#### **No Apparent Reason**

Investigate Fuel Problems

Check:

1. Fuel Cock ..... ON Left or Right
2. Mixture ..... Fully Rich
3. Throttle..... ¼ Open
4. Fuel Pump ..... ON Check press
5. Fuel Contents ..... Sufficient

#### **Investigate ignition Problem**

Check:

1. Magnetos ..... Both

If not better, set

Magnetos to RIGHT, if no better

Magnetos to LEFT, if no better

Magnetos to BOTH

IF NO IMPROVEMENT – CARRY OUT FORCED LANDING

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## EMERGENCY LANDING

### FORCED LANDING

The optimum flapless gliding speed is 80kts. This will give a still air gliding range of about 1.5nm/1,000ft.

- |                    |       |                |
|--------------------|-------|----------------|
| 1. Radio *         | ..... | Emergency Call |
| 2. Harness         | ..... | Tight          |
| 3. Throttle        | ..... | Closed         |
| 4. Propeller       | ..... | MIN RPM        |
| 5. Mixture *       | ..... | CUT-OFF        |
| 6. Fuel Cock *     | ..... | OFF            |
| 7. Magnetos *      | ..... | OFF            |
| 8. Fuel Pump       | ..... | OFF            |
| 9. Master Switch * | ..... | OFF            |
| 10. Alternator     | ..... | OFF            |

Items marked \* must be completed even following an engine failure after take-off.

Optimum gliding speeds after flap selection are:

- |            |       |        |
|------------|-------|--------|
| Clean      | ..... | 80 kts |
| T/off flap | ..... | 70 kts |
| Threshold  | ..... | 65 kts |
| Landing    | ..... | 65 kts |
-

## DITCHING

### DITCHING

If above 2000ft AGL consider abandonment by parachute

**WARNING:** Ditching is best carried out whilst engine power is available to control the rate of descent.

In a strong wind, land into wind, onn wave crest, otherwise land parallel to the swell.

Carry out the Forced Landing checks (this card) aiming to ditch with:

#### **WITH POWER AVAILABLE**

1. Harness ..... Tight and locked
  2. Canopy ..... Closed or Locked Open (post mod 283)
  3. Flaps ..... Fully down
  4. Speed ..... 60 kts
  5. Rate of Descent ..... 300 ft per min
- DO NOT ROUND OUT. Continue descent into the water

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#### **WITHOUT POWER AVAILABLE**

1. Forced landing checks ..... Complete except canopy
2. Canopy ..... Closed or Locked Open (post mod 283)
3. Flaps ..... Fully down
4. Speed ..... 60 kts
5. Rate of Descent ..... As established

DO NOT FULLY ROUND OUT Check rate of descent but fly the aircraft into the water.

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#### **CAUTION**

1. In both cases the aircraft may turn on its back. Release the seat harness and exit via the open canopy before inflating lifejackets.
2. With canopy open during flight suction controlled instruments will be more difficult to read due to indicator flutter.

## OIL PRESSURE

### PROPELLER

#### OIL PRESSURE FAILURE

**WARNING:** Prolonged use of power after engine oil pressure failure will lead to mechanical damage  
Full throttle may be used in emergency but is likely to lead to engine failure.

If oil pressure fails, the propeller will revert to the minimum RPM (Coarse Pitch) position.

1. RPM ..... Control with throttle
  2. Throttle ..... Closed – except for emergency
- CARRY OUT LANDING AT NEAREST SUITABLE SITE

#### PROPELLER GOVERNOR FAILURE

##### RPM WILL NOT INCREASE

1. Oil Pressure ..... Check in Green (if not refer to Oil Press Fail above)
2. Manifold pressure ..... greater than 15" - if not open throttle
3. RPM control ..... Operate slowly through whole range

IF RPM DOES NOT RESPOND

4. RPM control ..... Leave at mid range

Use engine power observe RPM/Manifold pressure limits (inside back page)  
LAND AT NEAREST SUITABLE AIRFIELD

##### RPM OVERSPEEDS OR WILL NOT DECREASE

1. Throttle ..... Use to keep RPM within limits – more than  $\frac{3}{4}$  may cause RPM overspeed
2. RPM Control ..... Leave at mid range
3. Airspeed ..... Maintain 80 kts

LAND AT NEAREST SUITABLE AIRFIELD

## ALTERNATOR

### FUMES

#### ALTERNATOR FAILURE

1. Alternator ..... OFF
2. Excitation c/b ..... RESET
3. Alternator c/b ..... RESET
4. Alternator ..... ON

If output not restored:

Alternator ..... OFF

Reduce electrical loads to a minimum to conserve battery life. Try to gain and maintain VMC. LAND AT NEAREST SUITABLE AIRFIELD.

Battery life with all essential services operating is in excess of 30 minutes.

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#### **FUMES**

1. Cabin heater / demister ..... OFF
2. Fresh air vents ..... FULLY OPEN

Check engine and electrical instruments for signs of malfunction.

If smell is electrical, carry out ELECTRICAL FIRE DRILL: Card E10

If smell is fuel, DO NOT MAKE ANY FURTHER ELECTRICAL SELECTION.

LAND AS SOON AS POSSIBLE.

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# COMMUNICATIONS

## PITOT STATIC

### COMMUNICATIONS FAILURE

1. Check volumes and selections on radios and control panel
  2. Check circuit breakers
  3. Try alternate frequencies
  4. Change headset if possible
  5. Plug mic/tel into other seat position and use other transmit button
  6. Turn off radios, allow to cool for 5 minutes then try again.
- 

### PITOT STATIC SOURCE FAILURE

#### Choose one (A or B):

A). OAT BELOW 0°C

1. Pitot heat..... ON

B). SUSPECTED BLOCKED STATIC SOURCE

1. Emergency static source ..... OPEN
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**RECOMMENDED SPEEDS AND POWER SETTINGS – T67M MkII****TAKE OFF**

Normal	$V_r$ 45 kts	Full Power	Take Off Flap
Lift off	55 kts	Full Power	Take Off Flap
	or 63 kts	Full Power	Clean
Climb	70 kts	Full Power	Take Off Flap
Climb	77 kts	Full Power	Clean

**APPROACH**

Downwind	85 kts	17" MAP	Clean
Normal	70 kts	11" MAP	Landing Flap
Flapless	75 kts	As required	Clean
Glide	80 kts	Idle	Clean
Glide	70 kts	Idle	Take-off Flap
Glide	65 kts	Idle	Landing Flap

NOTE: Add 5 knots to approach speeds for final turn speed.

**STALLING SPEEDS**

Power off / 975kg (2150lb)	Clean	57 kts
	Take off flap	54 kts
	Landing Flap	51 kts

**SPEED LIMITATIONS**

Never Exceed speed ( $V_{ne}$ )	180 kts
Maximum Normal Speed ( $V_{no}$ )	140 kts
Maximum Manoeuvre Speed ( $V_a$ )	140 kts
Max Speed Flaps at Take Off	120 kts
Max Speed Flaps at landing	98 kts
Maximum Crosswind	25 kts

**LOADING**

Total fuel 2x17.75 Imp gallons (2x80.7 litres)  
 Unusable fuel 2x0.44 Imp gallons (2x2 litres)  
 Maximum Weight 2150 lbs (975 kg)  
 Max in baggage compartment 66 lbs (30 kg)  
 +6g -3g Flaps up  
 +2g -1g Flaps down

**ICING**

Flight into known icing conditions is FORBIDDEN

**ENGINE LIMITATIONS**

RPM	2,700 No overspeed permitted
Temperature/Pressure	Red Sections on all gauges

**AEROBATICS****Before commencing aerobatics SET 2600 RPM.**

Tail slides and Inverted spins are NOT permitted.  
Recommend entry speeds for an inexperienced pilot.

	Entry Speeds (kts) (IAS)
Slow Roll .....	110
Stall turn entry .....	110
Stall turn rotate .....	50
Loop .....	115
Roll off the top .....	125
Flick roll max .....	70
Spin .....	see Flight Manual

**AFTER AEROBATICS**

Throttle .....	Max
Fuel Pressure .....	Check both tanks feeding, then Lean to 5 PSI Fuel Pressure (With Full Throttle Set)
Temp & Press .....	Green
Artificial Horizon .....	Erect
HSI .....	Free-Slave and check alignment
RPM .....	2600 RPM
Fuel Pump .....	Off

**M MkII PERFORMANCE DATA**

**RANGE** IAS..... 100kts  
 Power ..... As Reqd (not greater than 25")  
 RPM ..... 2100 RPM  
 Mixture..... 1.3 PSI  
 Fuel Consumption ..... 8 gals(36Lit) / hr (approx.)

**ENDURANCE** IAS..... 80 kts  
 Power ..... As required (approx 15" (22"max))  
 RPM ..... 1800 RPM  
 Mixture..... 0.8 PSI  
 Fuel Consumption ..... 4.4 – 5.5 gals / hr  
 Fuel Consumption ..... 20 – 25 Lit / hr

<b><u>CRUISE</u></b>	<b><u>TAS</u></b>	<b><u>Approx SL Pwr Setting</u></b>	<b><u>Mixture</u></b>	<b><u>Fuel Consumption</u></b>
3000 ft	100kts	21" / 2600 RPM	1.7 PSI	10 gal (45lit) / hr
3000 ft	120kts	25" / 2600 RPM	3.5 PSI	12 gal (55lit) / hr

Note: At higher altitudes, fuel consumption will improve.

**CLIMB PERFORMANCE:**

Conditions: Flaps UP, FULL Throttle, Mixture 5PSI, standard temp, zero wind and weight 975kgs, starting at sea level.

<b><u>Pressure Alt (ft)</u></b>	<b><u>Time (mins)</u></b>	<b><u>Fuel Used (gals/lit)</u></b>	<b><u>Distance (Nms)</u></b>
1000	3.1	0.2 / 1	3.8
2000	4.2	0.4 / 2	5.3
3000	5.4	0.6 / 3	6.9
4000	6.7	0.8 / 4	8.7
5000	8.2	1.1 / 5	10.8
6000	9.8	1.3 / 6	13.0
7000	11.6	1.6 / 7	15.6
8000	13.6	1.9 / 8.5	18.5
9000	15.9	2.2 / 10	21.7
10000	18.4	2.6 / 12	25.4

Note 1: Increase all figures by 10% for each 10°C above ISA

Note 2: Add 0.5 gals (3 Lit) for Start, Taxi and Take-off

Note 3: The figures in this table for Time and Distance have been increased from those in the Slingsby documents and have been confirmed by operating experience.

## ENGINE HANDLING WITH CONSTANT SPEED UNIT

The constant speed unit works by providing a continuously variable pitch on the propeller to maintain the same engine RPM when the engine is operating at cruise and climb power settings. It could be equated to an automatic gearbox on a car with lots of gears which is changing frequently and quickly to keep the engine running at the same RPM while at different roadspeeds.

Similar to a car engine it will be damaged by being in a gear which is too high for the conditions.

To ensure the engine is not working too hard:

**Manifold Air Pressure (MAP) must be less than hundreds of RPM plus 4.**

i.e. With 2200RPM, Max MAP=26”Hg

With 2300RPM, Max MAP=27”Hg

Etc.

The general rule to ensure these limits are not broken while changing RPM or throttle settings:

**WHEN INCREASING POWER – “REV UP” FIRST**

**WHEN DECREASING POWER – “THROTTLE BACK” FIRST**

**SIMPLE RULE:**

**ALWAYS HAVE**

**RPM LEVER FULLY FORWARD (MAX RPM)**

**WHEN MAKING**

**LARGE THROTTLE MOVEMENTS**

**DEPARTURE from Controlled Airfield – ON GROUND**

Cobham Ground, G-XXXX G-XXXX, Cobham Ground, pass your message

G-XXXX, (Location), POB ....., ATIS ....., QFE ..... Request Start.

G-XX, Start, Runway 24/06/18/36, QNH XXX, QFE XXX. G-XX Start.

G-XX, Request Taxi G-XX, Taxi Runway ....., Route.....

Taxi Runway ....., Route....., G-XX.

(any convenient time prior to takeoff checks)

G-XX, Request Clearance

G-XX is cleared VFR departure to the .....

Not above ..... On Cobham QFE/QNH .....

Squawk ..... Once airborne to Departures (freq).....

G-XX ( **READ BACK CLEARANCE**), G-XX, Read back correct

(taxy to hold )

G-XX To Tower G-XX Roger

(check approach clear before calling)

Cobham Tower, G-XXXX Ready for Departure G-XX Hold / cleared line-up / takeoff

G-XXXX, Cobham Tower, hold / cleared line-up / takeoff runway .....

wind xxx/xx

G-XX Cleared for Takeoff

**DEPARTURE – ONCE AIRBORNE**

G-XX to Departures. G-XX Roger.

Cobham Departures, G-XXXX, passing xxxft QFE/QNH.

G-XXXX, Cobham Departures, Identified, continue VFR, (instructions).

Continue VFR, Wilco, G-XX.

**RECOVERY to Controlled Airfield**

Cobham Approach, G-XX, request visual recovery presently X miles to the N/E/S/W

G-XX, Cobham Approach, Using Runway XX, QFE XXX, Squawk XXXX, Cleared to enter Cobham Controlled Airspace, VFR, (Instructions).

G-XX (**READ BACK CLEARANCE**),.

G-XX, Read Back Correct, report field in sight. Wilco, G-XX.

G-XX, Field in sight. G-XX, Contact Tower. Contact Tower, G-XX.

Cobham Tower, G-XXXX G-XX Join Runway ....., report downwind / Base

G-XX, Downwind / Base Touch & Go / Full Stop. G-XX, Surface Wind, xxx/xx knots.

G-XX. Roger

G-XX Final.

G-XX, Continue / cleared to touch & Go/ Full Stop / Go-Around. Wind xxx/xx

G-XX Continue / cleared to touch & Go/ Full Stop / Go-Around.

<p><b><u>REQUESTING A SERVICE</u></b>  YYY Radar, this is G-XXXX  G-XXXX, YYY Radar, pass your message  G-XXXX, request BASIC /TRAFFIC  Firefly  Departure point + destination  Present Position  Level  Additional information / request:  e.g. Routing relevant to ATC unit</p> <p><i>Service Issued (to be read back!)</i></p>	<p><b><u>ZONE CROSSING</u></b>  YYY Radar this is G-XXXX  G-XXXX, YYY Radar, pass your message  YYY Approach, G-XXXX, request  Zone crossing / MATZ penetration  Firefly  Departure point + destination  Present Position  Level  Additional information / request:  e.g. Routing relevant to ATC unit  G-XX Squawk ZZZZ  G-XX (<i>Readback and set Squawk</i>)  <i>Once Radar identified - Clearance Issued (to be read back!)</i></p>
<p><b><u>JOINING AT AN AFIS AIRFIELD</u></b>  YYY Information, G-XXXX, Firefly, X  POB, presently X miles to the N/E/S/W,  XXXXft on XXXX, request airfield  information.  G-XX, YYY Information, Runway XX,  Advisory QFE XXX, (traffic info).  Runway XX, QFE XXX, Joining  overhead/downwind/base leg, G-XX.  G-XX, Roger, Report  downwind/overhead/base leg.  Wilco, G-XX.</p>	<p><b><u>JOINING AT AN A/G AIRFIELD</u></b>  YYY Radio, G-XXXX, Firefly, X POB,  presently X miles to the N/E/S/W, XXXXft  on XXXX, request airfield information.  G-XX, YYY Radio, Runway XX, Advisory  QFE XXX.  Runway XX, QFE XXX, Joining  overhead/downwind/base leg, G-XX.  G-XX, Roger.</p>
<p><b><u>JOINING AN AIRFIELD WITH NO RADIO SERVICE (e.g. CLOSED)</u></b>  Use callsign YYY Traffic, G-XXXX</p>	
<p><b><u>EMERGENCY</u></b></p> <p>'MAYDAY' or 'PAN-PAN' x 3  G-XXXX  PA28/Firefly  Nature of Emergency  Intentions  Position  Pilot Qualls if relevant (e.g Student)  X POB</p>	<p><b><u>EMERGENCY SQUAWKS</u></b></p> <p>7600 – Radio Failure  7700 – Distress</p> <p><i>VFR Radio failure: Join through  deadside to 500ft, waggling wings or  flashing landing light to get attention.  Join circuit and wait for flare signal on  finals – Green flare = cleared to land  Red flare = do not land, give  way and continue circling</i></p>

