SECTION 1 LEADING PARTICULARS AND DIMENSIONS

CONTENTS

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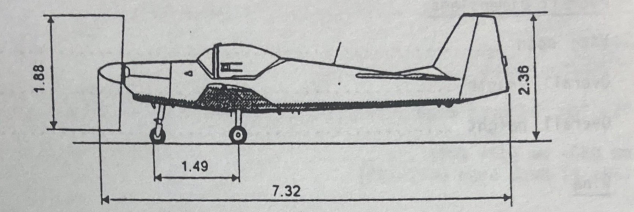
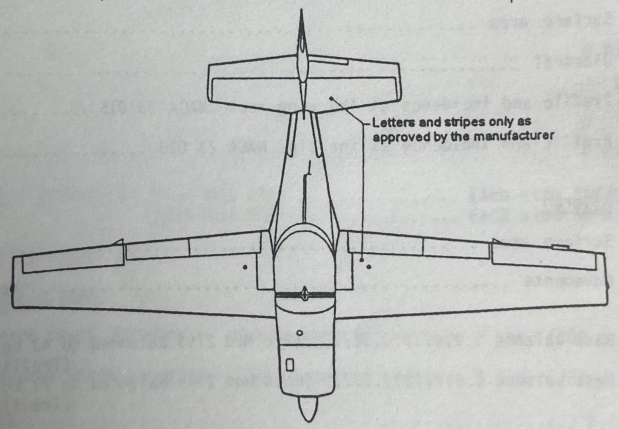
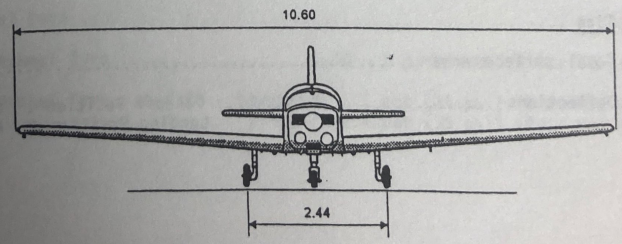
TP.T67C/3/FM

1.1 3 VIEW PLAN







All Dimensions in Metres

KEY TO COLOUR RESTRICTIONS

Unrestricted — Only colours approved by the manufacturer

(Lighter colours and shades are preferable to dark ones)

1.2 DIMENSIONS AND LEADING PARTICULARS

Overall Dimensions

Wing span	10.60m
Overall length	7.32m
Overall height	2.36m

Wing

Surface area	12.60m^2
Dihedral	3°30'
Profile and incidence at the wing root NACA 23 015	3°
Profile and incidence at the tip NACA 23 013	0°20'

Aileron

Surface area		0.62m^2 each
Movements	Up	14° ±1°
	Down	11.75° ±1°
Mass balance	(Pre Mod 276)	Balanced to 43 kg mm + 5 kg mm (Trailing Edge Down)
Mass balance	(Post Mod 276)	Balanced to 77 kg mm + 5 kg mm (Trailing Edge Down)

Flap

Total surface area		1.74m^2
Deflections	Takeoff Position 1	18° +1°-2°down
	Landing Position 2	40° +1°-2°down

Tailplane

Fixed surface area 1.65m²

Incidence to fuselage reference ..... +1°

Elevator surface area 0.99m²

Movements ..... Up 22°±2°
Down 20°±2°

Trim tab movements ..... Up & Down 24° +6° -2°

Elevator mass balance ..... 100% +5kg mm -0kg mm
(Trailing edge down is +ve)

Fin

Surface area 0.80m²

Rudder

Surface area 0.81m²

Rudder movements (Pre Mod 458) ..... Each side 30°±2°
(Post Mod 458) ..... Each side 30°±1°

Undercarriage

Tricycle Type

Forward shock absorber oleo-pneumatic pressure 7 bar (100 psi)

Mainwheel shock absorber oleo-pneumatic pressure 5.5 bar (80 psi)

Track 2.44m

Wheel Base 1.495m

> Nosewheel Tyre ..... 5.00 - 5 pressure 3.5 bar(50 psi)

Mainwheel Tyre .... 6.00 - 6 pressure 1.7 bar (25 psi) (Pre Mod 468)
pressure 2.4 bar (35 psi) (Post Mod 468) <

Wheel Brakes

Mainwheels only. Cleveland disc brakes with duplicate toe brakes and with parking brake.

Propulsion Unit

Engine ..... Lycoming O-320-D2A

Engine ratings ..... 160 bhp at 2700 rpm

Fuel ..... AVGAS 100LL Tank capacity 2 x 17.75 Imp Gal (80.7 litres)
Useable fuel 2 x 17.31 Imp Gal (78.7 litres)

Post Mod 292B A/C
Tank capacity 2 x 21.3 US Gall
Useable fuel 2 x 20.77 US Gall

Oil

Straight mineral oil for first 50 hrs then ashless dispersant grade may be used according to the following recommended temperature range:

Average Ambient Air Temperature	MIL-L-6082 Mineral Grades	MIL-L-22851 Ashless Dispersant
All Temperatures	-	SAE 15W50 or SAE 20W50
Above 80°F(27°C)	SAE 60	SAE 60
Above 60°F(15.5°C)	SAE 50	SAE 50
30°F to 90°F(-1°C to 32°C)	SAE 40	SAE 40
0°F to 70°F(-18°C to 21°C)	SAE 30	SAE 30, SAE 40 or SAE 20W40
0°F to 90°F(-18°C to 32°C)	SAE20W50	SAE 20W50 or SAE 15W50
Below 10°F(-12°C)	SAE 20	SAE 30 or SAE 20W30

A manually controlled carburettor hot air system is fitted to prevent carburettor icing.

Propeller ..... Sensenich M74 DM6-0-64 diameter 1.88m

Cockpit ..... 2 seats side by side

Canopy ..... Fixed windscreen with canopy hinging upwards and rearward

Luggage ..... 30 kg (66 lbs)

SECTION 2 LIMITATIONS AND PLACARDS

CONTENTS

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2.1 CLASS AND CATEGORY OF CERTIFICATION

For the purpose of the First Schedule of the Air Navigation Order, this aircraft is classified as an Aeroplane (landplane).

The Slingsby T67C type of aircraft is eligible for certification in the United Kingdom in the Transport Category (Passenger). This aeroplane may, however, be restricted to another category and a particular use and this will be stated on the Certificate of Airworthiness.

When flown for public transport, compliance with performance Group E of the Air Navigation (General) Regulations must be established using the operating techniques and parameters laid down in the flight manual.

The Slingsby T67C type of aircraft has been certified by the CAA on the basis of compliance with U.S. CFR 14 part 23 - Airworthiness Standards: normal, utility & aerobatic cateogry aeroplanes at amendments 23 - 27, plus special conditions as defined by the CAA.

Special Condition - Composite Material Construction.
British Civil Airworthiness Requirements as follows:

Section K Light Aeroplanes, Issue 6 - April 1974, Chapters 2-2 to 2-5 inclusive, as necessary for the aircraft to be classified in Performance Group E.
Section N Noise, Issue 2 - November 1978.
Section R Radio, Issue 4 - April 1974.
Current Airworthiness Notices.
Electrical Power Supplies for Aircraft Radio Systems.

2.2 MINIMUM CREW

The minimum crew for operation of the aircraft is one pilot.

2.3 MAXIMUM OCCUPANTS

The total number of persons carried including crew shall not exceed two, nor the number of seats which is approved for use during take-off and landing.

2.4 ENGINE LIMITATIONS

RPM The maximum RPM is 2700. No overspeed is permitted.

Oil Contents

The maximum oil sump capacity is 6.7 UK Quarts (8 US Quarts). The minimum safe quantity in the sump is 3.2 UK Quarts (4 US Quarts).

Oil Pressure on Start-Up

The engine must be shut down if the oil pressure has not started to rise within 30 seconds of starting the engine.

Oil Pressures

	Maximum	Minimum
Normal Operating	6.2 bar (90 psi)	4.1 bar (60 psi)
Start and Warm-Up	7.0 bar (100 psi)	3.8 bar (55 psi)
Idling	- -	1.7 bar (25 psi)

Oil Pressure During Aerobatic Manoeuvres

Avoid flight at zero 'G' state for more than 10 seconds as in these modes the oil system will not scavenge.

Magneto Check

Maximum RPM drop when switching either magneto off at 1800 RPM.	175 RPM
Maximum difference between left and right magneto RPM drops at 1800 RPM.	50 RPM

Cylinder Head Temperature

Maximum permissible temperature	260°C

> For continuous operation cylinder head temperatures should be maintained below 446°F (230°C) <

Oil Temperatures

Maximum permissible	118°C

> Engine oil temperature should not be below 60°C during continuous operation. <

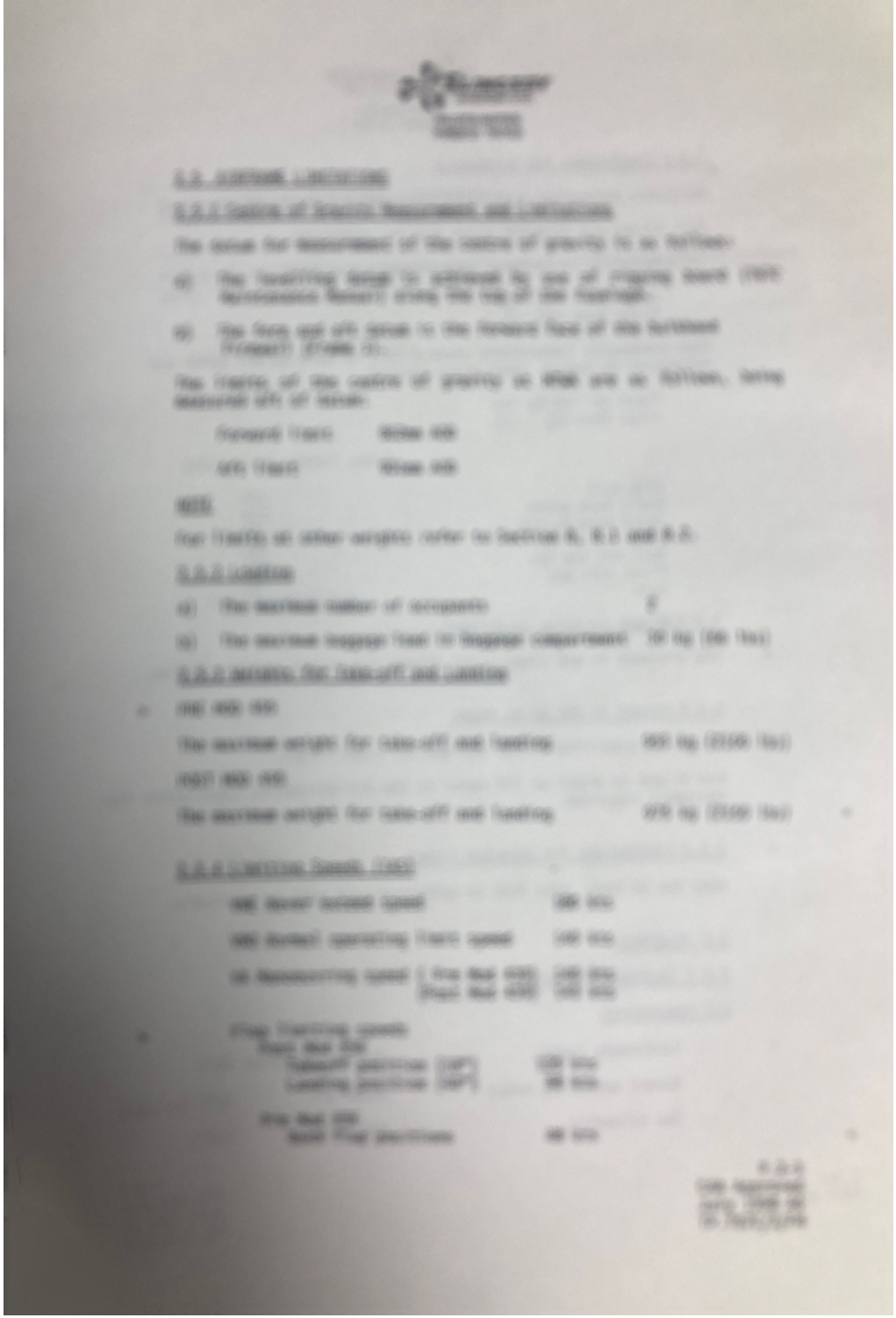
Fuel

The minimum fuel grade is 100LL.

> For tank capacities and useable fuel refer to Section 1 Leading Particulars. <

Ground Running

The maximum CHT of 260°C must not be exceeded during ground running and operation at full throttle should not exceed 3 minutes.



2.5.5 Limitations for Aerobatics

Aerobatic manoeuvres with flaps extended are not permitted.

Tail Slides and Inverted Spins are not permitted.

'G' Limitation (structural temperature below 50°C)

Flaps up +6g -3g
Flaps down +2g -1g

When structural temperature reaches 50°C or more DO NOT carry out aerobatics or impose loads which exceed:

Flaps up +4.4g -2g
Flaps down +2g -1g

	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	80
Spin	See Paragraph 3.7

2.5.6 Flight in Icing Conditions

> The aircraft is not cleared for flight into known icing conditions. <

2.5.7 Flight in IMC or at Night

Flight is permitted in IMC day and for night flight.

For flight by night or IFR refer to the Air Navigation Legislation for equipment required.

> 2.5.8 Limitations for Inverted Flight

When low on fuel, only fuel in collector tank will be available. <

2.6 PLACARDS

2.6.1 Instrument Markings

Oil Temperature

> Cautionary range	Yellow arc below	40°C
Normal operating range	Green arc	40°C to 118°C
Max allowable	Red Line	118°C <

TRANSPORT CANADA ADDITIONAL LIMITATION

Flight is not permitted when the indicated structural temperature exceeds 50°C.

(this page to be inserted facing p.2-4)

Oil Pressure

Minimum pressure	Beginning of Yellow arc End of Red arc	
Low oil pressure	Yellow arc	1.7 to 4.2 bar
Normal operating range	Green arc	4.2 to 6.2 bar
High oil pressure	Yellow arc	6.2 to 7 bar
Maximum pressure	End of Yellow arc before Red arc	7 Bar

Fuel Pressure (Post Mod 381)

Low fuel pressure	Red arc	0 to 0.5 psi
Normal operating range	Green arc	0.5 to 8 psi
High fuel pressure	Red arc	8 to 25 psi

Cylinder Head Temperatures

Normal operating range	Green arc	100°C to 230°C
Cautionary range	Yellow arc	230°C to 260°C
Maximum temperature	End of Yellow arc Before Red arc	260°C

Tachometer

Normal operating range	Green arc	700 to 2,700 rpm
Maximum rpm	Red line	2,700 rpm

ASI Markings

VNE	Radial red line	180 knots
Cautionary zone	Yellow arc	140 to 180 knots
Normal operating range	Green arc	56 to 140 knots
> Flap speed range (Landing flap 40°)		
Post Mod 656	White arc	49 to 98 knots
Pre Mod 656	White arc	49 to 88 knots

OAT/Structure Temperature Gauge

Structure temperature Maximum Red line		50°C

Carburettor Temperature Gauge (Mod 463)

	Yellow arc	-15°C to +5°C

Vacuum Gauge

	Green arc	4.5 to 5.5inHg

2.6.2 Labels

The following information is to be furnished on placards well within sight of pilot.

Pre Mod 439 Label

NO SMOKING

LIMITATIONS

VNE (KTS) (IAS)	180
MANOEUVRING SPEED VA (KTS) (IAS)	140
FLAP LIMITING SPEEDS (KTS) (IAS)	88
MAX TOTAL WEIGHT AUTHORISED (KG)	953

MAX g LOADS

	STRUCTURAL TEMPERATURE BELOW 50°C		ABOVE 50°C	
FLAPS UP	+6g	-3g	+4.4g	-2g
FLAPS DOWN	+2g	-1g	+2g	-1g

ALTITUDE LOSS IN A STALL RECOVERY 150 FT (46m)

FLIGHT INTO KNOWN OR FORECAST ICING CONDITIONS PROHIBITED

AIRCRAFT CERTIFICATED FOR FLIGHT IN IMC, DAY AND FOR NIGHT FLIGHT

AEROBATIC MANOEUVRES - UP TO ALL UP WEIGHT 953 Kg (2100 lbs)

MAXIMUM PERMISSIBLE STRUCTURE TEMPERATURE FOR AEROBATICS IS 50°C

	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	80
SPIN	SEE FLIGHT MANUAL

Post Mod 439 Label identical to Pre Mod 439 Label except for

MANOEUVRING SPEED VA (KTS) (IAS)	143

> Post Mod 495 Label

MAX TOTAL WEIGHT AUTHORISED (KG)	975 Kg (2150 lbs)
AEROBATIC MANOEUVRES - UP TO ALL UP WEIGHT	975 Kg (2150 lbs) <

2.6.2 Labels (continued)

POST MOD 656 AND 757F

NO SMOKING

LIMITATIONS

VNE (KTS) (IAS)		180
MANOEUVRING SPEED VA (KTS) (IAS)		140
FLAP LIMITING SPEEDS (KTS) (IAS)		
TAKEOFF POSITION (18°)		120
LANDING POSITION (40°)		98
MAX TOTAL WEIGHT AUTHORISED (KG)		953

MAX g LOADS

	STRUCTURAL TEMPERATURE			
	BELOW 50°C		ABOVE 50°C	
FLAPS UP	+6g	-3g	+4.4g	-2g
FLAPS DOWN	+2g	-1g	+2g	-1g

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LOOP	115
ROLL OFF THE TOP	125
FLICK ROLL MAX	80
SPIN	SEE FLIGHT MANUAL

2.6.2. Labels (Continued)

Notice above the luggage compartment

BAGGAGE
30 Kg MAX
FOR C OF G AND TOTAL
WEIGHT LIMITATIONS
SEE FLIGHT MANUAL

Aft of the refuelling caps - on each wing upper surface

FUEL - AVGAS 100LL
78.7 Litres
17.31 Imp Gal

Mod 292B A/C

FUEL - AVGAS 100LL
78.7 Litres
20.77 US Galls

Post Mod 310B A/C

Fuel type and contents, as above, in Litres.
Imp. Galls and US Galls are combined on a fuel filler/wing joint vinyl covering

At the foot of the flap control lever on the central fairing

Takeoff

Landing

> On the trim indicator in front of the trim control

D (Nose Down)

N (Neutral)

U (Nose Up) <

2.6.2 Labels (Continued)

On the underside of the oil filler access flap

OIL
MIL-L-22851
SAE 15W50 OR SAE 20W50

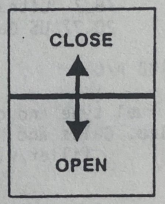
On canopy frame one each side of latch mechanism (POST MOD 129)

CANOPY MUST ALWAYS REMAIN CLOSED
AND LATCHED DURING FLIGHT
UNLESS EMERGENCY EVACUATION IS INTENDED

Under side of canopy latch cover (POST MOD 129)

PUSH UP HERE
TO RAISE CANOPY

> On rear face of canopy latch cover, one each side of lever (Post Mod 129)



On the top of the instrument panel

NOTE

On Mod 460 instrument panels the strobe caution label was repositioned to below the engine instrument block on RH side of panel.

AEROBATIC MANOEUVRES
WITH FLAPS EXTENDED
ARE NOT PERMITTED

CAUTION
TURN OFF STROBE LIGHT WHEN TAXIING NEAR OTHER AIRCRAFT OR WHEN FLYING IN FOG OR CLOUDS. STANDARD POSITION LIGHTS MUST BE USED FOR ALL NIGHT OPERATIONS

Below fuel contents gauges

USEABLE FUEL
34.62 IMP GALLS

POST MOD 292B A/C

USEABLE FUEL
41.6 US GALLS

2.6.2 Labels (continued)

Lower right hand side of the instrument panel (Mod 460B)

THE MARKINGS AND PLACARDS
INSTALLED IN THIS AIRCRAFT
CONTAIN OPERATION LIMITATIONS
WHICH MUST BE COMPLIED WITH
WHEN OPERATING THIS AIRCRAFT
IN THE AEROBATIC CATEGORY.

OTHER OPERATING LIMITATIONS
WHICH MUST ALSO BE COMPLIED WITH
WHEN OPERATING THIS
AIRCRAFT IN THIS CATEGORY OR IN
THE NORMAL OR UTILITY
CATEGORIES, ARE CONTAINED IN
THE AIRCRAFT FLIGHT MANUAL.

On face of carburettor temperature gauge below scale (Mod 463)

KEEP NEEDLE OUT OF
YELLOW ARC DURING
POSSIBLE ICING CONDITIONS

Below carburettor temperature gauge (Mod 463 A/C with un-placarded instrument)

MAINTAIN AT LEAST 5°C OR 9°F
ABOVE FREEZING DURING POSSIBLE
CARBURETTOR ICING CONDITIONS

> Top right of instrument panel above row of switches

THIS AIRCRAFT IS EQUIPPED WITH
AN ALTITUDE REPORTING SYSTEM
OPERABLE TO 20,000 FT

<

2.7 OPERATIONAL LIMITATIONS

2.7.1 Maximum Operating Altitude

The maximum permissible operating altitude is 12,000 ft without oxygen equipment being fitted.

2.7.2 Maximum Takeoff and Landing Altitude

The maximum takeoff and landing altitude is 8000 ft density altitude.

2.7.3 Operating Temperatures

Maximum operating temperature is ISA +23°C.

Minimum operating temperature is -20°C before winterisation is required.

NOTES

(1) For operations below OAT -20°C consult the engine and propeller handbooks for procedure.

(2) There is no defined lower limit for the aircraft structure.

2.8 PAINT FINISH

Certain areas of the aircraft have colour restrictions, these are indicated on the 3 View Plan (P.1-1).

NOTE

The above restrictions are to assist in keeping the critical areas of structure cool.