

TB 10

PILOT'S OPERATING HANDBOOK

U.S. VERSION

SOCATA

Groupe **AEROSPATIALE**
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PILOT'S OPERATING HANDBOOK

SOCATA Groupe Aérospatiale

MODEL TB 10

SERIAL N°

891

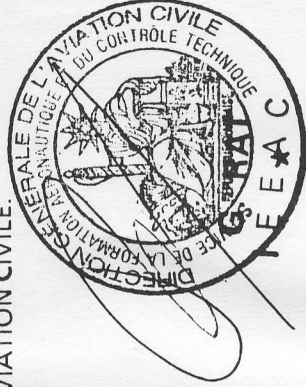
REGISTRATION N°

N2526J

This Pilot's Operating Handbook is FAA approved for U.S. registered airplane in accordance with the provisions of 14 CFR Section 21.29, and is required by FAA Type Certificate Data Sheet Nr A51EU.

Sections 2 - 3 (Pages 2.1 to 2.14, 3.1 to 3.14, 5.3, 5.5) approved by
DIRECTION GENERALE DE L'AVIATION CIVILE.

D.G.A.C. Approval



P.O

Date : - 4 NOV. 1988

"Ce Manuel est une traduction en langue anglaise, comme répondant aux exigences de la FAA, du Manuel Français correspondant approuvé par la D.G.A.C."

This airplane must be operated in accordance with the limitations contained in Section 2 of this Flight Manual.

THIS DOCUMENT MUST BE KEPT PERMANENTLY ABOARD THE AIRPLANE.

January 31, 1988

0.1

APPLICABILITY OF YOUR MANUAL

The Pilot's Operating Handbook in the airplane at the time of delivery from SOCATA contains information applicable to SOCATA Model TB 10 airplane designated by the serial number and registration number shown on title page of this handbook.

This information is based on data available at the time of publication.

For any Operating handbook and / or Supplement order, it is necessary to mention their part number.

PILOT'S OPERATING HANDBOOK AND SUPPLEMENTS PART NUMBERS

A Pilot's Operating Handbook consists of a basic part which has its own part number (Sections 0 to 8) and of Supplements, each one bearing a particular part number.

Each Supplement looks like a small Pilot's Operating Handbook.

The part number in the form of "Z00. 18xxxxxxx" is the number noted on each page providing the "List of effective pages and validities", either of the basic Pilot's Operating Handbook or of each Supplement.

To a part number corresponds an airplane model, a version and an edition of the handbook or of a Supplement.

REVISIONS AND EDITIONS

Changes and / or additions to this handbook and its supplements will be covered by revisions and editions published by SOCATA.

REVISIONS

Revisions allow updating of part of the handbook or the Supplement (s) (mistakes, omissions, airworthiness repercussions...).

Revised pages cancel and replace the respective pages in the handbook.

Revisions do not alter part number (Z00. ...).

Revised pages take systematically the more recent edition of the concerned handbook.

NOTE :

Modifications and additions are noted in the margin with a black vertical line facing the modified part ; if the text has not been modified, but if it has been moved to another page, the black line will be drawn opposite paging or revision.

CAUTION :

It is the responsibility of the owner to maintain this handbook in a current status and therefore to incorporate successive revisions.

EDITIONS

Editions enable to validate the whole handbook or Supplement (s) further to modifications and / or important technical improvements on the concerned model (example : new fuel system, increase of landing weight...)

To a new edition corresponds a new airplane validity and a new part number (Z00. ...). Except in exceptional cases, your handbook is not concerned with new editions.

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ORIGINAL ... 0 ... January 31, 1988

D.G.A.C. APPROVAL



★ G. RAT
J E E A C

Approved on **4 NOV. 1988**

January 31, 1988

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SECTION 0

SOCATA
MODEL TB 10 "U.S. Version"

EDITION ... 1 ... February 29, 1988

D.G.A.C. APPROVAL



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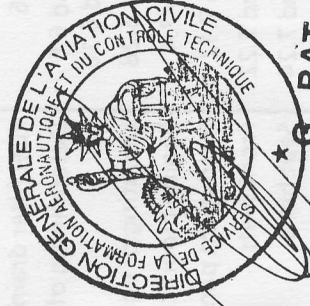
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SECTION 0

EDITION ... 2 ... March 31, 1988

D.G.A.C. APPROVAL



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March 31, 1988

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SECTION 0

MODEL TB 10 "U.S. Version"
SOCATA

LIST OF AMENDMENTS

NOTE : *Bold-faced and italic types are used for "U.S." specific pages.*

Edition 1 of February 29, 1988

Pages	Description
0.7A and 0.7B	Adding of approval page
0.8	List of amendments
0.9 and 0.10	List of effective pages and validities
1.5 and 2.1	Modification of weight in baggage compartment
2.8 to 2.10, 2.12	and / or text moving
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4.6	Fuel filter draining
6.5 and 6.6	Determining of weight and balance
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8.18	Ash-trays

D.G.A.C. approval :

Date : **- 4 NOV. 1988**

LIST OF AMENDMENTS

NOTE : Bold-faced and italic types are used for "U.S." specific pages.

Edition 2 of March 31, 1988

Pages	Description
0.7B	Adding of approval page
0.8A and 0.8B	List of amendments
0.9 and 0.10	List of effective pages and validities
1.5	Modification of maximum landing and take-off weight
2.8	
2.10	
5.1	Paging modification
5.25	Adding of landing performance at 2535 lbs
5.26	Text moving
8.16	Modification of nose gear shock absorber inflating

D.G.A.C. approval:

Date : **4 NOV, 1988**



**SOCATA
MODEL TB 10**

March 31, 1988

LIST OF EFFECTIVE PAGES AND VALIDITIES

NOTE : Bold-faced and italic types are used for "U.S." specific pages.

EDITION ... 2 ... March 31, 1988

From S / N 823 to S / N 947, plus S / N 804, 807, 808
and from S / N 816 to S / N 819
(P / N Z00. 1800041088)

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SECTION 1

GENERAL

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SECTION 1
GENERAL

SOCATA
MODEL TB 10

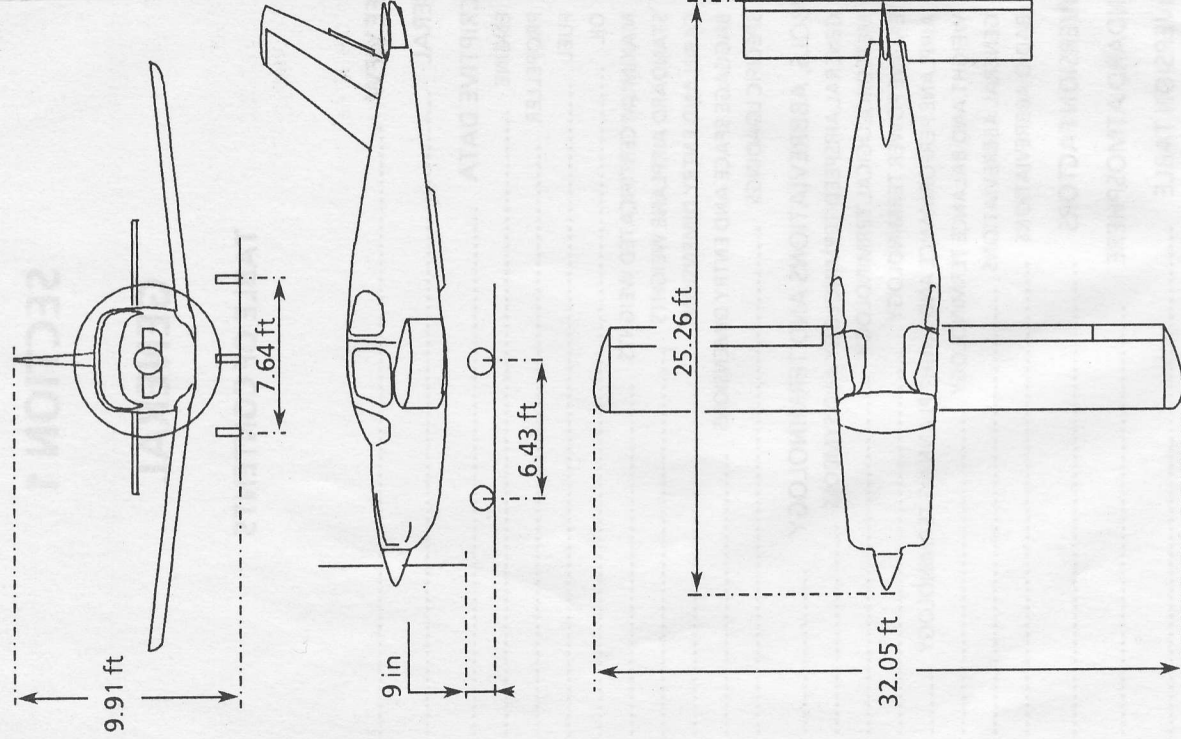


Figure 1.1 - THREE VIEW DRAWING

GENERAL

This handbook contains 9 sections, and includes the material required by FAR Part 23 to be furnished to the pilot for operation of SOCATA Model TB 10 airplane. It also contains supplemental data supplied by SOCATA.

This section provides basic data and information of general interest. It also contains definitions or explanations of abbreviations and terminology commonly used.

The general for optional systems are given in Section "Supplements" of the Flight Manual.

DESCRIPTIVE DATA

ENGINE

Number of engines : 1

Engine Manufacturer : AVCO LYCOMING

Engine Model Number : O-360-A1AD

Engine Type :

Four-cylinder, direct drive, air-cooled, horizontally opposed
Horsepower Rating and Engine speed : 180 rated BHP at 2700 RPM.

PROPELLER

Number of propellers : 1

Propeller Manufacturer : HARTZELL

Propeller Model Number : HC-C2YK-1BF/F7666A-2

Number of blades : 2

Propeller Diameter :

Maximum : 74 inches (1.88 m)

Minimum : 72 inches (1.83 m)

Propeller Type :

Constant-speed, hydraulically-actuated, pitch setting at
28 inches station : low 11°30', high 31°

Propeller Governor : HARTZELL F4

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FUEL

Approved Fuel Grades (and Colors) :
100 LL Grade Aviation Fuel (Blue)
100 (Formerly 100/130) Grade Aviation Fuel (Green)

Total capacity : 55.4 U.S Gallons (210 Litres)
Total capacity each tank : 27.7 U.S Gallons (105 Litres)
Total usable : 53.8 U.S Gallons (204 Litres)

NOTE :

Isopropyl alcohol or ethylene glycol monomethyl ether may be added to the fuel supply. Additive concentrations shall not exceed 1 % for isopropyl alcohol or 0.15 % for ethylene glycol monomethyl ether. Refer to Section 8 "Handling, servicing and maintenance" for additional information.

OIL

Oil grades (specifications) and Viscosity :

Outside Air Temperatures	MIL-L-6082 Spec. Mineral Grades 50 first hours	MIL-L-22851 Spec. Dispersant Grades after 50 hours
All temperatures		SAE 15W50 or SAE 20W50
Above 80°F (27°C)	SAE 60	SAE 60
Above 60°F (15°C)	SAE 50	SAE 40 or SAE 50
30°F (-1°C) to 90°F (32°C)	SAE 40	SAE 40
0°F (-18°C) to 70°F (21°C)	SAE 30	SAE 30, SAE 40 or SAE 20W40
0°F (-18°C) to 90°F (32°C)		SAE 20W50 or SAE 15W50
Below 10°F (-12°C)	SAE 20	SAE 30 or SAE 20W30

Oil Capacity :

Sump : 8 Quarts (7.6 Litres)
Total : 8.45 Quarts (8 Litres)
Maximum oil consumption : 0.8 qt/hr.

MAXIMUM CERTIFICATED WEIGHTS

	Normal category	Utility category
Ramp :	2546 lbs (1155 kg)	2370 lbs (1075 kg)
Take-off :	2535 lbs (1150 kg)	2359 lbs (1070 kg)
Landing :	2535 lbs (1150 kg)	2359 lbs (1070 kg)

Weight in Baggage Compartment : 143 lbs (65 kg) ; refer to Section 6 for cargo loading instructions.

STANDARD AIRPLANE WEIGHTS

	Normal category	Utility category
Standard Empty Weight :	1543 lbs (700 kg)	1543 lbs (700 kg)
Maximum Useful Load :	1003 lbs (455 kg)	827 lbs (375 kg)

CABIN AND ENTRY DIMENSIONS

Maximum Cabin Width : 4.20 ft (1.28 m)
 Maximum Cabin Length : 8.30 ft (2.53 m)
 Maximum Cabin Height : 3.67 ft (1.12 m)
 Number of Cabin Entries : 2
 Maximum Entry Width : 3.45 ft (1.05 m)
 Minimum Entry Width : 2.62 ft (0.80 m)
 Maximum Entry Height : 2.30 ft (0.70 m)

BAGGAGE SPACE AND ENTRY DIMENSIONS

Maximum Compartment Width : 4.10 ft (1.25 m)
 Minimum Compartment Width : 3.45 ft (1.05 m)
 Maximum Compartment Length : 2.95 ft (0.90 m)
 Minimum Compartment Length : 2.20 ft (0.67 m)
 Maximum Compartment Height : 2.03 ft (0.62 m)
 Minimum Compartment Height : 1.35 ft (0.41 m)
 Entry Width : 2.10 ft (0.64 m)
 Entry Height : 1.44 ft (0.44 m)

SPECIFIC LOADINGS

Normal category

Wing loading : 19.9 lbs/sq. ft (97.1 kg/m²)

Power loading : 14.1 lbs/BHP (6.4 kg/CV)

Utility category

Wing loading : 18.4 lbs/sq. ft (89.9 kg/m²)

Power loading : 13.1 lbs/sq. ft (5.9 kg/CV)

SYMBOLS, ABBREVIATIONS AND TERMINOLOGY

GENERAL AIRSPEED TERMINOLOGY AND SYMBOLS

KCAS : *Knots Calibrated Airspeed* is indicated airspeed corrected for position and instrument error and expressed in knots. Knots calibrated airspeed is equal to KTAS in standard atmosphere at sea level.

MPH CAS : *Miles per hour Calibrated Airspeed*

KIAS : *Knots Indicated Airspeed* is the speed shown on the airspeed indicator and expressed in knots.

MPH IAS : *Miles per hour Indicated Airspeed*

KTAS : *Knots True Airspeed* is the airspeed expressed in knots relative to undisturbed air which is KCAS corrected for altitude and temperature.

V_A : *Maneuvering Speed* is the maximum speed at which full or abrupt control movements may be used.

V_{FE} : *Maximum Flap Extended Speed* is the highest speed permissible with wing flaps in a prescribed extended position.

V_{NE} : *Never Exceed Speed* is the speed limit that may not be exceeded at any time.

- V_{NO}** : **Maximal Structural Cruising Speed** is the speed that should not be exceeded except in smooth air, and then only with caution.
- V_{SO}** : **Stalling Speed or the minimum steady flight speed** at which the airplane is controllable in the landing configuration.
- V_{S1}** : **Stalling Speed or the minimum steady flight speed** obtained in a specific configuration.

METEOROLOGICAL TERMINOLOGY

- ISA** : **International Standard Atmosphere**
- OAT** : **Outside Air Temperature** is the free air static temperature. It is expressed in either degrees Celsius or degrees Fahrenheit.

Pressure Altitude :

Is the altitude read from an altimeter when the altimeter's barometric scale has been set to 29.92 inches of mercury (1013.2 hPa).

Standard Temperature :

Is 59°F (15°C) at sea level pressure altitude and decreases by 3.6°F (2°C) for each 1000 ft of altitude.

ENGINE POWER TERMINOLOGY

- BHP** : **Brake Horsepower** is the power developed by the engine.
- MP** : **Manifold Pressure** is a pressure measured in the engine's induction system and is expressed in inches of mercury (in.Hg).
- RPM** : **Revolutions Per Minute** is engine speed.

AIRPLANE PERFORMANCE AND FLIGHT PLANNING TERMINOLOGY

Climb Gradient :

Is the demonstrated ratio of the change in height during a portion of climb, to the horizontal distance traversed in the same time interval.

Demonstrated crosswind velocity :

Is the velocity of the crosswind component for which adequate control of the airplane during take-off and landing was actually demonstrated during certification tests. The value shown is not considered to be limiting.

g : Is acceleration due to gravity.

Usable Fuel : Fuel available for flight planning.

Unusable Fuel :

Fuel remaining after a runout test has been completed in accordance with governmental regulations.

WEIGHT AND BALANCE TERMINOLOGY

Reference Datum :

Is an imaginary vertical plane from which all horizontal distances are measured for balance purpose.

Arm : Is the horizontal distance from the reference datum to the center of gravity (C.G.) of an item.

Moment : Is the product of the weight of an item multiplied by its arm. (Moment divided by the constant 1000 is used in this handbook to simplify balance calculations by reducing the number of digits).

Center of gravity (C.G.) :

Is the point at which an airplane, or equipment, would balance if suspended. Its distance from the reference datum is found by dividing the total moment by the total weight of the airplane.

C.G. Limits :

Center of Gravity Limits are the extreme center of gravity locations within which the airplane must be operated at a given weight.

Standard Empty Weight :

Weight of a standard airplane including unusable fuel, full operating fluids and full oil.

Basic Empty Weight :

Standard empty weight plus optional equipment.

Useful Load :

Is the difference between ramp weight and the basic empty weight.

Maximum Ramp Weight :

Is the maximum weight approved for ground maneuver. (It includes the weight of start, taxi and run up fuel).

Maximum Take-off Weight :

Is the maximum weight approved for the start and the take-off run.

Maximum Computation Weight at Landing :

Is the maximum weight approved for landing touch-down.

SECTION 1 GENERAL

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GENERAL ABBREVIATIONS

A	: Ampere
ALT	: Alternator
A/P	: Autopilot
C	: Consumption
CHT	: Cylinder Head Temperature
EGT	: Exhaust Gas Temperature
°C	: Degree Celsius (Centigrade)
°F	: Degree Fahrenheit
ft	: Foot (Feet)
ft/min	: Feet per minute
hPa	: Hectopascal
hr	: Hour
HSI	: Horizontal Situation Indicator
in	: Inch
in.Hg	: Inch of mercury
kg	: Kilogram
kt	: Knot (1 nautical mile/hr - 1852 m/hr)
l	: Litre
lb	: Pound
LDG	: Landing gear
m	: Metre
min	: Minute
mm	: Millimetre
P/N	: Part Number
psi	: Pound per square inch
qt'	: Quart
SM	: Statute Mile
S/N	: Serial Number
sq.ft	: Square foot
Std	: Standard
U.S Gal	: U.S Gallon
V	: Volt

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SECTION 1 GENERAL

RADIO ABBREVIATIONS

ADF	: Automatic Direction Finder System
ATC	: Transponder
COM	: Communications Transceivers
DME	: Distance Measuring Equipment
ELT	: Emergency Locator Transmitter
HF	: High Frequency
IFR	: Instrument Flight Rules
ILS	: Instrument Landing System
MKR	: Marker Radio Beacon
RMI	: Radio Magnetic Indicator
NAV	: Navigation Indicators and / or Receivers
VFR	: Visual Flight Rules
VHF	: Very High Frequency
VOR	: VHF Omnidirectional Range
VOR / LOC	: VHF Omnidirectional Range Localizer

CONVERSION FACTORS

IMPERIAL AND U.S. UNITS TO METRIC UNITS			METRIC UNITS TO IMPERIAL AND U.S. UNITS		
MULTIPLY	BY	TO OBTAIN	MULTIPLY	BY	TO OBTAIN
FEET	0.3048	METRE	METRE	3.2808	FEET
INCH	25.4	mm	mm	0.03937	INCH
Imp.Gal	4.546	Litre	Litre	0.220	Imp.Gal
U.S.Gal	3.785	Litre	Litre	0.264	U.S.Gal
lb	0.45359	kg	kg	2.2046	lb

STANDARD ATMOSPHERE

Pressure altitude (ft)	Pressure (hPa)	°C	°F
0	1013.2	+ 15.0	+ 59.0
2000	942.1	+ 11.0	+ 51.8
4000	875.0	+ 7.0	+ 44.6
6000	811.9	+ 3.1	+ 37.6
8000	752.6	- 0.8	+ 30.5
10000	696.8	- 4.8	+ 23.4
12000	644.3	- 8.7	+ 16.2
14000	595.2	- 12.7	+ 9.2
16000	549.1	- 16.6	+ 2.2
18000	505.9	- 20.6	- 5.0
20000	465.6	- 24.6	- 12.4

CONVERSION TABLE

Note :

The standard pressure of 1013.2 hPa is equal to 29.92 inches of mercury.

950 28.05	951 28.08	952 28.11	953 28.14	954 28.17	955 28.20	956 28.23	957 28.26	958 28.29	959 28.32
960 28.35	961 28.38	962 28.41	963 28.44	964 28.47	965 28.50	966 28.53	967 28.56	968 28.58	969 28.61
970 28.64	971 28.67	972 28.70	973 28.73	974 28.76	975 28.79	976 28.82	977 28.85	978 28.88	979 28.91
980 28.94	981 28.97	982 29.00	983 29.03	984 29.06	985 29.09	986 29.12	987 29.15	988 29.18	989 29.20
990 29.23	991 29.26	992 29.29	993 29.32	994 29.35	995 29.38	996 29.41	997 29.44	998 29.47	999 29.50
1000 29.53	1001 29.56	1002 29.59	1003 29.62	1004 29.65	1005 29.68	1006 29.71	1007 29.74	1008 29.77	1009 29.80
1010 29.83	1011 29.85	1012 29.88	1013 29.91	1014 29.94	1015 29.97	1016 30.00	1017 30.03	1018 30.06	1019 30.09
1020 30.12	1021 30.15	1022 30.18	1023 30.21	1024 30.24	1025 30.27	1026 30.30	1027 30.33	1028 30.36	1029 30.39
1030 30.42	1031 30.45	1032 30.47	1033 30.50	1034 30.53	1035 30.56	1036 30.59	1037 30.62	1038 30.65	1039 30.68
1040 30.71	1041 30.74	1042 30.77	1043 30.80	1044 30.83	1045 30.86	1046 30.89	1047 30.92	1048 30.95	1049 30.98

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LIMITATIONS

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LIMITATIONS

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**SOCATA
MODEL TB 10 "U.S. Version"**

**SECTION 2
LIMITATIONS**

GENERAL

SOCATA Model TB 10 is certificated in the Normal and Utility Categories.

This airplane must be flown in compliance with the limits specified by placards or markings and with those given in this section and throughout the Flight Manual.

This section of the airplane Flight Manual presents the various operating limitations, the significance of such limitations, instrument markings, color coding, and basic placards necessary for the safe operation of the airplane, its power plant and installed equipment.

The limitations included in this section have been approved by the Federal Aviation Administration in accordance with 14 CFR Section 21.29.

The limitations for optional systems are given in Section "Supplements" of the Flight Manual.

SOCATA Model TB 10 is certificated under FAA Type Certificate N° A51EU.

AIRSPEED LIMITATIONS

Airspeed limitations and their operational significance are shown in Figure 2.1.

	SPEED	KCAS	KIAS	REMARKS
V_{NE}	Never Exceed Speed	165	165	Do not exceed this speed in any operation
V_{NO}	Maximal Structural Cruising Speed	128	128	Do not exceed this speed except in smooth air, and then only with care
V_A	Maneuvering Speed	122	122	Do not make abrupt or full control movements above this speed
V_{FE}	Maximum Flap Extended Speed	95	95	Do not exceed this speed with flaps extended

Figure 2.1 - AIRSPEED LIMITATIONS

AIRSPEED INDICATOR OR TRUE AIRSPEED INDICATOR MARKINGS

Airspeed indicator or true airspeed indicator markings and their color code significance are shown in Figure 2.2.

MARKING	KIAS VALUE OR RANGE	SIGNIFICANCE
White Arc	53 - 95	Full Flap Operating Range Lower limit is maximum weight V_{SO} in landing configuration. Upper limit is maximum speed permissible with flaps extended
Green Arc	60 - 128	Normal Operating Range Lower limit is maximum weight V_{S1} with flaps retracted. Upper limit is maximum structural cruising speed
Yellow Arc	128 - 165	Operations must be conducted with caution and only in smooth air
Red line	165	Maximum speed for all operations

Figure 2.2 - AIRSPEED INDICATOR OR TRUE AIRSPEED INDICATOR MARKINGS

SECTION 2 LIMITATIONS

SOCATA
MODEL TB 10

POWER PLANT LIMITATIONS

Number of engines : 1

Engine Manufacturer : AVCO LYCOMING

Engine Model Number : O-360-A1AD

Engine Operating Limits for Take-off and Continuous Operations :

Maximum Power : 180 BHP

Maximum Engine Speed : 2700 RPM

Maximum Cylinder Head Temperature : 500°F (260°C)

Maximum Oil Temperature : 244°F (118°C)

Oil Pressure :

Minimum : 25 psi (1.7 bar)

Maximum : 100 psi (6.9 bar)

Fuel Pressure :

Minimum : 0.5 psi (34 hPa)

Maximum : 0.5 psi (34 hPa)

Fuel Grades : See Fuel Limitations

Oil Grades (Specification) :

MIL-L-6082 Aviation Grade Mineral Oil or

MIL-L-22851 Aviation Grade Dispersant Oil

Number of propellers : 1

Propeller Manufacturer : HARTZELL

Propeller Model Number : HC-C2YK-1BF/F7666A-2

Propeller Diameter :

Minimum : 72 inches (1.83 m)

Maximum : 74 inches (1.88 m)

Propeller Blade Angle at 28 inches station :

Low : 11°30'

High : 31°

Propeller Operating Limits :

Restricted Range for Continuous Operation : 2000 to 2250 RPM

POWER PLANT INSTRUMENT MARKINGS

Power plant instrument markings and their color code significance are shown in Figure 2.3.

INSTRUMENT	Red Line or Arc Minimum Limit	Yellow Arc Red Arc Caution Range	Y R - / -	Green Arc Normal Operating	Red Line Maximum Limit
Tachometer	---	2000 to 2250 RPM	R	750 to 2700 RPM and 2250 to 2700 RPM	2700 RPM
Oil Temperature	---	Below 104°F (40°C)	Y	104 to 244°F (40 to 118°C)	244°F (118°C)
Fuel Pressure	Below 0.5 psi	---	/	Above 0.5 psi	---
Oil Pressure	25 psi	25 to 60 psi and 90 to 100 psi	Y	60 to 90 psi	100 psi
Cylinder head temperature *	---	435 to 500°F (224 to 260°C) **	Y	200 to 435°F (93 to 224°C) **	500°F (260°C)
Carburated air temperature	---	14 to 41°F (-10 to + 5°C)	Y	---	---

* If installed on airplane

** Optional marking (according to instrument model)

Figure 2.3 - POWER PLANT INSTRUMENT MARKINGS

SECTION 2 LIMITATIONS

SOCATA
MODEL TB 10

WEIGHT LIMITS

Normal category

Maximum Ramp Weight : 2546 lbs (1155 kg)
Maximum Take-off Weight : 2535 lbs (1150 kg)
Maximum Weight at Landing : 2535 lbs (1150 kg)

Utility category

Maximum Ramp Weight : 2370 lbs (1075 kg)
Maximum Take-off Weight : 2359 lbs (1070 kg)
Maximum Weight at Landing : 2359 lbs (1070 kg)

Maximum Weight in Baggage Compartment for both categories :
143 lbs (65 kg) ; refer to Section 6 for cargo loading.

CENTER OF GRAVITY LIMITS

Normal category

Forward :

45.0 inches (1.144 m) aft of datum at 2535 lbs (1150 kg)
39.8 inches (1.010 m) aft of datum at 2359 lbs (1070 kg)
37.3 inches (0.949 m) aft of datum at 2138 lbs (970 kg) or less.

Utility category

Forward :

40.7 inches (1.035 m) aft of datum at 2359 lbs (1070 kg)
38.3 inches (0.974 m) aft of datum at 2249 lbs (1020 kg)
37.3 inches (0.949 m) aft of datum at 2138 lbs (970 kg) or less.

Aft :

47.4 inches (1.205 m) aft of datum at all weights and for both categories.

Reference datum : Front face of firewall.

Straight line variation between points.

Leveling point : Upper fuselage spar

NOTE :

It is the responsibility of the pilot to insure that the airplane is properly loaded. See Section 6 "Weight and Balance" for proper loading instructions.

MANEUVER LIMITS

This airplane is certificated in both normal and utility categories.

Normal category

The normal category is applicable to airplane intended for non-aerobatic operations.

These include any maneuvers incidental to normal flying, stalls (except whip stalls) and turns in which the angle of bank is no more than 60°.

Maximum Design Weight
Design Maneuvering Speed

2535 lbs (1150 kg)
122 KIAS (141 MPH IAS)

The TB 10 airplane is approved for the following normal category maneuvers : Lazy eights, chandelles, and steep turns in which the angle of bank is not more than 60°.

Utility category

This airplane is not designed for aerobatic flight. However, the utility category is applicable to airplane intended for limited aerobatic operations.

Maximum Design Weight
Design Maneuvering Speed

2359 lbs (1070 kg)
122 KIAS (141 MPH IAS)

No aerobatic maneuvers are approved except those listed below :

Maneuver

Recommended Entry Speed

Chandelles

135 KIAS (155 MPH IAS)

Lazy eights

130 KIAS (149 MPH IAS)

Steep turns

108 KIAS (124 MPH IAS)

Stalls (except whip stalls)

Slow Deceleration

Spins Prohibited

FLIGHT LOAD FACTOR LIMITS

Normal category

Flaps up : + 3.8 g
Flaps down : + 2.0 g

Utility category

+ 4.4 g
+ 2.0 g

KINDS OF OPERATION LIMITS

The airplane is equipped for day VFR operations and may be equipped for night VFR and day & night IFR operations. See Supplements Section of this Manual.

Flight into known icing conditions is prohibited.

FUEL LIMITATIONS

2 Tanks :	27.7 U.S Gallons (105 Litres) each
Total Fuel :	55.4 U.S Gallons (210 Litres)
Usable Fuel :	53.8 U.S Gallons (204 Litres)
Unusable Fuel :	1.6 U.S Gallons (6 Litres)

NOTE :

Usable fuel can be safely used during all normal airplane maneuvers EXCEPT STEEP NOSE DOWN ATTITUDE (rapid descent) or PRONOUNCED SIDE SLIPPING.

SEATING LIMITS

Front seats :	2
Rear seats :	2 when accomodated with 2 seatbelts or 3 when accomodated with 3 seatbelts [maximum total weight on rear seats : 454 lbs (206 kg)]

OTHER LIMITATIONS

Flight with doors open or ajar is prohibited.

PLACARDS

(1) In full view of the pilot, forward of overhead lights

THIS AIRCRAFT MUST BE FLOWN IN NORMAL OR UTILITY CATEGORY IN ACCORDANCE WITH THE PLACARDS, MARKINGS AND FLIGHT MANUAL.

NORMAL CATEGORY

MAXIMUM TAKE-OFF AND LANDING WEIGHT	2535 lbs
MANEUVERING SPEED V_A	122 KIAS
NEVER EXCEED SPEED V_{NE}	165 KIAS
FLAP EXTENDED SPEED V_{FE}	95 KIAS
DESIGN LIMIT LOAD FACTOR	FLAPS RETRACTED + 3.8 FLAPS EXTENDED + 2 -0

UTILITY CATEGORY

MAXIMUM TAKE-OFF AND LANDING WEIGHT	2359 lbs
MANEUVERING SPEED V_A	122 KIAS
NEVER EXCEED SPEED V_{NE}	165 KIAS
FLAP EXTENDED SPEED V_{FE}	95 KIAS
DESIGN LIMIT LOAD FACTOR	FLAPS RETRACTED + 4.4 FLAPS EXTENDED + 2 -0

ANY ACROBATIC MANEUVER IS PROHIBITED IN NORMAL CATEGORY

IN UTILITY CATEGORY ONLY THE FOLLOWING ACROBATIC MANEUVERS ARE PERMITTED :

CHANDELLES	ENTRY SPEED
LAZY EIGHT	135 KIAS
STEEP TURNS	130 KIAS
STALLS	108 KIAS

VOLUNTARY SPINS ARE PROHIBITED IN BOTH NORMAL AND UTILITY CATEGORIES.

MARKINGS, PLACARDS AND INSTRUCTION PLATES APPLY TO CATEGORY "N".

FOR "U" CATEGORY REFER TO THE FLIGHT MANUAL.

FLIGHT CONDITIONS : DAY VFR
ICING CONDITIONS NOT ALLOWED

(2) Calibration chart on compass

For	N	30	60	E	120	150
Steer						
For	S	210	240	W	300	330
Steer						

DATE: _____ RADIO ON _____

(3) On Baggage door

65 kg - 143 lbs MAXIMUM
FOR LOADING INSTRUCTIONS
SEE "WEIGHT AND BALANCE
DATA" IN FLIGHT MANUAL

(4) Near fuel tank caps

CARBURANT
FUEL - KRAFTSTOFF

AVGAS 100 LL

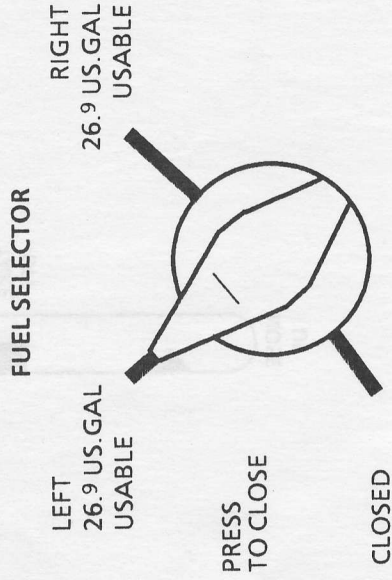
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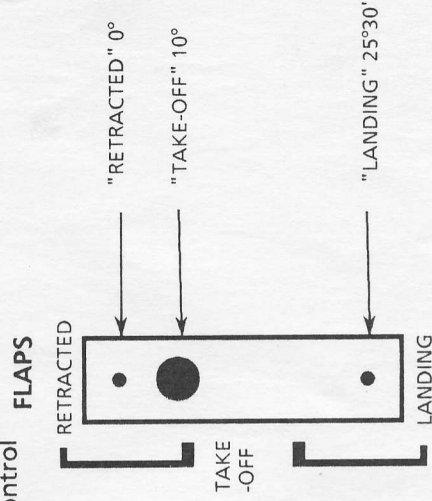
(5) On oil door



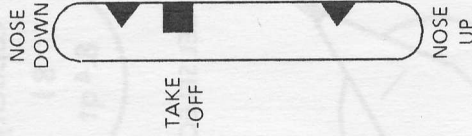
(6) On the fuel selector



(7) Near the wing flap control



(8) Near the pitch trim position indicator



SECTION 3

EMERGENCY PROCEDURES

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EMERGENCY PROCEDURES

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GENERAL

This section provides the pilot with procedures that enable him to cope with emergencies that may be encountered in operating the SOCATA Model TB 10 airplane. If proper preflight inspections, operating procedures, and maintenance practices are used, emergencies due to airplane or engine malfunction should be rare. Likewise, careful flight planning and good pilot judgment can minimize enroute weather emergencies. However, should any emergency develop, the guidelines in this section should be considered and applied as necessary to correct the problem.

The emergency procedures for optional systems are given in Section "Supplements" of the Flight Manual.

AIRSPEEDS FOR SAFE OPERATIONS (IAS)

Engine failure after take-off	70 KIAS
Maneuvering speed	122 KIAS
Maximum glide speed	86 KIAS
Precautionary landing with engine power	65 KIAS

ENGINE FAILURES

ENGINE FAILURE DURING TAKE-OFF RUN

Throttle	REDUCED
Brakes	APPLY
Mixture	IDLE CUT-OFF
Magneto switch	OFF
Main switch	OFF
Fuel selector	OFF

ENGINE FAILURE IMMEDIATELY AFTER TAKE-OFF

Airspeed	70 KIAS
Mixture	FULL RICH
Fuel selector	SWITCH TANKS
Fuel pump	ON

If engine does not start :

Mixture	IDLE CUT-OFF
Fuel selector	OFF

SECTION 3 EMERGENCY PROCEDURES

SOCATA
MODEL TB 10

Fuel pump

Land

Magneto switch

Main switch

OFF

STRAIGHT AHEAD

OFF

OFF

WARNING

NEVER TRY TO TURN BACK

ENGINE FAILURE IN FLIGHT

Glide speed

Main switch

Fuel pump

Mixture

Fuel gages

Fuel selector

Magneto switch

Starter

When the engine runs
(windmilling)

86 KIAS

ON

ON

IDLE CUT-OFF

CHECK

SWITCH TANKS

BOTH

ENGAGE (if propeller stopped)

SLOWLY ENRICH

UNTIL RE-START

If the engine does not start, get ready for an emergency landing without engine power.

NOTE :

Gliding distance is approximately 1.62 nautical miles (1.86 statute miles) for each 1000 feet of altitude above terrain.

LOW OIL PRESSURE

Oil warning light

Pressure indicator

Throttle

Oil temperature

If oil temperature in
red sector

ON

IN RED LOW SECTOR

REDUCE AS FAR AS POSSIBLE

CHECKED

REDUCE THROTTLE

Prepare for a forced landing and land as soon as possible.

LOW FUEL FLOW

Fuel pump
Fuel gages
Fuel selector

OPERATING
CHECKED
SWITCH TANKS

ENGINE VIBRATION

Engine vibration is generally due to carburator icing (see § "Icing"), defective spark plugs or too rich a mixture.

Mixture

RESET

If vibration persist :

RPM SET FOR MINIMUM VIBRATION RANGE

Land as soon as possible.

PROPELLER GOVERNOR FAILURE

In case of oil pressure drop in the governor system or pitch control failure, the propeller moves to low pitch.

Oil pressure
Oil temperature
Throttle
Airspeed

CHECKED
CHECKED
AS REQUIRED
REDUCED

Avoid rapid application of power.

CAUTION : MAXIMUM RPM : 2700

FORCED LANDINGS

EMERGENCY LANDING WITHOUT ENGINE POWER

Glide speed
Radio

86 KIAS

TRANSMIT MAYDAY on 121.5 MHz
or on the appropriate frequency
giving location and intentions

Mixture

IDLE CUT-OFF

SECTION 3 EMERGENCY PROCEDURES

SOCATA
MODEL TB 10

Fuel selector	OFF
Magneto switch	OFF
Flaps	LANDING
Seats, seat belts, shoulder harnesses	ADJUSTED and SECURE
Main switch	OFF

PRECAUTIONARY LANDING WITH ENGINE POWER

Flaps	LANDING
Approach speed	70 KIAS
Radio	ADVISE ATC OF INTENTIONS
Seats, seat belts, shoulder harnesses	ADJUSTED and SECURE
Field	FLY OVER selected field
Main switch	OFF
Touch-down	FLARE OUT
Magneto switch	and keep nose high
Brakes	OFF
	AS REQUIRED

DITCHING

Radio	TRANSMIT MAYDAY on 121.5 MHz or on the appropriate frequency giving location and intentions
Flaps	LANDING
Seats, seat belts, shoulder harnesses	ADJUSTED and SECURE
Airspeed	70 KIAS
Flight path	Parallel to swells
Before touch-down :	
Main switch	OFF
Mixture	IDLE CUT-OFF
Fuel selector	OFF
Touch-down	FLARE OUT
	and keep nose high

FIRES

ENGINE FIRE DURING START

Mixture	IDLE CUT-OFF
Starter	GO ON STARTING
Throttle	FULL THROTTLE
Fuel selector	OFF

If fire goes on :

Main switch	OFF
Magneto switch	OFF

Evacuate passengers and extinguish fire using all available means (fire extinguisher if installed)

ENGINE FIRE IN FLIGHT

Visual detection	SMOKE - FLAMES
Fuel selector	OFF
Mixture	IDLE CUT-OFF
Fuel pump	OFF
Throttle	FULL THROTTLE
Cabin air cooling & demisting	FIRE CUT-OFF

After engine has stopped :

Magneto switch	OFF
Alternator switch	OFF
Main switch	OFF
Forced landing	EXECUTE (as described in "Emergency Landing Without Engine Power")

WARNING

**NO ATTEMPT SHOULD BE MADE TO
RESTART THE ENGINE AFTER A FIRE**

SOCATA
MODEL TB 10

* If FIRE is in ENGINE COMPARTMENT:

*If FIRE is in CABIN:

*If FIRE APPEARS TO BE OUT and electrical power is necessary to continue flight :

Main switch	OFF
Cabin air cooling & demisting	FIRE CUT-OFF
Fire extinguisher (if installed)	ACTIVATE

January 31, 1988

WING FIRE

Navigation and landing lights	OFF
Pitot heat switch (if installed)	OFF
Land as soon as possible.	

ICING

FLIGHT INTO KNOWN ICING CONDITIONS IS PROHIBITED

Carburator icing leads to a power rating drop, a manifold pressure drop and slight vibration :

Carburator heating	ON
--------------------	----

NOTE :

Pulling the carburator heating control may cause the power rating to drop and increase the vibration level.

After having pulled fully the carburator heating control, it is mandatory to adjust the mixture to suppress vibration. The use of carburator heating increases appreciably the hourly fuel consumption.

Cabin temperature	FULL HOT
Pitot heating (if installed)	ON
Demisting	OPEN
Engine	INCREASE POWER

and periodically change RPM to minimize ice buildup on propeller
Carburated air thermometer

(if installed) + 41 to + 68°F (+ 5 to + 20°C)

Turn back or change altitude to obtain outside air conditions that are less likely to cause icing.

After disappearing of icing conditions :

Carburator heating OFF

If icing continues plan a landing at the nearest airport. With an extremely rapid ice build-up, select a suitable "off airport" landing site.

NOTE :

With an ice accumulation on or near the wing leading edges, a higher stalling speed may be expected. Plan all maneuvers accordingly.

LANDING WITHOUT STABILATOR CONTROL

Fly the airplane using pitch trim and throttle.

- Long final :

Airspeed	80 KIAS
Flaps	LANDING
Fuel pump	ON
Mixture	FULL RICH
Propeller	HIGH RPM
Throttle and pitch trim	ADJUST SO AS TO MAINTAIN A DESCENT RATE LOWER THAN 500 ft/min

- Final :

FLARE OUT near the ground with the pitch trim.

CAUTION

**REDUCE THROTTLE ONLY
AFTER TOUCH-DOWN**

AILERON CONTROL FAILURE

Should an aileron control efficiency loss occur (accidental disconnection), fly the airplane using rudder for lateral control.

If flaps are extended, set rapidly sufficient speed (70 KIAS at least) and retract flaps.

Land with retracted flaps.

ELECTRICAL FAILURE

ALTERNATOR FAILURE

Alternator warning light

ON

Voltmeter :

- Green sector

CONTINUE FLYING

- Red / yellow sector

ALT. Switch

OFF then ON

Alternator warning light

REMAINS ON

ALT. switch

OFF

Nonessential electrical

load items

OFF

CAUTION

**CHECK BATTERY DISCHARGE
IN THIS CASE, ENDURANCE IS
REDUCED AS ELECTRICAL POWER
IS ONLY SUPPLIED BY BATTERY**

Battery approximate duration : 50 min
(Night IFR emergency conditions)

ELECTRICAL EQUIPMENT FAILURE

Check the circuit-breakers panel.

If the circuit-breaker is tripped, reset it once only.

If it trips again, do not try to reset the circuit-breaker, the equipment has failed.

AIRSPEED INDICATING SYSTEM FAILURE

In case of erroneous indications in flight :

Pitot heating (if installed)

ON

Alternate static source

(if installed)

EMERGENCY (Pulled)

In case of alternate static source utilization, open vents and / or actuate

air conditioning flow lever to open position. Then, airspeed indicator and

altimeter errors are not significant.

If erroneous indications persist, carry out a precautionary approach maintaining an adequate airspeed margin above stall warning activation speed.

Recommended parameters :

Propeller

FULL FORWARD

Manifold pressure

AS REQUIRED

(Approach : 15 in.Hg)

INVOLUNTARY SPIN

INTENTIONAL SPINS ARE PROHIBITED

However, should inadvertent spin occur, the following recovery procedure is recommended :

Rapid and simultaneous action :

Throttle

REDUCED

Rudder control

HOLD OPPOSITE

Stabilator control

DIRECTION OF ROTATION

Ailerons

FULL FORWARD

NEUTRAL

Spin with flaps :

Same procedure, except retract flaps as soon as possible.

When spinning stops, centralize rudders, level the wings and ease out of the ensuing dive.

JAMMED DOORS

In case of jammed doors and in case of emergency : JETTISON REAR WINDOWS, kicking with foot on the upper part.

MAXIMUM GLIDE (See page hereafter)

SECTION 3 EMERGENCY PROCEDURES

SOCATA
MODEL TB 10

MAXIMUM GLIDE

- Speed 85 KIAS at maximum weight
- Propeller wind milling
- Flaps up
- Zero wind

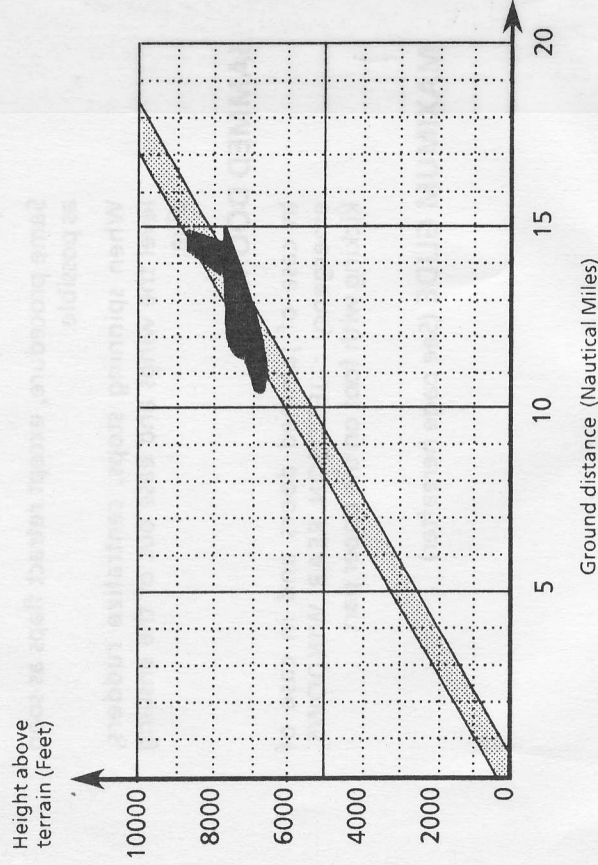


Figure 3.1 - MAXIMUM GLIDE

SECTION 4

NORMAL PROCEDURES

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GENERAL

This section provides procedures for the conduct of normal operation of the SOCATA Model TB 10 airplane.

The normal procedures for optional systems are given in Section "Supplements" of the Flight Manual.

AIRSPEEDS FOR SAFE OPERATIONS (IAS)

Following speeds are those important for safe operation of airplane.

These data are valid for standard airplane used at maximum weight in normal conditions.

- Best rate of climb	78 KIAS
- Flaps retracted	70 KIAS
- Flaps in landing position	
- Best angle of climb	62 KIAS
- Flaps retracted	51 KIAS
- Flaps in landing position	122 KIAS
- Operating speed in turbulent air	95 KIAS
- Maximum speed with flaps in take-off position	95 KIAS
- Maximum speed with flaps in landing position	72 KIAS
- Final approach speed (flaps in landing position)	25 kt
- Maximum demonstrated crosswind	

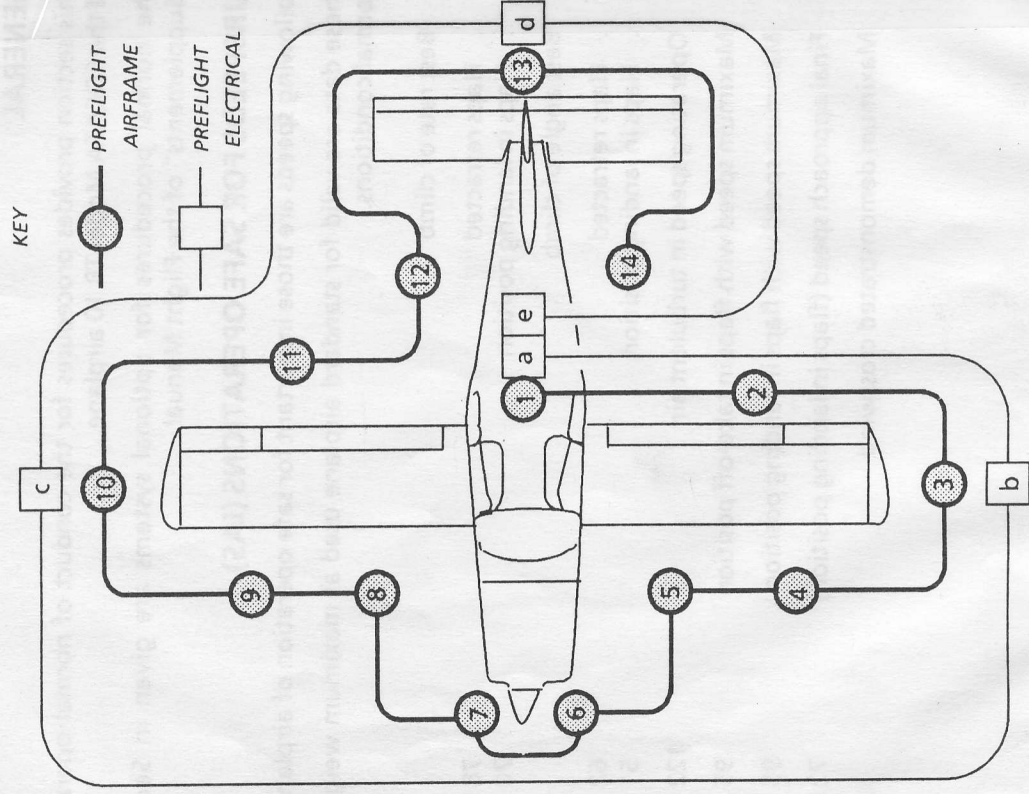


Figure 4.1 - PREFLIGHT INSPECTIONS

PREFLIGHT INSPECTIONS (See Figure 4.1)

AIRFRAME

1 - Cabin

Pilot door	OPEN
Controls lock	REMOVED
Magneto switch	OFF
Mixture	IDLE CUT-OFF
Main switch	ON
Flaps	LANDING
Pitch trim	TAKE-OFF
Fire extinguisher (if installed)	Check pressure
Main switch	OFF

Proceed with the external preflight inspection moving clockwise around.

2 - L.H. wing trailing edge

Flap and aileron Check controls,
hinges, plays, deflections

3 - L.H. wing

Wing tip, lights and
landing lights

Undamaged

4 - L.H. wing leading edge

Wing	Free of frost, snow, ice
Pitot	Cover removed, clean, unobstructed
Tie-down	REMOVE
Stall warning device	Clean, check deflection
Fuel tank	Check level
Fuel tank cap	SECURE
Fuel tank draining	Fuel free of water and sediment
Fuel tank drain	Check CLOSED

SECTION 4
NORMAL PROCEDURES

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5 - *L.H. main landing gear*

Chocks	REMOVE
Tire	Check for condition
Shock absorber	Normal position
Fairing	Check for good condition, cleanliness and normal position

6 - *Forward fuselage*

Windshield and window panels	Clean
Engine cowling attachment	Check
Oil	Check level
Propeller	and absence of leak
Propeller cone	Clean, good condition
Air intakes	Check (no play)
Oil pump breather	Clean
Exhaust pipe	Unobstructed
Fuel filter draining	Check
Fuel filter drain	Fuel free of water and sediment
	Check CLOSED

7 - *Nose landing gear*

Towing fork	REMOVE
Tire	Check
Shock absorber	Normal position
Fairing	Check for good condition, cleanliness and normal position

8 - *R.H. main landing gear*

Chocks	REMOVE
Tire	Check for condition
Shock absorber	Normal position
Fairing	Check for good condition, cleanliness and normal position

9 - R.H. wing leading edge

Fuel tank draining	Fuel free of water and sediment
Fuel tank drain	Check CLOSED
Fuel tank	Check level
Fuel tank cap	SECURE
Tie-down	REMOVE
Wing	Free of frost, snow and ice

10 - R.H. wing

Wing tip and lights	Undamaged
---------------------	-----------

11 - R.H. wing trailing edge

Flap and aileron	Check controls, hinges, plays, deflections
------------------	--

12 - R.H. rear fuselage

R.H door lock	Unlocked
Static port	Cover removed, clean
Window panels	Clean

13 - Empennage

Fin	Check
Rudder	Check controls, hinges, deflections, plays, frictions
Stabilator and stabilator tab	Check controls, hinges, deflections, plays, frictions
Tail cone and navigation light	Good condition

14 - L.H. rear fuselage

Static port	Cover removed, clean
Baggage compartment door	SECURE
Windowpanels	Clean

SECTION 4 NORMAL PROCEDURES

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ELECTRICAL SYSTEMS

a - Cabin

Alternator switch	OFF
Fuel pump	OFF
Main switch	ON
Alarm panel	Tested
Fuel gages	Check
Flaps	RETRACT
Instrument lights	ON
Navigation lights	ON
Anti-collision light (if installed)	ON
Strobe lights (if installed)	ON
Pitot heating (if installed)	ON
Landing lights	ON

b - L.H. wing

Navigation light	Illuminated
Strobe light (if installed)	Flashing
Landing lights	Illuminated

WARNING

DO NOT TOUCH PITOT DIRECTLY
IT CAN BE HOT ENOUGH TO BURN SKIN

Heated pitot (if installed)	Check for heat
Stall warning device	Aural warning

NOTE :

Landing lights and Pitot heating "OFF" before carrying on inspection will protect battery from being run down.

c - R.H. wing

Navigation light	Illuminated
Strobe light (if installed)	Flashing

d - Airplane rear part

Navigation light	Illuminated
Strobe light (if installed)	Flashing
Anti-collision light (if installed)	Flashing

e - Cabin

Navigation light	OFF
Strobe lights (if installed)	OFF
Anti-collision light (if installed)	OFF
Pitot heating (if installed)	OFF
Landing lights	OFF
Instrument lights	OFF
Main switch	OFF

BEFORE STARTING ENGINE

Preflight inspection	Carried out
Doors	CLOSED, check hooks in place
Main switch	OFF
Parking brake	Set
Seats, seat belts, shoulder harnesses	ADJUSTED and SECURE
Flight controls	Check for proper operation
Pitch trim	Check deflection
Fuel selector	OPEN (L.H. or R.H.)
Circuit-breakers (side panel)	In
Magneto switch	OFF
"Radio master" (if installed)	OFF

ENGINE STARTING

NORMAL PROCEDURE :

Carburator heating	OFF
Propeller	FULL FORWARD
Mixture	FULL RICH
Main switch	ON
Fuel pump	ON
Injection	Throttle operated a few times
Pump warning light	ON
Fuel pressure	Green Sector
Throttle	1/4 OPEN
Area	Clear
Magneto / start switch	START (30 sec. maxi)

When the engine starts :

Magneto switch	BOTH
Oil pressure	Green Sector

If no oil pressure indication after
30 sec., shut-down engine.

Engine	1000 to 1200 RPM
Fuel pump	during heating
	OFF

HOT ENGINE :

Same procedure as normal procedure, but without injection.

COLD WEATHER PROCEDURE :

Same procedure as normal procedure, but, after starting, engine speed sustained by successive injections up to 900 / 1000 RPM.

FAILED STARTING :

Failed starting may be due to excess fuel resulting from repeated injection producing black smoke and back fire.

Proceed as follows :

Mixture	IDLE CUT-OFF
Throttle	FULL POWER
Magneto / start switch	START (30 sec. maxi)

Then, resume normal procedure without injection.

AFTER STARTING ENGINE

ELECTRICAL GENERATION CHECK :

Alternator switch OFF

- Generation warning light ON
- Voltmeter Yellow sector

Alternator switch ON

- Generation warning light OFF
- Voltmeter Green sector

Turn and bank indicator (if installed) ON

Suction gage (if installed) Checked

Anti-collision light (if installed) ON

Alarm panel test Positive

"Radio master" (if installed) ON

All radios and nav aids ON

Fuel selector Set to fullest tank

Flaps Checked and RETRACTED

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TAXIING

Parking brake	Release
Brakes	Checked
Flight instruments	Checked

Avoid exceeding 1200 RPM as long as the oil temperature indicator pointer is within yellow sector.

Steering the airplane with the rudder pedals only is generally sufficient. The combined use of the rudder pedals and the brakes permits tight turns.

Check operation of gyroscopic instruments by means of alternate turns : horizontal attitude, directional and turn and bank indicators.

ENGINE RUN-UP

Parking brake	Set
Engine controls friction	Adjusted
Oil temperature	Green sector
Oil pressure	Green sector
Fuel pressure	Green sector
Mixture	FULL RICH
Carburator heating	OFF
Fuel selector	Set to fullest tank

PROPELLER CHECK :

Propeller	FULL FORWARD
Throttle	2000 RPM
Propeller	Cycle twice (maxi. 500 RPM drop)
	Return to high RPM (FULL FORWARD)

MAGNETO CHECK :

Throttle 2000 RPM
Magnetos switch L. then BOTH
R. then BOTH

Maximum RPM drop on 175 RPM
each magneto
Maximum difference 50 RPM
between magnetos

CARBURATOR HEATING CHECK :

Carburator heating ON
Manifold pressure Decrease
Carburator temperature
indicator (if installed) Increase
Carburator heating OFF

MAXIMUM POWER CHECK :

Full throttle 2700 RPM

Throttle - Idle

BEFORE TAKE-OFF

Seats, seat belts, shoulder harnesses	Check
Doors	LOCKED
Controls	Free
Pitch trim	TAKE-OFF
Flaps	TAKE-OFF
Magneto switch	BOTH
Propeller	FULL FORWARD
Carburator heating	OFF
Mixture	FULL RICH
Fuel selector	Set to fullest tank
Fuel pump	ON
Oil temperature	Green sector
Oil pressure	Green sector

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Fuel pressure	Green sector
Voltmeter	Green sector
Altimeter	Set
Directional gyro (if installed)	Set
Horizontal attitude gyro (if installed)	
Parking brake	RELEASE - Light
Cabin blower (if installed)	OFF
Landing lights	As required
Navigation lights	As required
Pitot heating (if installed)	As required
Transponder (if installed)	As required

TAKE-OFF

Lined up on runway Check directional gyro
Smoothly apply full power
Airspeeds See Section 5

"Take-off performance"

STANDARD AIRSPEEDS :

Rotation	65 KIAS
Initial climb	67 KIAS

WHEN SAFELY AIRBORNE :

Brakes Apply

AT 300 ft :

Climb speed	73 KIAS
Flaps	RETRACT
Fuel pump	OFF
Landing lights	As required
Navigation lights	As required

CLIMB

Mixture	FULL RICH
Throttle	FULL POWER
Propeller	FULL FORWARD (2700 RPM)
Optimum climb speed	78 KIAS

NOTE :

Climb can also be carried out at higher speeds (better visibility towards front, better engine cooling) and lower power ratings (lower noise level)

CAUTION

CLIMB AT OPTIMUM GLIDE SHOULD BE USED ONLY IN EXCEPTIONAL CASES SINCE THE ENGINE IS LESS COOLED

CRUISE

Power	Adjusted
Pitch trim	Adjusted
Mixture	Adjusted
Normal cruise between 60 % and 75 %, see Section 5 "Performance".	
Adjust mixture on "FULL RICH" for power higher than 75 %.	
Maximum fuel imbalance 13.2 U.S Gallons (50 Litres).	

RECOMMENDATIONS :

In practice, it is recommended to change tank every half-hour when observing fuel pressure.

During take-off from high elevation airport or during prolonged climbs, roughness or loss of power may result from overrichness.

In such a case, adjust mixture control only enough to obtain smooth operation and not for economy.

Rough operation due to overrich fuel / air mixture is most likely to be encountered at altitudes above 5000 ft.

CAUTION

ALWAYS ENRICH MIXTURE BEFORE INCREASING POWER

*Flight into known icing conditions is
PROHIBITED*

In case of unintentional icing encounter (precipitation or clouds with outside air temperature at or below 32°F (0°C)) set the carburetor heating control in ON position.

Leave icing conditions as soon as possible.

Remember to replace the carburetor heating control in OFF position after leaving the icing area.

This airplane is fitted with a generating system which relies on battery power for initial excitation, therefore there is a possibility that if the generator is turned off in flight, the loss of the battery system, or the subsequent discharge of the battery will result in the loss of all electrical power.

DESCENT

Power setting as required for descent.

Every 1500 ft, carry out a go-around to avoid a too important engine cooling and spark plugs fouling.

If fast descent :

Carburetor heating

ON

APPROACH - LANDING

FINAL :

Airspeed	78 KIAS
Flaps	TAKE-OFF ON
Fuel pump	
Mixture	FULL RICH
Propeller	FULL FORWARD
Carburator heating	ON or OFF as required
Brakes	Checked
Seats, seat belts, shoulder harnesses Landing lights	ADJUSTED and SECURE ON as required

SHORT FINAL :

Flaps	LANDING
Airspeed	See Section 5 "Landing Performance"

Standard airspeed
Landing lights

72 KIAS
ON

GO-AROUND

Carburator heating OFF

Smoothly apply full power

Airspeed

70 / 73 KIAS

Retract flaps to take-off position then fully
Climb at 73 KIAS.

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AFTER LANDING

Fuel pump	OFF
Flaps	RETRACTED
Landing lights	OFF
Trim	TAKE-OFF
Radio equipment	As required
Pitot heating (if installed)	OFF
Carburator heating	OFF

SHUT-DOWN / SECURING AIRPLANE

Parking brake	Set
Turn and bank indicator (if installed)	OFF
Anti-collision light (if installed)	OFF
Navigation lights	OFF
"Radio master" (if installed)	OFF
Throttle	REDUCED
Magnetos cut-off test	OFF, then BOTH
Throttle	900 / 1000 RPM
Mixture	IDLE CUT-OFF
AFTER ENGINE STOPS :	
Magneto switch	OFF
Alternator switch	OFF
Main switch	OFF
Fuel selector	OFF
Controls lock	Installed
Chocks / Tie-downs	Installed

STALLS

CAUTION

ATTEMPT PRACTICE STALLS ONLY WITH SUFFICIENT ALTITUDE FOR RECOVERY

Power-on stalls require an extremely steep pitch attitude. If the center of gravity is at or near its aft limit, a slight tendency toward wing rocking or a wing drop may occur when the stabilator is deflected near its stop.

Aerodynamic warning (pre-stall buffet) is more pronounced at higher power settings. Stall recovery can be effected immediately by easing the stick forward. Altitude loss is minor in all cases and is minimized by prompt application of power at the onset of the stall.

The stall warning horn will sound from 5 to 10 knots before stall speed.

FLIGHT WITH CROSSWIND

TAKE-OFF :

Apply full power before brake release.

Aileron control moved into wind.

Keep the airplane on centerline using the rudder.

Maintain nose-wheel on ground up to 65 KIAS.

Lift-off cleanly in order to avoid touch-down.

LANDING :

When landing in a strong crosswind, use the minimum flap setting required for the landing distance available.

Although the crab or combination method of drift correction may be used, the wing low method gives the best control. Maximum bank angle close to the ground is 15°.

After touch-down, keep the nose-wheel on the ground, hold a straight course using rudder pedals.

OPERATION ON SHORT RUNWAYS

TAKE-OFF :

Flaps
Pitch trim

TAKE-OFF
TAKE-OFF

Apply full power before brake release.

Take-off

Airspeed : See Section 5
"Take-off performance"
Airspeed : See Section 5
"Take-off performance"

Initial climb

As soon as the airplane lifts off :

Airspeed
Flaps

73 KIAS
RETRACTED

LANDING :

Make a power approach with a reduced rate of descent.

Flaps

LANDING

Approach with power

Airspeed : See

Section 5 "Landing performance"

Just before touch-down, retard throttle to idle.

Nose-wheel on ground.

Firmly apply the brakes.

FLIGHT IN TURBULENT AIR

Maximum airspeed

128 KIAS

Recommended airspeed

108 KIAS

Seats, seat belts,

shoulder harnesses ADJUSTED and SECURE

USE OF DOORS

In windy or gusty conditions, the doors should be firmly held during opening and closing and should be closed and locked immediately after entering or leaving the airplane.

The doors must be closed and locked for all taxiing and flight operations.

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SECTION 5

PERFORMANCE

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SECTION 2

PERFORMANCE

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FLYOVER NOISE LEVEL

Flyover noise level measured in accordance with 14 CFR Part 36
Appendix F : 70.7 dB (A).

NOTE :

No determination has been made by the Federal Aviation
Administration that the noise levels of this airplane are or should be
acceptable or unacceptable for operation at, into or out of any airport.

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AIRSPEED CALIBRATION

NORMAL STATIC SOURCE

$CAS \approx IAS$

NOTE:

The indicated airspeeds (IAS) suppose instrument error to be null.

ALTERNATE STATIC SOURCE

In case of alternate static source utilization, open vents and / or actuate air conditioning flow lever to open position. Then, instrument error is slight.

ALTITUDE COMPENSATION

ALTERNATE STATIC SOURCE

In case of alternate static source utilization, open vents and / or actuate air conditioning flow lever to open position. Then, instrument error is not significant.

STALLING SPEEDS

CONDITIONS : Weight : 2535 lbs (1150 kg)
Power OFF

CONFIGURATION	BANK					
	0°		30°		45°	
	KIAS	MPH IAS	KIAS	MPH IAS	KIAS	MPH IAS
FLAPS RETRACTED	60	70	65	75	72	83
FLAPS TAKE-OFF	57	66	62	71	68	78
FLAPS LANDING	53	61	57	66	63	73

NOTE :

The indicated airspeeds (IAS) suppose instrument error to be null.

Figure 5.3 - STALLING SPEEDS

WIND COMPONENTS

EXAMPLE:

Wind speed

: 20 kt

Angle between wind direction and flight path

: 50°

Headwind

: 13 kt

Crosswind

: 15 kt

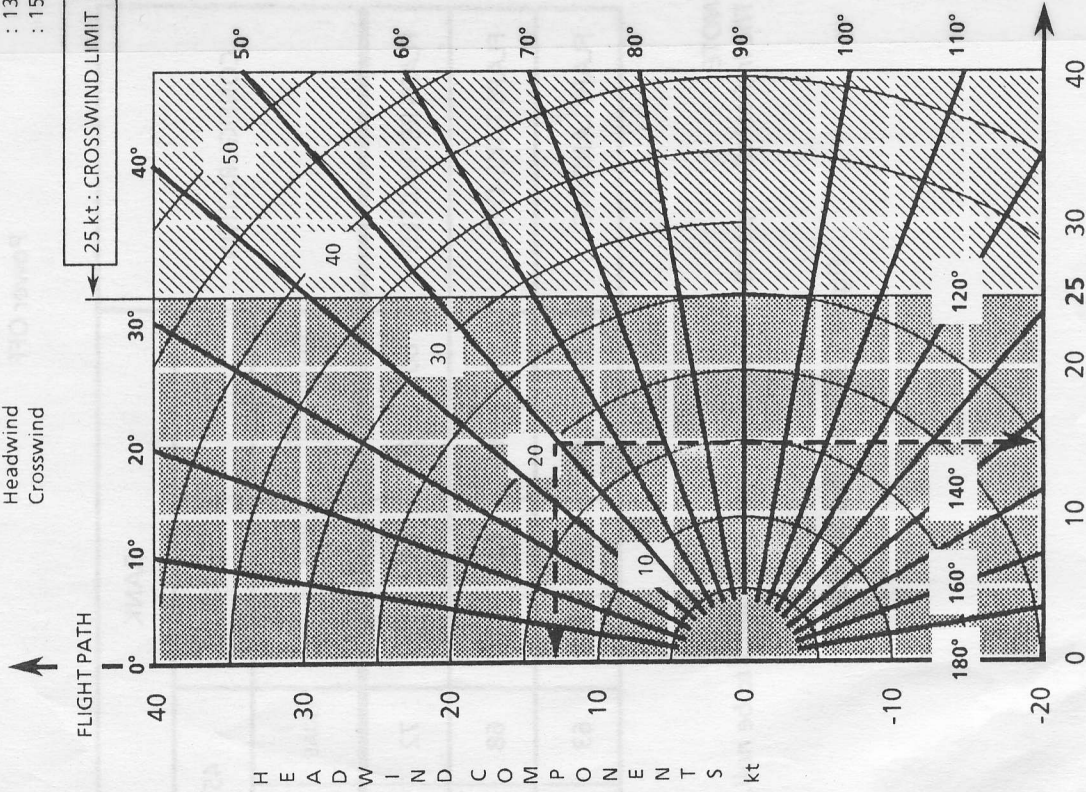


Figure 5.4 - WIND COMPONENTS

NOTICE

Measurements were taken with zero wind condition on dry and hard runway.

The performance are presented as a function of the altitude in feet and the temperature at the considered altitude.

The rolling distances at take-off shall be increased by :

- 10 % on tarred runway
 - 17 % on hard grass
 - 20 % on short grass
 - 37 % on high grass
 - 39 % on short, wet grass on a firm subsoil
- more than 39 % on soft, muddy or snowy field.

For operation on short, wet grass on a firm subsoil, increase take-off (clear 50 ft) distance by 25 % and landing distance by 30 %. The effect on the ground roll is evaluated above.

Wind influence :

Headwind :

Reduce distance of 20 % with 5 kt headwind.

Rear wind :

Increase distance of 15 % with 2.5 kt rear wind.

TAKE-OFF PERFORMANCE

Flaps extended

The take-off runs correspond to tests conducted (in TARDES-OSSUN), on tarred runway and compensated for concrete runway.

TAKE-OFF PERFORMANCE

CONDITIONS: IAS : Lift off : 59 KIAS - 68 MPH IAS
 Clear 50 ft : 65 KIAS - 75 MPH IAS
 Weight : 2535 lbs (1150 kg)

Temperature	Distance	Pressure altitude (ft)				
		0	2000	4000	6000	8000
- 4°F (- 20°C)	Roll (ft)	837	1001	1214	1460	1755
	Clear 50 ft (ft)	1296	1558	1886	2329	2920
+ 32°F (0°C)	Roll (ft)	968	1165	1394	1690	2051
	Clear 50 ft (ft)	1476	1804	2198	2739	3478
+ 59°F (+ 15°C)	Roll (ft)	1066	1280	1542	1870	2297
	Clear 50 ft (ft)	1657	2001	2461	3084	4035
+ 86°F (+ 30°C)	Roll (ft)	1181	1427	1722	2297	2543
	Clear 50 ft (ft)	1837	2231	2756	3478	4626
+ 104°F (+ 40°C)	Roll (ft)	1280	1542	1837	2231	2707
	Clear 50 ft (ft)	1968	2411	2969	3789	5118

Figure 5.5 - TAKE-OFF PERFORMANCE

CLIMB PERFORMANCE

CONDITIONS :

Climb speed : 78 KIAS - 90 MPH IAS

Weight : 2535 lbs (1150 kg)

Airplane equipped with wheel fairings

Flaps retracted

Pressure altitude (ft)	VERTICAL SPEED (ft/min)				
	-4°F (-20°C)	+ 32°F (0°C)	+ 59°F (+ 15°C)	+ 86°F (+ 30°C)	+ 104°F (+ 40°C)
0	921	844	787	732	697
2000	799	724	669	618	585
4000	671	598	547	498	465
6000	547	478	427	380	348
8000	427	362	313	266	236

Figure 5.6 - CLIMB PERFORMANCE

SECTION 5 PERFORMANCE

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CLIMB PERFORMANCE

CONDITIONS :

Climb speed : 78 KIAS - 90 MPH IAS

Weight : 2535 lbs (1150 kg)

Airplane without wheel fairings : option Nr 525
Flaps retracted

Pressure altitude (ft)	VERTICAL SPEED (ft/min)				
	-4°F (-20°C)	+ 32°F (0°C)	+ 59°F (+ 15°C)	+ 86°F (+ 30°C)	+ 104°F (+ 40°C)
0	792	726	677	630	599
2000	687	623	575	531	503
4000	577	514	470	428	400
6000	470	411	367	327	299
8000	367	311	269	229	203

Figure 5.7 - CLIMB PERFORMANCE

ANTENNAS ACCOUNT ON PERFORMANCE

Installation of radio antennas reduces cruise performance as follows :

AERIAL	CRUISE SPEED		RANGE
	KIAS	MPH IAS	
VHF	- 0.48	- 0.56	- 0.30 %
VOR	- 0.59	- 0.68	- 0.37 %
Glide	- 0.32	- 0.37	- 0.20 %
ADF Loop antenna	- 0.75	- 0.87	- 0.47 %
ELT	- 0.16	- 0.19	- 0.10 %
Anti-collision light	- 0.43	- 0.50	- 0.27 %
Strobe lights	- 0.16	- 0.19	- 0.10 %
Example : IFR	- 3.23	- 3.73	- 2 %

Figure 5.8 - ANTENNAS ACCOUNT ON PERFORMANCE

RATINGS TABLE - ENGINE LYCOMING O-360-A1AD

% BHP	PRESSURE ALTITUDE ft	MANIFOLD PRESSURE in.Hg		
		2350 RPM	2450 RPM	2700 RPM
75	0	24.6	24.1	23.1
	2000	24.1	23.6	22.4
	4000	23.6	23	22
	6000		22.5	21.5
	8000			21
65	0	22.2	21.8	20.7
	2000	21.7	21.2	20.3
	4000	21.2	20.7	19.8
	6000	20.7	20.2	19.4
	8000	20.2	19.7	19
55	0	21	20.6	/
	2000	20.5	20.1	
	4000	20	19.6	
	6000	19.5	19.1	
	8000	19	18.7	

Recommended values : *Italic numbers*

Add 0.5 in.Hg to manifold pressure per fraction of 18°F (10°C) above standard temperature.

Decrease manifold pressure by 0.5 in.Hg per fraction of 18°F (10°C) under standard temperature.

Figure 5.9 - RATINGS TABLE

LEVEL FLIGHT PERFORMANCE

Level flight performance are given for a take-off weight of 2535 lbs and for setting "Best Power" obtained with an EGT.

Fuel : 53.8 U.S Gal (204 litres) usable

Endurance without reserves

The endurances and ranges specified correspond to complete use of the fuel at the indicated altitude without allowing for take-off, climb, and so on...

Endurance with reserves

The endurances and ranges specified correspond to the use of the fuel allowing for take-off, climb, descent, indicated altitude and with a fuel reserve of 6.07 U.S Gal corresponding to 45 min flight at 50 % of the maximum power.

Various parameters such as the mixture setting, engine and propeller condition and the atmospheric conditions (wind, moisture, temperature, and so on...) may noticeably vary the endurance and range.

Performance with minimum consumption

- Decrease speeds by 2 KIAS - 2 MPH IAS
- Decrease fuel consumption by 1.32 U.S Gal/hr
- Add 15 % to distance to be cleared.

Settings

- Minimum consumption with EGT :
Best economy mixture setting : from full rich, reduce slowly mixture until peak EGT.
- Minimum consumption without EGT :
Best economy mixture setting : from full rich, reduce slowly until first engine malfunctioning signs (vibration) appear.
- Best power mixture setting :
From peak EGT, re-enrich until EGT temperature decreases by 75°F (3 divisions).

SECTION 5 PERFORMANCE

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PRESSURE ALTITUDE : 2000 ft
STANDARD TEMPERATURE : 52°F (11°C)
Airplane with wheel fairings

N (RPM)	2700		2600		2500		2400		2300	
MP (in. Hg)	22.1		23.6		23.6		25		25	
	20.7		22.1		22.1		23.6		23.6	
	19.2		20.7		20.7		22.1		22.1	
% BHP (rounded)	73		78		76		81		78	
	67		72		70		74		72	
	60		65		63		68		66	
TAS			58		57		62		60	
	KTAS MPH		KTAS MPH		KTAS MPH		KTAS MPH		KTAS MPH	
	119	137	122	141	121	140	124	143	122	141
	114	132	118	136	117	135	120	138	118	136
	108	124	113	130	112	129	115	133	113	130
C (U.S Gal/hr)			106	122	104	119	110	127	108	124
	11.4		11.7		11		11.3		11.1	
	10.4		10.6		10		10.5		10.1	
	9.4		9.6		9.1		9.6		9.2	
			8.8		8.4		8.7		8.4	
Distance to be cleared without reserves	h.min SM		h.min SM		h.min SM		h.min SM		h.min SM	
	4.42	646	4.37	649	4.53	684	4.46	684	4.41	662
	5.12	687	5.05	690	5.22	724	5.07	708	5.20	727
	5.43	711	5.36	727	5.54	758	5.38	749	5.51	764
Distance to be cleared with reserves	h.min SM		h.min SM		h.min SM		h.min SM		h.min SM	
	4.07	562	4.02	565	4.17	593	4.11	593	4.14	593
	4.32	597	4.26	600	4.42	631	4.29	615	4.39	531
	5.00	618	4.53	631	5.06	657	4.49	649	5.06	662
			5.19	646	5.35	665	5.23	677	5.34	690

Figure 5.10 - LEVEL FLIGHT PERFORMANCE (2000 ft)

PRESSURE ALTITUDE : 2000 ft

STANDARD TEMPERATURE : 52°F (11°C)

Airplane without wheel fairings : option Nr 525

N (RPM)	2700		2600		2500		2400		2300	
MP (in.Hg)	22.1		23.6		23.6		25		25	
	20.7		22.1		22.1		23.6		23.6	
	19.2		20.7		20.7		22.1		22.1	
% BHP (rounded)	73		78		76		81		78	
	67		72		70		74		72	
	60		65		63		68		66	
TAS			58		57		62		60	
	KTAS	MPH	KTAS	MPH	KTAS	MPH	KTAS	MPH	KTAS	MPH
	110	127	113	130	112	129	114	132	113	130
	106	122	108	125	108	124	111	127	109	126
C (U.S Gal/hr)	99	114	104	119	103	118	106	122	105	121
			97	112	196	110	101	117	99	114
	11.4		11.7		11		11.3		11.1	
	10.4		10.6		10		10.5		10.1	
Distance to be cleared without reserves	9.4		9.6		9.1		9.6		9.2	
			8.8		8.4		8.7		8.4	
	h.min	SM	h.min	SM	h.min	SM	h.min	SM	h.min	SM
	4.42	597	4.37	600	4.53	630	4.46	629	4.41	609
Distance to be cleared with reserves	5.12	634	5.05	635	5.22	665	5.07	650	5.20	672
	5.43	652	5.36	666	5.54	696	5.38	687	5.51	708
			6.06	683	6.25	706	6.10	722	6.23	728
	h.min	SM	h.min	SM	h.min	SM	h.min	SM	h.min	SM
	4.07	518	4.02	519	4.17	547	4.11	544	4.14	546
	4.32	549	4.26	550	4.42	580	4.29	565	4.39	580
	5.00	568	4.53	577	5.06	602	4.49	588	5.06	608
			5.19	593	5.35	612	5.23	621	5.34	633

Figure 5.11 - LEVEL FLIGHT PERFORMANCE (2000 ft)

SECTION 5 PERFORMANCE

SOCATA
MODEL TB 10

PRESSURE ALTITUDE : 4000 ft STANDARD TEMPERATURE : 45°F (7°C) *Airplane with wheel fairings*

N (RPM)	2700	2600	2500	2400	2300
MP (in.Hg)	22.1	23.6	23.6	23.6	23.6
	20.7	22.1	22.1	22.1	22.1
	19.2	20.7	20.7	20.7	20.7
% BHP (rounded)	76	80	79	77	74
	69	74	72	70	68
	62	67	66	64	62
TAS		60	59	58	
	KTAS	KTAS	KTAS	KTAS	KTAS
	MPH	MPH	MPH	MPH	MPH
	123	126	125	124	122
	118	122	120	119	117
C (U.S Gal/hr)	112	117	115	113	111
		110	107	105	101
					128
	11.9	12.1	11.4	10.9	10.4
	10.7	11	10.3	9.9	9.6
	9.7	9.9	9.7	9	8.7
Distance to be cleared without reserves		9.1	8.5	8.3	
	h.min	h.min	h.min	h.min	h.min
	SM	SM	SM	SM	SM
	4.32	4.27	4.43	4.57	5.09
	5.02	4.55	5.13	5.27	5.40
Distance to be cleared with reserves	5.34	5.25	5.32	6.00	6.12
		5.57	6.19	6.30	6.12
					783
					786
					792
	h.min	h.min	h.min	h.min	h.min
	SM	SM	SM	SM	SM
	3.58	3.53	4.07	4.19	4.29
	4.28	4.17	4.32	4.44	4.54
	4.49	4.42	4.48	5.11	5.23
		5.08	5.26	5.35	671
					618
					652
					677

Figure 5.12 - LEVEL FLIGHT PERFORMANCE (4000 ft)

PRESSURE ALTITUDE : 4000 ft

STANDARD TEMPERATURE : 45°F (7°C)

Airplane without wheel fairings : option Nr 525

N (RPM)	2700	2600	2500	2400	2300
MP (in.Hg)	22.1	23.6	23.6	23.6	23.6
	20.7	22.1	22.1	22.1	22.1
	19.2	20.7	20.7	20.7	20.7
% BHP (rounded)	76	80	79	77	74
	69	74	72	70	68
	62	67	66	64	62
TAS		60	59	58	
	KTAS	MPH	KTAS	MPH	KTAS
	113	130	115	132	112
	108	125	111	127	108
C (U.S Gal/hr)	103	118	106	122	103
		101	99	97	112
Distance to be cleared without reserves	11.9	12.1	11.4	10.9	10.4
	10.7	11	10.3	9.9	9.6
	9.7	9.9	9.7	9	8.7
		9.1	8.5	8.3	
Distance to be cleared with reserves	h.min	SM	h.min	SM	h.min
	4.32	589	4.27	685	4.57
	5.02	629	4.55	634	5.27
	5.34	657	5.25	672	6.00
Distance to be cleared with reserves			5.57	690	6.30
	h.min	SM	h.min	SM	h.min
	3.58	508	3.53	506	4.19
	4.28	537	4.17	540	4.44
Distance to be cleared with reserves	4.49	562	4.42	574	5.11
			5.08	587	5.35
			5.26	612	6.21
Distance to be cleared with reserves	h.min	SM	h.min	SM	h.min
	4.29	571	4.29	553	4.29
	4.54	602	4.54	587	4.54
Distance to be cleared with reserves	5.23	621	5.23	618	5.23

Figure 5.13 - LEVEL FLIGHT PERFORMANCE (4000 ft)

SECTION 5 PERFORMANCE

SOCATA
MODEL TB 10

PRESSURE ALTITUDE : 6000 ft
STANDARD TEMPERATURE : 37°F (3°C)
Airplane with wheel fairings

N (RPM)	2700	2600	2500	2400	2300
MP (in.Hg)	22.1 20.7 19.2	22.1 20.7 19.2	22.1 20.7 19.2	22.1 20.7 19.2	22.1 20.7 19.2
	78 71 64	76 69 63	74 68 61	73 66 60	70 64 58
	% BHP (rounded)				
TAS	KTAS MPH	KTAS MPH	KTAS MPH	KTAS MPH	KTAS MPH
	127 122 115	125 120 113	125 119 111	123 117 109	121 115 105
	146 140 132	144 139 130	144 137 128	142 135 126	139 132 121
	KTAS MPH	KTAS MPH	KTAS MPH	KTAS MPH	KTAS MPH
C (U.S Gal/hr)	12.2 11.1 9.9	11.3 10.3 9.3	10.7 9.7 8.9	10.2 9.3 8.5	9.9 8.9 8.2
	h.min SM	h.min SM	h.min SM	h.min SM	h.min SM
	4.25 4.52 5.25	4.46 5.14 5.48	5.02 5.33 6.06	5.16 5.48 6.21	5.28 6.00 6.32
Distance to be cleared without reserves	SM	SM	SM	SM	SM
	643 684 718	687 724 755	721 761 783	746 783 795	761 792 789
	h.min SM	h.min SM	h.min SM	h.min SM	h.min SM
	3.53 4.15 4.42	4.10 4.33 5.00	4.23 4.49 5.16	4.35 5.01 5.28	4.44 5.11 5.37
Distance to be cleared with reserves	SM	SM	SM	SM	SM
	550 581 612	587 618 640	615 646 665	634 665 671	646 671 668
	h.min SM	h.min SM	h.min SM	h.min SM	h.min SM

Figure 5.14 - LEVEL FLIGHT PERFORMANCE (6000 ft)

PRESSURE ALTITUDE : 6000 ft

STANDARD TEMPERATURE : 37°F (3°C)

Airplane without wheel fairings : option Nr 525

N (RPM)	2700		2600		2500		2400		2300	
MP (in.Hg)	22.1		22.1		22.1		22.1		22.1	
	20.7		20.7		20.7		20.7		20.7	
	19.2		19.2		19.2		19.2		19.2	
% BHP (rounded)	78		76		74		73		70	
	71		69		68		66		64	
	64		63		61		60		58	
TAS	KTAS	MPH	KTAS	MPH	KTAS	MPH	KTAS	MPH	KTAS	MPH
	117	134	115	133	115	132	113	130	111	128
	112	129	111	127	110	126	108	124	106	122
	106	122	104	120	103	118	100	116	97	111
C (U.S Gal/hr)	12.2		11.3		10.7		10.2		9.9	
	11.1		10.3		9.7		9.3		8.9	
	9.9		9.3		8.9		8.5		8.2	
Distance to be cleared without reserves	h.min	SM	h.min	SM	h.min	SM	h.min	SM	h.min	SM
	4.25	592	4.46	634	5.02	664	5.16	685	5.28	700
	4.52	628	5.14	665	5.33	699	5.48	719	6.00	732
	5.25	661	5.48	696	6.06	720	6.21	735	6.32	725
Distance to be cleared with reserves	h.min	SM	h.min	SM	h.min	SM	h.min	SM	h.min	SM
	3.53	506	4.10	537	4.23	568	4.35	580	4.44	593
	4.15	534	4.33	565	4.49	593	5.01	612	5.11	615
	4.42	562	5.00	587	5.16	608	5.28	615	5.37	621

Figure 5.15 - LEVEL FLIGHT PERFORMANCE (6000 ft)

SECTION 5 PERFORMANCE

SOCATA
MODEL TB 10

PRESSURE ALTITUDE : 8000 ft

STANDARD TEMPERATURE : 30°F (−1°C)

Airplane with wheel fairings

N (RPM)	2700	2600	2500	2400	2300
MP (in. Hg)	20.7 19.2 17.7	20.7 19.2 17.7	20.7 19.2	20.7 19.2	20.7 19.2
% BHP (rounded)	74 66 59	72 65 58	70 63	68 62	66 60
TAS	KTAS MPH	KTAS MPH	KTAS MPH	KTAS MPH	KTAS MPH
	125 119 107	124 117 103	122 115	121 112	119 109
	144 137 123	143 134 118	141 132	139 129	137 126
C (U.S Gal/hr)	11.4 10.2 9.3	10.6 9.6 8.7	10 9.1	9.6 8.7	9.2 8.5
	h.min SM	h.min SM	h.min SM	h.min SM	h.min SM
	4.42 5.15 5.48	5.05 5.37 6.09	5.22 5.55	5.37 6.10	5.49 6.22
Distance to be cleared without reserves	677 718 715	727 752 727	758 783	780 798	798 798
	h.min SM	h.min SM	h.min SM	h.min SM	h.min SM
	4.09 4.35 5.02	4.27 4.52 5.18	4.41 5.07	4.52 5.19	5.02 5.28
Distance to be cleared with reserves	575 606 603	612 634 615	637 659	656 671	668 671
	h.min SM	h.min SM	h.min SM	h.min SM	h.min SM
	4.09 4.35 5.02	4.27 4.52 5.18	4.41 5.07	4.52 5.19	5.02 5.28

Figure 5.16 - LEVEL FLIGHT PERFORMANCE (8000 ft)

PRESSURE ALTITUDE : 8000 ft

STANDARD TEMPERATURE : 30°F (− 1°C)

Airplane without wheel fairings : option Nr 525

N (RPM)	2700		2600		2500		2400		2300	
MP (in.Hg)	20.7		20.7		20.7		20.7		20.7	
	19.2		19.2		19.2		19.2		19.2	
	17.7		17.7							
% BHP (rounded)	74		72		70		68		66	
	66		65		63		62		60	
	59		58							
TAS	KTAS	MPH	KTAS	MPH	KTAS	MPH	KTAS	MPH	KTAS	MPH
		115		132		113		130		110
		110		126		106		122		100
		99		114		109		104		116
C (U.S Gal/hr)	11.4		10.6		10		9.6		9.2	
	10.2		9.6		9.1		8.7		8.5	
	9.3		8.7							
Distance to be cleared without reserves	h.min	SM	h.min	SM	h.min	SM	h.min	SM	h.min	SM
		4.42		620		5.05		671		5.49
		5.15		662		5.37		696		6.22
		5.48		661		6.09		670		739
Distance to be cleared with reserves	h.min	SM	h.min	SM	h.min	SM	h.min	SM	h.min	SM
		4.09		528		4.27		562		5.02
		4.35		526		4.52		581		6.12
		5.02		553		5.18		565		6.15

Figure 5.17 - LEVEL FLIGHT PERFORMANCE (8000 ft)

SECTION 5 PERFORMANCE

SOCATA
MODEL TB 10

PRESSURE ALTITUDE : 10000 ft
STANDARD TEMPERATURE : 23°F (- 5°C)
Airplane with wheel fairings

N (RPM)	2700	2600	2500	2400	2300
MP (in.Hg)	19.2 17.7	19.2	19.2	19.2	19.2
% BHP (rounded)	68 61	67	65	64	62
TAS	KTAS MPH	KTAS MPH	KTAS MPH	KTAS MPH	KTAS MPH
	122 110 127	120 139	119 137	116 134	113 130
C (U.S Gal/hr)	10.6 9.5	9.9	9.4	9	8.7
	h.min SM	h.min SM	h.min SM	h.min SM	h.min SM
Distance to be cleared without reserves	5.06 718 5.40 718	5.28 758	5.45 786	6.00 802	6.10 802
	h.min SM	h.min SM	h.min SM	h.min SM	h.min SM
Distance to be cleared with reserves	4.30 603 4.56 603	4.47 634	5.01 656	5.11 668	5.20 668
	h.min SM	h.min SM	h.min SM	h.min SM	h.min SM

Figure 5.18 - LEVEL FLIGHT PERFORMANCE (10000 ft)

PRESSURE ALTITUDE : 10000 ft

STANDARD TEMPERATURE : 23°F (-5°C)

Airplane without wheel fairings : option Nr 525

N (RPM)	2700	2600	2500	2400	2300
MP (in.Hg)	19.2 17.7	19.2	19.2	19.2	19.2
% BHP (rounded)	68 61	67	65	64	62
TAS	KTAS	MPH	KTAS	MPH	KTAS
	113	130	109	107	104
	101	117	128	123	119
C (U.S Gal/hr)	10.6 9.5	9.9	9.4	9	8.7
	h.min	SM	h.min	SM	h.min
	5.06	5.28	5.45	6.00	6.10
Distance to be cleared without reserves	663	700	725	738	734
	5.40	663			
	h.min	SM	h.min	SM	h.min
Distance to be cleared with reserves	4.30	4.47	5.01	5.11	5.20
	553	581	597	612	612
	4.56	553			

Figure 5.19 - LEVEL FLIGHT PERFORMANCE (10000 ft)

LANDING PERFORMANCE

WEIGHT : 2407 lbs (1092 kg)

CONDITIONS : Clear 50 ft : 72 KIAS - 83 MPH IAS
Flaps in landing position

Temperature	Distance	Pressure altitude (ft)				
		0	2000	4000	6000	8000
- 4°F (- 20°C)	Roll (ft)	560	610	660	715	765
	Clear 50 ft (ft)	1275	1355	1440	1545	1665
+ 32°F (0°C)	Roll (ft)	610	660	715	765	830
	Clear 50 ft (ft)	1360	1460	1545	1665	1765
+ 59°F (+ 15°C)	Roll (ft)	650	695	745	815	880
	Clear 50 ft (ft)	1425	1525	1630	1730	1835
+ 86°F (+ 30°C)	Roll (ft)	680	730	780	850	917
	Clear 50 ft (ft)	1495	1595	1695	1815	1935
+ 104°F (+ 40°C)	Roll (ft)	695	745	815	880	950
	Clear 50 ft (ft)	1545	1630	1750	1865	1985

Figure 5.20 - LANDING PERFORMANCE (2407 lbs)

LANDING PERFORMANCE

WEIGHT : 2535 lbs (1150 kg)

CONDITIONS : Clear 50 ft : 73 KIAS - 84 MPH IAS
Flaps in landing position

Temperature	Distance	Pressure altitude (ft)				
		0	2000	4000	6000	8000
- 4°F (- 20°C)	Roll (ft)	591	640	689	738	787
	Clear 50 ft (ft)	1345	1427	1526	1624	1739
+ 32°F (0°C)	Roll (ft)	640	689	738	787	886
	Clear 50 ft (ft)	1427	1542	1624	1739	1870
+ 59°F (+ 15°C)	Roll (ft)	673	722	771	869	935
	Clear 50 ft (ft)	1509	1608	1706	1821	1936
+ 86°F (+ 30°C)	Roll (ft)	705	755	837	902	968
	Clear 50 ft (ft)	1575	1673	1772	1919	2034
+ 104°F (+ 40°C)	Roll (ft)	722	787	869	935	1001
	Clear 50 ft (ft)	1624	1706	1854	1969	2083

Figure 5.21 - LANDING PERFORMANCE (2535 lbs)

SECTION 5 PERFORMANCE

SOCATA
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CLIMB - CONSUMPTION - TIME - DISTANCE COVERED

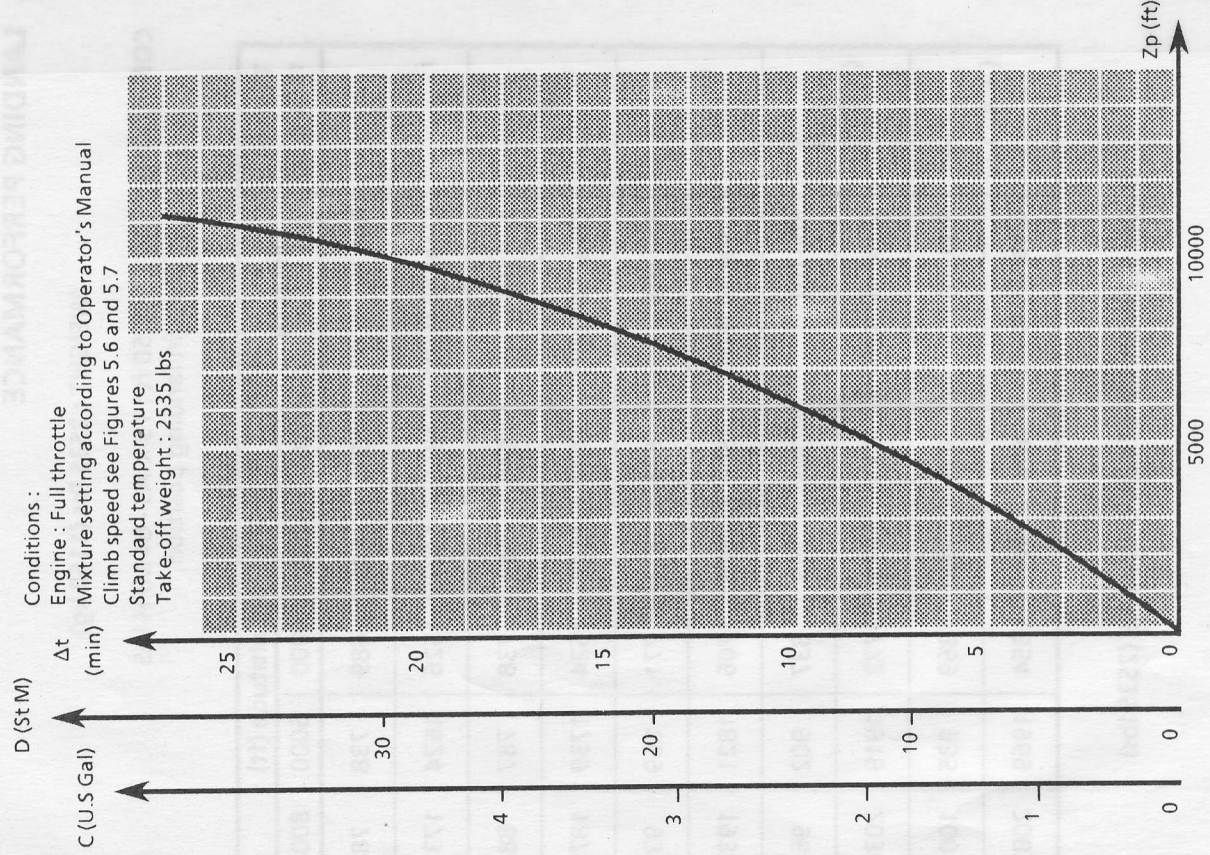


Figure 5.22 - CLIMB - CONSUMPTION - TIME - DISTANCE COVERED

SECTION 6

WEIGHT AND BALANCE

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SECTION 6 WEIGHT AND BALANCE

SOCATA
MODEL TB 10

GENERAL

This section contains the procedure for determining the basic empty weight and moment of SOCATA Model TB 10 airplane. Procedures for calculating the weight and moment for various operations are also provided. A list of equipment available for this airplane is included at the back of this section.

It should be noted that the list of specific optional equipment installed on your airplane as delivered from the factory can be found in the records carried in the airplane.

IT IS THE RESPONSIBILITY OF THE PILOT TO ENSURE THAT THE AIRPLANE IS LOADED PROPERLY.

AIRPLANE WEIGHING PROCEDURES

Refer to Maintenance Manual for the procedures to use.

NOTE :

Weighting carried out in factory takes into account all equipment installed on the airplane. The list of these equipment and the weighing result are noted in the Individual Inspection Record.

BAGGAGE / CARGO LOADING

BAGGAGE

The baggage compartment is located at the back of rear passengers seat. Loading can either be carried out through baggage compartment access door provided with a locking device, located on L.H. side of the airplane, or from the inside of the cabin, on upper part of the rear seat back. In this case, a zip fastener allows folding the sound-proofing cloth.

Tie-down straps are provided for securing baggage on compartment floor.

CARGO

To facilitate the carrying of equipment, large or bulky items, the rear seat may be removed from the airplane.

To remove rear seat : See Figure 6.1 (A, B, C, D)

- Lift up rear seat seating (Item 6) (kept in position with "Velcro" straps)
- If you want to free the back from its support plate, lift it up about 1.5 inch at both ends and pull it forward so that both attaching pins free from apertures.
- To remove the support plate (Item 5) and back (Item 1) :
 - . Unfasten attachments of sound-proofing cloth on cross-beam (Item 2)
 - . Pushing, unscrew $\frac{1}{4}$ turn both attaching pins of air conditioning duct on rear floor (Item 4)
 - . Pull both latches inwards (Item 3)
 - . Lift up support plate (Item 5) to disengage it forward.

NOTE :

To reinstall rear seat - see Figure 6.1 (a, b, c, d) reverse removal instructions.

IMPERATIVELY RESPECT WEIGHT AND BALANCE LIMITS

THE PILOT IS RESPONSIBLE FOR CORRECT BAGGAGE AND / OR CARGO LOADING. PRIOR TO ANY FLIGHT HE MUST MAKE SURE THAT WEIGHT, BALANCE AND TIE-DOWN ARE CORRECT.

- Baggage weight :

Maximum 143 lbs (65 kg) at 66.04 in. (2.600 m)

- Cargo weight (without baggage) :

Maximum 573 lbs (260 kg) at 48.26 in. (1.900 m)

CAUTION

WHEN IN CARGO CONFIGURATION, NO PASSENGERS ARE ALLOWED IN THE CARGO AREA.

SECTION 6 WEIGHT AND BALANCE

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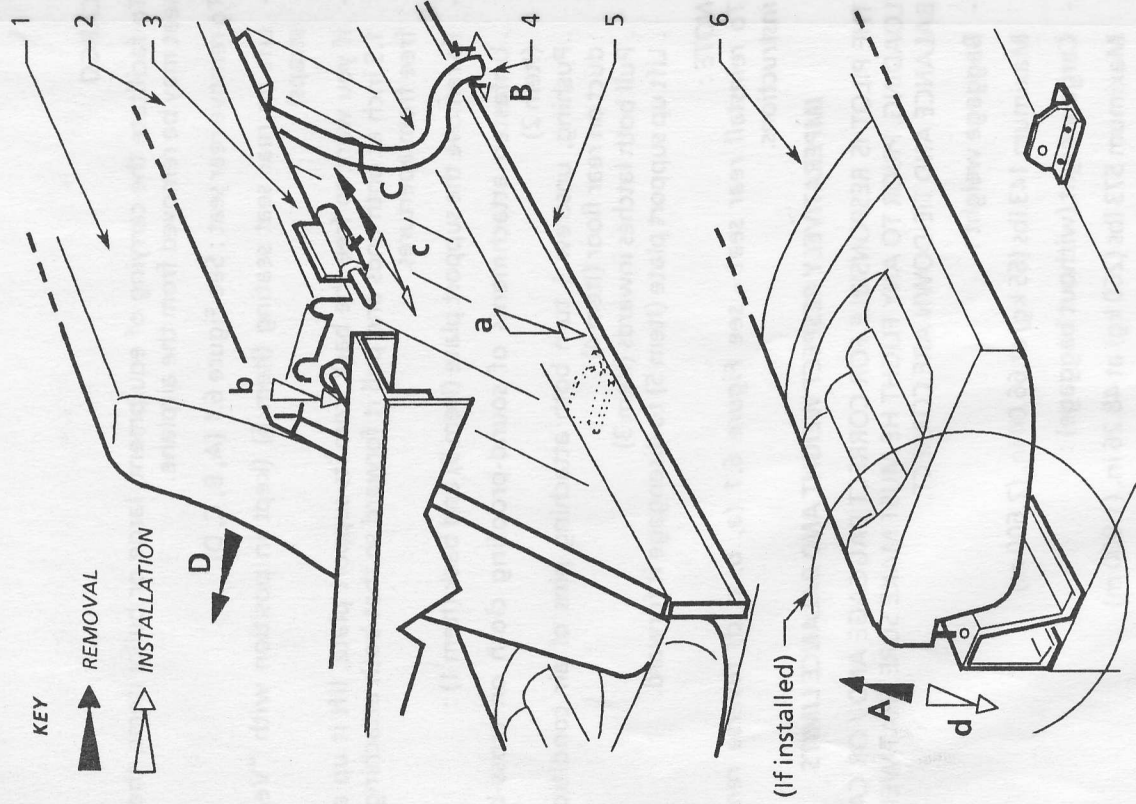


Figure 6.1 - REMOVAL AND INSTALLATION OF REAR SEAT

DETERMINING WEIGHT AND BALANCE

GENERAL

This paragraph is intended to provide the pilot with a simple means of determining weight and balance of his airplane with regard to its empty characteristics and loading. The empty weight to be considered is the one noted on the last weighing form.

The data concerning loading are given on following graphs :

- Loading graph : see Figure 6.4
- Weight / Moment envelope : see Figure 6.5

To determine airplane loading within a given flight configuration, you only have to add up weights and moments of the various loads recorded and to add them to empty airplane data.

These values carried forward on weight / moment envelope must give a point within the limits drawn with continuous line.

If that is the case, loading is acceptable.

NOTE :

If moment is not directly known (optional equipment for example), determine it multiplying weight (lbs) by arm (in.).

UTILIZATION OF WEIGHT / MOMENT GRAPH

Extract translucent Figure 6.5 from the manual and take a pencil.

- On Figure 6.5, place point A (1) corresponding to your empty airplane
(Our sample loading : 1554 lbs - 59.17 lb.in / 1000)
- Superpose point A (1) and point A of graph ① Figure 6.4.
- Draw on weight / moment envelope the straight line pilot + front passenger to get point A (2) corresponding to front seats loading.
(Our sample loading : 2 persons 340 lbs).

SECTION 6 WEIGHT AND BALANCE

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- Superpose point A (2) and point A of graph ①, draw the rear passengers straight line to get point B (1) related to rear seat loading.
(Our sample loading : 2 persons 340 lbs)
- Superpose point B (1) and point B of graph ②, draw the fuel straight line to get point B (2).
(Our sample loading : 249 lbs - 41.45 U.S Gal fuel)
- Superpose point B (2) and point B of graph ③, draw the baggage straight line to get point M.
(Our sample loading : 33 lbs baggage)

Since point M falls within weight / moment envelope, the loading is acceptable.

NOTE :

The option Nr 800.00 "Moving back of L.H. pilot's seat" is marked on your airplane by a color ring (yellow / green) located on the 2 front supports (tubes) of the seat.

SECTION 6
WEIGHT AND BALANCE

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	SAMPLE AIRPLANE		YOUR AIRPLANE			Ref. on chart Figure 6.6
	Weight lb	Lever arm in.	Moment lb.in./1000	Weight lb	Lever arm in.	Moment lb.in./1000
Empty standard airplane	1528	37.83	57.80	1165	45.42	53.16
Optional equipment	11	1.57	1.73	255	45.99	117.14
Oil (13.3 qt)	15	-23.82	-0.36	720	82.54	113.33
Empty weight	1554		59.17		42.35	111.57
Pilot + front passenger	340	45.86	15.59		5.82	
Rear seat passengers	340	82.48	28.04			
Fuel (66 U.S Gal.)	249	42.32	10.54			
Baggage	33	97.05	3.2			
TOTAL WEIGHT AND MOMENT	2516		116.50	2443		117.98
						M

Figure 6.3 - SAMPLE LOADING

CAUTION

Option Nr 800.00 (See NOTE on page 6.6) : 2 in. (50 mm)
moving back for pilot's seat

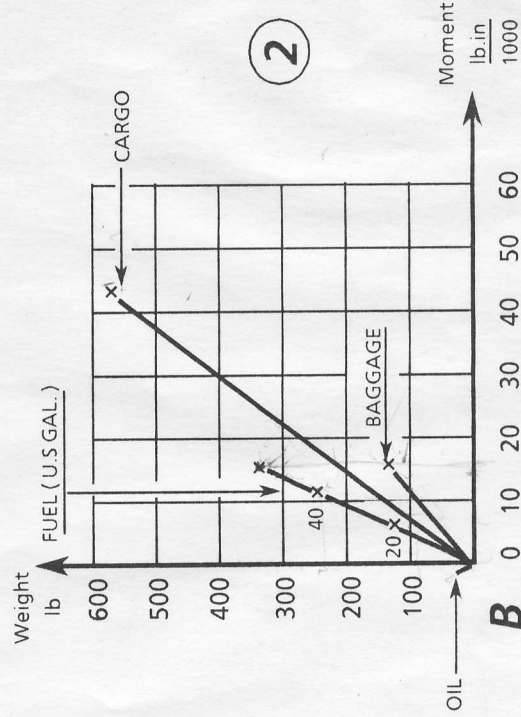
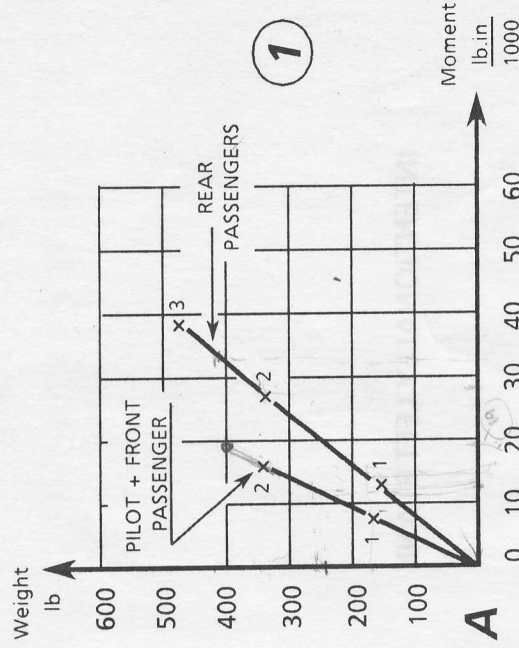


Figure 6.4 - LOADING GRAPHS

SECTION 6
WEIGHT AND BALANCE

SOCATA
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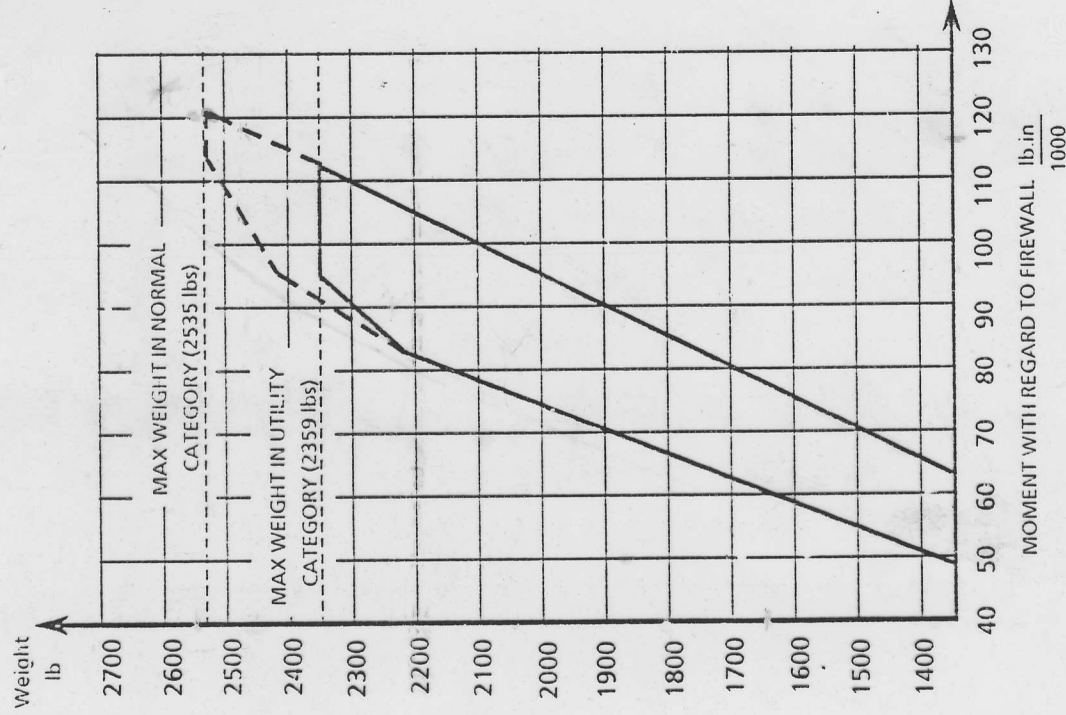


Figure 6.5 - LIMITS WEIGHT / MOMENT

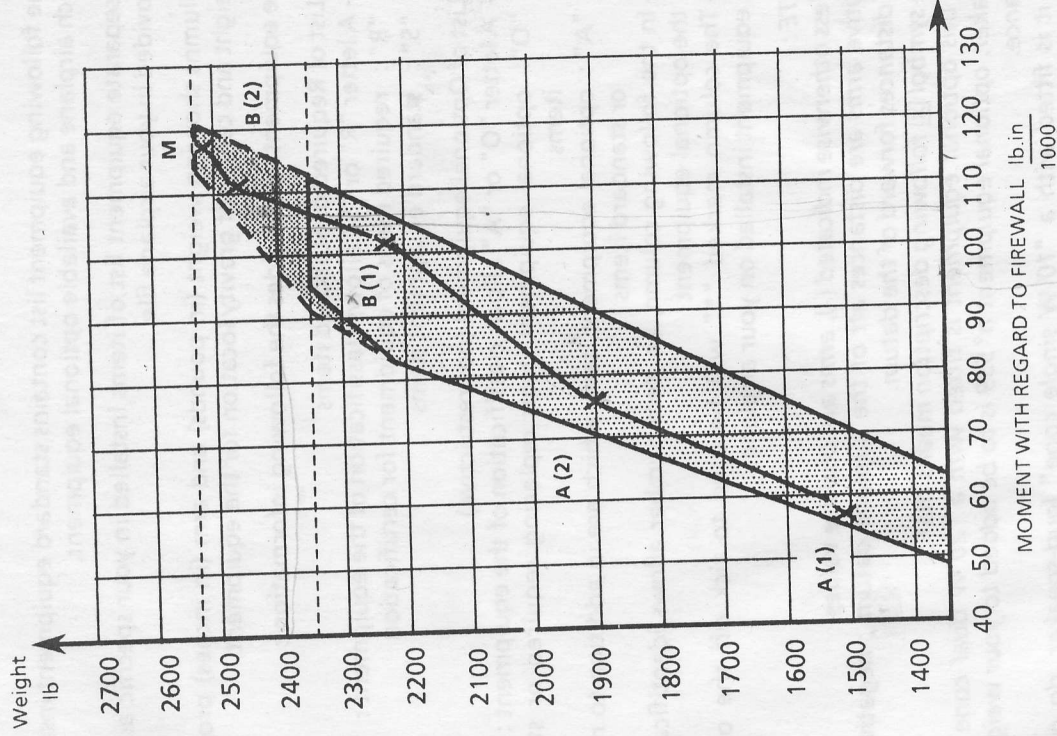


Figure 6.6 - LOADING SAMPLE

SECTION 6 WEIGHT AND BALANCE

SOCATA
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EQUIPMENT LIST

The following equipment list contains standard equipment installed on each airplane and available optional equipment.

A separate equipment list of items installed in your specific airplane is provided in your airplane file.

Columns showing weight (in pounds) and arm (in inches) provide the weight and center of gravity location for the equipment.

The equipment list provides the following information :

a) List of Required or Standard items

- A letter "R" or "S" allows classification of the equipment :

"R" : required items of equipment for certification

"S" : standard equipment items

b) List of Optional equipment (not restrictive)

- A letter "O" or "A" allows classification of the equipment :

"O" : optional equipment items replacing required or standard items

"A" : optional equipment items which are in addition to required or standard items

- In the following column, an item number allows identification of the optional equipment

- The column marked "*" will be used to tick off the optional equipment installed on your airplane.

NOTE :

Unless otherwise indicated (-), arms are positive values.

Positive arms are distances aft of the airplane datum ; negative arms are distances forward of the datum.

The symbol ☒ following description means that :

- If this optional equipment is fitted with a "20 W dual cone" loud-speaker, optional equipment n° 539 is to be added to your weight and balance.

- If it is fitted with a "10 W single cone" loud-speaker, do not add anything.

R or S	REQUIRED OR STANDARD EQUIPMENT	WEIGHT lb	ARM in.
POWER PLANT AND ACCESSORIES			
R	Engine : LYCOMING O-360-A1AD	287.700	- 27.95
R	Propeller : HARTZELL HC-C2YK-1BF/F 7666 A-2	54.233	- 47.64
R	Oil cooler : NDM 20002A	1.742	- 20.47
R	Propeller governor : HARTZELL F4	5.731	- 14.96
R	Fuel selector / filter : LE BOZEC 35001 A10-1	1.300	44.49
LANDING GEAR AND ACCESSORIES			
Wheels, tires and brakes - Main LDG (2) :			
R	- Wheel assy : CLEVELAND 40-97E Type III	5.842	59.84
R	- Brake assy : CLEVELAND 91.50	1.918	59.84
R	- Tire : 6.00-6 6 PR	8.818	59.84
R	- Tube : 6.00-6	1.653	59.84
Fairings :			
S	- L.H. : TB10 48012006	11.905	62.20
S	- R.H. : TB10 48012007	11.905	62.20
Wheel and tire - Nose LDG :			
R	- Wheel assy : CLEVELAND 40-70 B	2.822	- 16.93
R	- Tire : 5.00-5 6 PR	5.798	- 16.93
R	- Tube : 5.00-5	1.455	- 16.93
S	Fairings (Front and Rear) : TB10 48014004 and 005	6.173	- 10.24
ELECTRICAL EQUIPMENT			
R	Battery : 12 V - 32 AH SONNENSCHNEIDER 6MK5	21.826	- 2.76
R	Alternator : PRESTOLITE 70A ALX 8421	12.985	- 37.80

SECTION 6 WEIGHT AND BALANCE

SOCATA
MODEL TB 10

R or S	REQUIRED OR STANDARD EQUIPMENT	WEIGHT lb	ARM in.
R	Dual magneto : D4LN 3000	10.582	- 17.32
R	Starter : PRESTOLITE MZ 4222	12.632	- 39.37
R	Battery relay : RBM 70 906	0.816	- 1.18
R	Starter relay : RBM 70 112 225-5	0.573	- 1.18
S	Lighter : 910.1704	0.287	37.80
R	Alarms panel : TB10 61042	0.463	22.83
R	Voltage regulator : TB20 61033000 (LAMAR 800371.5)	1.345	3.94
R	Fuel electric pump : BENDIX 480 543	1.653	1.18
R	Flaps actuator : AVIAC 8076.1 or AVIAC 8218	5.070	61.81
S	Cabin lighting (Front and Rear) : TB10 61001	0.639	65.35
S	Landing light : G.E. 4509	0.441	35.43
S	Taxi light : G.E. 4519	0.441	35.43
S	Navigation lights : - L.H. : LABINAL 47007 903 30G - R.H. : LABINAL 47007 903 50D - Rear : LABINAL 47007 907 70AR	0.220 0.220 0.198	33.86 33.86 239.76
INSTRUMENTS			
R	Tachometer : AID 30S 101.02 or AID 30S 101.12	1.124	25.59
R	Manifold pressure : UI 6111 Code D 50 or AID 27.1000.3L	1.146	25.59

R or S	REQUIRED OR STANDARD EQUIPMENT	WEIGHT lb	ARM in.
R	Engine and fuel controls : TB10 76061	1.058	24.80
R	True airspeed indicator with integrated lighting UI 8100 Code B 483	0.661	24.80
R	Altimeter : UI 5934 PD 1 Code A 187	1.036	25.59
R	Vertical speed indicator : UI 7000 Code C 85	1.014	24.80
R	Compass : TB10 76025 (AIRPATH C2400 L 4P)	0.595	20.47
R	Turn and bank indicator : AIR PRECISION Type 57	0.110	23.62
CABIN EQUIPEMENT			
Seat belts :			
R	- Front seat belt : SECURAIGLON 10.4022.000.002 or TRW REPA 10.4022.000.002 or ANJOU AERO 10.4022.000.002	2.646 2.646 2.646	47.24 47.24 47.24
R	- Rear seat belt : AIGLON Type 343 - 1	0.728	85.04
Seats :			
R	- Front seat : TB10 74028	21.164	51.18
R	- Rear seat : TB10 74016 Back Seating TB10 74016	17.637	88.19
S	Colourless windows	27.558	53.15
	- Windshield TB21 24001	11.023	27.56
	- Doors windows TB10 25030	8.598	55.12
	- Rear side windows TB10 22030	7.937	86.61

SECTION 6 WEIGHT AND BALANCE

SOCATA MODEL TB 10

A or O	ITEM N°	OPTIONAL EQUIPMENT	*	WEIGHT lb	ARM in.
		AIRFRAME, ENGINE AND ELECTRICAL EQUIPMENT			
A	511.00	Alternate static source (in cabin)		0.331	23.62
O	515.10	Heated pitot (L.H. wing)		1.146	53.15
		"AERO INSTRUMENT"			
A	517.00	Fixed emergency beacon "NARCO ELT 10"		3.307	119.29
A	517.10	Fixed emergency beacon "JOLLIET"		3.086	119.29
A	519.20	Ground power receptacle		7.121	66.93
O	525.00	TB 10 without landing gear fairing		- 29.983	47.24
	530.00	Navigation lights			
A		- 2 lights (wing tips)		5.864	67.72
A		- 3 lights : 2 wing tips lights		7.187	92.13
O		1 tail light			
A	533.00	Anti-collision light		0.882	190.16
		"LABINAL"			
A	534.00	Anti-collision light		3.748	149.61
		"GRIMES"			
A	537.00	Anti-collision light on vertical stabilizer		1.984	161.42
		"JPC 1000"			
A	580.30	Ferry fuel tank (TB20 52925)		63.933	78.35
A	587.00	Outside air thermometer "JAEGER"		0.772	23.62
A	597.00	Rudder / aileron control interconnection		1.675	16.14
O	630.00	Battery 35 AH : or REBAT R 35 GILL G 35		2.646	1.97

A or O	ITEM N°	OPTIONAL EQUIPMENT	*	WEIGHT lb	ARM in.
A	635.00	2nd heated pitot (R.H. wing) "AERO INSTRUMENT"			
		Pitot + 2nd true airspeed indicator		1.323	55.12
				1.984	44.88
A	658.10	Oil drain door		0.220	- 25.59
A	684.00	Illuminated carburetor thermometer		0.331	23.62
A	685.00	EGT - CHT illuminated dual indicator - probe on cylinder n° 3 - probes on all cylinders		1.323	19.69
				3.307	3.94
A	690.00	Outside air thermometer "AID"		0.948	30.71

SECTION 6 WEIGHT AND BALANCE

SOCATA
MODEL TB 10

A or O	ITEM N°	OPTIONAL EQUIPMENT	*	WEIGHT lb	ARM in.
		COCKPIT EQUIPMENT			
A	502.10	3rd rear seat belt		0.882	84.65
A	504	Blower "DALE" (504.70 or 80)		1.874	125.98
O	506	Rear seat with central arm "cendre" (506.10) or "sable" (506.20) - Rear seat seating - Rear back-rest - Rear seating support		24.846	88.19
A	521.00	Braking control (R.H. post)		3.307	11.81
A	526.30	Glare shield "Plexiglas"		0.683	41.34
A	528.00	Cabin fire extinguisher		2.822	36.22
A	562	Little window (562.00 or 10 or 20 or 30)		0.750	39.37
O	563.20	Rear reel safety belt		2.646	106.30
O	579	Seats assembly "Executive" fabric "cendre" (579.50 + 70 + 85) or "sable" (579.60 + 80 + 95) - Head -rest - Front seat - Rear seat seating - Rear back-rest - Rear seating support		85.649	62.99
O	585.20	Tinted windows - Windshield TB21 24001 - Doors windows TB10 25030 - Rear side windows TB10 22030		1.477 25.684 14.043 14.330 1.653	53.15 27.56 27.56 55.12 86.61
A	588.00	Maps reading light		0.176	25.59

SOCATA
MODEL TB 10

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A or O	ITEM N°	OPTIONAL EQUIPMENT	*	WEIGHT lb	ARM in.
A	637.00	Rear seat shoulder harness (Quantity 2)		2.249	94.49
A	640.00	3rd rear reel safety belt		1.918	106.30
A	641.00	3rd rear seat shoulder harness		1.124	94.49
O	800.00	Moving back system of L.H. pilot's seat		0.331	37.80

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SECTION 6 WEIGHT AND BALANCE

SOCATA MODEL TB 10

A or O	ITEM N°	OPTIONAL EQUIPMENT	*	WEIGHT lb	ARM in.
		INSTRUMENT PANEL EQUIPMENT			
A	513.10	Turn and bank indicator (capable A / P 1)		1.323	23.62
A	516.00	Stop watch		0.441	35.43
A	527.10	Electric clock		0.441	27.56
A	548.00	Electric hour meter		0.331	27.56
A	561.00	Starter warning light		0	/
O	569.00	Flaps preselection		0.772	68.90
A	571.00	Electric hour meter (Engine using time)		0.992	23.62
A	577.30	R.H. large instrument panel		4.740	23.62
A	631.00	Warning light for gyros supply failure		0.198	0.39
A	634.00	Raised radio console		3.131	23.62
A	638.00	Digital chronometer "ASTROTECH LC2"		0.551	35.43
A	680.00	Chronometer "Q18 THOMMEN"		0.661	35.43
A	681.00	Altimeter n° 2 "UNITED INSTRUMENT"		1.786	24.80
A	682.00	Vertical speed indicator "UNITED INSTRUMENT"		1.014	24.80
A	689.00	Ammeter "AID"		0.529	28.74
O	691.00	Turn and bank indicator "UNITED INSTRUMENT" or "AID"		2.028	22.83

A or O	ITEM N°	OPTIONAL EQUIPMENT	*	WEIGHT lb	ARM in.
		RADIO AND NAVIGATION EQUIPMENT			
A	523.00	Boom microphone headset "SOCAPEX"		1.036	55.12
A	524	Interphone VHF (524.10 or 20 or 30)		1.190	55.12
A	539.00	VHF capability - loudspeaker 10 W single - loudspeaker 20 W dual		0.441	11.81
A	541.00	VHF 1 COLLINS 251 E ☒		0.860	62.20
A	542.00	VHF 2 COLLINS 251 E + AMR 350		6.239	31.50
A	543.00	VOR LOC COLLINS VIR 351 + IND 350 A		7.209	19.29
A	544.00	VOR ILS COLLINS VIR 351 + IND 351 A + GLS 350 E - used without HSI - used with HSI		4.850	39.76
A	545.00	ADF 650 A COLLINS		9.149	43.31
A	546.00	Transponder COLLINS TRD 950		7.848	46.06
A	547.00	DME COLLINS 451 - without switching box - with switching box		7.496	83.46
A	547.15	Additional DME COLLINS		2.205	20.47
A	549.10	Rigid antenna VHF 1 D & M		6.900	41.34
A	549.20	Rigid antenna VHF 2 D & M		7.385	41.34
A	551.00	VHF 1 BECKER AR 2009 / 25 ☒		0.485	41.34
				0.661	127.17
				0.661	57.87
				5.071	29.53

SECTION 6 WEIGHT AND BALANCE

SOCATA MODEL TB 10

A or O	ITEM N°	OPTIONAL EQUIPMENT	*	WEIGHT lb	ARM in.
A	552.00	VHF 2 BECKER AR 2009 / 25 + AL 3B		5.952	22.44
A	553.00	VOR LOC BECKER NR 2029 + IN 2041		5.732	38.19
A	554.00	VOR ILS BECKER NR 2029 + IN 2040 + GM 2020		9.480	44.88
A	560.00	HF KING : KHF 950-05		35.053	100.39
A	572.00	ADF BECKER 2079 + VR 2070		8.818	78.74
A	573.00	Transponder BECKER ATC 2000		2.205	20.47
A	583.03	HSI without heading recopy		4.850	23.62
A	583.04	HSI with heading recopy		6.173	23.62
A	584.00	RMI KING KI 229		3.417	23.62
A	594.00	Radio master switch		0.992	29.53
A	596.00	Stormscope 3M-WX-10 A		11.905	96.06
A	598.00	Radio console ventilation		2.028	6.30
O	599.10	Alti-coder NARCO AR 850		1.323	17.72
A	601.00	VHF 1 COM 120 NARCO ☑		5.952	31.50
A	602.00	VOR LOC NAV 121 NARCO		3.748	39.37
A	603.00	VHF 2 COM 120 NARCO and box CP 136		6.614	20.47
A	604.00	ADF 141 NARCO		7.275	53.15
A	605.00	Transponder AT 150 NARCO		2.866	20.87
A	608.20	Alti-coder "KING" KEA 130		1.764	21.65
A	608.30	Alti-coder "UNITED INSTRUMENT" 20000 ft		1.764	21.65

A or O	ITEM N°	OPTIONAL EQUIPMENT	*	WEIGHT lb	ARM in.
A	613.00	VOR ILS NAV 122 NARCO		5.732	47.24
A	615.20	Additional equipment for IFR France		1.543	24.80
A	616.20	Additional equipment for night VFR France		1.543	24.80
A	624	DME 195 NARCO (airplane fitted with VOR LOC) (624.00 + 624.10)		10.362	40.55
A	625.10	DME KING KN 65 A KI 266 1 VOR		10.362	39.76
A	625.15	Additional equipment for installation of 2nd VOR		4.189	40.16
A	648.00	Transceiver VHF 1 KY 0196-05 with 28 V converter		7.496	33.07
A	648.10	Transceiver VHF 2 KY 0196-05 with 28 V converter		7.496	33.07
A	651.00	VHF 1 KING KY 019700 ☒		7.055	37.01
A	652.00	VHF 2 KING KY 019700 + KMA 2402		5.512	23.62
A	652.10	VHF 2 KING KY 197 / VHF - VOR KX		3.748	23.62
A	653.00	VOR LOC KING KN 53.01 + KI 203.00		5.291	51.18
A	654.00	VOR ILS KING KN 53.00 + KI 204.02		7.055	62.99
A	655.00	ADF KING KR 87 + KI 227.00		6.393	59.06
A	656.00	Transponder KING KT 76 A 00		3.307	20.08
A	657.00	DME KING KN 62 A 01 or KN 64		3.968	21.26
A	660.00	Course indicator KING KCS 55 A - without converter - with converter		12.456 13.779	65.75 59.84

SECTION 6 WEIGHT AND BALANCE

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A or O	ITEM N°	OPTIONAL EQUIPMENT	*	WEIGHT lb	ARM in.
A	661.00	VHF / VOR ILS KING KX 155.01 ☒ + KMA 2402 + KI 204.02		13.889	39.37
A	662.00	NAV System KNS 81.10 KING - with KI 206		8.598	43.70
A		- with KI 525 A or with NSD 360 A		7.275	47.24
A	662.10	- indicator KI 206.04		1.301	23.62
A	662.20	- channellisation warning		/	/
A	663.00	VHF 1 / VOR LOC KING KX 155.08 ☒ + KI 203.00		9.656	33.86
A	663.10	VHF 2 / VOR LOC KING KX 155.08 ☒ + KI 203.00		7.606	21.65
A	664.00	DME KING KN 63.04 + KDI 572		4.189	40.16
A	665.00	2nd ADF KING KR 87 + KI 228 + Audio control box + KMA 24.00		6.393	35.43
A	666.00	VHF / VOR LOCKING KX 165.00 ☒ + KMA 2402 + KI 202.00		12.566	35.43
A	666.10	VHF / VOR ILS KING KX 165.01 ☒ + KMA 2402		13.889	39.37
A	667.00	NAV System KNS 80 : - without Glide connected with KI 202 - with Glide connected with KI 206 - with Glide connected with KI 525 A - with Glide connected with NSD 360 A		7.937 9.700 12.787 13.228	31.50 43.31 37.80 37.80
A	676.00	Marker receiver KING KR 21		1.543	21.26
A	677	Switching NAV 1 - NAV 2 for KING A / P : - with demodulator - without demodulator		1.036 0.705	15.75 15.75

A or O	ITEM N°	OPTIONAL EQUIPMENT	*	WEIGHT lb	ARM in.
		AUTOPILOT AND BLIND FLIGHT ASSEMBLY			
A	531.00	A / P "MITCHELL CENTURY I"		5.401	39.76
A	581.00	Blind flight gyroscopic assembly (with vacuum system) for A / P 21		9.810	11.42
A	581.10	Blind flight gyroscopic assembly (with vacuum system) for A / P 21 with course indicator, without heading recopy		13.558	15.35
A	581.20	Blind flight gyroscopic assembly (with vacuum system) for A / P 21 with course indicator, with heading recopy		15.102	16.14
A	632.00	Auxiliary dry air pump		16.203	48.81
A	636.00	2nd air-driven attitude gyro indicator KG 258 KING		3.527	23.62
A	642.00	Radiobeacon KR 10A KING		4.740	112.99
A	643.00	2nd electrical attitude gyro indicator RCA 26AK 1 AID		2.976	21.65
A	659.00	A / P "MITCHELL CENTURY 21"		7.716	35.43
A	668.00	A / P "KING KAP 100" without electric pitch trim		11.442	35.43
A	668.10	A / P "KING KAP 100" with electric pitch trim		17.659	67.72
A	669.00	A / P "KING KAP 150"		21.363	76.38
A	670.00	A / P "KING KFC 150"		21.561	75.59

SECTION 6 WEIGHT AND BALANCE

SOCATA MODEL TB 10

A or O	ITEM N°	OPTIONAL EQUIPMENT	*	WEIGHT lb	ARM in.
A	671.00	Blind flight for A / P KAP 100 without directional with directional		5.666 8.355	6.30 11.02
A	671.10	Blind flight for A / P KAP 100 without heading recopy without directional		18.122	47.24
		Blind flight for A / P KAP 100 without heading recopy with directional		20.811	43.70
A	671.20	Blind flight for A / P KAP 100 with heading recopy without directional		19.445	44.09
		Blind flight for A / P KAP 100 with heading recopy with directional		22.134	41.34
A	672.00	Blind flight for A / P KAP 150 without directional with directional		5.666 8.355	6.30 11.02
A	672.10	Blind flight for A / P KAP 150 without heading recopy without directional		18.122	47.24
		Blind flight for A / P KAP 150 without heading recopy with directional		20.811	43.70
A	672.20	Blind flight for A / P KAP 150 with heading recopy without directional		19.445	44.09
		Blind flight for A / P KAP 150 with heading recopy with directional		22.134	41.34

A or O	ITEM N°	OPTIONAL EQUIPMENT	*	WEIGHT lb	ARM in.
A	673.00	Blind flight for A / P KFC 150 without heading recopy		18.320	46.85
A	673.10	Blind flight for A / P KFC 150 with heading recopy		19.643	44.09
A	675.00	Altitude and vertical speed preselector KING KAS 297 B		1.764	20.87
A	683.00	Blind flight "AID"		8.929	11.42

SECTION 6 WEIGHT AND BALANCE

SOCATA
MODEL TB 10

MSA	TYPE	WEIGHT	HEIGHT	WEIGHT
00.00	00.00	00.00	00.00	00.00
00.00	00.00	00.00	00.00	00.00
00.00	00.00	00.00	00.00	00.00
00.00	00.00	00.00	00.00	00.00

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