

CESSNA F 150 J RR

HB - CVZ

LUFTFAHRZEUG - FLUGHANDBUCH

SERIE-NR. 0497

McCAULEY PROPELLER SYSTEMS
OWNER/OPERATOR
 INFORMATION MANUAL

FIXED PITCH PROPELLER DESCRIPTION

1. Metal Fixed Pitch Propellers

- A. The propellers of this model series are manufactured of one-piece anodized aluminum alloy and have a fixed pitch.

NOTE: Some fixed pitch propellers are certified with a defined spacer. Refer to Propeller Installation Parts List, Table 1003, Installation Parts for Fixed Pitch Propellers for the correct part number spacer for each applicable propeller model.

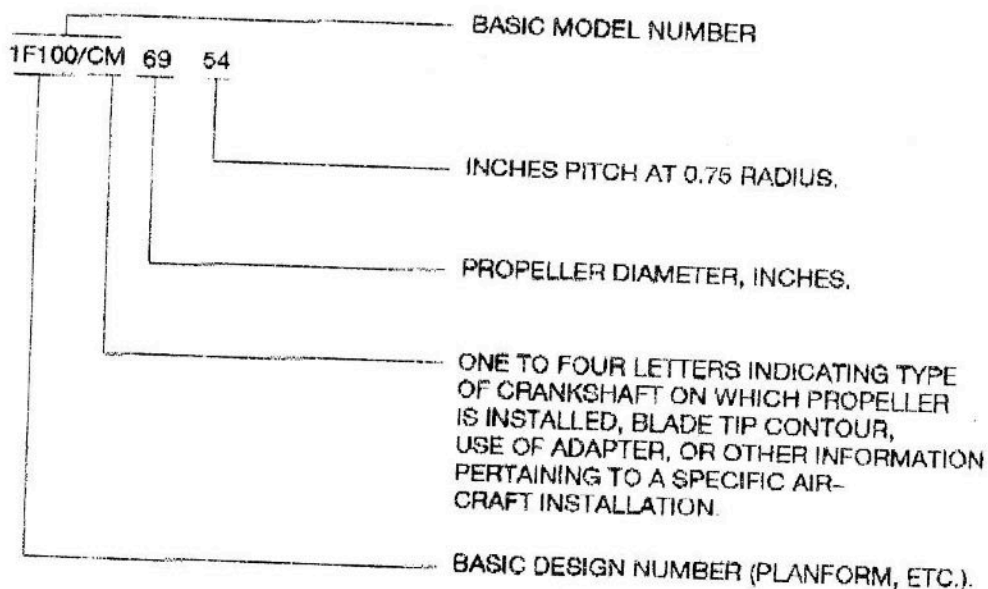
- B. For identification, the hub of each propeller is stamped with the complete model number, serial number, Federal Aviation Agency (FAA) type certificate number, production certification number, and the number of times the propeller has been reconditioned. The complete model number is a combination of the basic model number and suffix numbers to indicate the propeller diameter and pitch.

(1) Propeller Model Designation

- (a) The hub model designation is steel stamped on the forward/camber side/face of the propeller hub.

1 Example of hub model designation:

C1390



- C. Consult the FAA TC Data Sheets for details relating to approved engine/propeller/airplane installations of fixed pitch propellers covered in this manual.
- D. Propeller Mounting Torque
- (1) Refer to Propeller - Removal/Installation for the correct installation instructions and torque values for the propeller mounting hardware.

**LUFTFAHRZEUG – FLUGHANDBUCH (AFM)
MANUEL DE VOL DE L'AERONEF**

für HB - CVZ
pour

Die den Betrieb des erwähnten Luftfahrzeuges betreffenden Unterlagen sind vom Eidgenössischen Luftamt als Luftfahrzeug-Flughandbuch genehmigt oder anerkannt. Sie bilden eine Grundlage des Lufttüchtigkeitszeugnisses Nr. 3247 und dürfen nur durch das Eidgenössische Luftamt oder in dessen Auftrag geändert werden.

Bei Änderungen in der Ausrüstung ist dem Eidgenössischen Luftamt unverzüglich ein Arbeitsbericht im Doppel unter Angabe von Gewicht und Hebelarm der ein- und ausgebauten Teile zusammen mit dem vorliegenden Luftfahrzeug-Flughandbuch zuzustellen.

Das Luftfahrzeug darf nur nach diesem Luftfahrzeug-Flughandbuch, das an Bord mitzuführen ist, betrieben werden.

Der Zulassungsbereich des Luftfahrzeuges ist im Anhang zum Luftfahrzeug-Flughandbuch festgelegt.

Les documents relatifs à l'exploitation de l'aéronef précité sont approuvés ou reconnus par l'Office fédéral de l'air en tant que manuel de vol de l'aéronef. Ils forment une base du certificat de navigabilité et ne peuvent être modifiés que par ledit office ou sur son ordre.

Lors de changements dans l'équipement, il y a lieu d'envoyer immédiatement à l'Office fédéral de l'air, avec le présent manuel de vol, un rapport de travail en deux exemplaires, et d'indiquer le poids ainsi que le bras de levier des parties montées et démontées.

L'aéronef ne peut être exploité que d'après le présent manuel de vol, qui doit se trouver à bord.

Le champ d'utilisation de l'aéronef est fixé dans l'annexe du manuel de vol.

3003 Bern, den 29. November 1976

EIDGENÖSSISCHES LUFTAMT
Sektion Flugmaterial
i.A.

L+A 57.21 df - 10.74







3003 Berne, le

OFFICE FEDERAL DE L'AIR
Section du matériel aéronautique
p.o.

Hauptsächlichste Daten des Luftfahrzeuges HB - CVZ
Données principales de l'aéronef

1. Gewichte und Schwerpunktlage
Poids et position du centre de gravité

- 1.1 Höchstzulässiges Abfluggewicht
Poids maximal autorisé au décollage 726 kp 1600 lbs
- 1.2 Höchstzulässiges Landegewicht
Poids maximal autorisé à l'atterrissage 726 kp 1600 lbs
- 1.3 Rüstgewicht
Poids à vide

Datum Date	Rüstgewicht Poids à vide	Schwerpunktlage Position du centre de gravité	Rüstgewichtsmoment Moment du poids à vide	Zuladung Charge utile
	kg / lbs	m / in	kgm / lbs. in	kg / lbs
17.11.76	1210	33.5	40'531.5	390 
1.10.80	1212.8	33.45	40566.5	387.2 
15.8.83	1200.97	33.19	39859.4	399.03 
10.5.85	1205.98	33.15	39978.4	394.02 
9.5.93	1203.23	33.19	39946.2	396.77 
29.10.99	1160.00	31.8	36888	440 

Im Rüstgewicht sind inbegriffen:
Dans le poids à vide sont compris:

- | | |
|--|---|
| <input checked="" type="checkbox"/> Ausrüstung gemäss Ausrüstungsliste
L'équipement selon la liste d'équipement | <input type="checkbox"/> Getriebeöl
Le lubrifiant des boîtes de transmission |
| <input checked="" type="checkbox"/> Nicht verwendbarer Treibstoff
Le carburant non utilisable | <input type="checkbox"/> Hydraulikflüssigkeit
Le liquide hydraulique |
| <input checked="" type="checkbox"/> Nicht verwendbarer Schmierstoff
Le lubrifiant non utilisable | <input type="checkbox"/> |
| <input type="checkbox"/> Verwendbarer Schmierstoff
Le lubrifiant utilisable | <input type="checkbox"/> |

1.0 Gewicht und Schwerpunktlage HB-CVZ

- 1.1 Höchszulässiges Abfluggewicht 726 kg 1600 lbs
- 1.2 Höchszulässiges Landegewicht 726 kg 1600 lbs

1.3 Rüstgewicht

Datum	Rüstgewicht <i>Poids à vide</i> lbs	Schwerpunktlage	Rüstgewichts-Moment	Zuladung <i>Charge utile</i> lbs	Eintrag
16.5.00	1161.50	31.78	36916	438.50	CAT Berechnung
11.05.2010	1162.70	31.76	36934.24	437.30	EHOVENAGHE S-FOCA-2483
12.11.2010	1155	31.88	36821	445	MagnAir 1731
24.04.2012	1155.1	31.88	36830.8	445	April 25, 2012
19.05.2017	1155.90	31.87	36842.4	445 (201.44 kg)	9
12.11.2020	1157.3	31.77	36773.4	442.7	9

FULL FUEL 29 USG, 174 LBS/78.9 kg

- Ausrüstung gemäss Ausrüstungsliste X
- Nicht verwendbarer Treibstoff X
- Nicht verwendbarer Schmierstoff X
- Verwendbarer Schmierstoff



Report Poids & position du centre de gravité

Datum	Rüstgewicht	Schwerpunktlage	Rüstgewichtsmoment	Zuladung
Date	Poids à vide	Position du centre de gravité	Moment du poids à vide	Charge utile
	lbs	in	lbs.in	lbs

Weight & Balance calculation approuvée se trouve dans l'AFM annexe

1

Bemerkungen / Observations

1.

1.

1

2. Anzahl Personen an Bord
Nombre de personnes à bord

D	2.1 Mindestflugbesatzung * Equipage minimal de conduite	1 Pilot			
1	2.2 Höchstzulässige Anzahl Passagiere	1			
/	Nombre maximal de passagers				

* Allfällige besondere Betriebsvorschriften bleiben vorbehalten.
D'éventuelles prescriptions d'exploitation particulières restent réservées.

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APPROVED FLIGHT MANUAL FOR THE
CESSNA F150J-RR

Nationality and

Registration Marks: HB - CVZ

Constructors Serial No: 0497

Constructed by: Reims Aviation,
Reims,
FRANCE.

Modified by: Miles Aviation and Transport (R & D) Ltd.,
No. 3 Hangar,
Ford Aerodrome,
Nr. Arundel,
Sussex,
ENGLAND.

C O N T E N T S

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Miles Aviation and Transport (R & D) Ltd.,
No. 3 Hangar,
Ford Aerodrome,
Nr. Arundel,
Sussex,
ENGLAND.

S E C T I O N I

GENERAL

The document reference number of this manual is MAT/FM/F150J/RR/009.

This flight manual applies only to the aircraft having the serial number specified on page 1. It is the responsibility of the pilot to be familiar with the contents of this manual including all the amendments and any relevant supplements.

The current amendment state of this copy is given on the record sheet on page 4. Amendments to the text will be indicated by a marginal line together with the amendment number unless the page is a graph, in which case the amendment number appears at the foot of the page. The date of approval is shown on each page.

Amendments are published by Miles Aviation and Transport (R & D) Ltd., and approved by the Air Registration Board.

AMENDMENT RECORD SHEET

Note: Refer to page 3 for description of the amendment system. All amendments must be embodied consecutively. This page will be re-issued with each amendment.

Amendment Number	Description	Pages Affected
G/2	All general amendments up to and including G/1 have been embodied in this Manual.	6 6, 9, 17. 10
	Modification to class of aeroplane Engine designation change Cylinder base temperatures deleted	

RECORD OF SUPPLEMENTS

Supplement Number and Name of Publisher	Date of Approval	Date of Embodiment and Signature
AM 1: installation of propeller Mc Cauley 1A135/BRN7150, by Air Maintenance SA, Geneva.	Sept. 19, 1972	FEDERAL AIR OFFICE Section for aeronautical material <i>[Signature]</i>

DESCRIPTION

CLASS

Aeroplane, Land plane, high wing monoplane.

POWER UNIT

One Rolls-Royce Continental O-240-A engine fitted with McCauley type 1C172/7249 propeller of 72 inches diameter.

LEADING PARTICULARS.

Wing

Span : 32 ft. 8½ ins.

Gross Area : 157 sq. ft.

M.A.C. : 4 ft. 10½ ins.

Aspect Ratio : 6.32

Tail Unit

Tailplane and elevator span : 10 ft.

Overall length : 23 ft. 9 ins.Overall height : 8 ft. 7½ ins.Landing Gear

Track : 6 ft. 6½ ins. =

Wheelbase : 4 ft. 10 ins.

CONVERSION TABLES

Tables to convert metres into feet and kilogrammes into pounds are given on the following page.

CONVERSION TABLES

Conversion - Metres to Feet.

Distance (metres)	Distance (feet)
100	328
200	656
300	985
400	1313
500	1640
600	1970
700	2300
800	2625
900	2950
1000	3280

Conversion - Kilograms to Pounds

Weight (Kg)	Weight (lb)
50	110
100	220
150	330
200	440
250	550
300	660
350	770
400	880
450	990
500	1100
600	1320
700	1540
800	1760

DEFINITIONS

The following terms are used in various sections of this Manual:-

Air Temperature: The temperature of free air near to, but uninfluenced by, the aeroplane. This temperature may be a reported, a forecast, or when permitted by the Air Navigation Regulations, a declared temperature derived in accordance with an approved system.

Altitude: The altitude shown on the charts and tables is pressure altitude which is the expression of atmospheric pressure in terms of altitude above mean sea level according to the interrelation of these factors in the International Standard Atmosphere (I.S.A.). This may be obtained by setting the sub-scale of an accurate pressure type altimeter at 1.013 millibars (29.92 inches or 760 millimetres of mercury).

I.S.A. : International Standard Atmosphere which is the interrelationship of air pressure and temperature as shown in Fig. 5-1.

Height: The vertical distance between the lowest part of the aeroplane and the relevant datum.

Weight: The total weight of the aeroplane, including fuel, oil, equipment, crew and payload.

I.A.S. : Indicated Air Speed; which is the reading obtained from an instrument having no calibration error. Because the permitted tolerances are small, the Air Speed Indicator Reading (A.S.I.R.) may be taken as equal to I.A.S.

E.A.S. : Equivalent Air Speed; which is the I.A.S. corrected for position and compressibility errors.

T.A.S. : True Air Speed of the aeroplane relevant to the undisturbed air, which is the E.A.S. corrected for altitude and temperature.

Hard Runway: A surface such as concrete or tarmac.

SECTION II

LIMITATIONS

THE AEROPLANE MUST BE OPERATED IN ACCORDANCE WITH THE FOLLOWING LIMITATIONS.

CATEGORY AND USE OF AEROPLANE

This type of aeroplane is eligible for certification in the General Purpose Category. However, this aeroplane may be restricted to particular use and to the Special Category and this will be stated in the Certificate of Airworthiness.

MANOEUVRES

Aerobatic manoeuvres, except stalls, are prohibited

FLIGHT LOAD FACTORS

at 1,600 lb - flaps up, max. positive load factor: 4.40 g.
max. negative load factor: 1.76 g.

at 1,600 lb. flaps extended, max. positive load factor: 3.50 g.

The aeroplane must not be flown in such a way that, in any intentional manoeuvres, there is a risk of exceeding the maximum acceleration values quoted.

AIRPEED LIMITATIONS

* ✓ NEVER EXCEED SPEED	162 m.p.h. U.S.S. (168 m.p.h. I.S.S.)
* MAXIMUM OPERATING LIMIT SPEED	120 m.p.h. U.S.S. (122 m.p.h. I.S.S.)
MANOEUVRING SPEED	109 m.p.h. U.S.S. (111 m.p.h. I.S.S.)
* FLAP, OPERATION AND EXTENDED	100 m.p.h. U.S.S. (102 m.p.h. I.S.S.)

POWER PLANT LIMITATIONS

Limitations for installed Rolls-Royce Continental O-240-a engine fitted with McCauley type 18172/18249 propeller.

Power	Manifold Pressure	R.P.M.	Max. Cyl. Head Temp. °C	Max. Oil Temp. °C
Max. take-off and Max. Continuous	Full Throttle	2800 *	240	115 *
Max. overspeed (20 sec. limit)	Full Throttle	2940	-	-

Oil pressure

* Normal

Minimum for run-up

: 30-60 p.s.i.

: 10 p.s.i.

Oil Temperature

Minimum for run-up

: 24°C

FUEL AND OIL

The approved fuel specification is D.Eng. R.D.2485 with a minimum grade of 100/130 octane, with a maximum lead content of 5.5 c.c. TEL/Imp.Gall

The approved oil specification is D.Eng. R.D.2450.

WEIGHT AND BALANCE

The maximum permissible take-off and landing weight is 726 Kg. (1600 lb.)

Centre of gravity range: 32.3 ins. to 37.5 ins. aft of datum.

Centre of gravity datum: Front face of engine firewall.

Baggage compartment maximum load is 73 Kg. (160 lb.)

MISCELLANEOUS LIMITATIONS

MINIMUM CREW

The minimum crew is one pilot.

NUMBER OF OCCUPANTS

The number of persons carried shall not exceed two, nor exceed the number of seats provided

* SMOKING

✓ Smoking is prohibited during take-off and landing.

FLIGHT IN ICING CONDITIONS

The aeroplane shall not be flown in icing conditions.

AIR TEMPERATURE

The maximum air temperature for operation is I.L.A. + 20°C.
No minimum temperature has been established.

INSTRUMENT COLOUR MARKINGS AND PLACARDS

When an instrument dial is marked in colours, they have the following meaning:-

- Red radial line = Maximum or minimum values.
- Red segments = Prohibited range.
- Yellow segments = Cautionary operation for short periods.
- Green segments = Normal operating range.
- White segments = Normal operating range with wing flaps extended.

Items marked * must be either placarded in the cockpit, or the appropriate instruments colour marked.

TYPES OF OPERATION

Night flying is permitted when the required equipment is installed, and when allowed by the Air Navigation Regulations.

RPM LIMITATIONS

When the propeller diameter lies between the limits of 72 inches and 71 inches the following placard shall at all times be displayed in a prominent position on the instrument panel:

AVOID CONTINUOUS OPERATION BETWEEN 2125 r.p.m. and 2375 r.p.m.
DURING DESCENT.

SECTION III

EMERGENCY PROCEDURES

RESTARTING ENGINE IN FLIGHT.

Should the engine stop during flight and it is certain that mechanical failure or fire are not contributory causes, the following procedure should be adopted for restarting.

- 1) Fuel: CHECK "ON".
- 2) Airspeed: Maintain steady glide at 65 m.p.h. I.A.S.
- 3) Master Switch: CHECK "ON".
- 4) Ignition switch: Check set to "BOTH".

If the engine refuses to start after carrying out the above checks it is possible that causes such as blockage of the fuel lines or severe carburettor icing are to blame. Should it be impossible to regain normal operation, maintain a steady glide at 65 m.p.h. I.A.S. and prepare for an emergency or crash landing.

ENGINE FIRE.

- 1) Ignition: OFF
- 2) Fuel: OFF
- 3) Throttle: Fully open

Do not attempt to restart engine if fire goes out after above actions, but set aircraft into a steady glide at 65 m.p.h. I.A.S. and prepare for an emergency landing.

CABIN FIRE.

Should a minor fire occur in the cabin, during flight, attempt to extinguish using the small hand extinguisher located in front of the pilot's seat. Switch "OFF" all unnecessary electrical items and land as soon as possible.

S E C T I O N I V

NORMAL PROCEDURES

EXTERIOR INSPECTION

The exterior inspection will begin at the left-hand cabin door and proceed anti-clockwise around the aircraft ending at the left-hand cabin door.

1. Inside cabin:
 - a) Turn on master switch and check fuel quantity indicators, then turn master switch "OFF".
 - b) Check ignition switch "OFF".
 - c) Check fuel valve set "ON".
 - d) Remove control lock.
2. Check left fuselage side.
3. Tailplane and rudder:
 - a) Remove rudder gust lock, if fitted.
 - b) Disconnect tail tie-down.
4. Check right fuselage side.
5. Right wing:
 - a) Disconnect wing tie-down.
 - b) Remove flap/aileron gust lock, if fitted.
 - c) Check flap and aileron.
 - d) Check wing-tip light.
6. Right main undercarriage:

Check wheel tyre for proper inflation.
7. Power plant and nacelle:
 - a) Check oil level.
 - b) Cowlings secure.
 - c) Intakes clear.
 - d) Propeller, check for damage and security.

NOTE

Before the first flight of the day and after each refuelling, pull out the strainer drain knob for about four seconds to clear fuel strainer of possible water and sediment.

8. Nose undercarriage:
 - a) Check nosewheel tyre and strut for proper inflation.
 - b) Disconnect nose tie-down.

9. Left main undercarriage and left wing:
Repeat procedures stated for right undercarriage and right wing, with the addition of:
 - a) Remove pitot cover.
 - b) Check landing light.
 - c) Check fuel tanks vent opening for stoppage.
 - d) Check stall warning vent opening for stoppage.
10. Airspeed static source (left side of fuselage forward of cabin door):
Check for stoppage.

BEFORE STARTING ENGINE

1. Seats and Seat Belts: Adjust and lock.
2. Fuel Valve Handle: ON.
3. Brakes: Test and set parking brake ON.
4. Radios and Rotating Beacon: OFF.

STARTING ENGINE

1. Carburettor Heat: Cold.
2. Mixture: Rich.
3. Prime: As required.
4. Throttle: Open $\frac{1}{4}$ ".
5. Master Switch: ON.
6. Propeller area: Clear.
7. Ignition Switch: START (release when engine starts).
8. Oil pressure: Check.

ENGINE RUN-UP

1. Brakes: ON.
2. Throttle Setting: 1700 r.p.m.
3. Magnetos: Check (75 r.p.m. maximum differential between magnetos).
4. Engine Instruments: Within green arcs.
5. Suction Gauge: Check (4.6 to 5.4 inches of mercury).
6. Carburettor Heat: Check operation.

TAXYING

1. Brakes: Release and check operation.

NOTE

When taxiing, it is important that speed and use of brakes be held to a minimum and that all controls be utilised when necessary to maintain

directional control and balance.

2. Nosewheel Steering: Check.

BEFORE TAKE-OFF

1. Cabin Doors: Locked.
2. Flight Controls: Check.
3. Trim Tab: Set to TAKE-OFF position.
4. Flight Instruments and Radio: Set.

TAKE-OFF

1. Wing Flaps: Up.
2. Carburettor Heat: Cold.
3. Throttle: Fully Open
4. Elevator Control: Lift nosewheel at approximately 50 m.p.h. I.A.S.
5. Climb speed: 64 m.p.h. I.A.S. (to be maintained until all obstacles are cleared).

CLIMB

1. Air Speed: 70 m.p.h. I.A.S.
2. Throttle: Fully open
3. Mixture: Rich (unless engine is rough)

CRUISING

1. Power: 2000 to 2800 r.p.m.
2. Elevator Trim: Adjust.
3. Mixture: Lean to maximum r.p.m. (above 5,000 ft.)

DESCENT

1. Mixture: Rich.
2. Throttle: As desired.
3. Airspeed: As desired.
4. Flaps: Retracted.

NOTE

Occasional bursts of power will be necessary to prevent over-cooling of the engine and its components. If the throttle has been almost closed it is advisable to apply full carburettor heat.

APPROACH

1. Mixture: Rich
2. Carburettor Heat: Apply full heat before closing throttle.
3. Airspeed: 70 m.p.h. I.A.S.
4. Wing Flaps: 40°

5. Airspeed: Not less than 58 m.p.h. I.A.S. (flaps extended).

LANDING

1. Touch Down: Main wheels first.
2. Landing Roll: Lower nose wheel gently.
3. Braking: Minimum required.

AFTER LANDING

1. Wing Flaps: Up.
2. Carburettor Heat: Cold.

ENGINE SHUTDOWN AND LEAVING THE AEROPLANE

1. Mixture: Idle cut-off.
2. All switches: OFF.
3. Fuel: OFF.
4. Parking brake: Set.
5. Control lock: Installed.

ROUGH AIR SPEED

90 m.p.h. I.A.S. with wing flaps retracted is recommended for flight in severe turbulence.

CROSS WIND COMPONENT

Take-offs and landings are permissible in cross wind components of 15 Knots, measured at a height of 33 feet. Controllability is not limiting.

BALKED LANDING

1. Throttle: Fully open.
2. Carburettor heat: Cold.
3. Climb speed: Not less than 60 m.p.h. I.A.S.
4. Flaps: Reduce setting to 20° as soon as possible, and then retract slowly, to the fully up position whilst allowing airspeed to increase to 64 m.p.h. I.A.S.

SECTION V

P E R F O R M A N C E

Use of the data in this section, is only mandatory when required by the Air Navigation Order or Regulations; otherwise its use, although most desirable on the grounds of safety, is at the discretion of the pilot in command of the aeroplane.

CONDITION OF AEROPLANE.

The information in this section relates to a standard Cessna F.150J-RR aeroplane, powered by a Rolls-Royce Continental O-240-A engine, fitted with a McCauley 1C172/EM7249 propeller.

COMPLIANCE WITH THE AIR NAVIGATION ORDER AND GENERAL REGULATIONS.

- (1) This aeroplane is classified in Performance Group E.
- (2) For compliance with the Regulations governing flight over water, the true air speed is 100 m.p.h.

VALIDITY OF PERFORMANCE INFORMATION.

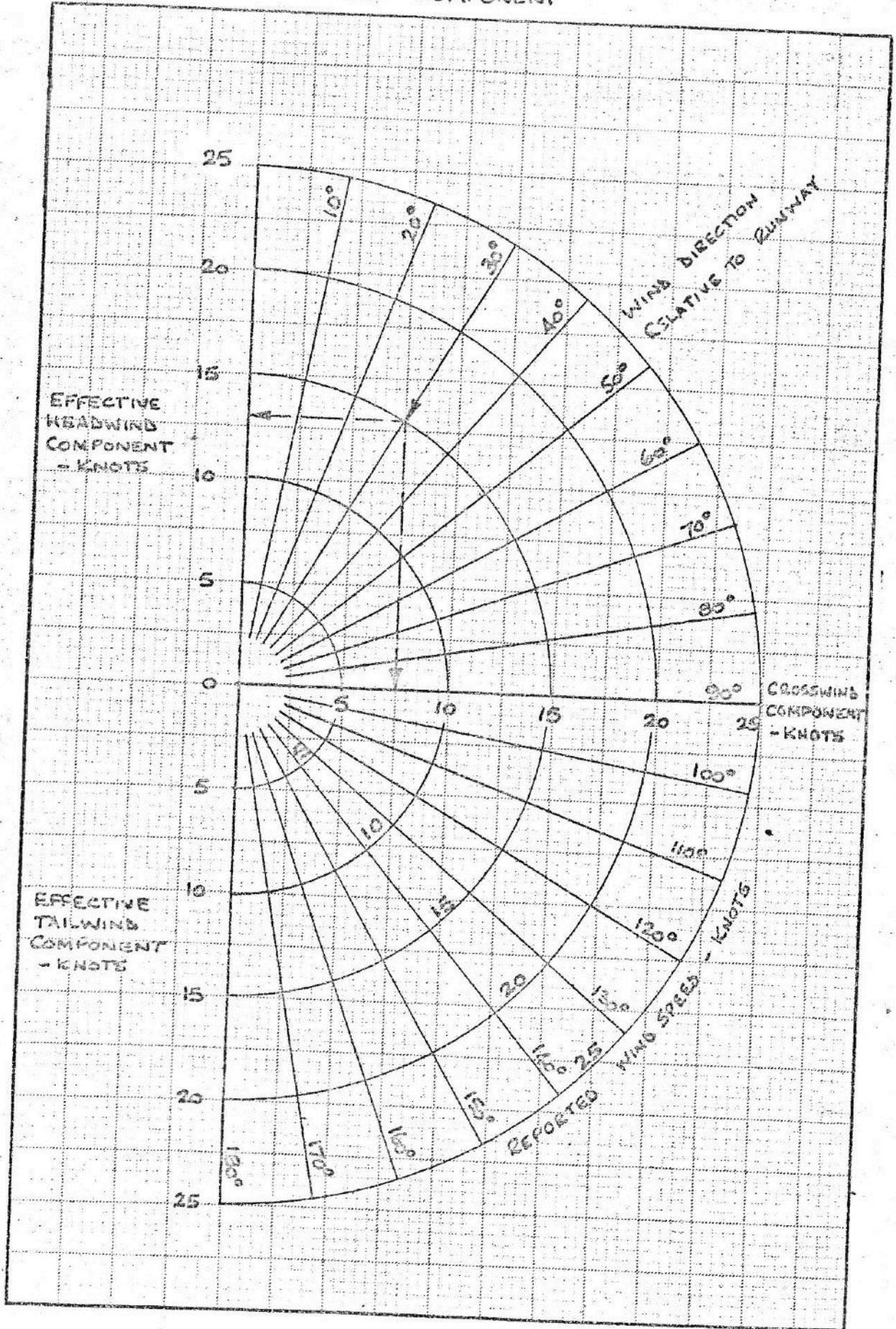
The performance information is not valid if:

- (a) The total loaded weight exceeds the relevant maximum permissible (take-off or landing) weight.
- (b) The aeroplane is flown when the outside air temperature exceeds the appropriate maximum temperature for which operational suitability has been established. (See Page 10.)
- (c) Readings from the tables are obtained by extrapolation (i.e. using values of parameters outside the range given on the table), except as and when specifically permitted. At temperatures below the lowest range scheduled the performance shall be assumed to be not better than that appropriate to the lowest temperature scheduled.
- (d) A propeller of a type differing from those stated above is fitted.
- (e) External modifications causing a significant increase in the aerodynamic drag are incorporated.

CONVERSION GRAPHS.

Graphs to convert wind velocity into wind component, °C and altitude into I.S.A. and °F to °C, are given overleaf.

WIND COMPONENT



A.R.B. Approved : 1st June 1971

FIG. S-1.

DETERMINATION OF TEMPERATURE IN RELATION TO I.S.A. AND CONVERSION OF °F TO °C.

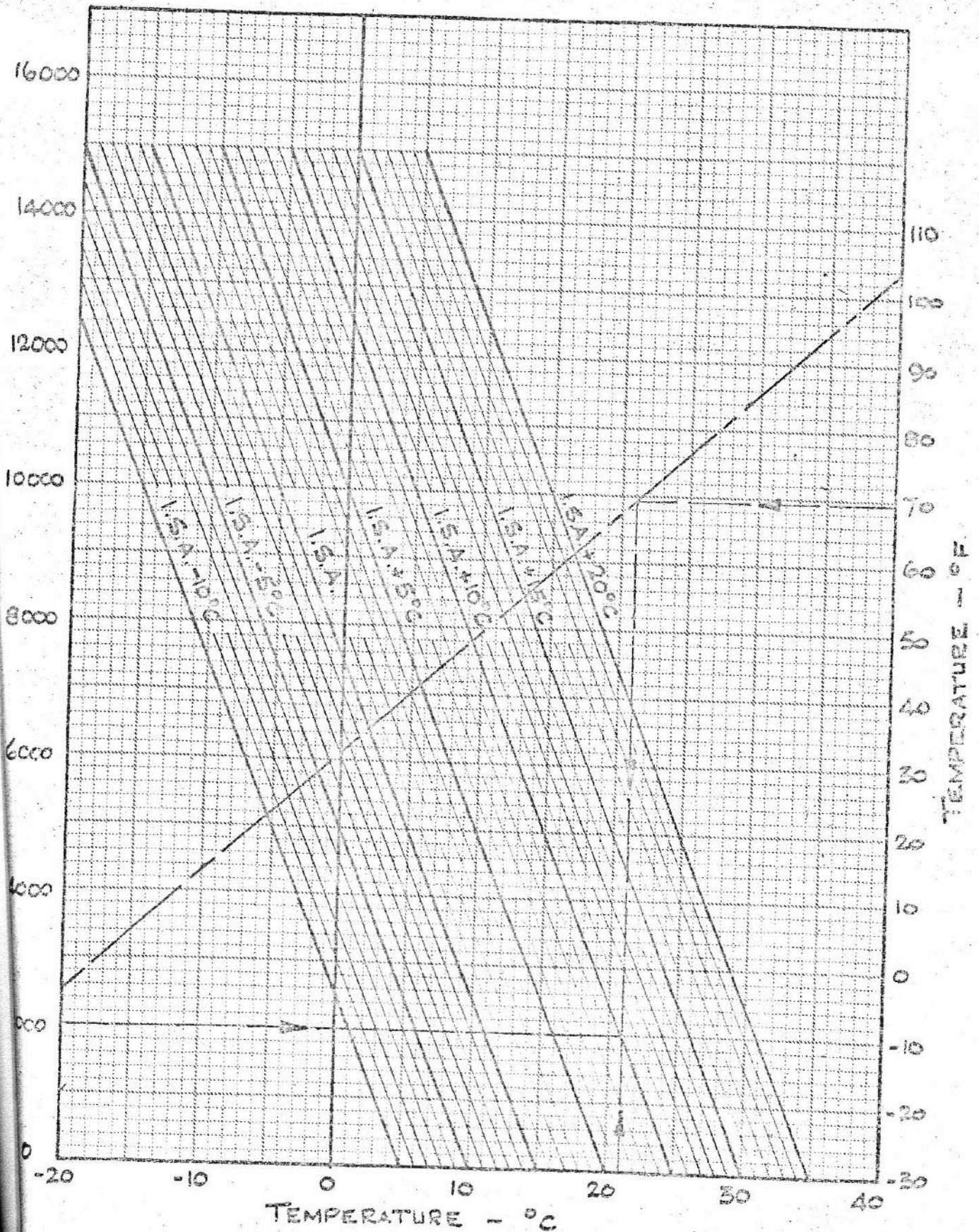


FIG. 5-2.

A.R.B. Approved: 1st June 1971

POSITION AND COMPRESSIBILITY ERROR CORRECTIONS

The position and compressibility error corrections to the I.A.S. to obtain E.A.S. are shown in the table below. Corrections are based on a weight of 726 Kg. (1600 lb.) and the variation of the correction at other weights is small.

The static error correction to the altimeter does not exceed 70 feet with flaps up. With approach and landing flap settings this error does not exceed 100 feet.

AIRSPEED CORRECTION TABLE

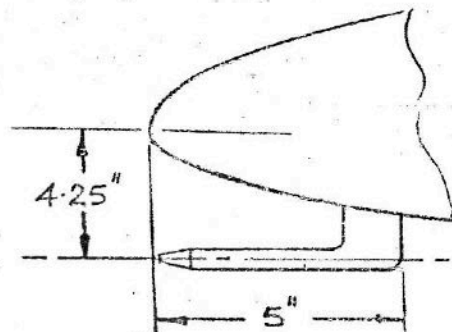
(Flaps UP)

Speed (m.p.h. I.A.S.)	40	50	60	70	80	90	100	110	120	130
Correction to I.A.S. (m.p.h.)	+11	+7	+5	+3	+2	+1	0	-1	-2	-3

(Flaps 40°)

Speed (m.p.h. I.A.S.)	40	50	60	70	80	90	100
Correction to I.A.S. (m.p.h.)	+9	+5	+3	+2	+1	-1	-2

Details of the position of the static vents and pressure head are given below.



PORT WING 4 ft. 10 ins.
TO A/C CENTRE-LINE.

The static vent is located on the port fuselage side, forward of the entrance door at fuselage station 4.

STALLING SPEEDS

The power off stalling speeds in terms of I.A.S and E.A.S. are given in the table below for the maximum weight of 726 Kg. with the effect on these speeds of angles of bank up to 60°.

CONDITION	ANGLE OF BANK			
	0°	20°	40°	60°
Flaps up m.p.h. I.A.S.	46	49	58	76
m.p.h. E.A.S.	55	57	63	78
Flaps 40° m.p.h. I.A.S.	38	40	48	65
m.p.h. E.A.S.	48	49	54	67

MEASURED PERFORMANCE

The performance presented is based on that measured on a representative aeroplane and should be realised under the conditions indicated with the aeroplane in good condition and with average piloting techniques.

ITEM	ALTITUDE (1,000 feet)	AMBIENT AIR TEMPERATURE		
		I.S.A.	I.S.A. + 10°C	I.S.A. + 20°C
Measured Take-off Distance to height of 50 feet - in metres (m). Wing flaps retracted. Speed at 50 feet, 64 m.p.h. I.A.S. Dry short level grass in zero wind. Maximum Weight of 726 Kg.	Sea Level	450	475	500
	2	525	550	575
	4	602	631	695
	6	698	734	770
	NOTES: (1) The above distances are assumed applicable to all weights up to 726 Kg. (2) For the effect of headwind, reduce the distance given by 10m. for every 1 Knot of headwind.			
Rate of climb in ft/min. with engine operating at Maximum Continuous Power, wing flaps retracted, 70 m.p.h. I.A.S. and at Maximum Weight of 726 Kg.	Sea Level	910	846	782
	2	809	752	695
	4	703	658	608
	6	607	564	521
	8	506	470	434
	10	405	377	349
	12	304	282	260
NOTE: The above values are assumed applicable for all weights.				
Descent with engine inoperative, propeller windmilling, wing flaps retracted at 65 m.p.h. I.A.S. and at Maximum Weight of 726 Kg.	Glide angle is approximately 1.60 nautical miles (n.ml.) per 1,000 feet height descended.			
Measured Landing Distance from a height of 50 feet (in metres) with wing flaps DOWN (40°). Speed at 50 feet, 58 m.p.h. I.A.S. Dry short level grass in zero wind. At Maximum Weight of 726 Kg.	Sea Level	392	420	447
	2	410	438	469
	4	427	456	486
	6	445	475	508
	NOTES: (1) The above distances are assumed applicable to all weights up to 726 Kg. (2) For the effect of headwind reduce the distance given by 10m. for every 1 Knot of headwind.			

Appendix 1

Aircraft Weighing Check List

Equipment included in Empty Weight

Engine O240-A
 Propeller McCauley 1A135/BRU.7150
 Airpath Compass
 Rear View Mirror
 O.A.T. Gauge
 Battery
 Oil Cooler
 Air Speed Ind.
 App. Horizon
 Turn Co-ordinator
 Direction Ind.
 Clock
 Altimeter
 Rate of Climb Ind.
 A.D.F. Ind.
 VOM Indicator
 R.P.M. Ind.
 Section Gauge
 Fuel Contents Ind.
 Oil Press Ind.
 Oil Temp Ind.
 Assorted
 Hours Run Ind.

King KY 160 TA/RE 15.8.83
 Cessna CC 306A A.S.F.
 Head Mic.
 Power Mod. Unit
 H.A.V. Aerial
 VHF Aerial
 AIF Aerial 9.5.93
 Seats 2 off
 Carpets and Trims
 Ash Trays 2 off
 Nav. Lights
 Landing Lamps
 Anti Collision Beacon
 Pressure Head
 Ext. Supply Socket
 Alternator
 Voltage Reg.
 Cabin and Cab. Air Heater
 Stall Warning Horn
 Dual Controls
 Seat Harness 2 off
 Engine Driven Vac. Pump 15.8.83

AIRBASE CH-17
 12.05.17

ELT: Pointer 3000A 15.8.83
 57 Modula
 OEA 29.11.83

COM King KY-92 01

1 VHF NAV NOVO NAVM

GARMIN GTX-328 15.8.83
 FLIEGERS
 BIRRFELD
 FLIEGER
 BIRRFELD

~~Transponder~~

~~ELT~~

~~Intercom~~

~~GPS Receiver~~

~~Encoder~~

~~ELT~~

{ COM VHF
 { FLARM CORE

14/05/2012
 EHOUMENAGHEL
 FOCA-2453

ELT: Pointer 3000 15.8.83
 FLIEGER
 BIRRFELD

~~NAT AA40-007~~

~~GARMIN 200 AND~~

ACK A 30 29.10.99

ELT KANNAD 402 AF

{ GARMIN GTR 225A 12.05.2017
 { FLARM

24/06/2012

AIRBASE
 BH-143 078
 12.05.2017

ISS.										
DATE										
COMP.	ONED	APPD								
MILES AVIATION & TRANSPORT (R & D)							SHEET	OF		

Supplement Nr. 1

to Flight Manual for CESSNA F 150 J-RR

This AFM-Supplement covers the installation of a Mc Cauley 1A 135/BRM 7150 propeller on Cessna Model F 150 J-RR (engine rolls-Royce O-240-A, 150 hp).

The following information revises the original Flight Manual as stated:

Section I General

Aircraft fitted with propeller Mc Cauley 1A 135/BRM 7150 instead of Mc Cauley 1C 172/EM 7249.

Section II Limitations

Limitations remain unchanged except for RPM limitation between 2125 and 2375 RPM, which is not applicable for this propeller.

Section III Emergency procedures

No change

Section IV Normal procedures

No change

Section V Performance

No change. The same performance figures have been flown with the 1A 135/BRM 7150 propeller.

SWISS FEDERAL AIR OFFICE approved: September 20, 1972

FEDERAL AIR OFFICE
Section for aeronautical
material

WEIGHING REPORT

Ref:
Issue:
Page:

TYPE Cessna 150J/RR REGISTRATION HB-CVZ

AIRCRAFT NUMBER	PLACE OF WEIGHING	DATE OF WEIGHING	WEIGHING EQUIPMENT

FIRST POSITION WEIGHING · ANGLE OF INCLINATION: ZERO

SCALE POSITION	SCALE READING (LB.)	TARE	SYMBOL	NETT WEIGHT
PORT MAIN REACTION			W_P	
STARBOARD MAIN REACTION			W_S	
NOSE REACTION			W_N	
TOTAL WEIGHT			W	

SECOND POSITION CHECK WEIGHING

SCALE POSITION	SCALE READING (LB.)	TARE	NETT WEIGHT
PORT MAIN REACTION			
STARBOARD MAIN REACTION			
NOSE REACTION			
TOTAL WEIGHT			

AVERAGE NETT WEIGHT = LB.

MEASUREMENTS

1. Distance from Datum to Weighing Reference Point ins.
2. Distance from Weighing Reference Point to Main Reactions ins.
3. Distance of Main Reactions from Datum (1+2) ins. (B)
4. Distance Between Nose and Main Reactions ins.
5. Distance of Nose Reaction from Datum (3 - 4) ins. (A)

CALCULATION OF (AS WEIGHED) CG AND MOMENT

$$W_N \times A + (W_P + W_S \times B) = (W \times C)$$

WEIGHT (LB.) x ARM (IN.) = MOMENT (LB/IN)

$W_N =$	x	-	=	
$W_P + W_S =$	x		=	
$W =$	x		=	

CORRECTED WEIGHT AND CG

ADDITIONS & DELETIONS	WEIGHT (LB.)	ARM (IN.)	MOMENT (LB./IN.)
AIRCRAFT AS WEIGHED			
DELETIONS: see Page			
TOTAL: LESS DELETIONS			
ADDITIONS: see Page			
WEIGHT EMPTY	1164	32.4	37712

Signed _____



Date Sept, 19, 1972

recomputed

FOR CG LIMITS, MAX. TAKE-OFF WEIGHT, AND MAX. LANDING WEIGHT REFER TO FLIGHT MANUAL

For latest weight see second next page!

TITLE WEIGHT AND CENTRE OF GRAVITY SCHEDULE.

Reference - MAT/S/F150J/RR011

Produced by - Miles Aviation and Transport (R & D) Ltd.

Aircraft Designation - Cessna F150J

Nationality and Registration Marks - Swiss HB-CV3

Constructor - Reims Aviation

Constructors S/No. - 0497

M.A.W. - 1600 lb.

C. of G. Limits - 32.8 ins. fwd. limit to 37.5 ins. aft limit. All lever arms are distances in inches aft of datum.

PART A. BASIC WEIGHT.

The basic weight of the aircraft as calculated from weighing report

The centre of gravity of the aircraft in the same condition at this weight is ins. aft of datum. The total moment about the datum in this condition is lb/ins.

The datum referred to is the forward face of the engine firewall.

The basic weight includes the weight of 2 imperial gallons unuseable fuel and 1.6 imperial quarts of unuseable oil and the weight of the following items which comprises the list of Basic Equipment.

See Appendix 1 attached.

PART B. VARIABLE LOAD. N/A.

PART C. OPERATING (APS) WEIGHT.

The operating or (Aircraft prepared for service) weight and lever arm
 Pilot 165 lb. 39" lever arm 6435 lb/ins.

PART C. LOADING INFORMATION (DISPOSABLE LOAD)

Fuel tanks	Port	Stbd.	WT.	ARM	MOMENT
	Imp. 14.5 galls.	14.5 galls	208 lb.	42.2 "	8800 lb/in.
Engine Oil	5 Imp. Quarts		11 lb.	-10 ins.	-110 lb/in
Baggage			120 lb.	64 ins.	7680 lb/in
Passenger			165 lb.	39 ins.	6435 lb/in.

This Schedule was prepared on 5th November 1971 and supersedes all previous issues.

Signed: Chief Inspector.

Firm:

Approval Ref: A1/7997/67

NOTE. The Commander of an aircraft registered in the United Kingdom shall satisfy himself before the aircraft takes off that the load carried by the aircraft is of such weight, and is so distributed and secured that it may be safely carried on the intended flight. (ANO. 1970 ART.29(d)).

ISS.	1						MILES AVIATION & TRANSPORT (R & D) LTD
DATE	11/71						
COMP.		CH'K'D.		APP'D.			SHEET 1 OF 1 MAT/S/F150J/RR011

Weight and Balance Calculation

Document Nr. AIRB-20170504-WB-01-01

For change per EO No.:	20170504	Aircraft Make:	CESSNA.
Aircrafts Model:	F150 J/RR	Aircraft Registration:	HB-CVZ
Aircrafts S/N:	0497		
Date:	12 May 2017	Superseded date:	24 April 2012

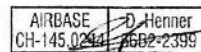
Weight & Balance calculation table:

Units: Inch (in) / Pounds (lbs)

	Weight	Arm	Moment
Previous A/C empty:	1155.10	31.88	36830.8
Removed Items:			
VHF-COM KING KY92	-2.80	12.50	-35.0
Installed Items:			
VHF-COM GARMIN GTR 225A	+3.06	13.20	+40.39
POWER FLARM CORE)	+0.54	11.50	+6.21
New A/C empty Moment			36842.4
New A/C E.W	1155.90		
New A/C C.G.		31.87	

Airbase Ltd, Bern-Airport, CH-3123 Belp

 Date:
12 May. 2017



 Didier Henner
Manager Avionic



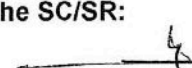
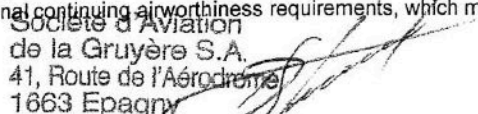
Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

Federal Department of the Environment,
Transport, Energy and Communications DETEC

Swiss Confederation

Federal Office of Civil Aviation FOCA
Safety Division - Aircraft

FOCA Form 123 (Issue 01)

FOCA Form 123 — Standard Change/Standard Repair (SC/SR) embodiment record	1. SC/SR number(s): 20170504		
2. SC/SR title & description: INSTALLATION OF POWERFLARM			
3. Applicability: HB-CVZ CESSNA F150 J/RR			
4. List of parts (description/Part-No/Qty): Fitted POWERFLARM CORE p/n: FLAPFC11E s/n: 004214			
5. Operational limitations/affected aircraft manuals. Copies of these manuals are provided to the aircraft owner: POWERFLARM / BUTTERFLY Pilot's Guide B101/B102-1.0-DE version 1.0 2015/07/30			
6. Documents used for the development and embodiment of this SC/SR: POWERFLARM CORE Installation Manual Flarm FTD-033 version 2.10 2017-02-28 POWERFLARM/BUTTERFLY Pilot's Guide B101/B102-1.0-DE version 1.0 2015/07/30 * Copies of the documents marked with an asterisk are handed over to the aircraft owner.			
7. Instructions for continuing airworthiness. Copies of these manuals are provided to the aircraft owner: N/A			
8. Other information: N/A			
9a. <input checked="" type="checkbox"/> This SC complies with the established criteria (see note 9a) and with the relevant paragraphs of CS-STAN. CS-SC051b AND CS-SC004a			
9b. <input type="checkbox"/> This SR complies with the established criteria (see note 9b) and with the relevant paragraphs of CS-STAN.			
10. Date of SC/SR embodiment: 12 May 2017	11. Identification data and signature of the person responsible for the embodiment of the SC/SR:  <table border="1" data-bbox="1149 1792 1356 1859"> <tr> <td>AIRBASE CH-145.0244</td> <td>D. Hemmer 6632-2399</td> </tr> </table>	AIRBASE CH-145.0244	D. Hemmer 6632-2399
AIRBASE CH-145.0244	D. Hemmer 6632-2399		
12. Signature of the aircraft owner. This signature attests that all relevant documentation is handed over from the issuer of this form to the aircraft owner, and, therefore, the latter becomes aware of any impact or limitations on operations or additional continuing airworthiness requirements, which may apply to the aircraft due to the embodiment of the change/repair. Societe d'Aviation de la Gruyère S.A. 41, Route de l'Aérodrome 1663 Epagny 			



Avionics Equipment List for HB- CVZ

Date 12 May 2017

Number	Description	Manufacturer, Type, Model	Number	Description	Manufacturer, Type, Model
VHF-COM 1			VHF-NAV 1		
1	Control Head	GARMIN GTR 225A	1	Control Head	NARCO NAV11
1	Transceiver		1	Receiver	
1	Antenna		1	Converter	
			1	Indicator	
			1	Antenna	
VHF-COM 2			VHF-NAV 2		
	Control Head			Control Head	
	Transceiver			Receiver	
	Antenna			Converter	
				Indicator	
				Antenna	
VHF-COM 3			Long Range / RNAV Navigation System		
	Control Head			FMS	
	Transceiver			INS / IRS	
	Antenna			GPS	ETSO- ()
				GPS	ETSO- ()
HF-COM			Glide Slope Receiver		
	Control Head			Control Head	
	Transceiver			Receiver	
	Antenna			Antenna	
	Selcal				
Audio-System			Marker Receiver		
	Isolation Amplifier			Receiver	
	Speaker Amplifier			Indicator	
	Selctor			Antenna	
1	INTERCOM	SHELTON AA-0080			
Emergency Locator Transmitter			ADF		
1	Transmitter	KANNAD 406AF COMPACT		Control Head	
1	Remote Switch	RC 200		Receiver / Amplifier	
1	Antenna AF, AP			Indicator	
1	Antenna			Antenna	
1	Frequencies MHz	121.5 <input checked="" type="checkbox"/> 243 <input type="checkbox"/> 406 <input checked="" type="checkbox"/>			
Transponder			DME		
1	Control Head	GARMIN GTX 328		Control Unit	
1	Tranceiver			Transceiver	
1	Antenna			Indicator	
1	Mode	A <input checked="" type="checkbox"/> C <input checked="" type="checkbox"/> S <input checked="" type="checkbox"/> Level		Antenna	
1	Encoder	ACK A30.8			

Weather Radar System		ACAS II / TCAS II	
Tranceiver			
Indicator			
Antenna			
		Software Version	
Passive Thunderstorm Detection System		GPWS / TAWS	
Receiver			
Indicator			
Radio Altimeter		Wind Shear Warning System	
Tranceiver			
Indicator			
Antenna			
Autopilot / Flightdirector		Electronic Flight Bag (EFB)	
		EFB No. 1 Class	(*) SW Type
		EFB No. 2 Class	(*) SW Type
Altitude Alerter		TRAFFIC AWARENESS AND COLLISION AVOIDANCE	
		1	MODULE FLARM CORE
		1	DISPLAY BUTTERFLY DISPLAY B 101
Air Data System			
Computer			
RVSM <input type="checkbox"/>			
Flight Data Recorder			
Recorder			
ULD			
Cockpit Voice Recorder			
Recorder			
ULD			

* Software Type

[Reset](#)

[Print](#)

Bundesamt für Zivilluftfahrt
 Postadresse: CH-3003 Bern
 www.bazl.admin.ch

No traffic received

If there is no traffic in range / received, Butterfly Displays show a special information screen with an UTC Clock and information about GPS and FLARM system status of the connected collision warning unit. Green indicators show normal operation, red ones indicate failures.

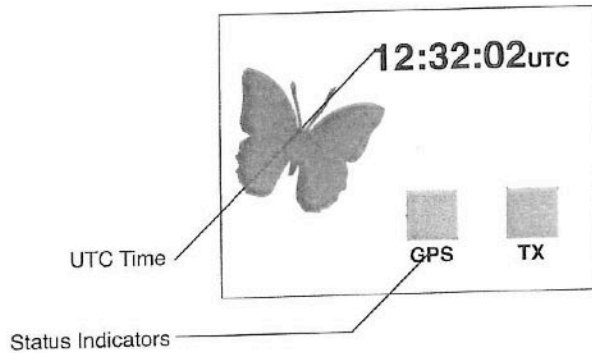


Abbildung 7.1: Info-Screen with status indicators and UTC time

A red GPS-Indicator means that the connected collision warning unit does not have sufficient GPS reception to determine the current position.

Traffic is received

If traffic is received, the pilot is able to select different views. A radar-like view with different zoom-factors and a list-view are available.

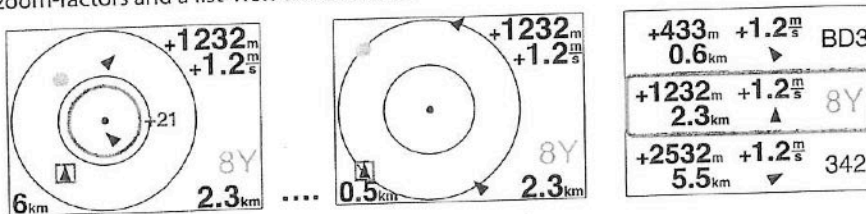


Abbildung 7.2: Different views when traffic is received (not all zoom-scales shown)

NEAREST and SELECT-mode

There are two different modes NEAREST and SELECT-Mode, the current mode can be set up in the menu, *System*.

- In SELECT-Mode (Standard) targets can be selected with the rotary knob
- on NEAREST-Mode targets can be selected with the rotary knob, the selection automatically switches back to the nearest (closest) target after 10 seconds

Radar-View

In the radar-view received traffic is shown on a radar-like display. Traffic is displayed as arrows with the arrow direction depicting the current flight direction. Circling traffic is displayed as blue circles.

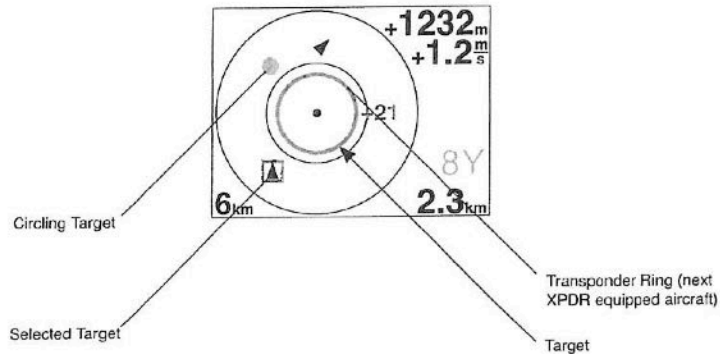


Abbildung 7.3: Radar-view with different symbols

Non directional traffic info (transponders without ADS-B) is displayed as a ring around the own ships position with relative altitude display. The ring diameter - corresponding to the current zoom-scale shows the distance, the relative altitude indicator on the right shows vertical separation. Depending on selected unit vertical separation is displayed in 100m or FL (100ft) steps.

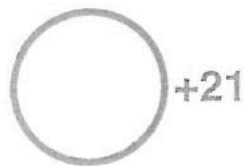


Abbildung 7.4: Transponder-Ring with vertical separation indication in 100ft steps, here 2100m above

On the right side of the display, additional numerical information to the selected target

is shown. If a target is selected, values like relative altitude, distance, climb/sinkrate and identification regarding the selected target are shown. When a target is circling, the circling direction is shown as well. Units of displayed values are user-configurable.

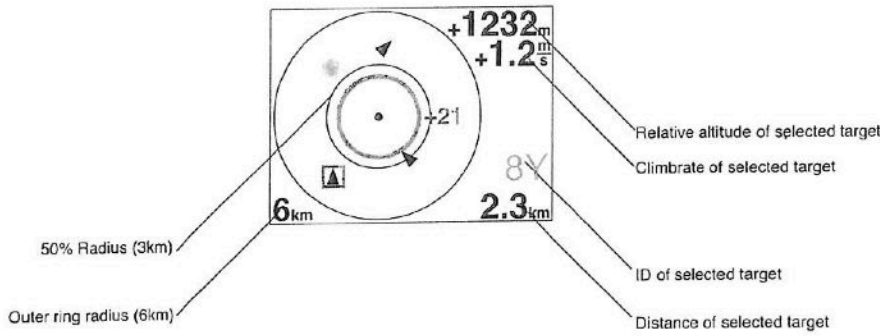


Abbildung 7.5: Radar view: values of selected target



Abbildung 7.6: Circling direction right and left

The current zoom-level of the radar screen (magnification) is shown in the lower left-hand corner. The displayed value corresponds to the outer range-circle of the radar screen. The inner range circle is a half of the outer one. If traffic is outside of the currently set up range, it still is shown on the edge of the radar for better situational awareness at high zoom-scales.

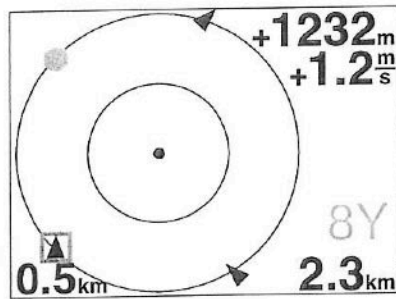


Abbildung 7.7: High zoom scale, targets with larger distance than zoom-scale still are displayed on the edge of the radar screen.

Warning-screen vertical viewing angles

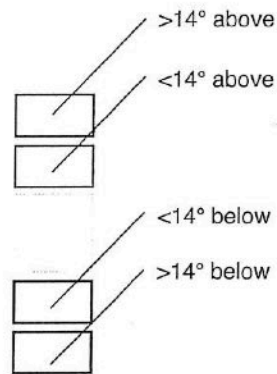


Abbildung 8.2: Vertical Viewing-Angles

Warning-screen distance Indicator

The displayed distance corresponds to the projected horizontal distance, this means not the actual distance (function of relative altitude and horizontal distance) but only the horizontal component.

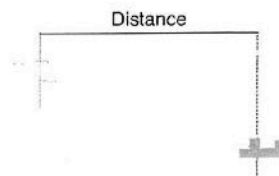


Abbildung 8.3: Distances on the warn-screen

Displayed directions relate to the aircrafts movement relative to ground (GPS-Track). Strong wind may falsify displayed directions significantly.

Depending on your collision warning unit, reception and its set up, the first warning will be given approximately 18 seconds before an eventual collision. When you encounter a warning only take a short look at the display and immediately look outside to find and identify the collision threat. Never try to look inside the cockpit or on the display when planning traffic avoidance maneuvers.

Carefully read the restrictions of your connected collision warning unit!

Train on ground on how to react in case of a collision warning before flying!

Special warning-screens

In special cases additional information is displayed on warning-screens.

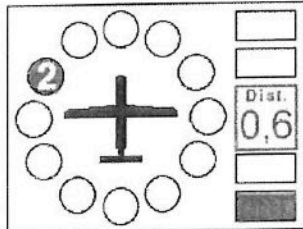


Abbildung 8.4: warning with two threats, the more important of which is at 10 O'Clock position, below, distance 0.6(km)

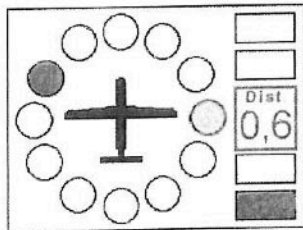


Abbildung 8.5: warning with team-mate/formation-mate that may be dangerously near when turning sharply to the right.

Obstacle Warnings

In case of a FLARM Obstacle Alert, a special warn screen is shown including an obstacle symbol.



Abbildung 8.6: Obstacle Warning Screen

The installation of a current obstacle database in the connected FLARM device is required for the display of obstacle warnings. Butterfly Displays do not contain own obstacle data.