

**MOONEY AIRPLANE COMPANY, INC.
LOUIS SCHREINER FIELD
KERRVILLE, TEXAS 78028**

FAA APPROVED

AIRPLANE FLIGHT MANUAL SUPPLEMENT

FOR

MOONEY AIRCRAFT MODEL

M20R

WITH

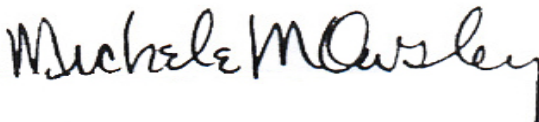
**HARTZELL PHC-J3YF-1RF/F7693DF(B)-2 THREE-BLADE PROPELLER
AND A-2295-10(P) SPINNER INSTALLED**

MODEL NO. _____

REG. NO. _____

SERIAL NO. _____

This Supplement must be inserted into the applicable FAA Approved Pilot's Operating Handbook and Airplane Flight Manual (POH/AFM) when the Hartzell PHC-J3YF-1RF/F7693DF(B)-2, 3 blade propeller and A-2295-10(P), spinner is installed in accordance with Mooney Drawing No. 680037. The information contained herein supplements or supersedes the basic manual only in those areas listed herein. For limitations, procedures and performance information not contained in the supplement, consult the basic POH/AFM. The pilot should become thoroughly familiar with this Supplement as well as the Pilot Handbook for this equipment, if applicable, issued by the manufacturer of the equipment covered by this Supplement.

FAA APPROVED:___ 

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HARTZELL 3 BLADE PROPELLER
AND SPINNER ASSEMBLY
LOG OF REVISIONS

MOONEY AIRPLANE COMPANY, INC.
M20R

REV.	REVISED	DESCRIPTION	FAA APPROVED	DATE
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NOTE: All changes are indicated by a black vertical line along the left margin.

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SECTION I – GENERAL

DESCRIPTIVE DATA

PROPELLER

Number 1
Manufacturer Hartzell
Model Number PHC-J3YF-1RF/F7693DF(B)-2
Number of Blades 3
Diameter (MAX.) 76 in. (193 cm.)
(MIN.) 75 in. (190.5 cm.)
Type Constant Speed
Governor Model (McCauley) Hydraulically Controlled by Engine Oil
Blade Angles @ 30.0 inch radius
Low 16.5 +/- 0.2 degrees
High 38.0 +/- 1.0 degrees

SECTION II - LIMITATIONS

NOISE LIMITS

The certificated noise level per 14 CFR Part 36, Appendix G, Amendment 36-22 of the Federal Aviation Regulations for the Mooney M20R, with the Hartzell 3 blade propeller installed at 3368 lbs (1528 Kg.) maximum weight is **78.67 dB(A)**. 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.

POWERPLANT LIMITATIONS

Propeller Manufacturer Hartzell
Propeller Hub/Blade Model Number PHC-J3YF-1RF/F7693DF(B)-2
Number of Blades 3
Propeller Diameter: Hartzell
(MAX.) 76 in. (193 cm.)
(MIN.) 75 in. (190.5 cm.)
Hartzell – Propeller Blade Angles @ 30.0 inch radius
Low 16.5 +/- 0.2 degrees
High 38.0 +/- 1.0 degrees
Propeller Operating Limits (Hartzell) 2500 RPM

DECALS AND PLACARDS

NOTE: Decal 150056-1003 is required only when the McCauley 2 blade propeller is installed on aircraft.

SECTION III – EMERGENCY PROCEDURES

EMERGENCY DESCENT PROCEDURE

GLIDE

The Hartzell propeller increases descent rate and decreases glide distance approximately 7%. When computing glide distances with the Hartzell propeller installed, subtract 7% from ground distance taken from “Maximum Glide Distance Model M20R” chart in SECTION III of basic AFM/POH.

SECTION IV – NORMAL PROCEDURES

No Change

SECTION V – PERFORMANCE

PERFORMANCE CONSIDERATIONS

Performance with the Hartzell three-blade PHC-J3YF-1RF/F7693DF(B)-2 propeller installed is as follows:

For **Mooney M20R, Ovation**, aircraft S/N 29-0001 thru 29-0182, 29-0184 thru 29-0199, utilizing AFM/POH Number 3600 (*) with performance data for McCauley three-blade propeller model 3A32C418/(G)-82NRC-9:

Takeoff Distance:..... Same as AFM/POH 3600(*)
..... Takeoff Distance Chart
Climb Performance:..... Exceeds handbook performance
..... **(Use attached chart in AFM Supplement, Page 8)**

For **Mooney M20R, Ovation 2**, aircraft S/N 29-0183, 29-0200 thru 29-TBA, utilizing AFM/POH Number 3600 (*) with performance data for McCauley two-blade propeller model 2A34C241/(G)-82NRC-9:

Takeoff Distance:..... Exceeds handbook performance
..... **(Use attached chart in AFM Supplement, Page 7)**
Climb Performance:..... Same as AFM/POH 3800(*)
..... Maximum Rate of Climb Chart

SECTION VI – WEIGHT AND BALANCE

The three-blade Hartzell propeller is approximately 4 pounds heavier than the three-blade McCauley propeller (Ovation) and is approximately 15 pounds heavier than the two-blade McCauley propeller (Ovation 2).

(*) = Current AFM/POH Revision

SECTION VII – AIRPLANE AND SYSTEMS DESCRIPTION

PROPELLER

The propeller is a three-blade, 76 inch (193 cm.) diameter, constant speed unit that features aluminum blades in an aluminum hub. The spinner is fabricated from aluminum alloy.

A more detailed description can be found in Hartzell Manual 115N (Propeller Owners Manual).

SECTION VIII – HANDLING AND SERVICE

MAINTENANCE **PROPELLER CARE**

Routine propeller servicing is described in the latest revision of Hartzell Manual 115N (Propeller Owners Manual).

SECTION IX – SUPPLEMENTAL DATA

Add this Supplement to this section.

SECTION X – SAFETY TIPS

No Change.

(*) = Current AFM/POH Revision

TAKEOFF DISTANCE

NOTE: 1. MAXIMUM DEMONSTRATED CROSSWIND IS 13 KNOTS.
2. CONDITIONS OF HIGH HUMIDITY CAN RESULT IN AN INCREASE OF UP TO 10% TO THE TAKEOFF DISTANCE.

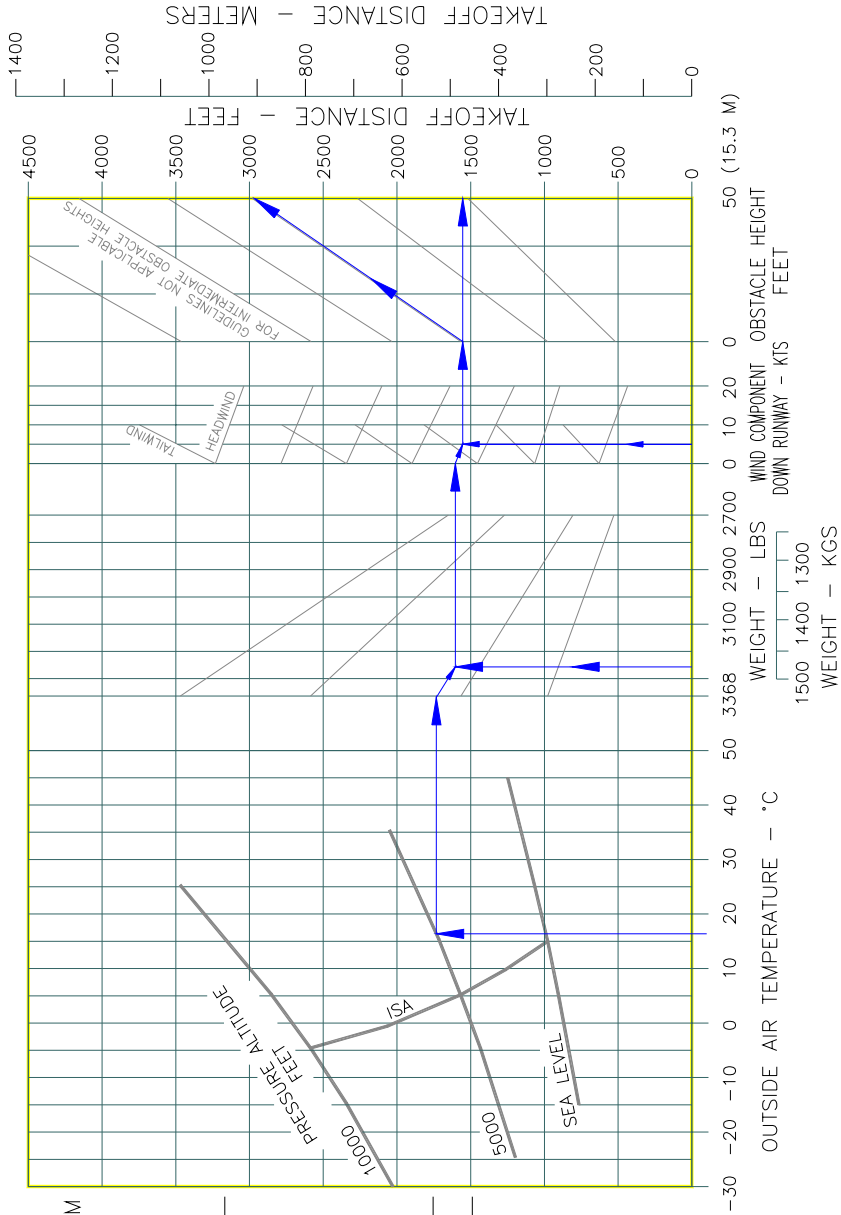
TAKEOFF WEIGHT - LBS (KGS)	TAKEOFF SPEED KIAS	SPEED AT 50 FT - KIAS
3368 LBS (1528 KGS)	67	82
3100 LBS (1406 KGS)	64	78
2700 LBS (1225 KGS)	59	74

ASSOCIATED CONDITIONS

POWER FULL THROTTLE/2500 RPM
LDG GEAR DOWN UNTIL OBSTACLE CLEARED
WING FLAPS 10°
RWY SURF. PAVED LEVEL, DRY

EXAMPLE:

OAT 17 °C
PRESSURE 5000 FT
ALTITUDE 3250 LBS (1474 KGS)
WEIGHT 5 KTS
HEADWIND COMPONENT
GROUND ROLL 1550 FT (472 M)
TOTAL TAKEOFF DISTANCE (50 FT OBSTACLE) 2900 FT (884 M)



MAXIMUM RATE OF CLIMB

FULL THROTTLE, 2500 RPM, 105 KIAS, FULL RICH, GEAR UP, FLAPS UP

