Minnis Aviation LLC
9291 Airport Road
Lakeview, Ml 48850

Report: M0601-3
Revision: **A**
Date: 04/28/2013

MASTER DRAWING

STC NUMBER
SA02482CH

MOONEY AIRCRAFT M20R, M20S & M20TN

INSTALLATION OF HARTZELL PROPELLER PHC-J3YF-1N/7605(8)-2

FAA Approved: FAA APPROVED

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LOG OF REVISIONS

Rev.	Rev Date	Pages	Description of Revision	MidWest Approved	FAA Approved
IR	10/19/07	7	Initial Release	Bob Minnis	
A	04/28/13	All	Name & Address Change	Bob Minnis	

1.0 INTRODUCTION

The modification replaces the existing McCauley or Hartzell Propeller with the Hartzell-Propeller, model number PHC-J3YF-1Nll605(8)-2 constant speed composite blade propeller and Spinner A-2295-10( ).

2.0 INSTALLATION INSTRUCTIONS

COMPATIBILITY OF THE INSTALLATION CHANGE WITH PREVIOUSLY APPROVED MODIFICATION MUST BE DETERMIND BY THE INSTALLER

2.1 Applicable Manuals:

- Hartzell Propeller Owner's Manual, 145
- FAA approved Airplane Flight Manual Supplement No. M0601-8

WARNING

Disconnect the ignition harness to the spark plugs before removing the existing propeller & spinner. Reconnect after the installation of the replacement propeller and spinner is completed.

Failure to comply may result in bodily injury when the propeller is rotated during removal or re-installation.

CAUTION

Wrap the blade shanks in several layers of masking or duct tape before removing the spinner dome to prevent damaging the blade and blade paint.

2.2 Removal and Installation

Removal / installation of the eroeeller seinner and eroeeller are to be accomplished in accordance with Hartzell Proeeller Owner Manual 145 rev. 4 dated 2006 or later aeeroved revision.

Note: If the propeller is equipped with an anti-ice or a de-ice system, follow the manufacturer's instructions for removing the components necessary for propeller removal.

2.3 Tooling requirements
- Safety wire pliers
- Torque wrench (1/2 inch drive)
- Torque wrench adapter (Hartzell P/N BST-2860)
- % inch open end wrench

2.4 Consumables
- Quick Dry Stoddard Solvent or Methyl-Ethyl-Ketone (MEK)

2.5 Expendables
- 0.032 Stainless Steel Aircraft Safety Wire
- "O" ring - propeller to engine seal (C-3317-228)

2.6 Pre-Installation
- Inspection of shipping package
  - Examine the exterior of the shipping container for signs of shipping damage, especially at the box ends around each blade. A hole, tear or crushed appearance at the end of the box (at the propeller tips) may indicate the propeller was dropped during shipment, possibly damaging the blades.

2.7 Uncrating
- Place the propeller on a firm support
- Remove the banding and any external wood bracing from the cardboard shipping container.
- Remove the cardboard from around the hub and blades. Place the propeller on a padded surface that supports the propeller over a large area. Never stand the propeller on a blade tip.
- Remove the plastic dust cover cup from the propeller-mounting flange (if installed).

2.8 Inspection after shipping
- After removing the propeller from the shipping container, examine the propeller components for shipping damage.

2.9 Placard and marking:

- 10-550- G or 10-550-N 244 BHP at 2400 RPM's (Reference Only)
  Tachometer Marking:
  - 2400 RPM maximum
  - Green arc between 2200 RPM and 2400 RPM

  Fuel Flow Marking:
  - 120 Lb/Hr or 20.5 Gal/Hr maximum

- 10-550- G or 10-550-N 280 BHP at 2500 RPM's (Reference Only)
  Tachometer Marking:
  - 2500 RPM maximum
  - Green arc between 2200 RPM and 2500 RPM

  Fuel Flow Marking:
  - 130 Lb/Hr or 22.1 Gal/Hr maximum

- 10-550- G or 10-550-N 310 BHP at 2700 RPM's (Reference Only)
  Tachometer Marking:
  - 2700 RPM maximum
  - Green arc between 2200 RPM and 2700 RPM

  Fuel Flow Marking:
  - 188 Lb/Hr or 32 Gal/Hr maximum

- TSI0-550-G 280 BHP at 2500 RPM's (Reference Only)
  Tachometer Marking:
  - 2500 RPM maximum
  - Green arc between 2200 RPM and 2500 RPM

  Fuel Flow Marking:
  - 130 Lb/Hr or 22.1 Gal/Hr maximum

- TSI0-550- G 310 BHP at 2700 RPM's (Reference Only)
  Tachometer Marking:
  - 2700 RPM maximum
  - Green arc between 2200 RPM and 2700 RPM

  Fuel Flow Marking:
  - 210 Lb/Hr or 35.8 Gal/Hr maximum

Placard: TSI0-550-G Only: Do not operate above 30.5 In. Hg. Manifold Air Pressure below 2500 RPM's

Markings and placard concerning other propellers are obsolete.

2.10 Perform static test, check for function and oil leakage.

- Perform full power static RPM check, adjust governor stop as required to achieve maximum power RPM.
- Check for proper governor control cable cushion, adjust as required.
- Adjust fuel flow in accordance with Mooney Service Instruction M20-107, TCM Engine Setup Procedures or in accordance with STC's that may be installed.
- TCM Service Information SID 97-3C or latest revision may also be used as a reference for fuel set-up.
- After adjustment is complete, final safety checks are made, safety wire installation as required, perform flight test and make all required log book entries.

2.11 Change weight and balance record and equipment list:

Installation

Hartzell-Propeller PHC-J3YF-1Nn605(B}-2 propeller with spinner:

Weight = 64.0 Lb.

Moment arm= -49.5 inches (forward of datum)

Removal

McCauley Propeller 2A34C239/90MC-15 propeller with spinner:

Weight = 56.0 Lb

Moment arm = - 49.5 inched (forward of datum}

McCauley Propeller 3A32C418-G (}-82 propeller with spinner:

Weight = 70.0 Lb

Moment arm= - 49.5 inched (forward of datum)

McCauley Propeller 2A34C241-G82PGC-6 propeller with spinner:

Weight = 68.0 Lb

Moment arm= - 49.5 inched (forward of datum)

Hartzell-Propeller PHC-J3YF-1RF/F7693DF (}-2 propeller with spinner:

Weight = 80.0 Lb.

Moment arm= - 49.5 inches (forward of datum)

2.12 Post-installation dynamic balance of the propeller/ engine combination is recommended perrecommended per Section 61-00-15 of the Hartzell Owner's Manual 145.

2.13 **Make** the appropriate logbook entries and return aircraft to service with FM Form 337 referencing STC.

External configuration, mechanical and electrical interfaces, and limitations of the modified engine model remain identical to the currently approved aircraft models.

Note: All Hartzell-Propeller manuals and service information can be ordered through your Hartzell-Propeller distributor or (if prepaid) directly from:

Hartzell Propeller Inc.
One Propeller Place
Piqua, Ohio 45356

Email
techsupport@hartzellprop.com

Telephone
(937) 778-4379
8am - 5pm US Eastern Time

(937) 778-4376
after hours AOG support

Or web site http://www.hartzellprop.com

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