

MOONEY AIRCRAFT CORPORATION

P. O. Box 72

Kerrville, Texas 78029

FAA APPROVED

AIRPLANE FLIGHT MANUAL SUPPLEMENT

FOR

Mooney Aircraft Models

M20J - (S/N 24-0001 & ON)

M20K - (S/N 25-0001 & ON)

M20L - (S/N 26-0001 & ON)

WITH

3M (Ryan) Stormscope, "WX-10", "WX-10A"  
or "WX-11" Weather Mapping System

Model No. \_\_\_\_\_

Reg. No. \_\_\_\_\_

Serial No. \_\_\_\_\_

This Supplement must be attached to the applicable FAA Approved Airplane Flight Manual and Pilot's Operating Handbook when the 3M (Ryan) Stormscope, WX-10, WX-10A or WX-11 Weather Mapping System is installed in accordance with Mooney Drawing No. 810413. The information contained herein supplements the information of the basic AFM/POH.

FAA APPROVED: \_\_\_\_\_

*for*

*C. L. Stoner*  
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FEDERAL AVIATION ADMINISTRATION  
Department of Transportation  
Southwest Region, Fort Worth, TX

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REV. C: 3-12-86

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LOG OF REVISIONS

Revision Number	Revised Pages	Description of Revision	FAA Approved*	Date
D	Title Pg, 1 thru 5	Added M20L Effectivity to each page.	<i>HA Armstrong</i>	3-31-88

The revised portions of affected pages are indicated by vertical black lines in the margin.

\*Don P. Watson, Manager, Airplane Certification Division

The 3M (Ryan) Stormscope, WX-10, WX-10A or WX-11, Weather Mapping System provides a visual screen readout of the electrical discharges associated with thunderstorms. This information with proper interpretation, will allow the pilot to detect severe thunderstorm activity. A series of green dots will be displayed on the screen to indicate the electrical discharge areas. The display scope provides full scale selectable ranges of 200, 100, 50 and 25 N/M along with 30° azimuth sectors.

SECTION II - LIMITATIONS

- I. The WX-10, WX-10A or WX-11 Stormscope System signal displays are not intended for the purpose of penetrating thunderstorm areas or areas of severe turbulence; such intentional use is prohibited.

NOTE: Range selector determines receiver sensitivity and therefore relative range. Displayed range is based on signal strength and is not to be used for accurate determination of thunderstorm location.

- II. Allow 30 seconds warm-up time before activating test functions.
- III. Placard required: Stormscope not to be used for thunderstorm area penetration.

SECTION III - EMERGENCY PROCEDURES

No change.

SECTION IV - NORMAL PROCEDURES

The 3M (Ryan) Stormscope, WX-10, WX-10A or WX-11 Owners Manual should be read thoroughly by the operator before using the displayed data to interpret thunderstorm activities.

- I. Operation (Preflight)
- A. Turn power/mode switch to "ON".
- B. Turn WX-10, WX-10A or WX-11 to "FWD", if desired, to concentrate system memory to forward 180° reception.
- C. Push test button, "TST". Check for proper signal reception on the 045° bearing. Check that signal reception occurs at both 100 NM range and 200 NM scale selections. No signal will normally be seen on the 50/25 NM scales.

SUPPLEMENT 3M (Ryan) Stormscope WX-10,-10A ,-11  
SECTION IV - NORMAL PROCEDURES (CONT.)

- D. Push clear button, "CLR", to clear dots from screen so new thunderstorm data can be displayed.
- E. Turn Range-Selection switch to desired range in nautical miles.
- F. For night operation, the brightness control, "BRT", controls intensity of dots for comfortable viewing.

WX-11 Only - The WX-11 has the capability to display electrical discharge activity relative to the aircraft heading, even while executing a turn, if the aircraft heading gyro has the necessary outputs and is connected to the WX-11 system.

- G. The "GYRO STATUS" is determined by simultaneously pressing the "TST" and "CLR" buttons while the unit is warmed-up and in operation. The dot pattern will momentarily display the words "GYRO ON" or "GYRO OFF". If "GYRO ON" appears, the electrical discharge generated dot patterns will automatically move on the screen relative to changes in aircraft heading. If "GYRO OFF" appears the electrical discharge generated dot patterns will remain stationary on the screen as aircraft heading changes.
- H. In "GYRO OFF" condition it will be necessary to clear the display manually, by pushing "CLR" button, each time the aircraft heading is changed.
- I. No thunderstorm information is processed while "TST" and "CLR" buttons are depressed.
- J. To CHANGE GYRO STATUS - Depress both "TST" and "CLR" buttons for more than three seconds to change the status of the gyro connection, i.e., changing from "GYRO ON" to "GYRO OFF" or VICE-VERSA. These mode changes can be made at any time.

NOTE: Whenever aircraft electrical power has been turned OFF the WX-11 and then restored, the unit will be in the "GYRO ON" mode.

- K. Gyro failure indication on WX-11 screen may not be apparent if the heading gyro does not have a failure output signal circuit. It is the pilot's responsibility to monitor the WX-11 screen periodically to make this determination.

SUPPLEMENT 3M (Ryan) Stormscope WX-10,-10A,-11  
SECTION IV - NORMAL PROCEDURES (CONT.)

- L. Some heading gyros have an electronic fault output circuit associated with the gyro flag and, if connected, the WX-11 can receive this output signal. The word "FLAG" will appear on the WX-11 screen face when this signal is received. Press the "TST" and "CLR" buttons simultaneously for more than three seconds to change to "GYRO OFF" mode.

NOTE: All failures may not be sensed electronically. The pilot is the final authority as to the proper operation of the WX-11 system.

NOTE: Operator should be aware that occasional aircraft electrical system (pitot heat, radio transmissions, etc.) activations or noisy external electrical devices in close ground proximity may cause signal patterns to be displayed. Such signals should be disregarded and cleared by the "CLR" button.

## II. IN-FLIGHT FUNCTIONS

- A. The WX-10, WX-10A or WX-11 has the capacity to show up to 256 dots on the display screen. When in "FWD" mode all dots will be concentrated on the upper half of the screen to give greater definition of thunderstorm activity ahead of the airplane. No warnings will be received from the rear half of the display.
- B. The size and shape of the cluster of dots will indicate how concentrated or sparse the electrical discharges are at the thunderstorm location.

The rapidity at which the individual dots appear indicate the rate of occurrence of the electrical discharges and generally the thunderstorm severity.

The dot patterns will update automatically anywhere from approximately 10 seconds to 5 minutes depending upon the nature and severity of the detected disturbances by automatic erasure of oldest signals and display of newly detected signals. A random, scattered display of signals may only indicate possible areas of atmospheric instability rather than significant thunderstorm activity.

Read the owners manual for complete explanation and interpretation of dots.

- C. The push button(s), "TST" or "TST" & "CLR" (simultaneously) may be used in-flight to verify proper operation of the system.

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SECTION V - PERFORMANCE

No change.

SECTION VI - WEIGHT AND BALANCE

Entry to be made when system is installed in aircraft.

SECTION VII - SYSTEMS

The WX-10 or WX-10A Stormscope system uses 20 watts (max.) when operating (1.4 amps at 14 volts, 0.7 amps at 28 volts). The WX-11 system uses 28 watts (max.) when operating (2.0 amps at 14 volts, 1.0 amps at 28 volts).

SECTION VIII - HANDLING AND SERVICE

No change.

SECTION IX - SUPPLEMENTAL DATA

Supplement added if system is installed in aircraft.

SECTION X - SAFETY TIPS

No change.