



US Department of Transportation

Federal Aviation Administration

MAJOR REPAIR AND ALTERATION (Airframe, Powerplant, Propeller, or Appliance)

Form Approved

OMB No. 2120-0020

For FAA Use Only

Office Identification

INSTRUCTIONS: Print or type all entries. See FAR 43.9, FAR 43 Appendix B, and AC 43.9-1 (or subsequent revision thereof) for instructions and disposition of this form. This report is required by law (49 U.S.C. 1421). Failure to report can result in a civil penalty not to exceed \$1,000 for each violation (Section 901 of Federal Aviation Act of 1958).

1. Aircraft	Make <p style="text-align: center;">Ryan</p>	Model <p style="text-align: center;">Navion B</p>
	Serial No. <p style="text-align: center;">NAV-4-2313B</p>	Nationality and Registration Mark <p style="text-align: center;">N5413K</p>
2. Owner	Name (As shown on registration certificate) <p style="text-align: center;">Putney, William W III Rodgers, Gail C</p>	Address (As shown on registration certificate) <p style="text-align: center;">5780 Balmoral Drive Oakland, CA 94619</p>

3. For FAA Use Only

The data identified herein complies with the applicable airworthiness requirements and is approved for the above described aircraft, subject to conformity inspection by a person authorized in FAR 43, Section 43.7

05-29-03

DATE

SIGNATURE

OAK-FSDO

4. Unit Identification

5. Type

Unit	Make	Model	Serial No.	Repair	Alteration
AIRFRAME	~~~~~ (As described in Item 1 above) ~~~~~				X
POWERPLANT					
PROPELLER					
APPLIANCE	Type				
	Manufacturer				

6. Conformity Statement

A. Agency's Name and Address <p style="text-align: center;">Pierre Borduas 875A Island Dr. #253 Alameda, CA. 94502</p>	B. Kind of Agency <input checked="" type="checkbox"/> U.S. Certificated Mechanic <input type="checkbox"/> Foreign Certificated Mechanic <input type="checkbox"/> Certified Repair Station <input type="checkbox"/> Manufacturer	C. Certificate No. <p style="text-align: center;">A.P. 2020552 I.A.</p>
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D. I certify that the repair and/or alteration made to the unit(s) identified in item 4 above and described on the reverse or attachments hereto have been made in accordance with the requirements of Part 43 of the U.S. Federal Aviation Regulations and that the information furnished herein is true and correct to the best of my knowledge.

Date <p style="text-align: center;">6-2-03</p>	Signature of Authorized Individual
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7. Approval for Return To Service

Pursuant to the authority given persons specified below, the unit identified in item 4 was inspected in the manner prescribed by the Administrator of the Federal Aviation Administration and is APPROVED REJECTED

BY	FAA Flt. Standards Inspector	Manufacturer	<input checked="" type="checkbox"/>	Inspection Authorization	Other (Specify)
	FAA Designee	Repair Station	<input type="checkbox"/>	Person Approved by Transport Canada Airworthiness Group	

Date of Approval or Rejection <p style="text-align: center;">6-2-03</p>	Certificate or Designation No. <p style="text-align: center;">A.P. 2020552 I.A.</p>	Signature of Authorized Individual
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NOTICE

Weight and balance or operating limitation changes shall be entered in the appropriate aircraft record. An alteration must be compatible with all previous alterations to assure continued conformity with the applicable airworthiness requirements.

8. Description of Work Accomplished

(If more space is required, attach additional sheets. Identify with aircraft nationality and registration mark and date work completed.)

Description of alteration: This alteration removes a Narco Mk-12A NAV/COM, CDI, VOR Resolver and Power Unit. This alteration also installs a TKM, Inc model MX-12 NAV/COM and a TKM model MC60 Navigation Converter and Indicator.

Description of work: The Narco radio and its wiring and accessories were removed and discarded. Installation of the new radio and indicator were accomplished according to the installation instructions in the TKM "MX12 Nav-Comm Owners Manual" and the TKM "MC60 Navigation Converter and Indicator Operation and Installation" manual. The MX-12 and the MC60 are located in the instrument panel at 7a and 6a respectively (see attached drawing N5413K Panel). Audio inputs and outputs are provided to the aircraft's audio panel (see attached N5413K Audio drawing). The existing communication and navigation antennas were reused for this installation.

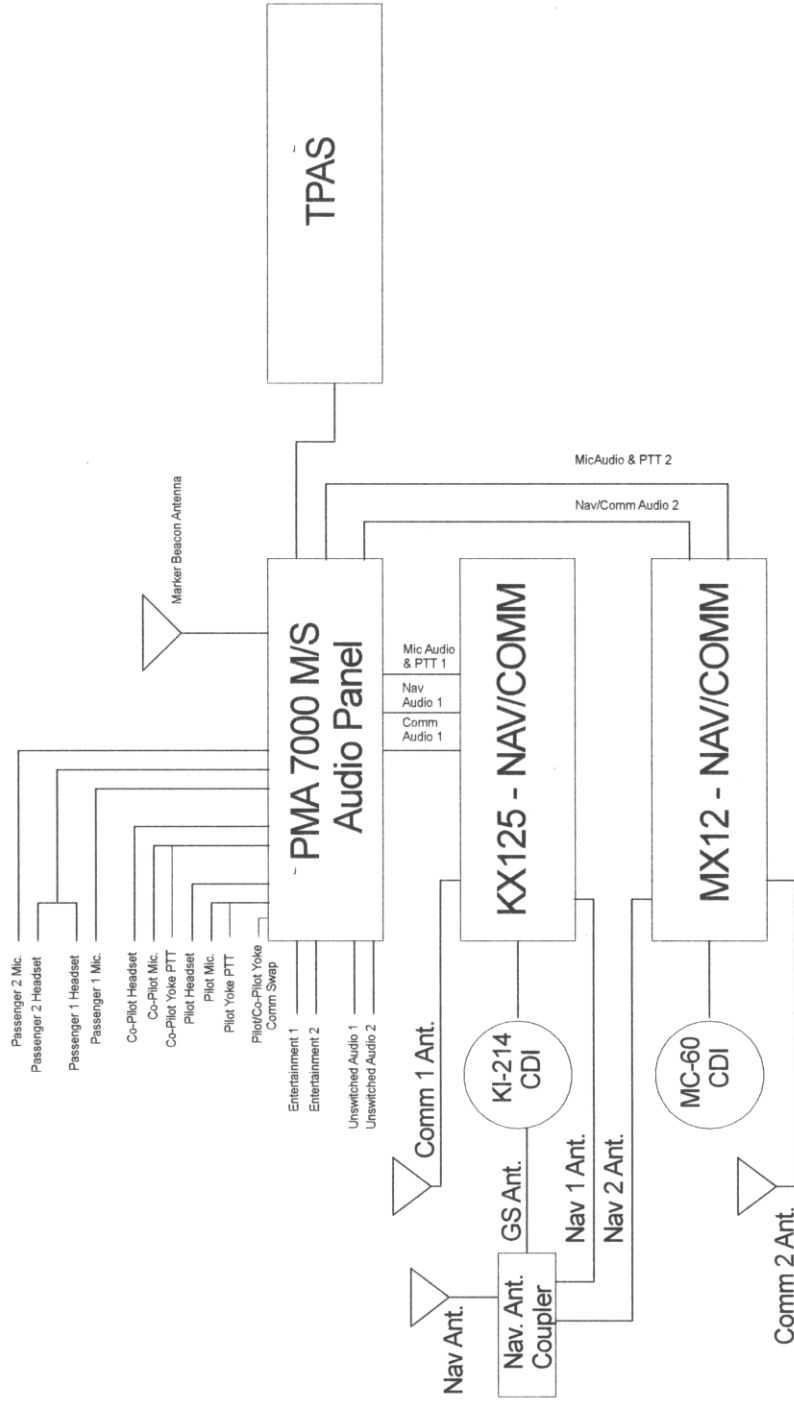
A dedicated 10A circuit breaker (Klixon PN: 7277-2-10) circuit breaker located in the switch panel to the left of the pilot labeled "Nav/Comm 2" provides power to the radio and CDI. The total aircraft system electrical load does not exceed 80% of the generating capacity after this alteration. Connections to aircraft power comply with 23.1365 "Electrical cables and equipment" (a, d, e) and 23.1357 "Circuit protective devices". The systems conform to 23.1311 "Electronic display instrument systems" (a)(1,2,6).

After installation a check for interactions with other systems was made to comply with 23.1309 "Equipment, systems and installations" (a)(1).

A new weight and balance measurement in accordance with 43.13 chapter 10 has been done which includes this alteration.

INSTRUCTIONS FOR CONTINUED AIRWORTHINESS

- 1) **Introduction:** See above (Form 337 section 8).
- 2) **Description:** See above (Form 337 section 8).
- 3) **Control:** Complete operational information is included in the TKM "MX12 Nav-Comm Owners Manual" and the TKM "MC60 Navigation Converter and Indicator Operation and Installation" manual.
- 4) **Servicing information:** Not applicable.
- 5) **Maintenance Instructions:** See TKM "MX12 Nav-Comm Owners Manual"
- 6) **Trouble shooting information:** See TKM "MX12 Nav-Comm Owners Manual".
- 7) **Removal and replacement information:** The MX12 can be removed from its tray by turning the ¼ turn fastener on the rear of the mounting tray counterclockwise. Disconnect the multi-pin connectors and the BNC connectors that connect to the aircraft wiring. When free MX12 can be pulled out. The MC60 is attached to the instrument panel by 4-#6-32 flat head screws. Disconnect the multi-pin connector on the rear of the unit. If the aircraft is to be returned to service without this unit installed, insure that cables and connectors are secured out of the way of flight controls.
- 8) **Diagrams:** Not applicable.
- 9) **Special inspection requirements:** Not applicable.
- 10) **Application of protective treatments:** Not applicable.
- 11) **Data:** 8 #6-32 flat head screws were used to attach the MX-12's tray to the radio rack.
- 12) **List of special tools:** No special tools are required to install or maintain any components associated with this alteration.
- 13) **For commuter category aircraft:** Not applicable.
- 14) **Recommended overhaul periods:** Not applicable.
- 15) **Airworthiness Limitation Section:** Not applicable.
- 16) **Revision:** A letter will be submitted to the local FSDO with a copy of the revised FAA Form 337 and revised ICA. The FAA inspector accepts the change by signing Block 3 of the 337.



Reg: N5413K

SN: NAV-4-2313B

N5413K - Audio

SIZE FSCM NO.

A

DWG NO.

NAV-2452787.14244

REV

1.0

SCALE NA

Date May 27, 2003

SHEET 1 of 1