

ERA17FA066

12/5/2016

Camilla, GA

KEY LIME AIR

FAIRCHILD SA-227AC METRO III

ADDITIONAL OPERATIONS GROUP DOCUMENTATION EXCERPTS

Takeoff Weight 11,400 lbs.

METRO III		
AIRSPEED LIMITS		
SPEED	KIAS (1)	REMARKS
V _A Maneuvering Speed	175	Maximum speed at which individual application of full available aerodynamic control will not overstress the aircraft at 14,500 pounds gross weight. This speed decreases approximately 7 KIAS per 1000 pounds reduction in weight.
V _{FE} Flaps Extended Speeds	215	1/4 Flaps (9 degrees)
	180	1/2 Flaps (18 degrees)
	165	Full Flaps (36 degrees)
V _{LO} Landing Gear Operating Speed	175	Maximum speed for operating the landing gear with the normal or emergency systems.
V _{LE} Landing Gear Extended Speed	175	Maximum speed with gear extended.
V _{MCA} Minimum Control Speed	91	Minimum control speed in flight in the following configuration: Gear up and flaps at 1/4, takeoff power on the operating engine, windmilling propeller on the inoperative engine with NTS operative, no more than 5° bank into good engine.

(1) KIAS is based on normal static system and assumes zero instrument error.

Accident Airplane - FAA Electronic Data Records - Airworthiness Equipment List

applicable airworthiness requirements.

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

Installed the following Avionics and Optional Equipment:

Dual Collins VHF-22 Comm Transceivers	Bendix King RDS-81 Weather Radar
Dual Collins VIR-32 Nav Receivers	Bendix King KEA-346 Encoding Altimeter
Dual Collins ADF-60A ADF Systems	Bendix King KAS-297A Altitude Alerter
Dual Collins RMI-30 RMI	Aerosonic 101735-11799 Altimeter
Dual Collins MCS-65 Compass Systems	Davtron 811B Digital Clock
Collins TDR-90 Transponders	Datcon 873 Flight Hour Meter
Collins DME-42 DME Transceiver	Narco ELT-910 ELT
Seven (7 ea) Collins CTL Control Heads	Dual Papst 4124GX Cooling Fans
Dual Baker M1035-CHKF-JLJ2 Audio Controls	Realistic 12-1984 Cassette Stereo
Dual Jet 510-24L Gyro Horizons	

Collins TDR-90 ATC Transponders have been tested and inspected in accordance with FAR 91.413 and found to comply with Appendix F of FAR Par. 43.

Bendix King KEA-346 Encoding Altimeter functionally ground checked in accordance with Advisory Circular 43.6A.

Aircraft structural and metal work on this aircraft has been accomplished in accordance with Advisory Circular 43.13-1A, Chp. 2, and Chp. 5, and AC 43.13-2A, Chp. 1.

Electrical wire/circuit protection was installed and electrical loads were checked in accordance with Advisory Circular 43.13-1A, Chp. 11, Sec. 2, 3, 6, 7 and 43.13-2A, Chp. 2, Par. 27.

All radio installations listed on this 337 were accomplished in accordance with Advisory Circular 43.13-2A, Chp. 2, Antenna installations in accordance with 43.13-2A, Chp. 3, and Instrument installations in accordance with 43.13-2A, Chp. 11.

Aircraft equipment list revised to reflect these changes.

Aircraft physically weighed by Fairchild Aircraft Corp.

A functional test of all of the equipment listed on this 337 has been performed in accordance with FAR 23.1301 and checked in accordance with FAR 23.1431 for operating satisfactorily and did not adversely affect any other components in the aircraft.

conformity with the applicable airworthiness requirements.

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

Installed a Fairchild Weston Flight Data Recorder, P/N 17M-703-274, also a Fairchild Weston Cockpit Voice Recorder, P/N93-A100-10. Installed per Fairchild Aircraft drawing 27-14025, Entitled: Cockpit Voice Recorder & Flight Data Recorder Modification Installation. All drawings are FAA approved for the SA227 series aircraft. The weight and balance and the equipment list have been revised and are in the flight manual.

E N D

Accident Airplane - FAA Electronic Data Records - Airworthiness Equipment List

Nationality and Registration Mark

Date

This aircraft has been modified by the following:
Reference FAA form 337 dated 05/12/2010

Installed King **KLN-90B GPS RNAV, VFR**: Software version, ORS 20. Approval basis was derived in accordance with AC20-138, appendix 1-14. System consists of KLN-90B GPS receiver/computer located in the panel @ FS 88.060, a KA-92 GPS antenna located on top of the fuselage @ FS 193.160, and a MD41-328 GPS annunciator located in the panel @ FS 88.060.

The King KLN-90B GPS system was installed in accordance with Honeywell Instruction manual 006-10521-0005, rev. 5 dated, April, 2003, using recommended procedures described in the AC43.13-2A, Chapter 2, paragraphs 21, 22 and 23. The power source for the KLN-90B GPS and the MD41-328 annunciator is Mil 27500, number 20ga Tefzel wire and is protected with two (2) circuit breakers, a 5 amp labeled "GPS" and a 3 amp "MD41" located on the LEFT avionics breaker .

GPS cooling is obtained from the new FN200 fan, powered through the GPS 5 amp breaker. This fan is mounted @ FS 110.0 on the right side of the avionics rack.

The King KA-92 antenna was installed on the top of the fuselage @ FS 193.160 using the provided doubler and sealed in accordance the AC43.13-2A section 44 and 8110-3, dated, 4/24/2014.

The King KLN-90B GPS is interfaced with the HSI through the Mid Continent MD41-328(5v) annunciator control unit in accordance with Mid Continent installation manual 7016074, rev. 4, dated 01/09/1997.

The GPS system was tested in accordance with the manufactures recommendations and to comply with FAR 23.1309 for interaction with other equipment.

Requirements of AC20-138A, paragraph 9 for VFR are verified under the provision of STC SA00241WI-D. Ground and flight evaluation was completed, flight data was omitted IAW AIR-100 memorandum dated 3/31/2005. The electrical running load of the aircraft continues to comply with the limitations of AC43.13-1B, chapter 11, paragraph 11-36d, page 11-12.

The King KLN-90B pilots guide # 006-08773-0000, rev.1 dated May 1997 was provided by the manufacturer and remains in the aircraft.

With the King KLN-90B GPS system installed and functioning, the system is approved for navigational use in VFR conditions only. A placard has been affixed to the panel and remains legible reading **"GPS LIMITED TO VFR USE ONLY"**.

- DON'T attempt to preflight plan a course between closely spaced echoes.
- DON'T land or take off in the face of a thunderstorm in the projected flight path. A sudden wind shift or low level turbulence could cause loss of control.
- DON'T attempt to fly under a thunderstorm even if you can see through to the other side. Turbulence under the storm could be severe.
- DON'T try to navigate between thunderstorms that cover 6/10 or more of the display. Fly around the storm system by a wide margin.
- DON'T fly without airborne radar into a cloud mass containing scattered embedded thunderstorms. Scattered thunderstorms not embedded usually can be visually circumnavigated.

- DO avoid by at least 20 miles any thunderstorm identified as severe or giving an intense radar echo. This is especially true under the anvil of a large cumulonimbus.
- DO clear the top of a known or suspected severe thunderstorm by at least 10,000 feet altitude. This may exceed the altitude capability of the aircraft.
- DO remember that vivid and frequent lightning indicates a severe thunderstorm.
- DO regard as severe any thunderstorm with tops 35,000 feet or higher whether the top is visually sighted or determined by radar.

Operation In-Flight

General

The RDS 81/82 Radar will provide you with target information to a greater degree of clarity than has ever been possible with previous generation weather radars. It is the purpose of this section to help you become a proficient radar operator as soon as possible. However, it is realized that proficiency can only improve with usage. It is, therefore, recommended that the operator become familiar with the operation of the system during fair weather instead of while trying to penetrate a storm front.

In previous sections of this handbook we have described the various controls and discussed the features of the RDS 81/82 Radar System. This section concerns itself with a more detailed discussion of some of these controls and how to make the most efficient use of them.

Note: *Your radar is a weather-avoidance device. It should never be used as a weather-penetration system. With proper interpretation, it will help you see and plan avoidance maneuvers around significant weather encountered during flight.*

Path Planning

Remember to plan a deviation path early. Simply skirting the red or magenta portion of a cell is not enough. Plan an avoidance path for all weather echoes which appear beyond 100 miles since this indicates they are quite intense.

The most intense echoes are severe thunderstorms. Remember

that hail may fall several miles from the cloud, and hazardous turbulence may extend as much as 20 miles from the storm. Avoid the most intense echoes by at least 20 miles, that is, echoes should be separated by at least 40 miles before you fly between them. As echoes diminish in intensity, you can reduce the distance by which you avoid them.

Path Planning Considerations

- Avoid cells containing magenta and red areas by at least 20 miles.
- Do not deviate downwind unless absolute necessary. Your chances of encountering severe turbulence and damaging hail are greatly reduced by selecting the upwind side of a storm.
- If looking for a corridor, remember corridors between two cells containing magenta and/or red areas

should be at least 40 miles wide from the outer fringes of the radar echo. The magenta displays areas of very heavy rainfall and statistically indicates a high probability of hail.

***Note:** Do not approach a storm cell containing magenta and red any closer than 20 NM. Echoes should be separated by at least 40 NM before attempting to fly between them.*