

DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

Revision: 6
Date: 01/23/2003

WASHINGTON, D.C.

M A S T E R M I N I M U M E Q U I P M E N T L I S T

* FOR PART 91 OPERATIONS ONLY! *

PIPER MODEL PA-44

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PIPER MODEL PA-44

Table of Contents

SYSTEM NO.	SYSTEM	PAGE
--	Table of Contents	I
--	Log of Revisions	II
--	Control Page	III
--	Highlights of Change	IV, V
--	Definitions	VI, VII, VIII, IX
--	Definitions	X, XI, XII, XIII
--	Preamble	XIV, XV, XVI
--	Guidelines for (O) & (M) Procedures	XVII, XVIII
21	Air Conditioning	21-1
22	Auto Flight	22-1
23	Communications	23-1, 2
25	Equipment/Furnishings	25-1
26	Fire Protection	26-1
27	Flight Controls	27-1
28	Fuel	28-1
30	Ice and Rain Protection	30-1
31	Indicating/Recording Systems	31-1
33	Lights	33-1
34	Navigation	34-1, 2, 3, 4, 5
34	Navigation	34-6
37	Vacuum/Pressure	37-1
61	Propellers	61-1
77	Engine Indicating	77-1

PIPER MODEL PA-44

Log of Revisions

REV.NO.	DATE	PAGE NUMBERS	INITIALS
ORIGINAL	06/18/1980	ORIGINAL ISSUE	
1	01/14/1985	COMPLETE REVISION	
2	04/19/1989	ALL PAGES	
3	06/26/1989	HIGHLIGHTS OF REV., DEFINITIONS	
3	06/26/1989	PREAMBLE	
4	06/12/1990	HIGHLIGHTS OF REV., DEFINITIONS	
4	06/12/1990	23-1, 25-1, 25-2, 26-1, 30-1	
4	06/12/1990	34-1, 34-2, 37-1	
5	03/24/1994	HIGHLIGHTS OF REV., DEFINITIONS	
5	03/24/1994	21-1, 22-1, 23-1, 25-1, 25-2	
5	03/24/1994	26-1, 27-1, 28-1, 30-1, 31-1	
5	03/24/1994	33-1, 34-1, 34-2, 37-1, 61-1	
5	03/24/1994	77-1	
5a	06/13/1996	HIGHLIGHTS OF REV., DEFINITIONS	
5a	06/13/1996	GUIDELINES	
5a	06/13/1996	21-1, 31-1	
6	01/23/2003	HIGHLIGHTS OF REV., DEFINITIONS	
6	01/23/2003	GUIDELINES	
6	01/23/2003	21-1, 22-1, 23-1, 23-2, 25-1	
6	01/23/2003	25-2, 26-1, 27-1, 30-1, 31-1	
6	01/23/2003	33-1, 34-1, 34-2, 34-3, 34-4	
6	01/23/2003	34-5, 34-6, 77-1	

PIPER MODEL PA-44

Control Page

SYSTEM	PAGE	REV NO.	CURRENT DATE
Cover Page	-	6	01/23/2003
Table of Contents	I	6	01/23/2003
Log of Revisions	II	6	01/23/2003
Control Page	III	6	01/23/2003
Highlights of Change	IV	6	01/23/2003
	V	6	01/23/2003
Definitions	VI	6	01/31/1995
	VII	6	01/31/1995
	VIII	6	01/31/1995
	IX	6	01/31/1995
	X	6	01/31/1995
	XI	6	01/31/1995
	XII	6	01/31/1995
	XIII	6	01/31/1995
Preamble	XIV	1	07/05/1990
	XV	1	07/05/1990
	XVI	1	07/05/1990
Guidelines for (O) & (M) Procedures	XVII	6	01/23/2003
	XVIII	6	01/23/2003
21	21-1	6	01/23/2003
22	22-1	6	01/23/2003
23	23-1	6	01/23/2003
	23-2	6	01/23/2003
25	25-1	6	01/23/2003
26	26-1	6	01/23/2003
27	27-1	6	01/23/2003
28	28-1	5	03/24/1994
30	30-1	6	01/23/2003
31	31-1	6	01/23/2003
33	33-1	6	01/23/2003
34	34-1	6	01/23/2003
	34-2	6	01/23/2003
	34-3	6	01/23/2003
	34-4	6	01/23/2003
	34-5	6	01/23/2003
	34-6	6	01/23/2003
37	37-1	5	03/24/1994
61	61-1	5	03/24/1994
77	77-1	6	01/23/2003

PIPER MODEL PA-44

Highlights of Change

- ATA 22-1 Changed relief for Autopilot System in accordance with Policy Letter 101, designated as Global Change 103.
- ATA 22-2 Added relief for Autopilot disconnect in accordance with Policy Letter 93.
- ATA 23-1 Changed relief for Communications Systems in accordance with Policy Letter 95, designated as Global Change 111 and moved High Frequency (HF) Communications to ATA 23-5.
- ATA 23-3 Changed relief for Cockpit Voice Recorder System in accordance with Policy Letter 29, designated as Global Change 48.
- ATA 23-4 Added relief for Boom Microphones in accordance with Policy Letter 58, designated as Global Change 100.
- ATA 23-5 Added relief for High Frequency (HF) Communication System in accordance with Policy Letter 106, designated as Global Change 89.
- ATA 25-2 Changed relief for Passenger Seats in accordance with Policy Letter 79, designated as Global Change 96.
- ATA 25-4 Deleted the word "OR" for clarification and compliance with Policy Letter 31, designated as Global Change 83, and deleted relief for other than "As required by FAR".
- ATA 25-5 Changed the number required for dispatch from a variable quantity to "0" required in accordance with Policy Letter 33, designated as Global Change 99.
- ATA 26-1 Changed relief for Portable Fire Extinguishers in accordance with Policy Letter 75, designated as Global Change 53.
- ATA 27-1 Reformatted Remarks or Exceptions column in accordance with Policy Letter 31, designated as Global Change 83.
- ATA 33-1 Changed the repair category and revised the proviso in accordance with Policy Letter 77, designated as Global Change 63.
- ATA 33-2 Deleted the word "OR" for clarification and compliance with Policy Letter 31, designated as Global Change 83.

PIPER MODEL PA-44

Highlights of Change

- ATA 34-1 Revised and edited system description and remarks for clarification.
- ATA 34-3 Changed relief for ATC Transponder and Automatic Altitude Reporting Systems in accordance with Policy Letter 76, designated as Global Change 110.
- ATA 34-8 Deleted relief for Altitude Encoder since it is now combined with ATA Item 34-3.
- ATA 34-9 Changed relief for DME in accordance with Policy Letter 03.
- ATA 34-12 Deleted the word "OR" for clarification and reformatted the remarks in accordance with Policy Letter 31, designated as Global Change 83.
- ATA 34-13 Changed relief and added TCAS I in accordance with Policy Letter 32, designated as Global Change 115.
- ATA 34-14 Added relief for TCAS II in accordance with Policy Letter 32, designated as Global Change 115.
- ATA 34-15 Renumbered and changed relief for Ground Proximity Warning System in accordance with Policy Letter 54, designated as Global Change 107.

PIPER MODEL PA-44

Definitions

1. System Definitions.

System numbers are based on the Air Transport Association (ATA) Specification Number 100 and items are numbered sequentially.

- a. "Item" (Column 1) means the equipment, system, component, or function listed in the "Item" column.
- b. "Number Installed" (Column 2) is the number (quantity) of items normally installed in the aircraft. This number represents the aircraft configuration considered in developing this MMEL. Should the number be a variable (e.g., passenger cabin items) a number is not required.
- c. "Number Required for Dispatch" (Column 3) is the minimum number (quantity) of items required for operation provided the conditions specified in Column 4 are met.

NOTE: Where the MMEL shows a variable number required for dispatch, the MEL must reflect the actual number required for dispatch or an alternate means of configuration control approved by the Administrator.

- d. "Remarks or Exceptions" (Column 4) in this column includes a statement either prohibiting or permitting operation with a specific number of items inoperative, provisos (conditions and limitations) for such operation, and appropriate notes.
- e. A vertical bar (change bar) in the margin indicates a change, addition or deletion in the adjacent text for the current revision of that page only. The change bar is dropped at the next revision of that page.

2. "Airplane/Rotorcraft Flight Manual" (AFM/RFM) is the document required for type certification and approved by the responsible FAA Aircraft Certification Office. The FAA approved AFM/RFM for the specific aircraft is listed on the applicable Type

PIPER MODEL PA-44

Definitions

Certificate Data Sheet.

3. "As required by FAR" means that the listed item is subject to certain provisions (restrictive or permissive) expressed in the Federal Aviation Regulations operating rules. The number of items required by the FAR must be operative. When the listed item is not required by FAR it may be inoperative for time specified by repair category.

4. Each inoperative item must be placarded to inform and remind the crewmembers and maintenance personnel of the equipment condition.

NOTE: To the extent practical, placards should be located adjacent to the control or indicator for the item affected; however, unless otherwise specified, placard wording and location will be determined by the operator.

5. "-" symbol in Column 2 and/or Column 3 indicates a variable number (quantity) of the item installed.

6. "Deleted" in the remarks column after a sequence item indicates that the item was previously listed but is now required to be operative if installed in the aircraft.

7. "ER" refers to extended range operations of a two-engine airplane which has a type design approval for ER operations and complies with the provisions of Advisory Circular 120-42A.

8. "Federal Aviation Regulations" (FAR) means the applicable portions of the Federal Aviation Act and Federal Aviation Regulations.

9. "Flight Day" means a 24 hour period (from midnight to midnight) either Universal Coordinated Time (UCT) or local time, as established by the operator, during which at least one flight is initiated for the affected aircraft.

10. "Icing Conditions" means an atmospheric environment that may cause ice to form on the aircraft or in the engine(s).

11. Alphabetical symbol in Column 4 indicates a proviso (condition or limitation) that must be complied with for

PIPER MODEL PA-44

Definitions

operation with the listed item inoperative.

12. "Inoperative" means a system and/or component malfunction to the extent that it does not accomplish its intended purpose and/or is not consistently functioning normally within its approved operating limit(s) or tolerance(s).

13. "Notes:" in Column 4 provides additional information for crewmember or maintenance consideration. Notes are used to identify applicable material which is intended to assist with compliance, but do not relieve the operator of the responsibility for compliance with all applicable requirements. Notes are not a part of the provisos.

14. Inoperative components of an inoperative system:
Inoperative items which are components of a system which is inoperative are usually considered components directly associated with and having no other function than to support that system. (Warning/caution systems associated with the inoperative system must be operative unless relief is specifically authorized per the MMEL).

15. "(M)" symbol indicates a requirement for a specific maintenance procedure which must be accomplished prior to operation with the listed item inoperative. Normally these procedures are accomplished by maintenance personnel; however, other personnel may be qualified and authorized to perform certain functions. Procedures requiring specialized knowledge or skill, or requiring the use of tools or test equipment should be accomplished by maintenance personnel. The satisfactory accomplishment of all maintenance procedures, regardless of who performs them, is the responsibility of the operator. Appropriate procedures are required to be published as part of the operator's manual or MEL.

16. "(O)" symbol indicates a requirement for a specific operations procedure which must be accomplished in planning for and/or operating with the listed item inoperative. Normally these procedures are accomplished by the flight crew; however, other personnel may be qualified and authorized to perform certain functions. The satisfactory accomplishment of all procedures, regardless of who performs them, is the responsibility of the operator. Appropriate procedures are

PIPER MODEL PA-44

Definitions

required to be published as a part of the operator's manual or MEL.

NOTE: The (M) and (O) symbols are required in the operator's MEL unless otherwise authorized by the Administrator.

17. "Deactivated" and "Secured" means that the specified component must be put into an acceptable condition for safe flight. An acceptable method of securing or deactivating will be established by the operator.

18. "Visual Flight Rules" (VFR) is as defined in FAR Part 91. This precludes a pilot from filing an Instrument Flight Rules (IFR) flight plan.

19. "Visual Meteorological Conditions" (VMC) means the atmospheric environment is such that would allow a flight to proceed under the visual flight rules applicable to the flight. This does not preclude operating under Instrument Flight Rules.

20. "Visible Moisture" means an atmospheric environment containing water in any form that can be seen in natural or artificial light; for example, clouds, fog, rain, sleet, hail, or snow.

21. "Passenger Convenience Items" means those items related to passenger convenience, comfort or entertainment such as, but not limited to, galley equipment, movie equipment, ash trays, stereo equipment, overhead reading lamps, etc.

22. Repair Intervals: All users of an MEL approved under FAR 121, 125, 129 and 135 must effect repairs of inoperative systems or components, deferred in accordance with the MEL, at or prior to the repair times established by the following letter designators:

Category A. Items in this category shall be repaired within the time interval specified in the remarks column of the operator's approved MEL.

Category B. Items in this category shall be repaired within three (3) consecutive calendar days (72 hours), excluding the day the malfunction was recorded in the aircraft maintenance

PIPER MODEL PA-44

Definitions

record/logbook. For example, if it were recorded at 10 a.m. on January 26th, the three day interval would begin at midnight the 26th and end at midnight the 29th.

Category C. Items in this category shall be repaired within ten (10) consecutive calendar days (240 hours), excluding the day the malfunction was recorded in the aircraft maintenance record/logbook. For example, if it were recorded at 10 a.m. on January 26th, the 10 day interval would begin at midnight the 26th and end at midnight February 5th.

Category D. Items in this category shall be repaired within one hundred and twenty (120) consecutive calendar days (2880 hours), excluding the day the malfunction was recorded in the aircraft maintenance log and/or record.

The letter designators are inserted adjacent to Column 2.

23. Electronic fault alerting system - General

New generation aircraft display system fault indications to the flight crew by use of computerized display systems. Each aircraft manufacturer has incorporated individual design philosophies in determining the data that would be represented. The following are customized definitions (specific to each manufacturer) to help determine the level of messages affecting the aircraft's dispatch status. When preparing the MEL document, operators are to select the proper Definition No. 23 for their aircraft, if appropriate.

a. BOEING (B-757/767, B-747-400, B-777)

Boeing airplanes equipped with Engine Indicating and Crew Alerting Systems (EICAS), provide different priority levels of system messages (WARNING, CAUTION, ADVISORY, STATUS and MAINTENANCE). Any messages that affects airplane dispatch status will be displayed at a STATUS message level or higher. The absence of an EICAS STATUS or higher level (WARNING, CAUTION, ADVISORY) indicates that the system/component is operating within its approved operating limits or tolerances.

System conditions that result only in a maintenance level message, i.e. no correlation with a higher level EICAS message,

PIPER MODEL PA-44

Definitions

do not affect dispatch and do not require action other than as addressed within an operators standard maintenance program.

b. DOUGLAS (MD-11)

Some Douglas aircraft are equipped with an alerting function which is a subsystem within the Electronic Instrument System (EIS). The alerting function provides various levels of system condition alerts (WARNING, CAUTION, ADVISORY, MAINTENANCE and STATUS).

Alerts that affect aircraft dispatch will include WARNING, CAUTION, STATUS or MAINTENANCE level. MAINTENANCE alerts are displayed on the status page of the EIS display panel under the maintenance heading.

A MAINTENANCE alert on the EIS indicates the presence of a system fault which can be identified by the Central Fault Display System (CFDS) interrogation. The systems are designed to be fault tolerant, however, for any MAINTENANCE alert, the MEL must be verified for dispatch purposes.

c. AIRBUS (A-300-600, A-310, A-320/319/321, A-330, A-340)

Airbus aircraft equipped with Electronic Centralized Aircraft Monitoring (ECAM) provide different levels of system condition messages (WARNING, CAUTION, STATUS, and ADVISORY). A-320/319/321, A-330, and A-340 also provide MAINTENANCE status messages.

Any message that effects airplane dispatchability will normally be at the WARNING, CAUTION or STATUS level. MAINTENANCE messages (A-320/319/321, A-330, and A-340 only) are also indicated on ECAM Status Page below the white Maintenance label.

A MAINTENANCE status (Class II) message on ECAM indicates the presence of a system fault which can be identified by CFDS (A-320/319/321) or CMS (A-330/A-340) interrogation. The systems are designed to be fault tolerant, however for any MAINTENANCE status (Class II) message, the A-320/319/321 MEL must be verified for dispatch capability. For the A-330 and A-340, MAINTENANCE status messages do not affect dispatch.

d. FOKKER (FK-100)

PIPER MODEL PA-44

Definitions

Fokker aircraft are equipped with Multi Function Display System (MFDS) which provides electronic message referring to the different priority levels of system information (WARNING (red), CAUTION (amber), AWARENESS (cyan) AND STATUS (white). Any messages that affects aircraft dispatch will be at the WARNING, CAUTION or AWARENESS level. In these cases the MEL must be verified for dispatch capability and maintenance may be required.

System conditions that only require maintenance are not presented on the flight deck. These maintenance indications/messages may be presented on the Maintenance & Test Panel (MAP) or the Centralized Fault Display Unit (CFDU) and by dedicated Built In Test Evaluation (BITE) of systems.

24. "Administrative control item" means an item listed by the operator in the MEL for tracking and informational purposes. It may be added to an operator's MEL by approval of the Principal Operations Inspector provided no relief is granted, or provided conditions and limitations are contained in an approved document (i.e. Structural Repair Manual, airworthiness directive, etc.). If relief other than that granted by an approved document is sought for an administrative control item, a request must be submitted to the Administrator. If the request results in review and approval by the FOEB, the item becomes an MMEL item rather than an administrative control item.

25. "****" symbol in Column 1 indicates an item which is not required by regulation but which may have been installed on some models of aircraft covered by this MMEL. This item may be included on the operator's MEL after the approving office has determined that the item has been installed on one or more of the operator's aircraft. The symbol, however, shall not be carried forward into the operator's MEL. It should be noted that neither this policy nor the use of this symbol provide authority to install or remove an item from an aircraft.

26. "Excess Items" means those items that have been installed that are redundant to the requirements of the FARs.

27. "Day of Discovery" is the calendar day an equipment/instrument malfunction was recorded in the aircraft

PIPER MODEL PA-44

Definitions

maintenance log and or record. This day is excluded from the calendar days or flight days specified in the MMEL for the repair of an inoperative item of equipment. This provision is applicable to all MMEL items, i.e., categories "A, B, C, and D."

PIPER MODEL PA-44

Preamble
(Effective 7/5/90)

This preamble is applicable to, and will be included in, master minimum equipment lists (MMEL) issued under the provisions of Section 91.30(a) ~~NEW~~ Section 91.213(a)(2) |. It is not applicable to MMEL's issued under the provisions of Parts 121, 125, 129, and 135 of the FAR.

Except as provided in Section 91.30(d) ~~NEW~~ Section 91.213(d) |, or under the provisions of an approved MMEL, all equipment installed on an aircraft in compliance with the airworthiness standards or operating rules must be operative. Experience has shown that with the various levels of redundancy designed into modern aircraft, operation of every system or component installed may not be necessary when the remaining equipment can provide an acceptable level of safety.

An MMEL is developed by the FAA, with participation by the aviation industry, to improve aircraft utilization and thereby provide more convenient and economic air transportation for the public. The FAA-approved MMEL includes only those items of equipment which the Administrator finds may be inoperative and yet maintain an acceptable level of safety by appropriate conditions and limitations. The MMEL and FAA-issued letter of authorization are used as an MEL by an operator and permit operation of the aircraft with inoperative equipment.

The MMEL includes all items of installed equipment that are permitted to be inoperative. Equipment required by the FAR, and optional equipment in excess of FAR requirements, is included with appropriate conditions and limitations. For each listed item, the installed equipment configuration considered to be normal for the aircraft is specified. Items of equipment installed on aircraft (except for passenger convenience items such as galley equipment and passenger entertainment devices), such as "TCAS," windshear detection devices, and ground proximity warning systems (GPWS) that are in excess of what is required, and are not listed on the MMEL, must be operational for dispatch unless MMEL relief is sought through the FSDO having jurisdiction for the operator. If MMEL relief is sought, the operator must notify the FSDO who will make a request of the FOEB to convene and consider adding the equipment to the MMEL. The operator may then dispatch with the equipment disabled, or rendered

PIPER MODEL PA-44

Preamble
(Effective 7/5/90)

inoperative, in accordance with all FAR. It is incumbent on the operator to endeavor to determine if O and/or M procedures for that equipment must be developed. If so, any procedures developed must comply with all FAR. Procedures developed to use the MMEL must not conflict with either the aircraft flight manual limitations, emergency procedures, or with airworthiness directives (AD), all of which take precedence over the MMEL and those procedures. Suitable conditions and limitations in the form of placards, maintenance procedures, crew operating procedures, and other restrictions, as necessary, are required to be accomplished by the operator to ensure that an acceptable level of safety is maintained. Those procedures should be developed from guidance provided in the manufacturer's aircraft flight and/or maintenance manuals, manufacturer's recommendations, engineering specifications, and other appropriate sources. Procedures must not be contrary to any FAR. Wherever the statement "as required by FAR" appears in the MMEL, the operator must either list the specific FAR by part and section and carry the FAR on board the aircraft or specify the requirements and/or limitations to conduct the flight in accordance with the appropriate FAR.

The MMEL is intended to permit operations with inoperative items of equipment for the minimum period of time necessary until repairs can be accomplished. It is important that repairs be accomplished at the earliest opportunity in order to return the aircraft to its design level of safety and reliability. Inoperative equipment in all cases must be repaired, or inspected and deferred, by qualified maintenance personnel at the next required inspection §Section 91.165(c), NEW Section 91.405(c) |. The repair intervals indicated by the Letters A, B, and C inserted adjacent to column 2 are NOT applicable to this MMEL.

The MMEL provides for release of the aircraft for flight with inoperative equipment. When an item of equipment is discovered to be inoperative, it is reported by making an entry in the aircraft maintenance records. The item is then either repaired or deferred per the MMEL or other approved means acceptable to the Administrator prior to further operation. In addition to the specific MMEL conditions and limitations, determination by the operator that the aircraft is in condition for safe operations under anticipated flight conditions must be made for all items of inoperative equipment. When these requirements are met, the

PIPER MODEL PA-44

Preamble
(Effective 7/5/90)

inoperative equipment. When these requirements are met, the aircraft may be considered airworthy and returned to service. Operators are responsible for exercising the necessary operational control to ensure that an acceptable level of safety is maintained. When operating with multiple inoperative items, the interrelationship between those items, and the effect on aircraft operation and crew workload, must be considered. Operators are expected to establish a controlled and sound repair program, including the parts, personnel, facilities, procedures, and schedules to ensure timely repair.

WHEN USING THE MMEL, COMPLIANCE WITH THE STATED INTENT OF THE PREAMBLE, DEFINITIONS, CONDITIONS, AND LIMITATIONS SPECIFIED IN THE MMEL IS REQUIRED.

PIPER MODEL PA-44

Guidelines for (O) & (M) Procedures

The FOEB has identified a need for certain procedures to provide an adequate level of safety while providing relief for the following items. These procedures must be established by the operator. The following guidelines are to help establish these required procedures.

- 21-1 (M)Maintenance procedure to ensure no fuel leak or electrical fault exists.
- 21-2 (M)Maintenance procedure to ensure no mechanical or electrical fault exists that will cause damage.
- 21-4 (O)Operations procedure for recording hours of operation.
- 22-1 (M)Maintenance procedure to ensure no electrical or mechanical fault exists that will have an adverse effect on any flight control function.
- 23-5 (O)Operations procedure to verify that the SATCOM System operates normally.
- 27-2 (M)Maintenance procedure to ensure that the failure of the electrical pitch trim will not affect the operation of the manual trims or other flight controls.
- 28-1 (O)Operations procedure to ensure the flight crew can determine the quantity of fuel on board.
- 31-2 (O)Operations procedure for recording aircraft flight time.
- 34-13 (M)Maintenance procedure to deactivate and secure the system.
- 34-13 (O)Operations procedure to ensure that TCAS is not required for the intended flight.
- 34-14 (M)Maintenance procedure to deactivate and secure the system.
- 34-14 (O)Operations procedure to ensure that TCAS is not required for the intended flight.
- 34-14-2 (O)Operations procedure to ensure that TA Only mode is selected and enroute or approach procedures do not require its use.

PIPER MODEL PA-44

Guidelines for (O) & (M) Procedures

- 34-14-3 (O) Operations procedure to ensure all RA display and audio functions are operative and enroute or approach procedures do not require its use.
- 34-15 (O) Operations procedure to ensure alternate procedures are established and used.
- 34-15-1 (O) Operations procedure to ensure alternate procedures are established and used.
- 34-15-4 (O) Operations procedure to ensure alternate procedures are established and used for advisory callouts.
- 34-15-5 (O) Operations procedure to ensure alternate procedures are established and used for inoperative windshear mode.
- 37-1 (M) Maintenance procedure to ensure no unsafe condition exists that could affect engine operations or systems function.

AIRCRAFT:

PIPER MODEL PA-44

REVISION NO: 6

DATE: 01/23/2003

PAGE:

21-1

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED		4. REMARKS OR EXCEPTIONS
			3. NUMBER REQUIRED FOR DISPATCH		
21	AIR CONDITIONING				
1.	Heater	C	1	0	(M)
2.	Air Conditioner System	C	1	0	(M)
3.	Fresh Air Fan	C	1	0	
4.	Heater Hour Meter	C	1	0	(O)

AIRCRAFT:

PIPER MODEL PA-44

REVISION NO: 6

DATE: 01/23/2003

PAGE:

22-1

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED		3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
			-	-		
22	AUTO FLIGHT					
1.	Autopilot System	C	-	0		(M)May be inoperative provided operations do not require its use.
2.	Autopilot Disconnect	C	-	-		One may be inoperative provided the autopilot is not utilized at less than initial approach altitude.

AIRCRAFT:

PIPER MODEL PA-44

REVISION NO: 6

DATE: 01/23/2003

PAGE:

23-1

SYSTEM & SEQUENCE NUMBERS	ITEM	1. NUMBER INSTALLED		2. NUMBER INSTALLED		3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
23	COMMUNICATIONS						
1.	Communications Equipment (VHF and UHF)	D	-	-	-	-	Any in excess of those required by FAR may be inoperative provided it is not powered by the emergency power supply and not required by emergency procedures.
2.	Cockpit Speaker	C	1	0	0	0	As required by FAR.
3.	Cockpit Voice Recorder						
	A) With Flight Data Recorder (FDR) installed	A	1	0	0	0	May be inoperative provided: a) Flight Data Recorder (FDR) operates normally, and b) Repairs are made within three flight days.
	B) Without Flight Data Recorder	A	1	0	0	0	May be inoperative provided repairs are made within three flight days.
4.	Boom Microphones						
	A) With Cockpit Voice Recorder and Flight Data Recorder installed						
	1) Cockpit Voice Recorder equipped to record Boom Microphone per 14 CFR 135.151(d)	A	-	0	0	0	May be inoperative provided: a) Flight Data Recorder operates normally, and b) Repairs are made within three flight days.
	2) Cockpit Voice ***Recorder not equipped to record Boom Microphone	D	-	0	0	0	Any in excess of those required by FAR may be inoperative.
	(CON'T.)						

AIRCRAFT:

PIPER MODEL PA-44

REVISION NO: 6

DATE: 01/23/2003

PAGE:

23-2

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
23	COMMUNICATIONS				
4.	Boom Microphones (CON'T.)				
	B) Cockpit Voice Recorder without Flight Data Recorder installed				
	1) Cockpit Voice Recorder equipped to record Boom Microphone per 14 CFR 135.151(d)	A	- 0		May be inoperative provided repairs are made within three flight days.
	2) Cockpit Voice ***Recorder not equipped to record boom microphone	D	- 0		Any in excess of those required by FAR may be inoperative.
5.	High Frequency (HF) Communication System	D	- -		Any in excess of those required by FAR may be inoperative.
		C	- 1		(O) May be inoperative while conducting operations that require two Long Range Communication Systems provided: a) SATCOM (High or Low Gain) Data Link System operates normally, and b) SATCOM Data Link Communication operates normally over the intended route of flight.

AIRCRAFT:

PIPER MODEL PA-44

REVISION NO: 6

DATE: 01/23/2003

PAGE:

25-1

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED		4. REMARKS OR EXCEPTIONS
			3. NUMBER REQUIRED FOR DISPATCH		
25	EQUIPMENT/FURNISHINGS				
1.	Cockpit Shoulder Harness	B	2	1	Right side may be inoperative provided seat remains unoccupied.
2.	Passenger Seat	C	-	0	May be inoperative provided: a) Seat does not block an emergency exit, and b) Affected seats are blocked and placarded "DO NOT OCCUPY". NOTE: A seat with an inoperative seatbelt is considered inoperative.
	1) Recline Mechanism	C	-	-	May be inoperative and seat may be occupied provided seat is secured in the upright position.
3.	Flotation Equipment	C	-	-	As required by FAR.
4.	ELT	C	1	0	As required by FAR.
5.	Passenger Convenience Items(s)		-	0	Passenger convenience items, as expressed in this MMEL are those related to passenger convenience, comfort or entertainment such as, but not limited to, galley equipment, movie equipment, ash trays, stereo equipment, overhead reading lamps, etc. Items addressed elsewhere in this document shall not be included. (M) and (O) procedures may be required and included in the air carrier's appropriate document.

AIRCRAFT:

REVISION NO: 6

PAGE:

PIPER MODEL PA-44

DATE: 01/23/2003

26-1

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
26 FIRE PROTECTION					
1. Portable Fire Extinguisher	D	-	-	Any in excess of those required by FAR may be inoperative or missing provided: <ul style="list-style-type: none"> a) The inoperative fire extinguisher is tagged inoperative, removed from the installed location, and placed out of sight so it cannot be mistaken for a functional unit, and b) Required distribution is maintained. 	

AIRCRAFT:

REVISION NO: 6

PAGE:

PIPER MODEL PA-44

DATE: 01/23/2003

27-1

SYSTEM & SEQUENCE NUMBERS		1. ITEM	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
27		FLIGHT CONTROLS			
1.	Trim Tab Position Indicators (Rudder, Elevator)	C	2	0	May be inoperative provided: a) Tab is visually checked for full range of operation, b) Tab operation is not affected, and c) Tab is positioned to neutral prior to each takeoff and neutral is verified by visual inspection.
2.	Electric Pitch Trim	C	1	0	(M)May be inoperative provided manual trim is operative and unaffected.

U.S. DEPARTMENT OF TRANSPORTATION

MASTER MINIMUM EQUIPMENT LIST

FEDERAL AVIATION ADMINISTRATION

AIRCRAFT:

PIPER MODEL PA-44

REVISION NO: 5

DATE: 03/24/1994

PAGE:

28-1

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
28	FUEL				
1.	Fuel Quantity Indicator	C	2	1	(O)One may be inoperative provided a reliable means is established to determine that fuel quantity on board meets the regulatory requirements for the intended flight.

AIRCRAFT:

REVISION NO: 6

PAGE:

PIPER MODEL PA-44

DATE: 01/23/2003

30-1

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED		4. REMARKS OR EXCEPTIONS
			3. NUMBER REQUIRED FOR DISPATCH		
30	ICE AND RAIN PROTECTION				
1.	Pitot Heater	B	1	0	May be inoperative provided: a) IFR passenger carrying operations are not conducted, and b) Aircraft is not operated in known or forecast icing conditions.
2.	Carburetor Ice Detection System	C	1	0	

AIRCRAFT:

REVISION NO: 6

PAGE:

PIPER MODEL PA-44

DATE: 01/23/2003

31-1

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED		4. REMARKS OR EXCEPTIONS
			3. NUMBER REQUIRED FOR DISPATCH		
31	INDICATING/RECORDING SYSTEMS				
1.	Clock with sweep second hand, or electric digital clock	C	1	0	May be inoperative under VFR conditions.
2.	Flight Hour Recorder	C	-	0	(0)

FEDERAL AVIATION ADMINISTRATION

AIRCRAFT:

REVISION NO: 6

PAGE:

PIPER MODEL PA-44

DATE: 01/23/2003

33-1

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED		4. REMARKS OR EXCEPTIONS
			3. NUMBER REQUIRED FOR DISPATCH		
33	LIGHTS				
1.	Cockpit and Instrument Lights	C	-	-	Individual lights may be inoperative provided remaining lights are: a) Sufficient to clearly illuminate all required instruments, controls, and other devices for which it is provided, b) Are positioned so that direct rays are shielded from crewmembers' eyes, and c) Lighting configuration and intensity are acceptable to the flight crew.
2.	Landing Lights	C	2	0	May be inoperative for day operations.
		C	2	1	One may be inoperative for night operations.
3.	Anti-collision Light System	B	1	0	May be inoperative for day operations.
4.	Navigation Position Lights	C	3	0	May be inoperative for day operations.
5.	Cabin Light Systems	C	-	-	May be inoperative provided lighting configuration is acceptable to the flight crew.

U.S. DEPARTMENT OF TRANSPORTATION

MASTER MINIMUM EQUIPMENT LIST

FEDERAL AVIATION ADMINISTRATION

AIRCRAFT:

PIPER MODEL PA-44

REVISION NO: 6

DATE: 01/23/2003

PAGE:

34-1

SYSTEM & SEQUENCE NUMBERS		1. ITEM	2. NUMBER INSTALLED		3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
34		NAVIGATION				
1.	Gyroscopic Rate of Turn/Slip Skid Indicator System	B	1	0	Must be operative on left side for IFR, passenger carrying VFR over the top and passenger carrying VFR night operations.	
2.	Vertical Speed Indicator	B	1	0	Must be operative on left side for IFR passenger carrying operations.	
3.	ATC Transponders and Automatic Altitude Reporting Systems	C	-	0	May be inoperative provided: a) Enroute operations do not require its use, and b) Prior to flight, approval is obtained from ATC facilities having jurisdiction over the planned route of flight.	
		D	-	1	Any in excess of those required by FAR may be inoperative.	
4.	Navigation Equipment (VOR/ILS, Loran, Omega/VLF, INS Doppler, RNAV, GPS)	C	-	-	As required by FAR.	
5.	Weather Radar/Thunderstorm Detection Equipment	C	1	0	As required by FAR.	
6.	Marker Beacon Receiver	C	1	0	May be inoperative provided approach procedure does not require its use.	
7.	Radar Altimeter	C	1	0		
8.	Altitude Encoder				DELETED REVISION 6. Combined with Item 3.	
9.	Distance Measuring Equipment (DME) Systems	D	-	-	Any in excess of those required by FAR be be inoperative.	

AIRCRAFT:

PIPER MODEL PA-44

REVISION NO: 6

DATE: 01/23/2003

PAGE:

34-2

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED		4. REMARKS OR EXCEPTIONS
			3. NUMBER REQUIRED FOR DISPATCH		
34	NAVIGATION				
10.	ADF	C	1	0	As required by FAR.
11.	RMI	C	1	0	
12.	Nonstabilized Magnetic Compass	B	1	0	May be inoperative provided any combination of three Gyro or INS (IRU) stabilized compass systems are operative.
		B	1	0	May be inoperative provided a) Any combination of two Gyro or INS (IRU) stabilized compass systems operate normally, and b) Airplane is operated with dual independent navigation capability and under positive radar control by ATC on the enroute portion of the flight.
		B	1	0	May be inoperative for flights that are entirely within areas of magnetic unreliability provided at least two stabilized directional gyro systems are installed, operate normally, and are used in conjunction with approved free gyro navigation techniques.

AIRCRAFT:

PIPER MODEL PA-44

REVISION NO: 6

DATE: 01/23/2003

PAGE:

34-3

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED		3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
			-	0		
34	NAVIGATION					
13.	Traffic Alert and Collision Avoidance System (TCAS I)	B	-	0	(M) (O) May be inoperative provided: a) System is deactivated and secured, and b) Enroute or approach procedure do not requires its use.	
		C	-	0	(M) (O) May be inoperative provided: a) Not required by FAR, b) System is deactivated and secured, and c) Enroute or approach procedures do not require its use.	
14.	Traffic Alert and Collision Avoidance System (TCAS II)	B	-	0	(M) May be inoperative provided: a) System is deactivated and secured, and b) Enroute or approach procedures do not require its use.	
***		C	-	0	(M) (O) May be inoperative provided: a) Not required by FAR, b) System is deactivated and secured, and c) Enroute or approach procedures do not require its use.	
1)	Combined Traffic Alert (TA) and Resolution Advisory (RA) Dual Display Systems	C	2	1	May be inoperative on the non-flying pilot side provided: a) TA and RA visual display is operative on the flying pilot side, and b) TA and RA audio function is operative on the flying pilot side.	

AIRCRAFT:

REVISION NO: 6

PAGE:

PIPER MODEL PA-44

DATE: 01/23/2003

34-4

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
34	NAVIGATION				
	(CON'T.)				
14.	Traffic Alert and *** Collision Avoidance System (TCAS II)				
	(CON'T.)				
2)	Resolution Advisory (RA) Display Systems	C	2	1	May be inoperative on non-flying pilot side.
		C	-	0	(O) May be inoperative provided: a) Traffic Alert (TA) visual display and audio functions are operative, b) TA only mode is selected by the crew, and c) Enroute or approach procedures do not require its use.
3)	Traffic Alert Display Systems	C	-	0	(O) May be inoperative provided: a) RA visual display and audio functions are operative, and b) Enroute or approach procedures do not require its use.

AIRCRAFT:

PIPER MODEL PA-44

REVISION NO: 6

DATE: 01/23/2003

PAGE:

34-5

SYSTEM & SEQUENCE NUMBERS	ITEM	1. 2. NUMBER INSTALLED		3. NUMBER REQUIRED FOR DISPATCH		4. REMARKS OR EXCEPTIONS
34	NAVIGATION					
15. Ground Proximity *** Warning System (GPWS)	A	-	0	(0)	May be inoperative provided: a) Alternate procedures are established and used, and b) Repairs are made within two flight days.	
	C	-	0	(0)	May be inoperative provided: a) It is not required by FAR, and b) Alternate procedures are established and used.	
1) Modes 1-4	A	-	0	(0)	May be inoperative provided: a) Alternate procedures are established and used, and b) Repairs are made within two flight days.	
	C	-	0	(0)	May be inoperative provided: a) It is not required by FAR, and b) Alternate procedures are established and used.	
2) Test Mode	A	1	0	May	be inoperative provided: a) GPWS is considered inoperative, and b) Repairs are made within two flight days.	
	C	-	0	May	be inoperative provided: a) It is not required by FAR, and b) GPWS is considered inoperative.	

AIRCRAFT:

PIPER MODEL PA-44

REVISION NO: 6

DATE: 01/23/2003

PAGE:

34-6

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED		4. REMARKS OR EXCEPTIONS
			3. NUMBER REQUIRED FOR DISPATCH		
34	NAVIGATION				
15.	Ground Proximity Warning System (GPWS) (CON'T.)				
3)	Glideslope Deviation (Mode 5)	B	2	0	
		C	2	0	May be inoperative provided it is not required by FAR.
4)	Advisory Callouts ***	C	-	0	(0) May be inoperative provided alternate procedures are established and used.
5)	Windshear Mode	C	-	0	(0) May be inoperative provided: a) Alternate procedures are established and used, and b) Windshear Detection and Avoidance System operates normally.
		C	-	0	(0) May be inoperative provided: a) Alternate procedures are established and used, and b) Takeoffs and landings are not conducted in known or forecast windshear conditions.
6.	Terrain Awareness and Warning System (TAWS) ***	C	-	0	

U.S. DEPARTMENT OF TRANSPORTATION

MASTER MINIMUM EQUIPMENT LIST

FEDERAL AVIATION ADMINISTRATION

AIRCRAFT:

PIPER MODEL PA-44

REVISION NO: 5

DATE: 03/24/1994

PAGE:

37-1

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
37	VACUUM/PRESSURE				
1.	Vacuum Pump	B	2	1	(M)One may be inoperative for day VFR flights.
2.	Vacuum Gauge	C	1	0	May be inoperative for day VFR flight provided the source failure indicators are operative.
3.	Source Failure Indicator	C	2	0	May be inoperative for day VFR flight provided the vacuum gauge is operative.

U.S. DEPARTMENT OF TRANSPORTATION

MASTER MINIMUM EQUIPMENT LIST

FEDERAL AVIATION ADMINISTRATION

AIRCRAFT:

REVISION NO: 5

PAGE:

PIPER MODEL PA-44

DATE: 03/24/1994

61-1

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
61	PROPELLERS				
1.	Propeller Synchrophaser	C	1	0	

U.S. DEPARTMENT OF TRANSPORTATION

MASTER MINIMUM EQUIPMENT LIST

FEDERAL AVIATION ADMINISTRATION

AIRCRAFT:

REVISION NO: 6

PAGE:

PIPER MODEL PA-44

DATE: 01/23/2003

77-1

SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
77	ENGINE INDICATING				
1.	Exhaust Gas Temperature Indicator, Dual Indicating	C	1	0	