

**EXPERIMENTAL AIRCRAFT ASSOCIATION, INC**

**Revised - 03/11/2011**

**B-17 AIRCRAFT  
OPERATIONS MANUAL**

**Revised - 03/11/2011**

**EXPERIMENTAL AIRCRAFT ASSOCIATION  
OSHKOSH, WISCONSIN  
2011 EDITION**

## FOREWORD

This Manual has been prepared to establish EAA's policies and procedures for B-17 Flight and Ground Operations Personnel. The Manual was written in conjunction with the applicable FAR's and FAA Exemption No. 6541, as amended. When a conflict arises between the FAR's, FAA Exemption No. 6541, as amended, and EAA policies, Exemption No. 6541, as amended, and the applicable FAR's takes precedent unless the procedures in this Manual are more restrictive, in which case they take effect. All EAA B-17 operations personnel must become familiar with this Manual.

This Manual has as its primary purpose the following:

1. To provide for and ensure a safe operating environment for the B-17 aircraft and its occupants;
2. To establish policies and procedures to be followed by all flight and ground personnel in operating the B-17 aircraft; and,
3. To ensure compliance with all of the applicable FAR's and FAA Exemption No. 6541, as amended.

In order that future generations may continue to view this aircraft in the air as well as on the ground, it is imperative that everyone who represents EAA instill in themselves a combination of pride, professionalism and a high degree of personal skill. We must jealously guard the legacy and heritage we have been entrusted to preserve.

Due to the complexity of the exemption 6541, and the operational issues of the B-17 program, and to ensure clarity of intent, it is imperative that the EAA communicates to the FAA with one voice. With that in mind, all communications on behalf of the EAA with the FAA, concerning "**B-17 Program Policy**", shall be restricted to the EAA VP of Government Relations, Director of Aircraft Operations, or the B-17 Program Manager.

Throughout this Manual, the term "EAA" refers to the Experimental Aircraft Association, Inc.

# Experimental Aircraft Association, Inc.

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## B-17 AIRCRAFT OPERATIONS MANUAL

### List of Issued Manuals

#	Name	Date	Reason For Issue
Master	EAA Flight Operations	03/29/2004	EAA Master Copy
1	Sam Bass	03/29/2004	Flight Crew Member
2	Danny Bowlin	03/29/2004	Flight Crew Member
3	George Daubner	03/29/2004	Flight Crew Member
4	Linc Dexter	03/29/2004	No Longer used
5	Sean Elliott	03/29/2004	Flight Crew Member
6	Clint Fraser	03/29/2004	No Longer used
7	Bill Harrison	03/29/2004	No Longer used
8	Mike Hastings	03/29/2004	Flight Crew Member
9	Al Malecha	03/29/2004	No Longer used
10	Larry New	03/29/2004	No Longer used
11	Dave Mann	03/31/2005	No Longer used
12	Jan Gerstner	03/31/2005	FAA Inspector
13	Neil Morrision	03/15/2006	Flight Crew Member
14	Rick Fernalld	03/07/2007	Flight Crew Member
15	Kent Holiday	03/09/2009	Flight Crew Member
16	Tony Manzo	03/09/2009	No Longer used
17	Dan Johnson	03/09/2009	No Longer used
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RECORD OF CHANGES - REVISION DATE – 03/26/2010

PAGE	VERSION	DATE	SUB-SECTION	REASON FOR CHANGE
1	REVISED	04/04/05	N/A	FLIGHT CREW PREFLIGHT
2	REVISED	03/01/08	N/A	ADMIN NAME CHANGE
3	REVISED	03/29/04	N/A	FOUNDATION NAME CHANGE
4	REVISED	03/01/08	N/A	SAFETY MANAGEMENT SYS
5	REVISED	03/01/08	N/A	ADMIN NAME CHANGE
6	REVISED	03/29/04	N/A	FOUNDATION NAME CHANGE
7	REVISED	03/08/09	N/A	OPERATIONAL CONTROL
8	REVISED	03/01/08	N/A	ADMIN NAME CHANGE
9	REVISED	03/29/04	N/A	FOUNDATION NAME CHANGE
10	UPDATE	03/5/10	N/A	NEW BALL TURRET LIMITATIONS
11	UPDATE	04/04/05	N/A	FLIGHT CREW PREFLIGHT
12	REVISED	03/29/04	N/A	FOUNDATION NAME CHANGE
13	REVISED	03/29/04	N/A	FOUNDATION NAME CHANGE
14	REVISED	03/26/10	N/A	PIC PARAGRAPH E REV
15	REVISED	03/29/04	N/A	FOUNDATION NAME CHANGE
16	REVISED	03/29/04	N/A	FOUNDATION NAME CHANGE
17	REVISED	03/01/08	N/A	NEW WEIGHT AND BALENCE
18	REVISED	03/01/08	N/A	NEW WEIGHT AND BALENCE
19	REVISED	03/01/08	N/A	NEW WEIGHT AND BALENCE
20	REVISED	03/01/08	N/A	NEW WEIGHT AND BALENCE
21	REVISED	03/29/04	N/A	FOUNDATION NAME CHANGE
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23	REVISED	03/29/04	N/A	FOUNDATION NAME CHANGE
24	REVISED	03/29/04	N/A	FOUNDATION NAME CHANGE
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26	REVISED	03/29/04	N/A	FOUNDATION NAME CHANGE
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31	REVISED	03/29/04	N/A	FOUNDATION NAME CHANGE
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34	REVISED	03/29/04	N/A	FOUNDATION NAME CHANGE
35	REVISED	03/29/04	N/A	FOUNDATION NAME CHANGE
36	REVISED	03/29/04	N/A	FOUNDATION NAME CHANGE
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38	REVISED	03/29/04	N/A	FOUNDATION NAME CHANGE
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RECORD OF CHANGES - REVISION DATE – 03/01/2008

PAGE	VERSION	DATE	SUB-SECTION	REASON FOR CHANGE
40	REVISED	03/29/04	N/A	FOUNDATION NAME CHANGE
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42	REVISED	03/29/04	N/A	FOUNDATION NAME CHANGE
43	REVISED	03/15/06	N/A	EXEMPTION 6541 CHANGE
44	REVISED	03/29/04	N/A	FOUNDATION NAME CHANGE
45	REVISED	03/29/04	N/A	FOUNDATION NAME CHANGE
46	REVISED	03/29/04	N/A	FOUNDATION NAME CHANGE
47	REVISED	03/29/04	N/A	FOUNDATION NAME CHANGE
48	REVISED	03/29/04	N/A	FOUNDATION NAME CHANGE
49	REVISED	03/29/04	N/A	FOUNDATION NAME CHANGE
50	ADDITION	03/01/08	N/A	SAFETY MANAGEMENT SYS
51	ADDITION	03/01/08	N/A	SAFETY MANAGEMENT SYS
52	ADDITION	03/01/08	N/A	SAFETY MANAGEMENT SYS
53	ADDITION	03/01/08	N/A	SAFETY MANAGEMENT SYS
54	ADDITION	03/01/08	N/A	SAFETY MANAGEMENT SYS
55	ADDITION	03/01/08	N/A	SAFETY MANAGEMENT SYS
56	ADDITION	03/01/08	N/A	SAFETY MANAGEMENT SYS
57	ADDITION	03/01/08	N/A	SAFETY MANAGEMENT SYS
58	ADDITION	03/01/08	N/A	SAFETY MANAGEMENT SYS
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68	ADDITION	03/01/08	N/A	SAFETY MANAGEMENT SYS
69	ADDITION	03/01/08	N/A	SAFETY MANAGEMENT SYS
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EAA ORGANIZATION - MANAGEMENT PERSONNEL

**OFFICIAL:** President  
**NAME:** Rod Hightower  
**PHONE #:** 920+426-4810

**OFFICIAL:** Director of Aircraft Operations  
**NAME:** Sean Elliott  
**PHONE #:** 920+426-4886

**OFFICIAL:** B17 Program Manager  
**NAME:** George Daubner  
**PHONE #:** Cell 920+371-2245 / Office 920+426-4865

**OFFICIAL:** EAA Aircraft Maintenance Manager  
**NAME:** John Hopkins  
**PHONE #:** 920+426-4875

**THE PRINCIPAL BASE OF OPERATIONS FOR THE EAA B-17 IS:**

Experimental Aircraft Association, Inc.  
Kermit Weeks Research Center  
1145 W. 20th Street, Oshkosh, WI 54902

**ALL FLIGHT RECORDS FOR EAA B-17 FLIGHT OPERATIONS SHALL BE KEPT ON FILE AT THE PRINCIPAL BASE OF OPERATIONS.**

**B-17 FLIGHT RECORDS ARE AVAIABLE FOR INSPECTION BY THE FAA AT THEIR DISCRESION. PLEASE CONTACT THE EAA DIRECTOR OF AIRCRAFT OPERATIONS @ 920+426-4886 TO MAKE ARRANGEMENTS**

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**EAA ORGANIZATION****1-0 OPERATIONAL CONTROL**

Operational Control is the exercise of Management Authority for initiating, terminating, conducting and diverting B-17 flights.

Facilities utilized by EAA to exercise Operational Control during business hours are the EAA Headquarters, however, any facility where telephonic or fax communications can be established with a person authorized to exercise Operational Control for EAA may be utilized.

The communications system and procedures utilized for the exercise of Operational Control shall consist of verbal and/or written instructions, applicable FCC aircraft communication frequencies and fax and telephonic communications.

By authority of the President, the following management personnel have been designated to exercise Operational Control over the B-17, additionally, the President, Director of Aircraft Operations or B-17 Program Manager, may, **in writing**, authorize other specific EAA personnel to exercise Operational Control over the B-17 for the EAA but retains overall responsibility for the actions of those personnel.

<b><u>LAST NAME</u></b>	<b><u>FIRST</u></b>	<b><u>TITLE</u></b>
HIGHTOWER	ROD	PRESIDENT
ELLIOTT	SEAN	DIRECTOR OF AIRCRAFT OPERATIONS
DAUBNER	GEORGE	B-17 PROGRAM MANAGER
HOPKINS	JOHN	EAA AIRCRAFT MAINTENANCE MGR

**1-1 OPERATIONAL CONTROL - PILOT IN COMMAND**

Each Pilot in Command of the B-17 upon receiving authorization from a management person to initiate a flight assumes operational control of that flight pursuant to the "Command Authority" delegated to that Pilot in Command by this Operations Manual and applicable FAR's.

Operational Control by management personnel is exercised to authorize a Pilot in Command to conduct a specific flight. This authorization constitutes a flight release.

Each Pilot in Command who by virtue of "Command Authority" diverts that flight to a destination other than the original destinations authorized for reasons such as weather, mechanical malfunction, etc., shall notify the EAA B-17 Program Manager upon arrival at that alternate or diversionary airport.

EAA ORGANIZATION

**1-2 DIRECTOR OF AIRCRAFT OPERATIONS**

The Director of EAA Aircraft Operations is directly responsible to the President, supervises the B-17 Program Manager and EAA Aircraft Maintenance Manager. His specific duties, responsibilities and authority as they pertain to the B-17 are as follows:

- a. He shall assist the President in designing and initiating EAA policies and procedures..
- b. He shall ensure that B-17 flight operations are conducted pursuant to applicable FAR's, FAA Exemption 6541, as amended, and EAA Policies and Procedures.
- c. He shall ensure that compliance dates are met for new regulations as they become effective and coordinates with the Program Manager, B-17 in disseminating the information applicable to those regulations to appropriate personnel.
- d. He shall review all B-17 flight operations records and reports.
- g. He shall assist the President and B-17 Program Manager in assuring that all B-17 flight operations and maintenance personnel perform safety sensitive functions pursuant to the applicable FAR's and FAA Exemption 6541, as amended.
- h. He shall have the authority to exercise operational control over the B-17.
- i. He shall be highly knowledgeable of all manuals, FAA Regulations, NTSB requirements, FAA Exemption 6541, as amended, Aircraft Flight Manuals and all other information pertinent to his duties.

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## EAA ORGANIZATION

**1-3 B-17 Program Manager**

The Program Manager, B-17 is directly responsible to the Director of EAA Aircraft Operations. His specific duties, responsibilities and authority are as follows:

- a. Manages the day to day operations of the EAA B-17 & tour program
- b. Assists the President and Director of Aircraft Operations in designing and initiating policies and procedures with regard to the B-17.
- c. Directs execution of policies and procedures and ensures that B-17 flight operations are conducted pursuant to applicable FAR's, FAA Exemption 6541, as amended, and EAA Policies and Procedures.
- d. Supervises the scheduling of the B-17 to available flight crewmembers and establishes personnel duty hours.
- d. Coordinates the scheduling of the B-17 for maintenance with the EAA Aircraft Maintenance Manager and return to service after maintenance.
- e. Manages the selection and dismissal of all B-17 Flight Personnel.
- f. Ensures compliance dates are met for new regulations as they become effective and disseminates the information applicable to those regulations to appropriate personnel.
- g. Distributes all B-17 flight operations related documents, manuals and revisions to those documents and manuals as they are drafted and approved by EAA and FAA Personnel.
- h. Supervises acquisition, distribution and posting of all information or memoranda relative to any changes affecting EAA policy.
- i. Reviews all B-17 flight operations records and reports.
- j. Assists the EAA Aircraft Maintenance Manager as may be required.
- k. Shall have the authority to exercise operational control over all B-17 flights.
- l. Shall be highly knowledgeable of all manuals, FAA Regulations, NTSB Requirements, FAA Exemption 6541, as amended, Aircraft Flight Manuals and all other information pertinent to his duties.
- m. He shall maintain all Flight Crew records as they pertain to qualification, currency and training. These records shall be maintained at the Experimental Aircraft Association, Inc., Kermit Weeks Research Center, 1145 W. 20th Street, Oshkosh, WI 54902. These records shall be maintained in accordance with the FAR's, and FAA Exemption 6541, as amended.

**1-4 AIRCRAFT LIMITATIONS**

**EAA Operational Limitations**

Minimum Fuel Load for Local Dispatch – 125 Gallons Behind Each Engine

Minimum Fuel Remaining After Cross Country Flight – 125 Gallons Behind Each Engine

Minimum Oil for Each Engine for Dispatch – 31 Gallons

No Night Flight without EAA B-17 Program Manager, or DAO Approval

No Formation Flight without EAA B-17 Program Manager or DAO Approval

Maximum Cross Wind Limit at Dispatch for Airport of Departure and Arrival (actual) for a test flight mission -10 Knots CWC

Ball Turret powering and operation is prohibited during any exemption flight operations. For any other ground or flight operations, DAO, or B-17 Program Manager authorization is required. Also, authorized supervision by the EAA Aircraft Maintenance Manager or his designee is Required for powering and operating the Ball Turret.

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**1-5 RESEREVED FOR FUTURE USE**

**1-6 FLIGHTCREW PREFLIGHT INSPECTION**

The Aircraft Commander will ensure that required airworthiness inspections have been accomplished and any previous discrepancies have been corrected or properly deferred in accordance with applicable procedures.

The Aircraft Commander will sign the EAA B-17 Flight Log/Aircraft Condition Acceptance form stating that the Aircraft Commander "Accepts This Aircraft as Airworthy". If the EAA mechanic is not available to perform the preflight inspection the Aircraft Commander may perform the preflight inspection or delegate to the PIC or SIC that task. If the Aircraft Commander or his/her designee performs the complete preflight inspection he/she must utilize and sign the EAA B-17 Preflight Checklist.

In all cases a final walk around by a flight crew member must be accomplished prior to accepting the aircraft as airworthy.

EAA ORGANIZATION**1-7 EAA AIRCRAFT MAINTENANCE MANAGER**

The EAA Aircraft Maintenance Manager is directly responsible to the to the Director of Aircraft Operations and supervises all aircraft maintenance activities. He shall assure all personnel utilized to perform maintenance activities to EAA aircraft are appropriately trained and qualified. The EAA Aircraft Maintenance Manager may exercise operational control over all flights as that control relates to specific maintenance issues. His duties, responsibilities and authority are as follows:

- a. Manages the EAA maintenance organization.
- b. Coordinates all maintenance and inspections performed on EAA aircraft and assures compliance with airworthiness standards prescribed by applicable regulations.
- c. Supervises aircraft maintenance activities including repair, overhaul, inspection, modification and maintenance of EAA aircraft.
- d. Schedules all EAA aircraft maintenance.
- e. Assures that all required aircraft maintenance and inspection records are properly executed, available, and maintained in current status.
- f. Coordinates closely with other maintenance facilities and personnel when maintenance is being performed on EAA aircraft pursuant to paragraph r. (Maintenance away from the Principal Operations Base).
- g. Is responsible for assuring parts, lubricants, materials, etc., are available in sufficient quantity to ensure minimum aircraft down time.
- h. Maintains close liaison with the Director of Aircraft Operations to provide current status of aircraft, forecasts down times, mechanical irregularity deferral or correction and scheduling of maintenance.
- i. Assures the B-17 aircraft is maintained in an airworthy condition, he may delegate specific duties to other properly certificated maintenance personnel but retains ultimate responsibility.
- j. When applicable, supervises the reweighing of aircraft and maintains current weight and balance records for all B-17 aircraft.
- k. Determines maintenance personnel requirements based on present and projected work loads.
- l. Assigns maintenance personnel duties.
- m. Submits mechanical reliability reports and mechanical interruption summary reports to the FAA pursuant to FAA Exemption 6541, as amended, and in accordance with the requirements stipulated in applicable FAR's.



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EAA ORGANIZATION**1-7 EAA AIRCRAFT MAINTENANCE MANAGER (cont.)**

- n. Establishes, maintains and assures appropriate training is received by himself and all other Maintenance Personnel.
- o. He will assure that maintenance personnel have a thorough knowledge of aircraft maintenance manuals, applicable FAR's and applicable sections of the B-17 Aircraft Operations Manual.
- p. He will assure that all maintenance, inspection, overhaul and repair manuals for EAA aircraft are kept up to date, and all personnel under his supervision are properly trained and qualified to perform maintenance on aircraft.
- q. He will assist the appropriate personnel with the writing and updating of maintenance procedures specified in EAA Manuals, and that appropriate sections of the B-17 Aircraft Operations Manual are readily available for all maintenance personnel.
- r. He will assure that all maintenance and/or repair to EAA aircraft that is accomplished away from the EAA Principal Maintenance Facility is accomplished by properly trained and qualified personnel or an appropriately rated FAA Certified Repair Station. Additionally, he shall assure all maintenance or repair accomplished to EAA aircraft is accomplished pursuant to the policies and procedures stipulated in this B-17 Aircraft Operations Manual, the Aircraft Manufacturers Maintenance and Inspection Documents and applicable FAR's.
- s. He shall maintain in a current status the Aircraft Discrepancy Form carried on board the aircraft.
- t. The Manager of Maintenance shall be highly knowledgeable of all maintenance sections contained in this B-17 Aircraft Operations Manual, FAA Exemption 6541, as amended, Service Bulletins, Airworthiness Directives, applicable FAR's, aircraft maintenance and inspection documents and all other documents necessary for the proper performance of his duties.

**1-8 AIRCRAFT COMMANDER**

The Aircraft Commander reports directly to the B-17 Program Manager and is responsible for the safe and efficient conduct of each flight assignment. He/she shall meet all applicable FAA regulatory requirements, including FAA Exemption 6541, as amended. He/she shall be the senior captain assigned to a tour stop. Specific duties and responsibilities are as follows:

- a. Maintains and oversees on site Operational Control of the B-17 during his/her assigned portion of the B-17 tour.
- b. Shall designate prior to each flight, who shall perform the duties of PIC and/or SIC for that particular flight segment. He/she shall perform the duties of PIC or SIC on all flights during his/her assigned portion of the tour.
- c. As senior pilot, may designate himself/herself as PIC or SIC at his/her sole discretion.

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- d. Shall have authority to, during a particular flight segment to immediately terminate a PIC designate and assume PIC duties himself/herself. Such authority shall be utilized by the Aircraft Commander only in those situations whereas the safety of flight or the aircraft are jeopardized. If such a transfer of authority occurs, an incident report must be filed with the Directory of Aircraft Operations as soon as practical.
- e. The Aircraft Commander may conduct or terminate a flight authorized by **B-17 Tour Management**. The Aircraft Commander may not initiate a flight not authorized by **B-17 Tour Management**. He/she will conduct all flights in a safe and professional manner. At no time (except as herein provided) will he/she relinquish command authority to any other person.
- f. Ensures that required airworthiness inspections have been accomplished and any previous discrepancies have been corrected or properly deferred in accordance with applicable procedures.
- g. Insures the documentation of aircraft discrepancies on the EAA Discrepancy Record form, and proper recording of maintenance accomplished by maintenance personnel, when maintenance is performed away from the principle operations base.
- h. Is ultimately responsible for passenger safety and security while onboard the aircraft.

**1-9 PILOT IN COMMAND**

The Pilot in Command reports directly to the Aircraft Commander (Note: The Pilot in Command may be the Aircraft Commander) and is responsible for the safe and efficient conduct of each flight assignment. He/she shall meet all applicable FAA Regulatory Requirements. Specific duties and responsibilities are as follows:

- a. Determines that he/she is adequately rested.
- b. Plans flight assignments and obtains information regarding purpose of the flight, weather, Temporary Flight Restrictions, operating procedures and special instructions.
- c. Prepares or supervises preparation for each flight, considering such factors as altitude, terrain, weather, range, weight, cruise control data, airport facilities and navigational aids.
- d. Insures proper flight equipment, charts and materials required by applicable FAR's are on board the aircraft prior to departure.
- e. Supervises or accomplishes the aircraft preflight inspection and performs preflight preparation. Supervises or accomplishes any post flight aircraft discrepancy write-up in the EAA aircraft discrepancy form. For the purpose of this section, this means that either the PIC or an EAA authorized maintenance representative may perform these functions. The PIC retains the overall responsibility.
- f. Assures proper loading and security of passengers. Determines that aircraft weight and balance is within prescribed limits, prepares Aircraft Flight Log and Load Manifest and assures that a copy of each Aircraft Flight Log and Load Manifest is delivered to the Director of EAA Aircraft Operations for filing upon the completion of the flight assignment.

**B-17 AIRCRAFT OPERATIONS MANUAL****PAGE 15**EAA ORGANIZATION

- g. Insures provisions for passenger comfort and any special emergency equipment such as life vests are aboard (when required).
- h. Retains final responsibility for obtaining flight releases and the logging of aircraft flight time, filing and closing of flight plans and preparation of his/her flight record.
- i. Must be highly knowledgeable of the EAA B-17 Aircraft Operations Manual, FAA Regulations, NTSB Procedures, FAA Exemption 6541, as amended, Aircraft Flight Manuals, and all other material pertinent to his/or duties.
- j. Shall assign a crewmember or passenger prior to departure to assist any person who may need the assistance of another person during possible emergency evacuation of the aircraft.
- k. Shall conduct the briefing of all passengers as required by and in accordance with FAA exemption 6541, as amended prior to each take-off. The briefing shall also include the use of safety belts, safety equipment on the aircraft, the precautions that need to be taken while moving around during flight, and the location of all emergency exits. He/she may delegate this duty to a required flight crewmember but retains responsibility.
- l. Shall assure all aircraft operations are conducted utilizing the EAA B-17 checklist procedures.

**1-10 SECOND IN COMMAND**

- a. The Second in Command is administratively responsible to the Director of Aircraft Operations and functionally responsible to the Pilot in Command of the flight to which he/she is assigned.
- b. The Second in Command of the aircraft, in the event of an accident or incident whereby the Pilot in Command becomes incapacitated or deceased the Second in Command shall assume the duties and responsibilities of the Pilot in Command and conduct the remainder of the flight to a safe landing. He/she shall be familiar with the duties and responsibilities of the Pilot in Command.
- c. Shall perform those duties stipulated throughout this B-17 Aircraft Operations Manual and specific responsibilities designated to the SIC by the EAA and the Pilot in Command.
- d. May delegate duties to other personnel or passengers when acting under instructions from the Pilot in Command or in the event the Pilot in Command becomes incapacitated.
- e. Must be highly knowledgeable of the EAA B-17 Aircraft Operations Manual, FAA Regulations, NTSB Procedures, Operations Specifications, Aircraft Flight Manual and all other material pertinent to his/her duty position.

EAA ORGANIZATION**1-11 COMMAND AUTHORITY / RESPONSIBILITY****Sequence of Command**

The following order will be utilized for all EAA Flight Operations when a sequence of command becomes applicable:

1. The Aircraft Commander as assigned by the Director of Aircraft Operations. He is the senior B-17 pilot assigned to a specific portion of the tour.
2. Pilot in Command as assigned by the Aircraft Commander. (Pilot in Command and Aircraft Commander may be the same person)
3. Second in Command as assigned by the Aircraft Commander. (Second in command and Aircraft Commander may be the same person)

**1-12 SENIOR TOUR COORDINATOR (On site B-17 Tour Management ) - RESPONSIBILITY**

The Senior Tour Coordinator answers to the Director of Aircraft Operations. He coordinates the daily exemption flights as well as all other tour stop activities. He works with the B-17's Aircraft Commander and the administrative support staff in Oshkosh to ensure a successful tour.

His / Her duties are as follows:

1. Is responsible for all tour stop issues except for those directly related to flight operations of the B-17
2. Coordinates passenger activities & prepares Flight Manifests for each exemption flight;
3. May, at the direction of the Pilot in Command, do the passenger briefing as mandated by Exemption 6541, as amended;
4. Is responsible for the security screening of all passengers prior to boarding the B-17;
4. May serve as the third flight crewmember on the B-17, if so trained, and if approved by the Aircraft Commander;
6. Is responsible for flight following of all B-17 flights that are away from the Principal Base of Operations for the B-17;
7. Works with the Aircraft Commander to resolve issues of common interest.

**1-13 B-17 INSTRUCTORS AND CHECKAIRMEN**

The duties and responsibilities of the B-17 Ground & Flight Instructors as well as B-17 Check Airmen are covered in the B-17 Training Program.

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**PAGE 17**

**WEIGHT AND BALANCE**

**2-1 WEIGHT AND BALANCE - GENERAL**

- a. Prior to each departure the Pilot in Command shall determine that the aircraft is within and will remain within the allowable C.G. range and weight limitations for that flight, referencing the EAA and manufacturer's weight and balance data.
- b. The weight of all fluids, fuel, oil, etc. shall be computed utilizing their standard unit weights.

**2-2 RUNWAY LIMITATIONS FOR TAKEOFF AND LANDING**

The Pilot in Command, prior to takeoff or landing at any destination, alternate, diversionary or departure airport shall assure by consulting the Aircraft Manufacturer's FAA Approved Flight Manual (AFM), Performance Data, Charts and Tables and the appropriate Airport Publications that the usable portion of the active runway at the airport of intended landing or departure is of appropriate length to guarantee compliance with the Aircraft Manufacturer's Performance Data, FAA Exemption 6541, as amended, and applicable FAR's.

**2-3 EXAMPLES**

PAGE 3 under this Section is an example of weight and balance calculations for minimum crew and dispatch fuel. PAGE 4 is a sample weight calculation for a typical tour flight. PAGE 5 is a sample weight calculation in our maximum operational configuration. In all illustrations, the aircraft is within the weight and balance limits.

**B-17 AIRCRAFT OPERATIONS MANUAL****PAGE 18**WEIGHT AND BALANCE**2-3 EXAMPLES**

Minimum Dispatch Fuel and Crew:

EAA B-17 Weight &amp; Balance Computations for N5017N

Per FAA Type Certificate

Maximum Gross weight for T/O and La	54,000lbs
Center of Gravity range	20% to 32% MAC
CG Range as measured in "Arm"	270.8 to 292.1

Item	No.	# per	Weight	Arm	Moment
Aircraft Empty Wt			34,524	282.8	9762240.70
Pilot & Co-Pilot	2	200	400	167.6	67040.00
TAMO	1	200	200	193.6	38720.00
Fwd Passenger (1)		200	0	193.6	0.00
Radio Room Passengers (3)		200	0	374.0	0.00
Rear Passengers (6)		200	0	559.0	0.00
Aircraft tools/Equipment			50	665.0	33050.00
Tanks 1 & 4 (425 ea)	250	6	1500	281.9	422850.00
Tanks 2 & 3 (213 ea)	125	6	750	292.2	219150.00
Feeder Tanks 2 & 3 (212 ea)	125	6	750	324.1	243075.00
Total			38,174	282.55	10786125.70
			CG in %	26.7	

Note: LEMAC = 235.2

MAC = 177.5

CG % = ((ARM minus LEMAC) divided by MAC) times 100

Example: ((280.6 - 235.2) / 177.5) \* 100 = 25.57 % = CG %

This Example is based on Weight &amp; Balance data dated 2/14/08

**B-17 AIRCRAFT OPERATIONS MANUAL****PAGE 19**WEIGHT AND BALANCE**2-3 EXAMPLES (cont.)**

Typical Tour Flight Load

EAA B-17 Weight &amp; Balance Computations for N5017N

Per FAA Type Certificate

Maximum Gross weight for T/O and La 54,000lbs  
 Center of Gravity range 20% to 32% MAC  
 CG Range as measured in "Arm" 270.8 to 292.1

Item	No.	# per	Weight	Arm	Moment
Aircraft Empty Wt			34,524	282.8	9762240.70
Pilot & Co-Pilot	2	230	460	167.6	77096.00
TAMO	1	250	250	193.6	48400.00
Fwd Passenger (1)	1	200	200	193.6	38720.00
Radio Room Passengers (3)	3	250	750	374.0	280500.00
Rear Passengers RS (3)	3	160	480	559.0	268320.00
Rear Passengers LS (1)	1	170	170	621.0	105570.00
Rear Passengers TW (2)	2	200	400	665.0	266000.00
Aircraft tools/Equipment			50	665.0	33250.00
Tanks 1 & 4 (425 ea)	400	6	2400	281.9	676560.00
Tanks 2 & 3 (213 ea)	240	6	1440	292.2	420768.00
Feeder Tanks 2 & 3 (212 ea)	160	6	960	324.1	311136.00
<b>Total</b>			<b>42,084</b>	<b>292.0</b>	<b>12288560.70</b>
			<b>CG in %</b>	<b>31.9</b>	

This Example is based on Weight &amp; Balance data dated 2/14/08

**B-17 AIRCRAFT OPERATIONS MANUAL****PAGE 20**WEIGHT AND BALANCE**2-3 EXAMPLES (cont.)**

Maximum Dispatch, fuel, crew, passengers, and baggage:

EAA B-17 Weight & Balance Computations for N5017N

Per FAA Type Certificate

Maximum Gross weight for T/O and La 54,000lbs  
 Center of Gravity range 20% to 32% MAC  
 CG Range as measured in "Arm" 270.8 to 292.1

Item	No.	# per	Weight	Arm	Moment
Aircraft Empty Wt			34,524	282.8	9762240.70
Pilot & Co-Pilot	2	200	400	167.6	67040.00
TAMO	1	200	200	193.6	38720.00
Fwd Passenger (1)	1	200	200	193.6	38720.00
Radio Room Passengers (3)	3	200	600	374.0	224400.00
Rear Passengers RS (3)	3	170	510	559.0	285090.00
Rear Passengers LS (1)	0	170	000	621.0	000000.00
Rear Passengers TW (2)	0	200	000	665.0	000000.00
Aircraft tools/Equipment			50	665.0	33250.00
Main Tanks 1 & 4 (425 ea)	850	6	5100	281.9	1437690.00
Main Tanks 2 & 3 (213 ea)	426	6	2556	292.2	746863.20
Feeder Tanks 2 & 3 (212 ea)	424	6	2544	324.1	824510.40
<b>Total</b>			<b>46684</b>	<b>288.3</b>	<b>13458523.30</b>
			<b>CG in %</b>	<b>29.9</b>	

This Example is based on Weight & Balance data dated 2/14/08



## B-17 AIRCRAFT OPERATIONS MANUAL

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ACCIDENT / INCIDENT NOTIFICATION**4-1 ACCIDENT / INCIDENT / OVERDUE AIRCRAFT NOTIFICATION PROCEDURES**

This Section contains the procedures for reporting aircraft accidents, incidents and certain other occurrences as defined in NTSB 830.5, pursuant to the operation of the EAA B-17.

- a. In the event of an accident or incident involving the B-17 aircraft, passengers or personal property, and the Pilot in Command is not incapacitated, he/she shall notify EAA Aircraft Operations (B-17 program management) immediately and furnish the information stipulated in the following pages under NTSB 830.6. If the Pilot in Command is incapacitated, the Second in Command shall provide such notification. Additionally, pursuant to NTSB 830.10, each Pilot in Command shall preserve the aircraft wreckage, mail, cargo, and records to the best of his/her ability. EAA Aircraft Operations shall notify the EAA President, who will then notify the NTSB.

B-17 PROGRAM MANAGEMENT PERSONNELOFFICE PHONE

SEAN ELLIOTT

920/379-3441 (cell)  
920/426-4886 (office)  
920/426-4881 (office fax)  
920/232-6894 (home)  
[selliott@eaa.org](mailto:selliott@eaa.org)

GEORGE DAUBNER

920-371-3244 (cell)  
920/426-4865 (office)  
920/426-4881 (office fax)  
262/673-5885 (home)  
262/673-2477 (home fax)  
[gdaubner@eaa.org](mailto:gdaubner@eaa.org)

JOHN HOPKINS

920-371-6661 (cell)  
920-426-4875 (office)  
920-233-7394 (home)

- b. Upon receipt of notification from the Pilot in Command or other reliable source that a reportable aircraft accident/incident under NTSB 830.5 has occurred, The EAA President shall immediately notify the National Transportation Safety Board.
- c. Additionally, when an EAA employee becomes aware of any of the listed occurrences specified in NTSB 830.5, he/she shall immediately notify at least one of the B-17 Program Management Personnel listed above.

ACCIDENT / INCIDENT NOTIFICATION

## 4-2 NTSB 830

## NATIONAL TRANSPORTATION SAFETY BOARD

PART 830 - RULES PERTAINING TO THE NOTIFICATION  
AND REPORTING OF AIRCRAFT ACCIDENTS OR INCIDENTS  
AND OVERDUE AIRCRAFT, AND PRESERVATION OF AIRCRAFT  
WRECKAGE, MAIL, CARGO AND RECORDS

## SUBPART A - GENERAL

## 830.1 APPLICABILITY

This part contains rules pertaining to:

- (a) Initial notification and later reporting of aircraft accidents and incidents and certain other occurrences in the operation of aircraft when they occur, when they involve civil aircraft of the United States; when they involve certain public aircraft, as specified in NTSB 830, whenever they occur; and when they involve foreign civil aircraft where the events occur in the United States, its territories or its possessions.
- (b) Preservation of aircraft wreckage, mail, cargo, and records involving all civil and certain public aircraft accidents, as specified in NTSB 830, in the United States, and its territories or possessions.

## 830.2 DEFINITIONS

As used in this part, the following words or phrases are defined as follows:

**“Aircraft accident”** means an occurrence associated with the operation of an aircraft which takes place between the time any person boards the aircraft with the intention of flight and all such persons have disembarked, and in which any person suffers death or serious injury, or in which the aircraft receives substantial damage.

**“Civil Aircraft”** means any aircraft other than a public aircraft.

**“Fatal injury”** means any injury which results in death within 30 days of the accident.

**“Incident”** means an occurrence other than an accident, associated with the operation of an aircraft, which affects or could affect the safety of operations.

**“Operator”** means any person who causes or authorizes the operation of an aircraft, such as the owner, lessee, or bailee of an aircraft.

ACCIDENT / INCIDENT NOTIFICATION**4-2 NTSB 830 (cont.)**

**“Public Aircraft”** means an aircraft used only for the United States government or an aircraft owned and operated by a Government other than the United States government, including a State, the District of Columbia, a territory or possession of the United States or a political subdivision of that government. (Reference NTSB 830 for complete definition)

**“Serious injury”** means any injury which: (1) requires hospitalization for more than 48 hours, commencing within 7 days from the date the injury was received; (2) results in a fracture of any bone (except simple fractures of fingers, toes, or nose); (3) causes severe hemorrhages, nerve, muscle, or tendon damage; (4) involves any internal organ; or (5) involves second or third degree burns, or any burns affecting more than 5 percent of the body surface.

**“Substantial damage”** means damage or failure which adversely affects the structural strength, performance or flight characteristics of the aircraft, and which would normally require major repair or replacement of the affected component. Engine failure or damage limited to an engine if only one engine fails or is damaged, bent fairings or cowling, dented skin, small punctured holes in the skin or fabric, ground damage to rotor or propeller blades, and damage to landing gear, wheels, tires, flaps, engine accessories, brakes, or wingtips are not considered **“substantial damage”** for the purpose of this part.

**SUBPART B- INITIAL NOTIFICATION OF AIRCRAFT ACCIDENTS,  
INCIDENTS, AND OVERDUE AIRCRAFT**

**830.5 IMMEDIATE NOTIFICATION**

The operator of any civil aircraft, or any public aircraft not operated by the Armed Forces or an Intelligence Agency of the United States, or any foreign aircraft shall immediately, and by the most expeditious means available, notify the nearest National Transportation Safety Board field office when:

- (a) An aircraft accident or any of the following listed incidents occur:
- (1) Flight control system malfunction or failure;
  - (2) Inability of any required flight crewmember to perform his/her normal flight duties as a result of injury or illness
  - (3) Failure of structural components of a turbine engine excluding compressor and turbine blades and vanes.
  - (4) In-flight fire; or
  - (5) Aircraft collide in flight;
  - (6) Damage to property, other than aircraft, estimated to exceed \$25,000 for repair (including materials and labor) or fair market value in the event of total loss whichever is less.
  - (7) For large multiengine aircraft:

**B-17 AIRCRAFT OPERATIONS MANUAL****PAGE 24**ACCIDENT / INCIDENT NOTIFICATION**4-2 NTSB 830 (cont.)**

- i) Inflight failure of electrical systems which requires the sustained use of an emergency bus powered by a backup source such as a batter, GPU, or air-driven generator to retain flight control or essential instruments;
- ii) Inflight failure of hydraulic systems that results in sustained reliance on the sole remaining hydraulic or mechanical system for movement of flight control surfaces;
- iii) Sustained loss of power or thrust produced by two or more engines; and
- iv) An evacuation of an aircraft in which an emergency egress system is utilized.

(b) An aircraft is overdue and is believed to have been involved in an accident.

**830.6 INFORMATION TO BE GIVEN IN NOTIFICATION**

The notification required in 830.5 shall contain the following information, if available:

- (a) Type, nationality, and registration marks of the aircraft;
- (b) Name of owner, and operator of the aircraft;
- (c) Name of the pilot in command;
- (d) Date and time of the accident;
- (e) Last point of departure and point of intended landing of the aircraft;
- (f) Position of the aircraft with reference to some easily defined geographical point;
- (g) Number of persons aboard, number killed, and number seriously injured;
- (h) Nature of the accident, the weather and the extent of damage to the aircraft, so far as it is known; and
- (i) A description of any explosives, radioactive materials, or other dangerous articles carried.

The National Transportation Safety Board field offices are listed under U.S. Government in the the telephone directories in the following cities: Anchorage, Alaska; Atlanta, Ga.; Chicago, Ill; Denver, Colo.; Fort Worth, Tex.; Kansas City, Mo.; Los Angeles, Calif.; Miami, Fla.; New York, N.Y.; Seattle, Wash.

**SUBPART C - PRESERVATION OF AIRCRAFT WRECKAGE, MAIL,  
CARGO AND RECORDS****830.10 PRESERVATION OF AIRCRAFT WRECKAGE, MAIL, CARGO AND RECORDS**

- (a) The operator of an aircraft involved in an accident or incident for which notification must be given is responsible for preserving to the extent possible any aircraft wreckage, cargo, and mail aboard the aircraft, and all records, including all recording mediums of flight, maintenance, and voice recorders, pertaining to the operation and maintenance of the aircraft and to the airmen until the Board takes custody thereof or a release is granted pursuant to 831.12(b).

**B-17 AIRCRAFT OPERATIONS MANUAL****PAGE 25**ACCIDENT / INCIDENT NOTIFICATION**4-2 NTSB 830 (cont.)**

- (b) Prior to the time the Board or its authorized representative takes custody of aircraft wreckage, mail, or cargo, such wreckage, mail or cargo may not be disturbed or moved except to the extent necessary:
  - (1) To remove persons injured or trapped;
  - (2) To protect the wreckage from further damage; or
  - (3) To protect the public from injury.
- (c) Where it is necessary to move aircraft wreckage, mail or cargo, sketches, descriptive notes, and photographs shall be made, if possible, of the original position and condition of the wreckage and any significant impact marks.
- (d) The operator of an aircraft involved in an accident or incident shall retain all records, reports, internal documents and memoranda dealing with the accident or incident, until authorized by the Board to the contrary.

**SUBPART D- REPORTING OF AIRCRAFT ACCIDENTS, INCIDENTS,  
AND OVERDUE AIRCRAFT**

**830.15 REPORTS AND STATEMENTS TO BE FILED**

- (a) Reports - The operator of a civil, public (as specified in 830.5) or foreign aircraft shall file a report on Board Form 6120.½ (OMB NO. 3147-0001) within 10 days after an accident, or after 7 days if an overdue aircraft is still missing. A report on an incident for which immediate notification is required by 830.5(a) shall be filed only as requested by an authorized representative of the Board.
- (b) Crewmember statement - Each crewmember, if physically able at the time the report is submitted, shall attach thereto a statement setting forth the facts, conditions, and circumstances relating to the accident or incident as they appear to him. If the crewmember is incapacitated, he shall submit the statement as soon as he is physically able.
- (c) Where to file reports - The operator of an aircraft shall file any report with the field office of the Board nearest the accident or incident.

Forms are obtained from the Board field offices, the National Transportation Safety Board, Washington, D.C. 20594, and the Federal Aviation Administration Flight Standards District Office.

AIRWORTHINESS**5-1 AIRWORTHINESS PROCEDURES**

Prior to each flight assignment the Pilot in Command shall assure that the B-17 aircraft is in airworthy condition and required airworthiness inspections have been accomplished, any prior discrepancies corrected or deferred pursuant to FAR 91.213(d) and the aircraft properly approved for return to service.

The following procedure enables the Pilot in Command to determine the airworthiness status of the EAA B-17 aircraft.

1. Examine the "Aircraft Discrepancy Log" onboard the aircraft and determine if any open or deferred discrepancies have been entered in the Discrepancy Log by a previous crewmember or maintenance personnel.

- a. If an open discrepancy has been entered, the following procedure will be utilized:

The Pilot in Command shall assure prior to each take-off that all instruments and equipment are in operable condition and any discrepancy/s recorded in the "Aircraft Discrepancy Log" have been repaired and the aircraft properly approved for return to service by qualified maintenance personnel, unless otherwise permitted by FAR 91.213(d).

- b. Review the "Aircraft Inspection Status Report" on board the aircraft and determine that the following items are within prescribed limits and will remain so throughout completion of the flight assignment:

Next Inspection	Due Hours/Date
Next AD, TBO Component, Etc.	Due Hours/Date
ALT/Static	Due Date
XPNDR. Check	Due Date
ELT (BATT/INS. CHECK)	Due Date/Insp. Due
Aircraft Weight (MEL)	Due Date
VOR check	Duty Hours/Date

- c. Inspect the aircraft and establish the following items are on board:
  - (1) Airworthiness certificate
  - (2) Registration certificate
  - (3) Required check lists
  - (4) FAA approved Aircraft flight manual, with Operating Limitations
  - (5) Flashlight
  - (6) Current Weight and balance information
  - (7) Current Appropriate charts (to the type of operations being conducted)
  - (8) Two microphones, two headsets
  - (9) Aircraft Flight Log, Load Manifest, Aircraft Discrepancy Log
  - (10) Fire extinguisher (check pressure/date due, on service tag)
  - (11) B-17 Aircraft Operations Manual
  - (12) FAA Exemption 6541, an amended
  - (13) Passenger Briefing Information (Cards)
  - (14) Aircraft Specification AL-1-3 (copy of Type Certificate)

AIRWORTHINESS**5-2 MECHANICAL IRREGULARITIES: REPORTING/RECORDING REQUIREMENTS**

- a. The Pilot in Command of the B-17 shall enter or have entered in the "Aircraft Discrepancy Log" (Under Aircraft Discrepancies) each mechanical irregularity that comes to the pilot's attention before, during and after completion of each flight.
- b. Before each flight, the Pilot in Command shall, if the pilot does not already know, determine the status of each mechanical irregularity entered in the "Aircraft Discrepancy Log" at the end of the preceding flight.
- c. Each person who takes corrective action concerning a reported or observed failure or malfunction of an airframe, powerplant or accessory shall record that action in the "Aircraft Discrepancy Log" (Under Corrective Action), provide his/her certificate number, type of certificate, signature and date.

**5-3 PROCEDURES FOR OBTAINING SERVICES AND MAINTENANCE AWAY FROM THE PRINCIPAL OPERATIONS BASE**

- a. The Aircraft Commander is authorized to procure "non-routine maintenance" or repairs while away from the EAA Principal Operations Base provided he/she contacts the EAA Manager of Maintenance or his designee before any repairs are accomplished. The aircraft shall not be operated until all discrepancy items are corrected or properly deferred and the aircraft approved for return to service by qualified maintenance personnel.
- b. All discrepancies discovered by the Flight Crew or Maintenance Personnel must be recorded in the discrepancy section of the "Aircraft Discrepancy Log". When qualified maintenance personnel have been located by the Aircraft Commander or Manager of Maintenance to effect repair of the discrepancy item, the repair agency shall obtain approval prior to commencement of the work to be accomplished from the Manager of Maintenance. Each Aircraft Commander shall assure all maintenance performed on the B-17 aircraft away from the Principal Maintenance Base is accomplished by properly qualified FAA certificated personnel or an FAA Certified Repair Station and those personnel are tested for drug and alcohol abuse pursuant to the requirements of applicable Federal Aviation Regulations. Additionally, all maintenance shall be accomplished in accordance with the policies and procedures stipulated in this B-17 Aircraft Operations Manual, applicable FAR's and the Aircraft Manufacturers Maintenance Documents and Instructions and FAA Exemption 6541, as amended.

All maintenance and/or repairs accomplished to the B-17 must be inspected and signed off by FAA certificated personnel, and documented by an entry of corrective action or an airworthiness release (as applicable) in the "Aircraft Discrepancy Log" and the Aircraft Permanent Records. Additionally, the person or agency accomplishing the repair work shall provide the Aircraft Commander with a detailed work order or invoice containing a

AIRWORTHINESS**5-3 PROCEDURES FOR OBTAINING SERVICES AND MAINTENANCE AWAY FROM THE PRINCIPAL OPERATIONS BASE (cont.)**

complete description of the discrepancy item, the work accomplished to correct that discrepancy, the repairman's name, signature, certificate type/number and date, a list of component parts utilized to accomplish that work and Component Airworthiness Tags (when applicable). The repair work order or invoice shall be delivered to the Director of Maintenance who will assure appropriate entries are made in the aircraft permanent maintenance records.

**5-4 INOPERATIVE OR UNSERVICEABLE COMPONENTS ENROUTE PROCEDURES**

B-17 aircraft experiencing inoperative or unserviceable components enroute shall utilize the following procedure:

- a. Upon discovery of an unserviceable or inoperative component enroute, the Pilot in Command shall enter, or cause to be entered that item in the Aircraft Discrepancy Log under "Aircraft Discrepancies".
- b. **IFR Operations:** The Pilot in Command shall advise ATC of any equipment failure immediately, and include to what extent the failure will effect IFR operations. He/she shall determine the best course of action considering distance from destination, current weather, forecast weather, nature of the equipment failure, and viable alternatives.

If continued flight in IMC conditions or under IFR regulations is not prudent or advisable, the Pilot in Command shall advise ATC and request vectors or re-routing (as appropriate to the nature of the malfunction), and proceed to the nearest suitable airport and land. Upon arrival at the diversionary airport the Aircraft Commander/Pilot in Command shall notify EAA Management Personnel in accordance with the procedures stipulated in this Manual.

- c. If, in the opinion of the Pilot in Command continuation to the destination airport is not prudent or advisable, he/she shall deviate to the nearest suitable airport and land. Upon arrival, he/she shall notify EAA Management in accordance with the procedures stipulated in this Manual.



**B-17 AIRCRAFT OPERATIONS MANUAL****PAGE 29**AIRCRAFT SERVICING**6-1 AIRCRAFT SERVICING - GENERAL**

The Pilot in Command shall ensure that the B-17 aircraft is serviced in accordance with the manufactures approved aircraft service manuals. This includes Fuel, Oil, Hydraulic, and Pneumatic. He shall also ensure that the aircraft is only serviced by EAA maintenance Personnel specifically trained in servicing the EAA B-17.

**6-2 REFUELING OF AIRCRAFT PROCEDURES**

- a. The Pilot in Command is responsible for determining the amount of fuel that will be required for any specific flight. Fuel samples will be taken during all preflight inspections and must be completely free from moisture and other contamination.
- b. All aircraft refueling shall be accomplished utilizing aviation fuel sources only.
- c. An adequate fire extinguisher must be available within 50 feet of the aircraft during all refueling operations.
- d. The aircraft and fuel dispensing units will be grounded by the use of wires, plugs or clips to discharge static electricity. These grounds will be attached to the landing gear or a grounding point specified by the aircraft manufacturer.
- e. All aircraft switches will be off.
- f. If passengers are aboard, they will be disembarked and not permitted within 50 feet of the aircraft.
- g. There will be no smoking within 50 feet of the aircraft.
- h. The Pilot in Command or his designee must be present during refueling and assume the following:
  - (1) Upon completion/fuel caps are secure;
  - (2) Fuel tanks are serviced to the desired quantity;
  - (3) Proper oil is used;
  - (4) Oil level does not exceed full mark;
  - (5) Oil caps are secure; and,
  - (6) Fuel is rechecked for contamination after fuel delivery.

AIRCRAFT SERVICING**6-3 REFUELING DURING THUNDERSTORMS**

Under no circumstances will the B-17 aircraft be refueled during an active thunderstorm. All B-17 pilots will assure that ground personnel do not attempt to refuel the aircraft while such conditions exist. An active thunderstorm is defined as a thunderstorm visually estimated by the refueling crew as being within 5 nautical miles of the airport, or visual lightning observed over or in the vicinity of the airport.

**6-4 DEFUELING OF AIRCRAFT PROCEDURES**

The Pilot in Command is responsible for proper procedure implementation and supervision of aircraft defueling operations. He will ensure that:

- (1) The aircraft is defueled by EAA maintenance personnel;
- (2) The aircraft defueling unit and tank are properly grounded by the use of wires, plugs or clips to discharge static electricity. These grounds will be attached to the base nuts or bolts on the landing gear or a point recommended by the aircraft manufacturer;
- (3) An adequate fire extinguisher is available during all defueling operations;
- (4) All aircraft switches will be off;
- (5) Any passengers must be disembarked and not permitted within a radius of 50 feet of the aircraft; and,
- (6) There will be no smoking within 50 feet of the aircraft.
  
- (7) The aircraft is not defueled during a thunderstorm ( as described in 6-3 )

**B-17 AIRCRAFT OPERATIONS MANUAL****PAGE 31**PASSENGER BRIEFING**7-1 PASSENGER BRIEFING – ITEMS TO BE COVERED**

In compliance with FAA regulations and FAA Exemption 6541, as amended, each Pilot in Command shall assure prior to surface movement of the aircraft, that all passengers have been briefed on at least the following items:

- (1) The Passenger briefing requirements as directed by paragraph #19 of FAA Exemption 6541, as amended, with special attention to the exemptions reference to the “Limited Airworthiness Certificate”;
- (2) Federal Aviation Regulation Requirements that passengers comply with the “No Smoking” / “Fasten Seat Belt” passenger information signs, posted placards, the use of safety belts and all other crewmember instructions;
- (3) Smoking: Smoking is prohibited on all B-17 flights at all times;
- (4) The emergency equipment on board the B-17;
- (5) The precautions required when moving about the aircraft during flight;
- (6) The location of all emergency exits available for use by the passengers in the event of an emergency;
- (7) The use of safety belts, including instructions on how to fasten and unfasten the safety belts and when, where, and under what conditions the safety belt must be fastened about that passenger.
- (8) After takeoff, passengers will be permitted to leave their seats and move about the aircraft. As they move up into the cockpit area and nose compartment, passengers are not to interfere with the flight crew or engage in unnecessary communications.

Before each takeoff the Pilot in Command shall assure a willing, able-bodied passenger is available to assist any person who may need the assistance of another person to move expeditiously to an exit if an emergency occurs. Additionally, before each takeoff the Pilot in Command shall ensure that each person who may need the assistance of another person to move expeditiously to an exit if an emergency occurs and that person’s attendant has received a briefing on the procedures to be followed if an aircraft evacuation becomes necessary.

When “In Range” for landing, an announcement will be made by a crew member instructing all passengers to remain seated during the approach and landing with their seatbelt securely fastened about them until the aircraft comes to a complete stop at the deplaning area.

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**B-17 AIRCRAFT OPERATIONS MANUAL****PAGE 33**EMERGENCY PROCEDURES**8-1 EMERGENCY PROCEDURES**

This section describes procedures for crewmembers should an emergency arise while conducting operations under FAR Part 91 and FAA Exemption 6541, as amended.

**8-2 EMERGENCY AUTHORIZATION**

In an emergency involving the safety of persons or property, the Pilot in Command may deviate from the FAR's to the extent required to meet that emergency.

**8-3 ORDER OF COMMAND**

The following order of command applies in the event of injury or incapacitation of a crewmember:

- (1) Pilot in Command of assigned flight.
- (2) Second in Command of assigned flight.

**8-4 DECLARATION OF EMERGENCY**

The Pilot in Command, or if incapacitated the Second in Command, may declare an emergency when any circumstance or condition jeopardizing the safety of that flight. An occurrence or condition need not be critical for the Pilot in Command to exercise his/her emergency authority. If, after evaluation of the circumstances and factors involved, the Pilot in Command believes an emergency exists or may be imminent, the utilization of emergency procedures should be considered.

In the event of an emergency, the Pilot in Command is authorized by applicable FAR's and the EAA to deviate from prescribed operating procedures and/or applicable FAR's, including weather minimums to the extent required, to address that emergency.

Transponder code 7700 shall be utilized by the Pilot in Command to convey an emergency situation to ATC facilities. The radio call "MAYDAY" shall be utilized and transmitted on frequency 121.5 Mhz since it represents the international distress call and guarantees absolute priority over all other communications. Use of MAYDAY conveys a threat of grave and imminent danger.

**8-5 DANGEROUS PASSENGERS**

In the event a passenger becomes unruly or dangerous to the point of affecting the safety of a flight or other passengers, the Pilot in Command shall use his/her best judgment in addressing the situation and if necessary land the aircraft at the nearest suitable airport. The EAA and appropriate authorities shall be notified by the most expedient means. (Call ahead for Law Enforcement assistance).

EMERGENCY PROCEDURES**8-6 PASSENGER INJURIES**

In the event of a passenger injury (non aircraft incident/accident related), the Pilot in Command shall do everything reasonably possible to address the situation, if he/she deems it appropriate the aircraft shall be diverted to the nearest suitable airport where medical assistance is available (call ahead). Continuation of the flight should be carefully evaluated by the Pilot in Command in the interest of passenger comfort and EAA liability.

**8-7 PASSENGER ILLNESS**

In the event of passenger illness, the Pilot in Command shall do everything possible to address the situation and assure the passenger is made as comfortable as possible. He/she shall exercise prudent judgment regarding continuation of the flight. Additionally, B-17 flight crews are reminded that if diversion to an alternate becomes necessary to address passenger injuries or illness, the PIC should select an alternate that can provide immediate medical attention to those passengers and upon arrival notify flight operations personnel, as per chain of command.

**8-8 SABOTAGE/BOMB THREAT**

- a. **On the Ground:** The Pilot in Command shall remove passengers from the aircraft and escort all passengers out of the area. He/she shall notify EAA Management Personnel and appropriate authorities and maintain aircraft security until the arrival of those authorities. In no case will any crewmember re-enter or in any manner approach the aircraft or allow any unauthorized person or persons to approach the aircraft until it is released by the proper authorities.
- b. **In Flight:** The Pilot in Command will advise ATC of the nature of the threat and request assistance, he/she shall land immediately at the nearest suitable airport, and comply with paragraph (a) in this section. If an expeditious landing cannot be accomplished due to weather or other prevailing circumstances, technical advice can be obtained from FAA Ordinance Demolition Specialist. These specialists are available via phone patch through the controlling ATC facility.
- c. **Bomb Threat Procedures:**
  1. If possible, land and evacuate the aircraft immediately.
  2. If an immediate landing is not possible, contact FAA Security through ATC and proceed as follows:
    - i. Keep passengers seated with seatbelts fastened.
    - ii. After considering aircraft capabilities and distance to the nearest suitable airport, when possible slow to approach speed, configure the aircraft for landing and restrict maneuvering to the minimum for safe operation. (In

**B-17 AIRCRAFT OPERATIONS MANUAL****PAGE 35**EMERGENCY PROCEDURES**8-8 SABOTAGE/BOMB THREAT (cont.)**

the event of detonation, the systems required to place the aircraft in landing configuration could be damaged, if the aircraft is preconfigured this problem is eliminated. Flight operations conducted at approach speeds in a level attitude reduces aircraft structural stress to a minimum.)

- iii. Proceed to the nearest suitable airport, land and evacuate the aircraft immediately.

**8-9 AERIAL PIRACY**

It is a violation of Federal law for any person to gain control over the operation of the B-17 aircraft by the use of force, threat, or by any act of violence.

The following procedures have been established by EAA and Federal authorities and are provided herein as general crewmember guidance:

- a. The Pilot in Command will utilize his/her best judgment in how to proceed. Drastic action should be taken if he believes the hijacker intends to use the aircraft as a weapon. In any case, the best interest of the passengers and crew should be considered.
- b. The Pilot in Command should attempt to utilize the aircraft transponder to convey his/her predicament to air traffic control.
- c. Pilot Signal: Set transponder to Code 7500. When unable to change the transponder setting or when not under radar control, if possible, transmit a radio message which includes the phrase "Trip, Aircraft call sign transponder seven five zero zero".
- d. Controllers shall acknowledge receipt of beacon Code 7500 by "(aircraft call sign)(name of facility), you are squawking 7500. Is this intentional?" An affirmative reply from the pilot or activation of the ident feature indicates confirmation and proper authorities will be notified.
- e. When an in-the-clear radio transmission of a hijacking is received, controllers shall assign Code 7500 to the aircraft. This does not preclude a subsequent change to Code 7700 by the Pilot in Command, if necessary.
- f. Pilot Message: Situation desperate, want armed intervention. After using code 7500, change the transponder to Code 7700. When unable to change the transponder setting or when not under radar control, if possible transmit "Trip (aircraft call sign) transponder seven seven zero zero".
- g. Pilots who change from Code 7500 to Code 7700 should remain on 7500 for at least three minutes or until a confirmation of Code 7500 has been received from the controller, before changing to Code 7700.

**B-17 AIRCRAFT OPERATIONS MANUAL****PAGE 36**EMERGENCY PROCEDURES**8-9 AERIAL PIRACY (cont.)**

- h. Aircraft squawking Code 7700 and not in radio contact with the ground will be considered by ATC to have an inflight emergency (in addition to hijacking). In these cases, notification of authorities shall include information that the aircraft displayed the hijack code as well as the emergency code.
- i. Notification Procedures At The EAA Principal Operations Base: Immediately upon receipt of reliable information that the B-17 aircraft has been skyjacked, the employee who receives the information shall notify EAA personnel pursuant to the chain of command who will provide all information required by:
  - (1) Police/State/Local
  - (2) FBI/DEA/ATF
  - (3) FAA/DOT/NTSB Officials
  - (4) U.S. Immigration/Customs Officials (if skyjacking takes aircraft across U.S. border)
  - (5) Official Representative of Foreign Government, if involved.

**8-10 CREWMEMBER INCAPACITATION**

In the event the Pilot in Command or Second in Command becomes incapacitated in flight, the following procedure shall be utilized:

- a. Assure a safe condition of flight exists.
- b. Once aircraft control is established, assist the incapacitated crewmember.
- c. If possible, utilizing the assistance of a passenger volunteer, remove the incapacitated crewmember from his/her seat.
- d. If crewmember removal from seat is not advisable, assure that he/she is restrained in a manner that prohibits involuntary movement that may interfere with aircraft control.
- e. Declare an emergency with ATC and advise them of the nature of the emergency and your intentions, request vectors and assistance.
- f. Once destination is determined, call ahead for medical assistance.
- g. Upon arrival at the destination notify Flight Operations Personnel immediately.



**B-17 AIRCRAFT OPERATIONS MANUAL****PAGE 37**EMERGENCY PROCEDURES**8-11 EMERGENCY EVACUATION DUTIES**

Aircraft preparation, distress calls, and emergency evacuation of the aircraft shall be accomplished pursuant to the following assigned crewmember duties:

PILOT IN COMMAND

Advises passengers and crewmembers of emergency, possible landing sight or ditching (as applicable) and remaining time factor.

Instructs Second in Command (when applicable) to send distress message, transponder to 7700.

Instructs SIC to begin cabin preparation for forced landing or ditching. Makes cabin safety announcement or instructs SIC to do so, using Bull Horn.

Set course for predetermined landing area.

Instructs SIC to issue 30 second warning prior to impact using Bull Horn.

Exits aircraft after all passengers and crew have been evacuated.

SECOND IN COMMAND

(Note: At the discretion of the PIC, the SIC may leave his duty station to the extent dictated by the emergency)

Sends distress message and sets transponder to 7700. (When instructed by PIC)

Assists passengers with cabin preparation.

Secures loose articles on flight deck/cabin.

Provides assistance to Pilot in Command.

Exits aircraft after passengers.

**8-12 AIRCRAFT ACCIDENT EMERGENCY / EVACUATION PROCEDURES**

- a. In the event an accident or ditching is imminent, the Pilot in Command and the Second in Command (when applicable) under direction of the Pilot in Command shall proceed as follows:
  - (1) Declare an emergency on 121.5 Mhz as early as possible, squawk 7700.
  - (2) When the aircraft comes to a complete stop, evacuate as rapidly as possible utilizing all normal and emergency exits. (Except when fire, obstruction, or water prevents use of that exit).

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EMERGENCY PROCEDURES**8-12 AIRCRAFT ACCIDENT EMERGENCY/EVACUATION PROCEDURES (cont.)**

- (3) Except when injuries prohibit the movement of passengers, the Pilot in Command shall instruct all passengers to move to an area which is a safe distance upwind from the aircraft and remain there until help arrives.
  - (4) When applicable, notify the nearest law enforcement jurisdiction and request site security assistance and emergency medical services if any passenger requires medical attention.
  - (5) Contact EAA Operations Personnel and furnish the information that must be reported to the NTSB, request that the President make the required reports to the NTSB, Flight Standards District Office and other agencies requiring notification.
  - (6) To the extent possible, secure the site until additional security arrives and advise security personnel of the requirements of NTSB 830 (preservation of aircraft wreckage and records).
  - (7) Unless injuries prevent crewmember compliance, the flight crew must remain at the scene of the accident until properly relieved by FAA, NTSB or EAA personnel.
  - (8) All crewmembers will refrain from speaking to any persons other than EAA B-17 Flight Operations Personnel regarding the accident and only after approval from the Director of Aircraft Operations.
  - (9) All news media, insurance company and related inquiries shall be directed to appropriate EAA personnel.
- b. **Pilot in Command Injuries** - In the event of an accident and the Pilot in Command is incapacitated, the crewmember stipulated in the order of command in paragraph 9-3 of this section shall perform the duties of the Pilot in Command. Immediately upon receipt of the accident notification, the President shall appoint EAA personnel to proceed at once to the scene of the accident and assume responsibility.

**8-13 EMERGENCY PASSENGER BRIEFING**

In the event of an emergency, the Pilot in Command shall assure that all passengers receive an emergency briefing appropriate to the nature of the emergency and as far in advance as possible.

If in the opinion of the Pilot in Command an off airport landing or crash is imminent, passengers shall be briefed as follows:

- a. Briefly describe the nature of the emergency and that it warrants an immediate off airport landing.

**B-17 AIRCRAFT OPERATIONS MANUAL****PAGE 39**EMERGENCY PROCEDURES**8-13 EMERGENCY PASSENGER BRIEFING (cont.)**

- b. Remove high heel shoes, neckties, all sharp objects from your pockets, jewelry and eyeglasses, wedge the objects in between the seats or under the seat cushions to prevent them from becoming missiles on impact.
- c. Adjust your seatbelt as low on the torso as possible and tighten the belt as much as you can.
- d. Place your feet flat on the floor and slightly in front of the edge of the seat and stow all loose articles.
- e. Repeat the operation of the normal and emergency exits and point to each exit, repeat the location of the fire extinguisher and floatation devices as applicable.
- f. Explain they must lean forward with their head in their lap if possible.
- g. Explain the first impact will not be the last and they must remain in the braced position until the aircraft comes to a complete stop, then depart the aircraft through an available normal or emergency exit.
- h. Explain that a flight crewmember will call "brace" as the signal to assume the bracing position prior to impact.

**8-14 BRACE POSITIONS FOR IMPACT**

Depending on seat location, passengers should assume the brace position in one of several ways, however, in all cases assure the seatbelt is worn as tightly as possible and as low on the torso as possible.

Passengers should rest their head and chest against their legs. Flailing can be reduced by asking the passengers to grab their ankles or legs, or if they are unable, they should wrap their arms under their legs with the face down in their laps and not turned to one side or the other.

Pregnant or handicapped passengers may need the assistance of another person to assume the brace position but should attempt to take the same brace position as the other passengers.

**B-17 AIRCRAFT OPERATIONS MANUAL****PAGE 40**AIRCRAFT INSPECTION AND MAINTENANCE**9-1 AIRCRAFT INSPECTION / MAINTENANCE PROCEDURES**

- a. The EAA B-17 aircraft shall be inspected in accordance with a FAA approved inspection program and maintained in accordance with the manufacturers maintenance manuals.
- b. It shall be the responsibility of the Manager of Maintenance to ensure that adequate equipment, aircraft maintenance programs, service manuals, A.D. notes and current manufacturer's service data is available for use by maintenance personnel.
- c. All inspections and maintenance shall be accomplished by U.S. certificated airframe/powerplant mechanics and/or inspectors. "Non-routine" maintenance or repairs accomplished between required inspection intervals shall be performed pursuant to the maintenance and repair requirements of the aircraft manufacturer's service, repair, inspection and maintenance documents and this B-17 Aircraft Operations Manual.

**9-2 MAINTENANCE RECORD ENTRY PROCEDURES**

- a. Each person accomplishing repairs, maintenance preventive maintenance on B-17 aircraft shall make appropriate entries in the aircraft permanent records and the "Aircraft Discrepancy log" for that specific repair, maintenance, inspection, etc. containing at least the following information:
  - (1) A description (or reference to data acceptable to the Administrator) of the work performed.
  - (2) The date of completion and the aircraft time in service when the work was accomplished.
  - (3) The name of the person performing the work.
  - (4) If the aircraft, airframe, aircraft engine, or accessory is approved for return to service, the signature, type of Certificate and Certificate Number of the person approving the work.
- b. Non-routine maintenance or repairs accomplished away from the principal operations base shall be accomplished pursuant to the procedures heretofore established in the B-17 Aircraft Operations Manual, the Aircraft Manufacturer's Maintenance and Inspection Documents, applicable FAR's, and shall be recorded in accordance with the requirements of those documents.

**9-3 FIRE EXTINGUISHERS**

The Fire Extinguishers shall be inspected in accordance with the approved inspection program.

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EAA PROCEDURES AND POLICIES**10-1 GENERAL**

All flight, ground and maintenance operations shall be conducted in accordance with the FAR's, state and local ordinances and EAA policies and procedures as outlined in this manual.

**10-2 SAFETY**

EAA operating policies and procedures are based on the concept that safety comes first. Calculated risks in EAA operations will not be tolerated. Essential elements of safety include the condition of equipment, thorough training of all personnel, devotion to duty, good judgment, sound operational practices and efficient use of available resources.

**10-3 RELIABILITY**

Reliability is very important to customers and, therefore, to the EAA. Every effort shall be made to meet departure and arrival times; however, safety shall not be sacrificed to meet flight schedule compliance.

**10-4 COMFORT AND CONVENIENCE**

Comfort and convenience of the passengers must be a paramount consideration at all times during ground and flight operations. B-17 pilots are instructed to perform smooth coordinated maneuvers and restrict climb and descent rates to acceptable angles. Abrupt maneuvers should be avoided except when necessary during emergencies.

**10-5 CREWMEMBER APPEARANCE AND CONDUCT**

- a. B-17 pilots are reminded that the image they project to customers and others will strongly influence their opinion of the EAA. No one shall use loud, offensive or boisterous language in the presence of customers or passengers.
- b. Required crewmembers' attire will be maintained in a neat and clean condition and will be worn on all flights except non-revenue or training. Pilots will dress and groom themselves in a manner consistent with EAA directives and that of a professional pilot.

**10-6 CREWMEMBER SMOKING**

Smoking shall not be permitted in or around the B-17 at any time, by anyone.

**10-7 CREWMEMBER FLIGHT STATUS**

Pilots are responsible for notifying EAA personnel of any change in their legal flying status. Additionally, pilots are cautioned not to accept flights when their physical or mental condition may jeopardize the safety of the flight.

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EAA PROCEDURES AND POLICIES**10-8 ALCOHOLIC BEVERAGES**

No person shall drink any alcoholic beverage aboard the B-17 aircraft unless that beverage has been served by an EAA crewmember. No person shall be permitted aboard the B-17 aircraft if, in the judgment of the Pilot in Command, that person appears to be intoxicated. The use of intoxicants by any EAA personnel while on duty is prohibited.

**10-9 CARRIAGE OF DRUGS**

No person shall carry narcotic drugs, marijuana, depressants or stimulant drugs aboard the B-17 aircraft except those prescription drugs prescribed to passengers by a licensed physician or as related to critical patient care when they are carried, utilized and administered by properly qualified, licensed medical professionals.

**10-10 CREWMEMBER USE OF DRUGS**

- a. Certain prescription drugs have a marked affect on the nervous system which is temporarily detrimental to crewmember's flying ability. Crewmembers should consult with their physician prior to duty and determine if any drug he has prescribed or non-prescription medicine recommendations will have any affect on their judgment or flying ability.
- b. The non-prescription use of mind-altering or mood-altering drugs by crewmembers at any time is prohibited and is grounds for immediate termination. All crewmembers are subjected to unannounced periodic testing for drugs and alcohol abuse.

**10-11 CREWMEMBER BLOOD DONATIONS**

In no case shall a flight crewmember perform any duties for 72 hours following a blood donation. Crew members giving blood, or who have experienced a substantial loss of blood, will report this fact to EAA management personnel.

**10-12 AIRCRAFT SECURITY**

The Aircraft Commander shall be responsible for aircraft security any time the aircraft is left unattended. These responsibilities include, a secure tie down or hangar location, if deemed necessary due to weather, as well as control lock installation and locking of all entrance doors.

**10-13 ADVERSE WEATHER**

The B-17 aircraft will not be operated into known adverse or severe weather conditions. Additionally, no B-17 aircraft will be operated in the vicinity of thunderstorm activity unless the flight can be conducted visually.

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EAA PROCEDURES AND POLICIES**10-14 DANGEROUS WEAPONS**

No person may carry a deadly or dangerous weapon aboard the B-17 aircraft except law enforcement personnel authorized to carry weapons without specific written approval from the Director of B-17 Operations.

**10-15 AIRWORTHINESS ASSURANCES**

The B-17 aircraft will not be released for flight if any required airworthiness inspection interval or AD compliance time will be exceeded prior to the return of the B-17 to the facility where the inspection will be accomplished.

**10-16 CREW REPORTING**

Flight crewmembers are required to report for duty 45 minutes prior to the first scheduled flight.

**10-17 WEATHER REPORTS**

Weather reports or forecasts required to conduct flight operations under FAR 91 and FAA Exemption 6541, as amended, must be prepared by the National Weather Service, a source approved by the National Weather Service or source approved by the Federal Aviation Administration. The following sources are approved by these agencies:

National Weather Service Offices (including contract observatories)  
Flight Service Stations  
Supplemental Aviation Reporting Stations (SAWRS)  
Limited Aviation Weather Reporting Stations (LAWRS)  
Automated Surface Observations, including (AWOS)

**10-18 FLIGHT OPERATIONS LIMITATIONS**

All flight operations must be conducted:

- a. Except for the purpose of take-offs and landings, at a minimum operating altitude of not less than 1,000 feet above the ground (AGL);
- b. Between the hours of official sunrise and sunset, as established in the American Air Almanac, as converted to local time;
- c. With weather minimums of:
  - i) a flight ceiling & visibility of not less than that specified by FAA Exemption 6541, as amended;
- d. Within a 50 statute-mile radius (26-50 mile radius requires EAA DAO authorization) of the departure airport with landing only permitted at the departure airport.
- e. At an airport that has a fire station or fire-fighting services available or within close proximity of the airport.

**B-17 AIRCRAFT OPERATIONS MANUAL****PAGE 44**EAA PROCEDURES AND POLICIES**10-19 MANIPULATION OF CONTROLS**

No Pilot in Command may allow any person other than the assigned crewmembers to be on the pilot stations of the B-17 aircraft during flight operations under FAA exemption 6541, as amended, unless that person is an EAA/FAA exemption approved pilot, current in a B-17.

No Pilot in Command may allow any person to manipulate the flight controls of the B-17 aircraft while operating under Part 91, outside of FAA exemption 6541, as amended, unless that person is:

- a. A pilot approved by the EAA and qualified in the aircraft.
- b. A pilot authorized by the Director of Aircraft Operations or his representative.
- c. A FAA safety representative who has the permission of the Pilot in Command, is qualified in the aircraft, and is acting in his or her official capacity for the FAA.

**10-20 USE OF SAFETY BELTS**

No Pilot in Command of the B-17 aircraft shall permit the operation of that aircraft unless each person onboard the aircraft occupies an approved seat with a separate safety belt properly secured about him/her during movement of that aircraft on the surface, take-off and landing.

**10-21 OPERATIONS AT UNCONTROLLED AIRPORTS**

The following procedures shall be utilized when operating the B-17 aircraft "into or out of" uncontrolled airports:

- a. Prior to departure for, or diversion to, any uncontrolled airport, the Pilot in Command shall familiarize him/herself with all applicable information regarding that airport. This familiarization must include at least, the airport diagram and a review of all runways and taxiways, verification of the traffic pattern in use, Unicom and/or traffic advisory frequencies, and a means for determining weather or surface winds as applicable.
- b. Within range of the airport, (8-10 miles), the Pilot in Command shall monitor the applicable advisory frequency and maintain a constant listening vigil for aircraft operating in the traffic pattern or vicinity of the airport.
- c. For VFR operations, the Pilot in Command shall assure flight operations are conducted utilizing the correct traffic pattern procedure unless he/she can visually verify that a variation from the normal traffic pattern would not jeopardize the safety of his/her flight or other aircraft operating in the traffic pattern. (Direct entry to final, etc.). IFR operations shall be conducted in accordance with charted approach procedures while monitoring the appropriate advisory frequency for that airport. If VFR and established in the traffic pattern, the Pilot in Command shall transmit over the advisory frequency the following aircraft positions: Downwind Leg, Base Leg, Turning Final (must include distance and runway of intended landing).



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## EAA PROCEDURES AND POLICIES

**10-21 OPERATIONS AT UNCONTROLLED AIRPORTS (cont.)**

- d. All aircraft movement on the surface shall be transmitted over the advisory frequency including positioning of the aircraft from the runway area to the active runway. Under no circumstances will any Pilot in Command taxi into "Position and Hold" on any runway of an uncontrolled airport.
- e. Departure operations and intentions shall be conveyed to other traffic via the advisory frequency, additionally, the Pilot in Command shall monitor the advisory frequency for traffic conflicts until radar contact has been established with ATC or the aircraft departs the airport traffic area.

**10-22 MONITORING ATC COMMUNICATIONS FOR POTENTIAL TRAFFIC CONFLICTS**

The Pilot in Command must assure a high state of situational awareness is maintained anytime his/her aircraft is conducting arrival, landing and/or taxi operations. Increased situational awareness means, carefully monitoring appropriate air traffic control frequencies with increased vigilance for conformation of ATC runway clearances and any inadvertent potential traffic conflict, this is of the utmost importance once the aircraft has been cleared into "Position and Hold" and/or whenever operations are conducted in high density airport areas.

**10-23 IFR FLIGHT & EAA FLIGHT RESTRICTIONS TO IFR FLIGHT**

All B-17 flight operations conducted under FAA Exemption 6541, as amended, shall be conducted with a ceiling and visibility at or greater than that specified by the FAA in Exemption 6541, as amended.

All B-17 flight operations flown outside of FAA Exemption 6541, as amended, shall be flown to meet or exceed the standards set by FAR part 91 or the EAA, whichever is greater.

**EAA Flight Restrictions with regard to IFR Flight:**

1. All **PLANNED IFR** flight must be highly conservative in nature and comply with EAA's stated minimums.

( Note: **PLANNED IFR** is defined by EAA as IFR flight to a destination airport where from 1 hour before to 1 hour after the ETA, the ceiling is forecast to be below the MEA for any part of the trip. )

2. The minimum departure airport ceiling & visibility requirements to initiate a take-off - at or above a 600 foot ceiling & 2 miles visibility;
3. The minimum destination airports forecast ceiling & visibility requirements to initiate flight - from 1 hours before to 1 hours after ETA - at or above a 600 foot ceiling & 2 miles visibility;
4. The actual reported weather required to initiate an approach - Prior to the IAF, the reported ceiling & visibility must be at or above published minimums.
5. The minimum alternate airport filing requirements - Part 91 regulations

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EAA PROCEDURES AND POLICIES**10-24 VFR / IFR NAVIGATION AND INSTRUMENT CHARTS**

The EAA shall supply one current and complete set of navigation charts for the B-17. This will include VFR / IFR navigation, enroute and approach charts. It is the responsibility of the Pilot in Command to insure that all appropriate charts are on board prior to any B-17 flight.

Prior to commencement of an instrument flight, the Pilot in Command shall assure applicable enroute, approach and navigation charts are readily available for each phase of flight. Additionally, prior to commencement of an instrument approach, the pilot in command will conduct a standard approach briefing. This briefing must include a review of the approach procedure in use, possible issues specific to the approach, the expected missed approach and a conformation of the effective dates of charts involved, if available.

**10-25 THE STANDARDS FOR A PRE DEPARTURE & ARRIVAL FLIGHT CREW BRIEFING**

The following procedures shall be utilized by the PIC for pre departure & arrival briefings:

1. In the case of a departure, the briefing shall consist of the type of take-off, (short field, standard, ¼ flaps, no flaps) power settings, the crew coordination of power settings, who sets final power setting, friction locks, and who does what in the case of an engine failure or other emergency.
2. For arrivals, type of landing, ie.. flap settings, target approach speeds, crosswind conditions, and prop controls management.
3. In addition to the standard flight crew briefings, the Pilot in Command shall assure that during takeoffs & landings requiring additional situational awareness, that awareness and the reason for same is included in the briefing. (Windshear, wind gusts, thunderstorm activity, crosswind conditions, high altitude airports, etc.)

**10-26 SAFETY IN GROUND OPERATIONS**

The following ground security procedures shall be utilized for all operations conducted with the B-17 aircraft:

1. The Pilot in Command shall assure all passengers are embarked and disembarked into and out of secure areas.
2. The Pilot in Command shall assure that all passengers are escorted from the secured area to the aircraft, and upon conclusion of the flight, escort those passengers from the aircraft back to a secured area.

**10-27 COMPLIANCE WITH OPERATIONS SPECIFICATIONS**

All EAA B-17 flight crews & maintenance personnel are herewith directed to comply with all applicable FAR's and FAA Exemption 6541, as amended.

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EAA PROCEDURES AND POLICIES**10-28 EAA FLIGHT MONITORING PROCEDURES – GENERAL**

Each Pilot in Command shall notify EAA Flight Operations personnel 15 minutes prior to the aircraft's departure and thereafter within 30 minutes of the aircraft's arrival at the destination, alternate, or diversionary airport.

Any change in itinerary on **any EAA B-17 flight** due to weather conditions, mechanical malfunction, etc. must be reported immediately to EAA Flight Operations.

No Pilot in Command or Second in Command shall operate the EAA B-17 for any purpose or to any destination without specific authorization from **EAA Flight Operations**.

No Pilot in Command or Second in Command shall operate the EAA B-17 with the intent of formation flight without the specific authorization of the **Director of Aircraft Operations**.

While on tour, each Pilot in Command shall notify the departure Tour Coordinator 15 minutes prior to the aircraft's departure and the departure Tour Coordinator shall notify EAA Flight Operations and the destination Tour Coordinator with the time of departure and expected time of arrival at the destination airport. The destination Tour Coordinator shall notify EAA Flight Operations if the B-17 is more than 45 minutes past due. EAA Flight Operations will then initiate notification / response procedures. (see 10-29 below for notification procedures)

**10-29 EAA FLIGHT MONITORING PROCEDURES FOR EXEMPTION FLIGHTS**

All B-17 Exemption flights are monitored by EAA Enroute Tour Coordinators. If any B-17 Exemption flight becomes 15 minutes late, the senior enroute tour coordinator shall contact local Air Traffic Control in an attempt to determine the status of the flight. If local Air Traffic Control cannot aid in determining the status of the B-17 and the aircraft becomes 30 minutes late, the senior enroute tour coordinator shall notify EAA Flight Operations and advise them of the situation. If EAA Flight Operations has no knowledge of the flights status, it shall –

- (1) Notify the Vice President of EAA and the Director of Aircraft Operations, or Assistant Dir Of B-17 Operations;
- (2) Coordinate with the Vice President and Director of Aircraft Operations the notification of appropriate authorities, and the initiation of a search and rescue procedure;

**10-30 FLIGHT CREWMEMBER FLIGHT TIME REPORTING PROCEDURES**

Crewmember flight time will be tracked by the Director of EAA Aircraft Operations based on data obtained from the aircraft Flight Log. Each crewmember shall also keep current their Flight Time Records to the extent required by the FAR's and Exemption 6541, as amended.

**B-17 AIRCRAFT OPERATIONS MANUAL****PAGE 48**EAA PROCEDURES AND POLICIES**10-31 ALCOHOL AND DRUGS**

The drinking of alcoholic beverage, including beer and wine, is prohibited for flight crew personnel pursuant to the following:

1. For 8 hours preceding the scheduling of duty time.
2. For 8 hours preceding scheduled reserve time.
3. While on duty or on standby.

**10-32 SCUBA DIVING**

Due to the detrimental effects of scuba diving, no flight crewmember shall participate in any scuba diving activity within 24 hours preceding a planned duty period.

**10-33 STATEMENTS TO THE MEDIA**

As we are all aware, media coverage of any event can be occasionally less than accurate, while it is not EAA policy to conceal information from the media, the EAA has a vested interest in assuring that any information released is documented and accurate. Flight Personnel should refer all media questions regarding aircraft operations to EAA Flight Operations in Oshkosh.

On occasion, flight personnel are asked to be interviewed by the media regarding the B-17 aircraft and the B-17 tour. Such interviews should be given by the Aircraft Commander or his designee and pertain only to the history of the B-17 aircraft, and the tour.

**10-34 REMOVAL OF PASSENGERS**

Occasionally it may become necessary to remove a passenger from the B-17 aircraft due to offensive or dangerous conduct, intoxication, illness, or other causes considered to adversely effect safety or other passengers, the following guidelines are provided for such instances:

1. When a passenger must be removed because their conduct or condition is considered by the Pilot in Command to be a danger to themselves or other passengers that passenger should be removed from the aircraft at the earliest opportunity.
2. The Pilot in Command shall determine if removal can be delayed until arrival at the next point of intended landing or the aircraft should be diverted to the nearest suitable airport. EAA Flight Operations shall be advised of the flight's disposition and routing as soon as possible.

**Reports**

In each case where a passenger is removed from the B-17 aircraft for any reason, a written report shall be prepared by the Pilot in Command detailing the reason for removal, appropriate action taken, and the names of all custodial persons to whom that passenger was released. The report must be submitted to the Director of Aircraft Operations within 5 days after each occurrence.

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EAA PROCEDURES AND POLICIES**10-35 COCKPIT DISCIPLINE**

Fundamental to B-17 flight operations is the "Total Crew Concept", each flight crewmember is trained to do his/her job and to expect the other crewmembers to do theirs, with each monitoring the other, and to provide on demand assistance as necessary.

It is contrary to the best interest of all concerned to suppress safety sensitive information, yet, there is often a reluctance to report incidents. Complete accurate and objective incident reporting is basic to any accident prevention program and the EAA expects crewmembers to report all facts and occurrences of unsafe procedures.

In the interest of safety, if any crewmember deviates from normal procedures or does not perform up to acceptable standards, or any unusual incident occurs, it is incumbent upon the other crewmember to submit a written report to the Director of Aircraft Operations.

**10-36 EXTENDED OVER WATER FLIGHTS**

For all over water flights operated under FAA Exemption 6541, as amended, the EAA shall not operate it's B-17 beyond it's power off glide distance from shore.

For all other over water flights, the EAA shall conform to FAR Part 91.

**10-37 TRANSFER OF CONTROL**

Any time control of the B-17 is to be transferred between pilots, the pilot flying shall challenge the pilot to whom control is being transferred with the following command... "You Have Control". The pilot receiving control of the B-17 shall respond... "I Have Control". Only after the challenge and response has been completed is control transferred.

**10-38 DEVIATION FROM NORMAL OPERATION – REPORTING**

Any time that the normal ( standard ) flight operations of the B-17 are altered or we need to deviate from FAA Exemption 6541, as amended, due to weather conditions, airport conditions, mechanical irregularities or any other reason justified in the interest of passenger and crew safety, an incident form must be filled out and forwarded to flight operations in Oshkosh. If said deviation forced deviation from the Exemption, then a phone call shall be made to our FAA POI and an explanation of the deviation will be given. This reporting is over and above that required by NTSB 830

**10-39 APPENDIX**

The appendix shall consist of forms used by the B-17 program as they become available.

## **EAA Aircraft Operations Safety Management System**

### **11.1 PURPOSE, SAFETY POLICY, RESPONSIBILITIES, GOALS**

The overall purpose of the EAA Safety Management System is to promote and facilitate the voluntary collection and sharing of safety information among its team members to improve safety.

**This system is specifically oriented and focused on the impact of safety considerations as they apply to air and related ground operations.**

### **11.2 BACKGROUND**

This Safety Management System was developed by the EAA to enhance safety within our Aircraft Operations Department. This is not a regulatory or approved document and its contents do not supersede any requirements mandated by the FAR, nor does it supersede or amend the manufacturer's type-specific Aircraft Flight Manuals, crew manuals, minimum equipment lists, or any other approved documentation.

For further information or to submit comments and/or suggestions related to this handbook, please contact Dick Hanusa at [dhanusa@eaa.org](mailto:dhanusa@eaa.org).

### **11.3 SAFETY COMMITMENT**

The EAA Safety Management System is essential for effectively managing the safety of Aircraft Operations flight activities. It is more than just safe operating practices, it is a total management program. EAA management sets the safety standards by:

- Specifying the organizations standards.
- Ensuring that everyone knows the standards and accepts them.
- Make sure deviations from the standard are recognised, reported, and corrected.

The EAA maintains its standards through the support of the Aircraft Operations staff involved in developing the standards and responsibilities. The ultimate responsibility for safety rests with the management of the EAA. EAA management has accepted the responsibility for safe operations. However, without the safety commitment of all personnel, the safety program is unlikely to be successful.

The individual to co-ordinate the EAA's safety program is the Flight Operations Safety Officer. The Safety Officer is responsible to promote safety awareness, oversee safety training and ensure that the prevention of incidents and accidents is the priority throughout all activities associated with the Aircraft Operations and the Aircraft Operations unit.

### **Safety Policy**

The president and management of The Experimental Aircraft Association (EAA) regard an effective safety program as vital in achieving the mission of the Aircraft Operations Department. In recognition of this fact, the EAA is committed to providing a safe and healthful working environment free of recognized hazards for its employees, volunteers, and guests. Safety is also an individual responsibility and must exist in our thinking, planning, and actions. All Aircraft Operations personnel will be held accountable for fulfilling their responsibilities under this safety program.

The cornerstone of an effective safety program is an active accident prevention system. The Aircraft Operations Department is committed to eliminating hazards and minimizing potential risks through the diligent practice of risk analysis. Hazards and incidents resulting from department operations shall be identified at all levels. Conditions and acts posing unacceptable risk shall be eliminated or changed to prevent personnel injury or illness and property damage or loss.

All levels of management embrace the concept that a strong and effective safety program is vital in effectively achieving the mission of the EAA. In response to this commitment the EAA is dedicated to providing a safe working environment for its volunteer/employees, free of any and all recognized hazards. Further, it is committed to providing the highest level of safety attainable in all of its activities and most especially when dealing with customers and guests.

Every volunteer/employee must recognize that safety is the responsibility of each individual and must always be foremost in their thinking, planning and actions. All personnel will be held accountable for fulfilling their responsibilities under this safety management system.

The underpinning of an effective safety management system is an active, non-attribution reporting system utilized in concert with an effective accident prevention program. The EAA is committed to eliminating hazards while minimizing the potential risks through the diligent practice of accident, incident prevention and risk analysis. Hazards will be identified at all levels, while conditions and acts posing unacceptable risks will be eliminated, changed or controlled to prevent personnel injury as well as preventing property damage and/or loss.

### **Safety Culture**

A safety culture or climate should be thought of as the Aircraft Operations Department's collective norms, standards, perceptions and behaviors with respect to safety. Management's fostering of a positive safety culture is critical to any effective safety program. The following concepts and actions are elements of our positive safety culture:

- Unqualified commitment to safety as a behavioral pattern and pervasive way of life by top management.

- Unambiguous expectations by management as well as each peer group that, for all employees and volunteers, safe life patterns and work habits are as normal as breathing and must be practiced off site as well as on EAA grounds

- Availability of quality, standardized equipment with which to accomplish the assigned tasks.
- Clear, easily understood operating procedures, followed without deviation.
- Inclusive system of communications for collecting, analyzing, and exchanging incident data related to safety.
- Non-retribution for submission of incident data.
- Retraining without penalty or stigma when safety is involved.
- System for tracking incident and accident data, analysis of trends, and feedback of results.
- Peer acceptance that accidents are preventable, regardless of operations.
- Peer acceptance that safety is a matter of lifestyle – a matter of culture.

#### **11.4 Safety Management System**

The elements of the EAA Aircraft Operations Safety Management System are:

1. An accident prevention program,
2. Employee/volunteer safety and accident prevention education and training,
3. An internal reporting system to allow employees and other personnel to report incidents and recognized hazards.
4. Senior management commitment to the EAA safety management system and their dedication to providing the safest environment in which to work and operate.
5. Hazard identification and risk management.
6. Internal safety and compliance audits/assessments.
7. Human factors and safety training are an integral part of all training programs.
8. Emergency response planning and practice are integral to the EAA's success and safety culture.
9. That safety is a part of the everyday environment and the EAA is committed to regular evaluation and improvement of the program.

#### **Responsibility for Safety**

The responsibility for maintaining a safe environment begins with senior management and extends to each and every employee and volunteer. Ultimately, the responsibility for safety is a decision of lifestyle; one that blends easily between personal and EAA related activities. Responsibilities of various individuals are as follows:



**Safety Officer**

The Safety Officer is tasked with the overall responsibility for development and implementation of the Aircraft Operations Department Safety Management System. The Safety Officer reports directly to the EAA President on all safety issues and shall also serve all levels of the Aircraft Operations Department as an advisor on safety matters. Specific responsibilities include:

- Develop and implement safety systems for the Aircraft Operations Department personnel to ensure a safe and healthful work environment.
- Advise management of recognized hazards and unsafe/unhealthful working conditions.
- Periodically assess Safety Program effectiveness and compliance.
- Update Safety Management System as necessary to maintain regulatory compliance.
- Perform periodic safety audits.
- Evaluate available training resources. Advise management concerning training requirements, methods, and sources.
- Disseminate safety-related information.
- Process Hazard and Incident Reports for the purpose of identifying and eliminating or mitigating workplace hazards.

### **Safety Representatives**

Individuals may volunteer to perform supplemental duties in support of the Safety Management System. Specific responsibilities include:

- Act as the Safety Officer's representative at the respective location.
- Advise the Safety Officer on safety-related issues.
- Disseminate urgent and routine safety information to personnel.
- Respond to the safety concerns of personnel and forward concerns to the Safety Officer.
- Assist the Safety Officer in conducting periodic Safety Audits.

### **Supervisors**

Supervisors are critical to the implementation and conduct of an effective safety program. They are responsible to management for the maintenance of a safe environment and the activities of employees/volunteers within their area of responsibility. Specifically, supervisors shall:

- Advise management of recognized hazards and unsafe/unhealthy working conditions or practices and recommend actions to mitigate those hazards, conditions, or practices.
- Train employees and volunteers in safe work practices and potential hazards and unsafe conditions within their area of responsibility.
- Advise the Safety Officer of any employee's or volunteer's injuries or illnesses as a result of workplace activities.

### **Employees/Volunteers**

Employees are essential to the maintenance of a safe and healthy work environment and the conduct of an effective safety program. Specifically, employees and volunteers shall:

- Comply with all safety practices and requirements.
- Implement all safe work practices provided during training.
- Advise supervisors or the Safety Officer of recognized hazards and unsafe working conditions.

## **Safety Performance Goals**

The goal of this safety management system is to provide a frame work a safety culture within the EAA Flight Operations Department to reduce the possibility of accidents/incidents to the lowest possible level.

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## **11.5 SAFETY/INCIDENT REPORTING SYSTEM**

A key to any successful Safety Management System is the ability for all participants to report hazards or potential hazards in a confidential non-punitive environment. The reporting system itself must be not only confidential but simple, direct and convenient. Once hazards are identified they must be acknowledged, investigated and actions must be taken to address the safety issues. The EAA is dedicated to providing an environment where the above conditions for success are met and encourages all volunteer/employees to participate in the program.

The success of EAA's Safety Management System is contingent upon an effective system to prevent accidents, incidents, and injuries. Essential to this objective is a program to identify and eliminate or mitigate hazards and to prevent the occurrence of accidents, incidents, and injuries. Under normal circumstances, hazards should be identified, reported and corrected as a matter of daily routine at the lowest operational level utilizing established lines of authority and responsibility. For other situations, the Safety and Incident Reporting System provides a means for employees/volunteers to report safety hazards or reportable incidents to management for appropriate action.

## **NON-REPRISAL POLICY**

It is imperative that the EAA has uninhibited reporting of all hazards, occurrences and incidents that in any way affect the safety of our operations, employees, volunteers, passengers, or visitors. Thus, it is the policy of the EAA to recognize the efforts of individuals who identify and communicate unsafe acts and conditions for the purpose of promoting safety. Consistent with this approach, it is also the responsibility of each employee/volunteer to communicate any and all information that could possibly affect the integrity of both flight and ground safety. All communications made by employees/volunteers pursuant to the reporting process shall be made with the assurance that no retaliation or reprisal shall occur to the employee/volunteer for submitting any information via the Safety and Incident Reporting System. The identity of employees and volunteers who provide information through this system shall be protected and will remain confidential.

### PROGRAM DESCRIPTION

The EAA has chosen to use a couple vehicles for reporting hazards or potential hazards. Prominently displayed and available throughout all facilities are the EAA safety reporting forms. If a hazard is recognized and cannot be resolved via normal volunteer/employee/supervisor procedures, the observer shall complete a Safety Report or a Flight Operations Incident Report and submit it to the Safety Officer. Reports may be submitted either in paper format or electronically via email. Volunteer/employees are also encouraged to contact their immediate supervisor or his/her supervisor to report any real or perceived hazards directly. Once these are reported the supervisor is responsible for getting the information to both the Safety Officer and the senior manager in charge of the section where the hazard is located. The hazard is then tracked until it is mitigated or completely eliminated, controlled or reduced to an acceptable level.

The following provides a guideline for determining whether a situation warrants the submission of a report. This description is not all-inclusive and the originator should exercise sound judgment and discretion when determining if a report should be submitted. A Safety Report or Flight Operations Incident Report shall be submitted when any situation, practice, procedure, or process is observed that is:

- A recognized safety concern, or
- Considered unusual from an operational or procedural standpoint, or
- Considered deficient from a safety standpoint, and

in the submitter's opinion, possesses a foreseeable potential for injury or illness to persons or damage or loss of property if not addressed in a timely manner.

Any safety concern that would be of interest to others involved in like activities should be reported. Safety Reports are not required for hazards which are able to be resolved immediately in the normal activities of the workplace, however, when a hazard is likely to be duplicated in other EAA workplaces a Safety Report should be submitted for the benefit of other affected employees.

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Additionally, a Flight Operations Incident Report shall be submitted when any of the following occur:

- System defects which could or will adversely affect the handling characteristics of the aircraft and renders it un-flyable
- Warning of fire or smoke
- Declaration of an in-flight emergency
- Safety equipment or procedures are defective or inadequate
- Deficiencies exist in operating procedures or instructions
- Incorrect loading of fuel or cargo or the discovery of the presence of dangerous goods
- Operating standards are degraded
- Any engine has been shutdown in flight
- Ground damage occurs to any equipment
- A rejected take-off is executed
- A runway or taxiway excursion occurs
- A runway or taxiway incursion occurs
- A navigation error involving a significant deviation from track
- An altitude excursion of more than 400 feet occurs
- Exceeding limiting parameters for the aircraft configuration
- Communications fail or are impaired
- A stall warning occurs, other than just prior to touchdown
- A heavy or hard landing check is required
- Loss of braking
- Elevator trim malfunctions of any type
- Aircraft is evacuated
- Aircraft lands with less than reserve fuel remaining
- Wake turbulence event occurs that is more than routine
- Windshear or other severe weather is encountered
- Crew or passengers become seriously ill, injured or are incapacitated
- Any part of the aircraft or its equipment is sabotaged or vandalized
- Security procedures are breached

- Bird strike or Foreign Object Damage
- An un-stabilized approach below 500 feet AGL
- Any other event considered to have or potentially have serious safety implications.

The report submitter's identification on the report is optional but is encouraged in the event that further information is required for elimination of the hazard. Reports should be concise and should accurately and thoroughly describe the hazard. When applicable, reports should include the submitter's recommendation(s) for corrective action. In circumstances where the perceived hazard possesses the immediate potential for injury/illness to persons or damage/loss of property, the Safety Officer or the Aircraft Operations Director shall be notified immediately by the most expeditious means possible for the purpose of determining appropriate action to prevent such injury/illness or damage/loss.

### REPORT PROCESSING

Upon receipt of a Safety Report or Flight Operations Incident Report, the Safety Officer will conduct an investigation to determine the content of the report as well as to gain additional information concerning the report's subject matter. Any hazardous situations or equipment shall be either placarded or removed from service until the hazardous situation is corrected. The submitter, if identified, will be advised of the result of the investigation. If a Safety Report or Flight Operations Incident Report identifies a problem that concerns policy or procedures the problem may be forwarded to the Safety Committee. Problems or issues outside the scope or authority of the Safety Program, will be forwarded to the EAA President or to the appropriate person responsible.

The following procedures are used to control the flow of hazard rectification:

- All hazard reports will be forwarded to the Safety Officer as soon as they are received
- The Safety Officer is responsible for guaranteeing the confidentiality of the report, the ensuing investigation and the problem rectification
- The Safety Officer is responsible for performing any follow up actions necessary to clarify the details or nature of the problem, while ensuring confidentiality is maintained.
- The Safety Officer is responsible for acknowledging and providing feedback to any volunteer/employee who identifies themselves during submission

- When appropriate the de-identified report will be made available to all volunteer/employees for review and for information purposes.
- Resolution of complex operational issues will be coordinated with the EAA President and senior staff.
- Less complex issues will be resolved by the Safety Officer and the Director of Aircraft Operations
- Issues concerning policy, conflict and incident review will be handled by the EAA Aircraft Operations Safety Committee
- The key to success in the rectification of any problem is open communications and the EAA is committed to ensuring this takes place on a continuing basis.

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Final reports will be distributed as follows:

- The original will be kept in the Safety office files
- A copy will be forwarded to the President
- A copy will be forwarded to the affected department manager
- The Safety Committee will receive a copy
- The individual submitting the hazard report, if they identified themselves.

### **11.6 Safety Audit/Assessment**

The EAA recognizes the value of a continual safety audit/assessment program which reviews training, record keeping, and procedures within the Aircraft Operations Department. Complying with policies and procedures requires the expenditure of considerable time and the commitment of valuable resources. An important segment of the Safety Program is the commitment to continually evaluate the entire Aircraft Operations program on a regularly scheduled basis.

Audits of the Aircraft Operations Department will be conducted by the Safety Officer on a regular basis. The audits will cover aircraft operations, aircraft maintenance, record keeping, operational procedures, observation of flight operations and any other areas requested by the EAA Aircraft Operations Director.

The audit findings will be used to determine if any changes to the current policies and procedures are required. Recommendations for changes to simple operational issues can be dealt with by the EAA Aircraft Operations Director and the Safety Officer.

### **Trend Analysis**

The EAA accepts the fact that one event can be considered as an isolated incident but two similar events may indicate the start of a trend. If an event recurs after preventive measures are in place, the cause must be determined to ascertain whether the first corrective action was proper, if the steps in the corrective action were not properly followed or if further corrective action is warranted in order to prevent recurrence in the future.

The EAA Safety Officer has developed a program to track safety related events. Information from Safety Reports and Flight Operations Incident Reports will be gathered and tracked for trend analysis. The system will enable the Safety Officer to:



- Log safety events under various categories
- Link events to related documents (e.g. reports, photographs, etc)
- Monitor trends
- Review historical records
- Monitor event investigations
- Apply risk factors
- Identify corrective actions and responses
- Report to the EAA Aircraft Operations Director any safety issues

## 11.7 HUMAN FACTORS

### GENERAL

The following discussion is one method of addressing Human Factors issues.

Safety is a main objective in the aviation industry. A major contributor to achieve that objective is a better understanding of Human Factors and the broad application of its knowledge. Increasing awareness of Human Factors will result in a safer and more efficient working environment.

The purpose of this section is to introduce this subject and to provide guidelines for improving human performance through a better understanding of the factors affecting it through the application of Crew Resource Management (CRM) concepts in normal and emergency situations and understanding of the accident model.

### THE MEANING OF HUMAN FACTORS

#### Human Error

The human element is the most flexible, adaptable and valuable part of safety. But it is also the most vulnerable to influence, which can adversely affect its performance. Lapses in human performance are cited as causal factors in the majority of incidents/accidents, which are commonly attributed to "Human Error". Human Factors have been progressively developed to enhance the Safety of complex systems, such as aviation, by promoting the understanding of the predictable human limitations and its applications in order to properly manage the 'human error'. It is only when seeing such an error from a complex system viewpoint that we can identify the causes that lead to it and address those causes.

## Ergonomics

The term “ergonomics” is defined as “the study of the efficiency of persons in their working environment”.

It is often used by aircraft manufacturers and designers to refer to the study of human-machine system design issues (e.g. Pilot-Cockpit, Flight Attendant - Galley, etc.). ICAO uses the term ergonomics in a broader context, including human performance and behaviour, thus synonymous with the term Human Factors.

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### What is Human Factors?

- It studies people working together in concert with machines.
- It aims at achieving safety and efficiency by optimising the role of people whose activities relate to complex hazardous systems such as aviation.
- A multidisciplinary field devoted to optimising human performance and reducing human error.
- It incorporates the methods and principles of the behavioural and social sciences, physiology and engineering.

### **THE AIM OF STUDYING HUMAN FACTORS IN AVIATION**

By studying Human Factors we notice that the human Factor is the most important component and the remaining components must be adapted and matched to the human. In aviation, this is vital, as errors can be deadly.

Manufacturers study hardware interface when designing a new machine and its physical components. Seats are designed to fit the sitting characteristics of the human body; controls are designed with proper movement, instruments layout and information provided are designed to match the human being characteristics, etc.

The task is even harder since the human being, adapts to mismatches, thus masking any mismatch without removing it, and constitutes a potential hazard. Examples of that are the different cockpit layouts for the many different aircraft flown by Aircraft operations pilots.

One of the most difficult interfaces to match with the human is the environment the human must operate in.

Adding proficient and effective individuals together to form a group or a set of views does not automatically imply that the group will function in a proficient and

effective way unless they can function as a team. For them to successfully do so we need leadership, good communication, crew-co-operation, and teamwork and personality interactions. Crew Resource Management (CRM) is designed to accomplish that goal.

In brief, Human Factors in aviation aim at increasing the awareness of the human element within the context of the system and provide the necessary tools to improve safety and efficiency.

## **SAFETY & EFFICIENCY**

Safety and efficiency are so closely interrelated that in many cases their influences overlap and factors affecting one may also affect the other. Human Factors have a direct impact on those two broad areas.

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Safety is affected by the Human-Hardware interface. Should a change affect such interface the result might be catastrophic. In a particular aircraft accident, one causal factor cited in the report was that “variation in panel layout among the aircraft in the fleet had adversely affected crew performance”.

Safety is also affected by the Human -Software interface. Wrong information set in the data-base and unnoticed by the crew or erroneously entered by them can result in a tragedy. In a case where an aircraft crashed into terrain, information transfer and data entry errors were committed by navigation personnel and unchecked by Flight Crew were among the causal factors.

Crew interface also plays a major role in Safety. Failure to communicate vital information can result in aircraft and life loss. In one runway collision, misinterpretation of verbal messages and a breakdown in normal communication procedures were considered as causal factors.

Efficiency is also directly influenced by Human Factors and its application. In turn it has a direct bearing on safety.

- For instance, motivation constitutes a major boost for individuals to perform with greater effectiveness, which will contribute to a safe operation.
- Properly trained crewmembers working in accordance with SOPs are likely to perform more efficiently and safely.
- The proper layouts of displays and controls in the cockpit enhance Flight Crew efficiency while promoting safety.

## **FACTORS AFFECTING AIRCREW PERFORMANCE**

Although the human element is the most adaptable component of the aviation system that component is influenced by many factors which will affect human

performance such as fatigue, circadian rhythm disturbance, sleep deprivation, health and stress. These factors are affected by environmental constraints like temperature, noise, humidity, light, vibration, working hours and load.

Fatigue - Fatigue may be physiological whenever it reflects inadequate rest, as well as a collection of symptoms associated with disturbed or displaced biological rhythms. It may also be psychological as a result of emotional stress, even when adequate physical rest is taken. Acute fatigues are induced by long duty periods or an accumulation of particularly demanding tasks performed in a short period of time. Chronic fatigue is the result of cumulative effects of fatigue over the longer term. Temperature, humidity, noise, workstation design and hypoxia are all contributing factors to fatigue.

Circadian Rhythm Disturbance - Human body systems are regulated on a 24-hour basis by what is known as the circadian rhythm. This cycle is maintained by

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several agents: day and night, meals, social activities, etc. When this cycle is disturbed, it can negatively affect safety and efficiency.

Circadian rhythm disturbance or circadian rhythms is not only expressed as jet lag resulting from long-haul flights where many time zones are crossed, but can also result from irregular or night scheduled short-haul flights. Each rhythm has a peak and a low point during every 24 hour period.

Symptoms of circadian rhythms include sleep disturbance, disruption of eating and elimination habits, lassitude, anxiety and irritability. That will lead to slowed reaction, longer decision making times, inaccuracy of memory and errors in computation, which will directly affect operational performance and safety.

Sleep deprivation - The most common symptom of circadian rhythmic is sleep disturbance. Tolerance to sleep disturbance varies between individuals and is mainly related to body chemistry and emotional stress factors. In some cases sleep disturbance can involve cases of over-all sleep deprivation. When that stage is reached it is called Situational Insomnia, i.e. it is the direct result of a particular situation. In all cases, reduced sleep will result in fatigue. Some people have difficulty sleeping even when living in normal conditions and in phase with the circadian rhythm.

To overcome problems of sleep disturbance one should adapt a diet close to his meal times, learn relaxation techniques, optimise the sleeping environment, recognise the adverse effects of drugs and alcohol and be familiar with the disturbing effects to circadian rhythmic to regulate his sleep accordingly.

### Health

Certain pathological conditions (heart attacks, gastrointestinal disorders, etc.) have caused sudden pilot incapacitation and in rare cases have contributed to

accidents. But such incapacitation is usually easily detectable by other crewmembers and taken care of by applying the proper procedures.

The more dangerous type is developed when a reduction in capacity results in a partial or subtle incapacitation. Such incapacitation may go undetected, even by the person affected, and is usually produced by fatigue, stress, the use of some drugs and medicines and certain mild pathological conditions such as hypoglycaemia. As a result of such health conditions, human performance deteriorates in a manner that is difficult to detect and therefore, has a direct impact on flight safety.

Even though aircrew are subjected to regular periodical medical examinations to ensure their continuing health, that does not relieve them from the responsibility to take all necessary precautions to maintain their physical fitness. It hardly needs to be mentioned that fitness will have favourable effects on emotions,

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reduces tension and anxiety and increases resistance to fatigue. Factors known to positively influence fitness are exercise, healthy diet and good sleep/rest management. Tobacco, alcohol, drugs, stress, fatigue and unbalanced diet are all recognised to have damaging effects on health. Finally, it is each individual responsibility to arrive at the workplace “fit to fly”.

### Stress

Stress can be found in many jobs, and the aviation environment is particularly rich in potential stresses. Some of these stresses have accompanied the aviation

Stress is also associated with life events, which are independent from the aviation system but tightly related to the human element. Such events could be sad ones like a family separation, or happy ones like weddings or childbirth. In all situations, individual responses to stress may differ from a person to another, and any resulting damage should be attributed to the response rather than the stress itself.

In an aircrew environment, individuals are encouraged to anticipate, recognise and cope with their own stress and perceive and accommodate stress in others, thus managing stress to a safe end. Failure to do so will only aggravate the stressful situation and might lead to problems.

### **PERSONALITY VS. ATTITUDE**

Personality traits and attitudes influence the way we behave and interact with others. Personality traits are innate or acquired at a very young age. They are deep-rooted, stable and resistant to change. They define a person and classify him/her (e.g. ambitious, dominant, aggressive, mean, nice, etc.).

On the contrary, attitudes are learned and enduring tendencies or pre-dispositions to respond in a certain way, the response is the behaviour itself. Attitudes are more susceptible to change through training, awareness or persuasion.

The initial screening and selection process of aircrew aims at detecting undesired personality characteristics in the potential crewmember in order to avoid problems in the future.

Human Factors training aims at modifying attitudes and behaviour patterns through knowledge, persuasion and illustration of examples revealing the impact of attitudes and behaviour on flight safety. That should allow the aircrew to make rapid decisions on what to do when facing certain situations.

## **CREW RESOURCE MANAGEMENT (CRM)**

CRM is a practical application of Human Factors. It aims at teaching crew members how to use their interpersonal and leadership styles in ways that foster crew effectiveness by focusing on the functioning of crew members as a team, not only as a collection of technically competent individuals, i.e. it aims at making aircrew work in “Synergy” (a combined effect that exceeds the sum of individual effects).

When introducing CRM some people might see a threat, since it constitutes a ‘change’. However, with the majority of accidents having lapses in human performance as a contributing factor. With nearly two decades of CRM application in the aviation community revealing a very positive feedback, we see this ‘change’ as “strength”.

CRM can be approached in many different ways; nevertheless there are some essential features that must be addressed: The concept must be understood, certain skills must be taught and inter-active group exercises must be accomplished.

To understand CRM, one must be aware of certain topics such as synergy - the effects of individual behaviour on the team work; the effect of complacency on team efforts; the identification and use of all available resources; the statutory and regulatory position of the pilot-in-command as team leader and commander; the impact of company culture and policies on the individual; the interpersonal relationships and their effect on team work.

For a CRM program to be successful it must be embedded in the total training program, it must be continuously reinforced and it must become an inseparable

part of the organisations culture. CRM should thus be instituted as a regular part of periodical training and should include practice and feedback exercises during training and checkrides.

**CRM SKILLS TO BE DEVELOPED INCLUDE:**

- **Communication skills**  
Effective communication is the basis of successful teamwork. Barriers to communication are explained, such as cultural difference, rank, age, crew position, and wrong attitude. Aircrews are encouraged to overcome such barriers through self-esteem, participation, polite assertiveness, legitimate avenue of dissent and proper feedback.
- **Situational Awareness**  
Total awareness of surrounding environment is emphasised so is the necessity from the crewmember to differentiate between reality and perception of reality, to control distraction, enhance monitoring and crosschecking and to recognise and deal with ones or others incapacitation, especially when subtle.
- **Problem Solving and Decision Making**  
That skill aims at developing conflict management within a time constraint. A conflict could be immediate or ongoing; it could require a direct response or certain tact to cope with it. By developing Aircrew judgement within a certain time frame, we develop skills required to bring conflicts to safe ends.
- **Leadership**  
In order for a team to function efficiently it requires a leader. Leadership skills derive from authority but depend for their success on the understanding of many components such as managerial and supervisory skills that can be taught and practised, realising the influence of culture on individuals, maintaining an appropriate distance between team members enough to avoid complacency without creating barriers, care for one's professional skill and credibility, the ability to hold the responsibility of all crew members and the

necessity of setting the good example. The improvement of these skills will all the team to function more efficiently by developing the leadership skills required to achieve a successful and smooth follower in the team.

- **Stress Management**

Pressure to complete the mission, mental and physical fitness to fly, fatigue, social constraints and environmental constraints are all part of our daily life and they all contribute in various degrees to stress. Stress management is about recognising those elements, dealing with one's stress and help others manage their own. It is only by accepting things that are beyond our control, changing things that we can and knowing the difference between both that we can safely and efficiently manage stress.

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- **Critique**

Discussion of cases and learning to comment and critique actions are both ways to improve one's knowledge, skills and understanding. Review of actual airlines accidents and incidents to create problem-solving dilemmas that participant aircrew should act-out and critique through the use of feed-back system will enhance crew member's awareness of their surrounding environment, make them recognise and deal with similar problems and help them solve situations that might occur to them.



11.8

EAA SAFETY REPORT

To: Dick Hanusa 920-379-6187 dhanusa@eaa.org	From: (Optional)	Date:
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Instructions: Fill our form using additional sheets as necessary. Forward the completed form to the Safety Officer in an envelope marked "Confidential." Thank you for your interest in the Safety Program!

Description of the incident or observed hazard: (Provide date, time and location, as applicable. Include a detailed and accurate description while being as concise as possible.)

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Recommendations to eliminate, correct or minimize the incident or hazard:

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Safety Officer's investigation summary:

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Referred to: \_\_\_\_\_  
 Suspense date: \_\_\_\_\_

Corrective action taken:

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Corrective action completion date: \_\_\_\_\_ by: \_\_\_\_\_

11.9

EAA FLIGHT OPERATIONS INCIDENT REPORT

To: Dick Hanusa 920-379-6187 dhanusa@eaa.org	From: (Optional)	Date:
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Instructions: Fill out form using additional sheets as necessary. Forward the completed form to the Safety Officer. Thank you for your interest in the Safety Program!

Type of event – check all appropriate responses

<input type="checkbox"/> Human factor error	<input type="checkbox"/> Runway/taxiway excursion	<input type="checkbox"/> Foreign object damage
<input type="checkbox"/> Altitude deviation	<input type="checkbox"/> Runway incursion	<input type="checkbox"/> Severe wake turbulence
<input type="checkbox"/> Navigational deviation	<input type="checkbox"/> Severe turbulence	<input type="checkbox"/> Collision hazard
<input type="checkbox"/> Communication error	<input type="checkbox"/> Severe icing	
<input type="checkbox"/> Crewmember incapacitation		
<input type="checkbox"/> Aborted takeoff	<input type="checkbox"/> Other _____	

Weather conditions – check all appropriate responses

<input type="checkbox"/> IMC	<input type="checkbox"/> Thunderstorm	<input type="checkbox"/> Icing
<input type="checkbox"/> VMC	<input type="checkbox"/> Turbulence	<input type="checkbox"/> Crosswind
<input type="checkbox"/> Precipitation	<input type="checkbox"/> Windshear	<input type="checkbox"/> Other _____

Date/time – check or fill out all appropriate responses

Date: _____
Time:(Local) _____

Mode of flight – check all appropriate responses

<input type="checkbox"/> Ramp	<input type="checkbox"/> Climb	<input type="checkbox"/> Descent
<input type="checkbox"/> Taxi	<input type="checkbox"/> Cruise	<input type="checkbox"/> Approach
<input type="checkbox"/> Takeoff	<input type="checkbox"/> Holding	<input type="checkbox"/> Landing

Action taken - check all appropriate responses

<input type="checkbox"/> Performed emergency procedure	<input type="checkbox"/> Declared emergency	<input type="checkbox"/> Followed checklist
<input type="checkbox"/> In-flight engine shutdown	<input type="checkbox"/> Requested crash/rescue	<input type="checkbox"/> Followed SOP
<input type="checkbox"/> Requested medical assistance	<input type="checkbox"/> Diverted from destination	<input type="checkbox"/> Other _____

7. Crewmember's assessment.

Was the above procedure/checklist adequate for this situation?  Yes  No  
 Was the training adequate for this situation?  Yes  No

8. Comments or suggestions:

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