

**Yankee Air Force, Inc.**  
**B-17G**  
***“Yankee Lady”***

**Approved Aircraft Inspection Program**  
**April 1, 1995**

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EMI FSDO AGL-23  
Principal Airworthiness  
Inspector

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# **CHAPTER 1**

## **Inspection Program - General**

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# Preface

The Yankee Air Force, Inc. is a public, non-profit corporation organized under the laws of the State of Michigan. An educational institution and museum, the corporation is tax exempt under Section 501 (c) (3) of the Internal Revenue Codes. The purpose of the corporation is to recover, restore, preserve and display, both in static and flight conditions, historic aircraft and to convince others through ground and flight tours and demonstrations to join in the preservation of a part of our National Heritage. Any and all donations received relative to this are used to cover the costs of operation and maintenance of each individual aircraft.

As part of this program, the Yankee Air Force has compiled and submitted this Aircraft Inspection Program Manual covering the following aircraft.

Boeing B-17G  
N3193G  
S/N AF44-85829

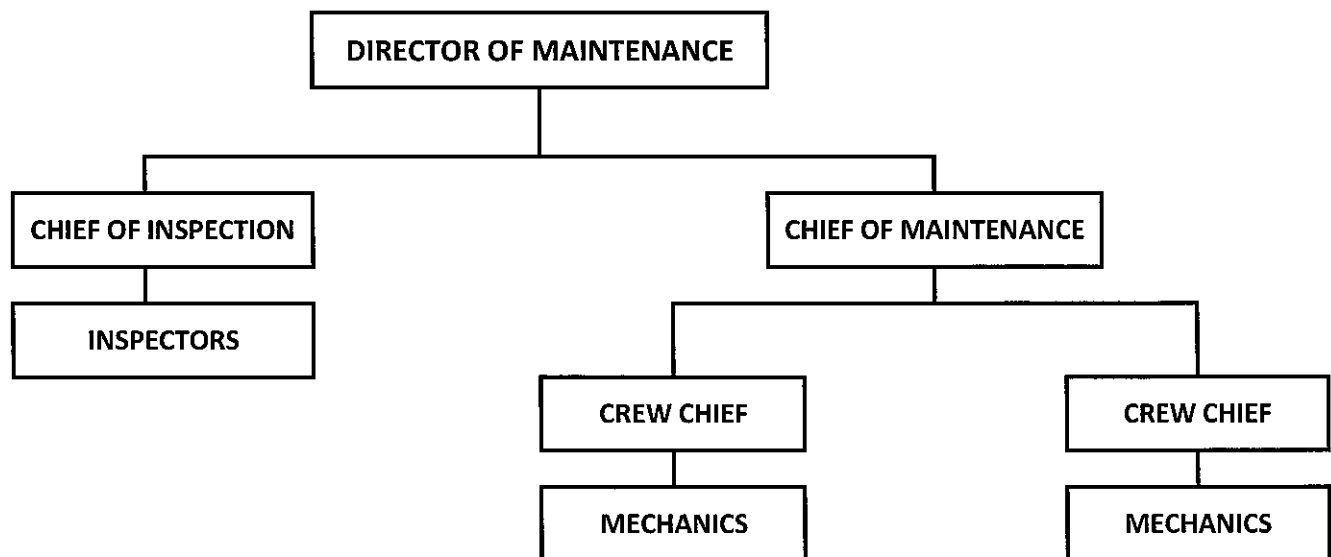
Owned and operated by:

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# Maintenance Operations Personnel Structure

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The YANKEE AIR FORCE, INC. has in place the following structure relative to the maintenance of Flight Demonstration Aircraft.



# Maintenance Operations Personnel Qualifications

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## DIRECTOR OF MAINTENANCE

The Director of Maintenance shall be knowledgeable in the area of aircraft maintenance and flight operations and shall have a working knowledge of the Federal Aviation Regulations. In addition he/she shall be knowledgeable in management structure and procedures and have the ability to coordinate all aspects of aircraft maintenance and inspection. The ability to effectively work with the FAA and to promote safety shall be considerations in the selection of this person. The Chief of Maintenance and Chief of Inspections shall report directly to this person.

## CHIEF OF MAINTENANCE

The Chief of Maintenance shall be responsible for all restoration and maintenance operations of flight demonstration aircraft. This person shall have an A&P rating and have a minimum of three years active experience in aircraft maintenance. All individual aircraft Crew Chiefs shall report directly to this person.

## CHIEF OF INSPECTION

The Chief of Inspection shall have an A&P rating with a minimum of three years of active experience in aircraft maintenance and shall be knowledgeable in inspection techniques.

## CREW CHIEF

The Crew Chief of an individual aircraft shall be responsible for all restoration and maintenance of that aircraft. This person shall have an A&P rating with a minimum of three years active experience in aircraft maintenance. This person shall have a general knowledge of the type of aircraft being assigned to him. All mechanics shall report directly to the Crew Chief.

## INSPECTOR

Inspectors shall have the same qualifications as the Chief of Inspection.

## MECHANIC

Mechanics shall have either an A&P rating or approval to work under general supervision of an A&P rated mechanic (*this approval shall be granted by the Director of Maintenance upon satisfactory completion of an interview with the Director of Maintenance, Chief of Maintenance and Crew Chief*).



# Description of Inspections

This A.A.I.P. will be used in conjunction with the following manuals:

AN 01-20EG-2 Maintenance Manual / B-17G Aircraft  
AN 01-20EG-4 Parts Catalog / B-17G Aircraft  
AN 02-35GC-2 Service Instructions / R-1820-97 Engine  
AN 02-35GC-4 Parts Catalog / R-1820-97 Engine  
TO 01-20E-3 Structural Repair Manual / B-17G Aircraft  
AN 03-10DA-1 Operation and Service Instructions / Turbosupercharger  
AN 01-20EG-1 Flight Manual / B-17G Aircraft

## Inspection Program Overview

This B-17G aircraft inspection program consists of an extensive B-Check Inspection accomplished annually or every 150-hours. An A-Check Inspection which is performed at 75-hours, and lesser checks completed every seven days.

A C-Check includes preventive maintenance and inspection items that are performed every two years. This inspection is designed to be performed together with a B-Check.

A Corrosion Inspection and a Primary Structure Inspection are components of the Aging Aircraft Program and are also accomplished alongside the B-Check Inspection. Additional special inspections address abnormal occurrences.

As there are no Life Limited Parts with mandatory replacement times identified on the Boeing B-17G, all components are maintained on-condition.

In an effort to preclude component failure, the following described inspections are intended to monitor the condition of the aircraft and its components at regular intervals. By recognizing wear or abnormal operation, corrective action such as repair or replacement can be taken before a failure occurs.

- a. 7-Day Check - A 7-Day Check Inspection will be accomplished each (7) calendar days that the aircraft flies. It shall be accomplished prior to the first flight that day. The 7-Day Check Inspection Form (*Section 2-01 of this manual*) shall be used. This inspection is to be accomplished by an A & P mechanic.
- b. A-Check Inspection - An A-Check Inspection shall be accomplished (75) flight hours after the previous B-Check inspection and at 75-hour intervals thereafter until the next B-Check inspection is due. The A-Check Inspection Form (*Section 2-02 of this manual*) shall be used.

# Description of Inspections

- c. B-Check Inspection - A B-Check Inspection will be accomplished after (150) flight hours or (12) calendar months, whichever comes first, after the previous B-Check inspection. This inspection may be accomplished (10) hours early or late, but if accomplished late, the original due date must be used to schedule the next B-Check. The B-Check Inspection Form (*Section 2-03 of this manual*) shall be used.
- d. C-Check Inspection - A C-Check Inspection will be accomplished with alternate B-Check inspections starting with the second B-Check inspection accomplished under this program. The C-Check Inspection Form (*Section 2-04 of this manual*) shall be used.

## Aging Aircraft Program

Airworthiness concerns associated with aging aircraft are most often related to structural failure and electrical wiring.

Causes of structural failure vary, but especially with older aircraft, the focus falls on fatigue and corrosion.

With detection and prevention being key to reducing the risk of a failure, a "Corrosion Inspection" and a "Primary Structure Inspection" have been developed and added to this Aircraft Inspection Program.

These inspections supplement related service letters, service bulletins, and the requirements of airworthiness directives.

With the replacement of all wiring with modern, approved materials during the restoration of this aircraft (*July 1995*), the inspection of electrical systems (*wiring & components*) will continue to only be addressed within the A, B, and C Check Inspections.

Listed here are some of the technical documentation utilized in the inspection, repair, and preventative / protective measures used on this aircraft:

- T.O. 01-20E-3 - Structural Repair Manual / B-17G
- AC 43-4A - Corrosion Control for Aircraft
- AC 43-12A - Preventative Maintenance
- AC 43.13-1B - Acceptable Methods, Techniques, and Practices - Aircraft Inspection and Repair

- e. Corrosion Inspection - A Corrosion Inspection will be accomplished at the same time as a C-Check Inspection. The Corrosion Inspection Form (*Section 2-05 of this manual*) shall be used.
- f. Primary Structure Inspection - A Primary Structure Inspection will be accomplished at the same time as a C-Check Inspection. The Primary Structure Inspection Form (*Section 2-06 of this manual*) shall be used.

## Description of Inspections

- g. Special Inspections - Two special inspections are provided. If a pilot reports a lightning strike, the Lightning Strike Inspection will be performed. If a pilot reports heavy inflight turbulence, or a hard or overweight landing, the Overweight Landing Inspection will be performed. Forms for these two inspections (*Section 2-07 & 2-08 of this manual*) shall be used.
- h. Additional Inspections - A return to service inspection will be performed if the aircraft has not been flown within 90 to 180 days. This will consist of an A-Check Inspection. If this aircraft has not been flown for a period greater than 180 days, a B-Check Inspection will be performed, regardless of the time since the last B-Check Inspection.
- i. Inspection Items - Inspection items (on any of the above inspections), will be accomplished by a licensed A&P mechanic. Each inspection item has a sign-off block labeled "Mech". This block must be initialed by a licensed A&P mechanic who completed the item or supervised the completion of the item. Additionally, at the bottom of each page is a sign-off labeled "Inspector". This line must be initialed by an inspector as designated by the Chief of Inspection. In no case may the same person initial both the "Mech" and "Inspector".
- j. Calendar Inspection Items - All items which require inspection or maintenance based upon calendar time are defined in Chapter 3 of this inspection program. These requirements may be incorporated as part of other inspections but the calendar time begins at the time of completion of the requirement.
- k. Discrepancies - Discrepancies found during any of the above described inspections may be recorded on a Discrepancy Sheet.
- l. Maintenance Release - Upon completion of an inspection, the mechanic will verify that all inspection items have been accomplished, and all logbook discrepancies are corrected, before signing the Maintenance Release at the bottom of the inspection form.
- m. Aircraft Log Sheet - The log sheet will be used at the start of each day of A/C operation. It will be completed after the last flight of the day and the yellow copy will be kept in Maintenance file in the Maintenance Office.

## Revision Control Log Page

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