Section 5

Flight Engineer
Fire Guard Duties
Loadmaster
Weight Form
Loading procedures for the Aircraft
Crew Manifest
FLIGHT ENGINEER RESPONSIBILITIES

PRE-FLIGHT RESPONSIBILITIES

**Administrative**
Check aircraft logbook for status
Insure required documents are on board
Obtain fuel load from PIC
Complete fuel & oil section of Weight & Balance form and give to Loadmaster

**Aircraft Pre-Flight**
Supervise / Perform fuel & oil loading of aircraft
Inspect aircraft as per pre-flight inspection SOP
Emergency hand-crank on board (3)
Aircraft tie-downs on board (3 lines)
Aircraft chocks on board (3)
Astrodome closed prior to T/O
Passenger briefing (Normally done by PIC; FE should know location of legal seats
For T/O and Landing)

IN-FLIGHT RESPONSIBILITIES
Read Checklists (aloud, on request from PIC)
Radio listening watch
Scanning duties (fuel, oil leaks, traffic watch)
Operate bomb bay doors (on command by PIC)
Computes fuel status (back of wt/bal form: on request by PIC)
Call out airspeed on T/O & Landing (as briefed by PIC)
Assist passengers as required

POST-FLIGHT RESPONSIBILITIES
Assist passengers off aircraft (beware of props)
Obtain Hobbs Meter readings and enter into logbook
Secure all cockpit windows
Police-call all garbage off aircraft
Supervise exterior securing of aircraft:
- Wheels chocked
- Pitot covers installed
- Ground wire installed
- Engine covers installed (as per PIC)
- Norden bomb sight cover installed
- Side windows & radio room hatch closed

TAXI RESPONSIBILITIES - Marshalling and Fire Guard responsibilities may be assigned by the PIC. See Marshalling Section for Signals. See next page for Fire Guard duties. During taxi, be aware and insure proper clearance of the horizontal stabilizers during turns, by monitoring through waist gun windows. If issues arise, notify PIC via intercom.
FIRE GUARD DUTIES

1. You should be wearing your leather gloves for these duties.
2. Remember, all communications with the cockpit shall be with the PIC, with the exception of starting engines 3 & 4 noted below.
3. The PIC will assign Fire Guard duties to either a Loadmaster or Flight Engineer during engine starts. When no other fire extinguisher is available, utilize the on-board extinguisher at the rear hatch. Dry Chemical is the suppressant. Place yourself in view of the cockpit on the co-pilot’s (right) side, ahead of and outboard of #3 engine.
4. Note by the co-pilot’s finger signal which engine he’s starting; he’ll start with #3 then move to #4 next.
5. The co-pilot will call out ‘CLEAR’. (This action is to make sure everyone is clear of the aircraft.)
6. You will then scan 360-degrees to insure all is clear. And when it is, you will respond back to the co-pilot ‘CLEAR’.
7. After receiving a visual “all clear” from the Fire Guard (three fingers in the air/right hand and circular motion with the left), the co-pilot will turn 9 blades and initiate prime on the ninth blade while the PIC activates engine start. The Fire Guard will indicate prime status by a right hand thumb up for no visual prime overflow or a thumb down to indicate visual prime overflow.
8. If, after engine start, everything about the engine looks normal, move the fire bottle to the next engine to be started.
9. Repeat for engine #4, then move to the pilot’s side and start number 2 and 1 in that sequence.
10. Once engines have started and there are no discernible problems, you may give thumbs up and move the fire bottle safely to the side and give a thumbs up, indicating this part of the sequence is complete.
11. At this point, turn the aircraft over to the Marshaller if required; otherwise if the pilot departs unaided simply render a salute.
12. NOTE: If these Fireguard duties are being performed by a crew Loadmaster during the departure from a Tour Stop, the pilot will direct you to remove the chocks, which you will take with you as you board the aircraft by the rear hatch. Turn the aircraft over to a ground marshaller, if provided, before you remove the chocks.

IN THE EVENT OF AN ENGINE FIRE WHILE STARTING - NOTE: A minor flame resulting from prime fuel igniting in the Induction Intakes or the Turbo/Exhaust areas are not cause for great concern and will usually blow out from propeller air and exhaust thrust.

1. If a major fire develops, point at the engine with your left hand and give the hand signal to indicate “FIRE”, making a figure 8 with your right hand in a horizontal motion.
   - If fire is severe, have someone call 911. If fire is growing, give the signal to the crew to abandon the aircraft. (Hands in front of the body, then quickly moving them over your shoulders).
   - If fire is not catastrophic, attempt to put it out with your fire extinguisher after the propellers have stopped turning.
2. All passengers must leave the aircraft immediately and remain clear until the fire is suppressed.
3. Once the Fire Department arrives, clear all persons from the area including you. This will expedite their fire fighting responsibilities.
CREW TRAINING & TOUR RESPONSIBILITIES

A. GENERAL
The selection, evaluation and initial qualifications of CAF B-17 crew members is governed by the CAF FEB, Program Manual, CAFR 60-2, dated January, 2012.

B. CREW MEMBER CATEGORIES
Pilots
Flight Engineers
Loadmasters

C. RATING AUTHORITY
Crew member rating orders are published by the appropriate CAF Headquarters as indicated:
1. HQS CAF
   B-17 Pilot
   B-17 Co-Pilot
   CAF Formation Rating

2. HQS, Gulf Coast Wing (GCW)
   B-17 Flight Engineer
   B-17 Loadmaster

D. GROUND SCHOOL / INDIVIDUAL STUDY
For most crew members, this phase of training will consist of the following:
1. Individual home study, using approved B-17 reference materials.
3. B-17 Check Out Questionnaire, which is an open-book exam to be completed during ground school.
4. Flight Engineers will also be required to complete hands-on training with the aircraft and complete an oral exam.
5. Loadmasters will be required to complete a hands-on training at the aircraft and cover proper loading procedures, passenger briefing, on-board safety and flight-deck communication procedures.
5. Pilot Training is covered by CAFR 60-2 and CAFR 60-3
LOADMASTER RESPONSIBILITIES

PRE-FLIGHT RESPONSIBILITIES

Administrative
Passenger Manifest - (both standard and revenue rides)
Hold Harmless - (both standard and revenue rides)
Weight & Balance Form (see example next page)
Passenger Briefing (normally handled by PIC, but Loadmaster may be asked to answer passenger questions for T/O and Landing).

Aircraft Pre-Flight
Cargo, Baggage and Traffic Cones / Pylons tied down
At notification of the PIC, brief passengers on seat-belt operation (latch & un-latch) and safety items
Prepare A/C by loading as described on pages 26-through-29
Windows and hatches secured (as per PIC)
Aircraft chocks on board (3 sets)
Aircraft tie-downs on board (3 lines)
Grounding wire on board
Area aft of tail wheel secure
Passengers seated with seat belts fastened for T/O
As directed by the PIC, briefs passengers (on revenue rides) on seat-belt use
Reports to the Mission Tour Director

IN-FLIGHT RESPONSIBILITIES (When Flying as Crew Member)
Scanning Duties (fuel, oil leaks, other aircraft)
Tail-wheel position (advise when tail-wheel up / down)
Intercom usage (requires use of push-to-talk headset)
Assist passengers as required
Be alert to passenger safety and in-flight irregularities
Communicate to Flight Engineer when passengers are secured for take/off & landing

TAXI RESPONSIBILITIES - Marshalling and Fire Guard responsibilities may be assigned by the PIC. See following pages 30 & 31 for Marshalling Signals. See page 34 for Fire Guard Duties. During taxi, be aware and insure proper clearance of the horizontal stabilizers during turns, by monitoring through waist gun windows. If issues arise, notify PIC via intercom.

POST-FLIGHT RESPONSIBILITIES
Assist passengers off aircraft (beware of props)
Chock wheels (mains first)
Secure windows, top hatch
Stow cargo tie downs and straps
Ground aircraft (assist pilot or FE)
Tie down aircraft (assist pilot or FE)
Police-call all garbage off aircraft
The Load Worksheet will be completed by the Loadmaster following the entries on the Fuel Worksheet made by the Flight Engineer.
LOADING THE AIRCRAFT

1. Loading bomb bay
   - Luggage
   - PX
   - Spare parts
   - Tools (under floor)
   - Bombs (6)
   - Ammo Box
     - 10 bpt
     - 6 bpt

2. Operating curtain toilet
   - Ammo Box
     - 9 tp
     - 6 pt
   - Seat +2
   - Curtain for toilet
   - Toilet Supplies

3. Loading tail section and cargo net
   - Tent
   - Gas can
   - Cone bases
   - Cones

pt - paper towels
tp - toilet paper
bpt - blue paper towels
LIGHTS ON BOARD THE AIRCRAFT
(For Special Events on Tour / with Limited Lighting)

Diagram for lights in plane
Please remove lights attached with velcro located on this diagram prior to authentic warbird contest in Oshkosh.

DO NOT PEEL VELCRO OFF OF AIRPLANE
LOADING IN THE BOMBAY

1. PX tables must be loaded into area below platform.

2. Table handles should be facing outwards pointing towards middle of bomb bay walkway.

3. Ugly side of green board must face inward

4. Look for scrape in green board as a marking from the screw to be inserted into bottom right

3. Green wood board must be placed at front of tables.

4. Green board must be pushed inward on right side and slotted behind the silver frame in picture 1.

5. Strap must be hooked from side to front and be tied down by orange strap.
LOADING THE TAIL SECTION WITH SUPPLIES

1. Before loading tail section, the net must be in place before loading can begin
2. Net must be attached to the two D rings in the back first.
3. From looking into the tail hatch, the right side of the net must be attached first
4. Place 10x10 tent in before the cones
5. Tent must slide in forward first and slide it into the back
6. Make sure the tent rests on the raised part at the back of the tail gunners position
7. Place cones inside and slide them in to fit in the back on raised part of tail gunners position
8. Cones will be placed on top of tent.
9. Rope goes on top of cones and gas can must be tied and secured with net through handle
10. Cone bases will be placed in front of the cones and separated 5 on left side and 5 on right side of aircraft