

10 March 1944

Ditching Procedure for H2X Equipped Airplanes

Note: This is a supplement to Group Circular No. 55-10, dated 16 February 1944 to apply to the H2X equipped B-24.

I. General

1. Many factors, some of which seem insignificant, greatly affect the successful ditching of an airplane. Whether to land into the wind or across the swells, whether sufficient time exists to jettison excess weight, and many similar questions arise in the mind of the pilot. As these considerations vary with each individual ditching, it will be the responsibility of the airplane commander to study available reports on ditching and settle in his own mind a few basic principles of "How to make a water landing". Having a general knowledge of the subject will aid in a faster and more correct decision, when problems arise at the time of actual ditching. It is not the purpose of this circular to discuss the relative merits of different types of approaches, methods of contacting the water, etc., but instead to describe in full the duties of each crew member prior to ditching, and to give what is thought to be the position of each crew member which will afford him the greatest possible safety at the time of impact, and to permit him to make the most rapid exit possible once the airplane has come to rest in the water.

2. To begin with, it is all important that each item of emergency equipment ALWAYS be in a pre-determined place in each airplane, and in addition to a thorough pre-flight check of all emergency equipment prior to each overwater flight; EACH CREW MEMBER MUST BE THOROUGHLY FAMILIAR WITH EVERY ITEM OF EMERGENCY EQUIPMENT AND ITS PROPER OPERATION AND USE. It would be well for each pilot to prepare himself a check list of emergency equipment, and have the crew check the equipment themselves before each overwater flight. In this way, the crew members will become more familiar with the location

(Ditching Procedure H2X B-24 10 Mar 44 Contd)

of the emergency equipment.

3. Crews must continually practice dinghy drill until a high degree of proficiency is obtained. Ditching drill should be repeated until a crew can perform their various duties prior to ditching and be in position for contacting the water within forty-five (45) seconds after the order "Prepare for Ditching" has been given. Speed and precision must be stressed during these drills. Practice dinghy drill until you can "do it with your eyes closed". You may have to do it at night and the fuselage is quite likely to be filled with water.

4. At the FIRST SIGN of trouble the Pilot gives the order "Prepare for Ditching". The Pilot never hesitates to make up his mind as to whether or not to ditch the airplane. If the Pilot becomes aware of a condition which may ultimately lead to a water landing, he IMMEDIATELY gives the order "Prepare for Ditching". SOS should be sent, position, etc., and all possible preparations made during the time available. If plenty of time is available, and there is altitude to spare, the Pilot informs the crew of the situation, which enables them to make a double check on the airplane and equipment to see that all is in readiness. Then, if possible, the Pilot should receive a report over the interphone system from each man after he has taken his ditching position. An SOS can easily be cancelled; therefore, if the slightest possibility of a water landing exists, PREPARE FOR DITCHING: cancel the SOS later if the emergency passes.

NOTE:: The following ditching procedure is designed for use in specially equipped B-24 airplanes, in which the Bombardier and Front Gunner are located in the nose, the Navigator and Radar Navigator on the flight deck, and the Radio Operator is located on the command deck. All other crew members will be in the usual positions.

## II. SIGNALS FOR DITCHING

1. Series of short rings on alarm bell, given by airplane commander -----  
-----"Prepare For Ditching".

2. One long ring of alarm bell ----- "LANDING IMPACT WITHIN 15 SECONDS".

3. Either or both of the above signals should be augmented by interphone warning such as, "Prepare for Ditching", or, "Brace yourselves for the landing" IN ALL CASES, however, the ALARM BELL SIGNAL WILL BE GIVEN.

NOTE: In combat zones crews have reported that it is difficult to hear the ditching signals. Four men of one B-24 crew heard no signal of any kind. Therefore, each man who does hear the signal should relay it to all members of the crew whom he passes while enroute to his ditching station.

## III. EMERGENCY EQUIPMENT (To be carried on all overwater flights)

1. Life Vest; One (1) per man. To be worn at ALL times during flight.

2. Life Rafts; Two (2). Two (2) in compartments on top of fuselage.

3. Emergency Transmitter; Type SCR 578-A. One (1) strapped on carrier rear of bomb bay, port side.

4. Emergency Rations; Ten (10). Five (5) in miscellaneous kit in front compartment, and five (5) in miscellaneous kit in rear compartment.

5. First Aid Kits; Five (5). One (1) in nose compartment, one (1) above radio operator's table, one (1) forward face station 4.1 left side of fuselage, one (1) aft face of door station 6.0, one (1) at station 9.1 left side of fuselage.

6. Axe; One (1). Forward end of radio compartment, on floor. (Latest model B-24's may or may not be equipped with an axe.)

7. Thermos Bottle (or gallon jug); One (1). In radio compartment.

8. Flashlights, floating type; Two (2). One in each miscellaneous kit.

9. Flares; Ten (10). Five (5) in each miscellaneous kit.

10. Optional Equipment: Bomb Bay Braces (wooden); Twelve (12). Eight (8)

(Ditching Procedure H2X B-24 10 Mar 44 Contd)

installed at all times; Two(2) on catwalk of front bomb bay, two(2) on catwalk of rear bomb bay to be installed in emergency.

11. Miscellaneous Kits (Musette Bag); Two(2). One(1) fastened to Pilot's armor plate, one(1) fastened to rear of starboard waist gun armor plate. Bombardier and Asst. Engineer will each draw one(1) Miscellaneous Kit from Squadron Parachute Room prior to every overwater flight.

#### IV. DUTIES OF INDIVIDUAL CREW MEMBERS

##### 1. Pilot.

- a. Warn crew by series of short rings on alarm bell; (also by interphone if conditions permit), "Prepare for Ditching".
- b. Assist co-pilot into shoulder harness.
- c. Remove parachute straps and with aid of co-pilot adjust shoulder harness. Loosen collar and tie.
- d. Order radio operator to take ditching station, just prior to landing.
- e. Give impact warning fifteen(15) seconds before contacting water.  
One(1) long ring.
- f. Last (4th) man to exit through top hatch.

##### 2. Co-Pilot.

- a. Assist pilot into shoulder harness.
- b. Remove parachute harness. Loosen collar and tie.
- c. Aid Pilot in controlling plane if necessary.
- d. Take parachute (with first aid kit attached) on leaving plane.
- e. 3d man to leave via top escape hatch.

##### 3. Navigator.

- a. Remove parachute harness, loosen collar and tie.
- b. Destroy secret papers, collect navigation instruments, and compass.

- c. Compute estimated ditching position. Relay this information to radio operator.
- d. Advise pilot of wind direction and velocity.
- e. Open top escape hatch. If time permits, remove hatch from hinges with aid of axe. CAUTION: PLACE HATCH BELOW FLIGHT DECK TO INSURE AGAINST ITS HITTING CREW MEMBER UPON CONTACT WITH WATER.
- f. Take ditching position.
- g. Remove miscellaneous kit in front compartment from stowage position place strap over shoulder.
- h. When ship comes to rest, pull life raft release handle with sharp jerk, and is first man to exit through top hatch.

4. Bombardier.

- a. If time permits, salvos bombs and close doors.  
NOTE: If there is any danger of bomb doors being open when the airplane strikes the water, it is better NOT TO ATTEMPT TO SALVO BOMBS, but to keep them aboard "SAFE".
- b. Remove parachute harness, loosen collar and tie.
- c. Take first aid kit from nose stowage and proceed to ditching station in waist section.
- d. Assume ditching position.
- e. 1st Man to exit through starboard waist window.

5. Engineer.

- a. Remove parachute harness and loosen collar and tie.
- b. Move to rear of aircraft.
- c. If available: Install the four wooden bomb bay braces on passing through bomb bay.
- d. Take emergency transmitter out with him as he leaves the airplane.
- e. 1st man to exit through port waist gun window.

6. Radio Operator.

- a. Remove parachute harness, loosen collar and tie.
- b. Turn IFF to "emergency", send out SOS on frequency he has been working, then work International Distress Frequency (500 kilocycles). Be sure to give time, position, heading, and call letters along with SOS.
- c. Receive estimated position of ditching from Navigator.
- d. Transmit estimated position of ditching.
- e. If time permits, transmit: course, altitude, ground speed, and MO's. Ask for fix or bearings. Pass any bearings received to Navigator.
- f. On signal from pilot, lock key down and assume ditching position.
- g. Aid in Jettisoning excess weight.
- h. Third man to exit through starboard waist window.

7. H2X Operator.

- a. Remove parachute harness, loosen collar and tie, and turn off all radar equipment.
- b. Closes vertical sliding door and drop floor board on flight deck after top hatch has been placed under flight deck.
- c. Take first aid kit with him as he exits.
- d. 2d man to exit through top escape hatch.

8. Front Gunner.

- a. Leave nose turret, remove parachute harness, loosen collar and tie, and proceed to ditching station.
- b. Aid in removing waist windows. Aid in Jettisoning excess weight.
- c. Take ditching position.
- d. 2d man to exit through starboard waist window.

9. Assistant Engineer.

(Ditching Procedure H2X B-24 10 Mar 44 Contd)

- a. Remove parachute harness, loosen collar and tie.
- b. Raise Radar turret. Open waist gun windows, jettison waist guns, ammunition, camera, tool box, cans of hydraulic fluid, etc.
- c. Take miscellaneous kit from rear of waist gun armor plate; place carrying strap over shoulder.
- d. Assume ditching position.
- e. Take miscellaneous kit with him on leaving airplane.
- f. 2nd man to exit through port waist gun window.

10. Tail Gunner.

- a. Leave tail turret, remove parachute harness, and loosen collar and tie.
- b. Remove first aid kit, emergency transmitter, a miscellaneous kit from storage and place in position by waist windows.
- c. Aid in jettisoning excess weight.
- d. Assume ditching position.
- e. Take first aid kit with him on leaving airplane.
- f. 3d man to exit through port waist gun window.

When "Prepare for Ditching" is given, each crew member, existing conditions permitting, should advise the pilot that he is leaving his station by saying over the interphone system, "Front Gunner Ditching", Navigator Ditching", Etc. This procedure will not always be advisable, since the initial altitude from which the ditching procedure begins may be so low that any such waste of time would prove fatal to many of the crew. When time permits, this procedure will be of great importance to the pilot, as it is his only means of knowing that each man in his crew has heard the "Prepare for Ditching" signal, and is getting under way with his duties.

V. DITCHING POSITIONS FOR INDIVIDUAL CREW MEMBERS.

1. Pilot: In pilot's seat, parachute harness unbuckled, shoulder straps and safety belt secured. Seat adjusted as far aft as possible, yet still allowing full control of the airplane.
2. Co-Pilot: Same as pilot.
3. Navigator: In Navigator's seat, safety belt fastened, parachute harness removed. Seat turned so that back support is next to side of fuselage, removes round cushion from back, folds in half and places it in the hollow of his neck. Feet braced against the table legs of navigator's table, and the back pressed firmly against rear of pilot's armor plate. Navigator should not grasp life raft release handle before or during landing. This may cause rafts to be released before the plane comes to a full stop, and in a high sea the rafts would probably be lost.
4. H2X Operator: Same as Navigator.
5. Assistant Engineer: The assistant engineer will take a position on the port side, just forward, of the waist window. He will face forward bracing both feet against step down located just aft of Radar turret grasping waist gun mount with left hand and placing right arm around tail gunner. It should be remembered that it is difficult to predict the ships reactions, but deceleration will be great. While it is advisable to lean forward caution should be used against placing the head too close to the knees.
6. Tail Gunner: To the right of assistant engineer, assuming same position with the exception of placing left arm around asst. engineer and right arm around front gunner.
7. Front Gunner: To the right of tail gunner assuming same position,



placing left arm around tail gunner and right arm around bombardier.

8. Bombardier: To the right of front gunner, assuming same position with left arm around front gunner and right hand grasping right waist gun mount.

9. Engineer: Will sit, facing rear of ship, with back to front of ship between tail gunner and front gunner. It is desirable that he lean toward the rear of ship to avoid having head thrown in contact with other members of crew.

10. Radio Operator: Will sit with back against bomb bay bulkhead on starboard side of ship. Place some article of protection against back of head. Remember deceleration is rapid and forward motion strong.

#### VI. NOTES ON DITCHING AND DINGHY DRILL.

As the task of mastering this ditching drill is begun, there are several points which should be kept foremost in mind, namely:

1. The airplane commander should supervise the drills from different positions of the airplane in order to check the efficiency of each crew member.

2. At first, drills should be conducted slowly; one individual at a time simulating ditching, "by the numbers". Later on, after each man THOROUGHLY understands his part, the crew should practice ditching drill as a team, but still "by the numbers". After this phase has been mastered, the crew should don full flying clothing, assume combat stations and practice the drill with two principle ideas in mind - accuracy and speed!

3. The airplane commander should be quick to notice any discrepancies in the ditching ability of his crew or in the ditching drill itself. These discrepancies must be corrected at once according to the dictates of common

sense, tactical requirements, or modification of the crew's aircraft.

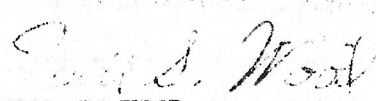
4. There are several factors apparently insignificant which may greatly affect crew safety. It is important that crew members know their airplane and know the equipment contained therein. A great number of injuries in the past have been caused by loose equipment tearing away from insecure mooring, due to sudden deceleration. It can not be overemphasized, that during the period in which crew members are jettisoning excess weight, a check should be made for loose equipment. If mountings are believed insecure, the equipment should be torn loose and jettisoned. The following equipment is generally dangerous to ditching safety and every effort should be made to jettison. Waist guns, ammunition boxes, ammunition, Bomb hoist, (above radar turret) loose tools, cans, etc.

5. Parachutes are extremely valuable to a crew afloat. They can be used as bandages, shelter from heat or cold, sail, bailing, collecting rain water, etc. If the time element permits each man should try to take with him a parachute pack. They can always be thrown away if raft is too crowded.

6. If time element permits it is advisable to not only open hatches but to remove with the aid of emergency axe. It will be noticed that hinges are not heavy and too much trouble should not be experienced doing so. Caution should be used however that hatches are not placed in such position after removing that they will hit crew upon contact with water. The top hatch may be placed below the flight deck, through ramp leading from bomb bay to flight deck. Waist hatches should be jettisoned. It may be desirable, however, to keep one and place against bomb bay bulkhead at Radio Operators ditching station.

By order of Major HARTBRODT:

OFFICIAL:

  
NEIL S. WOOD  
Capt, AC  
Opns O

ERWIN F. MENNINGER  
2d Lt, AC  
Ditching Instructor

# DITCHING POSITIONS

## KEY:

- P - PILOT
- CP - CO-PILOT
- N - NAVIGATOR
- VN - RADAR NAVIGATOR
- E - ENGINEER
- AE - ASSISTANT ENGINEER
- TG - TAIL GUNNER
- FG - FRONT GUNNER
- R - RADIO OPERATOR
- B - BOMBARDIER

PATH INSIDE ———— | ———— PATH OUTSIDE  
 ORDER OF CREW MEMBERS LEAVING AIRPLANE

