

CRASH INVESTIGATION PROCEDURE

- I. Have full size photographs taken of the entire ship.
 - a. Four views, head on, tail view and left and right hand wings.
 - b. Photo of every instrument in the cockpit.
 - c. Photo any part or section of the aircraft that tore loose, and are laying some distance from the crash.

- II. If possible, take a qualified pilot and mechanic on that type aircraft with you.

- III. Talk to all witnesses possible.
 - a. Was the ship on fire or smoking in the air?
 - b. Was one engine dead or both engines?
 - c. Did the ship dive in, or was the pilot trying to land?
 - d. Was he maneuvering at low altitude, flying low or fast, or at high altitude?
 - e. Did any part come off the ship in flight?

- IV. Examine the ship and determine what type of crash it was.
 - A. Examine all marks that the ship made on the ground or runway.
 - a. This will tell you if the tail, the nose, or a wing hit the ground first. It will also tell you the direction the ship was coming from.
 - b. Was the ship coming in for a normal landing? Was it upside down, or did one wing hit first? This will give you an idea as to whether the ship was under control or not.

 - B. Was the pilot trying to make a normal landing but over-shot or under-shot the field?
 - a. Flaps and flaps handle in cockpit will be in the down position.
 - b. Landing gear and landing gear handle will be in the down position.
 - c. Both magnetos will be on.
 - d. Mixture controls should be in auto-rich.

 - C. Was the pilot trying to make a single engine landing?
 - a. One propeller will be feathered.
 - b. Tank selector for dead engine will be off.
 - c. Throttle and mixture controls off on dead engine.
 - d. Magneto switch off on dead engine.
 - e. If it was engine failure, check plugs, ignition system, fuel system, magnetic plug, and Cuno.

 - D. Did the ship just dive into the ground? If it did,
 - a. Check the pilots oxygen mask. (Did he get sick at altitude and throw up in it?)
 - b. If pilot passed out at altitude or blacked out in maneuvers, throttles will be open.

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- E. Was the ship fluttering around the sky?
- Check all surface controls for freedom of movement. Make sure they are all there. (Ailerons, Rudders, and Elevator.)
 - Check all trim tabs, make sure that none broke loose in flight and set up a fluttering condition.
 - Check the pilot as in Par. 4, Section D.
- F. Did the pilot try to make an emergency landing with both engines dead?
- Check gas supply, but if ship is too badly damaged, check with his field. How much gas did he have and how long was he in the air? (Figure consumption.)
- V. If the examination of the pilot shows that he did pass out, find the cause.
- Did he have plenty of oxygen-check with his field, how much oxygen did he have and how long was he in the air?
 - Check with the crew on his ship. Was he feeling OK before he took off? Had he ever been sick at altitude before?
 - Check the food at his field, is it too heavy for altitude missions? Check with other pilots who eat at the same mess hall. Do they often get sick at altitudes? If you think the food is too heavy, check with good flight doctor.
- VI. If there is a series of accidents at one field,
- Have the gas and oil analyzed for filings, sugar, etc., also for the proper octane rating.
 - Always check spark plugs they will show impurities from gasoline. Have them bomb tested to see if they were all firing OK.
 - If it is a field where they are checking out new pilots, you will normally have a few crashes from pilot error such as running out of gas. Trying maneuvers that are restricted in that airplane, etc.
 - If accidents are all with the same type of airplanes, request a representative from that manufacturer to check the maintenance of the ships, knowledge of pilots, etc. Manufacturer will be glad to send one as they hate accidents with their airplanes as bad as you do.
- VII. Further Aids to the Investigator.
- Get the Tech Order on the plane from the tech order files at the field. All technical data, characteristics of the plane, etc. are in these files.
 - Forms 41B and 1A are kept in the plane and will show if anything has been previously wrong. These forms will show the case history of the plane.
 - Contact the tower operator and see if the pilot called in.

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- d. Such items as soft bolts, and frayed cables can be tested. Take samples of the gas and oil as a matter of routine practice. These can be later tested if you decide such action is necessary.
- e. Levers usually stay in the position they were placed before the crash. Instruments cannot be relied upon.
- f. Be sure to photograph the cockpit.