GRAMPAW PETTIBONE

Physical Injuries in Accidents

Data are being compiled on aircraft accidents, correlating material damages with physical injuries sustained by flight personnel. This study is being made in the interest of flight safety, looking to changes in design of aircraft and to the development of additional safety equipment, as may be indicated. ▶ It is requested that members of Aircraft Trouble Boards insure a more complete listing of injuries than has normally been the case in the past. The body *location and nature* of all injuries is desired, including those that are fatal. Data should be obtained from flight surgeons or medical officers in attendance. The term INJURIES, MULTIPLE EXTREME without further elaboration is of no value in this study.

A good example of what may be accomplished as a result of these studies is the shoulder harness which was developed because it was noted that a large percentage of aircraft accidents resulted in head and face injuries only.

PBY Spin

A PBY-5 was seen to enter a spin at about 5,000 feet and crash. From testimony of the surviving crew members, it was believed that the student under the hood was being instructed in wing-overs. The student had, on two previous occasions during this flight, approached a stalled attitude and the instructor had been forced to take over. The plane spun out of the third stall, killing seven of the crew.

Grampaw Pettibone says:

Perhaps the instructor was making his student recover from unusual positions. In this connection all instructors and pilots must bear in mind that abrupt elevator control movements may cause a stall at *any* air speed. Whether recoveries from unusual positions were being attempted or whether wing-overs were actually being practiced is of little consequence now, but

as a reminder to other PBY pilots who may not have aircraft restrictions in mind, let me say this: The PBY and all other VP and VPB airplanes are specifically restricted from wing-overs and violent turns by Technical Order 84-42.

Cease Firing

A portion of a letter received from an aviation chief machinist's mate is quoted as of general interest:

DEAR GRAMPAW PETTIBONE:

Please get a firm grip on your old armchair and hang on to your spectacles, as I am going to cut loose with a salvo from the main battery.

Mindful of the fact that your column is not a Vox Pop, I think you missed the boat in regard to your article entitled "The Right Way," in the issue of November 1, 1943, of NAVAL AVIATION NEWS. Paragraph *b.* reads: "The fuel line connection to the droppable wing tank came loose on one plane. The engine started running roughly because of slugs of air getting into the gas line. The pilot brought the plane back on one engine." Now Grampaw, doesn't the yellow sheet inspection form cover fuel systems, or was this flight so strenuous that the connection was loosened during flight; and was the fuel supply used from the proper tanks in order, or does this pilot save his drop tanks for reserve supply?

Paragraph *c.* reads: "The propeller governor on another plane froze and chewed up the gear train; the propeller went up to full speed. The pilot brought it back, mostly on one engine." I'll have to use the secondary battery on this one, Grampaw. The author states that the pilot brought it back, mostly on one engine. However, the take-off and landing procedure is accomplished with the propeller in low pitch position and I should think the engines could be synchronized and throttled to enable a plane to be successfully flown back to the base.

Paragraph *d.* reads: "On another plane, the hose going to the droppable wing tank had deteriorated and failed; the fuel pump became airlocked. The pilot brought it back on one engine." Oh! Dear Grampaw, now you have me repeating myself as of paragraph 2. That old yellow sheet again, or did the hose deteriorate during flight, and was this same pilot flying the plane?

Paragraph *f.* reads: "During an engine run-in flight, the pilot feathered the propeller for test. When he could not unfeather it, due to a high pressure oil line failure, he brought the plane home on one engine." Oh, dear! Now I sound like a broken record, Grampaw. That yellow sheet again; or perhaps the same pilot. Why, oh why, wasn't the propeller tested on the ground? Surely one feathering operation on the ground or perhaps two, should have sufficed, or does the pressure increase with altitude?

Now Grampaw, you state you are in the "kick in the pants division," so don't go

soft by back-patting in such cases as the above-mentioned when it is quite obvious that they were the direct cause of faulty pre-flight inspection and unfamiliarity on the part of the pilot. And, Grampaw, isn't the type of plane involved designed to fly on one engine, and doesn't the training syllabus teach single engine operation?

Now, Grampaw, if you don't think you missed the boat, I will train in and secure and humbly apologize.

Very truly yours,
AVIATION CHIEF MACHINIST'S MATE

Grampaw Pettibone says:

Here I was, in my big-hearted way, trying to give a squadron a boost for some snappy one-engine operation, and

somebody has to spoil it all by pointing out that better maintenance and inspection and more familiarity with equipment on the part of some of the pilots would have forestalled most of those engine troubles!

When these salvos started coming over I jumped in the foxhole back of my desk and from there I entreat the squadron commander concerned to re-investigate these cases carefully to see whether courts-martial should not be given in lieu of any medals he may have contemplated awarding on the strength of my praise.

Targets Can Hypnotize You

This is a piece of advice for dive bomber pilots from a patient in a U. S. Naval Hospital. His advice is sound because it is based on personal experience. He is lucky because he is alive, or, rather, he is alive because he is lucky. And his advice is this:

"Don't get so fascinated with your target that you forget about your altitude. The ground is very hard. I know, because I landed on it on my face."

This student aviator *did* forget about his altitude with the result that he has a slight concussion, two broken ankles, several minor cuts and bruises, and a black eye. His SBD was spread over an area of 100 square yards, but he was thrown clear when it hit.

It all happened while the pilot was making dive bombing runs on a land target. Coming in at a 70-degree angle, he was practically hypnotized by watching the target grow as it came nearer and nearer in the reflector sight. He forgot all about his altimeter until he was well below the minimum safe altitude for pull out. He wanted his bomb in the center of the circular target so much that he almost carried it there in the SBD.

"It was entirely my fault," the pilot said. "I was so intent on the target I didn't realize I was getting into trouble until I saw the tops of the trees. Then I pulled back on the stick, but it was too late. The plane knifed through the treetops and smacked into the ground so hard that it plowed a three-foot furrow before disintegrating."

Direct hits on the circular target are very satisfying, but there is no satisfaction in making hits if you get your congratulations posthumously.

Visibility Zero, Judgment Zero

One pilot was injured when his FM-1 crashed shortly after taking off, and a second pilot, also in an FM-1, was killed when he followed the first ship into the ground. The accident occurred at MCAS Mojave on a particularly dark night when it was necessary to go on instruments immediately after take-off inasmuch as no surface reference was visible.

The pilot of the first plane—No. 2 in a four-plane formation—said he had started to join up after taking off, looked at his instruments, found he was in a right turn, but crashed before corrected attitude was attained. The pilot of the second plane apparently followed the first into the deck while attempting to join up. Both pilots had well over 300 hours and had completed the instrument syllabus.

▶ *COMMENT*—**A pilot must watch his instruments when the visibility is low. Although the ceiling was 11,000 feet, it was so dark the pilots had absolutely no natural reference points by which to judge the attitude of their planes. Had the pilots referred to their instruments to determine the planes' attitude, instead of attempting to maintain control by reference to surface objects, one man's life and two costly airplanes would have been saved.**

Reversed Controls

During interim overhaul of a K-type airship, the rigger in charge inadvertently put the drive chain of the elevator control on backwards which reversed the action of these controls. The controls were not checked after installation. The pilot apparently thought a visual check for proper operation of the control surfaces was not necessary and made none when the airship was released for flight. He did, however, turn on the elevator indicator, but paid no attention to it when the needle gave an "erratic" reading.

Aircraft Trouble Reports

In the future all requests for Aircraft Trouble Report forms (NAVAER-339) will be filled with tissue sheets only. Bond sheets now on hand should be used as originals until stock is depleted, after which a signed tissue should be used as the original for each Aircraft Trouble Report.

A take-off was begun and while "down" elevator control was applied to raise the tail, the airship reacted normally to the reverse elevator control, took off quickly and climbed steeply in response to the "up" elevator then being applied by the pilot who thought he was giving "down" elevator to ease off the climb. At 1,700 feet ascent was halted and approximately 30 minutes later the airship was flown into the ground with the pilot holding "up" pressure on the elevator controls, still unaware of the cause of the trouble.

▶ *COMMENT*—**The carelessness of the rigger who reversed the controls and of the petty officer who was responsible for inspection after overhaul, are readily apparent.**

The Trouble Board, however, considered the pilot equally to blame for this accident, assigning to him, in fact, 51% of the cause. He had 1,625 hours' flight time and should have been able to prevent this accident. First, he should have made a visual check for proper operation of the control surfaces, since the airship had just come out of overhaul and especially after the "erratic" reading of the elevator indicator.

Even after becoming airborne with elevator controls reversed, there need have been no accident. The pilot showed poor judgment, when he noted that some major control fault existed, in not ballasting the ship to near static equilibrium, obtaining weigh-off at sufficient altitude, and then deliberately checking to determine cause of trouble.