

# GRAMPAW PETTIBONE

## Beware of Bombs

While dropping 500-pound live bombs with instantaneous fuzes during a practice run, a TBM pilot went down too low on his second drop. His plane was hit by blast fragments, necessitating a forced landing at sea.

*Comment*—This pilot was lucky! Other similar instances have caused loss of control with fatal results.

There is no reason for pilots to conduct individual experiments on this subject; the effective danger altitude of blasts for various size bombs has been accurately determined. Minimum release altitudes, both for training and combat, are set forth on page 109 of FTP 224 (Restricted). This information should be made available to and thoroughly impressed on all bombing pilots.

## Test Controls Before Take-off

During the attempted take-off in a gusty wind of 30-40 knots, a PB4Y-2 showed a strong tendency to swerve to the right. The pilot stopped the take-off and returned to his starting position. At this point, an inspection of the rudder control linkage from bomb bay to tail showed linkage to be satisfactory.

The pilot then attempted another take-off during which the same strong tendency to turn to the right was experienced. Full rudder and unequal application of power were made, but

the pilot was unable to maintain a straight course. Plane continued to drift to the right after becoming airborne, whereupon the pilot cut power and landed. The plane turned off the runway at a 15° angle, crossed a taxi strip and finally hit a 5 ft. drainage ditch which sheared off the landing gear and parted the fuselage forward of the after, top gun turret. Fortunately, no one was killed.

The Alameda Safety Board published the following analysis of errors and contributing factors involved in this accident:

1. With proper precautions on the part of the pilot and ground crew, this accident, which required replacement of a very expensive airplane, would not have occurred. The immediate cause of lack of rudder control was the shearing of rivets in the rudder torque tube assembly. It is considered this was caused when the rudder controls were unlocked while the plane was parked in the strong, gusty crosswinds, or while being taxied crosswind. (Upon inspection of other *Liberators* following these severe wind conditions, the rudder lock drum brackets, part no 32r4007, were found to be cracked and bent, causing the rudder-locking drum to become jammed against the quadrants at the base of the rudder-control post, thus restricting movement of the rudder.)

2. There was negligence in not having the plane parked facing the wind with

battens applied, thus eliminating the strain on the rudder assembly.

3. The fact that no pressure was felt on the rudder pedals as the plane was taxied crosswind was a definite indication that no force was being exerted on or by the rudder. This, alone, should have aroused the pilot's suspicion after a faulty attempted take-off.

4. Inspection of the rudder linkage system was correct, but the second attempt to take-off should never have been made without a thorough inspection of ALL control elements. This always includes a visual check for the free and forceful movement of the control surfaces.

5. When the second take-off was attempted, the pilot should certainly have been more aware of the probability of the same trouble occurring and should have insured a greater margin of safety by not reaching so great a speed before deciding to stop.

## Not Too Tight

An F6F pilot noted a sudden drop in oil pressure while on a gunnery flight at 7000 feet. He headed for the nearest field, but was forced to make an emergency landing on the beach when the engine froze. The aircraft received major damage.

An inspection of the engine revealed that the sump plug had been lost, which allowed all the oil to drain out. It was the opinion of the safety board that the plug had been improperly safety-wired; the wire was twisted so tight when installed that it was practically severed. The weakened wire then parted due to engine vibration.

*Grampaw Pettibone says:*

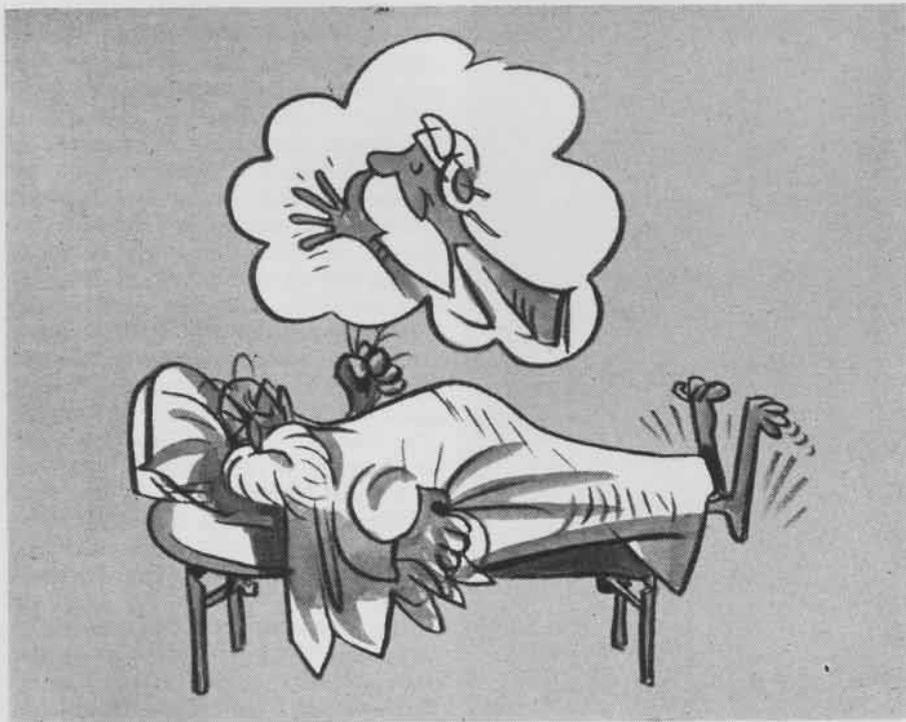
This report went on to state that the mech involved was given additional instruction.

So far so good, but I hope the rest of the mechs in that squadron were also warned of this danger.

No aircraft accident can be considered "finished business" until all possible corrective action has been taken.

That's why this case is published—so that this matter will be brought to the attention of all hands.

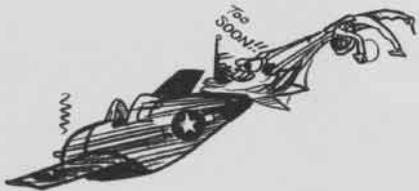
SHARPLY silhouetted against the sky, four aviation technicians are hard at work on the port engine of a PBM at an island seaplane base in the Pacific. In forward, combat areas, where operational flights over large stretches of open water are routine, skilled men insure the safety of each trip by constant maintenance of all the equipment.





## Proper Technique—Your Only Safeguard

Four F6F's were engaged in a two-section division defensive exercise at 8000 feet, with a fifth F6F simulating attack. Sections were stepped down. The wingman of the second section had lagged behind his normal position. This pilot, who was noted for his painstaking pride in flying a neat, tight formation, found it necessary to close up and cross under to regain his outboard position. In so doing, he closed too rapidly, overshoot his position and then pulled up



into the section leader's propeller. Damage to the empennage threw the wingman's plane into a severe spin. The pilot was seen to bail out at 5000 feet. The parachute streamed, but did not blossom. Later examination showed that it had been ripped.

The wingman's error in overshooting his position was considered as being due to overzealousness to "stay in there," coupled with his attention being diverted by the attacking plane. Pulling up into the section leader then resulted from the natural tendency to haul back on the stick when he turned his head upward and back to orient his position.

It was believed that the parachute was torn when it became fouled on the empennage because the pilot pulled the rip cord before being sufficiently clear of the airplane.

 **Grampaw Pettibone says:**

I've got to sound off about the parachute part of this accident. That sort of thing happens altogether too often. In some cases pilots stand up and pull the rip cord even before leaving the plane. Toss a newspaper out of the cockpit some time and watch where it goes. That's exactly where you will be pulled by your parachute, if you open it too soon.

Don't wait until you get caught in a jam and then try to figure out what to do. That way you will probably make the same mistake this pilot did—it's only natural to want to get that chute open as soon as possible. Use some forethought, figure it out in your bunk where you can think clearly and talk it over with some one with jumping experience. Picture this situation and make up your mind that if you ever have to jump, you will get well clear of the plane before pulling that rip cord.

A parachute is a perfectly safe means of making a landing, but like everything else connected with aviation, it takes a little

know-how, a bit of technique. Study the pamphlet *Parachute Sense* and hold a mental bailing-out drill in the air occasionally.

### Dangerous Snag

Serious injuries were sustained by the radioman in an SB2C when, during dive bombing practice, he accidentally released his parachute.

In order to keep track of the other planes in the division for his pilot, he was sitting facing aft. His safety belt had been loosened to give him greater freedom of movement. As he rose to a crouching position to see a plane below, he unknowingly hooked the rip cord handle on the body armor support. The parachute spilled and trailed over the port side of the plane, pulling the radioman up into the turtleback. Fortunately for him, the risers immediately were cut by the sawing action against the turtleback.

Upon questioning other radiomen in the squadron, the commanding officer found that several of them almost had experienced similar accidents by having their rip cords catch on the same post while moving about in the cockpit.

### Cockpit Enclosures

There have been quite a few recent cases of cockpit enclosures jamming shut during crash landings on land and water. In some instances, pilots made unsuccessful attempts to jettison enclosures before landing. In other cases,

pilots failed to lock the enclosure open; they merely pushed it back out of their way, hoping it would lock itself. It didn't, and seldom will.

Evidence indicates that cockpit canopies frequently cannot be jettisoned owing to improper maintenance. If an aircraft is out of control in the air, as might occur after a collision, structural failure, or stall, it sometimes is necessary for the pilot to jettison the enclosure before he can leave the cockpit. In such cases, a pilot's life depends on proper functioning of the jettisonable feature. It is up to the engineering officer and his crew to see that this mechanism is maintained in accordance with the latest instructions.

It is recommended enclosures *not* be jettisoned for a forced landing, however, as there always is the possibility they may strike the tail surfaces and cause loss of control. Instead, they should be locked open; in fact, they should be *locked open for all landings* so that this procedure becomes automatic. This open-lock is designed to withstand impact of a violent crash. No matter how strong it is, however, it won't do a bit of good unless you shove the enclosure far enough back to engage it, or manually lock it if your plane is so equipped.

### Shoulder Harness Insurance

*Case 1.* During field carrier-landing practice, the engine of an SBF cut out on the down-wind leg of an approach. The pilot managed a controlled forced landing with wheels up, but the plane caught fire. Upon arriving at the scene, rescuers found that the pilot's shoulder harness was unlocked and that he had been rendered unconscious from a blow on the head. Before the rescue could be effected, the pilot received severe burns that resulted in his death the next day.

*Case 2.* An F4U swerved off the runway during a landing run-out and crashed into a drainage ditch. The pilot suffered severe facial and head injuries because he was not wearing his shoulder harness.

*Case 3.* An F6F settled slightly during approach to a landing and struck the top of a tall tree. With insufficient airspeed to maintain flight, the plane then crashed on the runway. The pilot received serious injuries when his head struck a cockpit light and the microphone holder. His shoulder harness was not locked.

► *Comment*—The foregoing cases are recent typical examples of what is happening all too frequently when pilots and crewmen fail to take advantage of the protection offered by properly locked shoulder harness. Flight Surgeons are urged to show Training Film MA-4488 to all flight personnel at the activity.

## GRAMPAW'S SAFETY QUIZ



ALL AVIATORS should know the answers to these questions. In the air, the penalty for not knowing may prove fatal. If you miss an answer on the ground, penalize yourself by looking up the reference.

1. If accidentally splashed with aviation gasoline, what immediate first aid measures should be taken?
2. What is the established piloting procedure for directing the attention of surface ships to scenes of distress?
3. Snap pull-outs definitely are prohibited; is this true or false?
4. If you were in position to take off and received a red light from the tower, what should you do?
5. On take-off, when the horizon is obscured by darkness or overcast, what is the safest flight procedure?

Answers on Page 48