GRAMPAW PETTIBONE

Shoulder Harness Adjustment

Although shoulder harnesses have been credited with saving hundreds of lives, their full effectiveness depends upon being adjusted individually to fit the pilot. Three recent accidents prove this point:

Case 1. Preparatory to making a forced landing at sea, an FM-1 pilot tightened his shoulder harness, checking the locking handle with his left hand. When the plane hit, there was enough slack in the shoulder straps to allow the pilot to hit his head against the gun sight. The deep gash required seven stitches. Had his head struck a little harder, he would have been knocked out and gone down with the plane.

Case 2. An SB2A pilot locked his shoulder harness when his engine failed at 300 feet after take-off. He was unable to reach down and retract his landing gear, however, because the harness was too tight. When the plane crashed, the pilot's head hit the instrument panel. What had happened was that the front adjustment on the harness was made when it was on spring tension. The front and back adjustments together were so tight that even when the pilot leaned back, the vertical rod would not go down far enough to allow the mechanism to operate. The spring tension prevented the pilot from reaching down to retract the landing gear, but it was not strong enough to counteract the sudden stoppage of the airplane. Front adjustments on the shoulder harness must be made with the harness retracting mechanism locked.

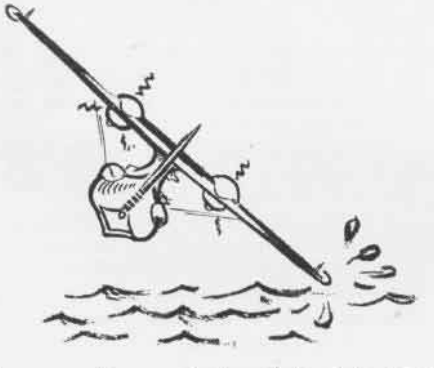
Case 3. An SBD-5 had a serious landing accident. In his report the commanding officer said: "The shoulder harness undoubtedly saved this pilot's life. This example has deeply impressed the squadron with the importance of wearing the harness drawn tight when landing or taking off."

Go Ahead and Live

Case 1. Shortly after take-off, the engine of an F4U-1 was heard to commence cutting out, followed immediately by complete failure. The pilot (366 hours) started an approach to a clearing within easy gliding distance but apparently changed his mind and began a steep, nose-high turn toward

another field. The airplane stalled and spun in; while the F4U pilot was killed.

Case 2. A PBY-5A patrol plane commander with 1,800 hours' flying time was on a practice anti-submarine bombing mission. While in a climb after a low-altitude drop on a downwind run, he experienced a loss of power on one or both engines. Upon becoming aware of the mechanical failure, he knew that he would have to land, but apparently



became disconcerted and tried to turn back into the wind. He had insufficient altitude to complete the turn and one wing hit the water, causing a violent crash. The entire crew was killed. Sea and wind conditions at the time were favorable for a downwind landing.

Grampaw Pettibone says:

You always have two possibilities if your engine cuts out at too low an altitude to make a safe turn:

1. You land in the *general* direction you are headed—and live to tell about it, or—

2. You start a steep turn during which you either fly into the ground for lack of altitude or you lose flying speed and spin in while trying to keep from hitting the ground. Usually fatal!

Notice I didn't say *how much* altitude was needed to make a power-off turn. As you know, this varies for different type planes and even for the same plane, depending on such things as excess speed, nose up or down, plane loading, etc. It's up to you to know these answers for any airplane you fly to keep from guessing wrong in an emergency. Read up on it, ask questions, and make a few tests, only make them up high and read the answers from your altimeter.

Another thing—just because you make a mistake and start a turn doesn't mean you have to be stubborn and finish it. Straighten out while you still can and remember, *never lose flying speed.*

Statistics show that if you once contact the ground or water in normal landing attitude, you are practically certain to survive, usually without any injury, but if you lose flying speed and spin in or fly into the ground or water while maneuvering in your approach, your survival chances are very slim.

A steep turn at low altitude after engine failure has been the last maneuver for many a good pilot!

Go! and Sin No More

Toward the end of his landing run, the pilot of a TBF-1C reached down to raise his flaps but, in so doing, moved the landing gear retracting lever. The wheels retracted and the plane received extensive damage while sliding 150 yards on the bomb bay doors.

▶*COMMENT*—Pilots must exercise particular care to operate only the control they intend to operate, and to refrain from automatically, and blindly, grasping a lever, hoping it is the right one.

The present safety lock, designed to prevent accidental retraction of the TBF (M) landing gear, operates only when the left landing gear strut is compressed at least half way. Over-inflation of shock strut, a sharp left turn, landing bounce, or the "roll" of a carrier, frequently causes the strut to extend beyond the effective range of the safety lock. At this point, the landing gear can be retracted if pilot inadvertently operates retracting lever.

The contractor and the Bureau of Aeronautics are at present investigating a redesign of the safety lock which will greatly increase its effective range. Until this redesigned lock is installed, maintenance personnel must be careful to inflate struts in accordance with *latest* BuAer instructions.

Hands Off

After travelling approximately 50 feet from the line, the port landing gear of an SBD-5 collapsed, causing considerable damage to the port wing and bomb rack.

Evidence indicated that some time after the previous flight some person had moved the landing gear lever to the "up" position and, upon realizing his mistake, had put it back in the "down" position without telling anyone. The locking pin did not go back into place, however, because the plane had been stopped in a turn and the strut had moved slightly when the pin was released.

Grampaw Pettibone says:

This was a costly mistake and further proves that anyone who is allowed to fiddle around an airplane must first be given a cockpit checkout. This includes ordnancemen, radiomen, and mech strikers. These men are not malicious, but they do have a natural curiosity about the intricate workings of an airplane. In order to forestall any damage which may be caused by their combined curiosity and ignorance, the purpose and operation of every handle, lever, switch and gadget must be fully explained. All taboos must be heavily stressed, including the major one, "Unless you know exactly what you are doing, keep your goddamn hands off!"

A Modern Fable of Folly

Once upon a time there was a very smart aviation cadet who was a joy to his instructor's heart for he did everything just as he was told through the gosport. There grew up between these twain a beautiful companionship, based on mutual faith and trust. As each went through the countryside that spring, he boasted of the other.

Spring passed.

On a lovely summer's day when these two were completing a highly satisfactory hop, the instructor said, "Take her to the barn."

To himself, the instructor said, "Of course, my bright student will put the wheels down." The student mused, "My instructor has lowered the wheels, because he didn't tell me to do it."

So neither checked.

As the trainer scraped its belly on the runway, screams of rage and violent oaths arose from the cockpits. Each felt he had been swindled in his trust.

Don't Gamble on the Horses

An SBD-5 engine checked okay before take-off but began to sputter and lose power after the plane became airborne. The pilot immediately put the mixture control in auto lean for about five seconds. Then he pushed the control to the full rich position, cut the throttle, landed, and ran off the edge of the mat where he overturned.

The Trouble Board said: "After noticing loss of power, the pilot erred in waiting too long before deciding to cut throttle. Placing the mixture control in the automatic lean position during take-off power operation was very poor procedure since the only effect it could possibly have would be to introduce detonation with accompanying power loss."

Grampaw Pettibone says:

This pilot did just about the worst thing he could when he leaned his mixture. Had he read General Engine Bulletin No. 2, he would have known what to do about his loss of power.

Take a tip from this pilot's experiences with his "iron horses" and read these bulletins. It's always a good bet to find out all you can about your engine. It's your best friend in the air, you know.

More Downdrafts

Previous items warning against dangerous downdraft currents on the leeside of land areas have made particular mention of the vicious downdrafts which occur in the Alaskan area. In reporting a recent fatal accident in the South Pacific which was attributed to turbulence on the leeside of an island, the squadron commander commented to the effect that Alaska has no monopoly on downdrafts.

True! These vertical downdrafts are found on the leeside of any obstruction. The following rules for avoiding downdrafts are equally applicable to all flight operations—from the Arctic to the Tropics and all places in between:

1. Stay away from cliffs, peaks, and valleys.
2. Remember that turbulence is less on the windward side of land masses, such as islands or mountains. If your mission permits, fly on that side.
3. Don't forget that on the leeward side the winds grow gentler as the distance from land increases.
4. Keep enough altitude so that a sharp downdraft will not force you to mush in.
5. Watch the water for indications of downdrafts. White caps may be traffic cops in disguise to warn you of the danger.

SURVIVAL QUIZ

Correct answers on page 40

1. **If you are lost on land, you should—**

- ☐ *a*–immediately worry about the future
- ☐ *b*–sit down and think the situation through
- ☐ *c*–immediately push on toward your base
- ☐ *d*–force yourself to eat and drink

2. **Rafts are best constructed from—**

- ☐ *a*–green woods
- ☐ *b*–hard woods
- ☐ *c*–palms
- ☐ *d*–dry, soft woods

3. **The most important single factor in determining survival is—**

- ☐ *a*–food
- ☐ *b*–state of mind
- ☐ *c*–warmth
- ☐ *d*–climate

4. **On the ocean, large numbers of birds indicate—**

- ☐ *a*–the arrival of a storm
- ☐ *b*–clear weather and calm seas
- ☐ *c*–some kind of land nearby
- ☐ *d*–shore waters

5. **Cones and terebras are—**

- ☐ *a*–edible mollusks
- ☐ *b*–phosphorescent mollusks
- ☐ *c*–the only two groups of mollusks that should be avoided
- ☐ *d*–edible succulent plants

6. **Only four fresh water fish are at all dangerous to man and all four are found in—**

- ☐ *a*–Africa
- ☐ *b*–United States
- ☐ *c*–Australia
- ☐ *d*–South America

7. **The best cooking is done over a—**

- ☐ *a*–bed of glowing coals
- ☐ *b*–smoky fire
- ☐ *c*–fire with flames
- ☐ *d*–soft-wood fire

8. **To obtain water from vines one must—**

- ☐ *a*–cut out a section of the vine
- ☐ *b*–cut out a section of the vine, cutting the top first
- ☐ *c*–make one cut close to the base
- ☐ *d*–cut at top of vine only