

GRAMPAW PETTIBONE



Get 'em Snug

In reconstructing a fatal jump by a student pilot, the investigating board determined that it is possible for a jumper to fall out of an incorrectly adjusted parachute harness, if the shoulder risers are off the shoulder. This can easily happen if the harness is too large and the risers slip off the shoulders before the jump is made or before the ripcord is pulled.

GET A 'CHUTE THAT FITS YOU OR HAVE IT ADJUSTED SO THAT IT DOES!

All's Well That Ends Well

A student in Squadron VN12D8-B, NAAS, Cuddihy Field, was recently forced to cope with an emergency such as he may later have to face in actual combat. During a cross-under maneuver, from a stepdown Vee formation, his vertical stabilizer and rudder were struck and badly damaged.

The student was able to keep his plane in level flight, but he had very little rudder or aileron control. He immediately decided he had enough control to land and proceeded to do so, successfully. This action saved an expensive airplane and prevented possible injury to himself.



Grampaw Pettibone says:

Very good, but I would feel a lot better about this if the report had said that the pilot had thoroughly tested out his controls at altitude, as per existing instructions. A damaged airplane may fly straight at high speed and yet be uncontrollable at stalling speed or in a landing attitude. That is why pilots are directed to thoroughly test out the control of a damaged airplane at altitude, before attempting to land. If you lose control while making these thorough tests at altitude, it gives you a chance to bail out and come back and tell all about it.

[SEE TECHNICAL ORDER NO. 48-40]

Never Too Old or Too Simple

In submitting the following list of pilot-error accidents, Marine Base Defense Air Group 44 points out that the old and simple rules and lessons stressed in training are demonstrated over and over again in actual practice:

1. A pilot landing an F4U ran off the runway on to the gravel. There were no obstacles or ditches ahead, but the dust flurried the pilot and he slammed on both brakes. The plane slowly went over on its nose, badly smashed up, and the landing gear was curved like a pair of bow legs. *Moral*—Don't get excited; keep your toes lightly on the brakes.

2. Another F4U came in for a landing with full flaps in a fresh and veering wind. After the plane touched ground, a sudden gust ballooned it up about 25 feet into the air. The pilot decided to circle the field again, opened the throttle full, got immediate left torque, ended up pancaked neatly upside down, and managed to get himself out of the plane after it caught fire. *Moral*—Two obvious mistakes here; you list them.

3. In taking off, the pilot of an F4F noticed the left wing start to dip just as the wheels were leaving the ground. He gave her more gun and the Grumman veered left and smashed through a hangar, taking out a 12-inch-square wood post and making mince meat of two Cubs. *Moral*—The same mistake again, which this time cost three planes, besides scaring the daylight out of a mechanic working in that location.

4. A pilot was sent from El Centro to pick up another El Centro pilot who had overshot the Mojave field and cracked up. He put his plane down at Tonopah, sure that he was in Mojave, for a casual glance at his map showed a somewhat similar layout of mountains and dry lakes. He had only 15 gallons of gas left, but that had not worried him, for he had seen numerous possible landing fields, none of which he

had bothered to identify. He had flown almost twice the El Centro-to-Mojave distance on a course 25 degrees in error. He even missed the right state, landing in Nevada instead of California, 165 miles from his destination. *Moral*—Compasses, radio beam signals, air speed dials, and estimated times of arrival can save a pilot embarrassing moments.

Wrong Runway

Corpus Christi reports on a recent and, fortunately, not fatal accident which occurred during night flying at that center. While plane No. 1 was waiting to take off on runway No. 4, the runway in use, plane No. 2 took off on runway No. 13 and collided with the No. 1 plane at the intersection of the runways, just after being airborne. *Result*: Two planes chalked up for Tojo.

The Trouble Board's opinion was that the responsibility rested wholly with the pilot of the No. 2 plane in that he took off on other than the designated runway. The pilot of No. 2 plane (570 hours) had made two previous flights the same night from No. 4 runway.



Grampaw Pettibone says:

I can hear the chorus of pilots saying, "What a dumb cluck—imagine using the wrong runway!" That's what the pilot of the No. 2 plane would have said, too, before it happened. And it *will* happen to you the moment you start taking things for granted.

The Low Flying Problem

NAS, Hutchinson, Kansas, has taken a new approach to the problem. A recent press release requested residents within a radius of 50 miles to cooperate in a survey to determine whether strict Navy regulations against low flying were being violated. Anyone seeing a low flying plane was requested to notify the air station immediately in writing, giving the number of the plane and the exact time and location it was observed.

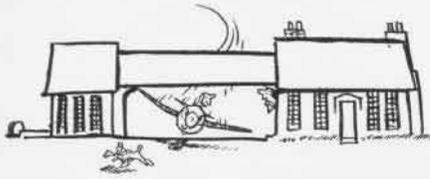
It was explained that the regulations at this station forbid flying at altitudes under 1,000 feet, and that acrobatics, while they are a definite part of Navy flight training, must be executed at al-



ATTENTION
SQUADRON COs!

Does Each of Your Pilots Know
TECHNICAL ORDERS AND NOTES
Applying to Your EQUIPMENT?

titudes above 4,000 feet. It was pointed out that if a plane is flying low enough for its numbers to be read accurately, it must be under 1,000 feet.



In forwarding a copy of this release to units of his command for information and guidance, Commander Naval Air Primary Training stated: "This publicity will go far toward winning public cooperation and otherwise helping to curb the evils of low flying."

 **Grampaw Pettibone says:**

This sounds like a body blow to flat-hatting. Even out in the sticks, someone might spot you.

Nothing was said about simulated emergencies, but I presume these maneuvers are limited to certain prescribed areas.

This procedure may seem like strong medicine, but the large number of serious accidents which occur as a result of this type of flying justifies such action. Anyway, it will only affect those who refuse to obey flight regs.

It strikes me that this problem will never be brought under control at training stations without the full cooperation of all flight instructors. Instructors who are addicted to this dangerous pastime are the most serious offenders, not only because a good many of them come to grief in this manner, but mainly because the students will copy everything they do. Once the instructors see the light, they should soon be able to stamp it out among the students.

And I believe, if the seriousness of the problem is properly put up to the instructors, together with their important relation to it, that the bulk of the instructors will be willing to forgo even an occasional "fling" and will report any and all transgressors. This latter action is absolutely necessary because just one pilot, who considers himself above the law, can wreck the whole program.

To back up the instructors, nonconformists must be dealt with severely.

Landing Gear Check

Upon attempting to raise the landing gear of a PV-1 after take-off, the wheels stuck one-fourth of the way up. All attempts to move them either up or down failed. It was subsequently necessary to make a belly landing on the field which caused considerable damage to the airplane.

Investigation disclosed that the trouble with the landing gear occurred because the linkage between the landing gear "Up-Down" position handle and the four-way hydraulic control valve was not properly adjusted after

the valve was replaced, following disassembly and bench test the night before the flight. Failure to make this adjustment caused the first movement of the "Up-Down" selector handle to turn the cam shaft in the four-way valve too far, shearing the soft aluminum cam stop. This released the triggers on all poppet valves, causing all of them to close. This locked the hydraulic system in all directions.

The Board recommended that each time any important repair or replacement is made in the landing gear hydraulic system that the airplane be jacked up and the landing gear be checked in both the "Up" and "Down" positions prior to flight.

COMMENT—This same recommendation should hold true after disassembly of any hydraulic actuating mechanism.



A MILD EXAMPLE of what can happen if you get in slip stream of plane ahead of you in making your landing approach.

Graveyard Spiral

The greatest single danger to an inexperienced pilot flying at night or on instruments is the "graveyard spiral," a diving spiral which gets progressively tighter and steeper and is accompanied by a rapid loss of altitude, according to *Instrument Flight, Part I* (Basic Airwork).

Such a spiral results directly from the pilot relying too much on his sensations and too little on instruments which show whether the airplane is banking or turning.

The graveyard spiral starts by the airplane gradually entering a turn without the pilot realizing it. In such an involuntary turn, the angle of bank and the rate of turn both increase so slowly that the pilot has no sensation to tell him that the position of his airplane has changed. He retains the positive impression that it is still flying straight with the wings level.

Bear in mind that these remarks all refer to night or "instrument" weather; if the pilot could "see," he immediately would recognize the position of his airplane.

The pilot's first indication that anything is wrong is a change of noise, an increase in airspeed or a loss of altitude. Under these circumstances, unless the

pilot looks at and believes the instruments which show that the plane is turning and banking, he will merely pull back on the stick, under the impression that he is recovering from a straight dive.

If he does so, this impression of being in a straight dive will be immediately heightened since pulling back on the stick gives him the feeling he would have in a normal straight pull-out.

Once he starts to pull back on the stick, the turn gets tighter, the nose drops lower, and there is a rapid increase in airspeed and rate of descent. After a few seconds, speed of the plane may have increased to more than double its original speed, and rate of descent may have increased to several thousand feet per minute. Fear and confusion accompanying this unexpected action prevent the inexperienced pilot from thinking rationally and from overcoming the fixed idea that he is in a straight dive.

The usual tendency is for him to pull back harder and harder on the stick in the blind hope that the plane will recover before it crashes.

Any pilot can easily and quickly recover from such a spiral. Remember—when anything seems to be wrong, when the airplane is starting to lose altitude and gain speed, *first look at the instruments that show whether the plane is banking and turning.*

In all probability the plane is banked and is turning although your sensations make you feel it is in straight flight with wings level. Fight any tendency to act according to your sensations. Make yourself stop the turn by leveling the wings. Then, and only then, use the stick to stop the dive.

[Note: Additional comments on the physical and psychological reactions of pilots when flying in instrument weather conditions will be found in the article *Vertigo*, BuAer T.N. 61-42.]

Jammed Controls

Several cases of jammed controls in SBD-5's have been reported. They have been caused by foreign articles lodging between the central control torque tube assembly (Part No. 3090186) and the cockpit deck.

Units operating this airplane should keep after cockpit curtains installed at all times and should make thorough pre-flight inspections for loose articles.

 **Grampaw Pettibone says:**

This advice about inspecting for loose articles is mighty sound for all airplanes. Things that are easy to remove on the ground are impossible to get at in the air, and no one is more helpless than an aviator with jammed flight controls.

Use Your Brain

While making an approach on the designated runway, an FM-1 pilot (600 hours) noticed that he was drifting considerably in a strong crosswind. He elected to continue the landing, however, and groundlooped violently, sending the airplane to A&R for a major overhaul.

The Trouble Board said: "All pilots in this squadron have again been cautioned that good judgment normally



dictates a wave-off when a strong crosswind is noticed in an approach to a landing, regardless of the landing course designated by the field control tower. Also, proper technique has been stressed in making a crosswind landing."

You Can Lead a Horse to Water

Numerous remarks, such as the following, appear on reports of aircraft accidents:

a. "The pilot's injuries would have been negligible had he worn the shoulder harness which was installed in this airplane."

b. "It is believed that this accident would not have resulted in death if the pilot had been wearing his shoulder harness."



Grampaw Pettibone says:

This stumps me! Apparently there is something in the mentality of the pilots who neglect to wear their shoulder harness which causes a large proportion of them to have accidents (doubtless they are also lax about other important flight requirements). Too bad this type can't be weeded out before flight training is started; screening them out by actual crashes seems like a crude, old-fashioned way of weeding them.

Or maybe you don't wear your shoulder harness because of false pride and a superior attitude—"I'm too good; it can't happen to me." Get humble, son; it is happening to better men than you are, every day. Be modern, keep up with the times. You wear a parachute and a safety belt; the shoulder harness is merely the latest life-saving device along these lines.

And don't be an ass and cling to the fatalistic idea, "if it's my turn, I'm going to get it, anyway." Aviation is no place for a fatalist. Fatalists are careless—and you know what that gets you in aviation. Flying is a science, governed by the laws of cause and effect. Only they should be in aviation who are aware of this; who fully realize its

dangers and intelligently set about forestalling them by every possible means; who intimately know their planes—their possibilities—and also their limitations.

To come back to shoulder harnesses, they were designed solely because most people who cracked up were injured only around the head and face. And the shoulder harness *does* stop these injuries, by keeping the upper body from snapping forward—ask the guy who has worn one in a crash. People who wear them are getting up and walking away from accidents that used to be fatal.

DON'T GET CAUGHT WITH YOUR SHOULDER HARNESS DOWN!

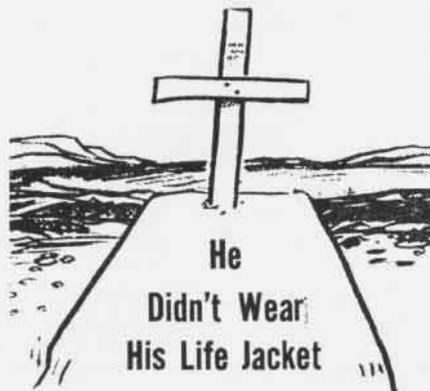
Bailing-Out Difficulties

"Realizing that I had to get out quickly, I rolled the tab to get a little more altitude and got rid of the cockpit cover by the emergency release. I was 1,500 feet when I released my safety belt and rolled over the ship. I placed my left hand on the rip cord ring as I started out of the cockpit. But as I let go of the controls my nose dropped. (Mistake No. 1: I had not rolled the tab forward.)

"When the nose dropped, I was slammed back into the cockpit. My left hand jerked the rip cord ring loose from the holder. (Mistake No. 2: I should not have had my hand anywhere near the ring.) I was afraid I had opened the chute, so grabbed the stick and slapped it forward, catapulting me into the air. I was then at about 1,000 feet. I reached across with my right hand and jerked the dangling ring. The chute opened at once.

"I was traveling about 180-200 knots and about 800 feet when the chute opened. The jerk blacked me out momentarily. When I came to, I immediately slipped back into the risers and when a couple hundred feet above the water I unbuckled the straps. I had no sooner done this than my feet hit the water. I dumped the chute and swam clear of the canopy.

"I pulled the co2 rings on my Mae West, but it immediately deflated. My Mae West had been punctured from the AA, though I did not notice any



ack-ack in the cockpit. I tried to inflate my life raft, but had difficulty in finding the co bottle. When I did, I could not find the pin, or turn the handle. (Mistake No. 3: I had never inflated the raft before.)"



Grampaw Pettibone says:

Are you as unfamiliar with some of the problems of bailing-out as this Marine fighter pilot (F4U) was? Circumstances beyond your control may force you to jump on your next hop. For this reason, you should have in your bag of tricks the proper *know-how* for using this and all other life-saving equipment. If you are not absolutely certain how to use any of this equipment, make it a point to rectify this deficiency before your next flight.

Squadron commanders bear an added responsibility for their entire squadron on these matters. If you don't already have one, I recommend the appointment of a squadron safety officer; a darned good one. There is plenty to do in looking after all safety equipment and insuring that personnel are fully trained in upkeep, handling, and use thereof, to make this practically a full-time job for an energetic and capable officer.

Lost Suction on Take-Off

The engine of an SB2C-1 cut out immediately after take-off during night field-carrier-landing practice. A fatal crash resulted. Subsequent investigation indicated that the pilot (1,016 hours) had flown the entire period (approximately one hour) on the fuselage tank and had exhausted the gas in this tank during his last take-off.

Service Bulletin No. 6 on this airplane and No. 4 on the SB2C-2 recommend that fuel in the fuselage tank be used during the early part of each flight, in order: 1. to improve balance, and 2. to use up the fuel in the non-leakproof tank first.



Grampaw Pettibone says:

It is impossible to issue directives covering every eventuality. That is why I keep harping on "common sense." It is one of the most necessary and valuable assets an aviator can have. The above bulletins never intended that the fuselage tank should be run dry at low altitude. Everyone knows how dangerous that is; even if you shift tanks immediately, you may not have enough altitude to regain suction.

Undoubtedly, this experienced aviator had no intention of running his tank dry. He just got so interested in his landings that he forgot to keep track of his gas consumption. Even in combat, pilots must remain *Fuel Conscious*. You must intermittently check your fuel consumption and keep the fuel picture in the back of your mind (not too far back), including exact movement of the fuel selector valve necessary to switch to a full tank.