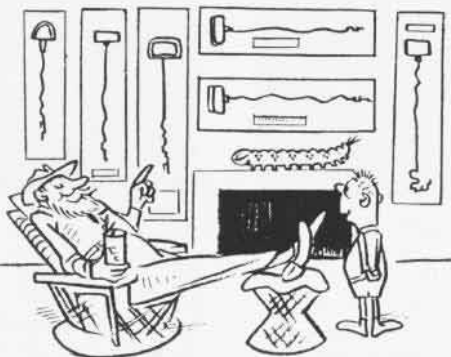


# GRAMP AW PETTIBONE

## Let's Use the Runway

An SB2C-5 pilot took off shortly before dark as part of a night flying section operating from Kobler Field, Saipan. After about two hours of section tactics, the group returned to the field and commenced a normal break-up. This pilot was number two to land and was making his first night landing at this field. The following excerpts are from the statements which he made after the crash:

"I took a slightly longer than normal interval with the intention of giving the plane ahead of me sufficient time to clear the runway. On the downwind leg, I went over my check-list and as I started my turn at the 180° position, I called the tower for the customary "wheels down and locked" check. I made another quick cockpit check after the call was completed and also noted that I was at 400 ft. with about 45° more to turn. I looked at the field I was approaching and saw four rows of lights of equal brilliance. My immediate impression was that the two outer rows of lights designated the coral strips on each side of the runway, which strips I knew to exist from my day flying experience on this field. As I began my flare out, I noticed some lights halfway down the runway and immediately interpreted these to belong to the plane that landed ahead of me. My reaction was to adjust the throttle and assume a three point eighty knot power approach so as to land as smoothly and short as was possible. That maneuver cut off all my vision forward, but I could still maintain directional control by observing the row of lights on either side. I held that attitude all the way down and only a split second before the impact, when the lights disappeared, did I realize I was wrong. The plane hit hard, bounced twice and then flipped on its back. My shoulder harness had kept me from any injury up to that point, so I unfastened my safety belt and began to look for a way out. The canopy had closed about three-quarters of the way, so I kicked a hole thru the starboard side of the plexiglas. The opening was still fairly small and would not permit my exit with the chute on. I was being drenched with gasoline by



then, but I managed to unfasten one leg strap and was working on the other when I lost consciousness due to the fumes. I came to about an hour later in the dispensary and was told I had landed dead center between the taxi strip and the runway—initial contact being made with a huge pile of coral."

*Grampaw Pettibone says:*

Chalk up another life saved by proper use of the shoulder harness. Next time you are scheduled for night flying, I'm sure you'll get a thorough briefing on the field lighting system, and be ready to take a wave-off if any doubt exists concerning your alignment with the runway in use. I don't imagine that you'll have to be reminded about locking the canopy in the full open position for landings after this experience either.

As a safety precaution squadrons practicing night landings should station a signalman with emergency flares at the approach end of the runway.

**"Dear Grampaw Pettibone:**

"I continue to be surprised at the theories and opinions held by naval aviators about various factors in the handling of an airplane by its pilot.

"Once, some years ago, I heard a *Chief Flight Instructor* in an intermediate flight training squadron say that downwind landings in the SNV weren't bad in a moderate wind. He had even permitted his student in a couple of cases to go ahead and land downwind when the student had misinterpreted the indication of the wind sock. But in each case he didn't permit the flaps to be used. When I asked him why he didn't let the students use flaps the Chief Flight Instructor said, "Well, that is the best way, isn't it? You don't want the wind blowing against the back side of the flaps."

"The above is about the most outstanding expression of ignorance I have

ever heard expressed by a naval aviator. However, I hear opinions voiced frequently which are not in agreement with my own opinions. The following are a few that I have heard recently:

"I do not agree that when landing in a crosswind with a twin-engine plane, you should use more power on the upwind engine during the final approach and landing than is used on the downwind engine.

"I do not agree that in an incipient groundloop the outboard wing (in the turn) rises due to the centripetal force acting on the plane in the turn. An aviator who is an operations officer and senior member of an aircraft accident board says this force is the same as the force tending to lift the outboard wheels of a car off the road as it goes around a sharp curve, and the procedure when a driver runs into a curve at a fast speed is to speed up to a faster speed. He got out a text book with a formula for centripetal force to prove his point. I attempted to show him how centripetal force and centrifugal force produce a couple tending to roll the car, but he still seems to think centripetal force acts at the center of gravity of the car and is produced by the velocity and that the faster the turn the greater the force tending to hold the car on the road. He still thinks the outboard wheels tend to rise from the road.

"I do not agree that in a threatened groundloop one should use opposite rudder and, if necessary, a blast of 'gun,' and if this isn't enough to stop the groundloop, use the outboard brake. Personally, I believe in using the brake and a fair amount of rudder from the very beginning and would probably not use a blast of gun unless the plane had made a pretty nasty bounce landing and there was a chance to straighten it out and go around again for another landing. In case brakes didn't hold very well and a great deal of force on a brake pedal was needed to get positive braking effect I would keep the rudder pedals in neutral because in that position I can apply more force on the brake pedal. (See Tech. Note 49-42, quoted in this issue. G.P.)

"I do not agree that in some planes, the RB4V for example and also in the GH, you get greater cruising speed with established power settings by climbing

500 feet above the cruising altitude and then descending to cruising altitude. Yet many pilots say you get it 'over the hump' or 'on the step' and that no swivel chair pilot in the Bureau can tell them it isn't true.

"As a matter of information, I have managed somehow to avoid a groundloop. Haven't had one in these 21 years of fooling around with planes, but I admit that I have made other embarrassing errors. Also, since I own two Howards and sometimes have to pay as much as 36¢ a gallon for gasoline I would be 'getting them over the hump' if I thought there was anything in that theory. But as it is, I'm stubborn and dumb. I just climb to cruising altitude and level off and when I pull up to the gas pump I just say 'Fill her up.'

"One of your early flight students"



## Close Shave

The pilot of the first F6F in the picture above had a very close shave when his aircraft was destroyed right up to the cockpit in a landing accident. He landed short at an airport 4500 feet above sea-level and was attempting to turn off at the intersection when he was over-run by the airplane landing directly behind him. As the number two plane in a group of eight that were landing, he should have kept his plane rolling down to the far end of the runway. The pilot in the plane which over-ran him landed long and fast and apparently did not hear the tower's transmission to take a "wave-off." He burned both tires flat in a 1000 foot skid down the runway in an effort to avoid the collision. Evidently he was not aware of the increased landing speed on high altitude fields, and his technique in trying to avoid the collision was very poor. An intentional swerve or groundloop might have prevented the collision after it was too late to take a wave-off.

## Bird Error?

During the last twelve months the accident analysts who make up *Grampaw Pettibone's* staff studied reports of 2572 major damage accidents to Navy aircraft. Each accident is carefully analyzed to determine the principal cause factor and any contributing causes. Not long ago a weary analyst came up against an accident that defied ready classification. It concerned an F8F mid-air collision with a bird, which, believe it or not, necessitated a major overhaul for the aircraft, as the bird struck and stuck in the leading edge of the starboard wing center section. The impact was sufficiently great to damage the front auxiliary beam. After chewing on his pencil for awhile the analyst wrote down the following:

"This is one for the birds. No pilot error involved. Pilot conforming to traffic pattern and completing check-off list prior to landing. Pilot states definitely that he did not see bird prior to collision. Due to death of bird it can not be established whether or not

bird saw aircraft prior to collision. In any event tower had not authorized bird to enter traffic circle. 100% Error of Other Personnel—Bird."

## Slow Reaction

The pilot of an SNJ made a normal landing. During the landing roll the plane started a slow swerve to the right unnoticed by the pilot until a groundloop was well developed. Throttle was then added in an effort to regain control and take off again. The groundloop rapidly increased and the plane flipped over on its back when it left the runway. Luckily the pilot of the plane escaped injury.

 *Grampaw Pettibone says:*

To let a groundloop develop is bad enough but to help it along adds insult to injury. Early and judicious use of the brakes would have prevented this accident. The addition of throttle after the groundloop has developed tends only to increase the severity of the loop, resulting in much greater damage to the aircraft involved. The following is quoted from *Technical Note 49-42*, and it's just as true today as it was five years ago:

"Pilots also have a tendency to delay too long in using brakes for correcting a groundloop. Experience has proved that brakes are of very minor value in correcting a groundloop which has gotten well under way, but they are of inestimable value in preventing a groundloop from starting or in the incipient stage if they are properly used during the run."

## Haste Makes Waste

An F4U pilot started his engine and gave the "pull chocks" signal to the plane captain. As the plane began to roll forward, the starboard landing gear retracted. The aircraft settled to the runway damaging the propeller and causing sudden stoppage to the engine.

On the morning of this accident the landing gear actuating cylinder had been changed by a dependable and experienced petty officer. He was hurrying to get the plane in commission for a group hop, and reversed the hydraulic lines as he made the connections to the new actuating cylinder.

 *Grampaw Pettibone says:*

This is not the first accident due to reversing the hydraulic lines. Two others have been reported in the past year. The only safe procedure is to *drop-check* the landing gear on all planes after repairs have been completed. You lads who work on planes must always remember that the safety of the pilot, and in larger planes the entire crew, is in your hands. No matter how great the rush to get a plane in the air—don't take any short cuts that jeopardize the aircraft or crew.

 *Grampaw Pettibone says:*

Thanks a lot for your interesting letter. That yarn about the Chief Flight Instructor is a tough one to believe, but if you say you heard it, I'll take your word for it.

Not too long ago I printed the story of a pilot who washed out a JRB trying to correct for a strong wind from the right by carrying 30" of manifold pressure on the starboard engine and about 15" on the port engine during the last part of his approach. Throttle settings on twin-engine planes should be as nearly equal as possible on landing until the plane is rolling on the ground. Then, of course, a little additional power on the upwind engine may assist in keeping the plane from weathercocking into the wind. The use of extra power on the upwind engine at any time before the wheels are on the deck will probably result in the plane landing in a skid.

As for the argument that the outboard wing of an airplane rises during a groundloop, you can refer anyone with this notion to *Grampaw's* Groundloop File, for I have literally thousands of cases on hand where the plane groundlooped to the right and required replacement of the left wing, and an equally large number of left hand groundloops which required replacement of the right wings or wing tips. Why don't you take your friend for a fast spin around the block and convince him that a car rolls away from the direction of a high speed turn and that the *inside* wheels tend to leave the ground rather than the outside wheels.

The old theory about getting a plane "on the step" has been exploded a good many times (see *Naval Aviation News* for Nov. 1946) however, it will probably continue to be a popular misconception for the next 100 years.

Congratulations on completing 21 years of flying without a groundloop—wish I could say the same.