

GRAMPAW PETTIBONE

A Word to the Wise

A flight of seven FG-1D aircraft took off from NAS SEATTLE for NAS WHIDBEY ISLAND to operate from that station for rocket firing at a nearby target. The flight time to Whidbey Island was 30 minutes and the planes then made two rocket firing flights from that station. The total flight time up to this point was 2.8 hours per plane.

Four of the seven planes were refueled at NAS WHIDBEY ISLAND prior to the fourth flight. Three pilots did not gas their planes because their gauges read approximately 115 gallons and it was expected that the fourth flight would only take about 45 minutes including the return to Seattle. Besides, after refueling the first four planes, the gas truck was empty and a delay would have been involved waiting for it to be refilled.

While rendezvousing in the vicinity of the target area after expending all rockets, one pilot called the flight leader to say that his engine had quit. His altitude was 2500 feet and he immediately turned toward an airstrip about 6 miles north of the target. He states that all gauges were normal when the engine quit except the fuel pressure, which had dropped to 8 lbs./sq. in. His fuel selector valve was on "Reserve" throughout the flight. He turned on his emergency fuel pump but it gave no increase in pressure.

Altitude was not sufficient to reach the airstrip, so the pilot chose a clear area and made a wheels-up landing. The plane was a strike but the pilot escaped without injury.

An inspection of the plane after the crash revealed:

1. The gas tank was empty.
2. The gas gauge read 60 gallons.
3. No mechanical difficulty was evident that would have caused the engine to fail.

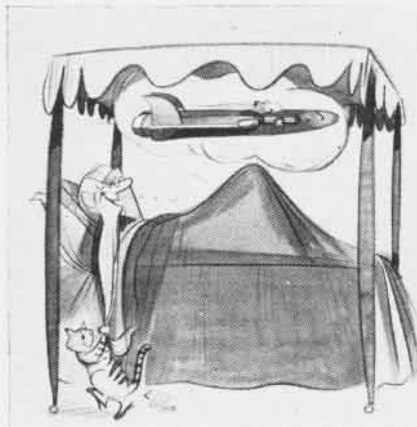


Grampaw Pettibone says:

After flying 2.8 hours, during which they made three take-offs and a good many climbs to altitude prior to starting their rocket runs, it seems to me that these pilots might have been a little suspicious of gasoline gauges which showed 115 gallons of fuel remaining.

They could have asked the driver of the gasoline truck to tell them how much gasoline each of the other four planes required.

After take-off the pilot of the plane that crashed could have shifted to "Main" in-



stead of flying on "Reserve" position. He would then have known when he was down to his last fifty gallons of gasoline and could have headed for a safe landing area.

Since this accident called attention to the faulty readings of the gasoline gauges, the instruments in each Corsair on this station have been checked by use of a calibrated dip stick. This will be done periodically to determine any future malfunctioning of the fuel gauges.

Looks to me like this might be a darn good idea for all outfits that use the FG/F4U type aircraft. It doesn't require much ingenuity to manufacture a calibrated dip stick, and the periodic checks can be made whenever a plane is being refueled after a fairly long flight.

Dear Grampaw Pettibone:

An argument has been raging among the pilots assigned this unit for some time. Perhaps you can help settle it for once and for all.

With consideration for both supercharged and non-supercharged reciprocating engine-propeller powered aircraft, at what altitude (no-wind condition) will a given aircraft make:

- (a) Its maximum speed?
- (b) Its maximum range?
- (c) Why?

Hope to see your answers soon.

Yours truly,
LT. U.S.C.G.



Grampaw Pettibone says:

I tugged on my beard for a couple of days trying to figure out satisfactory answers to these questions and then sent your letter down to the performance experts in BuAer.

I wish you could see some of the fancy formulas they sent me—lots of signs that stood for lift, drag, propeller efficiency, engine critical altitude, specific fuel consumption, maximum speed, ram effect, density altitude, etc.

For a couple of days I quit saying top speed, I was strictly a "Vmax" man.

When I finally got around to having these formulas explained to me things cleared up considerably.

For instance, I learned that the F6F-5 will make its top speed (Vmax that is) at 24,000 feet. Why? Because this is the highest altitude at which the engine will deliver maximum power in high blower, and up there the density of the air through which the plane is flying is less than at any lower altitude. For the AD-1 the corresponding altitude is approximately 16,000 feet, and for the F4U-4 it's 29,000 feet.

The relationship between altitude and range is a little more complicated. Up to a certain point range increases slightly with altitude, but actually the choice of the most desirable altitude is usually made on the basis of the prevailing winds. However, if we assume a no-wind condition as you suggest, here are some of the factors that determine the best altitude for maximum range.

First of all we've got to know just about everything about the plane including how much it weighs, and the specific fuel consumption at various power settings, to say nothing of having a little dope on the lift-drag ratio and the propeller efficiency at various altitudes and various power settings. Also we've got to know the temperature of the outside air at various levels. To top it all off you've got to figure out how much gasoline you're going to burn getting up to the most favorable altitude, because the fuel you expend in the climb is never fully regained in the glide at the end of the line.

Fortunately for most of us, the flight test experts at Patuxent have done all this long and tedious work. We can find most of the answers in the *Pilot's Handbook* or in *Supplementary Operating Instructions*. These charts and tables are figured out for standard operating conditions and a given weight, but correction tables are provided, so that you can correct for variations in temperature, airplane weight, and for such things as having the cowl flaps or oil cooler doors partially open.

There are surprising variations in planes with somewhat similar characteristics. For example, the best altitude for optimum range in the F6F-3 is between 1,000 and 2,000 feet, while for the F4U-1 it is very close to 10,000 feet.

While we are on the subject of maximum range, I'd like to put in a plug for a safety pamphlet that's fun to read and might save your life some day. It's called *Fuel Savings Sense* and I'll be glad to send a copy to any naval aviator who will send in the coupon on the opposite page.

Someday you may be in a spot where a

few extra gallons will make the difference between getting back to your base or carrier, or waiting it out in a life raft.

If you don't want the pamphlet you might cut this out and paste it on your windshield:

WHY WORRY?

"There's not much use worrying because I'll either get back to the carrier before my gas runs out or I won't. If I get back my worries are over. If not, then, I only have to worry about whether to bail-out or ditch. If I bail-out, the chute either opens or it doesn't open. If it doesn't open my worries are certainly over. If I ditch, it will either be a good one or a bad one. If it's a bad one I won't get out, and my worries will be over. But if I get out, I'll only have to worry about whether my Mae-West works or doesn't work. If it doesn't work my worries are over. If it does work then all I'll have to worry about is whether they find me or don't find me. If they don't find me my worries will soon be over, and if they do, I've only got two things to worry about. Either the Accident Board will call it "pilot error" or they won't. If they don't, I've got nothing to worry about. If they do—well they'll either send me before a Disposition Board or they won't. If they don't, I have nothing to worry about. If they do, then the Board will either jerk my wings or they won't. If they don't, I've got nothing to worry about. If they do? Well, there are a lot of jobs that are safer than this so, WHY WORRY?"

"Dear Grampaw Pettibone:

I noted with interest your story in a recent issue regarding the student who groundlooped twice and suddenly found himself airborne again on both attempts.

Not to go one better, but did you ever hear about the solo student in primary at NAS BUNKER HILL, Indiana in the spring of 1945 who ground-looped a wee bit further and became airborne? It seems that he was returning from a flight, entered traffic pattern normally, and since he had taken off in one direction, and was doing the opposite maneuver, he decided that the direction of his landing should also be opposite.

Thus the tower observed one N2S landing on the mat directly opposite to the landings of about 50 others. This student stated that he was not aware of anything peculiar until he was involved in a well developed ground-loop. After turning 360 degrees he decided that he was in an embarrassing position, groundlooping among all those other aircraft, and he had better get out of there quickly. He did—he took off immediately—downwind and still

against opposite traffic. He finally extricated himself from that traffic, re-entered and landed in the normal manner.

Summary of this student's experience indicated no previous flying prior to entering primary training, but, that at the time of this flight he was on one of the last solos prior to his "C" Stage check.

WHY PRIMARY INSTRUCTORS GOT GRAY!!

A Former Primary Flight Instructor"



Up—Over—Under

The pilot in the F4U-4 pictured here is obviously in serious trouble. A few seconds before he was given a fairly late wave-off by the LSO who had noticed that his hook was not down. (The hook spotter had previously given an "ALL DOWN.")

Apparently the pilot lost sight of the LSO as he rolled out of his turn at the ramp; he anticipated a cut, and had taken off some throttle by the time he saw the wave-off signal. The plane had started to settle. The pilot applied full throttle and started a left turn in a nose high attitude.

The left wing continued on down as the engine torque began to roll the plane. A second or two after the lower picture was taken the plane nosed down and hit the water at an angle of 70 degrees.

The pilot was strapped in snugly. His shoulder harness was locked. He cleared the wreckage in a few seconds and inflated his life jacket. Within a matter of minutes he was picked up by the search and rescue helicopter.

Dear Grampaw:

I hear via the grapevine that you once did some flying out of Newfoundland, so I thought you might enjoy this song:

SONG OF NEWFOUNDLAND

or
Where the Hell Shall I Land?

To the tune of "My Bonnie Lies Over the Ocean" or "My God How the Money Rolls In." En route from Goose Bay to Argentia A pilot is singing the blues, As he circles the town of Placentia He moans to the airwaves the news:

CHORUS:

ROLLS IN, ROLLS IN, MY GOD HOW THE FOGBANK ROLLS IN, ROLLS IN ROLLS IN, ROLLS IN, MY GOD HOW THE FOGBANK ROLLS IN.

Argentia has zero and zero, Torbay has forgotten the sun, I wish to God I were a hero, I'd try to make Blueie West One.

(CHORUS)

Goose Bay has a hole in its ceiling; It claims it is 30 feet wide, But I have an uncertain feeling The whole thing is just local pride.

(CHORUS)

I asked for the weather at Torbay, They say that they really don't know; Their forecaster's lost on the runway, They think that the ceiling is low.

(CHORUS)

Take care of my dear aging mother, Take care of my young ball and chain, And say a kind word for me, brother, For soon I'll be feeling no pain.

(CHORUS)

(Author's note: This was written on the back of a page from HO 510, in the hope that someone would come upon these immortal verses in the wreckage and forward them to the Hook Committee.)

Lieut. (jg), USN.



Grampaw Pettibone says:

I know what you mean. The best life insurance any pilot can have in that area is plenty of instrument practice and lots of confidence in G.C.A.

SEE DIRECTIONS!



Grampaw Pettibone
Naval Aviation News
Room 4D356
Pentagon Bldg.
Washington, D. C.

Dear Grampaw:

My neck is just as valuable as the next guy's. Please send a copy of "Fuel Saving Sense."

Rank Name Corps

Address

P.S.

Despite the hot dope that I'll get out of this booklet, I promise not to fly over water without my life jacket.