GRAMPAW PETTIBONE

Slipstream Warning

Following a series of six landing accidents that were caused by slipstream within a period of one month, ComFAir Quonset issued a safety bulletin containing the following:

1. Maintain adequate air speed throughout landing procedure.
2. Maintain sufficient interval between planes in the landing circle, to allow for slipstream.
3. Take own wave-off should interval become too close during landing.
4. Alternate sides of runway in landing, reducing possibilities of encountering slipstream.
5. Remember! At slow speed slipstream quickly induces stall.

Orchids to VJ-10

While taxiing back to the line, the port landing gear of a TBM-1C collapsed, causing stoppage of the engine and considerable propeller and wing damage. The pilot reported he had not touched flap or landing gear levers after landing.

There was no apparent cause for this accident. It might easily, therefore, have been listed as indeterminate and forgotten. But VJ-10 Aircraft Accident Board was made of sterner stuff. Knowing of two similar accidents, they determined to try and find what was causing them. The investigation took one week.

They drop tested the plane and found there was no malfunction in the extension, retraction or locking of the gear. Time interval checks then were made and it was found that both main gears unlocked simultaneously, but the tail wheel retracted two seconds earlier. The mechanical interconnector safety lock was found to be inoperative even with proper inflation of the oleo. The gear flap control unit was bench tested and internal leakage was discovered. Upon disassembly, seals on the poppet valve were found to be deteriorated. This condition was considered the cause of the accident, since that deterioration caused raising of port gear.

The board then prepared an RUDM making recommendations to correct this control valve trouble. They also recommended that a more satisfactory mechanical control lock be designed for this type aircraft and that all units examine the lock during drop tests on every 120-hour check.

▸ *Comment*—This is not the only AAR ever received. It is, however, the best of recent ones and is covered in some detail to show what Aircraft Accident Boards can and should do. Their investigations and reports are a source of information that results in saving lives.

The average of AAR's has shown improvement the past year. A new NAVAER Form 339 soon will be out which should help units prepare more effective reports. Fleet units are reminded that they are no longer exempt from submitting this report.

Leave Them Down

An F6F pilot experienced difficulty in raising his wheels following takeoff. He finally managed to retract them by means of the hydraulic hand pump. Later, when coming in to land, he was unable to fully extend the gear. The proper emergency procedure, plus a series of sharp pull-outs, was tried, but to no avail. The pilot was forced to make a one-wheel landing.

▸ *Comment* — You can be fairly certain that when your landing gear is difficult to raise, it will be just as difficult, if not more so, to extend and lock. If circumstances permit, you should not attempt to force the gear up, but should concentrate on re-lowering and locking it for an immediate landing, in order to enable experts to determine the trouble.

Don't Change Your Mind

The division leader's engine failed at 5000 feet. By radio he informed the remainder of the flight, and continued to restart the engine. Altitude was lost rapidly until, at about 500 feet, the pilot was seen to bail out. His pilot chute streamed, but the main canopy did not have time to open fully before the pilot struck.

In his report of the accident the CO made a statement which is considered good advice to pass along:

"Why the pilot decided to jump at such low altitude I don't know, for it has been repeated over and over, as squadron policy, to make up your mind to jump when high, or ride the plane down. This case proves how fatal it is to change mind at low altitude. How better to impress this on the pilots I don't know. It has been repeated at least once a week to the entire squadron, sometimes more frequently."

IN THE GROOVE AND WAITING FOR THE CUT →

EVERY CARRIER landing requires the utmost in split-second timing and coordination between pilot and landing signal officer. An F6F pilot demonstrates smooth approach technique as he comes in for a landing on the U.S.S. Ranger. *In the groove and watching for signals from the LSO, the pilot is putting into practice all the good flying habits he formed during months of intensive training received both before and after he earned his Navy wings. In the post-war period Naval Aviators in the active reserve will be provided ample opportunity to fly operational planes at naval air stations located throughout the United States.*

During Low Visibility??

When a pilot "walks away" after flying into the terrain at night, his story is almost certain to throw light on many similar accidents where life is lost. The following are two such cases:

Case 1. A TBM pilot, attempting a practice night attack on a target force at sea, had successfully evaded defending night fighters for one hour and the fighters retired. He had been flying at 1500 feet and decided to make another approach at 250 feet to get in close without being detected. The pilot again was picked up by night fighters, however, and had to resume evasive tactics. When his center tank indicated 20 gallons, the pilot shifted to a full tank. While the pilot reported his action to the accompanying plane, the engine popped twice. The pilot then turned on the emergency fuel pump and at the same instant hit the water.

Case 2. While flying above the overcast on a night navigation hop, the pilot of an F7F-2N drifted somewhat off course. "So I dropped down through the overcast to look around," the pilot recited later. "Broke out at 4000 feet and elevation of our estimated position was 2100 feet (actual elevation was 3100 feet, a mistake on my part). I had turned my radio altimeter off because bright lights destroyed my night vision. I was making a circle with my right wing down when I ran out of gas. I reached down to change tanks and as I raised up I crashed going 210 knots."

A third case concerns a flight of six F6F-5's having mixed results with respect to fatalities.

Case 3. Returning from rocket firing practice under a 900-foot ceiling, the formation, flying at 500 feet, entered a fog bank which extended to the ground. The flight continued straight and level for about a minute, then commenced a right turn using a 30-degree bank. Two pilots broke off and left the formation when they noticed that the division was at 300 feet in a steep nose-down turn. The remaining four aircraft crashed into the ground in formation a few moments later.

▶ *Comment:* **In Cases *1* and *2* the pilots made their first major errors when they let down without first shifting to a full main fuel tank. The failure of the pilot in Case *2* to utilize his radio altimeter was a major cause in his getting into a position where an accident could happen to him; impairment of night vision should be avoided, but not to the exclusion of employing the best instruments available to fix one's position and altitude. Altimeters, gyro horizons, compasses and fuel gages are instruments that are vital to flight safety especially at night or during low visibility.**

The pilots in Case *3* who survived, in spite of their leader's apparent confusion, owe their lives to their own alertness in detecting a dangerous attitude of the formation and immediately breaking away to fly on instruments. As has often been stated, formations breaking up during periods of low visibility multiply the chances of collision, but every pilot, like every ship captain, must be decisive in applying the GENERAL PRUDENTIAL RULE. Never forget that the pilot is solely responsible for the ultimate safety of his plane.

Tow Planes and Lightning

A report concerning lightning discharges affecting tow lines and sleeves has been received from the Philippine area.

While no damage was sustained by the JM-1 and TBM-3 planes involved, probably due to the fact that the structural units of these aircraft were sufficiently bonded to eliminate internal arcing, it is essential that pilots be made aware of the inherent danger of flying into the areas beneath cumulo-nimbus clouds (thunderheads).

The 5000 to 7000 feet of metal cable used in towing a sleeve astern of an aircraft provides an excellent conductor for the electrical charges built up within cumulo-nimbus clouds. In dragging this conductor through the highly stressed electrical field, the pilot provides the electrical charge with a more effective method of discharge. In other words, the tendency is for the discharge to take place along the metallic conductor rather than by the normal method—through the air. An electric discharge – or lightning stroke – then occurs.

The tremendous potential developed within the electrical field is sufficient to produce a current on the order of 30,000 to 100,000 amperes. The excessive heating which then results will frequently cause the tow cable to "smoke" because of the vaporization of the coating of moisture that clings to it after passing through a precipitation area. Although the one-eighth inch cable is classified as "unoiled," a very thin film is left as protective covering against normal corrosion. The oil, too, may ignite or "smoke."

As stated above, reports of this phenomena have not, to date, disclosed serious damage to the aircraft used in towing the target sleeves. It is, however, mandatory that pilots avoid towing the sleeves into cumulo-nimbus areas whenever possible. Failure to obey this rule may well have fatal results.

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. **In case of a forced landing resulting in minor or no damage but causing a delay of over two hours, to whom must the pilot report and by what means?**
2. **A formation has the right-of-way over a single airplane except when?**
3. **If cleared on routine contact flight plan and flight is completed without incident, it is unnecessary to file a notification of arrival. True or False?**
4. **During simulated instrument flight in solo aircraft, what is the minimum altitude below which the hooded pilot should immediately remove his goggles and proceed contact?**
5. **It is dangerous to attempt take-off with ice or frost on the wings but loose snow on wings will blow off and not cause any trouble. True or False?**

(Answers on page 40)

Within Gliding Distance

Case 1. A pilot took off in an F4U-1 on an engine "run-in" and did not return on schedule at 1600. Nothing further was heard from the pilot, and all rescue and search facilities were put into operation with negative results.

Case 2. The pilot of an F6F-5 performed a full-power check while flying at only 1500 feet over the water. Upon retarding manifold pressure to 30 inches, RPM dropped off necessitating a forced water landing.

Case 3. An F6F pilot (500 hours) experienced engine failure at 1000 feet while 15 miles from base during engine test. By the time he checked the controls in an attempt to locate the difficulty, it was too late to jump. The ensuing forced landing was made with flaps up, hood closed and shoulder harness not locked. Also, the right wing was low on contact with the ground, causing the plane to cartwheel. The pilot was seriously injured.

Grampaw Pettibone says:

I can tell you an easy way to prevent washouts during test flights of this nature. Simply *stay within gliding distance of the field.*

Granted it isn't very interesting to drone around for a long time over the same airport, but if the alternative means additional and unnecessary accidents, then the answer is clear. And the record does show this, to the tune of two strikes a month.

If you are not interested in saving planes, what about your own neck? Think about your poor orphaned grandchildren!