CALLBACK ASRS
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A Frequency of Digits

Among the most famous one-liners from the black-and-white movie era was W.C. Fields' sly flattery of Mae West, as he admired her hand: "Ah, what symmetrical digits you have!" Yet digital symmetry–identical or very similar number elements used in radio frequencies–is a less amusing subject to many pilots, especially when similar digits are assigned to ILS frequencies for parallel runways.

The limited number of ranges available for ILS frequency assignments is undoubtedly one reason that repetition of numbers, or use of similar numbers, occurs. Regardless, a recent report to ASRS from an air carrier pilot illustrates the problems that can ensue when a flight crew fails to verify navigation radio settings because of high workload during the final approach:

■ *We had been deviating around cells since we had reached the southern tip of Florida. We were given an approach clearance for the ILS to 9R. The First Officer [F/O] was flying the aircraft and I was concerned with a cell that had been on the field and at the time was located at the boundary of the airport. I had looked at the F/O's radios and had seen the proper inbound course dialed in and a frequency of 110-something. Before we got to the initial approach fix, the Approach Controller told us to turn right 20 degrees and intercept the 9R localizer. It was at this time I realized that my F/O had tuned in 110.3 instead of 110.9, the localizer for 9R. We had initially been on the localizer for 9L. Fortunately, approaches were not being made on that runway at the time. I think a major contributing factor to this incident is the fact that both localizer frequencies for landing in the same direction start with 110 (110.9 for 9R and 110.3 for 9L). Interestingly enough, both localizer frequencies landing to the west start with 109 (109.1 for 27R and 109.5 for 27L).*

Our reporter wrote that he had never previously encountered this situation. However, a cursory look through the approach plates for a number of major metropolitan airports revealed quite a few instances in which parallel runway ILS frequencies are similar.

Some parallel runway ILS frequencies have the same first three digits, and only the decimal digits differ:

33R/L	111.95/111.7	Baltimore-Washington Int'l
11R/L	110.3/110.7	Minneapolis-St. Paul
8R/L	109.9/109.3	Atlanta

One ILS frequency was found with identical decimal digits, and nearly identical first three digits:

2R/C	111.75/110.75	Nashville, TN

Dallas-Ft. Worth has an interesting situation with its parallel cluster "Right" ILS runways assigned the same first three digits, and its parallel cluster "Left" ILS runways also assigned the same first three digits:

18R/L	111.9 / 110.55	Dallas-Ft. Worth
17R/L	111.35 / 110.3	Dallas-Ft. Worth

Miami International appears to be the only airport with a double whammy–its easterly parallel runways are assigned frequencies with identical first three digits, and the reversed, westerly parallel runways are also assigned frequencies with identical first three digits.

Frequencies with similar or identical number elements can certainly play a role in incidents such as the one above reported to ASRS. However, careful selection and visual verification of radio frequencies (especially with electronic displays), combined with verbal callouts of the navaid frequency, go a long way toward preventing these types of incidents.

From Angels to GRUMPs

CALLBACK's readers occasionally like to embellish on stories and safety tips offered here, and this was the case with our December '94 issue (#187), which inspired several letters of interest. In response to our "Guardian Angels" item about a Cherokee Six internal fuel drain actuator that was accidentally activated by a passenger, one pilot shared this more uplifting experience:

✍ *I owned a converted Twin Comanche. I had been to Florida, from where I filed IFR in lousy weather back to North Carolina. Level, at altitude and in clouds, I shifted to the outboard tanks, and shortly thereafter the right engine went dead, windmilling. The fuel gauge showed a full tank. I shifted back to the main tanks, and the engine started up again.*

During the preflight I had drained a not insignificant amount of water from the right outboard tank (there had been heavy rains in Florida and I had never learned that I should have exchanged the short neck gas caps for the tighter long neck). So I decided to switch back to the outboard tank and then pull the fuel drain which fortunately is inside the cockpit. I didn't have to drain for long before the engine again was running as it should.

Inboard fuel drains can save the day...

Several readers responded to our article on "GUMP," offering their own variations on this familiar acronym. First, from a pilot who advocates GRUMP:

✍ *Somewhere in my past, someone recommended adding an "R" for Radio, making it GRUMP...particularly when flying VFR from a field using the CTAF to another [field] which uses a different CTAF frequency. [In these situations] it is easy to forget that all the chatter coming over the radio is not on the [frequency] you need. At controlled fields it is less likely that the radio will be mistuned, however frequency changes are easy to miss.*

Another correspondent likes GUMPS–with the "S" standing for "Seatbelt."

ASRS Recently Issued Alerts On...
Spoiler delamination visible only inflight on a B737-500
Alleged design flaw in an L-1011 fuel shutoff switch guard
Questionable ATC sequencing of a B-727 behind a B-757
Flight/ground crew illness attributed to rain repellent leak
Inadequate length Flight Attendant seatbelts on a DC9-30

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December 1994 Report Intake	
Air Carrier Pilots	1980
General Aviation Pilots	630
Controllers	70
Cabin/Mechanics/Military/Other	27
TOTAL	**2707**

TELL YOUR STORY TO ASRS

A Call for Wake Turbulence Encounter Reports

Are you a pilot who has recently experienced wake turbulence produced by another airborne aircraft? If you're willing to tell the Aviation Safety Reporting System (ASRS) about it, you can help support an FAA effort to reduce the frequency and danger of these events, and make a safe system even safer.

ASRS Telephone Interviews. At the request of the FAA, the ASRS will be conducting detailed telephone interviews (called "structured callbacks") with pilots who report wake turbulence incidents to the ASRS. Reporter participation is voluntary, and as usual, all personally identifying information will be removed before the ASRS research data are given to the FAA. Only aircraft make/model information will be retained in the ASRS data.

The ASRS callback effort will begin in March 1995. Based on your reports, the FAA will use the information to develop models that can accurately predict wake vortex phenomena and help evaluate turbulence separation criteria for aircraft. The collection of wake turbulence incident data by the ASRS is the first phase of an extended FAA effort to track and monitor wake turbulence incidents.

How the Interviews Work. Here's how the structured callback works: You report a wake turbulence incident to the ASRS, using a NASA form obtained from your company; from an FAA Flight Standards District Office or Flight Service Station; or directly from ASRS at (415) 969-3969. ASRS will contact you for an interview appointment in one of two ways: by a telephone call to the phone number given on your reporting form ID strip, or by letter to the address on your ID strip (if you give no phone number). You will be asked whether you're willing to participate in a telephone questionnaire about the incident. If you are, ASRS will make an appointment to call you back at a convenient time for the interview.

The interview itself will take approximately 45 minutes. If there are any questions you prefer not to answer for any reason, the interviewer will simply go on to the next question. *And you will receive your report ID strip back–with no record of your identity retained by ASRS–as soon as the interview is complete.*

The Bonus Is Improved Safety. Many pilots who have participated in past ASRS structured callback efforts have found this experience extremely rewarding. In addition to supplying important research information that might not be included in a written ASRS report, the interview process provides a unique way for pilots to help improve the system and give something back to aviation.

So remember–if you're a pilot who has experienced (or even suspected) a wake turbulence encounter, ASRS is waiting to hear your story.

Tall Ships and Short Planes

As if the FAA didn't have enough to worry about...here's an unusual report to ASRS that shows it's not just aircraft that are vulnerable to wake vortex encounters. The flight crew reported that they were flying a Boeing 757 on an ILS approach to a coastal international airport, when...

■ *ATC advised us that a tall masted sailing ship was in the channel. We replied that we had the ship in sight moving from (our) left to (our) right... As we flew over the channel, the ship was just slightly to the left of the ILS centerline. The Captain deviated slightly to the right and stayed slightly above the glide path. I observed the ship through the Captain's left aft window as we went by.*

After landing we were notified that Tower observed some damage to the top of the ship by wake turbulence.

Magnetic Mystery

Experienced pilots know that it's a good idea to check the accuracy of their directional gyros, HSIs, or Flight Directors against the wet compass before making a takeoff or landing. Here's one reason, as described by a First Officer operating out of New York's La Guardia airport:

■ *Our clearance required a turn to a heading of 360 degrees after takeoff on Runway 31. Our gate is very close to the departure end of Runway 31. Start-up, checklists, and taxi involved less than 4 minutes and we were cleared for takeoff upon reaching the end of the departure runway. During the takeoff roll, I noted that my HSI read 350 degrees when it should be reading 310 (runway heading). The Captain's HSI and both our RMI's read the same erroneous heading. No flaps or instrument failure warnings were present. With some help from Departure Control we managed to get on our correct heading and subsequently re-synced the HSI's against the wet compass. All further operations were normal...*

We learned later that the gate we had parked at prior to our departure had produced gross compass swings in the past on some aircraft. Evidently some magnetic anomaly is present there, producing as much as 40 degrees of compass swing. A subsequent rapid departure does not give the compass system time to re-sync to the correct heading and if the crew doesn't catch it, a problem after departure can develop. Our company has since issued a NOTAM in our release papers that warms against compass swing possibility at that particular gate.

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