CALLBACK

From NASA's Aviation Safety Reporting System

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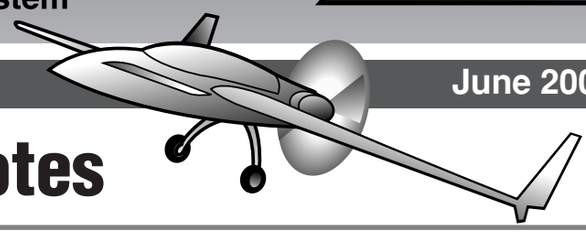

Experimental Aircraft Notes

On July 26th the Experimental Aircraft Association (EAA) will launch the "Air Venture Oshkosh 2000," the nation's largest fly-in event held each year in Oshkosh, Wisconsin.

The EAA Oshkosh fly-in typically attracts about 2,800 participating aircraft, including homebuilts, antiques, classics, warbirds, ultralights, and rotorcraft. Over 500 forums are conducted by aviation leaders, NASA researchers, FAA personnel, aircraft designers, and a host of others. There are also exhibits galore, daily air shows, and many other attractions that make this a unique aviation event.

As a tribute to Oshkosh 2000, *CALLBACK* presents excerpts from several ASRS incident reports involving experimental aircraft. We lead off with an incident that reminds us of a clever caption used years ago by *CALLBACK's* founding Editor, Rex Hardy.

When Is a Door Not a Door?

■ *This emergency situation occurred while at cruise, at 10,000 feet on an IFR flight plan. My wife, the only passenger in our 2-seat experimental aircraft, noticed that the pilot side gull-wing style door, was ajar. The latch was in the closed position. The locking pin on the back side of the door was extended but not engaged into the receiving hole in the plane. The font locking pin was engaged. I attempted to fully close the door. While attempting to close the door, the front locking pin became disengaged, the door flew open and totally departed the aircraft.*

Although the aircraft is approved for flight without doors, the pilot (I) feared that the tail section or a control surface may have been damaged by the departing door. I declared an emergency. Center instructed me to "close" [flight plan] on the ground and say if there were any injuries.

The plane flew normally… to the airport and we landed without any further problems. Immediately after landing I contacted the local FSS, closed the flight plan, said that there were no injuries and asked if they would contact Center and tell them we were safely on the ground… In retrospect I should have landed the plane before attempting to fully close the door…

Gear-Up 'Gotchas

A number of gear-up landings reported to ASRS by pilots of experimental aircraft involve a mechanical or electrical problem, coupled with the pilot's failure to use a before-landing checklist:

■ *Landed with nosewheel retracted. Minor damage to aircraft. Nosewheel up/warning for throttle to idle was disabled due to electrical wiring problems. New aircraft (15 hours since completion) and new [experimental aircraft] pilot. [I have now] established specific procedure to lower nosewheel prior to turning base leg pattern.*

The pilot of an experimental turbojet trainer describes how a demo flight with a prospective buyer (the Pilot Flying in the incident below) became a real drag:

■ *…On the final approach, the Pilot Flying [PF] was distracted due to potential conflicting traffic on long final. As a result, an unusual pattern was flown. As PIC, I directed the PF to perform the tasks of power management, spoiler deployment, flaps and landing gear extension, in a much more rapid sequence than normal. A close-in, high final approach was flown with the engine unspooled, at flight idle. During the flare, I recognized a lower attitude than normal and looked at the landing gear indicator to confirm wheel position. I instinctively knew that the wheels were not down but wasted approximately 2-3 seconds seeking confirmation from the gear indicator system. As the flare continued, antennae and flaps began dragging on the runway, further decelerating the aircraft. A late attempt at full power was made, but the engine response was not sufficient to go around…*

A contributing factor was that the Pilot Flying was very unfamiliar with this airplane. Further contributing is that this aircraft has no aural/visual landing gear warning system linked to throttle or flaps. Human performance considerations: Poor perception by the PIC of the PF's ability. Poor judgment of the PIC in not terminating an 'unusual' approach.

CALLBACK Says
'So Long for the Summer

Dear Readers: This fiscal year ASRS experienced a 6.5% budget reduction by its primary funding source, the Federal Aviation Administration, which in turn underwent broad budget cuts across the agency. This funding shortfall has required ASRS to reduce its output of products and services to the aviation community. In recent months the ASRS Program has sharply reduced database search services, suspended its topical research program, cut back on outreach activities, and reduced publication activities.

Unfortunately, one of the products affected is *CALLBACK*. For the first time in its 21-year history, *CALLBACK* will not publish July and August issues. ***Readers will receive their next issue of CALLBACK (#253) in September 2000***.

We hope the ASRS funding picture will be brighter next fall, at the beginning of a new budget year. Until then: stay safe, and stand by for our next squawk.

– The Editor

ASRS Recently Issued Alerts On…
A B737-300 rudder jamming incident
A potentially hazardous noise abatement procedure
Jet blast hazard at a major East Coast airport
Swearingen SX300 tire assembly failure during landing
Multiple runway incursion incidents at a Midwest airport

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April 2000 Report Intake	
Air Carrier / Air Taxi Pilots	2131
General Aviation Pilots	681
Controllers	92
Cabin/Mechanics/Military/Other	180
TOTAL	**3084**

Cockpit Irregularities

An article in the April 2000 *CALLBACK* (#250) on the effects of passenger misconduct on flight crews has attracted much aviation community interest. As a sequel, here's an incident recently reported to ASRS that involved a passenger who used an airline's "secret knock" to gain entrance to the cockpit during flight.

The Secret Knock

■ *While in extensive holding for ATC delays, I notified the passengers that we might have to divert [to airports short of destination]. A few minutes later, the First Officer and I heard the "secret knock" on the cockpit door, so we unlocked the door. We turned around to face the door and were surprised to see a young female passenger standing at the doorway she had just opened. The female passenger then said to us: "You can't do this to us." The First Officer and I told her to shut the door and go back to her seat. She repeated: "You can't do this to us." The First Officer and I repeated our command to go back to her seat, which she then complied with. When we arrived at destination, our customer service reps called the local police, who met the aircraft and the female passenger on the jetway for questioning. Corrective Actions:*

✈ *The FAA should publish and display, in public view at all major airports, the consequences and penalties for interference with the flight crew members. This will educate and remind the flying public that interfering with crew members will not be tolerated.*

✈ *Airlines that use "the secret knock" on the cockpit door for entrance into the cockpit should think of other ways to make it tougher for unauthorized individuals to access the cockpit. Ideas might include: issue cockpit door keys only to authorized personnel…*

An ASRS callback to the Captain who reported this incident revealed that the passenger had been seated in First Class. When questioned later by authorities, she said in her defense that there was no sign on the cockpit door that prohibited entry. The reporter affirmed this was correct. Apparently the passenger may have observed a Flight Attendant's entry procedure to the cockpit before deciding to try it out.

By the Wiggle, But Not "By the Book"

Seasoned pilots may develop their own repertoire of handling techniques to deal with aging aircraft. Not all of these techniques may be safe, especially if they lead less experienced crew to ignore Standard Operating Procedures. An incident involving a Captain "on the roll" in a DC-9 illustrates:

■ *At the initial power application for takeoff from Runway 23L, the takeoff warning horn sounded. Captain reduced thrust and wiggled flap/slat handle. The horn silenced and flaps [were] verified in 5º extension by indicator, slats indicated extended by blue "slats extend" light. Takeoff continued. [We performed a] maintenance write-up on system at destination airport.*

One-Size-Fits-All Maintenance Problem

In the past year several incidents have been reported to ASRS in which Boeing 737-100 and -200 wheel bearings were incorrectly installed on the series -300 aircraft. Now here's a Captain's report that describes the installation of a B-757 wheel bearing on a B-737-300 wheel – with potentially catastrophic results:

■ *Shortly after departure from Runway 34L the Tower controller informed us we had lost a wheel on the takeoff. In a very short period of time we were told we had lost either the right outboard main gear wheel, the right inboard main gear wheel, or even both right main gear wheels. I elected to stay in the local area and reduce fuel to an acceptable level (weight) for landing. The B737-300 does not have fuel dumping capabilities.*

Since I did not know the integrity or even existence of the remaining wheel on the right side, I wanted to reduce the aircraft weight as much as possible for landing. We held outside the [airport] area for two hours. I realized that if we held for an extended period, we would be making an emergency landing, and quite possibly a passenger evacuation after sunset. With this consideration, I held until the time we could make a low pass, get a visual inspection from the Tower and return for landing just prior to sunset.

The low pass was conducted and the ATC personnel, as well as company mechanics, reported the right outboard wheel was intact, the inboard was missing. After the visual inspection, we returned for landing… The approach and landing were uneventful… The aircraft was towed to the maintenance hangar where it was discovered that the main wheel bearing on the right inboard wheel had failed. The wheel departed the airplane, leaving the axle and the brake assembly intact on the landing gear... There was absolutely no indication on the takeoff roll that the wheel had failed. In fact, when the errant wheel was located, it too was intact and even still inflated.

The B-737-300 wheel apparently will accept B-737-100, 200, and B-757 bearings and look like a correct installation. The underlying problem is that part numbers are on the bearing race are normally covered with grease. Unless maintenance technicians take time to verify the B-737 part numbers, the wrong bearing may be installed on the wheel.