

Aviate, Navigate, Communicate March 2012

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When flying we are often presented with more than one situation at a time that requires our attention. As we become more proficient, we get better at “multitasking,” handling more than one situation at a time – flying while talking on the radio, etc. However, there are times when even the most experienced pilot is task saturated. During those times we are taught to prioritize our response to multiple situations presented at the same time – **“Aviate”** first (fly the airplane), then **“Navigate”** (make sure the airplane is going where you want it to go) and finally **“Communicate”** (respond to Air Traffic Control). Following is a compilation of actual incidents within our program where there was a breakdown of Aviate, Navigate, Communicate. The information from these incidents was gleaned from discussions with the pilots involved, listening to ATC tapes and from the secret listening devices in every airplane and office. After each incident is an analysis and my thoughts on what could have been done differently.

## Incident 1

Tower (shortly after CRM 1 had lifted off on a soft field take off): “Crimson 1 left turn out when altitude permits, contact OKC approach 124.6.”

Crimson 1: “Going to OKC approach.”

Examiner to Pilot as aircraft approaches level off at 6500 feet: “Done all of our checklists?”

Pilot: “Oh, no, didn’t do the climb check.”

Examiner: “Did you notice we still have a notch of flaps in?”

Pilot: “Oh s\*\*\*!”

### Analysis:

We normally expect the frequency change after climbing and turning out. When tower gives it to us early there is a tendency to “skip ahead” to that point in the flight. In this case that caused the pilot to skip fully retracting the flaps as well as the climb checklist.

### Better Course of Action:

Acknowledge transmission, but fly the airplane – retract flaps, turn out, climb to altitude, do the climb checklist. IF YOU FORGOT THE FREQUENCY, ASK TOWER TO GIVE IT TO YOU AGAIN.

## Incident 2

OKC Tower (to aircraft on ILS, inside the FAF): “Crimson 2, new climb out instructions, turn left to 260, climb to 3000 contact OKC Approach on 133.6.”

Crimson 2: “Left to 260, 3000, Approach on 133.6.”

The pilot then wrote this information down on his kneeboard. By the time he looked back at his instruments, the aircraft was rolling to the right with an increasing descent rate and was approaching full scale deflection on both glide slope and CDI.

### Analysis:

The pilot interrupted Aviate and Navigate to ensure he could Communicate later.

### **Better Course of Action:**

Acknowledge transmission, but Aviate and Navigate – do not break scan to write anything down. AT MISSED APPROACH POINT, CRAM, CLIMB, CLEAN (fly the airplane). FORGOT THE NEW INSTRUCTIONS? – MAINTAIN RUNWAY HEADING AND ASK TOWER TO REPEAT THE INSTRUCTIONS.

### **Incident 3**

Aircraft arrives at missed approach point on ILS to 35R at Will Rogers.

Crimson 3: “Tower, Crimson 3 going missed.” Throttle brought to full power.

Tower: “Crimson 3, Execute climb out instructions, contact OKC Approach.”

Crimson 3 (while starting a turn to 260 degrees) “Going to Approach. OKC Approach

Crimson 3 with you, climbing to 3000.”

Variation 1

Examiner to Pilot: “Doesn’t look like we’re climbing to me – in fact we’re descending and heading right into the tower!”

Variation 2

Examiner to Pilot as aircraft is climbing out: “Do you always keep the flaps in this long?”

#### **Analysis:**

The “4 C’s” when going missed are: Cram, Climb, Clean, Communicate. The pilot Communicated first and then Crammed, but never initiated the Climb or Clean.

#### **Better Course of Action:**

Aviate (Cram, Climb - which includes putting in some nose up trim, Clean), Navigate (start your turn) and **then** Communicate to tower that you’re going missed.

### **Incident 4:**

When doing a touch and go, shortly after lift off the pilot looked down to check her next frequency for the next leg of her cross-country flight. At this point the aircraft drifted off runway centerline and settled back toward the ground. The left wheel and prop struck an airport sign.

#### **Analysis:**

Here we go again – putting Communicate ahead of Aviate and Navigate.

#### **Better Course of Action:**

Perform a full stop landing. Check and load the correct frequencies and verify on course heading at that time. Note: For private pilot students a full stop landing on solo cross-country flights is mandatory.

### **Incident 5:**

The Instructor and Pilot were shooting a LOC 03 approach to OUN in hard IFR (ceilings 400 feet visibility 2 miles). This was before tower had its own radar feed.

8231V: “Tower 8231V with you localizer 03 full stop.”

Tower: “31V, report Sooner.”

31V: “Will report Sooner.”

Next Transmission from 31V: “Tower 31V clear of the runway request taxi to park.”

Tower: “Uh, 31V you never reported Sooner and I never cleared you to land. Taxi to

park, monitor ground and come up and see me.”

Instructor to Self: “S\*\*\*”

### **Analysis:**

This was a challenging approach with an instrument student. The instructor was putting everything he had into helping the student Aviate and Navigate the Approach. However, we are not absolved from our responsibility to communicate just because it’s the “last” priority.

### **Better Course of Action:**

This one’s a bit tougher. Sometimes we’re asked to report the FAF, but a lot of times we’re not. In VMC, sometimes it’s report the river or report two mile final. If we don’t get the same reporting requirement every time it’s harder to build a good habit pattern. One clearance we always get is “CLEARED TO LAND,” or “CLEAR FOR THE OPTION.” If we haven’t heard that clearance and we’re inside the FAF, or on short final, we’ve probably missed something, and it’s time to query tower.

## **Incident 6:**

An assistant chief instructor applicant with an examiner from the FSDO on board had just made her last landing. As they were rolling out:

Tower: “43F exit at Bravo, Taxi on Charlie to Echo, Hold Short of Runway 21 at Echo.”

43F: “Taxi to Park Monitor Ground.”

No response from Tower.

As 43F approached Runway 21 on Echo:

Pilot: “That’s strange – there’s an airplane on short final, what was tower thinking?”

Examiner: “Well, let’s get across the runway.”

As 43F taxi’s across the runway:

Tower: “43F you were instructed to hold short! Come up and talk to us!

Later: The applicant and examiner refused to believe they were told to hold short until they heard it on the tape!

### **Analysis: Lots of stuff in this one.**

1. The pilot and examiner were both concentrating on Aviating (slowing down and clearing the runway). The stressful check ride flight was over, time to relax! When the communication came from tower they “heard” what they expected to hear – “taxi to park, monitor ground.”
2. Tower is not infallible, they missed the incorrect read back. Pilots aren’t the only people who get task saturated!
3. Both the pilot and examiner saw the aircraft on short final to the runway. However, instead of holding short and querying tower, they elected to cross because they thought they had been cleared to cross and they had plenty of time. They did clear the runway before the aircraft on final touched down.
4. Experience does not provide immunity from screwing up!

### **Better Course of Action:**

1. If you get taxi instructions while still on the runway, clear the runway and perform the after landing checklist. Then ask tower or ground to repeat the taxi instructions. **If everybody does this, maybe we can teach OUN tower to stop giving taxi instructions while we’re still on the runway!**
2. If you see a traffic conflict, don’t assume anything. If you’re piloting the aircraft on

the ground and see an aircraft on short final, hold short. If you're piloting the aircraft on short final and see an aircraft crossing in front of you, go around!

3. Finally, the flight isn't over until the aircraft is secured on the ramp. Don't get complacent, and never let down your guard!

## **Incident 7:**

The power off accuracy landing had just been reintroduced into the commercial PTS. Two instructors were practicing this maneuver at DJ Perry. There was a pretty hefty tailwind speeding the aircraft along on downwind. There was a lot of discussion about when to pull the power, aim point, touch down point, when to start the turn, when to start reducing airspeed, when to add flaps, etc.

In the round out the flying pilot added full power and executed a go-around.

Non-Flying Pilot: "What are you doing?"

Flying Pilot: "Look at that (gear indicator lights). I did one last check for three green and didn't see it! We almost made a gear up landing!"

Non-Flying Pilot in state of denial: "Holy s\*\*\*! The gear warning system is obviously broken! We need to write that up!"

Subsequent check of the gear warning system indicated it was working properly.

### **Analysis:**

The pilots got rushed and put Navigate (making the aircraft go where you want it to go) ahead of Aviate (running the GUMPS checklist). They probably could have done a more thorough job of "chalk talking" this maneuver prior to the flight. At the last second the good habit of making one last check for three green saved the day.

### **Better Course of Action:**

Perform a thorough preflight briefing when introducing new maneuvers.

For the power off accuracy landing anticipate that things happen fast – tighter pattern, short approach. Get the gear down and checked as you turn down wind. If at OUN don't wait till mid-field to ask tower for a short approach – ask early.

Finally, for any landing, **verbally call out the GUMPS check**. Check and **verbally call out three green on final**. We must build this habit in our students. Good practice – if the student doesn't call three green at some point after turning final, call for a go-around!

## **Incident 8**

An instructor and student were attempting a landing in the Arrow in a stiff crosswind. They elected not to use flaps. Power setting was 15-16 inches until just before touch down. There was a lot of instruction on crab angle and when to transition to the side slip and the amount of control input to maintain the side slip. The aircraft (43F) settled into a gear up landing.

### **Analysis:**

As in Incident 6, Navigate was put before Aviate. Unfortunately, there was no GUMPS check and no last check for three green on final to save the day. Another contributing factor was that the instructor was finishing up a long day. The weather was obviously challenging.

### **Better Course of Action:**

Aviate first – build the strong habit pattern for performing the GUMPS check and last check for three green on final. **Verbalize these checks** so there is no doubt they're being

done. A strong, solid habit pattern will help overcome the distracters of a challenging situation.

## Incident 9

An instructor and CFI student were doing pattern work at Purcell. On upwind they experienced a significant loss of power. The instructor took the controls, pitched for best glide and picked a landing spot in the wind shield. The instructor determined there was no time to trouble shoot and continued to fly the airplane to the touch down spot. The instructor told the student to send out a mayday on 121.5. The aircraft touched down in a cow pasture, under control and rolled to a stop. Nobody was injured and the aircraft was not damaged.

### **Analysis:**

When confronted with this emergency the pilot followed his training. He Aviated first and Navigated to his landing spot. He made the judgment that attempting to trouble shoot would impede the primary task of maintaining aircraft control and navigating to the landing spot. He delegated the task of Communicate to his student. There was a bit of luck involved in that there was a good flat spot in his wind shield to land on. Had there not been a good landing spot, he still would have maximized his chances of survival by flying the aircraft and maintaining control to the landing point.

### **Better Course of Action:**

N/A. He did everything right and lived to tell the tale! We do a pretty good job of briefing what we would do about an engine failure during each phase of the take off. Are we just going through the motions with this briefing or are we creating a good habit that we will instinctively follow when that engine failure happens? Without being paranoid we can help ourselves by running a few “what if” drills. I’ve just departed runway 21 (or 35, 17 or 03). What if I lost my engine now?

**What would I do first? – Pitch and trim for best glide.** Now, where am I going – golf course?, I35 median?

### FINAL NOTE:

I SUPPOSE ITS HUMAN NATURE TO SPECULATE ON WHO WAS INVOLVED IN THESE INCIDENTS AND TO COMPARE THEIR “SKILL” LEVEL WITH YOURS. IF YOU DO THAT, YOU’VE MISSED THE POINT. YOU NEED TO REALIZE THAT **ANY ONE OF US CAN FIND OURSELVES IN THESE TYPES OF SITUTIONS.** IF WE DON’T PRIORITIZE OUR ACTIONS PROPERLY THE SITUATION WILL BECOME AN ACCIDENT OR INCIDENT. EXPERIENCED INSTRUCTORS WERE THE PRIMARY “CULPRITS” IN INCIDENTS 5 – 9. I WILL SAY THAT THESE INSTRUCTORS AND ASSISTANT CHIEF INSTRUCTOR IN THESE INCIDENTS ARE LONG GONE TO BIGGER AND BETTER THINGS IN THEIR AVIATION CAREERS. TO EMPHASIZE THE POINT THAT NO ONE IS IMMUNE FROM SCREWING UP, I WILL ALSO ADMIT THAT THE CHIEF FLIGHT INSTRUCTOR WAS DIRECTLY INVOLVED IN ONE OF THESE INCIDENTS (NOT #9).