Aviation Academy *Phoenix*

The Seat Cushion

Saving your tail and preventing injury since aviation's inception!

A May Day

By Brent Crow

We have all heard stories of aircraft accidents which we hope never happen to us. Even when they don't – we are still affected by them. They alert us to our shortcomings, but they can also show us our strengths.

On a May day in 2016, a flight of two AT-6's were cleared for take-off at Falcon Field. At the same time, two student solo's and a dual flight were in the pattern. The dual flight was on final for 22L (Oxford 214), and a solo arriving from the north on a right base for 22R (Oxford 203). The other solo was entering the left base for 22L (Oxford 202). Twenty five nautical miles away to the west, an unforecasted thunderstorm was bearing down on Phoenix Sky Harbor Airport producing a dust front which was now approaching Falcon Field.

As the Flight of two AT-6's (callsign five eight golf) were climbing through 300 feet and over the departure end of the airfield, witnesses on the ground heard the wingman's aircraft engine sputter and pop. The aircraft began a turn to the right back to the airfield and a short, rapid, transmission is heard, "Dash two, Mayday."

The call came across so fast, the controller attempts to reply but all that comes out is the aircraft's callsign as she watches the aircraft plummet to the ground at the edge of the airport releasing a fireball and a plume of thick black smoke.

An AT-6 Texan

The controllers training immediately kicks in… "Oxford 214 go around!"

"Oxford 214 going around."

The students in both Oxford 202 and Oxford 203 are now presented with a view on base to final of a large plume of black smoke and flames over the departure end, and about 8nm away in the background a wall of dust rapidly approaches.

The controller continues, "North American 58G Flight, you've got an accident of your other aircraft, what is your intentions?"

"58G Flight, say again?"

It becomes evident that the lead aircraft in the flight of two has no idea his wingman has crashed. The controller advises the other AT-6 that both runways are now closed at Falcon. The closest airfield is Mesa Gateway, 10 miles south with its 3 parallel runways.

The pilot of the AT-6 replies, "58G flight roger, we'll go to Gateway." He still has not connected the dots.

The controller then shifts her attention to the two solo students on final. "Oxford 22R landing… Oxford 202 and Oxford 203, go around." Both reply simultaneously.

Then the student's training kicks in, "Falcon Tower, Oxford 202, this smoke cloud is coming in pretty fast, do you want me to divert to Gateway?" The controller confirms to climb to pattern altitude and fly southbound.

The controller also gives instructions to Oxford 203 to make a right turn to get him clear of the smoke. The controller asks the student in Oxford 203 where he wants to divert to – Gateway or Chandler.

"I'll go to Gateway, but I'm not sure with the airport…" replies Oxford 203.

The controller picks up that the student has never been to Gateway before and the controller comes back with a reply you seldom hear from Controllers. "Ok, I'll help you with that. Make a right turn, fly suggested heading 360." The student reads the instructions back and the controller also confirms that Oxford 202 is headed to Gateway as well.

Then the controller asks, "North American 58G flight, what's the tail number of the aircraft that crashed?"

Then the awful realization is made by the pilot, "Tower, North American 58G flight, was that our wingman?"

The controller replies in the affirmative, and the pilot of 58G returns the callsign to the tower.

Oxford 214 also checks in with Tower and states they are diverting to Gateway as well, but they are not sure of the frequency for Gateway Tower. The tower controller states that they will check on the frequency and then goes back to 58G to have him ident. After identifying the aircraft on radar, the tower gives 58G a suggested heading and approves a frequency change.

Then the controller goes back to Oxford 202, and asks him to ident and that she's looking up the frequency for Gateway Tower, but the student replies for the benefit of all listening, "That's alright, I've just been there and its 120.6." The controller approves a frequency change to Gateway Tower.

The controller then assists Oxford 203 with directions to Gateway Airport, who is also issued a frequency change.

The dust front is now 3 nautical miles from Falcon Field.

As Oxford 202 switches frequencies to Gateway Tower, the G1000 annunciator panel begins blinking red, with master warning chime and red text which reads, "ALTR FAIL." The student realizes his alternator has failed, and assesses the situation:

- He just witnessed an aircraft crash and is currently running on a heavy dose of adrena-

Dates to remember:

- 19 August- National Aviation Day
- 5 September- Labor Day **School Closed**
- 22 September– Equinox
- 28-29 October- Copperstate
- 31 October- Halloween
- 24 November– Thanksgiving **School Closed**

Look - Listen - Focus

By Theresa Farley

> time isn't worth noting.
>
> — Michael Parfit, 'The Corn was Two Feet Below the Wheels,' Smithsonian Magazine, May 2000.

No pilot wants to make a mistake, but we are human and mistakes happen. What can we do to help prevent mistakes and to avoid pilot deviations?

LOOK - LISTEN - FOCUS

Air carriers have developed standard operating procedures (SOPs) to increase the awareness of threats and identify mitigation strategies to minimize distractions. These strategies will work in the training environment as well.

Personally develop strategies for Pre-Taxi, Taxi Out, Taxi In, and Any Time in the following areas:

- Situational Awareness
- See and Be Seen
- Expectation Bias
- Distraction
- Haste
- Fatigue

The Facts

Pilot deviations are on the rise and causing frustration for pilots and ATC. Everything from runway and airspace incursions , failure to follow taxi instructions, attempting to take off when instructed to Line Up and Wait, and deviating from ATC instructions either by mistake or on purpose is occurring with an alarming regularity.

What Can You Do?

Educate yourself. Be aware.

Look. Listen. Focus.

The FAA and AOPA have developed posters and training material to help pilots recognize the dangers and techniques to mitigate the risks. Check out AOPAs Runway Safety course at www.aopa.org/lms/courses/runway-safety/

The FAA's pamphlet on Avoiding Pilot Deviations www.faa.gov/news/safety_briefing/2014/media/SE_Topic_09_2014.pdf

More strategies on threat and error management can be found in the paper by Michele Summers Halleran from Embry-Riddle Aeronautical University https://www.faasafety.gov/files/gslac/library/documents/2010/Sep/46721/Pilot%20Runway%20Safety%20Training-Final.pdf

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Air Carrier Threat and Error Management Response Factors

Situational Awareness	Properly comprehend taxi clearance and trap inherent errors, and know their position on the airport surface.
See and Be Seen	Adopt techniques to enhance the likelihood of being seen by traffic on final when moving on the airport surface.
Expectation Bias	Resist temptation to expect a certain clearance based on past experience with commonly used movement patterns.
Distraction	Avoid unnecessary distractions that could divert attention from safe taxi.
Haste	Avoid errors and undesired aircraft state resulting from time compression.
Fatigue	Address vulnerability to this ever-present human physiological factor.

Halleran, ERAU , 2010

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line.

- The dust front is rapidly approaching Falcon, with Gateway next in its path which will certainly bring gusty winds and reduced visibilities.
- He's in the process of navigating to Gateway while changing frequencies to Gateway Tower.
- He's keeping an eye on three traffic around him – 58G (2nm ahead), Oxford 214 (1 nm ahead) and Oxford 203 (8 o'clock and 3 miles in trail).
- Now his Alternator has failed… his first real in-flight failure of a system.

As a student with only 45 hours, and 25 hours solo he realizes he's overloaded. He makes a decision to call Gateway Tower and get the aircraft on the ground as soon as possible before things get worse.

"Gateway Tower, Oxford 202, Mayday, Mayday, Mayday. Alternator failure diverting from Falcon field 3nm to the NW request immediate landing."

Gateway Tower immediately clears the aircraft for landing on 12L, and the student lands without further issue. Behind him, Oxford 203 and Oxford 214 both make a successful landing.

It is a wonderful feeling, to see your student who at one time couldn't even taxi an aircraft, achieve the skills necessary to solo the aircraft around the pattern. Perhaps greater than that, is to see your student placed in a threatening situation and be able to successfully navigate through it based on decision making skills that you helped construct. It is also comforting to know that when the accident happened, everybody worked together to prevent the situation from escalating. All were saddened by the loss of a fellow aviator that day.

Controller being presented a Safety Commendation for her assistance in diverting the students safely.

After the event, the students involved wished to thank the Controller for her assistance during this event. The photo below is of one of the students presenting the Tower