



NATA Safety 1st eToolkit

Welcome to the 38th issue of the NATA Safety 1st eToolkit, our online safety newsletter, supporting the NATA Safety 1st Management System (SMS) for Ground Operations.

The NATA Safety 1st Management System (SMS) for Ground Operations is underway and many of the tools discussed in this and other eToolkits will be provided to SMS and PLST participants.



This monthly newsletter highlights known and emerging trends, environmental and geographical matters, as well as advances in operational efficiency and safety. Flight and ground safety have been enhanced and many accidents prevented because of shared experiences.

HOW'S YOUR CHEESE?

What do Swiss cheese and safety have in common? Quite a lot it turns out. Research shows that, without proper defenses in place, your company could have "holes" that allow accidents and other unwanted events to occur.

The "Swiss Cheese" model of how unwanted or unplanned events can occur was developed by Dr. James Reason, who is world renown for his work in looking at how conditions in individual organizations contribute to accidents.

Within every organization, there are layers: the decision-makers or top management, line management who implement top management's strategies, and the front-line staff or line activities. All three layers exist within the organizational culture, which can be healthy, unhealthy or somewhere in between.

In an ideal world, each layer within an organization works together to protect the system when a hazard or potential hazard arises. Unfortunately, the real world seldom functions in this manner. Holes in the defensive layers occur and, when these holes align, the organization can suffer a loss (see illustration on page 2).

Dr. Reason describes two types of conditions within an organization that contribute to loss: active failures and latent failures. Active failures are unsafe acts committed by people who are in direct contact with the system, and consist of: slips, lapses, mistakes, procedural violations, etc. Whereas, latent failures are pre-existing conditions that can lie dormant in the system for many years before they combine with active failures to create an accident opportunity.

Latent conditions are resident in the system, and arise from decisions made by designers, builders, procedure writers, top management, etc. These pre-existing conditions can take the form of items such as, time pressure, understaffing, inadequate equipment, fatigue, inexperience, etc.

Think of active failures as mosquitoes that can be swatted one-by-one, but never go away altogether. Whereas, latent conditions can be thought of as the swamp that must be drained in order to prevent the mosquitoes from returning.

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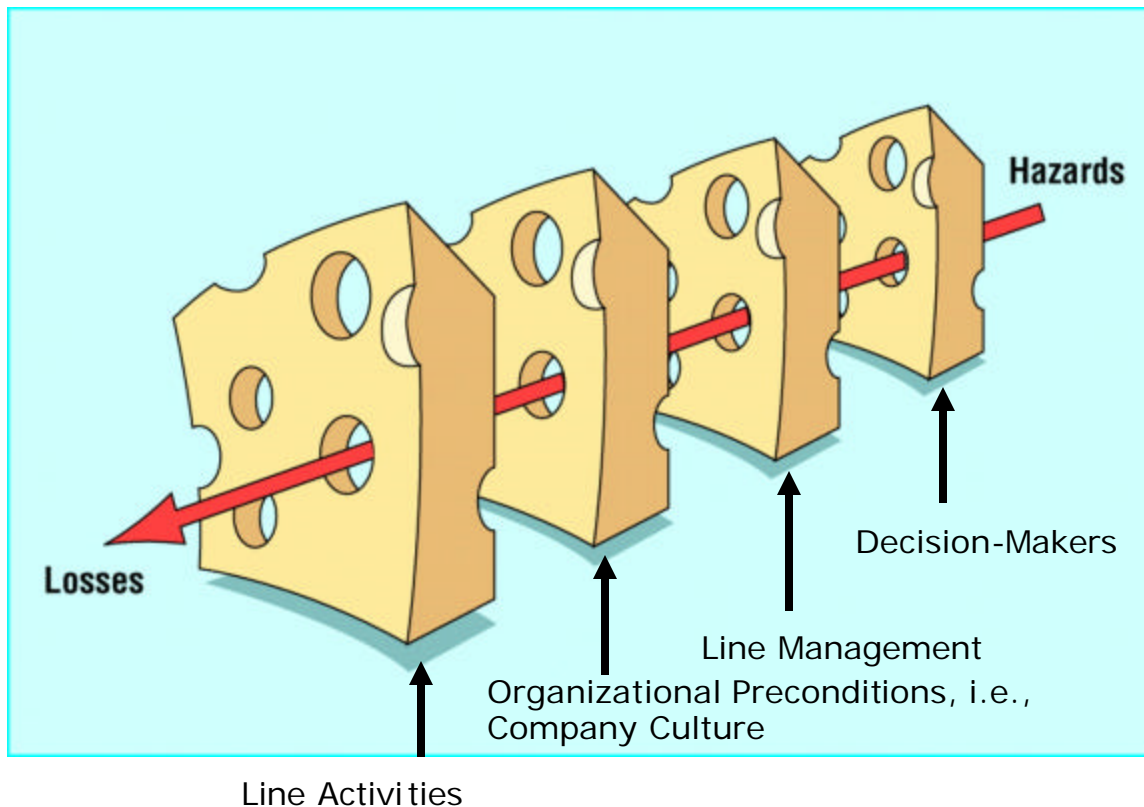
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An organization can respond to an incident or accident in either of two ways: The first is to blame the individual or individuals directly involved and go no further in the ensuing investigation (swat the mosquitoes). This is also known as the “person approach,” where you need look no further for the cause once the unsafe acts are identified.

The second response is a proactive approach and results when the organization is introspective and determines whether any pre-existing or latent conditions (the swamp) could have caused the incident.

The good news: Latent conditions can be identified and remedied *before* an adverse event occurs (*drain the swamp*). This can be accomplished with a top-down hazard identification and risk analysis plan within the company. Everyone at every level needs to be involved in this activity, which typically takes several months of dedicated effort to complete.

Once the initial effort is complete, an action plan for making the necessary changes to manage risk within the organization should be developed and monitored. The plan should be reviewed periodically and whenever change occurs within the company. It’s an ongoing process that results in proactive risk management. And this is what good safety management is all about. If nothing else, implementing a continuous hazard identification and risk management plan will allow you to move on to a different brand of cheese.



James Reason’s Swiss Cheese model of how defenses, barriers, and safeguards may be penetrated by an accident trajectory.



INSURANCE CORNER

Hangar Agreements Part 1

FBO's & Hangar Owners Should Require Tenants to Have Insurance

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The expansion of general aviation, especially in small to medium sized airports, has brought an explosion in new hangar construction. Private and municipally operated FBO's are expanding their hangarkeeper operations. In addition, individual hangar owners are getting into the hangarkeeper business as a way to offset the cost of construction and ownership.

The issue of airport operators developing and enforcing requirements for tenants to obtain insurance as part of a hangaring agreement is a constant point of discussion with aircraft owners. In meeting their fiduciary responsibilities well established and experienced airport authorities, FBO's and hangar operators have taken a great deal of time and effort to develop minimum risk management and insurance standards for leasing hangars, hangar space, T-hangars, or operating out of an airport. These include requiring tenants to obtain airport premises, property, and/or general liability insurance (to include auto insurance) as part of the hangar lease agreement in addition to or as part of their aircraft insurance.

No matter how small or large the operation, the principles remain the same. A part of good risk management includes good hangaring agreements that require tenants to properly insure themselves and their landlords against the perils of their aviation operation.

Why? It's a simple matter of protecting the FBO, airport authority, and/or hangar owner against the liability created by the actions of their tenants. While in most states it is illegal to operate an automobile without insurance, I know of no FAA regulation and only a couple of state laws that require even "liability only" insurance to operate a personal aircraft. Maybe it's a throwback to the free spirited origins of aviation, but countless aircraft operators strongly resist any attempts by airports to impose even the most fundamental insurance requirements as a condition of operation.

There are three typical scenarios involved in hangaring agreements for tenant aircraft.

1. A stand alone hangar lease in which the tenant is the sole occupant of the hangar.
2. Leasing a T-Hangar in a row of connected hangars.
3. Leasing hangar space in an open bay hangar. While each case has its own set of exposures and innuendos, all have one thing in common—the aircraft owner/operator should expect to be required to execute a formal, written hangaring agreement.

These agreements have evolved over the years from simple one page agreements to complicate legal documents. In the final analysis they all attempt to narrow the scope of one simple question: When an accident or incident occurs, who is responsible for the damage or injury? Who pays?



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Every situation is different, but ultimately, that is a legal question that only a court can answer. From a practical insurance point of view, we all know who may get stuck with the bill—the party who has insurance! Regardless of who is at fault, all too often, the airport operator or FBO gets entwined in litigation related to an accident for which they had little if any responsibility or control. Not requiring and/or enforcing proper insurance requirements for their tenants leaves them exposed to additional liability.

Does the fact the aircraft owner doesn't have insurance relieve them (the aircraft owner) from financial responsibility? No, but many times the plaintiff's legal council will go after the airport or FBO because it is an easier target with deeper pockets or has prospects of a quick settlement. The aircraft owner remains exposed to litigation and judgment by the plaintiff. Through a provision in the airport operator/landlord's insurance policy called subrogation, the insurance company also has the right to pursue the responsible parties to recover their losses. As the cost of claims continues to erode profitability, the uninsured party should expect that the insurance companies will pursue such remedies in the future.

To the airport operator or FBO the bottom line is cost. The small to medium market FBO has not benefited a great deal in this current competitive market that has seen insurance rates decline for aircraft owners. While there has been some price softening, Premises Liability and Hangarkeepers Legal Liability rates have held fairly steady. The boom in new light general aviation aircraft has seen aircraft values rise with a corresponding rise in the average cost of repairs. This is one reason is that over the past decade industry figures show the cost of claims continues to rise dramatically.

Airport operators can't afford to leave their business investment unprotected. The FBO with a poor loss history (regardless of who is at fault) will not likely benefit from any further downward market pressures and might even see an increase in premiums as fewer markets are willing to vie for their business.

One remedy available to hangar owners and landlords is the adoption and implementation of reasonable risk management and safety practices like those found in NATA's Safety 1st and Safety Management System (SMS) programs. Another is to require all their tenants to meet minimum insurance standards commensurate with the exposure of the operation involved.

It is not just the cost of claims settlements that concerns the aviation insurance underwriters; it is also the substantial cost of defending their clients against unwarranted litigation. An FBO or hangar owner with established safety procedures and requirements in addition to reasonable and enforced tenant lease agreements reduces these exposures and puts them in a better position to obtain aviation insurance at the lowest possible rates.

For the aircraft owner, the aviation insurance needed to meet the requirements of a hangaring agreement is readily available at competitive rates and may be contained in their aircraft policy. Some aircraft insurers can provide additional coverage through endorsements which include coverage for airport premises liability and damage to a non-owned hangar and/or property. There are a variety of auto insurance companies whose coverage extends to operating a vehicle on the ramps and designated roadways of the airport.

In the end, the FBO or hangar owner must charge hangar rents that insure a reasonable profit. A cooperative relationship between tenant and landlord can help to improve safety and reduce costs. Any quality aviation insurance specialty agent or broker can help both the FBO and the aircraft owner work through these issues to find the most economical risk management and insurance solutions for all parties.

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prevent incidents like this in the future. We commend you for actively managing safety on your ramp and giving us the opportunity to share your wisdom with our readers.

READER CORNER

Q. I was wondering what NATA's position is on chocking aircraft during day-to-day operations? We normally only chock one gear, either one main or the nose gear as long as winds are not high etc. However, we recently had an incident here where a Falcon 50 was towed outside one of our hangars and the left main gear only was chocked. The winds were calm and it was a nice day. The aircraft was refueled and in preparation to tow the aircraft back into the hangar the nose steering linkage was disconnected as the tow vehicle approached the aircraft. In a matter of 15 seconds, as captured on security camera footage, a microburst (dust devil) blew into the picture and the aircraft spun 90 degrees to the left and stopped. It likely stopped because there was a mechanic sitting on a wheeled stool in the right wheel well and as the aircraft moved he grabbed the strut (out of panic) and rolled with the aircraft until his right foot went under one of the main tires! Believe it or not he was not seriously injured - a bruised foot for a few days but that was it.

We have now gone to a policy that both main gear must be chocked on all aircraft anytime they are outside. We also decided this because a major customer has told us that their policy is to chock both main gear due to near misses that they have encountered.

We are fortunate that we reinforce the rule that aircraft must be at least 50 feet from the hangar for any refueling/de-fueling operations. If it had not been 50 feet away, it almost certainly would have impacted the hangar when it spun around.

A. Thank you for sharing your incident with us! We honestly believe your event is not uncommon and hope everyone reads this keeping in mind; "this could happen on our ramp." You can't always predict the winds or other conditions on your ramp. Your policy requiring both mains be chocked is a great step to prevent future occurrences. Following through to make sure everyone at your company knows this is your policy is a proactive approach to managing this risk. Making this the standard operating procedure will

Chocks:

For the traditional FBO ramp, handling aircraft below transport category, using six inch high (6-8lb) rubber chocks will provide appropriate control provided you position two chocks immediately fore and aft of the nose and main wheels. (Those 2-inch high chocks sometimes used on a GIV or Global nose are of no use when battling the varying elements of a ramp. Jet blast, strong gusts (like this microburst) and shifting aircraft CG require a robust chock to secure aircraft.) NATA recommends the rubber chocks for all aircraft in hangars as well.

We want to revisit the following article since it discusses a similar ramp event. We shared this in our March 16, 2006 *eToolkit*, but it is worth sharing again in its entirety.

SMS ROOT CAUSE IN ACTION: DISSECTING A NEAR MISS

How SMS enables participants to analyze near misses for incident/accident prevention

FBO Manager: "Before SMS, we wouldn't even have looked at this twice. Nothing happened that bent metal or cost us money so we wouldn't have thought about again. But now, because we are analyzing all events that may have an impact, we are better able to prevent an accident. This is one of those "WINS" that come along with the SMS.

They say success in safety is like fighting a guerilla war, you don't know what you may have just walked by. In the case of having a functioning SMS, we are now more aware than ever before of what could be, and therefore, we now know what to do to prevent these from happening.

I used this example to show my underwriter what we are doing to improve our safety performance. Suffice it to say, we all walked away from the table happy. Using the root cause analysis training we received on the NATA SMS Webcasts, we were able to identify all of the factors that could have led



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to bent metal. And now we are able to head off potential problems before they even happen. As they say in the Webcasts, it's all about raising safety awareness."

A Citation X arrived at the FBO late afternoon on a Friday. It was towed to the far aircraft parking area (open area) where it would remain until Sunday. On Saturday morning, the aircraft was discovered to be sitting at a strange angle on the ramp. The aircraft had been blown by the wind. It spun into the wind, jumping the 4inch tall nose wheel chock. The 6inch wheel chock on one of the main wheels appeared to have stopped the aircraft from traveling, other than the pivot movement. The line service crew placed three sets of large chocks on the aircraft after the incident.

The reported wind was 28mph on Friday and Saturday with gusts from 33 to 39 mph.

A thorough investigation using the **5 whys methodology** taught to all SMS participants included the following:

Why was the aircraft found in a strange angle on the ramp?

The aircraft was blown into the direction of the wind.

Why did the aircraft spin into the wind?

A strong gust of wind pushed the aircraft tail with enough force to move the aircraft off of its nose chock.

Why did this aircraft weathervane when others did not? (Other various models were there as well)

Citations (especially the X [ten] model) are well known to be "nose light and tail heavy" and therefore may have been the most prone to this phenomenon.

Why were no other precautions taken?

Standard known procedure only requires two sets of chocks for that size of aircraft.

From the Fishbone (a procedure taught to all SMS participants), corrective solutions and procedures were put into place:

1. (Procedures) Triple chock all citation X's and Falcon 10's with (3 sets) of large chocks.

2. (Measures) Wind gauging equipment for the line shack.

3. (Nature & Procedures) Add to company SOP/SMS manual: Move Citation X's into hangars in high wind gusts above 30 mph.

4. NATA alerts all members to chock both mains of the Citation X or triple chock in any winds greater than calm.

We welcome your questions and open this corner up to responses from our readers. If you have any additional input, please send your responses to Safety1st@nata.aero or by FAX: (703) 845-0396. Your input will be anonymously shared in an upcoming issue of the Safety 1st eToolkit. Thank you for taking the time to share your questions and concerns with others.

COMMUNICATE SAFELY

Two-way communication is essential to safe and efficient operations on our ramps. However, proper equipment for the job and its appropriate use are just as important.

Radios mounted inside vehicles do not have to meet the same safety criteria as those used in a fuel vapor area. Placement of vehicle mounted equipment should be well thought out. If an operator must divert his or her attention from driving to operate or adjust the radio equipment, safety may be compromised. Radio equipment should be mounted in plain view of the operator. Written driving policies should be implemented on the ramp. Policies and procedures requiring the operator to stop the vehicle before commencement of communications, and definitely, before writing down information, would be well advised. Specific procedures should be written so that all personnel know what to do and are trained appropriately.

Know that any electrical device used around the fueling environment must be Class 1 Division 1 explosion proof. Two-way, handheld "walkie talkies" probably do not meet this industry standard. Cell phones do not typically meet Class 1 Division 1 rating for use around flammable liquids. Many companies have implemented cell phone policies that limit the location or circumstances of their usage.



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Although these devices are fast becoming the norm in our daily operations, ensure that they have been properly selected for the environment in which they will be used. Above all else, make sure they are used safely.

WINNER AVIATION CITED BY OSHA IN HANGAR DOOR DEATH – SAFETY SWITCH BYPASSED WITH A NAIL

A fixed-base operator at the Youngstown-Warren Regional Airport (YNG) has been cited for a bypass to a safety switch on a hangar door that killed one of its employees.

Winner Aviation Corp. was cited by the Occupation Health and Safety Administration for a bypass on a hangar door that allowed the door to close on Paul Wiscott, 71, of Youngstown.

The Trumbull County coroner ruled the death of Wiscott, who had worked at the airport 40-years, an accident, saying he died of head trauma according to Vindy.com.

The Western Reserve Port Authority operates the airport; Winner was leasing the hangar from the group.

Winner was fined \$2,000. Rob Medlock, OSHA area director in Cleveland, OH, noted Winner didn't install the bypass on the safety switch. Medlock says that it can't be determined which previous tenant installed it, or when.

Winner Aviation general manager Mark Gisler declined to comment. Steve Bowser, airport's director of aviation, said the bypass has been fixed and declined to answer any other questions due to the possibility of litigation over the death.

According to Medlock, the 30-foot-high door closes in a cascade fashion. The door switch is designed to only operate the door when it is depressed. A large nail hanging next to the switch was used to hold it down, to bypass the safety feature.

"You can't bypass electrical equipment," Medlock said.

The bypass enabled Wiscott to reach between the door and the hangar wall and hold down the switch to open the door.

Wiscott apparently took his finger off the switch while going into the hangar, when the door closed on him.

Medlock could not remember seeing an accident like this in his 15 years as area director. "Most people use the main door to get into a hangar," he said.

ADVANCE LINE SERVICE SUPERVISOR TRAINING (ALSST) SEMINAR –

Recognizing the need to offer more in-depth line service training – NATA expanded its seminar offerings to include an Advanced Line Service Supervisor Training (ALSST) seminar. The ALSST is intended primarily for those who have already taken the popular Line Service Supervisor Training (LSST) and are looking to take the next step. This seminar takes many of the topics from the LSST such as fuel filtration and quality assurance and builds on them. It also introduces new topics such as fuel system management, managing your manager, dealing with difficult employees and coaching leadership.

NATA held the last ALSST of 2007 in Windsor Locks, CT at the New England Air Museum. As with the previous two ALSSTs, there were several participants in attendance who had previously taken the popular Line Service Supervisor Training. In recognition of these individuals' commitment to safety and training, we have added them to the NATA Certified Supervisor's list.

It is not too early to register for next year!

[Phoenix, AZ ALSST ~ Jan. 22-23](#)

[Washington, DC ALSST ~ April 29-30](#)

NATA Certified Supervisor's List:

*Don Garrod of
Montgomery Aviation*

*Kenneth Flowers of
TAC Air*

*Tommy Martin of
Columbia Air Services*

*Jim Hall of
Columbia Air Services*



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Line Service Supervisor Seminars Scheduled for 2008

Come Find out what has changed!



Six Line Service Supervisor Training (LSST) Seminars have been scheduled for 2008. NATA has been offering top-notch line service training through our LSST seminars for over 25 years. Traditionally attendees have been exposed to a mix of the latest technical and managerial skills. Attendees will still get technical training in fuel production and distribution, fuel quality, filtration, fuel delivery systems, fuel additives and managerial training in topics such as interacting positively with different personalities and disciplining affectively. However, the LSST will now incorporate new interactive group activities as well as invaluable self assessments. Participants will obtain fire safety training online and no longer be required to watch the “fire video” at the seminar. Instead this time will be used for live fire exercises and new revolutionary training methods that are sure to excite all in attendance.

2008 LSST Seminar Schedule

[Line Service Supervisor Training \(LSST\) in Atlanta, GA](http://www.nata.aero/events/event_detail.jsp?EVENT_ID=1104)

http://www.nata.aero/events/event_detail.jsp?EVENT_ID=1104

Feb 06-07, 2008

Atlanta, GA

[Line Service Supervisor Training \(LSST\) in Dallas, TX](http://www.nata.aero/events/event_detail.jsp?EVENT_ID=1542)

http://www.nata.aero/events/event_detail.jsp?EVENT_ID=1542

Mar 16-17, 2008

Dallas, TX

[Line Service Supervisor Training \(LSST\) in Indianapolis, IN](http://www.nata.aero/events/event_detail.jsp?EVENT_ID=1543)

http://www.nata.aero/events/event_detail.jsp?EVENT_ID=1543

May 14-15, 2008

Indianapolis, IN

[Line Service Supervisor Training \(LSST\) in Reno, NV](http://www.nata.aero/events/event_detail.jsp?EVENT_ID=1544)

http://www.nata.aero/events/event_detail.jsp?EVENT_ID=1544

Jun 25-26, 2008

Reno, NV

[Line Service Supervisor Training \(LSST\) in Windsor Locks, CT](http://www.nata.aero/events/event_detail.jsp?EVENT_ID=1545)

http://www.nata.aero/events/event_detail.jsp?EVENT_ID=1545

Sep 17-18, 2008

Windsor Locks, CT

[Line Service Supervisor Training \(LSST\) in Denver, CO](http://www.nata.aero/events/event_detail.jsp?EVENT_ID=1546)

http://www.nata.aero/events/event_detail.jsp?EVENT_ID=1546

Nov 05-06, 2008

Denver, CO





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CONTINUING EDUCATION

NATA FBO Leadership Conference

March 17-20, 2008

Held during the Aviation Industry Expo in Dallas, TX

Additional Details & Registration Online:

http://www.nata.aero/events/event_detail.jsp?EVENT_ID=1301

General Education Offerings

Advanced Line Service Supervisor Training (ALSST) Seminar

January 22-23, 2008 in Phoenix, AZ

Additional Details & Registration Online:

http://www.nata.aero/events/event_detail.jsp?EVENT_ID=1121

April 29-30, 2008 in Washington, DC

Additional Details & Registration Online:

http://www.nata.aero/events/event_detail.jsp?EVENT_ID=1541

Line Service Supervisor Training Seminar

February 6-7, 2008 in Atlanta, GA

Additional Details & Registration Online:

http://www.nata.aero/events/event_detail.jsp?EVENT_ID=1104

March 16-17, 2008 in Dallas, TX

Additional Details & Registration Online:

http://www.nata.aero/events/event_detail.jsp?EVENT_ID=1542

May 14-15, 2008 in Indianapolis, IN

Additional Details & Registration Online:

http://www.nata.aero/events/event_detail.jsp?EVENT_ID=1543

NATA Safety 1st Trainer Seminar

March 18, 2008 in Dallas, TX

Additional Details & Registration Online:

http://www.nata.aero/events/event_detail.jsp?EVENT_ID=1547

2007/8 Schedules: Aviation Safety and Security Offerings

Embry-Riddle Aeronautical University's Center for Aerospace Safety/Security Education (CASE)

Details online:

http://www.avsaf.org/programs_events.html

Southern California Safety Institute

Website: <http://www.scsi-inc.com/>

The GW Aviation Institute

Aviation Safety and Security Certificate Program

http://www2.gwu.edu/~aviation/safetyandsecurity/ss_courses.html

Transportation Safety Institute

Details online:

<http://www.tsi.dot.gov/Catalog/Default.aspx?value=DTI-20>

University of Southern California

Aviation Safety and Security Program

Details online: <http://viterbi.usc.edu/aviation/>



The National Air Transportation Association (NATA), **The Voice of Aviation Business**, is committed to raising the standard on ground safety. NATA began with the Safety 1st Professional Line Service Training (PLST) Program in 2000 and expanded with the adoption and implementation of the NATA Safety 1st Management System (SMS) for Ground Operations in 2004. The eToolkit provides continuing education in support of the PLST and SMS programs.



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