

The FAA Airport Safety Newsletter

Volume 1, Issue 2-----December 1, 1999

The FAA ASNL
is the Newsletter
of the
Airport Safety and Operations
Division

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Thought for the
Day.....

If an accident or incident happened
on MY airport, and the NTSB
conducted the investigation, how
would they evaluate the level of
safety provided at this field?

How it all began....

It was a dark and stormy afternoon. ...literally. The weather report: sky partially obscured; 120/11M200⊕ ¾ FG 41/40 29.55. Read: winds 120 @ 11; measured ceiling 200 overcast; ¾ mile visibility in fog; temperature/dew point 41/40; altimeter 29.55; Additional notes included these: RVR not available, .4 of the sky hidden by fog, 1 inch of snow on the ground, rain ended 1210.

The place was Detroit; the time was 1245 CST. and the NTSB report continues:

On December 3, 1990, at 1345 eastern standard time, Northwest Airlines (NWA) flight 1482, a McDonnell Douglas DC-9 and Northwest Airlines flight 299, a Boeing 727 (B-727), collided near the intersection of runways 09/27 and 03C/21C)at Detroit Metropolitan Wayne County Airport (DTW), Romulus, Michigan.

As we all know now, this accident generated a flurry of activity with respect to airport marking, lighting, and signs. It consolidated an effort which the NTSB had recommended in 1986, i.e., "In cooperation with terminal air traffic managers, airport managers, airline representatives, and pilot groups, determine the most effective signs, markings, and procedures,

from an operational and human performance perspective, to prevent pilot-induced runway incursions and issue an advisory circular to disseminate the information to airport managers and pilot organizations.”

We have come a long way since then, and airport marking, lighting, and signs have been standardized, at certificated airports with nearly virtual consistency throughout the nation.

Standardization and uniformity were two basic steps that had to be taken in an effort to eliminate some of the causes of runway incursions. The effort undertaken by the airports certificated under 14 CFR part 139 took nearly 6 years to accomplish. Airports developed and implemented sign plans, overcame many hurdles in obtaining the required signs, and coordinated with users, FAA airport inspectors and others, who signed their approval to the proposed sign plans.

In a study that was conducted prior to these actions, pilots identified signs at airports to be one of the most difficult problems. They cited the lack of uniformity in signs, meanings of signs, sign location, and sign maintenance. Many pilots who were flying into airports for the first time reported their inability to understand local references. They did not know the location of the

“penalty box” or the “southside route.”

About two-thirds of the way into the implementation process, when many signs had been installed and a sense of order was being established, pilots were again questioned about signs on airports. The positive response was impressive. Most pilots were finding the order and predictability engendered by the sign program of great assistance in taxiing. Thus, meeting the provisions of NTSB’s recommendation has had a pay-off in raising the level of safety and in making the airport a much more sensible environment.

An event on an airport, whether it is an accident or incident, subjects the airport to extensive scrutiny. This means that conditions which may or may not be related to the event also come under intense examination. And anything out of place on the airport is subject to being investigated and noted for action. NTSB is interested in the level of safety that exists on the entire airport, not just those items that are directly connected to the event being investigated. This is a good point to keep in mind, the bottom line being this: If there’s an event on the airport, what will NTSB find when they come to investigate? In other words, how will the airport measure up...in every safety respect?

AIRPORT SAFETY

THE BIG PICTURE

The first step toward improving safety involves taking inventory of your airport as an integral part of a community. This is an important step in being a good neighbor.

◆ General aviation airports have a special stake in assuring a community that the airport is an asset and acts responsibly. Protection for both airport users and airport visitors is a matter that each general aviation airport is encouraged to address.

◆ Part 139 Certificated airports have an additional aspect to this responsibility. They must address public protection in the context of part 139, a federal regulation, and, in some cases, other safety and security issues related to air carrier operations, as provided by part 107.

Inadvertent Entry

◆ Fencing ◆ Gate Access ◆ and ◆ The Psychology of an Attractive Airport

Airports are not public places in the sense that a person can go anywhere, anytime. Public protection is an important part of airport safety, and access to the airport must be controlled. If you have fencing and **gates**, controlling the use of the **gates** is essential. If you do not have fencing, **signs** that inform the general public about no entry points and/or remaining clear

of aircraft operating areas must be effective. Because of the cost of fencing, it may be limited to strategic areas. Access to movement areas on your airport can also be controlled in other ways. These can make the airport an attractive and safe place for users and viewers alike. Roads that provide users with access to their hangars/tie-downs should have prominently placed signs to prevent inadvertent entry into areas that carry potential risks for non-aviation oriented visitors. Some of the methods, besides signs, that can be used to control access to the airside include

- Shrub/tree plantings (that are not wildlife attractants)
- Paths that guide people away from potential conflicts with aircraft
- Observation areas that invite people to watch aircraft operations from a safe vantage point

At part 139 certificated airports, airside access must be strictly controlled, as violations involving inadvertent entry are serious events. Fencing and control of gated access through permits or escorts are two effective means of preventing entry to unauthorized persons. Part 139.335 *requires* the airport to provide public protection. In addition, part 107 requires the airport to provide protections related to security. Together, these regulations are intended to ensure a safe environment for aviation operations.

What are the means of providing a “safe” airport environment at both certificated and non-certificated airports? The following can guide you in making an assessment of how well you protect your airport, the personnel whom you employ, and the users, tenants, and visitors.

Authorized Access Employee Access

◆ Limits/Conditions ◆ Training Requirements ◆ Currency

At airports where part 107 (the airport security regulation) requires an airport security plan (ASP), many aspects of access control are addressed, and while only portions of the airport are affected, secure areas are established and access to those portions is limited. On the other hand, at certificated airports, the requirements of part 139 regarding inadvertent entry also must be observed, and the force of both part 107 and part 139 can ensure that the airport establishes a basic, secure, public protection environment. Naturally, this affects a wider area of the airport.

Those persons who *are* authorized to have access to airside, at both certificated and non-certificated airports, should understand the nature of operating airside and be trained to conduct airside activities safely.

At non-certificated airports, airport operators should provide instruction to those who will have access to areas where aircraft operate. This is a matter of common sense and self-

protection. At the larger non-certificated airports, procedures much like those at certificated airports can provide the appropriate level of protection and safety. The information below, while directed mainly toward certificated airports, can be helpful to everyone in airport management in assessing how well the airport protects itself and the people who work and visit there.

◆ Limits/conditions

Access to the airside of the airport is a privilege as well as a necessity for many airport users and personnel. Identifying and limiting user and employee access are basic tools in controlling activities at the airport.

At all airports, there are several groups of people who need access to airside areas of the airport. **Maintenance personnel** (mowers, snowplow operators, electricians, e.g.) and **construction personnel**, e.g., must get onto runways and taxiways, and into safety areas. Since these people perform a service for the airport, it is only logical and a matter of common sense that education about aviation operations and airport safety should be conducted for them. **User access**, associated with tenants or aircraft owners who require admission to specified areas on the airport are another group of people who should be instructed about rules and regulations of the airport. Many airports control user access by issuing permits or access codes through specified points of entry. Access roads are another method of preventing mishaps on the

movement area. Anytime the opportunity to circumvent the movement area or even the entire airside exists, it should be exploited. Separating vehicles from aircraft is always the easiest and best way to avoid incursions, collisions, and catastrophes. And when “inconvenience” is cited by those who see crossing the airport as expeditious, it is best to remind them that “if they think safety is expensive or time-consuming, they should try an accident.”

At larger airports, and especially at certificated airports, access control is much more complicated; not only because of the numbers of employees involved but also because of the variety of reasons these employees need access to the airside.

Part 139 guidance is explicit about access to movement area: only those, whose jobs are essential on airside, should be permitted to operate. At towered airports, two-way radio communication is required. At non-towered airports, methods for controlling activities include prearranged signs and other forms of communication. Actually, at non-towered airports, the challenge is sometimes greater since the responsibility for ensuring safety falls completely on the person who is on the airside area of the airport.

◆ Training Requirements ◆ Currency

Training is key. As the airport operator, you should ensure that training reflects current operational

procedures. Failure to inform and teach users or tenants about obsolete or amended procedures is an open invitation for mistakes. It is important to develop a system by which the rules and regulations for airside vehicular operations are kept current and information about them distributed in a timely manner. More importantly, if your tenants or others on the airport conduct the training, how do you control it? Have you established your approval authority for these programs? Not doing so may be your Achilles heel. Establishing guidelines, even requirements, for driver training programs that will be conducted on your airfield is not only reasonable but also prudent. Testing is another area that deserves your scrutiny. And recurrent training at specified intervals will keep everyone aware of the importance of driving safely on the airport.

Training Program Content

◆ Programs ◆ Tools ◆ Penalties

The airport is a dynamic environment. To prepare people for driving on an airport, a program that contains the operating rules as well as the rationale for those rules is basic. Some airports use videos to discuss aircraft and vehicle operations; others tailor a lecture to their airport’s requirements; others use some of each approach. Whatever means you select, review it periodically to see if it needs updating or refreshing. And to maintain retention, test!

Training programs are designed to familiarize users with the airport

layout and the means of getting around the airport. However, low visibility and night conditions change a vehicle operator's perceptions of the airport. This should be taken into account when developing a training program for an airport with night operations or inclement weather conditions that limit visibility.

Some conditions on airports will be encountered nowhere else in a vehicle operator's experience. Jet blast, prop wash, and the necessity of limiting vehicle speed on airside are a few of them. Respect for safe operating practices must be cultivated, and one of the most effective ways to accomplish this is through incentives, and when this doesn't work, disincentives.

Getting lost (loss of situational awareness) on the airport is an opportunity for a runway incursion, as is miscommunications and complacency. **Airport diagrams** in vehicles can be very helpful to airport personnel. They can depict intersections with challenging geometrics or identify preferred routes; they can be color-coded or highlighted in some way, if necessary. Placards that contain **procedures and standard phraseology** as guides to ATC communications can serve as reminders to airport personnel that miscommunication is more easily avoided by adhering to terms that have specific meanings in the aviation environment.

Penalties for infractions may be handled in different ways. In some municipalities and counties, the local jurisdiction issues tickets for traffic violations. In other places, the airport develops its own program for addressing violations of the airport traffic rules and regulations. Infractions of security regulations (SIDA violations, e.g.,) may also be addressed through provisions of the ASP. Penalties must be enforced and the ultimate penalty, loss of airside privilege, should be publicized well beforehand, so that those with airside privileges respect the permits they have obtained.

Vehicle Requirements

◆ Inspections ◆ Types ◆ Airport Specific Issues

Vehicles that operate properly are a safety prerequisite. Inspection procedures should be clearly understood by all who have permits to operate airside. Do your airport personnel conduct vehicle inspections before operating any equipment? At some airports, a morning or "first use" inspection is used to identify equipment maintenance needs. Other airports use "surveillance inspections" to ascertain the status of tenant owned and operated vehicles. This is part of the agreement tenants should have signed for airside privileges/use.

Enforcement

◆ Rules and Regulations ◆ Violations ◆ Actions

The rules and regulations for vehicular operations on the airport should be clear and concise.

Vehicle operators should know the limits of their airside permits, if there are any. All vehicle operators should know, and be tested, on the airport's rules and regulations prior to operating airside. All vehicle operators should know the penalties for violations of the rules and regulations. Action by the airport

management to acknowledge safe driving records as well as violations will make for a better environment on the airport. Incentives are powerful tools for preventing accidents. Disincentives will keep those who jeopardize everyone's safety off the airport.

Quarterly Vignette # 2

Here are two events that recently occurred on airports, as reported to FAA. #1 Contractors engaged in rehab efforts on the airport, especially those that require access to runways and taxiways, pose serious challenges to certificate holders. Part 139 requires airport operators to control and monitor construction activities, to ensure that conflicts like this one do not occur. #2 Some folks who just positively must get on the airport will find a way. Where gaps exist in fencing or where vegetation has been cleared, signs, saw horses, or some other impediment to airfield access should be used. In some cases, it is advisable to post personnel to ensure that inadvertent entry is prevented.



Grooving contractor vehicle crossed R/W 14 at intersection R/W 5/23 without authorization conflicting with United Parcel Service B-757. UPS clearance was cancelled and held in position to avoid loss of separation.

What if the B-757 had not seen the vehicle or not heard the cancelled clearance? What if ATC had not been alert and seen the vehicle? This item on the Alert Bulletin might have had a different ending, if it hadn't been for a vigilant AT controller and a vigilant pilot.



A vehicle drove along the fence and entered Taxiway "F" without authorization. No conflicts reported.

No conflicts this time.....but what might happen the next time?

**Runway Incursions by
Month - CY 1999
(Through 11/15/99)**

Month	OE/D	PD	V/PD	Total
May	7	20	2	29
June	8	13	7	28
July	8	24	7	39
August	8	16	1	25
September	11	17	7	35
October	7	13	2	22
November	5	15	2	22
Total May-Nov 15 '99	54	119	28	200
Total Jan-Nov 15 '99	76	173	43	292

**Runway Incursions by
Month - CY 1998**

Month	OE/D	PD	V/PD	Total
May	5	12	5	22
June	16	9	7	32
July	5	14	4	23
August	9	14	5	28
September	7	24	7	38
October	7	17	6	30
November	11	19	6	36
Total May-Nov '98	60	109	40	237
Total Jan-Nov '98	86	168	48	302

**NOTE: CY 1999 RI data
is based on preliminary
reports and is subject to
change following final
investigative results.**

Legend

Runway incursion (FAA Order 8020.11A, Ch.1 Par 5): Any occurrence at an airport involving an aircraft, vehicle, person, or object on the ground that creates a collision hazard or results in loss of separation with an aircraft taking off, intending to take off, landing, or intending to land,

OE = Operation Error, attributable to an incorrect directive from ATC

PD = Pilot Deviation, attributable to an incorrect action by a pilot entering a movement area without proper clearance

V/PD = Vehicle/Pedestrian Deviation, attributable to an incorrect action by a person in a vehicle or on foot who enters the movement area without proper clearance