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Applied Common Sense Is a Prime Factor in Ramp Safety

Conscious utilization of a basic human attribute is the key to preventing a large percentage of accidents and incidents at the airport.

by
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"You can't teach ramp safety if the employee doesn't have common sense."

With that summation, Jack K. Gartner, manager of the Aeronautical Services Division at John F. Kennedy International Airport (JFK) in New York, U.S., put the topic of ramp safety into two words. There is more to ground safety around aircraft than a simple truism, however, because the record shows again and again that common sense is not common enough.

The theme of common sense surfaces often in discussions with airport officials who are thoroughly familiar with ramp safety problems. It is a refrain heard often and is a weakness in safety efforts that stands out in stark contrast to the high-technology systems required to handle other needs in aviation.

"Virtually every ramp incident or accident could be prevented," said Betty Stansbury, assistant director of operations and maintenance for the Wichita Airport Authority in Kansas, U.S. "No high-tech equipment or complicated procedure is needed, just some basic common sense and an awareness on the part of the people who operate vehicles and aircraft on the ramp."

As airliners with wingspans of 200 feet (60 meters) or more appear at civil airports, ramp safety becomes more than a common sense concern — it becomes a dollars-and-cents concern. The consequences of carelessness were never insignificant, no matter how small the airplane, but now they are quite astonishing. One "minor" bump of an airliner wing by a catering truck caused by a driver's misjudgment directly affects the airline's cash flow.

"It Was Just a Bump"

Consider the effect of that bump and the seemingly minor damage it involves. The aircraft must be immediately removed from service for a thorough engineering inspection; passengers, cargo and mail must be off-loaded and placed on another flight (possibly with another carrier); crew schedules are thrown into disarray; aircraft scheduling and maintenance is disrupted; inconvenienced passengers and shippers may convert their ire into a loss of revenue for the airline; connecting flights are missed at airports along the way; and, flights which depended on

that original airplane for their own scheduling may also have to be cancelled.

Needless to say, the actual financial effect on the airline, and possibly the airport, usually will far outweigh the cost of repairing that bump. The airport will have to make unanticipated arrangements for the aircraft, and a loading gate could be tied up if the collision, for example, involved a tow tug and the aircraft landing gear. Other consequences of the event may include insurance claims and paperwork. And if an accident results in an injury, the implications are far more serious.

With increasing airport traffic, higher passenger volume and bigger airplanes, the ramp safety problem is also increasing.

In the United States, the Federal Aviation Administration (FAA) published a booklet in 1990 for employees required to know basic ramp safety rules. *A Guide to Ground Vehicle Operations on the Airport*, written by Wichita's Stansbury, was published by the FAA and describes lighting, signs, markings, working at controlled and uncontrolled airports, how to talk to the tower, how to avoid foreign object damage (FOD) to jet engines, security, bad weather driving and other elementary subjects.

Despite the availability of the FAA publication, however, new requirements for procedures and equipment being formulated by FAA in conjunction with international organizations are intended more for the runway and taxiway than for the ramp area. The airport operator, therefore, must establish basic local operating rules, and it is up to each individual who works around aircraft to follow the rules with that key ingredient: common sense.

Statistics Tell The Story

Five annual campaigns on ramp safety conducted by the International Air Transport Association (IATA) and the Airport Associations Coordinating Council (AACC) were studied and analyzed by Saudi Arabian Airlines. The results were presented at the Flight Safety Foundation 43rd International Air Safety Seminar (IASS) at Rome, Italy, in 1990 by Capt. Agostino Ferrari, safety and operations manager for Società Aeroporti di Roma.

After the five-year effort that involved several airports and airlines, the final results painted an interesting picture. It is probably fair to say that the general picture remains the same today, based on the observations of those responsible for ramp safety at large and small airports in the United States.

The analysis of the resulting statistics from the five-year information-collection effort indicated that between 1983 and 1987 there were 1.33 million flight departures and 1,365 ramp accidents. The overall rate was one accident for every 980 departures. A breakdown of the statistics showed that all types of equipment were involved in mishaps on the aircraft operations ramp, but some types were more likely to be involved than others.

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The greatest number of accidents on the ramp involved equipment-to-equipment collisions during aircraft handling operations. Next in order of occurrence were accidents involving aircraft loading equipment, aircraft servicing equipment, structural facilities, passenger handling equipment, other property and equipment, and miscellaneous. The distribution was as follows:

Equipment-to-equipment damage	37.54%
Aircraft loading equipment	22.85%
Aircraft servicing equipment	09.86%
Structural facilities damage	08.68%
Passenger handling equipment	06.37%
Property & equipment	03.08%
Aircraft-to-aircraft	00.44%
Miscellaneous	11.62%

Of the 1,365 accidents reported during the period, approximately half, or 695, involved aircraft, and the remainder involved other ramp equipment or structural facilities. The rate involving aircraft was one accident for every 1,924 departures, and the rate involving ground equipment was one for every 1,996 departures. There was one minor injury for every 1,250 departures, and one severe injury for every 15,194 departures.

"Ramp safety is a combination of all the safety practices you have when you're driving specialized equipment, beyond normal automobile driving," said Gartner. He said that moving airplanes, jet blasts, broad areas of unmarked ramp or where markings are obscured by snow, as well as other factors, can play a role in accidents. The IATA/AACC study supplements this explanation by itemizing the following ramp vehicles: passenger stairs, mobile lounges, passenger loading bridges, tractors, baggage carts, pallet loaders, forklifts, belt conveyors, catering trucks, cleaning trucks, lavatory service trucks, fuel tankers, air start and ground power units, engineering access stairs, cherry pickers, passenger coaches and ordinary automobiles.

Most likely among ground service equipment to be involved in accidents is aircraft loading equipment, but some of these units are more likely than others to damage the aircraft. These include pallet containers, hiloaders, baggage/cargo dollies, catering trucks, ramp tractors, conveyor belts and forklifts.

How Accidents Happen

Many airport ramps are not painted with roadway markings because they may not lend themselves to marking, said Gartner, and employees often drive in bad weather, especially in the northeastern United States. There may be limited light and few reference points. Further, drivers may be driving open vehicles, like tugs, with rain or snow blowing in their faces. The problem is worsened by driving where there is ice, snow, liquid spills and other hazards. The biggest single problem is speeding, Gartner said.

IATA now has an annual ramp safety program because of these very problems.

All major air carriers have their own ramp safety programs, and driver safety programs are now mandated in connection with the U.S. federal requirement for an airport driver's license in the aircraft operations area.

Language and reading skills may be part of the problem, said Gartner, but they are not a major contributor to accidents. "A driver's license is needed for almost any employee and if that test is passed, the language and other basic skills are adequate for many airport driving purposes." This does not apply, however, to special oversize equipment with specific driving license regulations; it would apply to smaller vehicles like tugs and belt loaders. Employees must have the basic language skills to pass those tests.

Competition and Budgets Play a Role

As airline revenues shrink and competitive survival during hard times forces budget reductions by everyone in aviation, the pressure mounts on all employees to work harder and faster.

"There is a psychological factor that comes into play when people have fewer resources," said Gartner, "and fewer people are often doing the job. Every aircraft turnaround is more pressure ... bang, bang, bang ... service, service, service ... get those bags in, get those bags out, get that vehicle over there ... bring those dollies in, come back out and pick up another bunch of dollies, we've got to meet the service standard ... ."

Gartner says companies are feeling the pressure to do more with less. "Instead of 10 people doing a job," he said, "some have cut back to seven doing the job now because of budget reductions. This is not to make excuses, but we've found that whenever there's an accident, pressure is frequently a part of the equation. Service companies have their competitive edge viewed by their client on how quickly they can turn a plane around. Cutting back on equipment and staff means people take short cuts, and that's how accidents occur."

Picture, then, a baggage cart driver during peak winter holiday periods. He is working overtime at night during a snowstorm, he is tired, the crew is short-staffed, the ramp is noisy as airplanes maneuver, and his boss is pushing him to get a Boeing 747 loaded. All it takes is one skid in the snow, one distraction at the wrong time, or one impulsive shortcut, and suddenly the economic loss is in the tens of thousands of dollars.

Case Histories Present the Realities

A review of just a few narratives from ramp accident reports will show how the parties involved got into the situations which resulted in accidents. Most were caused by vehicle operators failing to yield the right-of-way to aircraft, people making unjustified assumptions or vehicles being somewhere that they were not supposed to be.

"After engine start, ground personnel experienced difficulty disconnecting the airstart unit hose. The ground signalman left the view of the [flight] crew to assist the other men in an effort to disconnect the unit from the aircraft. The pilot, assuming that all was clear, started to taxi. The substantial damage to the aircraft's right wing resulted from collision with the starting unit."

"After pushback, the ground crew informed the flight crew (via intercom) that the bypass pin was removed and the steering was connected. The ground crewman ended the conversation by stating: 'You gentlemen have a nice trip, see you another day.' The intercom was disconnected and the captain started to taxi before receiving a visual signal from the ground crew and before the tug was removed from the airplane's path. Subsequently, the airplane hit the top of the tug and damaged the lower right part of the forward fuselage."

"While taxiing to the gate the number one engine struck a baggage cart in an area normally occupied by aircraft. The pilot's undivided attention was to the signalman."

"Aircraft was parked at the gate awaiting departure. A bus used to shuttle flight crews around the ramp arrived at … to deliver a flight attendant. The driver was backing

away from the aircraft when the left side of the bus contacted the right wing tip."

"The airplane collided with a vending truck and knocked it over while taxiing to the gate. The truck had crossed the ramp in front of the airplane while traveling between concourses. A light rain was falling at the time. The truck driver reported that he did not see the airplane prior to impact. The driver was new to the job and had just completed his training."

"While taxiing for takeoff, the underside of the left wing struck the boom of (an unattended) backhoe parked adjacent to the aircraft ramp ... while the operator was on his lunch break."

Common Sense Is All It Takes

Stansbury, who wrote the FAA book on ramp safety, has some advice. For the airport management, learn from mistakes when accidents occur at other airports. For training programs, stress the basic rules with every new employee. Periodically after that, explain the hazards of working around aircraft; repeat the responsibility of each person to make the airport as safe as possible; remind employees to concentrate on where they are and what they are doing, as well as what others nearby are doing; and, that prime rule — use common sense.

The topic of ramp safety is often considered somewhat mundane alongside other critical problems in aviation, such as air traffic control, runway incursions, collision avoidance, etc. In several cases, we asked civil aviation authorities for information on ramp safety and the answer was the same: "Well, there's really not much to it. It's really just ... common sense."

In early 1991, a commuter airliner at Washington National Airport, U.S., was deplaning passengers. A small van from another airline crossed into the marked passenger walkway on the ramp and struck a group of passengers and crew, killing two women. The van driver was charged with two counts of manslaughter and two counts of leaving the scene of an accident.

Common sense not only saves time, money, jobs and equipment, it also saves lives. ♦

About The Author

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