



National Transportation Safety Board Aviation Incident Final Report

Location:	Denver, CO	Incident Number:	OPS11IA273
Date & Time:	12/31/2010, 2034 UTC	Registration:	
Aircraft:	EMBRAER ERJ190	Aircraft Damage:	None
Defining Event:	Runway incursion veh/AC/person	Injuries:	N/A
Flight Conducted Under:			

Analysis

A runway incursion occurred when an aviation operations vehicle, operated as the lead vehicle for a snow removal team, entered an active runway without clearance as the airplane was about to begin its takeoff roll. The airplane's crew noticed the headlights of the vehicle approaching on the runway and did not initiate their takeoff roll. The tower controller was not aware of the vehicle on the runway until advised by the airplane's crew. The airport was equipped with ASDE-X, which did not alert of the runway incursion due to the slow closure rate of the vehicle to the stationary aircraft. Postincident investigation revealed that the driver of the operations vehicle misidentified the runway for an adjacent taxiway.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this incident to be: The driver of the operation vehicle's misidentification of the runway for an adjacent taxiway, resulting in a runway incursion with an aircraft in position for takeoff.

Findings

Personnel issues	Decision making/judgment - Airport personnel (Cause)
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Factual Information

Air Canada Flight (ACA) number 1072, an Embraer RJ-190 on a scheduled 14 CFR Part 121 flight between DEN and Chicago O'Hare International Airport (ORD), Chicago, Illinois, had been cleared for takeoff from the approach end of runway 34R at DEN. At approximately 1334:40, after releasing the parking brake but prior to beginning takeoff roll, the pilot of ACA1072 observed headlights of a vehicle on runway centerline proceeding toward him on runway 34R. The pilot advised the control tower that a vehicle was on the runway after which the tower canceled ACA1072's takeoff clearance and directed ACA1072 to taxi off of runway 34R at taxiway F2 at approximately 1336:10. The vehicle on runway 34R was OPS6, a DEN Aviation Operations Vehicle operated by the DEN Aviation Operations Manager as the lead vehicle for the snow removal vehicle team. OPS6 had requested and had been authorized by the control tower personnel to proceed southbound on taxiway F in preparation for snow removal operations on runway 34R. Taxiway F parallels runway 34R. The operator of OPS6 misidentified runway 34R for taxiway F and proceeded onto runway 34R at taxiway WC and traveled south on the runway. Once the tower personnel became aware of a vehicle on the runway, they contacted OPS6 as the lead vehicle of the snow removal team to advise him that a vehicle was on the runway. OPS6 did not initially realize that he was the vehicle on the runway. While coordinating with the tower, OPS6 attempted to visually identify the vehicle on runway 34R before realizing that his vehicle was the vehicle in question. The DEN air traffic control tower (ATCT) was equipped with airport surface detection equipment, model X (ASDE-X). The ASDE-X system was designed to aid in identifying and de-conflicting aircraft and vehicles on the airport to assist in air traffic controller situational awareness, and to prevent runway incursions. According to the DEN ASDE-X playback, OPS6 entered runway 34R at taxiway WC at approximately 1333:40 and proceed down runway 34R while ACA1072 was in takeoff position on the runway. The algorithms of the ASDE-X are set to prevent nuisance alerts for aircraft and/or vehicles traveling less than approximately 40 knots. As OPS6 was not traveling at such speed and ACA1072 was stationary, the ASDE-X did not alarm. Staffing in the DEN ATCT included an instructor controller and a developmental controller on local control (LC) 4 position. The LC4 position was providing ATC services for arrivals and departures on runways 34L and 34R at the time of the incident. According to air traffic controller statements, both the qualified controller and the developmental controller stated that the runway appeared to be clear prior to issuing a takeoff clearance to ACA1072. The developmental controller stated that he scanned the runway and the ASDE-X display in the tower and everything appeared clear.

History of Flight

Taxi-into takeoff position

Runway incursion veh/AC/person (Defining event)

Aircraft and Owner/Operator Information

Aircraft Manufacturer:	EMBRAER	Registration:	
Model/Series:	ERJ190 100IGW	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	No
Airworthiness Certificate:		Serial Number:	
Landing Gear Type:	Unknown	Seats:	
Date/Type of Last Inspection:		Certified Max Gross Wt.:	
Time Since Last Inspection:		Engines:	
Airframe Total Time:		Engine Manufacturer:	
ELT:		Engine Model/Series:	
Registered Owner:		Rated Power:	
Operator:		Operating Certificate(s) Held:	Foreign Air Carrier (129)
Operator Does Business As:		Operator Designator Code:	ARNF

Meteorological Information and Flight Plan

Conditions at Accident Site:	Instrument Conditions	Condition of Light:	Day
Observation Facility, Elevation:	KDEN, 5431 ft msl	Observation Time:	1253 MST
Distance from Accident Site:		Direction from Accident Site:	
Lowest Cloud Condition:	Scattered / 1500 ft agl	Temperature/Dew Point:	-13°C / -16°C
Lowest Ceiling:	Overcast / 2200 ft agl	Visibility	1 Miles
Wind Speed/Gusts, Direction:	11 knots, 20°	Visibility (RVR):	5000 ft
Altimeter Setting:	30.05 inches Hg	Visibility (RVV):	
Precipitation and Obscuration:			
Departure Point:	Denver, CO (KDEN)	Type of Flight Plan Filed:	IFR
Destination:	Montreal-Trudea (CYUL)	Type of Clearance:	IFR
Departure Time:	2030 UTC	Type of Airspace:	

Airport Information

Airport:	Denver International Airport (KDEN)	Runway Surface Type:	Asphalt
Airport Elevation:	5431 ft	Runway Surface Condition:	Dry
Runway Used:	34R	IFR Approach:	None
Runway Length/Width:	12000 ft / 150 ft	VFR Approach/Landing:	None

Wreckage and Impact Information

Crew Injuries:	N/A	Aircraft Damage:	None
Passenger Injuries:	N/A	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	N/A	Latitude, Longitude:	(est)

Administrative Information

Investigator In Charge (IIC):	Daniel J Bartlett	Adopted Date:	10/03/2011
Additional Participating Persons:			
Publish Date:	10/03/2011		
Investigation Docket:	http://dms.nts.gov/pubdms/search/dockList.cfm?mKey=78289		

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