Aviation Investigation Final Report

Location:	San Diego, California	**Accident Number:**	LAX02LA286
Date & Time:	September 16, 2002, 08:20 Local	**Registration:**	N3951D
Aircraft:	Cessna 182A	**Aircraft Damage:**	Substantial
Defining Event:		**Injuries:**	1 None
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

During the landing rollout the accident airplane passed behind a MD-11, which was beginning to move forward, and nosed over onto its back. The accident pilot had diverted from his intended destination due to weather. When he arrived at the accident airport, the local controller advised him that he was number 2 for landing behind a MD-11. The local controller instructed him to do two 360-degree turns on downwind for spacing and to land beyond the touchdown point of the MD-11. On final approach, the local controller asked the accident pilot if he had observed where the MD-11 had touched down, which was at the 1,000-foot marker. The pilot indicated that he had, and would plan, his touchdown point beyond that. After the MD-11 landed, it exited the runway at taxiway B-5 and was holding perpendicular to the runway awaiting ground control clearance, with the tail end of the airplane facing the runway. Tower personnel indicated that the accident airplane touched down at taxiway B-3, about 2,000 feet down the runway, and beyond the MD-11's touchdown point. The MD-11 had started to move very slowly off the taxiway prior to the accident airplane passing behind it. On the landing rollout the tail of the accident airplane started to oscillate up and down after passing behind the tail end of the MD-11. The oscillations continued to increase, and on the third oscillation it nosed over and came to rest inverted. Tower personnel reported that the MD-11 was off the runway prior to the accident airplane being cleared to land, and there was no part of the airplane protruding over the runway during the landing rollout of the accident airplane. The accident airplane touched down near taxiway B3, about the 2,000-foot marker, and continued a long rollout towards taxiway B5 where the MD-11 had exited. The measured distance between taxiway B3 and taxiway B5 is 2,054 feet. In the performance section of the Federal Aviation Administration approved flight manual, at standard sea level pressure and temperature, and 2,100 pounds gross weight, the airplane's landing ground rollout distance over a 50-foot obstacle should have been 445 feet. At a gross weight of 2,650 pounds, the landing ground rollout should have been 560 feet.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: the pilot's failure to maintain adequate clearance to avoid jet exhaust due to his improperly planned approach and inadequate in-flight decision to perform a long landing rollout, which placed the airplane in proximity to an area of observed high velocity jet exhaust.

Findings

Occurrence #1: PROPELLER BLAST OR JET EXHAUST/SUCTION
Phase of Operation: LANDING - ROLL

Findings
1. (C) IN-FLIGHT PLANNING/DECISION - INADEQUATE - PILOT IN COMMAND
2. (C) PLANNED APPROACH - IMPROPER - PILOT IN COMMAND
3. (C) CLEARANCE - INADEQUATE - PILOT IN COMMAND

Occurrence #2: NOSE OVER
Phase of Operation: LANDING - ROLL

Factual Information

On September 16, 2002, at 0820 Pacific daylight time, a single-engine Cessna 182A, N3951D, encountered jet exhaust blast and nosed over on the landing rollout on runway 27 at San Diego International-Lindbergh Field Airport (SAN), San Diego, California. The pilot/owner operated the airplane under the provisions of 14 CFR Part 91. The airplane sustained substantial damage. The private pilot, the sole occupant, was not injured. Visual meteorological conditions prevailed for the cross-country flight, and no flight plan had been filed. The flight departed the Jean Airport, Jean, Nevada, at 0545. The flight was scheduled to terminate at Brown Field Municipal Airport (SDM), San Diego.

According to the pilot's written statement (NTSB Pilot/Operator Aircraft Accident Report Form 6120.1/2), the weather at Brown Field was foggy, and he was unable to land there. The Southern California Terminal Radar Approach Control (SoCal TRACON) controller offered SAN as an alternate because SAN was reporting visual flight rules (VFR) flight conditions. The pilot then coordinated with the SoCal controller for a landing at SAN. The SoCal controller "brought him in over the Mission Bay VOR [very high frequency omni-directional radio range]" and then had him descend for a right downwind for SAN. When he was handed off to the local controller (LC) for SAN he was instructed to do two 360-degree turns for spacing behind an MD-11. The pilot reported that both 360-degree turns were done "just north of midfield."

The pilot reported that he saw the MD-11 touchdown at the 1,000-foot marker. The LC then asked the pilot if he had observed the MD-11's touchdown point, and the pilot replied in the affirmative. The LC then cleared the pilot to land. The pilot indicated that he extended his downwind a "bit for more spacing." The LC warned him again of wake turbulence, and asked the pilot again if he had observed the MD-11's touchdown point along with the blue smoke. The pilot replied that he had seen the MD-11's touchdown point and was planning on touching down at the 2,000-foot marker. The pilot stated that the radio communications took place while he was on base turning to final.

On final approach the pilot set up for landing. As the airplane got closer to the runway the pilot shifted his attention from his intended touchdown point to looking down the runway. The pilot stated that he saw a "very large tail protruding onto the runway." The pilot stated that he considered going around, but the controller had cleared him to land and "clearly wanted me out of the way."

The pilot reported that touchdown was at the 2,000-foot marker slightly left of centerline. The "power was all the way out," and he applied the brakes to slow the airplane down on the landing rollout. The pilot reported that on the landing rollout he had started to retract the flaps when the airplane approached the back of the MD-11. He continued to taxi past the MD-11 to the next taxiway intersection.

The pilot stated that as his airplane passed behind the MD-11, his airplane "seemed to power up again." He looked down to check the power setting of the accident airplane to see if it had not moved, and realized that he had full left rudder input, and the flight controls were all the way to the left. He heard squeaking noises coming from his tires as they skidded to the right. The tail and left wing came up, and the right wing tip and propeller impacted the ground. At which point the airplane flipped over onto its back.

According to the SAN airport incident/accident report, the airport operations supervisor observed the accident. He had been driving eastbound on a service road adjacent to taxiway B5 when he saw the MD-11 on the taxiway with the accident airplane on runway 27 rolling out behind the MD-11. The accident airplane's left wing went up in the air, the airplane veered to the right, back to the left, and flipped over facing toward the east.

Runway 27 at SAN is 9,400 feet long by 200 feet wide. The MD-11 touched down adjacent to taxiway B2 at the 1,000-foot marker. The accident airplane touched down at taxiway B3 about the 2,000-foot marker. The MD-11 exited the runway at B5, the high-speed taxiway. SAN airport operations measured the distance between taxiway B3 and taxiway B5 as 2,054 feet.

The San Diego International-Lindbergh Field Airport tower personnel, the local controller (LC), the ground controller, the Air Traffic Control manager, the on-duty supervisor, and another controller were interviewed. All of the tower personnel indicated that the MD-11 exited the runway at taxiway B5, the high-speed taxiway, prior to the accident airplane landing, and that the MD-11 was perpendicular to the runway instead of at an angle. They indicated that the accident airplane landed long, about the 2,000-foot marker, and started to oscillate when it taxied past the MD-11.

The local controller (LC) indicated that the MD-11 "planted it" at the 1,000-foot marker, and there was a cloud of blue rubber smoke that emanated from the airplane at the touchdown point. The MD-11 was slow exiting the runway, but was entirely off the runway at taxiway B5 before the accident airplane had been cleared to land. He stated that it was unusual for an MD-11 to land at SAN so the controllers were paying close attention to it. The LC stated that at no time during the accident sequence was there an indication that the MD-11 had powered up (i.e. smoke emanating from the engines) to move off the taxiway.

The local controller stated that the accident airplane came in steeper than normal, but not diving for the runway. The flight path appeared steady, and under control. The airplane stayed well above the flight path of the MD-11. The LC reported that the accident airplane landed past taxiway B5, and then he went back to his duties. When he looked up, the accident airplane was on its back.

The ground controller (GC) indicated that the MD-11 had landed and exited the runway, and had "definitely passed the edge line of the runway." After the MD-11 came to a stop the GC instructed them to taxi without delay. When the MD-11 didn't appear to be moving, he issued

the flight crew instructions to follow a Southwest airplane. The GC looked out the window and indicated that the accident airplane had not yet crossed over the displaced threshold. He checked again to make sure that the MD-11 had cleared the runway. The GC stated that the accident airplane touched down prior to taxiway B5, and he looked away. When he looked out of the tower window again, the airplane's tail was lifting up and then the airplane flipped over. The GC reported that the MD-11 had started to move "very slowly" during the time when the accident airplane's tail lifted up and rotated over.

The air traffic control manager stated that he and the GC were discussing what to do with the MD-11, and his perception was that the MD-11 had started to move at the time of the accident. He observed the local controller visually check the runway to make sure that the MD-11 had cleared the runway prior to issuing a landing clearance for the accident airplane, and that the local controller provided advisories to the accident airplane throughout the approach. During the landing rollout the tail of the accident airplane lifted up into the air three times. Each time the tail went up in the air it "got progressively worse until the airplane flipped over." The manager stated that the oscillations began after the accident airplane passed behind the MD-11.

The on-duty supervisor indicated that the accident airplane made a "tight, short approach." The base turn was right at the runway edge, and that the pilot made more of an "angled turn to final." The supervisor asked the local controller if he had intentionally turned the airplane in "like that [tight]." The local controller replied negatively.

Utilizing data provided from the Federal Aviation Administration approved flight manual for the accident airplane under the performance section, and the following conditions: standard sea level pressure and temperature, 2,100 pounds gross weight, and a 50-foot obstacle, the airplane's landing rollout should have been 445 feet. Utilizing a 2,650-pound gross weight, the landing rollout should have been 560 feet.

Pilot Information

Certificate:	Private	**Age:**	34,Male
Airplane Rating(s):	Single-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	
Instrument Rating(s):	None	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	No
Medical Certification:	Class 3 Valid Medical--no waivers/lim.	**Last FAA Medical Exam:**	May 7, 2002
Occupational Pilot:	UNK	**Last Flight Review or Equivalent:**	
Flight Time:	380 hours (Total, all aircraft), 360 hours (Total, this make and model), 150 hours (Pilot In Command, all aircraft), 60 hours (Last 90 days, all aircraft), 10 hours (Last 30 days, all aircraft), 4 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Cessna	**Registration:**	N3951D
Model/Series:	182A	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	34651
Landing Gear Type:	Tricycle	**Seats:**	2
Date/Type of Last Inspection:	September 12, 2002 Annual	**Certified Max Gross Wt.:**	2650 lbs
Time Since Last Inspection:	10 Hrs	**Engines:**	1 Reciprocating
Airframe Total Time:	4730 Hrs as of last inspection	**Engine Manufacturer:**	Continental
ELT:	Installed, activated, did not aid in locating accident	**Engine Model/Series:**	O-470
Registered Owner:	DB Air Inc.	**Rated Power:**	230 Horsepower
Operator:	Marc Hogue	**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	SAN,14 ft msl	**Distance from Accident Site:**	0 Nautical Miles
Observation Time:	08:39 Local	**Direction from Accident Site:**	0°
Lowest Cloud Condition:	Clear	**Visibility**	7 miles
Lowest Ceiling:	Broken / 1200 ft AGL	**Visibility (RVR):**	
Wind Speed/Gusts:	5 knots / None	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	190°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	29.88 inches Hg	**Temperature/Dew Point:**	66°C / 61°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Jean, NV (0L7)	**Type of Flight Plan Filed:**	None
Destination:	San Diego, CA (SAN)	**Type of Clearance:**	VFR
Departure Time:	05:45 Local	**Type of Airspace:**	Class B

Airport Information

Airport:	San Diego International Airpor KSAN	**Runway Surface Type:**	Asphalt;Concrete
Airport Elevation:	14 ft msl	**Runway Surface Condition:**	Dry
Runway Used:	27	**IFR Approach:**	None
Runway Length/Width:	9400 ft / 200 ft	**VFR Approach/Landing:**	Full stop;Traffic pattern

Wreckage and Impact Information

Crew Injuries:	1 None	**Aircraft Damage:**	Substantial
Passenger Injuries:		**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	1 None	**Latitude, Longitude:**	32.733612,-117.18972

Administrative Information

Investigator In Charge (IIC):	Cornejo, Tealeye
Additional Participating Persons:	Ty Parks; Federal Aviation Administration; San Diego, CA
Original Publish Date:	June 8, 2005
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=55700