Aviation Investigation Final Report

Location:	Sacramento, California	**Accident Number:**	WPR18CA172
Date & Time:	June 14, 2018, 11:38 Local	**Registration:**	N2165
Aircraft:	DORNIER GMBH ALPHA JET	**Aircraft Damage:**	Substantial
Defining Event:	Landing gear not configured	**Injuries:**	2 None
Flight Conducted Under:	Part 91: General aviation - Instructional		

Analysis

The pilot-under-instruction planned a visual, simulated no-flap approach and landing during an instructional flight in a twin-engine advanced jet trainer. Audio data provided by the Federal Aviation Administration indicated that the pilot requested a left closed traffic, simulated no-flap pattern and stated that he needed to go out about 4 miles upwind. By the time the air traffic tower controller responded, the pilot had already started the crosswind turn; therefore, the controller cleared him to the overhead pattern, left closed traffic. Subsequently, the controller initially instructed the pilot to make the base turn when able but then instructed him to turn immediately to be sequenced in front of slower traffic on a 5-mile final approach. The controller stated that he would give the pilot the 4 miles he requested on the next pattern. The pilot accepted the turn clearance and reported to the controller that he was turning. A review of radar data indicated that, during the final turn, the airplane overshot the final approach by over 1,800 ft to the northwest. Subsequently, the airplane landed on its belly and sustained substantial damage to the bottom of the fuselage. A postlanding fire ensued.

The filed company report stated that flying a no-flap approach and landing required maintaining a higher airspeed during the final turn, and when established on final approach, the airspeed had to be quickly bled off. The higher approach speed, difficulty of maintaining airspeed, and the early turn to final increased the pilot's workload during the simulated no-flap pattern. While on final approach, the pilot extended the air brakes, which are typically extended just before lowering the landing gear but failed to extend the landing gear. The flight instructor failed to notice the omission, which resulted in a gear-up landing. The pilots reported no preimpact mechanical malfunctions or failures with the airplane that would have precluded normal operation.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be:

The pilot's failure to extend the landing gear before landing. Contributing to the accident was the pilot's and the flight instructor's failure to adequately monitor the workload.

Findings

Personnel issues	Forgotten action/omission - Student/instructed pilot
Aircraft	Gear extension and retract sys - Not used/operated
Personnel issues	Use of equip/system - Pilot
Personnel issues	Task monitoring/vigilance - Instructor/check pilot
Personnel issues	Task monitoring/vigilance - Pilot
Environmental issues	Traffic pattern procedure - Effect on personnel

Factual Information

History of Flight

Landing	Landing gear not configured (Defining event)
Landing-landing roll	Fire/smoke (non-impact)

Flight instructor Information

Certificate:	Airline transport; Flight instructor	**Age:**	49,Male
Airplane Rating(s):	Single-engine land; Multi-engine land	**Seat Occupied:**	Rear
Other Aircraft Rating(s):	Glider	**Restraint Used:**	5-point
Instrument Rating(s):	Airplane	**Second Pilot Present:**	Yes
Instructor Rating(s):	Airplane multi-engine; Airplane single-engine; Instrument airplane	**Toxicology Performed:**	No
Medical Certification:	Class 1 Without waivers/limitations	**Last FAA Medical Exam:**	February 26, 2018
Occupational Pilot:	Yes	**Last Flight Review or Equivalent:**	February 5, 2018
Flight Time:	(Estimated) 9138 hours (Total, all aircraft), 136 hours (Total, this make and model), 9 hours (Last 90 days, all aircraft), 2 hours (Last 30 days, all aircraft), 1 hours (Last 24 hours, all aircraft)		

Pilot Information

Certificate:	Airline transport	**Age:**	47,Male
Airplane Rating(s):	Single-engine land; Multi-engine land	**Seat Occupied:**	Front
Other Aircraft Rating(s):	None	**Restraint Used:**	5-point
Instrument Rating(s):	Airplane	**Second Pilot Present:**	Yes
Instructor Rating(s):	None	**Toxicology Performed:**	No
Medical Certification:	Class 1 Without waivers/limitations	**Last FAA Medical Exam:**	January 18, 2018
Occupational Pilot:	Yes	**Last Flight Review or Equivalent:**	May 14, 2018
Flight Time:	(Estimated) 7900 hours (Total, all aircraft), 154 hours (Last 90 days, all aircraft), 27 hours (Last 30 days, all aircraft), 0 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	DORNIER GMBH	**Registration:**	N2165
Model/Series:	ALPHA JET No Series	**Aircraft Category:**	Airplane
Year of Manufacture:	1982	**Amateur Built:**	
Airworthiness Certificate:	Experimental (Special)	**Serial Number:**	0165
Landing Gear Type:	Retractable - Tricycle	**Seats:**	2
Date/Type of Last Inspection:	October 30, 2017 Condition	**Certified Max Gross Wt.:**	
Time Since Last Inspection:		**Engines:**	2 Turbo fan
Airframe Total Time:	2912.5 Hrs as of last inspection	**Engine Manufacturer:**	Snecma
ELT:	C126 installed, not activated	**Engine Model/Series:**	Larzac 04-C6
Registered Owner:		**Rated Power:**	2870 Lbs thrust
Operator:		**Operating Certificate(s) Held:**	Other operator of large aircraft

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	MHR,98 ft msl	**Distance from Accident Site:**	
Observation Time:	18:45 Local	**Direction from Accident Site:**	
Lowest Cloud Condition:	Clear	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	8 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	230°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	29.76 inches Hg	**Temperature/Dew Point:**	26°C / 11°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Mountain View, CA (NUQ)	**Type of Flight Plan Filed:**	None
Destination:	Sacramento, CA (MHR)	**Type of Clearance:**	VFR
Departure Time:	10:00 Local	**Type of Airspace:**	Class D

Airport Information

Airport:	Sacramento Mather MHR	**Runway Surface Type:**	Asphalt
Airport Elevation:	98 ft msl	**Runway Surface Condition:**	Dry
Runway Used:	22L	**IFR Approach:**	None
Runway Length/Width:	11301 ft / 150 ft	**VFR Approach/Landing:**	Touch and go;Traffic pattern

Wreckage and Impact Information

Crew Injuries:	2 None	**Aircraft Damage:**	Substantial
Passenger Injuries:		**Aircraft Fire:**	On-ground
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	2 None	**Latitude, Longitude:**	38.555278,-121.297225(est)

Administrative Information

Investigator In Charge (IIC):	Nixon, Albert
Additional Participating Persons:	Joseph Mitchell; Federal Aviation Administration; Sacramento, CA
Original Publish Date:	April 8, 2019
Note:	This accident report documents the factual circumstances of this accident as described to the NTSB.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=97502