Aviation Investigation Final Report

Location:	GALLUP, New Mexico	**Accident Number:**	DEN00LA140
Date & Time:	July 28, 2000, 18:22 Local	**Registration:**	N8188V
Aircraft:	Cessna A188	**Aircraft Damage:**	Substantial
Defining Event:		**Injuries:**	1 None
Flight Conducted Under:	Part 91: General aviation - Ferry		

Analysis

The pilot had just purchased the airplane, and was ferrying it to its new home base. Since an annual inspection was not current, a ferry permit was issued by the FAA for this flight. The pilot was landing to refuel. The pilot determined the wind was from the north as he made 'a normal wheel landing with some braking' on runway 24. The pilot stated that during the landing roll, 'the right wing lowered and the airplane turned hard left. The right main landing gear collapsed and the right wing struck the ground.' The airplane departed the left side of the runway at approximately 2,260 feet from the approach end, coming to a rest in the grass on the south side. The right main landing gear and right wing were damaged extensively. Recorded winds were 350 degrees at 10 knots gusting to 15 knots. Calculations provided evidence that by landing on runway 24, the pilot was attempting to land with a 20 degree right quartering tailwind. These circumstances provided a tailwind component of 5 knots and a crosswind component of 15 knots. The 1968 Cessna A188 Pilot Operating Handbook does not contain a demonstrated crosswind component listed. However, there is crosswind limitations. The 1983 Cessna A188, which has a higher gross weight than the former, has a demonstrated crosswind component of 17 miles per hour (15 knots).

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot's failure to compensate for the wind conditions. Factors were the pilot's selection of the wrong runway, and the tailwind/crosswind weather conditions.

Findings

Occurrence #1: LOSS OF CONTROL - ON GROUND/WATER
Phase of Operation: LANDING - ROLL

Findings
1. (F) WEATHER CONDITION - TAILWIND
2. (F) WEATHER CONDITION - CROSSWIND
3. (F) WRONG RUNWAY - SELECTED - PILOT IN COMMAND
4. (C) COMPENSATION FOR WIND CONDITIONS - NOT PERFORMED - PILOT IN COMMAND

Occurrence #2: GEAR COLLAPSED
Phase of Operation: LANDING - ROLL

Findings
5. LANDING GEAR,MAIN GEAR STRUT - OVERLOAD

Factual Information

On July 28, 2000, at 1822 mountain daylight time, a Cessna A188, N8188V, operated by Sun Western Flyers, Inc., was substantially damaged when it departed the side of the runway during landing roll at Gallup Municipal Airport, Gallup, New Mexico. The commercial pilot, the sole occupant aboard, was not injured. Visual meteorological conditions prevailed, and no flight plan had been filed for the ferry flight being operated under Title 14 CFR Part 91. The flight originated at Las Vegas, New Mexico, approximately 1530.

According to the pilot, he had just purchased the airplane, and was ferrying it to its new home base in Yuma, Arizona. Because an annual inspection was not current, the FAA issued a ferry permit for this flight. The pilot departed Meadow Lake Airport, Colorado Springs, Colorado, around 1300 hours, refueled at Las Vegas, New Mexico, around 1520 hours, and was landing at Gallup to refuel.

The pilot determined the wind was from the north as he made "a normal wheel landing with some braking" on runway 24. The pilot stated that during the landing roll, "the right wing lowered and the airplane turned hard left. The right main landing gear collapsed and the right wing struck the ground." The airplane departed the left side of the runway at approximately 2,260 feet from the approach end, coming to a rest in the grass on the south side. The right main landing gear and right wing were damaged extensively.

An FAA aviation safety inspector went to the scene. He stated that physical evidence suggested that the landing gear failed due to excessive side loads. Examination of the runway provided evidence of gouging caused by the right main wheel assembly, the right main gear strut, and propeller.

Recorded winds were 350 degrees at 10 knots gusting to 15 knots. Calculations provided evidence that by landing on runway 24, the pilot was attempting to land with a 20 degree right quartering tailwind. These circumstances provided a tailwind component of 5 knots and a crosswind component of 15 knots. Landing on runway 06 would have presented a 70 degree left crosswind, and would have provided a headwind component of 15 knots and a crosswind component of 5 knots (see Crosswind Component Chart).

In a telephone conversation with a Cessna representative, he said that in the pilots' operating handbook (POH), for this Cessna A188, which is a 1968 version, there is not a demonstrated crosswind component listed. However, there is a demonstrated crosswind component of 17 miles per hour (15 knots), listed in the POH for the 1983 version. This can only be used as a reference, because the 1983 version has a maximum gross weight of 4200 lbs, which is 900 lbs higher then the 1968 version.

Pilot Information

Certificate:	Commercial	**Age:**	65,Male
Airplane Rating(s):	Single-engine land; Single-engine sea; Multi-engine land	**Seat Occupied:**	Center
Other Aircraft Rating(s):	Glider	**Restraint Used:**	
Instrument Rating(s):	Airplane	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	No
Medical Certification:	Class 2 Valid Medical--w/ waivers/lim	**Last FAA Medical Exam:**	October 6, 1998
Occupational Pilot:	UNK	**Last Flight Review or Equivalent:**	
Flight Time:	5600 hours (Total, all aircraft), 4 hours (Total, this make and model), 5500 hours (Pilot In Command, all aircraft), 50 hours (Last 90 days, all aircraft), 20 hours (Last 30 days, all aircraft), 4 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Cessna	**Registration:**	N8188V
Model/Series:	A188 A188	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	188-0438
Landing Gear Type:	Tailwheel	**Seats:**	1
Date/Type of Last Inspection:	Annual	**Certified Max Gross Wt.:**	3300 lbs
Time Since Last Inspection:	550 Hrs	**Engines:**	1 Reciprocating
Airframe Total Time:		**Engine Manufacturer:**	Continental
ELT:	Installed, activated, did not aid in locating accident	**Engine Model/Series:**	IO-520-D
Registered Owner:	SUN WESTERN FLIERS, INC.	**Rated Power:**	300 Horsepower
Operator:		**Operating Certificate(s) Held:**	
Operator Does Business As:		**Operator Designator Code:**	EKIA

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	GUP ,6472 ft msl	**Distance from Accident Site:**	
Observation Time:	18:15 Local	**Direction from Accident Site:**	
Lowest Cloud Condition:	Clear	**Visibility**	25 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	10 knots / 15 knots	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	350°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30 inches Hg	**Temperature/Dew Point:**	34°C / 3°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	LAS VEGAS , NM (LVS)	**Type of Flight Plan Filed:**	None
Destination:		**Type of Clearance:**	None
Departure Time:	15:30 Local	**Type of Airspace:**	Class E

Airport Information

Airport:	GALLUP MUNICIPAL AIRPORT GUP	**Runway Surface Type:**	Asphalt
Airport Elevation:	6472 ft msl	**Runway Surface Condition:**	Dry
Runway Used:	24	**IFR Approach:**	None
Runway Length/Width:	7312 ft / 100 ft	**VFR Approach/Landing:**	Stop and go;Straight-in

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:**	35.519214,-108.729248(est)

Administrative Information

Investigator In Charge (IIC):	Scott, Arnold
Additional Participating Persons:	JOHN C SANDERS; ALBUQUERQUE , NM
Original Publish Date:	March 2, 2001
Last Revision Date:	
Investigation Class:	Class
Note:	The NTSB traveled to the scene of this accident.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=49843