

ACCIDENT

Aircraft Type and Registration:	Learjet 45, C-GMCP	
No & Type of Engines:	2 Honeywell TFE731-20BR-1B turbofan engines	
Year of Manufacture:	2000 (Serial no: 45-126)	
Date & Time (UTC):	4 May 2019 at 2159 hrs	
Location:	Edinburgh Airport	
Type of Flight:	Commercial Air Transport (Non-Revenue)	
Persons on Board:	Crew - 2	Passengers - 2
Injuries:	Crew - None	Passengers - None
Nature of Damage:	Damage to nose landing gear leg and its support and actuating mechanism	
Commander's Licence:	Airline Transport Pilot's Licence	
Commander's Age:	50 years	
Commander's Flying Experience:	12,920 hours (of which 2,669 were on type) Last 90 days - 152 hours Last 28 days - 57 hours	
Information Source:	Aircraft Accident Report Form submitted by the pilot and further enquiries by the AAIB	

Synopsis

The nose landing gear leg collapsed aft during pushback which was most likely caused by inadvertent brake application.

History of the flight

The flight crew started both engines at the gate. The aircraft was then pushed back using a TLD 150 Max tug¹. As the aircraft was being turned to line up on the taxiway the nose landing gear (NLG) suddenly collapsed aft and the aircraft came to rest (Figure 1). During the pushback the co-pilot had been carrying out checks and had started adjusting the position of his rudder pedals. He was bringing the pedals aft and he said there was a possibility he might have tapped the brakes but he was not aware of having done so.

Aircraft examination

The NLG on this aircraft type retracts in the forward direction. The NLG actuator is attached to the front of the nose leg at a bracket. This bracket had failed allowing the NLG to collapse aft. The bracket was examined at a metallurgical lab which revealed that it had failed due to overload. There was no evidence of material defects or fatigue.

Footnote

¹ The heaviest aircraft this tug can handle is a Boeing 757.



Figure 1

C-GMCP nose gear collapse

The aircraft manufacturer examined photographs of the structural damage to the NLG bay and stated that this damage and the damage to the bracket was similar to the damage that occurred to a Learjet 45 (MSN 2129) at their production facility, which occurred during pushback with brake application. The manufacturer stated that it was also aware of two in-service events (Learjet 45 MSN 181 and Learjet 45 MSN 202) in which brake application during pushback resulted in the same rearward NLG collapse as in this accident.

Conclusion

The NLG collapse on aircraft C-GMCP was most likely caused by inadvertent brake application during pushback.