No: 10/92 **Ref: EW/G92/06/09** **Category: 1c**

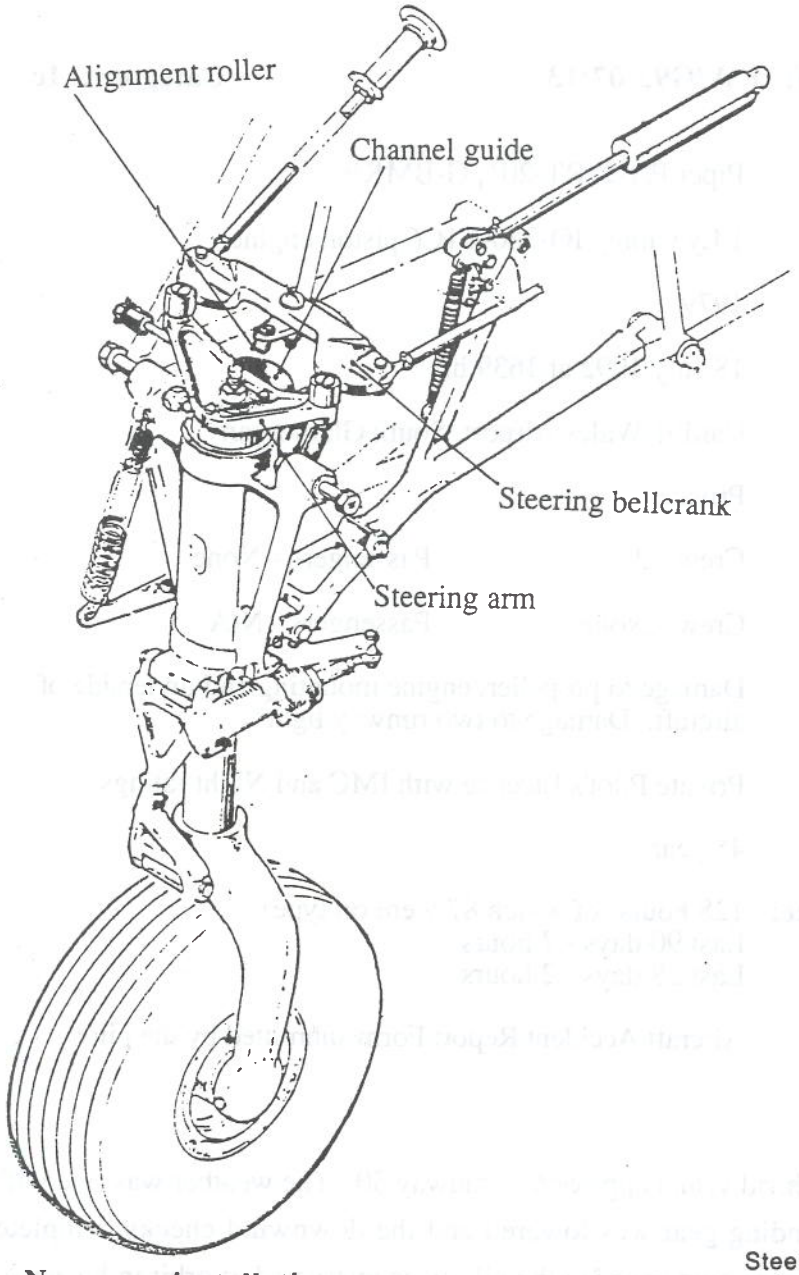
Aircraft Type and Registration:	Piper PA-28R-200-2 Cherokee Arrow II, G-BBFD
No & Type of Engines:	1 Lycoming IO-360-C1C piston engine
Year of Manufacture:	1973
Date & Time (UTC):	16 June 1992 at 1545 hrs
Location:	White Waltham Airfield, Berkshire
Type of Flight:	Private (training)
Persons on Board:	Crew - 2 Passengers - None
Injuries:	Crew - None Passengers - N/A
Nature of Damage:	Propeller blades damaged
Commander's Licence:	Commercial Pilot's Licence with Instrument and Instructor ratings
Commander's Age:	42 years
Commander's Flying Experience:	1,792 hours (of which 70 were on type) Last 90 days - 174 hours Last 28 days - 53 hours
Information Source:	Aircraft Accident Report Form submitted by the pilot and additional AAIB enquiries

During climb-out from a practice forced landing, the 'in transit' light remained on after the landing gear had been selected up. The climb speed was increased and the landing gear override switch (which inhibits automatic gear deployment at low airspeeds) was operated, but the light remained on. The gear selector was recycled twice and on the second occasion the nose gear was heard to lock down with a pronounced 'clunk'. However the transit light remained on after the next retraction. On returning to the airfield, only the main gear green lights illuminated when the gear was selected down. Personnel on the ground confirmed that the nose leg appeared jammed at an angle of 45 degrees. The aircraft was climbed to altitude where it was manoeuvred in order to apply 'g' loading to the nose leg. The emergency extension procedure was carried out, full travel rudder inputs were made, and the gear was cycled once again, but to no avail. On returning to the airfield once more, a practice approach was made in order to establish glide performance, and on the next approach the engine was stopped at about 400 feet agl in order to minimise propeller damage during the landing. The touchdown was smooth and the nose was held off the runway as long as possible. The aircraft came to a halt after a

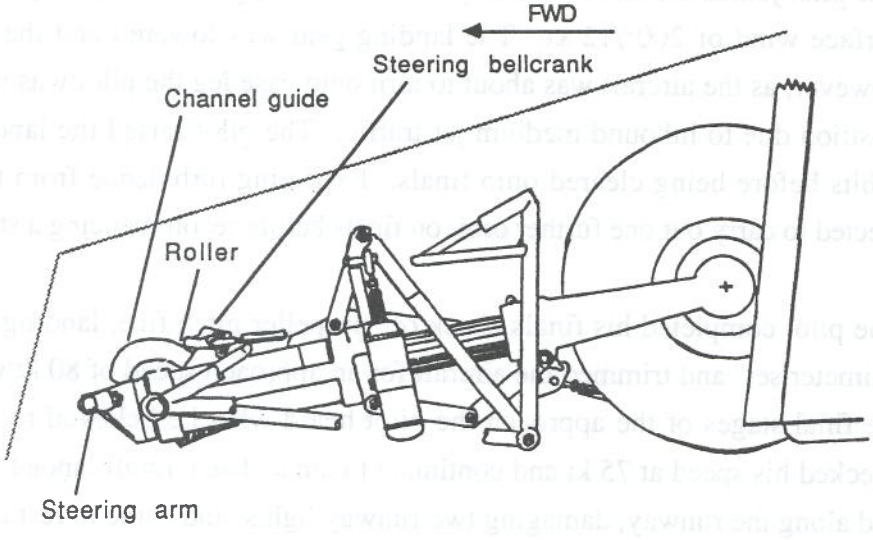
short groundslide and the occupants left the aircraft via the cabin door, which had been opened prior to touchdown.

Subsequent examination revealed that a roller on the steering linkage, which is normally located within an alignment channel attached to the top of the nose leg, had ridden along the outside of the channel during landing gear extension. The steering linkage becomes separated from the leg during retraction, with the exception of the roller on the steering arm which should remain in the channel (see attached diagrams). It was thus evident that the roller had disengaged from the end of the channel during flight, allowing the leg to rotate slightly, with the result that on the next gear down selection the roller rode along the left hand side of the channel, causing the leg to twist, thereby preventing alignment between the steering bellcrank on the linkage and the steering arm on the leg. This, in turn, prevented the leg from reaching the fully extended position.

The subsequent repairs necessitated replacing the alignment channel, and it was observed that the new component was 0.3 inches longer than the old item, although there was no paperwork, such as a Service Bulletin, which recorded any such change. The reason for the roller having disengaged from the channel was not established. However, it was noted that the increased length of the new channel reduced the scope for the roller to suffer disengagement.



Nosegear installation



View of nosegear in retracted position