

No: 4/92

Ref: EW/G92/01/12

Category: 1b

Aircraft Type and Registration: Britten-Norman Islander, BN2A, G-BDWG

No & Type of Engines: 2 Lycoming O-540-E4C5 piston engines

Year of Manufacture: 1976

Date & Time (UTC): 30 January 1992 at 0030 hrs

Location: Prestwick Airport, Strathclyde

Type of Flight: Public Transport

Persons on Board: Crew - 1 Passengers - None

Injuries: Crew - None Passengers - N/A

Nature of Damage: Damage to propeller tip, nose landing gear and runway edge light

Commander's Licence: Airline Transport Pilot's Licence

Commander's Age: 42 years

Commander's Flying Experience: 6,000 hours (of which 1,000 were on type)

Information Source: Aircraft Accident Report Form submitted by the pilot and further inquiries by AAIB

The aircraft was about to depart from Prestwick Airport on a freight only night flight to Belfast Aldergrove, Northern Ireland. The weather was CAVOK with a surface wind of 040°/05 and the temperature was -1°C. Before starting engines the pilot had a layer of frost removed from the windscreens, however, during the taxi phase the pilot noticed moisture forming both on the inside and outside of the windscreen. The aircraft heater, which demists the windscreen, had been selected ON but had not yet become effective. The pilot reported that he was having problems with the cockpit lighting and that lights from the runway and terminal buildings were being refracted by the moisture contamination on the windscreen.

After holding for a short while, the aircraft was cleared to line-up for a take-off on runway 31. The runway at Prestwick is 46 metres wide with tarmac shoulders 23 metres wide. White runway edge lights which stand approximately 12 inches high and a broad white painted line designate the boundary between the main runway surface and the hard shoulders. The pilot stated that, after line-up and during the take-off run, a "bump" was felt similar to that caused when driving over a "catseye" reflector on a road. During the climb-out, the pilot realised that his take-off may not have been on the

runway centre line and that he may have confused the runway edge lights for runway centre line lights. He continued to Belfast Aldergrove and landed without incident.

The pilot reported that as he taxied onto the runway he must have mistaken the taxiway edge lines for the centre line. These edge lines curve towards the grass edges adjacent to the hard shoulders where the taxiway meets the runway. As they curve they become worn and indistinct. The yellow painted taxiway centre line, which crosses the runway and leads into the runway centre line, had also become worn and faded in the area of the hard shoulder.

Initial inspection of the aircraft revealed slight damage to one of the propeller tips. However, further engineering inspection showed that the nose landing gear leg had been distorted, the tyre had been cut and damage had been caused to the bulkhead and baffles in the nose wheel bay area.

In his report the pilot stated that his entrance onto the runway was from link 'L' (see attached airfield plans). However, inspection of the runway lights at Prestwick revealed damage to one runway edge light in block adjacent to the link 'P' entrance. If the aircraft had commenced its take-off roll from link 'L' this light would have been behind it. The taxiway markings on link 'L' also differ from those described by the pilot in that the taxiway edge lines extend across the runway hard shoulders to meet the runway edge lines and lights. Markings on the link 'P' entrance match those described in the pilot's report. When these anomalies were brought to the pilot's attention he stated that, on reflection, he was unsure of which taxiway link had been used.

The pilot assessed the cause of the accident to be due to the poor cockpit lighting and moisture on the inside and outside of the windscreen reducing forward visibility, coupled with the large runway shoulder area and a taxiway edge line which was mistaken for a centre-line during line-up.

It has been recommended that the CAA should carry out an audit of those airfields, where the paved surface extends beyond the runway width, in order to standardise the surface markings at taxiway / runway junctions designed to lead aircraft onto the centreline. Furthermore, it has been recommended that where taxiway guidance is by painted marks alone and possible confusion exists, consideration should be given to restricting the use of these taxiway / runway junctions to daylight hours only.

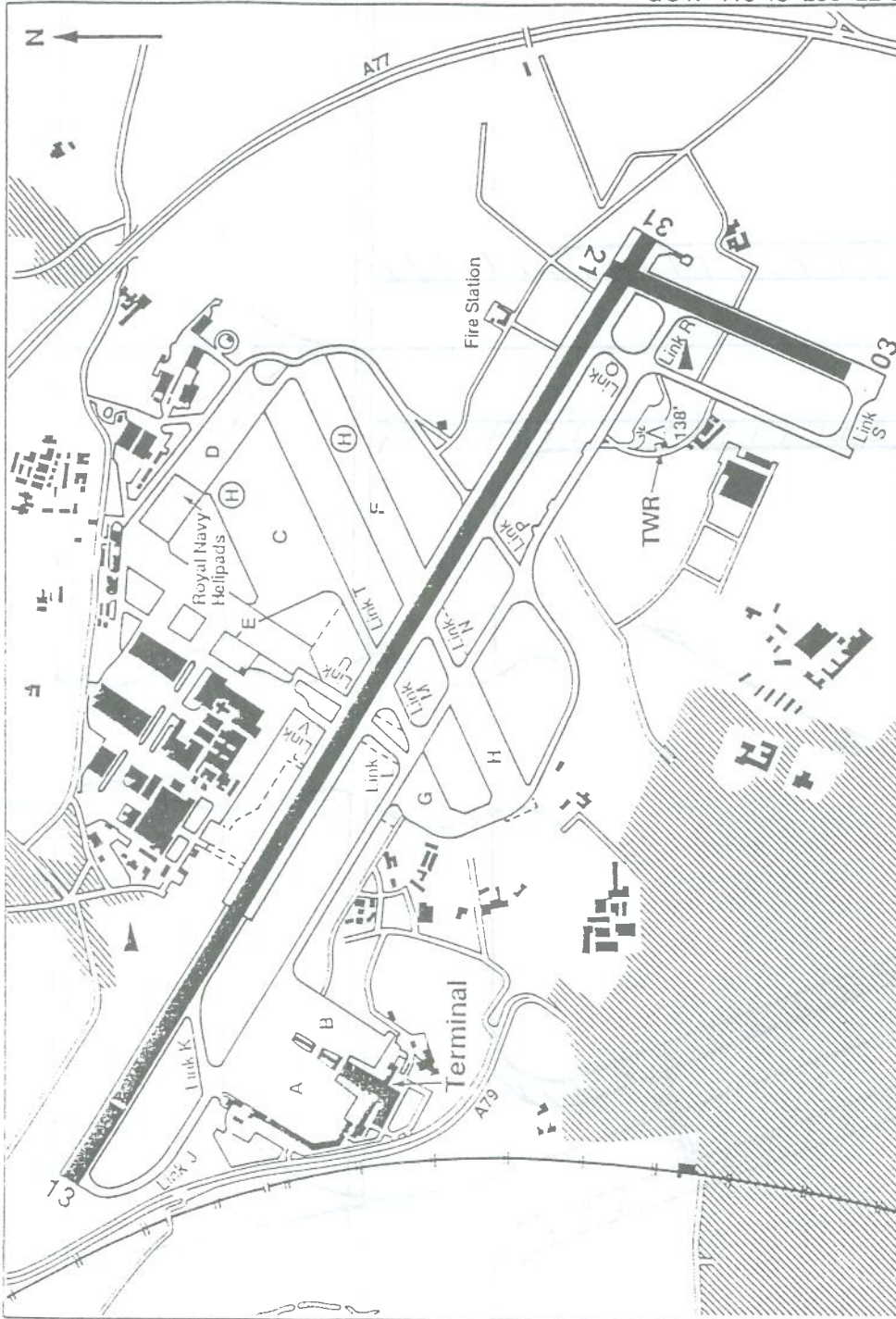
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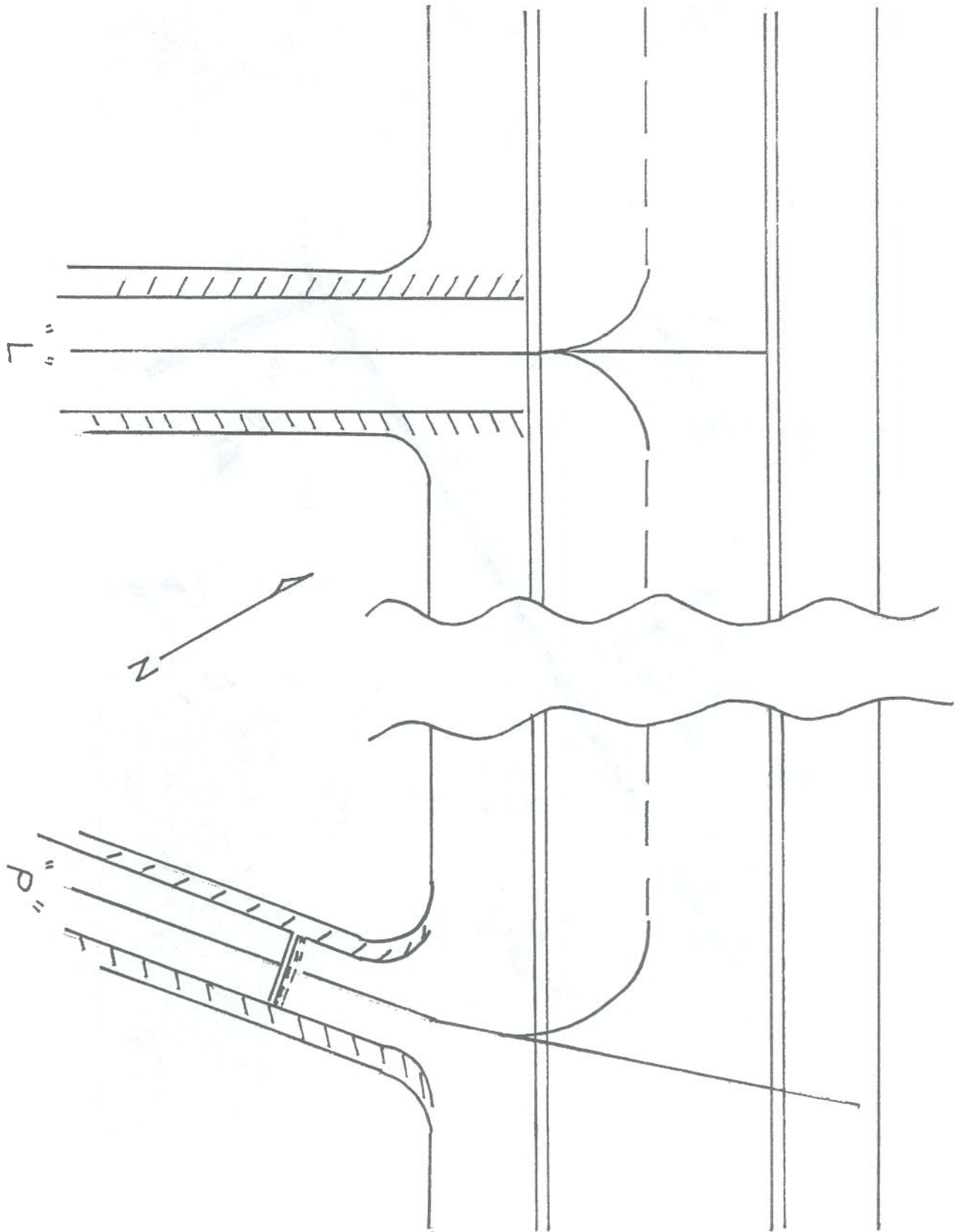
N5530-47 W00435-13
1nm NE of Prestwick.

PRESTWICK

66 ft AMSL

TRN 117-50 038 13-5
GOW 115-40 200 22-3





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