

Accident

Aircraft Type and Registration:	AW139, 5N-BOX
No & Type of Engines:	2 Pratt & Whitney Canada PT6C-67C turboshaft engines
Year of Manufacture:	2012 (Serial no: 31386)
Date & Time (UTC):	13 November 2023 at 0958 hrs
Location:	Norwich Airport
Type of Flight:	Commercial Air Transport (Non-Revenue)
Persons on Board:	Crew – 2 Passengers – None
Injuries:	Crew – None Passengers – N/A
Nature of Damage:	Damage to main rotor blade tips
Commander's Licence:	Airline Transport Pilot's Licence
Commander's Age:	35 years
Commander's Flying Experience:	2,600 hours (of which 2,100 were on type) Last 90 days – 200 hours Last 28 days – 80 hours
Information Source:	Aircraft Accident Report Form submitted by the pilot

Synopsis

The helicopter was ground taxiing to the parking area on return from an air test flight. As the commander manoeuvred the helicopter to align with other helicopters on adjacent parking spots the main rotor blades struck a lamp post on the airport perimeter. All five main rotor blades were damaged. The helicopter was shut down and no personnel were injured. The handling agent took safety action to require the use of marshallers for crew unfamiliar with or visiting the airport and to replace the stand markings in early 2024.

History of the flight

The helicopter, an AW139, had concluded a post maintenance test flight and was returning to its parking position at Norwich Airport (Figure 1). Neither of the pilots were based at Norwich so their familiarity with the airport was limited.

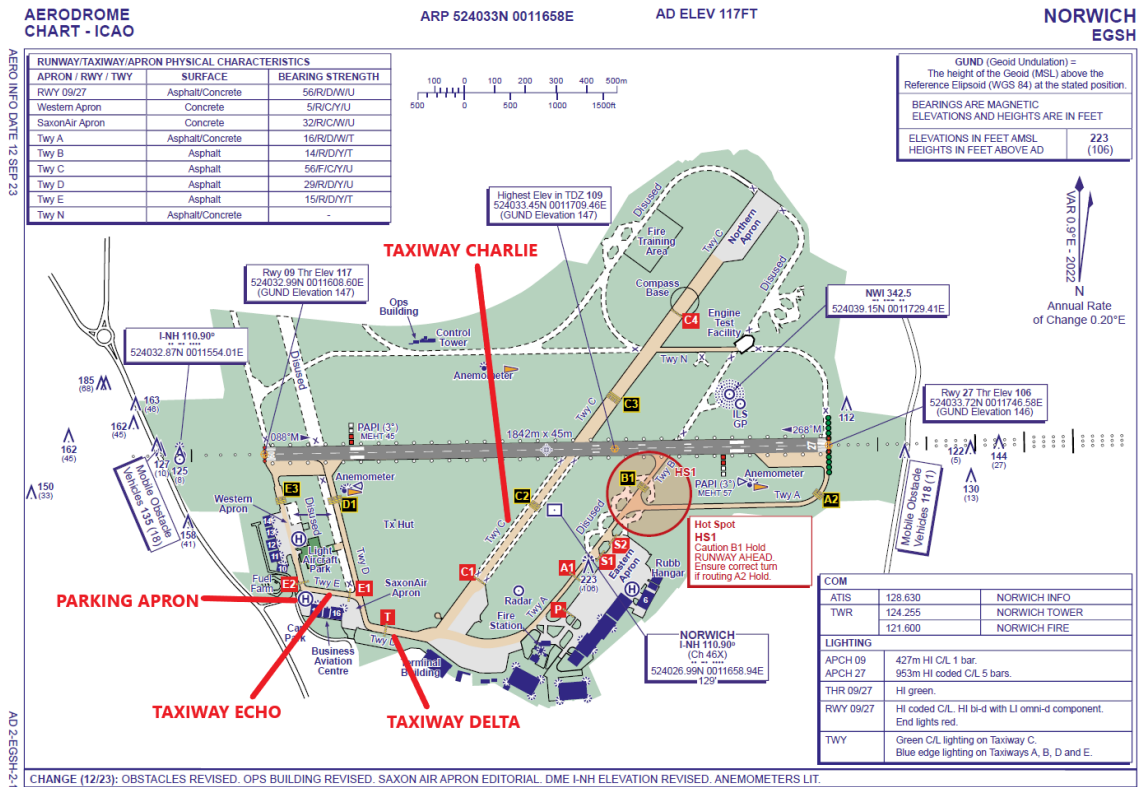


Figure 1
Norwich Airport chart

The helicopter made an approach to Runway 27 and vacated at the intersection with Taxiway Charlie (Figure 1). The helicopter was manoeuvred south down Taxiway Charlie and then turned right to continue via Taxiways Delta and Echo to the parking apron (Figure 1).

The only unoccupied parking stand on the apron was Stand 12 which is the closest stand to the airfield perimeter (Figure 2). Stand 11 is disused. As the helicopter ground taxied toward Stand 12 the commander was PF. He stated that he followed the yellow line off Taxiway Echo into the parking stand and then followed the outer yellow circular line (Figure 3) to the right to allow him to turn left and park facing to the east, in the same direction as the helicopter on the adjacent Stand 13.



Figure 2
Parking stand positions

The commander believed that following the outer line would give the helicopter clearance from obstacles. However, as the helicopter turned left toward the centre of Stand 12 the main rotor blades struck a lamp post that was located on the street just outside the airfield perimeter. The path followed by the helicopter is illustrated in a sketch provided by the commander (Figure 3).

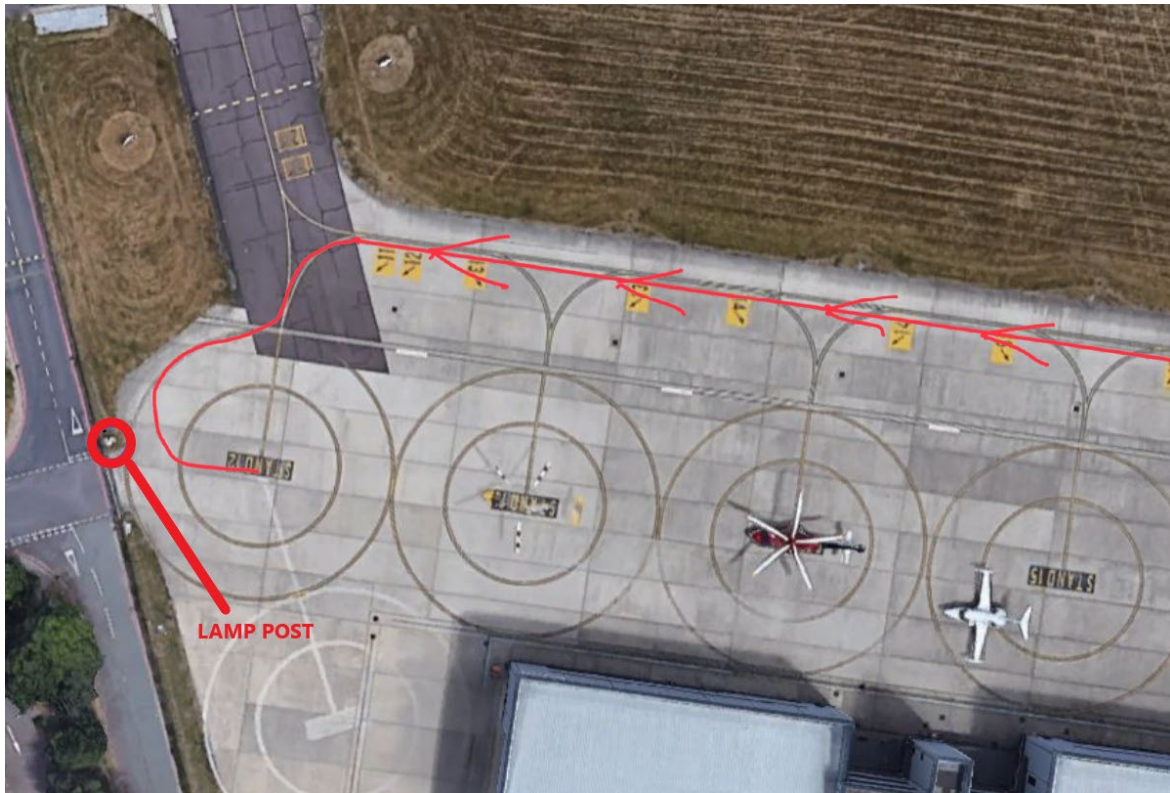


Figure 3

Sketch of taxi path provided by commander

After the blade strike, the commander turned further left to move the helicopter away from the obstacle. The helicopter was then shut down on Stand 12. All five main rotor blades were damaged and there was impact damage on the lamp stanchion. Some small pieces of debris were scattered all around the vicinity of Stand 12. No personnel were injured.

Meteorology

The weather report for Norwich published at 0950 hrs indicated a wind from 180° at 12 kt with the direction varying between 140° and 230°.

Parking Stand Markings

The standards for helicopter parking stand markings are contained in Annex 14 to the Chicago Convention. An extract showing standard marking layouts is at Figure 4.

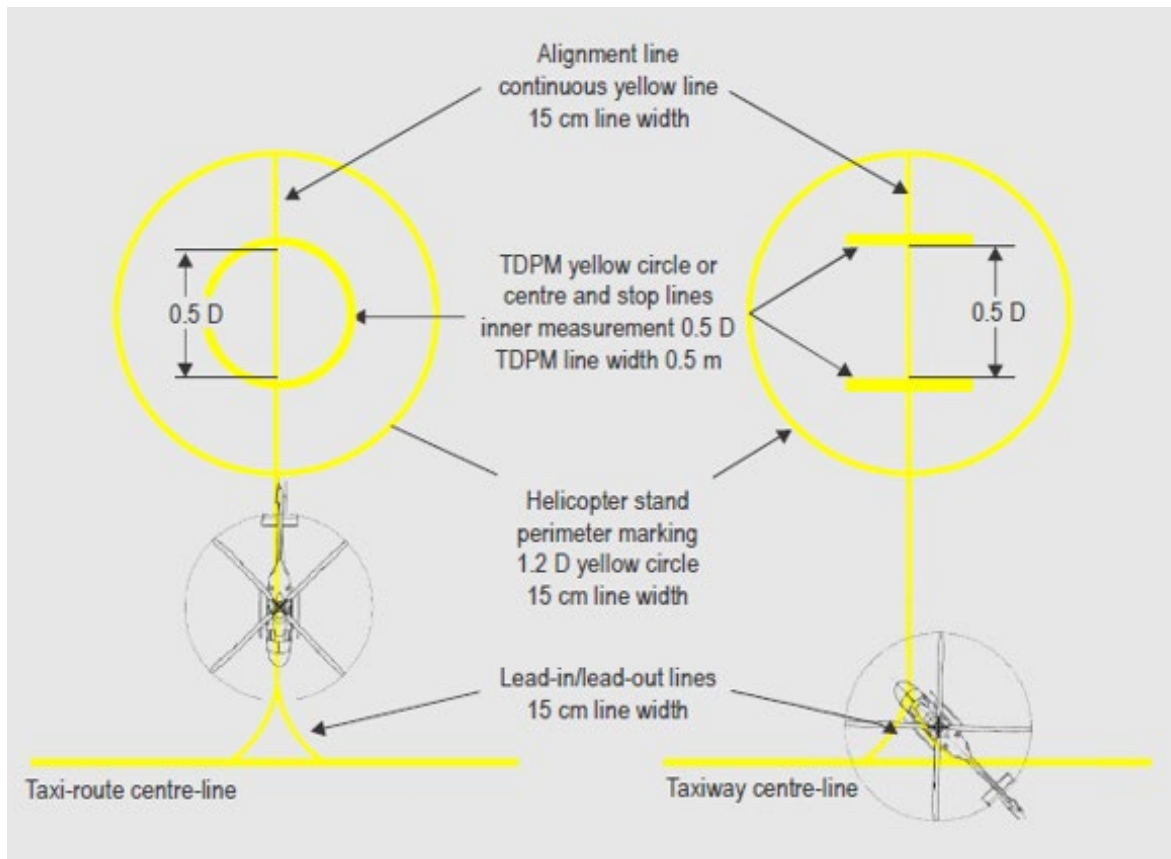


Figure 4

Annex 14 stand markings

The markings at Norwich conform with the left design, using a circular Touch Down Position Marking (TDPM). The D in the diagram is a variable dimension for the size of the markings, where D is the diameter of the rotor and delineates the largest helicopter which could use the stand. The Norwich stands were sized for AW139 helicopters.

A photograph supplied by the handling agent (Figure 5) shows that the surface markings at Norwich were somewhat faded. The red arrow indicates the helicopter direction of travel round the outer circle of the stand.



Figure 5

Norwich stand markings. The commander stated that he was familiar with the markings for a stand as described in Annex 14

Analysis

The helicopter was returning to the parking stand at Norwich following an uneventful post maintenance test flight. After clearing the runway, the commander was ground taxiing the helicopter to park on Stand 12 at Norwich. Along Taxiway E, the commander correctly followed the yellow centreline marking. As the helicopter approached Stand 12 the commander initially followed the lead-in line from the taxiway centreline toward Stand 12. However, as he entered the stand he turned right and followed the yellow perimeter line of the stand, believing that would give him clearance from obstacles. The commander's intention in making the right turn along the perimeter line was to create sufficient room for a left turn to park on the TDPM with the helicopter facing east. The helicopter on the adjacent Stand 13 was parked facing east and the commander was distracted by this to do the same. The prevailing wind was from the south so following the lead-in line directly to the TDPM would have left the helicopter on an into-wind heading for shutdown.

Room for the manoeuvre was constrained so the commander was endeavouring to give himself maximum room for the turn. The lamp post that the main rotor struck was outside the airport perimeter, painted grey and would not have been obvious to the commander, particularly given his focus on positioning the helicopter for the left turn to east.

Despite his knowledge of helicopter parking stand markings, the commander mistook the yellow stand perimeter line for a continuation of the taxiway lead-in line which is also painted yellow. At that juncture he believed that following the perimeter line would give the helicopter clearance from obstacles in the same way as the taxiway centreline is designed to. This would likely have reduced his attention to possible obstacles to the right of the helicopter since he believed they would not be a factor. The poor definition of the ground markings may have contributed to the commander's misinterpretation of the correct taxi path.

As the perimeter line is not intended to give clearance from obstacles and with reduced crew attention to the right the helicopter main rotor blade tips struck the lamp post, damaging all five.

Conclusion

The helicopter main rotor blades struck a lamp post while ground taxiing to park on Stand 12 at Norwich Airport. All five main rotor blades were damaged and small pieces of debris were spread over a considerable area. No personnel were injured. Two safety actions were taken.

Safety action

To reduce the likelihood of a re-occurrence of a similar event with crews that are not Norwich based, the handling agent for the parking apron took the following safety action:

A local procedure was established so that crews not based at Norwich would be directed to their parking positions by an aircraft marshaller.

The stands would be resized for different helicopters in the early part of 2024 and the stand markings would be erased and replaced with new painted surface markings.