ACCIDENT

Aircraft Type and Registration:	Piper PA-34-220T Seneca V, OK-OKD	
No & Type of Engines:	2 Continental Motors TSIO-360 piston engines	
Year of Manufacture:	2001	
Date & Time (UTC):	17 August 2015 at 1832 hrs	
Location:	Newquay Airport, Cornwall	
Type of Flight:	Private	
Persons on Board:	Crew - 1	Passengers - None
Injuries:	Crew - 1 (Fatal)	Passengers - N/A
Nature of Damage:	Aircraft destroyed	
Commander's Licence:	Private Pilot's Licence	
Commander's Age:	68 years	
Commander's Flying Experience:	1,300+ hours (estimated, of which 16+ were on type) Last 90 days - 16+ hours Last 28 days - 16+ hours	
Information Source:	AAIB Field Investigation	

Synopsis

The pilot was landing at Newquay Airport at the end of a three-sector flight from Pribram Airport, near Prague, Czech Republic. The aircraft bounced on landing and a go-around was initiated. At some stage during the touchdown, the right engine propeller blades contacted the runway. After lifting off, the aircraft started a low level climbing turn to the right, which continued towards a downwind heading. The aircraft was then seen to yaw to the right and enter a steep descent, before impacting the ground.

History of the flight

Background

The pilot arranged to purchase the aircraft from a company based at Pribram Airport (LPKM), near Prague, Czech Republic. The purchase arrangements included familiarisation training on the aircraft, if required, and the option of a safety pilot for the flight to the United Kingdom (UK).

The pilot travelled to the Czech Republic on 11 August 2015 and started flying OK-OKD, with an instructor, on 12 August 2015. He had planned to return to the UK on Friday 14 August but there was a delay in the completion of the necessary documentation for the transfer of the aircraft ownership and the instructor also considered that the familiarisation training was not complete.

Between 12 and 16 August, the pilot completed ten hours of familiarisation training, including three hours in the local circuit and several landings at other airfields. During the course of instruction, the sequence of actions trained for a two-engine go-around was: set full power, speed 90 kt, initiate climb, retract the flap to 25°, then, when a positive climb had been achieved, select the landing gear UP, select flap to 10°, then flap 0° and set climb power.

Additional familiarisation training was available but the pilot was keen to return to the UK as soon as possible. Consequently, it was arranged that the aircraft would depart Pribram on 17 August, with the intention of flying to Biggin Hill Airport (EGKB), in the UK. The pilot and the instructor then planned to stay the night in London, before flying on to Newquay Airport, Cornwall (the pilot's home airfield), the next day.

Flight to the UK

The pilot and his instructor departed Pribram Airport at 0755 hrs on 17 August 2015, initially flying to Prague Airport (LPKR). The aircraft arrived there at 0840 hrs and was refuelled. Customs clearance was obtained and it departed for Biggin Hill Airport at 0950 hrs. The weather conditions were not suitable for VFR flight, so both sectors were flown IFR. As the aircraft neared the UK, the weather conditions improved and a straight-in ILS approach was carried out to Runway 21, at Biggin Hill. The aircraft landed at 1329 hrs.

After landing the pilot and instructor discussed the serviceability of the autopilot. For about the last 30 minutes of the flight from Prague, the autopilot's heading mode had not maintained the selected heading, although the navigation mode had worked normally. The instructor suggested that the problem might be fixed by removing all power from the autopilot and then restoring it.

The instructor offered to accompany the pilot for the rest of the flight to Newquay, either that same afternoon or on the following day. However, the pilot declined the offer and indicated that he would plan to stay overnight in London and continue the next day, either with a local UK based instructor or on his own. The instructor recommended to the pilot that he should fly with a safety pilot for a number of hours until he had become more familiar with the aircraft. The instructor returned to the Czech Republic that evening.

After the instructor departed, the pilot entered the Airport terminal area to buy a cup of coffee and obtain assistance printing out a flight plan from his tablet computer. The assistant at the reception desk stated that the pilot mentioned he was very tired and asked for help with the coffee machine.

The pilot also arranged for the aircraft to be refuelled, uplifting 322 litres (85 USG) of Avgas 100LL.

Flight to Newquay

The aircraft departed for Newquay at 1634 hrs. It flew south-east towards the coast and then turned west. A plot of the nine waypoints on the planned route, together with the aircraft's recorded track, are shown in Figure 1.

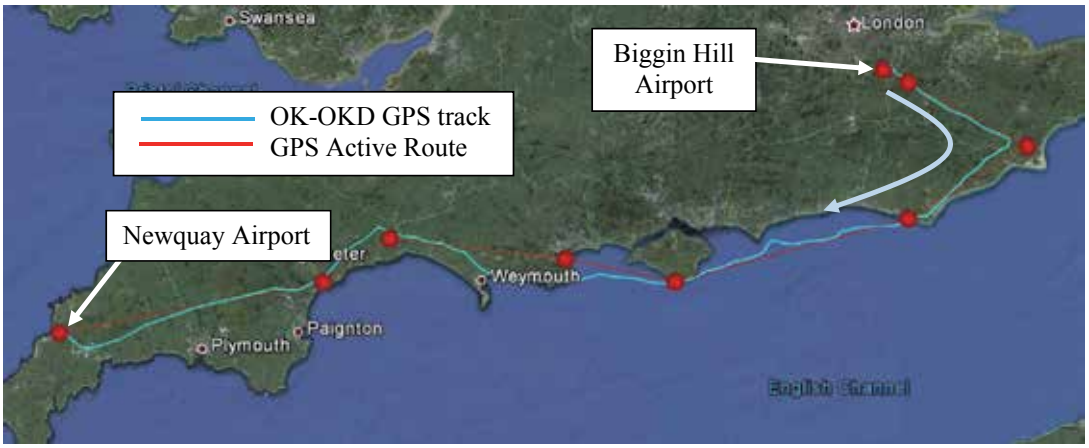

Figure 1
OK-OKD recorded GPS track

At 1815 hrs, the pilot contacted Newquay ATC (Approach). He was issued with a transponder code and advised that the aerodrome QNH was 1018 hPa. He confirmed that he had received ATIS information Y (Runway 30 in use) and requested a visual approach, commenting "ITS BEEN A LONG DAY". The next contact was at 1826 hrs, as the aircraft was tracking west, when ATC enquired whether the pilot had the airfield in sight. He replied "NOT JUST AT THE MOMENT – ER THE SUNS RIGHT IN MY EYES". ATC advised the pilot he was approaching the runway extended centreline at about 8 nm and suggested a turn to the right. He was advised that the runway lights were on. Two minutes later, the pilot confirmed that he had the lights in sight and he was instructed to transfer to the ATC Tower frequency. Having established contact with the ATC Tower Controller, he was issued with a clearance to land and advised that the surface wind was from 350° at 7 kt.

From his vantage point in the ATC Tower Visual Control Room (VCR), the Controller watched the aircraft land. He later stated that it touched down just after the runway touchdown zone and bounced. He then saw the left wing lift and the aircraft turn towards the right side of the runway. Thinking that it was going to run off the runway onto the grass, he activated the crash alarm. The aircraft then become airborne again and he heard the pilot transmit "GOING ROUND" in a calm voice.

The aircraft tracked towards the ATC Tower in a climbing turn to the right. The controller estimated that it had climbed to a height of about 150 ft, and was still turning to the right, when he saw a distinct yaw to the right, the nose drop to a near vertical attitude and the aircraft descend rapidly. It then disappeared out of sight behind a building.

As the crash alarm had already been activated, the Controller made contact with the airfield RFFS and directed them towards the aircraft. He advised them that there was one person on board but subsequently revised this to an unknown number of persons on board. He then telephoned Biggin Hill ATC to confirm how many occupants were in the aircraft. Being a private, domestic flight, there was no requirement for the pilot to notify ATC of the number of persons on board.

The RFFS arrived at the scene quickly and extinguished a small fire. They determined that the pilot had not survived the impact and checked the cabin to confirm that he was alone.

Witness information

A witness located south of the runway reported that his attention was drawn to the aircraft by an unusual noise, as it went around. He described a "loud clattering", somewhat similar to an "unsilenced exhaust" on a car. He saw the aircraft flying towards the ATC Tower, while turning right. As the turn continued, the angle of bank increased until the left wing was almost vertical. Then he saw the nose dropping and realised the aircraft would crash. Subsequently, he saw smoke rising from the accident site and drifting to the right (south-east).

A witness in a vehicle, also on the south side of the runway, saw the aircraft make a couple of small "hops" on landing and then described seeing a "huge leap" and the aircraft bounce from one wheel to another. He heard the engine noise increase and saw the aircraft climb away from the ground in a turn to the right. He watched as the aircraft entered a steeply banked turn to the right and described seeing the nose turn towards the ground, before the aircraft entered a steep descent.

Meteorological information

The weather conditions for the flight from Biggin Hill to Newquay were suitable for VFR flight and the Newquay ATIS information, issued at 1820 hrs, reported: surface wind from 360° at 6 kt, visibility greater than 10 km, few clouds at 4,000 ft, temperature 16°C, QNH 1018 hPa, Runway 30 active. The weather forecasts for southern England for the next day were good and would also have been suitable for VFR flight.

Sunset at Newquay Airport was in the west-north-west at 2038 hrs. At the time the pilot made his approach, the sun was low in the sky and about 15° to the left of the runway heading.

Pilot information

The pilot's first licence was a PPL(H), issued in 1991. Then, in 1996, he gained a PPL(A). An IMC (now IR Restricted) rating was added in 1997 and a Multi-engine Piston (MEP) rating in 1998. He renewed his Single-engine Piston (SEP) rating on 14 September 2013 and his IRR(A) rating on 12 December 2014. His MEP rating was renewed on 10 July 2015 and was valid until 31 July 2016.

The pilot had previously owned several other aircraft. In 2001, he took part in the London to Sydney Air Race, flying in his own Piper PA-23 Aztec. In October 2009, he purchased a Piper PA-32R Saratoga, a single-engine aircraft. It appears that he flew this regularly until it was sold in June 2015, although no log book records were found which were dated later than April 2013. For this reason, an accurate assessment of his recent flying history was not possible. It was reported that the pilot was in the habit of using a checklist while flying.

When the instructor at Pribram first flew with the pilot in OK-OKD, he described his performance as "poor". However, after a couple of hours of instruction, progress was made and the training continued. The instructor considered that, with the limited training time available, achieving consistent landings was a priority. Thus, all the landings practised were conducted using full flap. Two-engine go-arounds were included in the training, using the procedure previously described.

The pilot advised the instructor that, on return to the UK, he would continue a training and familiarisation programme with a local instructor. Although the pilot normally had a slow manner of speech, the instructor observed that he appeared to be tired much of the time.

The instructor described the pilot's conduct of the flight from the Czech Republic and his approach and landing at Biggin Hill as good - he told the pilot it was his best landing yet. He noted that the pilot generally preferred to fly manually, rather than use the autopilot, and considered that he was sufficiently practised to be able to conduct a solo cross-country flight in good visual weather conditions.

Medical and pathological information

The pilot held a European Union Class 2 medical certificate which was renewed on 31 July 2015 and valid until 29 August 2016. A post-mortem examination was carried out and no evidence of any medical condition that could have contributed to the accident was found.

Aircraft information

Piper Seneca V

The Seneca V is a twin, piston-engine-powered, general aviation aircraft. It is approximately 9 m long, with a wingspan of approximately 12 m. The accident aircraft was manufactured in 2001 and was transferred from the US register to the Czech Republic in 2002, when it was re-registered as OK-OKD. The current Certificate of Airworthiness was issued in 2008 and the Airworthiness Review Certificate was valid until March 2016. The aircraft had accumulated approximately 993 hours since new, prior to the accident flight. It was fitted with six seats, including the pilot's, and was well equipped for single-pilot IFR flight. The two engines had recently been fully refurbished and were rated at 220 BHP each. They were fitted with three-blade, fully feathering, constant-speed propellers. The engine controls consisted of a throttle, a propeller control lever and a mixture control lever for each engine, located on a quadrant below the central instrument panel. To carry out a baulked landing or go-around manoeuvre, the propeller and mixture controls should be advanced fully forward and the throttles adjusted for full power.

The aircraft has three selectable stages of flap, at 10°, 25° and 40°. The flap select lever is mounted on the instrument panel, immediately to the right of the centre console and throttle quadrant. In order to change the flap setting, the lever has to be pulled out of its detent and moved into the detent for the required setting.

The retractable landing gear is selected using a selector switch on the centre console. It is a wheel-shaped knob located to the left of the throttle quadrant. To operate the switch, it must be pulled out before it is moved to the UP or DOWN position.

The aircraft's fuel capacity is 128 USG (485 litres), with a useable fuel of 122 USG (462 litres).

The power off stall speed, at 1,860 kg (4,100 lbs) with 0° flap, is 66 KIAS. At 30° angle of bank, for the same weight, it increases to 71 KIAS and at 60° angle of bank it increases to 93 KIAS[1].

Procedures

The Pilot's Operating Handbook (POH) includes guidance on operating procedures. A normal takeoff in the Seneca V is performed with 0° flap and the recommended liftoff speed is 79 KIAS. It is recommended that the final approach is flown at 90 KIAS. For a flapless approach a '*higher than normal'* speed is recommended.

In the event of a baulked landing the initial target climb speed is 85 KIAS, adjusted to 83 KIAS for the best angle of climb (V_X) or 88 KIAS for the best rate of climb (V_Y), once the landing gear and flaps have been retracted. The Air Minimum Control Speed (V_{MCA}) (the lowest airspeed at which an aircraft is controllable with one engine operating at takeoff power and the flaps UP) is 66 KIAS. The one-engine-inoperative best rate of climb speed (V_{YSE}) is 88 KIAS.

The POH provides checklists for use during the different phases of flight. There was also a similar, but not identical, checklist in the aircraft. Both checklists contained an '*Approach and Landing*' checklist, a separate '*Normal Landing*' checklist and a '*Go-Around'* checklist. The selection of flaps did not feature in either of the '*Approach and Landing'* checklists but the first item on the '*Normal Landing'* checklist was, in both cases:

Flaps (Below 113 KIAS).....DOWN/FULL

The earlier versions of the Piper Seneca, variants I, II and III, contained a single, combined '*Approach and Landing*' checklist. The manufacturer provided the following explanation for the apparent anomaly of providing two 'Landing' checklists for the Seneca V:

> *'During the history of the Seneca III Piper added a short field performance landing procedure. When the short field landing procedure was added, the checklist line concerning flaps was removed from the approach and landing checklist and added to both the normal landing and short field performance landing checklist.'*

Footnote

[1] Power on stall speeds are not available in the Pilot's Operating Handbook.

The manufacturer's and on-board aircraft go-around checklists were similar:

Mixtures.....FULL RICH
Propellers.....FULL FORWARD
Throttles.....FULL POWER
Control Wheel.....BACK PRESSURE TO OBTAIN POSITIVE CLIMB ATTITUDE at 85 KIAS
Flaps.....RETRACT SLOWLY
Gear.....UP

Handling considerations for multi-engine piston (MEP) aeroplanes

FAA publication Airplane Flying Handbook[2] contains a chapter '*Transition to Multi-engine Airplanes'* which provides extensive guidance on factors associated with the operation of small multi-engine aircraft. The following paragraph concerns go-arounds:

> *'If the go-around was initiated from a low airspeed, the initial pitch up to a climb attitude must be tempered with the necessity of maintaining adequate flying speed throughout the maneuver. Examples of where this applies include go-arounds initiated from the landing roundout or recovery from a bad bounce as well as a go-around initiated due to an inadvertent approach to a stall. The first priority is always to maintain control and obtain adequate flying speed. A few moments of level or near level flight may be required as the airplane accelerates up to climb speed.'*

Accident site

Eight propeller strike marks were identified on the runway, along the centreline and approximately 609 m from the threshold for Runway 30. The marks were approximately 72 cm apart and were shallow in depth. No further ground marks were present, until the point where the aircraft made contact with the ground during the final impact sequence. This was located on an old aircraft dispersal area, adjacent to a disused taxiway and near to a new Maritime and Coastguard Agency hangar, which was under construction. Initially, the aircraft struck the surface of the hardstanding and the fuselage nose, engines and wing leading edges left clear impressions in the tarmac, on a heading of 099°M. There were also deep propeller strike marks leading to each engine impression. The aircraft came to rest approximately 20 m away from the initial impact point on a heading of 114°M, on the grass and in an inverted attitude. Debris from the aircraft was scattered around the area of the main fuselage.

Footnote

[2] Airplane Flying Handbook: FAA-H-8083-3A available at http://www.faa.gov/regulations_policies/handbooks_manuals/aircraft/airplane_handbook/media/faa-h-8083-3b.pdf [accessed 14 September 2015]

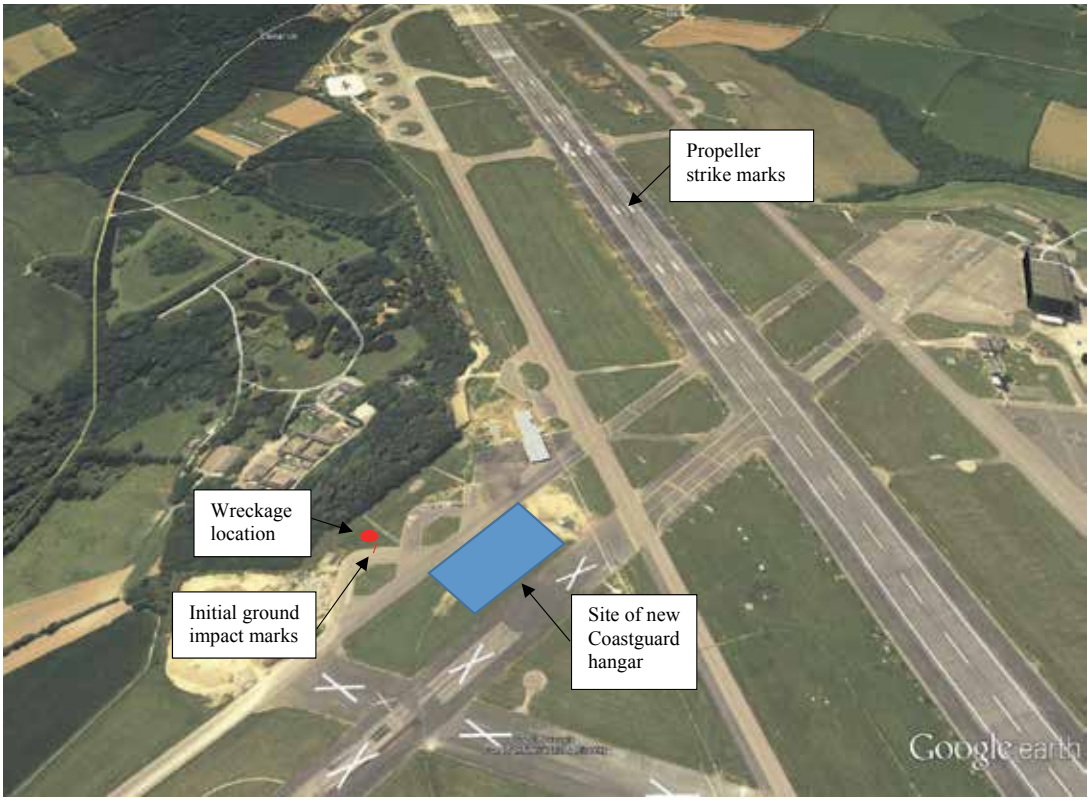

Figure 2

Accident site relative to the runway, looking back down Runway 30 from the direction of the Control Tower

Aircraft wreckage

The aircraft fuselage was significantly disrupted by the impact with the ground. The nose section was completely removed, with small pieces of the structure scattered around the debris field. The cockpit bulkhead was compressed as a result of the impact with the ground. All six propeller blades had been liberated from their hubs, which were also disrupted. The blades were distributed around the accident site but within close proximity to the main fuselage. Both engines had broken from their mounts and only remained attached by wiring and ancillary pipework. The right wingtip leading edge was damaged by the impact with the ground and the left wing tip had been destroyed by a small post-impact fire. The landing gear was down and locked, but the nose gear supporting framework had become detached. The main fuselage was compressed and bent upwards (relative to its normal attitude) at a point just aft of the rear passenger door. The vertical fin had also become partially detached at the forward attachment points. The flaps were in the stowed position, with the flap select lever in the zero flap position. Both wing fuel tanks had been disrupted and significant amounts of fuel had been released onto the grass.

Later detailed inspection of the propeller blades showed that the blades from the right engine were worn at the tips, consistent with striking the runway. This damage was distinct from the distortion caused by the main impact with the ground and was not present on the blades from the left engine. The tip damage was minor in nature and was consistent with

the shallow depth of the strike marks observed on the runway surface. Inspection of the blade feathering system for the right engine, confirmed that it had not been damaged by the contact with the runway surface.

An assessment of the pre-impact continuity of the flight control system was not possible due to the extent of the impact and fire damage. However, there was no supporting evidence to suggest this was an issue.

Maintenance review

A review of the maintenance history and aircraft documents revealed no evidence of any issues with the maintenance work carried out or the serviceability of the aircraft. The instructor who accompanied the pilot on the leg from Prague to Biggin Hill reported that there had been a minor fault during that sector relating to the autopilot not maintaining the selected heading. In all other respects, the aircraft was fully serviceable.

Aerodrome information

Runway 30 has a displaced threshold, with a landing distance available of 2,444 m. High intensity approach lights, with five crossbars, are on the extended centre-line. The elevation of the airfield is 390 ft. Figure 3 shows the Newquay Airport Aerodrome Chart indicating the location of the ATC Tower.

Recorded information

Radar and GPS data

The pilot's tablet computer was recovered from the aircraft wreckage and, despite damage, was successfully downloaded at the AAIB. The pilot was using flight planning and navigation software which logged GPS position and altitude once per second. This, along with the programmed active route, was successfully recovered. In addition, OK-OKD was captured on a number of radar heads during the flight, including one at Newquay Airport. Recorded radar data was made available which consisted of recorded position and Mode C altitude to the nearest 100 ft. In this report, Mode C altitude has been corrected for a QNH of 1018 hPa, to give altitude amsl.

At 1827 hrs, the aircraft was approximately 7 nm south-east of Newquay Airport, heading in a westerly direction at 2,200 ft amsl. It then commenced a turn towards the airport and began to descend, crossing the Runway 30 threshold at 1831:03 hrs at a derived groundspeed of approximately 90 kt. The reported wind was from 350° at 7 kt, which gave a headwind component of 4.5 kt. The initial touchdown point could not be established, due to the accuracy and resolution of the GPS altitude, but the groundspeed at the lowest recorded GPS altitude, 393 ft amsl, was 76 kt. Groundspeed continued to decrease and, as it did, the heading decreased slightly from 303°M to 300°M over a period of 6 seconds. This occurred in the approximate region of the propeller strike marks on the runway.

The heading then increased and continued to do so until the end of the GPS recording (see Figures 4 and 5). At 1831:20 hrs, the aircraft reached its minimum derived groundspeed of 63 kt as the GPS altitude increased to 421 ft amsl, over the runway. The GPS recording

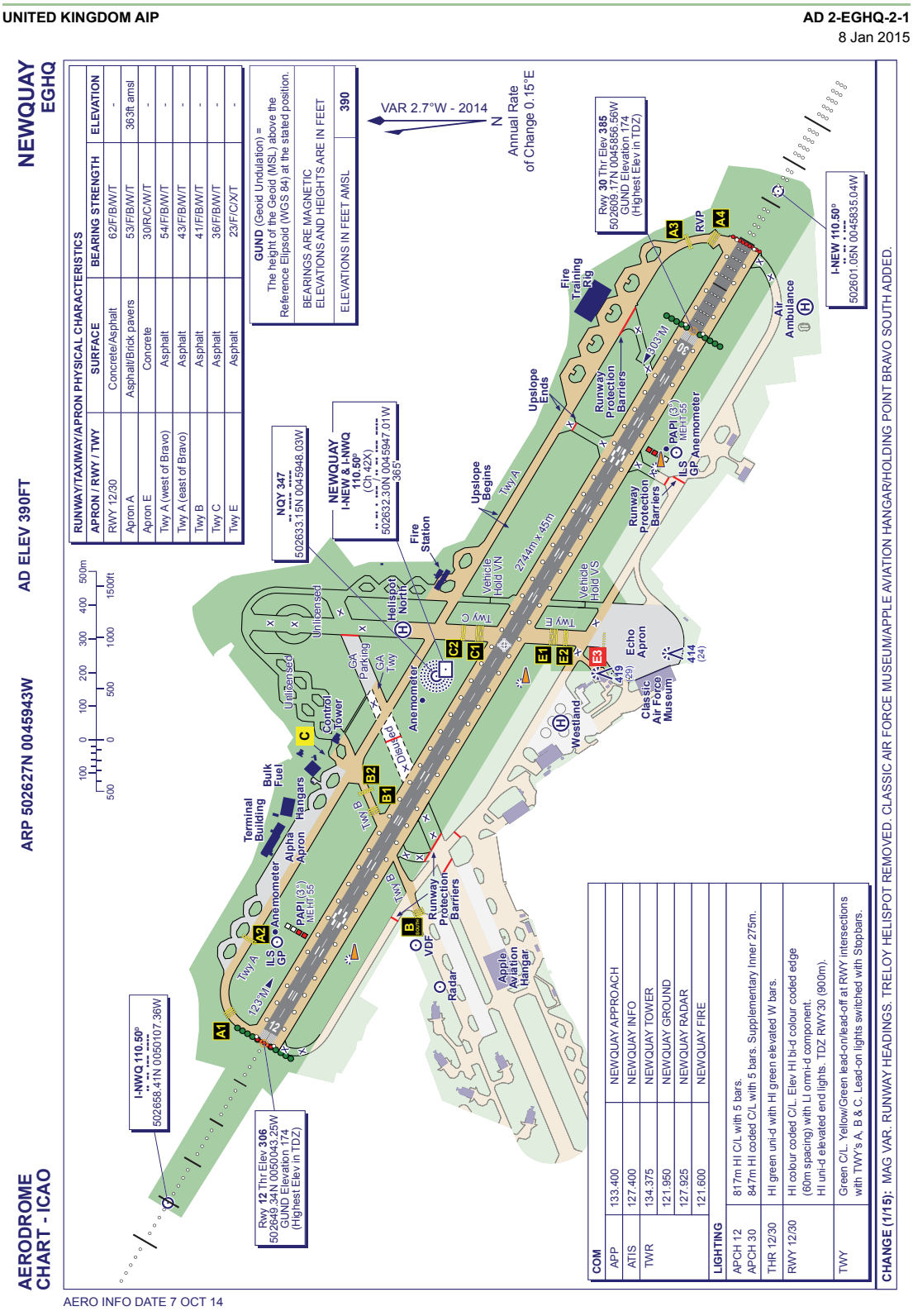

Figure 3

Newquay Airport, yellow boxed 'C' indicates position of ATC tower

ceased at 1831:25 hrs but the Newquay Airport radar head continued recording Mode C altitude and position every four seconds. Due to the limitations in the accuracy of the radar position, groundspeed for the remainder of the flight could not be calculated accurately but the recordings showed a turn to the right, following the approximate route described by eyewitnesses. The corrected Mode C altitude increased from 330 ft (±50 ft) to a maximum of 530 ft amsl (±50 ft) over a period of 18 seconds.

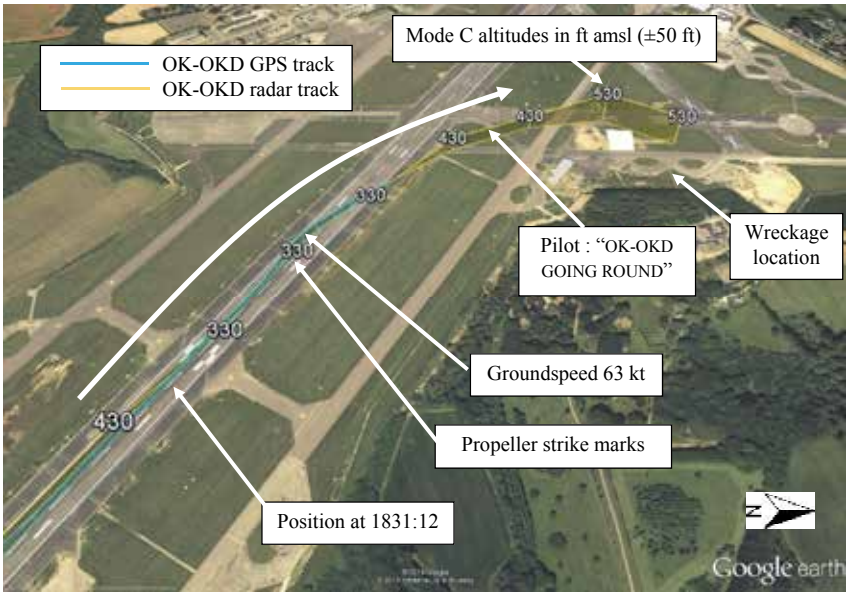

Figure 4

OK-OKD GPS and radar tracks showing corrected Mode C altitudes in ft amsl

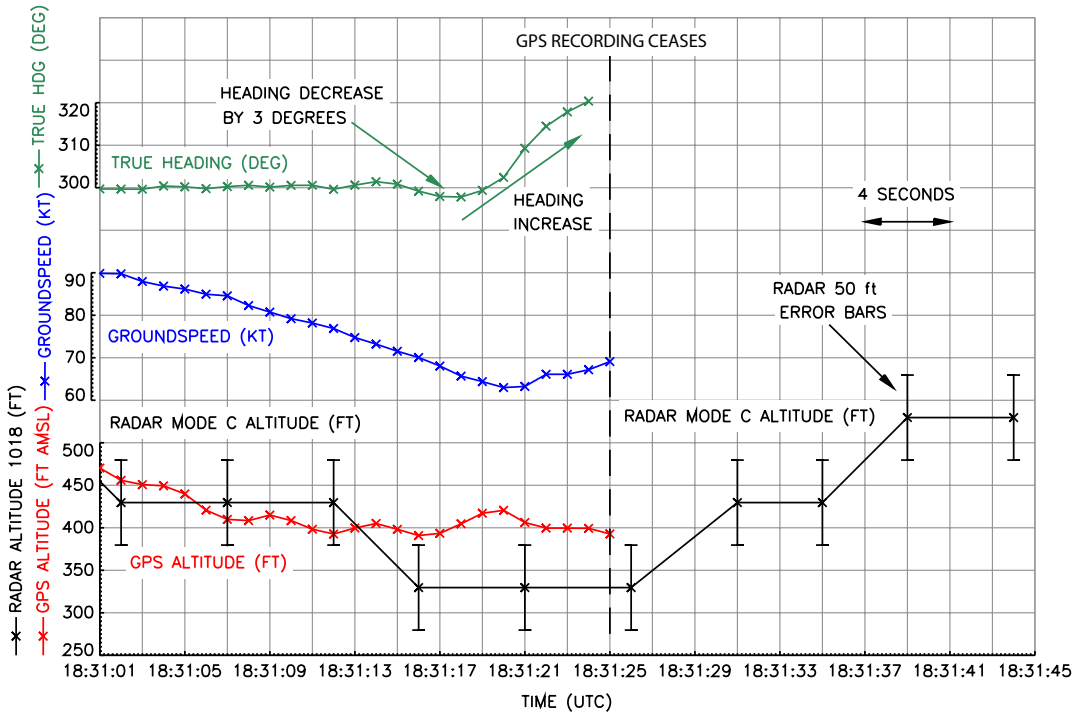

Figure 5

OK-OKD GPS and radar data

Aircraft avionics

The aircraft was fitted with a Digital Display and Monitoring Panel (DDMP) which was capable of displaying engine, fuel and electrical data on a digital display. It also recorded up to 200 engine exceedences in its memory, including overspeed and high oil temperature and pressure. This unit was recovered from the aircraft wreckage and downloaded. There were no engine exceedences recorded from the day of the accident.

Analysis

Engineering

No issues were identified with the aircraft maintenance and no evidence of a contributory fault was found on the aircraft.

Using the recorded GPS groundspeed at the point on the runway where the propeller strike took place and the distance between the strike marks, the contact was calculated to have lasted for approximately 0.14 seconds and occurred when the engine was at idle rpm. This, combined with the superficial nature of the ground marks and the limited damage to the propeller blades and feathering mechanism on the right engine indicated that the damage to the propeller blades had little, if any, effect on the thrust produced by the right engine. As such, it is unlikely that the propeller strike contributed to the subsequent flight profile of the aircraft.

Analysis of evidence from the wreckage and accident site showed that the aircraft struck the ground almost vertically and came to rest inverted. The final position of the wreckage relative to the initial impact ground marks showed that there was some rotation to the right in yaw. This was consistent with the right wing of the aircraft stalling in a turn to the right and the aircraft entering an incipient spin. This was supported by the radar data and witness statements.

Operations

The pilot had owned a number of different types of aircraft, both single and twin-engine, but for the last six years, the evidence suggested that he mainly flew his single-engine Piper Saratoga, with an occasional MEP rating renewal on a twin-engine aircraft. The Saratoga was sold in June 2015. Thus, when he started his familiarisation training on the Seneca, his recent MEP flying practice was limited. After ten hours of familiarisation training at Pribram in the Czech Republic, the instructor considered the pilot was sufficiently practised to be able to conduct a solo cross-country flight in good visual weather conditions.

The flight to Biggin Hill, in the UK, was conducted under IFR with the instructor on board, using the autopilot in navigation mode, although, apparently, the pilot preferred to fly manually. The instructor described the pilot's conduct of the flight from the Czech Republic and his approach and landing at Biggin Hill as good and told the pilot it was his best landing yet.

It is not known when or why the pilot changed his plans from staying overnight near Biggin Hill to continuing the flight later the same afternoon. The weather conditions were good,

as was the forecast for the following day. The pilot held a current medical certificate and the post-mortem did not find any evidence of a medical problem, although, by his own acknowledgement he was tired. The two-hour flight to Newquay, possibly flown manually, as was his preference, would have increased his level of fatigue.

When the pilot contacted Newquay ATC he requested a visual approach. At the time, the sun was low in the sky, about 15° to the left of Runway 30, and he reported that it was affecting his ability to see the runway. He turned right to establish on the runway centreline at a range of 8 nm and was visual with the runway by 4 nm. However, the sun could still have been affecting his ability to see the runway.

The airspeed on the final stages of the approach reduced steadily and reached approximately 94 kt, slightly higher than the recommended final approach speed with flap selected, by the time the aircraft crossed the runway threshold. The precise touchdown point could not be determined but was in the region of the touchdown zone. The aircraft was then seen to bounce several times before going around.

Flap selection and landing gear

There are several possibilities for the flaps being found in the stowed position, with the flap select lever in the 0° flap position. It is possible that the flap was never selected, either intentionally or inadvertently, or that the flap was retracted during the go-around.

It is considered unlikely that the pilot deliberately flew a flapless approach, for two reasons; he had not practised flapless approaches and, with the sun low on the horizon, the higher nose-up attitude with 0° flap would have restricted his view ahead[3].

A possible explanation is that the approach was flown without flap, inadvertently. The distraction of the sun in his eyes could have caused the pilot to omit the selection of flap and/or completion of the '*Normal Landing*' checklist. The landing gear was found selected DOWN, which suggests that the '*Approach and Landing'* checklist was completed. If the '*Normal Landing*' checklist had then been carried out, the lack of flap selection should have been detected. The pilot was tired, unfamiliar with the aircraft and flying an approach into sun, all which may have contributed to him inadvertently omitting the flap selection.

It is improbable that the flap had been selected on final approach and retracted fully during the go-around, as there would have been no urgency to do so and it is not part of the go-around procedure until after the landing gear is UP. The flap selection lever, located on the lower right instrument panel is out of the pilot's direct view and would require him to reach across to make a selection. After lifting off from the runway, the pilot would have been busy controlling the aircraft, looking out and making his radio transmission.

Footnote

[3] The effect of carrying out an approach without flaps would have been to increase the nose-up attitude of the aircraft, for a given speed.

The go-around

The aircraft bounced on landing, perhaps several times, and at some point the pilot decided to go around. The propeller strike was brief and it is not known whether he was aware of it. Propeller marks on the runway ran along the centreline and the evidence indicated that the deviation to the right probably occurred after the propeller strike. The minimum calculated groundspeed of 63 kt, which equated to an airspeed of 67 to 68 kt, occurred just beyond the location of the propeller strike, with the aircraft apparently airborne, having bounced. The aircraft then started to accelerate and, from the combined evidence, appeared to descend back on to the runway, while deviating at least 20º to the right for reasons that could not be established.

The aircraft then lifted off the ground, heading towards the ATC tower. Its airspeed was probably still below the baulked landing climb speed of 85 kt as it performed a climbing turn to the right. The bank angle was seen to increase and the aircraft climbed to an estimated height of between 100 and 200 feet in 15 seconds. As the angle of bank increased, so did the stalling speed. When the left wing appeared almost vertical, the aircraft seemed to stall and enter an incipient spin, at a height and attitude from which recovery was not possible.

The initial turn during the go-around may have been to avoid obstacles but the reason for the increase to a steep angle of bank could not be established. The pilot gave no indication of concern in his radio transmission during the go-around and there was no evidence of a contributory fault on the aircraft.

The FAA publication concerning '*Transition to Multi-engine Airplanes'* highlights the importance of maintaining adequate speed throughout the go-around manoeuvre: '*The first priority is always to maintain control and obtain adequate flying speed'.*

ATC actions after the accident

This was a private, domestic flight and there was no requirement for the pilot to advise Newquay ATC of the number of persons on board the aircraft. Although the controller thought there was only the pilot, he realised that he could not be certain and advised the RFFS accordingly. The RFFS attended the scene quickly and controlled the fire. They checked on the condition of the pilot but then, because of uncertainty about the number of persons on board, checked the interior of the cabin.

The Newquay airport authority is considering whether to require all inbound aircraft, for whom details are not already provided, to inform them of the number of persons on board.

Conclusion

The pilot made the decision to go around after a bounced landing. The aircraft was at a slow speed and a degree of directional control appeared to have been lost. The aircraft commenced a continuous climbing turn, with an increasing angle of bank, before appearing to stall and enter an incipient spin at a height from which it was not possible to recover.