



This investigation has been conducted in accordance with  
*Annex 13 to the ICAO Convention on International Civil  
Aviation, EU Regulation No 996/2010 and  
The Civil Aviation (Investigation of Air Accidents and Incidents) Regulation; Legal  
Notice 16 of 2013.*

Under these Regulations, the sole objective of the investigation of an accident or incident is the prevention of accidents and incidents in the future. It is not the purpose of this investigation to assign fault or blame and the reporting process should not be used to determine liability.

# Serious Incident Preliminary Report

---

## 1. General Information.

<b>Location:</b> Malta International Airport	<b>Accident Number:</b> BAAI/SIR-003-2020
<b>Date &amp; Time:</b> 18 <sup>th</sup> July 2020 1228 hrs (local time)	
<b>Defining Event:</b> Loss of separation in the air	
<b>Aircraft 1:</b>	<b>Aircraft 2:</b>
<b>Type:</b> Tecnam P2002JF Sierra	<b>Type:</b> Airbus A321 NEO
<b>Registration:</b> 9H-VLT	<b>Registration:</b> HA-LVH
<b>Damage:</b> Nil	<b>Damage:</b> Nil
<b>Injuries:</b> No injuries reported	<b>Injuries:</b> No injuries reported
<b>Flight Conducted Under:</b> VFR	<b>Flight Conducted Under:</b> IFR

## 2. Synopsis

A light aircraft flying a circuit on Runway 05 at Malta International Airport during a first solo flight came into close proximity of an Airbus A321 NEO on late final approach to land on Runway 31. There were no injuries or damage reported and both aircraft proceeded to land safely.

### 3. Brief Description of the Incident

A Tecnam P2002JF Sierra, registration 9H-VLT, was carrying out a circuit on Runway 05 during a first solo flight. At the time, there were several light aircraft in the vicinity of the approach to Runway 05 and commercial traffic on the approach to Runway 31.

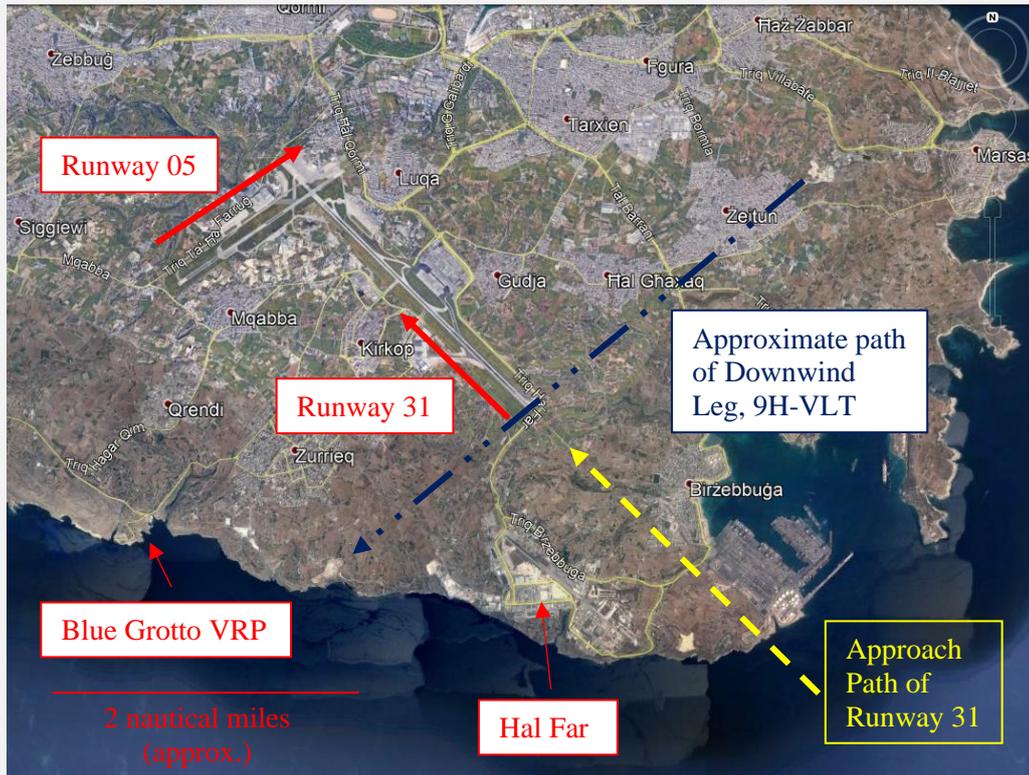
Surveillance radar information indicates that 9H-VLT proceeded to conduct a right hand downwind leg, crossing Runway 31 in the vicinity of its threshold at an altitude of 1,500 feet when an Airbus A321 NEO, registration HA-LVH, was on final approach to Runway 31, approximately over the Final Approach Fix SUKAL 8.5 nautical miles from the threshold of Runway 31 (8.5 DME from LM). Aircraft of Approach Category C or D, under which the Airbus A321 NEO may be classified, will take about 3 minutes to fly 8.5 nautical miles on final approach.

During the downwind leg, 9H-VLT was instructed by ATC to proceed to and orbit over the Blue Grotto Visual Reporting Point (VRP). On arrival over the coast, 9H-VLT commenced a wide left orbit that brought the aircraft in the general area of Hal Far (Figure 1). It continued turning left over land and when on a North-Westerly heading, the turn was reversed. This brought the aircraft close to the approach path of Runway 31, approximately 1 nautical mile from the threshold and on a reciprocal heading at an altitude of 1,000 feet. At this moment, HA-LVH was 2 nautical miles from the runway threshold at 1,000 feet and descending on the glidepath.

9H-VLT proceeded to fly on a reciprocal heading to the approach path of Runway 31.

The two aircraft continued to fly towards each other, with HA-LVH flying below 9H-VLT when the two aircraft crossed each other. Surveillance radar information indicates that 9H-VLT was only 100m off the extended centerline of Runway 31 and at an altitude of 1000 feet when HA-LVH was 0.5nm away at 900 feet and descending. At this time, 9H-VLT commenced a right turn and the two aircraft flew within 200 feet of each other vertically with a lateral separation of less than 500m.

The two aircraft then proceeded to land without further reported incident.



**Figure 1. Map of South-East Malta, showing Malta International Airport and the downwind leg of Aircraft 1.**

### **Injuries to Persons**

**Crew:** None reported

**Passengers:** None reported

**Other:** None reported

### **Damage to Aircraft**

None reported

### **Other Damage**

None reported

### **Meteorological Information for the region and at the time of the Incident:**

**Conditions:** Visual Meteorological Conditions

**Condition of Light:** Day

**Visibility:** More than 10km

**Lowest Cloud Condition:** Few (1-2 octas), 2,600 feet (above ground level)

**Lowest Ceiling:** NA (no overcast)

**Wind Speed:** 7kts

**Wind Direction:** Variable

**Precipitation and Obscuration:** Nil

**Temperature:** 29°C

**Dew Point:** 21°C

**Mean Sea Level Barometric Pressure (QNH):** 1013mb

**Significant Weather:** NIL

### **Airport Information**

**Airport:** Malta International Airport (LMML)

**Type of Airspace:** Class D

**Elevation, Runway 31:** 231 feet (Threshold)

## 4. Preliminary Findings

Weather was not a contributing factor in the incident.

Surveillance Radar information indicates that HA-LVH was flying a stabilised approach on the final approach to Runway 31.

There has been no evidence of any technical malfunction or failure (including radio failure) contributing to the incident on board either aircraft or on the ground.

The crew of HA-LVH reported that they were fully configured for landing with the landing light on when a TCAS Resolution Advisory (RA) was triggered for 2-3 seconds during final approach. The RA consisted of the “Monitor Vertical Speed” aural alert and visual guidance on the instantaneous vertical speed indicator (IVSI). The crew reported that they followed the alert and then acquired 9H-VLT visually, to the left of HA-LVH and approximately 200 feet above. Regulations require all turbine-powered aeroplanes with a maximum certificated take-off mass exceeding 5,700kg and those authorised to carry more than 19 passengers to be equipped with collision avoidance logic version 7.1 of ACAS II. HA-LVH falls under both these categories. When the “Monitor Vertical Speed” RA aural alert is generated by ACAS II Version 7.1, pilots are required to avoid rates of climb or descent prohibited by the RA display (indicated by a red region on the IVSI on the Primary Flight Display on the Airbus A321 NEO). This RA does not necessarily require a change in rate of climb or descent. All RAs are inhibited below 1,000 feet AGL ( $\pm 100$  feet).

9H-VLT was not equipped with TCAS. The P2002J, being a light aircraft certified under EASA CS-VLA, is not required to have TCAS installed. The aircraft was equipped with a transponder, which allowed it to be detected by the TCAS equipment on board HA-LVH, but this did not allow for collaborative traffic conflict resolution between the two aircraft.

The pilot of 9H-VLT reported seeing HA-LVH when still far away but had no recollection of seeing the aircraft close by or seeing its landing light.

The air traffic control officer acting as Tower controller at the time reported that he was aware that 9H-VLT was on a solo flight but not that it was on a first solo. Recordings of radio transmissions confirm that, prior to the incident flight, the flight instructor of 9H-VLT requested clearance from Ground control for the student to conduct a single circuit.

However, there was no explicit indication that the flight would be a first solo flight.

Training flights are frequently conducted at LMML, as there are a number of training schools operating from the airport. It is also common for student pilots to conduct solo flights at different stages of their training. During a first solo, the student pilot will have limited skills, proficiency and experience that cannot be expected to go beyond safely flying in the circuit and landing the aircraft in the event of an emergency without the presence of the flight instructor. It is therefore relevant for ATC to be made aware that a flight is a first solo flight. This is especially the case in the context of LMML, which handles general, commercial and military aviation and can be busy during the day.

Radar surveillance information indicates that when 9H-VLT arrived at the coast it was more than 1 nautical mile away from the Blue Grotto VRP and the left orbit initiated was wide. These two factors brought the aircraft in the region of Hal Far (Figure 1) and this was not in accordance with the instruction given by the Tower controller. As the aircraft was approaching Hal Far, the Tower controller instructed 9H-VLT to conduct a right-hand orbit at its present position. This would have kept 9H-VLT clear of the approach path of Runway 31 and HA-LVH. The pilot of 9H-VLT requested the controller to repeat the instruction whilst still turning left and, in the process, flying towards the approach path of Runway 31. The Tower controller did not repeat the instruction but instead instructed 9H-VLT to proceed directly to Blue Grotto via the coast. 9H-VLT did not acknowledge and the Tower controller did not challenge this omission. The pilot of 9H-VLT then initiated the right turn that brought the aircraft onto the approach path of Runway 31 on a reciprocal heading.

The lack of awareness that 9H-VLT was on a first solo flight led to the situation that developed into one requiring piloting skills that, whilst well within those expected of a trainee pilot with solo flying experience, were beyond those of the student pilot conducting the first solo on 9H-VLT.

## 5. Recommendations

On this preliminary report, the following recommendations are made:

To local flying schools:

1. Prior to a first solo flight the flying instructor to inform ATC that it will be a **First Solo Flight**.
2. The call sign of a first solo flight to explicitly include the term '**First Solo**' for the duration of the flight.

The investigation will continue, focussing on:

- 1) the events that contributed and led to the traffic conflict,
- 2) the effectiveness of the ACAS system in the incident.

## **ABBREVIATIONS**

ACAS	-	Airborne Collision Avoidance System
AGL	-	Above Ground Level
DME	-	Distance Measuring Equipment (slant range in nautical miles from the equipment)
EASA	-	European Union Aviation Safety Agency
EU	-	European Union
IFR	-	Instrument Flight Rules
ILS	-	Instrument Landing System
IVSI	-	Instantaneous Vertical Speed Indicator
LM	-	Name of the DME station located adjacent to the touch-down zone of Runway 31 at Malta International Airport
LMML	-	Malta International Airport ICAO Code
NA	-	Not Applicable
NEO	-	New Engine Option
QNH	-	Atmospheric pressure at mean sea level
RA	-	Resolution Advisory
SUKAL	-	Name of the Final Approach Fix on the ILS/Localiser Instrument Approach of Runway 31 at Malta International Airport
TCAS	-	Traffic Collision Avoidance System
VFR	-	Visual Flight Rules