



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.

A safety investigation report into the loss of separation between 9H-IAN and 9H-EFA

1. General Information.

Accident Number: BAAI/SIR-001-2021	
Defining Event: Loss of separation in flight	
Location: Malta International Airport	
Date & Time: 18 th December 2020, approximately 09:40 am (Local)	
Aircraft 1: Tecnam P2002 JF Sierra	Aircraft 2: Piper PA-28-161
Registration Aircraft 1: 9H-IAN	Registration Aircraft 2: 9H-EFA
Aircraft Damage: None	
Injuries: None	

2. Synopsis

- 2.1 On the day of the incident there were 4 light aircraft performing circuits on RWY05 and other aircraft operating in the LUQA FIR. 9H-IAN (solo flight) was cleared for a touch and go RWY 05 with an initial clearance to maintain runway track until Grand Harbour area and hold; 9H-IAN proceeded as cleared.
- 2.2 As soon as 9H-IAN was airborne, ATC cleared 9H-EFA (Falcon3C) to enter RWY05 and shortly thereafter, was cleared to take off (@09:40:02) with a clearance to fly a right-hand circuit for RWY 05. On passing approximately 500 ft QNH, 9H-EFA (Falcon3C) turned right to join right hand crosswind RWY05 and continued to climb to 1300 ft. A turn at 500ft QNH means that 9H-EFA (Falcon3C) started the turn to join the crosswind leg at only 200ft AGL.
- 2.3 Meanwhile 9H-IAN was cleared to join right-hand downwind RWY05 (@09:40:34) at 1400 ft. Both aircraft were now crossing each other's path with just 100 ft of separation between them. During the interview, 9H-IAN said that he saw Falcon3C climbing and crossing from right to left. The two aircraft were operating in accordance with ATC instructions.
- 2.4 The sequence of the aircraft positions within the circuit was disturbed as a result of 9H-EFA turning crosswind at only 500ft QNH. This early turn led to 9H-EFA cutting in front of 9H-IAN that was number 1 in the circuit and now becoming number 2. 9H-IAN maintained visual separation behind 9H-EFA. Both aircraft proceeded on downwind very close to each other. Mid-downwind, ATC instructed 9H-IAN to extend downwind. No further incident occurred beyond this point.

3. Factual Information

Aircraft and Owner/Operator Information

Aircraft 1	Aircraft 2
Aircraft Make: Tecnam P2002 JF Sierra	Aircraft Make: Piper PA-28-161
Aircraft Category: Light aircraft	Aircraft Category: Light aircraft
Landing Gear Type: Tricycle	Landing Gear Type: Tricycle
Registration: 9H-IAN	Registration: 9H-EFA
Registered Owner: Malta School of Flying	Registered Owner: European Flight Academy

Meteorological Information

Conditions at Accident Site: Visual conditions clear

Condition of Light: Day

Lowest Cloud Condition: N/A

Lowest Ceiling: N/A

Wind Speed/Gusts: N/A

Forecast/Actual: N/A

Wind Direction: N/A

Forecast/Actual: N/A

Altimeter Setting: N/A

Temperature/Dew Point: N/A

Precipitation and Obscuration: None

Airport Information

Airport: Malta International Airport

Geographical coordinates: N 35°51'/E 014°28'

Airport Elevation: 297ft (Threshold Runway 05)

Runway Used: RWY 23

Runway Heading: 232°

Runway Surface Type: Asphalt

Runway conditions: Dry

Runway Length/Width: 2377m/45m

The circuit on RWY05 is shown in Figure 1 below.

VISUAL CIRCUIT RWY 05 FOR LIGHT AIRCRAFT



Circuit Altitude not above 1500 feet QNH.

Circuits on RWY 05 may be variable in direction in accordance with ATC instructions.

Figure 1: The circuit on RWY05 as taken from the current AIP

4. Findings

4.1 This investigation performed a series of interviews: with the student pilot and instructor for 9H-IAN, the pilot for 9H-EFA (call sign Falcon3C), the student ATCO that was in charge at the time of the incident and the OJTI. The findings reported here are a result of these interviews.

Interview with the student Pilot of 9H-IAN

4.2 The pilot of 9H-IAN was accompanied by the instructor owing to the fact that he is still a student and does not hold a licence. The pilot stated that he saw 9H-EFA turning right (Joining downwind) and approaching him from the right and climbing. The pilot said that he pulled the throttle back to reduce power while keeping the other aircraft in sight. The two aircraft continued on downwind very close to each other. The pilot continued that at one point the other traffic was very close on his left and slightly above. The pilot produced the report of the incident which he wrote soon after he landed.

Interview with the pilot for 9H-EFA (call sign Falcon 3C)

4.3 The pilot, who is also a qualified flight instructor, explained that the altimeter is set to the airport QNH and that he was flying VFR with two other persons on board and stated that he did not see any other traffic when he was on the upwind leg and turned crosswind at 500ft. The pilot showed that he was completely unaware of the situation that had developed and he only remembers being informed that there was other traffic close to him later when he was on downwind. This was much later than when the incident happened. The pilot did not see the other traffic at any time.

Interview with the Student ATCO and OJTI.

4.4 The Student ATCO stated that he did not recall much of the incident as about three months had passed since then. However, he did recall that 9H-EFA made a right turn onto crosswind soon after take-off. This took him somewhat by surprise. 9H-IAN had reported seeing him very close. He stated that he gave traffic information but he was not able to give a more detailed account. This investigation uncovered an overwhelming silence until the situation was resolved.

4.5 The OJTI stated that no report was filed because what happened on the day was quite often with traffic in the circuit which fly on a 'see and be seen' basis. He recalled that it was not easy to see the aircraft and that traffic information had been given. He also stated that 9H-EFA (Falcon 3C) did not report to ATC seeing 9H-IAN at any time. No further action

had been taken except when the situation had been resolved and both aircraft were on downwind, and the student ATCO instructed 9H-IAN to extend the downwind leg. The OJTI recalled that at the time of the incident he ad-hoc instructions to the student ATCO to increase separation between aircraft. The OJTI also recalled that 9H-EFA was not given an instruction to maintain runway track upon departure similar to what 9H-IAN had been given. The OJTI expressed concern about the use of the callsign 'Falcon' (which at the time of the incident was being used by 9H-EFA) when more than one aircraft are usually flying with this callsign followed by a number and a letter attached at the end. He added that this could be a cause for confusion especially when the traffic workload is high.

The Bureau of Air Accidents (Malta) has determined that the cause of the incident is due to a number of causal factors, primarily:

1. An early turn of 9H-EFA Upon departure.

9H-EFA turned right at an altitude of 500 ft QNH. The airport is at an altitude of 300 ft above sea level and therefore the aircraft joined the right-hand crosswind too early.

2. Lack of use of ATC tools to ensure separation.

Both aircraft were cleared to fly a visual circuit and therefore aircraft act on a 'see and be seen basis'. 9H-EFA had repeatedly stated that he has no visual contact with other traffic. ATC has a radar display near the control position. The BAAI appreciate that this tool is for information purposes only and not for controlling purposes. The use of this tool is also not mandatory. However, it could have helped the Student ATCO and OJTI to pre-empt how the situation was going to develop. According to the OJTI it was not easy to see the aircraft. Therefore, in such a situation the tool could have been used to remedy a tight situation and establish a safe separation between the two aircraft. In this case the (student) pilot of 9H-IAN acted to avert a developing situation and resolved the issue himself.

5.0 Recommendations

5.1 Throughout this investigation it was noted that the AIP does not fully define the circuit for general aviation. Specifically, it lacks the definition of some critical units. After takeoff a pilot would be expected to maintain track/heading until the aircraft is 500 ft above ground (QFE). However, inadvertently some pilots may not make the correction between QFE and QNH. In the specific conditions of Malta, this results with some aircraft turning 300 ft too low.

The following recommendation is hence being made:

To the flying authority:

Recommendation 1

That that AIP is updated to include specific units and include restrictive details of the circuit altitudes, turning and entry points.

5.2 At the time of the incident for aircraft were in the circuit, three of which had a common callsign “Falcon” followed by a number and a letter (for example **FALCON 3C**). Although there is no evidence that the use of the common callsign ‘Falcon’ had any bearing on the incident, it was highlighted by the OJTI that this can make their job more challenging, especially during high workload. The following recommendation is hence being made:

To the ATC and flying schools:

Recommendation 2

The continued use of the callsign Falcon followed by one number and one letter, and other similar callsigns followed by one number and one letter should be discontinued in favour of a simplified call sign with a single digit. (As an example: **FALCON 3C** becomes **FALCON 3**. Call signs for other aircraft would become **FALCON 4**, **FALCON 5**, etc...)

5.3 Throughout the course of this investigation, it was highlighted that out of the three parties involved in the incident, only one party made a formal report. Such reports are mandatory and are a very useful aide memoire later on, should an investigation be required. Such reports are also useful for the aviation authorities to establish trends in occurrences and therefore plug any holes in the system that may be uncovered from time to time.

To the ATC and flying schools:

Recommendation 3

That the parties that are aware of their involvement in an occurrence, enforce the practice to file a safety report.

ABBREVIATIONS


ATC	-	Air Traffic Control
ATIS	-	Automatic Terminal Information Service
ICAO	-	International Civil Aviation Organization
LMML	-	Malta International Airport ICAO Code
MATS	-	Malta Air Traffic Services
MTOW	-	Maximum Take-off Weight
NOSIG	-	No Significant Weather
PPL(A)	-	Private Pilot Licence (Airplane)
QNH	-	Atmospheric Pressure adjusted to Mean Sea Level
SEP(Land)	-	Single Engine Piston (Land)
VFR	-	Visual Flight Rules
WGS84	-	World Geodetic System 1984

ANNEX 1

Following the draft report and the discussions between the BAAI and CAD, a Safety Information and Advisory Notice (SIAN) was issued by CAD.

The SIAN reiterating the importance of Situational Awareness and Collision Avoidance Awareness amongst GA users. This notice has been disseminated among ATO's, is publicly available on the TM-CAD website and will also be disseminated among known Microlight club(s).

The full SIAN 01/21 is attached below.

SAFETY INFORMATION AND ADVISORY NOTICE (SIAN)		 Transport Malta Civil Aviation Directorate Safety and Compliance Unit Transport Malta Centre Triq Pantar Lija LJA 2021 Malta aviationsafety.tm@transport.gov.mt
SIAN Number: 01/21	Issue Date: 13/08/2021	
Subject: Adherence to the standard visual circuit patterns at LMML.		

1.0 INTRODUCTION

This Safety Notice contains instructions and recommendations regarding operational safety.

Following recent reported events concerning General Aviation (GA) aircraft within the airport traffic pattern, the Civil Aviation Directorate (CAD) reiterates the importance of Situational Awareness and Collision Avoidance Awareness for the continued safe conduct of GA operations around the island.

2.0 APPLICABILITY

This Notice is to be disseminated to all personnel, and people who have interests relating to the safe conduct of GA flights around the Island of Malta.

Aerodromes:	Not primarily affected.
Air Traffic:	All Air Traffic Services.
Airspace:	Not primarily affected.
Airworthiness:	Not primarily affected.
Flight Operations:	All General Aviation Operators and GA local flights, GA PICs, FIs and Solo Students.
Licensed/Unlicensed Personnel:	ATOs, GA and Microlight Community.

3.0 RECOMMENDATIONS AND INSTRUCTIONS

Pilots-in-command, examiners, instructors, student pilots and GA community are reminded that:

In line with SERA requirements, the standard VFR circuit pattern at LMML shall be based on a specified path as published in the Malta AIP (AD 2-LMML-MISC-VC) and may only be altered for sequencing purposes or as necessary by ATC. A pilot requiring deviation from the standard pattern shall only be executed after obtaining the necessary approval from ATC.

Aircraft in the circuit shall always maintain their sequence in the pattern unless instructed otherwise by ATC. Cross-wind turns shall not be dependant only on performance and on passing 500ft AGL but also on the aircraft's geographical positioning, as indicated in the Aeronautical Information Publication (AIP).

It is imperative that pilots listen and understand radio communications at all times and are capable of having situational awareness during this delicate phase of flight.

4.0 FURTHER INFORMATION

Aeronautical Information Publication (AIP):

<https://www.transport.gov.mt/aviation/air-navigation-services-aerodromes/aeronautical-information-publication-3764>

Any queries or further guidance as a result of this safety notice are to be addressed to: aviationsafety.tm@transport.gov.mt

5.0 CANCELLATION

This safety notice will remain in force till further notice.

SAFETY AND COMPLIANCE UNIT