



Summary Report

A summary investigation, in accordance with article 45 of the Ordinance on the Safety Investigation of Transport Incidents from 17th December 2014 (OSITI), as of 1st February 2015 (SR 742.161) was carried out with regards to the following serious incident. This report was prepared to ensure that lessons can be learned from the incident in question.

Aircraft	Cessna C525		YU-BST	
Operator	Eagle Express doo, Višnjički venac 41, Beograd/SRB			
Owner	Private			
Pilot in command	Swiss citizen, born 1978			
Licence	Commercial Pilot Licence Aeroplane (CPL(A)) in accordance with European Aviation Safety Agency (EASA), issued by the Federal Office of Civil Aviation (FOCA).			
Flying hours	Total	2216 h	During the last 90 days	102 h
	On the incident type	1700 h	During the last 90 days	102 h
Copilot	French citizen, born 1986			
Licence	EASA CPL(A), issued by the Civil Aviation Administration of France			
Flying hours	Total	560 h	During the last 90 days	70 h
	On the incident type	340 h	During the last 90 days	70 h
Location	CTR Sion (LSGS), approx. 2 NM before runway 25			
Date and time	19 December 2016, 10:45 UTC			
Type of operation	Private			
Flight rules	Instrument Flight Rules (IFR)			
Flight phase	Final approach			
Incident type	Near collision with Remotely Piloted Aircraft System (RPAS ¹)			
Point of departure	Geneva (LSGG)			
Destination	Sion (LSGS)			
Injuries to persons	Crew	Passengers	Third parties	
Minor	0	0	0	
None	2	0	n/a	
Damage to aircraft	Not damaged			
Third-party damage	None			

¹ The term RPAS was introduced by the *International Civil Aviation Organisation* (ICAO)

Factual information

Course of events

The Cessna C525 aircraft, registered as YU-BST, took off from Geneva (LSGG) at 10:23 UTC for a ferry flight to Sion LSGS. The crew performed an instrument guidance system (IGS) approach to runway 25 in Sion. After the crew reported being in visual meteorological conditions (VMC), air traffic control (ATC) cleared the crew of YU-BST to fly visually towards long final of runway 25. As the aircraft reached the position abeam the hospital of Sion, both pilots saw on opposite track and on their right side an object what they identified as a drone.

According to the crew no corrective action was required, since the horizontal and lateral distance was sufficient. The object seemed to move in level flight and the crew had the impression that its colour was red. Furthermore they recalled the drone having three propellers.

The crew continued the flight and landed on runway 25 at 10:49 UTC. After landing the crew informed ATC about the proximity of this object.

Investigation

The hospital of Sion is located north of the extended centreline of runway 25. The distance to the threshold is approximatively 2 NM. Based on the assumption that the crew of YU-BST followed an approach angle of 3° to 3.5° the C525 crossed the area abeam the hospital at an altitude of approximatively 2300 ft/QNH. This would mean that the drone had been piloted up to an altitude of 200 to 250 m above ground.

The Federal Office of Civil Aviation (FOCA) has published on its website obligatory rules concerning the operation of drones in a public area. These rules include among others the following information:

“With effect from 1 August 2014, for safety reasons drones may no longer be operated above gatherings of people (several dozen people standing in close proximity to one another) or within a radius of 100 meters from gatherings of people. And the operation of a drone without direct eye contact (i.e. including the use of binoculars, video glasses, etc.) has been prohibited for quite some time already.”

Furthermore, the operation of model aircraft and drones with a weight between 0.5 and 30 kg is prohibited at distances of less than 5 km from the runways of a civilian or military airfield. In addition, the operation of such vehicles within control zones (CTR) is prohibited, if a height of 150 m above ground is exceeded.

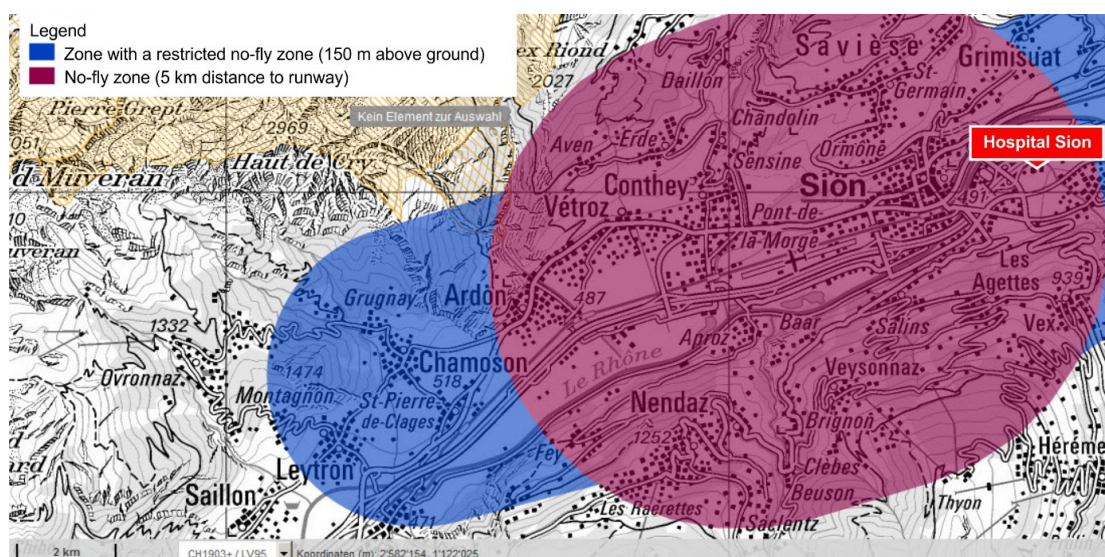


Figure 1: Map published by FOCA with the restrictions around LSGS and with the location of the hospital, where the mid-air encounter took place.

Analysis

As seen in Fig.1 the serious incident took place within the no-fly zone of LSGS. Since the pilot of this Remotely Piloted Aircraft System (RPAS) is unknown, it is not possible to determine the drone-pilot's knowledge concerning the existing legislation.

This incident can also be referred to the similar incident described in the Summary Report of the STSB, dated 20 December 2016 involving the Airbus A320-214, registered as G-EZPA.

Conclusions

Given that remotely piloted aircraft systems (RPAS) can predominantly only be detected visually and not by collision warning devices, it is just a matter of time before a collision with an aircraft at low altitude occurs, especially in light of the increasing number of RPAS in use. Above all, an RPAS can cause considerable damage to an aircraft's engine or even set it on fire due to its large size.

Targeted measures must therefore be implemented relentlessly and quickly. From the perspective of aviation safety, these specifically include measures that make it possible for unmanned aircraft to be detected, both by those directly affected and by third parties such as air traffic control (detect and avoid).

Berne, 11 April 2018

Swiss Transportation Safety Investigation Board