

AIRBORNE PUBLIC SAFETY ASSOCIATION



The

Safety

Wire

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MANNED AND UNMANNED AIRCRAFT FLYING TOGETHER IS...

how would you finish that sentence? Some people would say, “dangerous.” Too many things can go wrong with both the machines and the people involved that could lead to disaster. Those people are right.

Others would finish that sentence with the word, “wasteful” or even “ridiculous”. The two types of machines would overlap the

same mission and objectives. They would get in each other’s way and create nothing more than a distraction to everyone involved. Those people are right.

Another group of people may finish the sentence with, “effective.” Manned and unmanned aircraft can fly safely together on a mission, complimenting each other’s capabilities and creating better results than either could create on their own. These people are also right.

The accurate completion of the sentence above depends on training and professional deployment of both types of aircraft. Without proper preparation and coordination, manned and unmanned combinations are wasteful at best, and downright dangerous at worst. However, there are numerous examples in our industry of organizations that have brought the two categories of aircraft together with common policies, procedures and training. Those organizations have some of the most impressive air support capabilities any of us could hope for.

Training and aircraft coordination should include the following subjects:

1. **Airspace deconfliction** – Altitude and lateral separation boundaries between the two aircraft. Also establish how aircraft will enter and exit the airspace.
2. **Communications** – Direct communication between the pilots and direct communication for the mission-related radios (police band, etc.).
3. **Aircrew composition** – For each aircraft, who is responsible for flying and who is responsible for mission objectives? What role does each person have in aircraft safety?
4. **Loss of control emergencies** – What is expected of everyone if either the UAS or the manned aircraft experiences an emergency, especially loss of aircraft control? What radio calls will be made? What emergencies should we be ready for?
5. **Mission tasking** – What objectives or search areas will be assigned to each type of aircraft? How will tasking change once an objective is achieved, such as locating a target subject? Do these assignments capitalize on the specific capabilities of each platform?



Are manned and unmanned aircraft flying together dangerous, wasteful or effective? The answer can be any of those three choices, depending on what we do to set the stage with training and procedures. Will there be some residual risk even in the best conditions? Yes, we can only reduce risk to the lowest practical level, not eliminate it. However, working separately, or in opposition with each other will never produce the same great results we can achieve by working in unison.

*“Airplanes are near perfect;
All they lack is the ability to forgive.”*

~Richard Collins

RESOURCES

NASA Callback Newsletter – COVID related stories

https://asrs.arc.nasa.gov/publications/callback/cb_485.html

Safety Board of Canada - Safety Alert on ELTs

<https://www.tc.gc.ca/en/services/aviation/reference-centre/safety-alerts/inspection-emergency-locator-transmitter.html>

Australian Transport Safety Bureau - Safety notice on hoist failures

<https://www.atsb.gov.au/media/news-items/2020/winching-safety-notice/>

ONLINE MEETINGS

APSA conducts regularly scheduled online meetings for safety officers, maintenance technicians, SAR personnel, and UAS operators via a conference call you can join using your computer, mobile device or phone. Online meetings are open to any APSA member. Contract maintenance providers to APSA members are welcome to participate in the maintenance meeting as well. If you would like to join, send an email to:

safety@publicsafetyaviation.org

The schedule for upcoming APSA online meetings is as follows.



Maintenance:

Wednesday, July 8, 2020

1:00 PM - 2:00 PM EDT (1700 UTC)

Safety Officers:

Friday, August 14, 2020

12:00 PM - 1:00 PM EDT (1600 UTC)

SAR:

Wednesday, September 16, 2020

1:00 PM – 2:00 PM EDT (1700 UTC)

UAS:

Wednesday, September 23, 2020

1:00 PM - 2:00 PM EDT (1700 UTC)

EMERGENCY PROCEDURE OF THE MONTH

In each monthly emergency situation, discuss what you would do, as a crew, to respond to the following emergency. If the EP does not apply to your specific aircraft, think of something similar.

Laser strike, pilot has temporary flash blindness

*"Mix ignorance with arrogance at low altitude,
and the results are almost guaranteed to be spectacular."*

~Bruce Landsberg - AOPA

Reality Check...

Note: The following reports are taken directly from the reporting source and edited for length. The grammatical format and writing style of the reporting source has been retained. My comments are added in red where appropriate. The goal of publishing these reports is to learn from these tragic events and not to pass judgment on the persons involved.

Aircraft:	Airbus AS350B3 and FLIR SkyRanger
Injuries:	None
TSB Canada#:	2020P0775

https://www.wapps.tc.gc.ca/saf-sec-sur/2/cadors-screaq/rd.aspx?cno%3D%26dtef%3D%26dtef%3D2020-06-04%26otp%3D-1%26ftop%3D%253e%253d%26fno%3D%26ijop%3D%253e%253d%26ijno%3D%26ole%3D%26prv%3D-1%26rgn%3D-1%26tsbno%3DA20P0019%26tsbi%3D-1%26arno%3D%26ocatno%3D%26ocatop%3D%26oevtno%3D%26oevtop%3D%26evtacoc%3D%26ftno%3D%26ftr%3D-1%26cars%3D-1%26acat%3D-1%26aar%3D%26aidl%3D-1%26aidxt%3D%26optdl%3D-1%26optcom%3D%26optseq%3D%26optxt%3D%26opdlxt%3DResults%2Bwill%2Bappear%2Bin%2Bthis%2Blist%26mkdl%3D-1%26mlct%3D%26mdld%3D-1%26mdlxt%3D%26cmkdl%3DC%26cmkxt%3D%26r%3DQR%26hpl%3Dy%26cnm%3D2020P0775&fbclid=IwAR0e8edDMF1H652LGo8lUfQy2yAshSmB3EkBtOZdwN_Uv2aqsQs8ntOAIqYs

An Aerospatiale AS350-B3 operated by RCMP Air Services, was conducting policing activities 24nm SW of Houston (CAM5), BC with 3 persons on board. Also operating in the area were two RCMP operated RPAS units. During low level flight (below 300 feet AGL), the helicopter and 1 RPAS (FLIR SkyRanger R60 - 2.4 kg) collided. The helicopter suffered some initial vibration and the pilot completed a precautionary landing on a road without further incident. Maintenance staff found damage primarily to the main rotor blades along with superficial damage on the tail boom and tail rotor. The effected components were removed as per the maintenance manual for repairs or overhaul as

required. The RPAS was destroyed. There were no injuries to persons in the aircraft or on the ground.

Aircraft: Airbus EC130
Injuries: 1 Minor, 2 Uninjured
ATSB#: AO-2019-005

https://www.atsb.gov.au/publications/investigation_reports/2019/aair/ao-2019-005/

After assisting the passengers to board the helicopter, the pilot conducted a walk-around and did not identify anything unusual. He then boarded and, following a normal engine start, carried out his take-off checks. As was his usual practice, he set the friction settings for both the cyclic and collective controls to minimum resistance. The wind was about 10 kt from the south-west (about 45° to the right of the helicopter), the sky was clear and it was approximately 30° C.

As the pilot increased to full power for take-off, he observed that the front right passenger had not put on her headset and signaled for her to do so. While he waited for her to put the headset on, [staying] on the ground, he noticed the cabin temperature was 32 °C and turned on the air-conditioning.

Shortly after 1500, the pilot was again ready to take-off. He raised the helicopter off the ground, more rapidly than he normally did without getting the usual 'fine balance'. At a height of about 3 m above the ground, the helicopter began to yaw to the left (turning counter-clockwise), seemingly pivoting about the tail and its attitude became progressively unstable.

The pilot applied inputs, mainly cyclic, to control the helicopter's movement but the yaw increased. The aircraft now seemed to be pivoting about the main rotor, moving closer to the trees and shed. The pilot recalled that the helicopter felt 'unstable' and moved the cyclic but did not get the response he expected. In seconds, the helicopter had turned through 360°. Unable to control the helicopter, the pilot decided to land and lowered the collective.

As the helicopter descended, its left skid contacted the mound, resulting in the helicopter pivoting around that skid and the main rotor blades striking the ground. The helicopter came to rest on its left side. The sequence, from lift-off to ground contact, occurred over about 5 seconds.

The pilot turned off the engine and battery, exited through the shattered left windscreen and assisted the passengers from the helicopter. The pilot sustained minor injuries while the passengers were uninjured.

The maintenance organization's examination found no evidence of airworthiness issues with YHS to explain the accident. The pilot's account and the manufacturer's comments also support a conclusion that a mechanical issue and the light wind did not contribute to the accident.



Aircraft:	Cessna 172
Injuries:	1 Fatal
ATSB#:	AO-2018-048

https://www.atsb.gov.au/publications/investigation_reports/2018/aair/ao-2018-048/

At 1712:41, a Cessna 172 was cleared to land on runway 35L and this was acknowledged by the pilot. ATC's observation during the approach was that the aircraft was a little low, but not unusually so, with flaps extended and a slight nose-up attitude.

At about the time the aircraft was cleared to land, witnesses on the ground described hearing the engine 'spluttering', 'struggling' and that it 'sounded like a lawn mower struggling to start'. Some witnesses also reported the aircraft was quite low and slower than expected. Witnesses located 120 m from the accident site reported it was heading in a westerly direction, at a height of about 25 m (82 ft) above the ground, with no engine noise.

At 1713:05, the pilot broadcasted MAYDAY and stated 'we've got engine failure'. In response, the tower controller directed his attention to the aircraft and observed that the aircraft was 'low' and the nose had 'started to pitch up' before the MAYDAY call was finished. At the completion of the MAYDAY transmission, the surface movement controller also noticed the aircraft was in a nose-up attitude. About 2–3 seconds later, they both observed the left wing and nose drop, before they lost sight of the aircraft below the tree line.

The MAYDAY broadcast also prompted several pilots to look toward it. These pilots reported observing that EWE was:

- initially in a shallow left turn, with increased angle of bank, prior to a left wing drop
- in 'a sharp left turn', then the left wing dropped
- 'near to a 30° bank to the west...the aircraft lost considerable height in this maneuver and continued in this state' [before he lost sight]
- 'banked in an uncontrolled state at about 150–200 ft...heading toward the ground'. A security camera located two houses to the west of the accident site captured the accident sequence. The footage showed EWE enter the frame in a slight left bank and initially on about a westerly heading. The aircraft was descending with a nose attitude appearing higher than that for a normal glide. As the aircraft passed behind a tree, the aircraft appeared to stall, indicated by the sharp reduction in pitch attitude and left wing drop. The left wing subsequently clipped the power service line to a corner property. The footage showed that the wing flaps were in the retracted position.

Contributing factors

- During final approach, for reasons that could not be determined, VH-EWE experienced an engine power loss, at a position that afforded limited clear landing area options.
- Following the engine power loss, control of the aircraft was lost at a height insufficient for recovery prior to collision with terrain.

***There are no new ways to crash an aircraft...
...but there are new ways to keep them from crashing.***

Bryan 'MaGu' Smith

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