

## Drone Sighting Guidelines

### INTRODUCTION

The objective of this joint document for pilots and air traffic controllers is to improve the information flow between the two groups and to coordinate the response when a drone is reported.

Drone sightings by commercial aircraft are on the rise. There have been numerous cases of airspaces and aerodromes being closed due to reports of drones in the vicinity. Many countries do not yet have standard procedures to deal with drone sightings near aerodromes or violations of controlled airspace by drones. These guidelines are not a one-fits-all solution due to the dynamic and unpredictable nature of drone encounters but can be used to support the implementation of standard procedures and help pilots and air traffic controllers handle drone reports until such procedures are in place.

### SPEED

A drone strike can be much more severe than a bird strike due to their solidity. Tests have shown that relatively small drones can penetrate aircraft windows and cause significant damage to aircraft structures. It is essential to slow down to reduce the kinetic energy of a potential drone impact.

Impact energy is proportional to the speed squared, so the safest thing is to SLOW DOWN!  
In particular, it is recommended to:

- Reduce speed to minimum clean during climb and descent.
- Reduce speed during approach as feasible.

While even small drones have been observed above 10,000 feet, pilots are more likely to encounter a drone at lower levels, during departure and approach phases.  
Any speed reduction should be coordinated with ATC.

### INFORM

If a drone is seen, pilots must report the sighting to ATC and provide as much accurate information as possible. It is particularly important to pass sufficient information to ATC to positively identify it as a "drone" (to distinguish it from a balloon, bird, etc.):

- Location
- Altitude
- Lateral and vertical separation
- Moving or stationary?
- Size, shape, appearance (e.g. quadcopter, camera underneath, colour, etc.)

ATC must in turn inform supervisors, neighbouring sectors and pilots already on and joining the frequency. Supervisors will take appropriate action, liaise with other units and, if deemed necessary, inform the authorities and police. Prosecution of unlawful interference with flight operations can only happen if authorities are informed promptly and react quickly.

ATC should continue to inform pilots joining the frequency for 30 minutes after the initial drone sighting or any subsequent sighting. Associated contingency procedures are likely to remain active for, at least, 30 minutes or until confirmation is obtained that the situation has been resolved.

### **DELAY**

Although operational impact should be kept to a minimum, drone sightings could lead to the closure of airspace or ultimately an aerodrome for a considerable time. Pilots should expect delays and plan for an early adjustment of the flight profile and consider diversion options.

Pilots should take into account the lower speeds and the increased track miles due to aircraft ahead flying more slowly and possibly being vectored away from areas of reported drone activity.

A drone sighting and the potential delays and airspace or aerodrome closures can increase radio-telephony usage (e.g. minimum fuel calls and diversion requests). Pilots and controllers should be prepared for possible frequency congestion, use standard phraseology throughout and make efficient use of the frequency.

### **AVOIDANCE**

Due to the nature of drone operations, its exact position can change rapidly, making it difficult to request or provide effective avoidance instructions. In addition, due to the traffic situation, it may not always be possible to vector aircraft away from the area where the drone was originally seen.

Pilots may request alternative vectors if deemed necessary. However, in order to maintain safety and a steady flow of air traffic it is essential to follow ATC instructions.

Air traffic controllers have no precise information about the location and direction of travel of the drone, so an attempt to vector aircraft around the affected airspace may be counterproductive. Air traffic controllers are advised to consider the safety of the operation and avoid the area of reported drone activity if deemed necessary.

### **REPORT**

After the event, pilots and controllers must file the corresponding safety report so the appropriate post-incident analysis or safety investigation can be carried out. Please include as much detail as possible about the drone, the risk to aircraft and the effect on the safety of the operation.

Detailed information is particularly important in order to satisfy the criteria national authorities use in their assessment of risk.

It is only by enhancing awareness among the general public that society will become more aware of the problems and risks associated with unlawful use of drones.

## GUIDELINES

### SPEED

Pilots: if a drone is reported, coordinate a speed reduction with ATC:

- Initially to minimum clean, including during departure.
- On STAR, initial or intermediate approach, request speed reduction to minimum clean or less, as feasible.
- On final approach observe ATC speed constraints to maintain separation.

ATC: expect pilots to request a speed reduction.

### INFORM

Pilots: if a drone is seen, inform ATC immediately and pass as much accurate information as possible about the drone sighting:

- Location
- Altitude
- Lateral and vertical separation
- Was it moving or stationary?
- Size, shape and appearance (e.g. quadcopter, camera underneath, colour, etc.)

ATC: inform supervisors, neighbouring sectors and pilots on and joining the frequency.

### DELAY

Pilots: expect possible delays or diversions

ATC: manage airspace and consider possible delays/diversions as a result

### AVOIDANCE

Pilots: request alternative routings or radar vectors if deemed necessary

ATC: consider the safety of the operation and avoid the area if deemed necessary

### REPORT

Pilots: file the appropriate safety report as established with your airline/aviation authority.

ATC: file the appropriate safety report as established with your ANSP/aviation authority.

***In the event of imminent threat to the aircraft, none of the above prevents pilots from declaring an emergency, taking avoidance action, etc.***