D-FEND SOLUTIONS

Sector Solution Overview: Airports

Safe Airports Require Safe Airspace

A study from the **Canada National Research Council's Aerospace Research Center** found that mid- and large-size drones with heavy payload capabilities can do **significant damage** to aircraft, including shattered windshields, penetration and inhalation hazards, lost optics and the need for emergency landings after impact.

At low speeds of around 140 knots, aircraft that collided with drones showed plastic damage and extensive deformation to the skin, as well as damage to the vessel's underlying honeycomb structure. At higher speeds of 250 knots, severe deformation of slat curvature, secondary damage to the leading edge and even penetration of drone debris into the aircraft's fractured area were observed.

This threat is being observed worldwide. For instance, **92 drone-related incidents** were recorded in German airspace in 2020, according to an article in Homeland Security Today, with one-third of those incidents leading to severely restricted air traffic:

"Such restrictions have consequences. The spacing between arriving and departing aircraft may have to be increased, or it can mean that specific areas, such as individual runways, cannot be used. In extreme cases, no take-off or landing clearances can be issued, which is tantamount to an airport closure."

Additional Complications

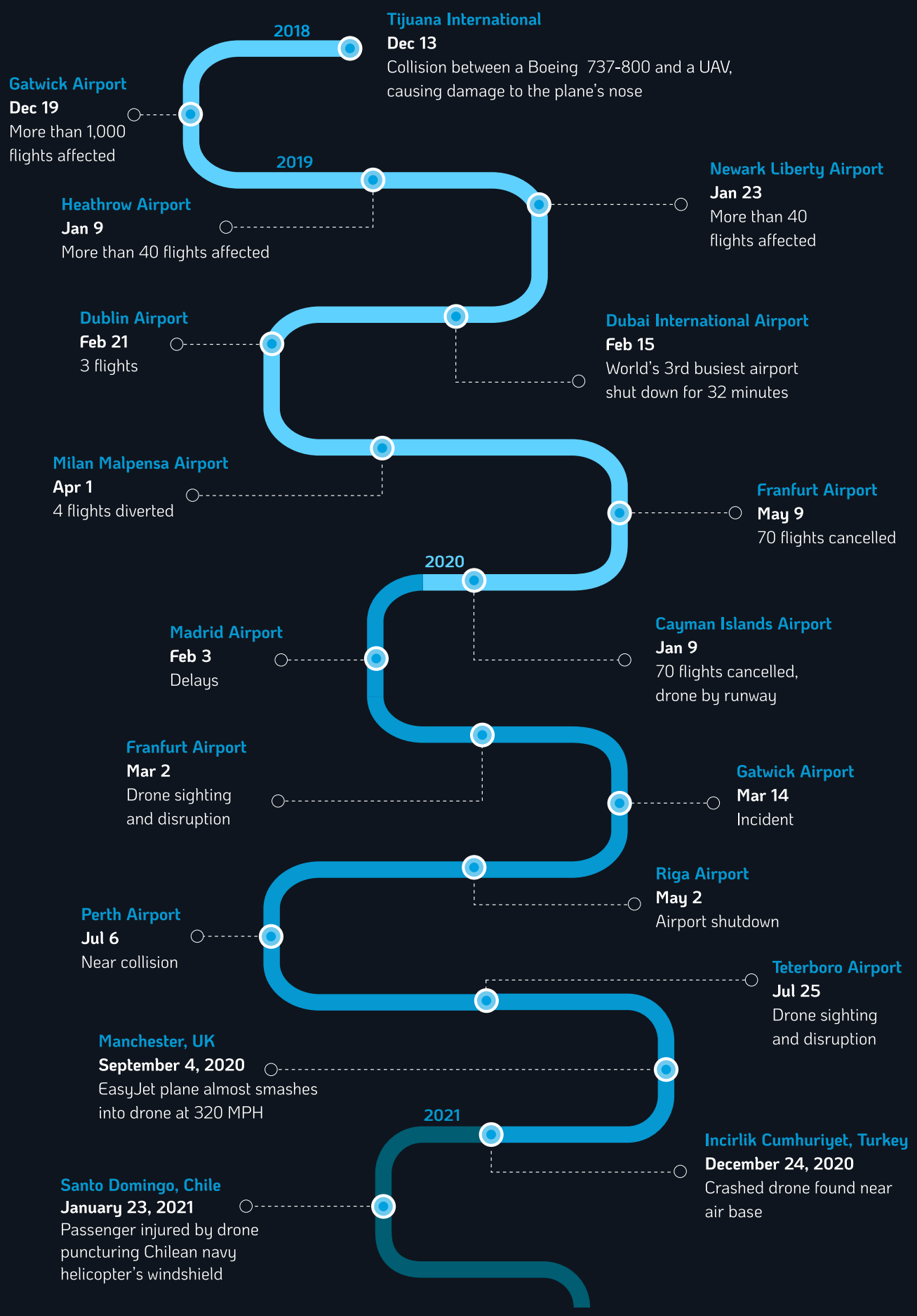
Fears of a drone colliding with a plane, or being used for a terror attack, have many airport security teams searching for suitable counter-drone technologies. Securing airports and controlling the risk of another drone-related closure, interruption or terror attack is crucial.

But there are additional complications: radars can be used for detection, but some generate false positives and they must be integrated with a mitigation system.

Jammers can potentially hamper crucial communications systems in the area. Also, jammer-based mitigation may be only temporary and allow the drone to fly back to its original take-off position, which would likely enable the original pilot to regain control of the drone. Many airport personnel are skittish about using kinetic technology, which can cause collateral damage.

It is important to note that authorized drones are utilized at many airports for inspection, security and other important tasks. But traditional counter-drone technologies struggle to differentiate between authorized and rogue drones during both the detection and mitigation stages.

It is unfortunately commonplace for drone incidents to affect airports and aircraft:



Ensure Control And Continuity With EnforceAir

Unlike traditional anti-drone solutions on the market, our flagship product, EnforceAir, uses non-jamming and non-kinetic technologies to keep your airspace safe, including takeoff and landing runways and airstrips. Flight schedules proceed as planned, backed by an autonomous system that asserts control over rogue drones and lands them safely in a designated zone. The solution co-exists with airport wireless communications.

EnforceAir can extract a unique identifier (known as a tail number) per drone, sourced from the drone's communication. Authorized drones can then be tagged as "authorized" to fly in certain areas of the airport. This classification capability is absent from radars and other traditional detection systems.

Safety and continuity are facilitated by EnforceAir, which prevents the pilot from regaining control over the drone, fully and smoothly eliminating the threat. Forensics extraction helps identify the ground operator.

EnforceAir also provides airport authorities with preventive notifications while extracting crucial data – such as the drone take-off position and pilot remote control location, so authorities can alert specific at-risk flights and emergency personnel.

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For more information, please visit: www.d-fendsolutions.com
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