# AERIAL DRONES AND PORTS

## Managing the risks and opportunities: a British Ports Association briefing paper

*November 2020*

*About the*

# BRITISH PORTS ASSOCIATION

The British Ports Association is the national association for ports, harbours and terminals; speaking for over 100 port authorities who own and operate over 400 ports, terminals and port facilities. We represent the interests of a diverse group of ports to all tiers of government. Our membership accounts for 86% of all tonnage and handle 85% of all vessel arrivals.

The British Ports Association also represents all the UK's main energy gateways, 19 of the top 20 fishing ports and an extensive network of ports and harbours that facilitate over one million leisure craft and yachts.

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# OVERVIEW

Following recent enquiries about drone (unmanned aircraft system) activity in ports, the British Ports Association (BPA) has collated the various resources that have been submitted by our members. We have also conducted our own research, which included speaking with a number of industry experts.

This paper is part of the BPA's Port Futures Programme, a series of papers considering the emerging and innovative trends in the ports sector. Thank you to those ports, colleagues and industry experts who sent us information; a summary of what has been collated is as follows.

Please note, this is document is not formal guidance and only aims to provide an overview of drones and considerations for the ports sector. Ports and other stakeholders may wish to gain formal advice from the UK's aviation regulator, the Civil Aviation Authority (CAA), or a legal advisor or specialist drone consultant.
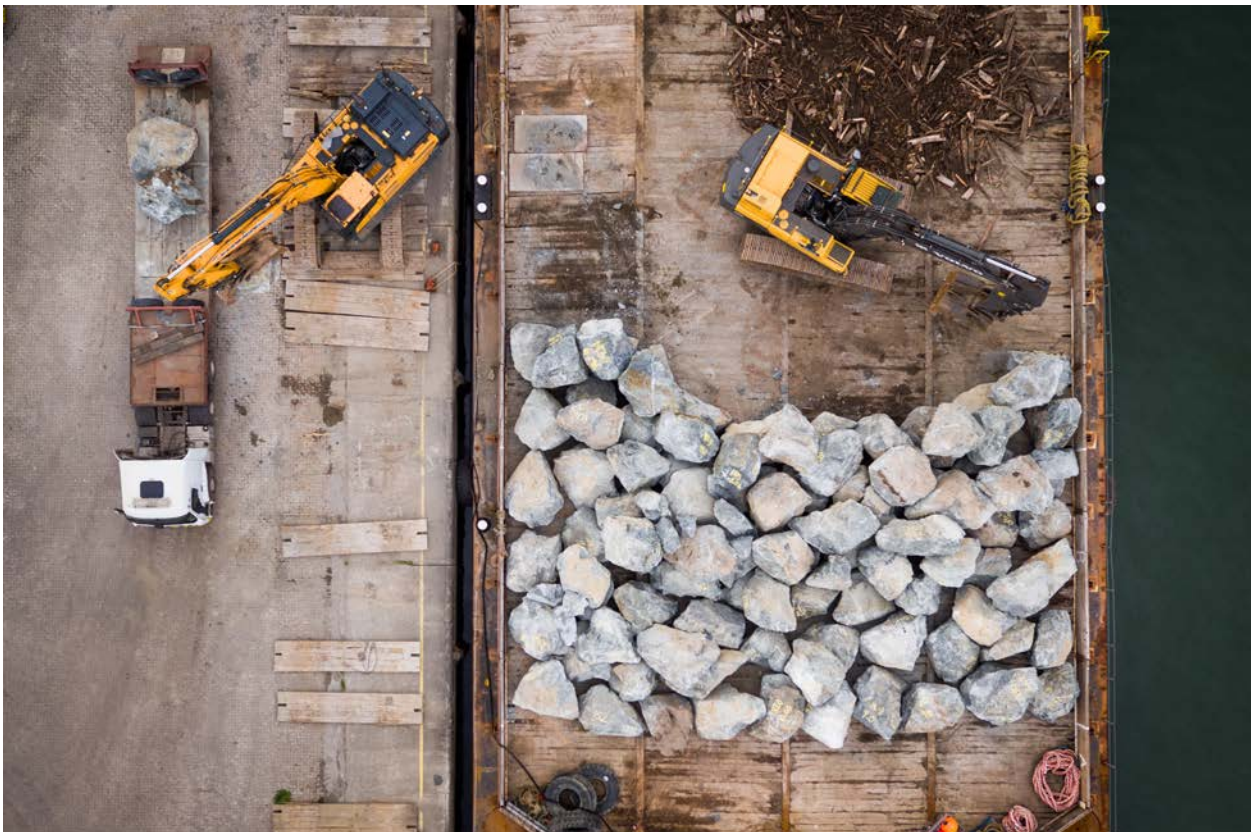
*The opportunities for*

# CHANGE

One of the initial enquiries the BPA received came from a port agent who wanted to explore whether they could use a drone to deliver a small parcel to a vessel. In the future, it is thought vessel operators, agents and suppliers may wish to **deliver light-weight parcels** such as documents, memory sticks and testing samples to and from vessels, rigs and other structures.

Looking ahead, when drones are fully commercialised and relevant parties are able to meet the various legal and regulatory framework that are in place, this may be an attractive alternative to using launches and helicopters to deliver supplies to vessels. Drones are now being used for **surveillance, surveying and asset/infrastructure management**, particularly in the energy and nuclear sector, and now increasingly within the maritime sector.

Scientists are currently testing how artificial intelligence (AI) boats could carry drones out to **wind turbines at sea**, which are often in challenging environments, before they take off and land on turbine blades and carry out repairs. Similar technology is also being tested that could clear oceans of **plastic waste**.

It seems that some ports allow certain drone activities with photography or leisure use in mind, however, this request appears to change the direction of travel for the future use of drones, particularly in the 'new normal' where social distancing is important to **prevent the spread of COVID-19**, in both maritime and urban environments.

Recently the UK's **Maritime and Coastguard Agency** undertook a two-week trial which examined how drones could be used to enhance **search and rescue** missions around the British coastline. After seeking approval from the CAA, the drones flew 'beyond line of sight' missions in unsegregated and uncontrolled airspace. As well as a special radar, automatic identification system, radio beacon and satellite communications suite; the drone can deploy a life raft that can save people stuck at sea.

Internationally, the use of drones is not a particularly new idea, even within the maritime setting. In 2016 the Institute of Chartered Shipbrokers published an article in their quarterly magazine which highlighted the first instance of drone delivery to a vessel in Danish waters by shipping line **Maersk**.

In the same year, Maersk reported that drone use could bring potential savings of $3,000 to $9,000 per vessel per year based on saving time and money on **washing, gas-freeing and re-inserting** during a cargo tank inspection. It was noted that mail, spare parts and medicine could be delivered in a more time and cost-effective manner.

Drones could also increase the quality of **inspecting** challenging areas on ships with high-quality images, meaning problems such as vessel damage or cracks can be identified faster, also avoiding the risks that may arise when an inspection is performed by a person. Drones can assist with close-up **surveys** to assess the structure and coating inside ballast tanks, cargo holds, jackup legs or similar. However, as Maersk pointed out in the interview for this magazine article, there are many challenges for those who wish to use drones in the maritime environment.

The **Drone Delivery Group**, an independent collaborative grouping of 300 organisations involved in all aspects of the drone industry, published a white paper in July 2020 with a number of important asks. This includes developing new testing grounds to deliver public safety, advancing the industry and supporting the ambition of the UK becoming a global leader in drone technology.

The biggest challenge highlighted in the paper is making commercial drone flights a reality in the UK. To do this the CAA needs to be accurately resourced to support drone activity. Barclays predict the global drone market is set to grow ten-fold during the next five years, from £3bn to £30bn, and will result in cost savings of £77bn.

Finally, and perhaps in the simplest terms, many ports are using drones to enhance their marketing and public relations to provide cost-effective aerial visual imagery. Instead of commissioning photography from light aircrafts, ports are now able to use drones to capture images and video footage and many ports have indeed acquired their own drones for such purposes.

*Using drones within the*

# MARITIME SECTOR

The use of drones within the shipping industry could fundamentally alter how ships are serviced, supplied and ultimately operated in the future. The Department for Transport's **Maritime 2050 strategy** notes that new transport modes and models of use, such as drones, need to be incorporated into investment programmes.

As mentioned above, drones also have the capability of being used for surveillance, surveying and **asset/infrasructure management** purposes. **Associated British Ports** (ABP) announced earlier this year that they have successfully embedded drone technology into their asset and property management practices, inspections and policies by working with PwC and Aerodyne Group. The drone and data technology is integrated with a secure cloud platform. ABP has said that drones are safer, faster and more cost-effective, which will enable them to optimise operations and reduce risks. For ABP, drones are a big step forward in their digital transformation and safety journey.

The use of drones within the lighthouse authority **Trinity House** over the past five years has steadily increased. This has ranged from simple **visual surveys** for maintenance inspections and historical comparisons, through to **highly technical light detection and ranging scanning** of lighthouse external and internal structures. It is an area of technology that is ever-evolving and by nature leads itself to a service that they currently source externally due to high equipment costs and compliance considerations.

It is thought that the application of drones can be extended beyond current use, particularly for **aids to navigation**, such as confirming buoy position, condition and light character.

However, Trinity House has said that it actively discourages the use of amateur operators as the majority of their estate is situated within very sensitive environmental and ecological areas and they have concerns about potential damage to their equipment.

# REGULATORY & LEGAL

## *Requirements*

Those who wish to operate drones must adhere to various safety, legal, regulatory, and insurance requirements. These vary depending on whether the drone is being used for **commercial or recreational purposes**. Furthermore, depending on where the flight takes place, drone flyers and operators may require the approval of the CAA, local air traffic control and port authorities, where relevant.

Interestingly there have been significant legal and regulatory developments in the UK over the last 12 months. Prior to this, delivering goods or cargo for commercial purposes by drones appeared to be a bit of a 'regulatory grey area'. The Operation of Air Services section of the **Community Regulations 2009** states 'you need an Operating Licence' however it appears that this was not drafted with the intention that it applies to drones, meaning there was a gap that needed to be filled.

To support the various changes during the last year, the website **Drone Safe** has been developed by the CAA and the air traffic control provider National Air Traffic Services (NATS).

Since 30 November 2019, it has been illegal to fly a drone or model aircraft that weighs between **250g-20kg** unless the flyer is registered with the CAA as a 'small unmanned aircraft operator'. For drones weighing **above 20kg**, permission must be given by the CAA as they are now subject to all UK aviation regulations, as listed in the Air Navigation Order 2016, although they may be exempted from certain requirements by the CAA. The 20kg threshold does not include the drone's fuel, but does include any articles or equipment installed in or attached to the aircraft at the commencement of its flight. The flyers of those drones that weigh under 250g do not need to be registered with the CAA but are still subject to the rest of the regulations under the Air Navigation Order 2016.

The **'flyer'**, the person who files the drone, must pass an online theory test to get a flyer ID. Registration for flyers is free and the theory test must be taken every three years. The **'operator'**, someone who owns or is responsible for a drone, must register to get an Operator ID. They are responsible for making sure only people with a valid flyer ID use their drone and must also label their drones with their operator ID. Registration for operators costs £9 and is valid for one year.

# DRONE AND MODEL AIRCRAFT CODE

The **Drone and Model Aircraft Registration and Service** (DMARES) was introduced by the Department for Transport is managed by the CAA. The **Drone and Model Aircraft Code**, developed by the CAA, sets out the regulations in brief and was published in October 2019. It applies to drones that weigh between 250g and 20kg, key points included in the Code are:

1.   You're responsible for flying safely whenever you fly.

2.   Always keep your drone or model aircraft in direct sight and make sure you have a full view of the surrounding airspace (any exception to this must specifically authorised by the CAA).

3.   Never fly above 400ft (120m).

4.   Keep the right distance (50m) from people, buildings, structures, vehicles, trains, vessels and other types of transport (unless permission has been given by the site owner to fly closer). For built-up and busy areas, or where there are crowds of more than 1,000 people, drones should not flyer closer than 150m. A hobbyist must keep the drone 150m away from a congested area (this would include a port, unless permission is given).

5.   Stay well away from airports, airfields and aircraft (most airports and airfields have a flight restriction zone).

6.   Always check and follow any flying restrictions.

7.   Check for local restrictions and temporary hazards.

8.   Make sure you know what your drone or model aircraft can and cannot do.

9.   Make sure your drone is fit to fly.

10.  Do not fly if the weather could affect your flight.

11.  Make sure you're fit to fly.

# DRONE AND MODEL AIRCRAFT CODE
*Continued*

12. Take action quickly and safely if the situation in the air or on the ground changes.

13. Report any dangerous incidents or near misses.

14. Do not use your drone to make money or for any kind of payment (permission must be given by the CAA).

15. If you fly your drone for recreation, you can choose whether or not to have insurance. If you fly your drone for commercial purposes you must have insurance.

16. Respect other people and their privacy.

17. Make sure you know what your camera can do and the kind of images it can take.

18. Make sure you can be clearly seen when you're out flying.

19. Let people know before you start recording.

20. Think before sharing photos or video.

21. Keep photos and videos secure.

22. You must pass the theory test to get a flyer ID before you fly.

23. You must take the theory test every three years.

24. The person or organisation that's responsible for a drone or model aircraft must register to get an operator ID.

25. Label your drone or model aircraft with your operator ID.

26. Make sure that anyone flying your drone or model aircraft has a valid flyer ID.

27. Keep your operator ID up to date.

In December 2019 the first **International Standard** for drones was published (ISO 21384-3) and contains internationally agreed and accepted requirements for safe commercial operations. Following this, three more International Standards have been published covering vocabulary, categorisation and classification of civil drones, and survey results. These are available to purchase online, see here.

To check the **airspace** around where the drone is intended to be flown, flyers are encouraged to use apps or the online portal.

If flyers want to do **more types of flying**, they will need to get the correct **permission** or **exemption** first, usually from the CAA but it may be other authorities depending on the location. For example flying at different heights or distances to the ones listed in the Code, flying closer to built-up or busy areas, flying near vessels, flying near an airport or flying for commercial purposes. Only the CAA can give permission or exemptions for these purposes.
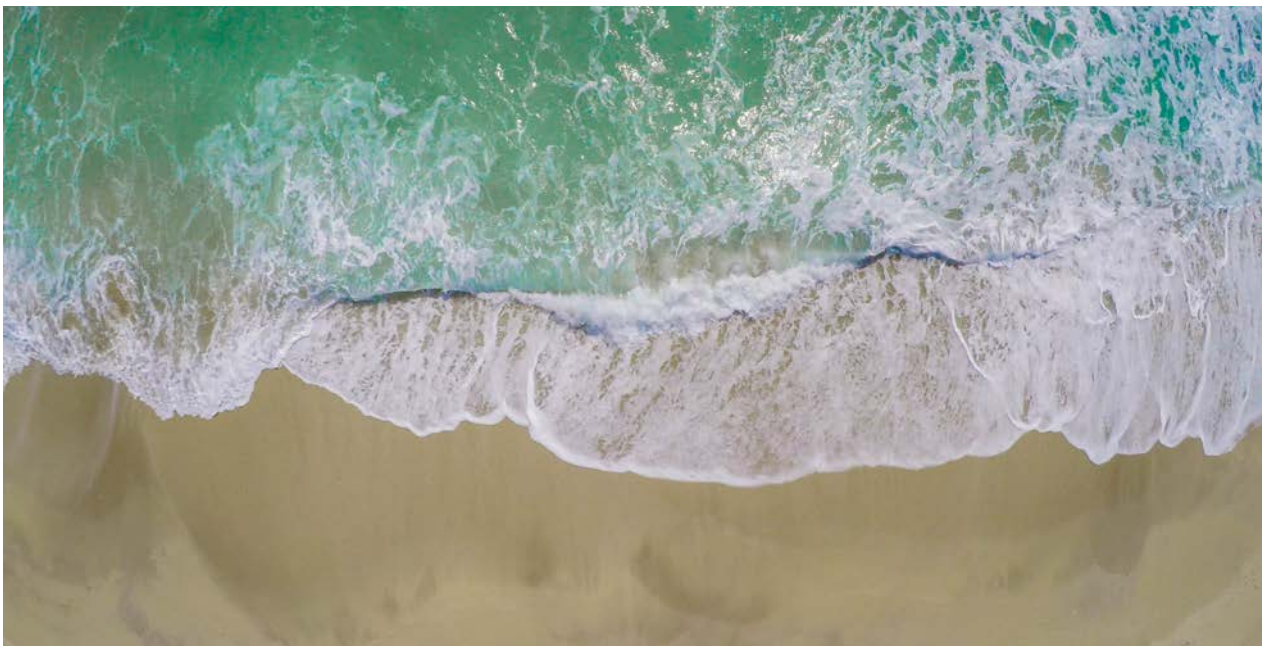
*Using drones for*

# RECREATIONAL PURPOSES

The regulations for recreational unmanned aircraft flights are contained within the **Air Navigation Order 2016**. The term 'recreational' means that the drone is not being used for commercial purposes, ie it is being used for leisure by a hobbyist. In order to keep the regulations at a proportionate level for flyers of recreational drones that have a mass of 20kg or less, a set of specific and simpler regulations apply, in addition to the Drone Code. These are:

- The flyer is responsible for flying the drone in a safe manner.
- The flyer must keep the drone in their direct sight at all times while it is flying.
- The flyer must not endanger anyone, or anything with their drone.
- The flyer must not fly more than 400ft above the surface.
- The flyer must not fly within the Flight Restriction Zone of a protected aerodrome.
- If the drone weighs more than 20kg additional rules apply if you fly in certain types of airspace.

**Insurance** is not required for those drones that are only being used for recreational purposes.

*Using drones with*

# CAMERAS INSTALLED

If the drone is fitted with a camera, there are also a number of **additional limitations** surrounding where it can be flown, and how close it can fly to other uninvolved people or objects. In order to be able to fly within these areas, or closer than the minimum distances that are in the regulations the Code, prior permission must be obtained from the CAA. This is the same process for drones that are used for commercial operations.

The **Information Commissioner's Office** (ICO) recommends that the users of drones with cameras should operate them in a responsible way to respect the privacy of others. If a drone has a camera, its use has the potential to be covered by the **Data Protection Act**.

The ICO has a number of tips for the responsible use of drones, including:

- Let people know before you start recording.
- Consider your surroundings.
- Get to know your camera first.
- Plan your flight.
- Keep you and your drone in view.·
- Think before sharing.
- Keep the images safe.

*Using drones for*

# COMMERCIAL PURPOSES

As noted on point 14 of the Code above, the CAA must give permission if drones are used for commercial reasons, ie in return for money. The CAA publish a list of current holders of the CAA permission which is regularly updated. The CAA aims to be effective and proportionate to the safety risk. Commercial activities carried out by drones traditionally include photography, survey, inspection and search and rescue.

In addition to what is contained in the regulations, there are some specific steps that must be taken if a drone is being flown for commercial operations, in addition to what is required for those using a drone for leisure purposes.

> **Permission** from the CAA is required if a drone is to be used for commercial operations or meets any of the below conditions:
>
> - Will be flying at a height of more than 400 ft above the surface.
> - Will be flying within 150m of either a congested area or an organised open-air assembly of more than 1000 persons.
> - Will be flying within 50m of people or properties/objects that are not under their control.

Either a **'standard' or 'non-standard' permission** will be given by the CAA.

To get this permission the following is required:

- Remote pilotage competence, demonstrate sufficient understanding of aviation theory and pass a practical flight test. This must be done through a CAA approved National Qualified Entity.
- Develop basic procedures for conducting the relevant type of flight and set these out in an Operations Manual
- If applying for a non-standard permission (for example if using a drone beyond the visual line of sight or within distances stated in the Order relating to open-air assemblies or uninvolved persons/properties) an Operating Safety Case must be submitted to demonstrate the intended operation is appropriately safe. Usually the drone must have a Detect and Avoid capability.
- Appropriate insurance coverage that is compliant with EC Regulation 785/2004. Any drone that is used for a commercial purpose must have a certificate of insurance regardless of weight.

The Operator would also need to consider whether they would need to submit an **'Operating Safety Case'** to operate at reduced distances than the usual 50m or if the drone weighs more than 20kg. In the maritime context, this may depend on the distance the ship is away from the drone flyer and whether the drone will drop small items on a prearranged area of the ship or the drone would land on the ship.



Photo credit: Crowded Space Drones

# HEALTH & SAFETY

*considerations for ports*

The safe use of drones, like any work in the UK, is often managed by a **risk assessment** which can help mitigate any potential dangers. Those who create the risk have a responsibility to make sure no one gets hurt. In the example given above where the agent has made an enquiry to the port authority, the agent needs to submit their risk assessment to the port which shows they have looked at the drone operation and considered the relevant risks and control measures.

In particular circumstances, **explosive atmospheres** in the port environment can be created by the build-up of flammable gases, mists, vapours or by combustible dusts during normal operations. Permission to handle such goods is often required by bodies such as the Health and Safety Executive and ports must typically follow strict guidelines. One example of such an environment would be cargo storage sheds, where methane and explosive dust may build up from stored biomass and dusty cargos.
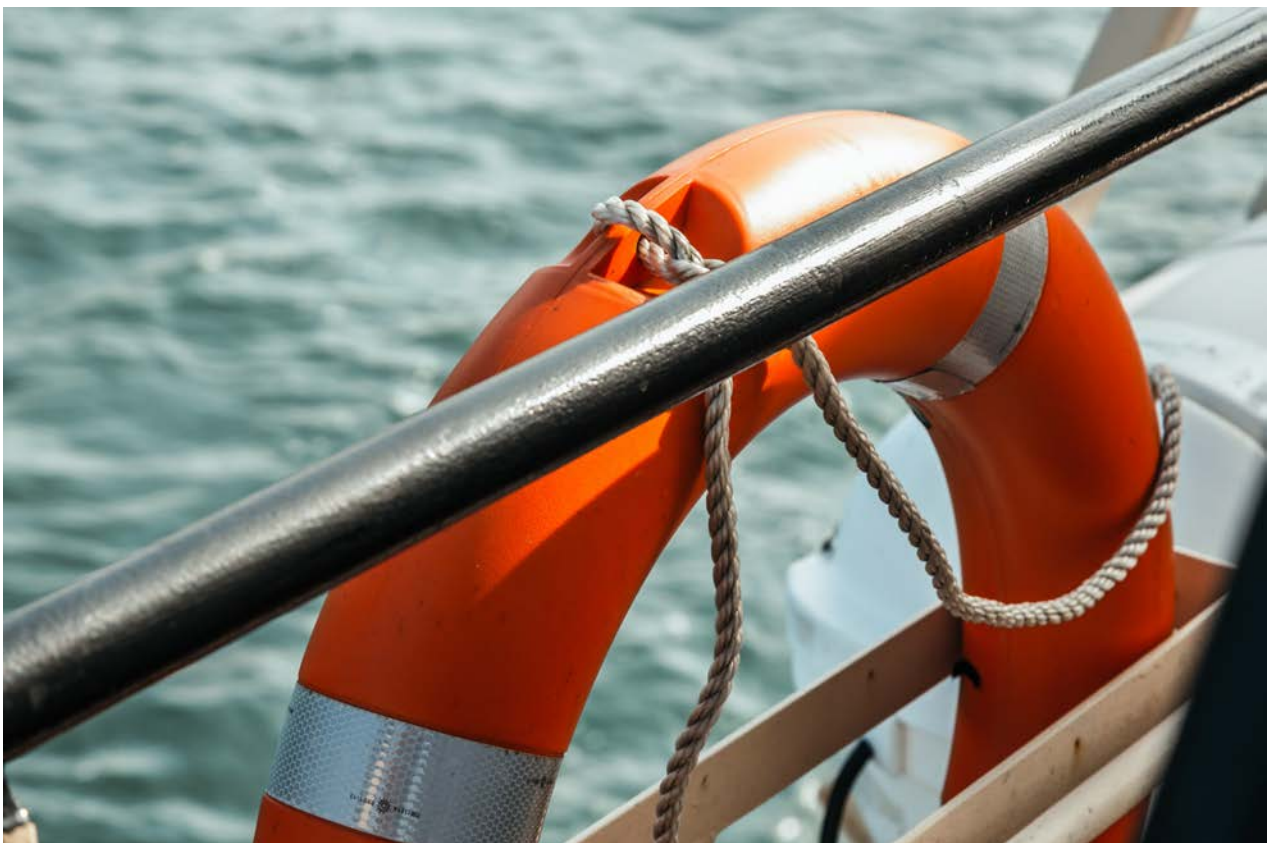
When enough of these substances are mixed in the air, then all that is needed is a source of ignition to cause an explosion which will result in loss of life, serious injuries as well as significant damage. Drones are potentially dangerous equipment to fly in these explosive environments as its electrical components (including but not limited to batteries, motors and rotating propellers) can constitute a source of ignition through sparks and static electricity during normal use.

The **Dangerous Substances and Explosive Atmospheres Regulations 2002** (DSEAR) place duties on employers to eliminate or control the risks from explosive atmospheres in the workplace and ATEX is the name commonly given to the two European Directives for controlling explosive atmospheres. In brief, the ATEX directives specify zoning of dusts into 'Zone 20' 'Zone 21' and 'Zone 22' based on the characteristics of the explosive atmosphere. Any plant or equipment to be used in these areas (including drones) should be intrinsically safe and ATEX rated for that zone to prevent fire and explosions. Before any drone operation can take place, port organisations should ensure their risk assessments and controls reflect the above ATEX requirements.

*UK port*

# POLICIES

Many UK ports have developed or are looking at designing specific drone policies. One such example is the Port of London Authority, who have a policy outlining when drone use is permitted and the requirements for gaining a license from the port.

Some ports that are not particularly close to an airport have a short policy on the use of drones and many only allow certain drone flights with photography, filming or leisure in mind, for example Peterhead Port.

Of course, certain types of ports might have relatively little activity that drones could actually endanger or disrupt, so may not have a formal risk assessment or policy in place concerning their use, either for recreational or commercial purposes. However, it is now becoming a common expectation that at a minimum a port might **request drone operators** to submit the following details:

- A method statement or task description.
- The proposed path and where it will be flown.
- Public liability insurance, if the drone is being used for commercial purposes
- Drone pilot license by the CAA (for commercial drone pilots).
- Approval from the CAA.
- Take-off and landing position.
- An emergency landing point should the drone suffer from some form of malfunction.
- Pre-notification of the time of the activity.

This would allow the port to grant specific permission and for the drone activity to be coordinated with the **Port Control Centre** where relevant. Most ports would come under the definition of a 'congested area' which is defined as 'in relation to a city, town or settlement, any area which is substantially used for residential, commercial, industrial or recreational purposes. If leisure drones are being used in a congested area then they must keep a distance of at least 150m.

Ports may also wish to consider checking on any **GDPR** concerns if the footage is low level where persons are identifiable or if a video or photo of someone is taken where they can expect privacy. This however in practice would probably prove to be very difficult.

*Using drones within the proximity of UK*

# AIRPORTS

If drone operators want to fly a drone or model aircraft at or near an airport, including within the flight restriction zone, they must get permission from the airport first.

Legislation governing the use of drones within the proximity of UK airports and airfields was amended in March 2019. In some cases, a port may lie within the new flight restriction zone surrounding airports and airfields, therefore presenting additional challenges should the port wish to allow drone activity.

An example of a port being located within an airport's flight restriction zone is **Belfast Harbour**. They have developed an application form for such a request and require the following documentation to be submitted:

- Written authority from Air Traffic Control at George Best Belfast City Airport.
- CAA Certification including a full Drone Pilots Licence.
- Permission for Commercial Operations (PfCO) issued by the CAA.
- Public Liability Insurance Policy to the value of £10 million.
- Map of proposed flight path.·
- Risk assessment.

Another example is **Aberdeen Harbour** which is on the flight path for commercial flights and the heliport. CAA guidance does not allow drones to fly within 50m of a vessel underway, which in Aberdeen, may be any berth in the harbour due to the frequency of movements within the port. Aberdeen Harbour has a similar policy to Peterhead Port for small commercially operated drones being used for inspection and photography, however do not permit this. As this would be a 'congested area' a hobbyist would need to not fly within 150m.
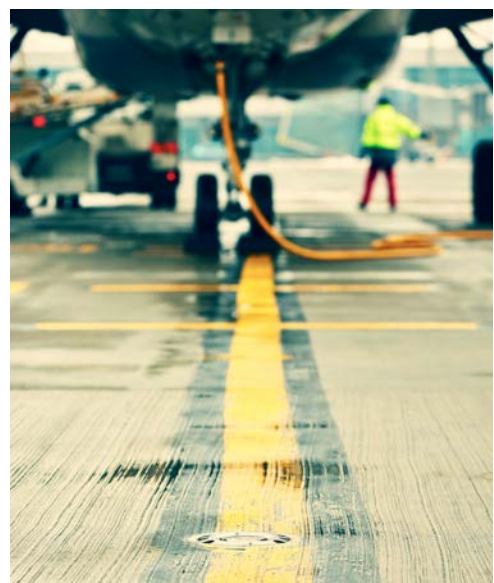
Similarly, as most of **Forth Ports'** outer estuary is directly under the Edinburgh Airport flight path, NATS have control of all airborne activities from sea level and therefore a lot of the management of these drone activities would fall directly to NATS, and then onto the port to manage the interaction with the vessels at anchor. **Wick Harbour** are also in the same situation as they are in close proximity to Wick Airport.

Air traffic controllers can only detect objects approximately one metre squared on their radars, which clearly would not include drones. However some drones are fitted with transponders which allows airport traffic control to track it.

For the first time in the UK, **Operation Zenith**, a drone demonstration was held at Manchester in November 2018. The operation proved it is possible for drones to be flown safely alongside manned aircraft in controlled airspace, if there was the right regulatory environment. It will be interesting to see if anything develops from this.
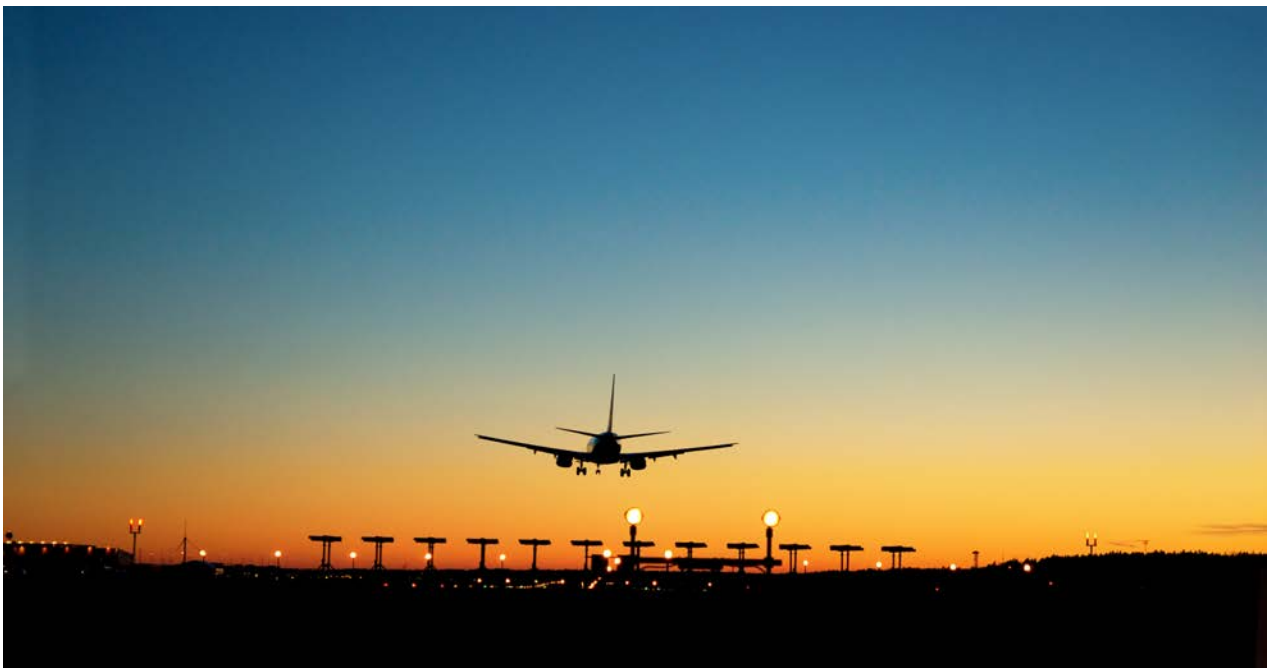
*Using drones within the proximity of UK*

# NAVAL DOCKYARDS & BASES

Those ports that are located within close proximity of HM dockyards will also need to consider what additional rules or requirements apply.

It is forbidden to fly a drone over a Ministry of Defence **Naval Base** without specific prior approval from the Ministry of Defence. Separately, overflight of the waters of the **Dockyard Ports** is only permissible with the advance approval of the Queen's Harbour Master – for the Dockyard Port of Portsmouth, this is only required within Portsmouth Harbour or its Approach Channel. When operating a drone, it must not overfly any **vessel**, Ministry of Defence **property** nor impede the **navigation** of any ship or submarine. Each Dockyard Port specifies the minimum distance that a drone must remain from vessels. Anyone operating a drone within the limits of a Dockyard Port must be compliant with all relevant CAA rules.

*Using drones in an area covered by*

# SPECIAL AIR NAVIGATION REGULATIONS

The **Port of Dover** is unique as it is covered the Air Navigation (Restriction of Flying (Port of Dover) Regulations 2019 which requires permission to be sought before flying drones in the vicinity of the port. This came into force in November 2019. Applications for permission are made via the port's Access and Use procedure and permission would be granted on the basis of satisfactory RAMS, flying permits, insurance etc. The final decision to permit drone flights rests with the duty Port Facility Security Officer.
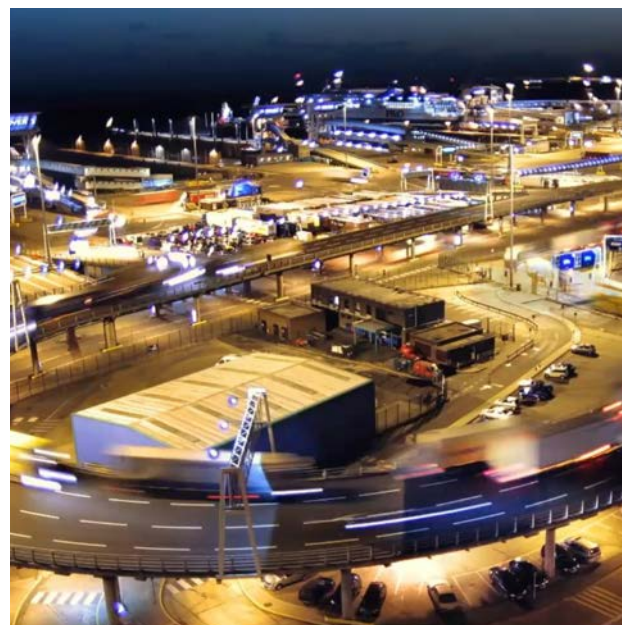
# INTERNATIONAL DEVELOPMENTS
*in the maritime sector*

The **Port of Antwerp**, in collaboration with FPS Mobility and Transport, have made an agreement with the European Maritime Safety Agency to use drones during their **enforcement tasks**. The drone will accompany port authority staff on their duties and enable the management, inspection and supervision of the port's 120km2 land area. The drone will also be used in the event of any **incidents**, which may include oil spills.

In **Singapore** drones have been used to **deliver small timely items** needed onboard vessels anchored within the port limits. Skyways drones made by Airbus are used for such deliveries, which are limited to 4kg of material a flying distance of a few kilometres. It's reported that these drones speed up shore-to-ship deliveries by as much as six times and reduce costs by as much as 90%, while eliminating the risks of human-manned launch boat deliveries and reducing the carbon footprint.

This was the first time drones have been used in real port conditions to deliver items to working vessels at anchorage. The trials were undertaken in conjunction with **Wilhelmsen Ships Services**. The image in Appendix 1 explains the process undertaken. A landing platform and control centre was set up on a pier at the Port of Singapore. The local maritime agency also designated anchorages for vessels to anchor off the pier for trials, and the local CAA worked with Airbus and Wilhelmsen to ensure the safety of the trials.

**Eastern Pacific Shipping** (EPS) and **F-drones** completed their first drone delivery to a laden tanker in May 2020. The EPS managed Aframax vessel, the Levantine Sea, was in Singapore anchorage where she received **spare parts** by drone. In return, the crew of the 2018-built and 114k DWT ship loaded the drone with two bottles of **bunker samples** for onshore analysis.

F-drones, an alumnus of the inaugural EPS Accelerator powered by Techstars programme, worked alongside EPS to develop specific operating procedures to ensure the smooth and safe use of the drone.

The shipping and logistics company **GAC** have also partnered with F-drones to test their third prototype which is capable of handling items up to 5kg over 50km. It is hoped large-scale drones will be able to deliver up to 100kg of supplies to vessels and offshore platforms 100km away.

In **Singapore**, Airbus and a number of partners are working with the port to conduct **5G trials** in real-world environments to ensure unmanned drones can operate safely and efficiently during their flights. The project will use drones to help build an open and inclusive 5G ecosystem for use in port operations and incident management and response.

The **Port of Los Angeles** has been conducting training exercises on **mapping/photography** assignments, **security and surveillance**, as well as **search-and-rescue** missions.

There is also the potential for drones to be used to 'sniff-out' **environmental violators**, such as shipping-based pollution. The sniffer-drones fly through the smoke plume of a ship and analyse how much sulfur is in the fuel, which can take as little as two minutes. Port authorities in **Denmark**, **Hong Kong**, the **Netherlands** and **Norway** are testing drones that travel up to 10 miles out to sea to catch offenders. The findings of the drones are not admissible in court, but they can lead to collecting fuel samples that are. Interestingly in some locations like Singapore, violators could be grounded for up to two years, under arrest for violating IMO regulations.

*Using drones for*

# OTHER PURPOSES

Other examples include drones delivering packages for **Swiss Post**; **medical supplies** in **Ghana**, **Rwanda**, **Switzerland**, **Haiti** and the **Dominican Republic**; along with, and **medical samples** from a hospital to nearby lab in **North Carolina**. German delivery firm **DHL** has been using a drone delivery since 2014 using an autonomous quadcopter to send **medicine and other important goods** to a German island which is 12 km from the coast. Drones have also been used to detect **forest fires** and monitor the status of **water bodies** and **traffic jams**.

There is a new trial of delivering **medical supplies** via drone from **Oban** mainland to Craignure island of Null in **Scotland**. This is being carried out in a temporary danger area and is heavily restricting other air users. Oban Airport is providing safety support to the trial. In Essex, trials are taking place with NHS drones, in partnership with the CAA, delivering **COVID-19 samples**, **test kits** and **protective equipment** between hospitals.

Partnerships are also being developed with the US pharmacy chain **Walgreens**, courier service **FedEx** and a handful of coffee shops, restaurants and retails stores in both the United States and Australia. **Amazon** is in the process of building its own aerial drones.

# FUTURE
## *developments*

**New EU drone rules** will be coming into force as of **31 December 2020**. The effective date of the new drone regulation was originally 1 July 2020 however the EU Commission granted an extension due to COVID-19. Even though the UK is leaving the EU, the Department for Transport has decided the UK will be following the new EU regulations as they are very safe and close to what the UK is doing already.



The changes to note are:
- The commercial element of a drone flight is removed as it is about risk not about whether you are getting paid for your flight.
- The weight threshold goes up from 20kg to 25kg.
- The drone license terminology changes to an 'Operational Authorisation; as the term commercial disappears.
- New terminology is introduced: A2 Certificate of competence and GVC (general visual line of sight certificate).
- Three different categories are introduced: Open, Specific, Certified. The Open category will open drones up to more people as it now will go on the weight of the drone.

The **Air Traffic Management and Unmanned Aircraft Bill** 'Drone Bill' is now before Parliament. The first reading was held in the House of Lords in February however the date of the next reading is yet to be announced, assumingly due to delays as a result of COVID-19.

The Bill aims to ensure that drone technology is used safely, by giving police the ability to require a person to land a drone, issue fixed penalty notices for certain offences and introduce new stop and search powers where particular offences involving a drone have been committed. The Transport Secretary Grant Shapps noted in the Government's press release for the Bill that drones have the potential to change how people and goods are moved.

Prior to the Bill being introduced a **policy paper** was published by the government which highlights the issue of those deliberately using drones for **criminal acts**, for example to disrupt national infrastructure such as airports. Many will recall the disruption at Gatwick Airport over the 2018 Christmas period due to drones.

As the law catches up with the increased use and capabilities of drones, **technology** is rapidly developing which hopefully will help make sure drones are used safely and in accordance with the law. Such technology includes geo-fencing, where a drone can be automatically prevented from flying within protected areas through in-built software.

The **European Aviation Safety Agency** are in the process of drafting **new drone product standards** which it is hoped will include geo-fencing as a requirement. Furthermore, the **Department for Transport** has proposed that **electronic conspicuity**, which allows the automatic identification of all airspace users, including drones, should be mandatory. Although not directly relevant to the UK, it's worth noting the EU's product standard requirement is expected to come into force in 2022 and will require all new drones coming onto the market to be electronically conspicuous.

*References and*

# FURTHER READING

- ABP – New drone technology transforms ABP's asset management, in partnership with PWC and Aerodyne
- Airbus – Airbus' Skyways drone trials world's first shore-to-ship deliveries
- American Shipper – Commentary: Drone use by ports to increase in 2020
- Argyll and Bute Council – Oban Airport supports drone trials for medical supplies between Oban and the Isle of Mull
- BBC – Covid-19: NHS trials drones to carry tests and equipment
- Bloomberg – Sniffer Drones Will Start Patrolling the World's Busiest Shipping Ports
- Civil Aviation Authority – The Drone and Model Aircraft Code
- Civil Aviation Authority – unmanned aircraft and drones
- Drone Safe – Drone Awareness in 2018 Report Summary
- Drone Safe – CAA Drones Awareness Tracker
- GAC – GAC supports Singapore-based start-up
- Gov.uk – Government response to the future of drones in the UK consultation
- Gov.uk – Maritime 2050: navigating the future
- Gov.uk – Public dialogue on drone use in the UK
- Gov.uk – UK Counter-Unmanned Aircraft Strategy
- Institute of Chartered Shipbrokers – 'Shipping Network' magazine, June 2016
- ISO – Drone Market set to take off with New ISO Standard
- ISO – standards by ISO/TC/2-/SC 16 – unmanned aircraft systems
- LinkedIn – Eastern Pacific Shipping Pte Ltd
- Market Marine – Are drones the future of marine surveying?
- NATS – tomorrow's skies, today
- Port Strategy – Drones Help Deliver 5G For Ports
- Port Strategy – Drones to help with port control
- SHD Logistics – Drone technology a game changer for global economy
- Sky News – Unmanned boats and drones could repair offshore wind farms and clean up plastic in the sea
- The Economist – Get on board with drone delivery
- Verdict – UK Maritime and Coastguard Agency trials drones for search and rescue

# APPENDIX 1

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