

# Safe Handling and Storage of Fuel and Dangerous Goods

## Airside Operational Instruction 20

### **CONTENT:-**

1. AIRCRAFT FUELLING
2. STORAGE AND DELIVERY
3. FLIGHTS CARRYING EXPLOSIVES - PARKING ARRANGEMENTS
4. CARRIAGE OF ELECTRIC MOBILITY AIDS

APPENDIX 1 ELECTRIC MOBILITY AID FORM



**A. AMENDMENTS**

This document will be subject to a routine review, over a period not exceeding 18 months. The latest version will be included in the annual reissue of the Aerodrome Manual; interim reviews are carried out as deemed necessary.

Only operational related amendments will prompt the issue of a new Version; pertinent amendments being highlighted in **green** text & indicated by a **green** bar in the right margin. Indication of any amendment of an administrative nature will be listed below.

**B. REVIEW / AMENDMENT HISTORY**

REVIEW SUMMARY			
<b>VERSION / REVIEW REF:-</b>	1.1	<b>REVIEW COMPLETED BY:-</b>	CATHY WILLOUGHBY-CRISP
<b>DATE:-</b>	SEP 16	<b>ROLE:-</b>	AIR TRAFFIC & OPERATIONS MANAGER

PARAGRAPH	AMENDMENT
	<i>Nil</i>

REVIEW SUMMARY			
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<b>DATE:-</b>	DEC 17	<b>ROLE:-</b>	AIR TRAFFIC & OPERATIONS MANAGER

PARAGRAPH	AMENDMENT
	New ownership

## 1. AIRCRAFT FUELLING

### 1.1 REQUIREMENTS

CAP 748 "Aircraft Fuelling and Fuel Installation Management" in conjunction with Explosive Atmospheres (ATEX) and Dangerous Substances Explosive Atmosphere (DSEAR) Regulations are adopted by BOH as best safety practice. Operators are to ensure that they comply with the requirements of these regulations and that their staff are subsequently aware of their provisions.

### 1.2 FUELLING ZONES

A fuelling zone is defined under the "Dangerous Substances and Explosive Atmosphere Regulations" (DSEAR) as an area that would qualify as either:-

- Zone 0:-

A place in which an explosive atmosphere, consisting of a mixture with air of dangerous substances in the form of gas vapour or mist, is present continuously or for long periods or frequently

- Zone 1:-

A place in which an explosive atmosphere, consisting of a mixture with air of dangerous substances in the form of gas, vapour or mist, is likely to occur in normal operation occasionally

BOH adopts the larger of the industry standards for these Zones, in a temperate climate, which is 3 metres. Therefore, when aircraft fuelling operations are in progress, a fuelling zone is established of at least 3 metres radially from the aircraft filling and venting points, and from any part of the fuelling vehicle and its equipment, including hoses.

Non-intrinsically safe equipment, including portable electronic devices (PEDs), such as mobile telephones, pagers, radios and any other electronic or electrically operated equipment are prohibited from any part of the refuelling zone. Particular aspects regarding fuelling zones, which Airside operators/personnel need to be aware of include: -

- a) The use of any equipment, with the potential to create or induce a source of ignition, should be identified and excluded from any Fuelling Zone. Equipment maintenance, repairs, and testing procedures, including the operation of switches or other devices, with the potential to create a source of ignition within the Fuelling Zone should be deferred until fuelling has finished.
- b) During fuelling operations, air and fuel vapour are displaced from the aircraft fuel tanks. This potentially explosive vapour is expelled via vent points, which tend to be located near the aircraft wingtips on both sides of the aircraft.
- c) Ground Power Units (GPUs) may be operated outside the fuelling zone. However, the connection and disconnection of GPUS, where the connection point is within the fuelling zone, is prohibited. On smaller aircraft i.e. Jetstream 41, the GPU connection point may be within the fuelling zone. Operators are to liaise with the fuelling supervisor to ensure that GPU connection or disconnection is not carried out during the fuelling operation.

- d) Operators must ensure that passengers do not enter the fuelling zone whilst embarking or disembarking.
- e) Operators must be aware that where aircraft are being refuelled on adjacent stands, the fuelling zone might extend between both aircraft in its entirety.

### 1.3 REFUELLING WITH PASSENGERS ON BOARD AN AIRCRAFT

- a) Provision should be made for the safe evacuation of passengers and/ or ground staff in the event of an emergency, via at least two of the main passenger doors (or the main passenger door plus one emergency exit, when only one main door is available), and preferably at opposing ends of the aircraft. Throughout the fuelling operation these doors, or emergency exits, should be constantly manned by a cabin attendant.
- b) If an emergency exit with an inflatable slide is designated to meet the above requirements, the deployment area must be kept clear of external obstruction and the fuelling supervisor must be informed. The access and egress routes from areas where slides might be deployed must also be kept clear.
- c) BOH (Fire) Control, ext. 141 is to be informed if it is intended to conduct aircraft fuelling operations with passengers on board. Although not required, BOH RFFS will attend if requested to do so. Requests for this service should be made through (Fire) Control.
- d) Ground staff, carrying out their duties on board an aircraft, are also bound by the provisions as detailed above.
- e) If for any reason an operator is not able to comply fully with the requirements they must apply for written consent from the BOH Air Traffic & Operations Manager to refuel aircraft with passengers on board.
- f) Consent to refuel aircraft with passengers on board will only be given once satisfactory risk assessments and safe systems of work have been submitted to the BOH Air Traffic & Operations Manager by the operator.

### 1.4 FUEL SPILLAGES OR FIRE; ACTION BY REFUELLERS

#### 1.4.1 FUEL SPILLAGE:-

The following procedures are to be incorporated into existing company procedures, by aircraft refuellers, in the event of a fuel spillage whilst carrying out aircraft fuelling operations:-

- a) Stop Fuelling:- Release dead man control, activate emergency cut off device.
- b) The Fuelling Overseer should notify the aircraft operator and BOH (Fire) Control if:-
  - The spillage is likely to create a fire hazard
  - The spillage covers an area in excess of 2 sq. metres or
  - The spillage enters the drainage system
- c) Alert personnel and airline staff within the vicinity and where possible, prevent ingress into the affected area by other vehicles and/or personnel.

- d) Keep all spark producing equipment and sources of ignition away from the area until the fuel is completely vaporised and the fuel vapour has dissipated.
- e) If safe to do so and the spillage is not within 6 metres of the engine compartment, disconnect all fuelling nozzles and bonding leads from the aircraft, reel in the fuelling hoses and move the fuelling equipment away from the spillage to a safe area.
- f) Do not start engines or move the fuelling vehicle if the fuel spillage is within 6 metres of the vehicle engine compartment, unless instructed to do so by the attending Fire Officer.
- g) Ensure that all minor spillages are cleared up using the appropriate absorbent materials, which should then be removed and disposed of safely.

#### 1.4.2 FIRE:-

The following procedures are to be incorporated into existing company procedures by aircraft refuellers, in the event of a fire during aircraft fuelling operations:-

- a) Stop Fuelling / Defuelling.
- b) Immediately raise the alarm and inform BOH Fire Control.
- c) Attempt to extinguish the fire, if it is safe and practical to do so.
- d) Alert all nearby personnel and airline staff.
- e) As soon as possible, and after hoses have been disconnected, drive the fuelling vehicle away from the aircraft to a safe area.

#### 1.5 SUPERVISION OF FUELLING

Aircraft operating companies are to ensure that a competent person (Fuelling Overseer) is present during all aircraft fuelling operations, to ensure the observance of correct fuelling procedures.

- a) The Fuelling Overseer should be easily identified to the fuelling company operative before fuelling / de-fuelling commences so that there is an obvious point of contact should a problem occur.
- b) The Fuelling Overseer is to remain in the vicinity of the aircraft whilst the fuelling operation is in progress to alert the fuelling company operative of potential hazards and to ensure that emergency exits from the aircraft or the exit path of the fuelling vehicle remain unobstructed.

#### 1.6 ADDITIONAL PROVISIONS

To prevent land / water contamination, aircraft and vehicle refuelling must not take place where the venting point and/or fuelling zone is above broken ground including, but not limited to, gravel and grass.

Fuelling staff are to be advised when de-icing of aircraft is to take place. Subject to weather conditions, de-icing may only be carried out on the opposing wing of the aircraft to the

fuelling point. The de-icing of the fuselage and remaining wing must not take place until fuelling is complete.

All personnel who are involved in aircraft fuelling operations must be adequately trained in the duties they perform.

## **2. STORAGE AND DELIVERY**

### **2.1 REQUIREMENTS**

All fuels to be used in aircraft require careful handling. Negligence in the receipt, storage and handling of fuel, or an error in fuelling can endanger an aircraft and the lives of all on board. It is essential that the correct grade and quantity of fuel is supplied and that it is in a condition fit for use in aircraft. CAP 748 "Aircraft Fuelling and Fuel Installation Management" is adopted by BOH as best practice. Operators are to ensure that they comply with the requirements of this publication.

### **2.2 SUPPLIERS**

Bournemouth Airport requires all fuels used in aircraft to be supplied either direct or in bulk storage by either of the two approved, licenced fuelling suppliers. No other fuels are permitted to be brought onto site without the permission of the airport authority.

Fuel suppliers must comply with the following:-

- a) It is the responsibility of the fuel supplier to ensure that fuel is fit for purpose on delivery. The Aerodrome fuel installation Manager should therefore, on acceptance of deliveries of fuel, insist that the supplier provides satisfactory evidence that the fuel has been sampled and found by tests to be fit for use in aircraft, with supporting documentation to this effect. After fuel has been delivered, the responsibility for its safekeeping, quality control and proper delivery to aircraft lies with the Manager of the fuel installation. Any fuel failing to meet this criteria or required quality tests must not be delivered into the installation or into an aircraft.
- b) Written records shall be kept for each installation, including vehicles (browsers or tankers), which show the dates, quantities and grades of fuel received and delivered to and from the installation. Details of all samples taken, the results of tests, maintenance and cleaning for each installation shall be recorded. All records should be signed and dated by the person responsible for the completion of such work. They shall be preserved for a minimum of twelve months, or for a longer period as required by the CAA. On request such records shall be produced to an Authorised person within a reasonable time.
- c) BOH will, on an annual basis, commission a suitably qualified person to carry out an audit of all fuel facilities. Results of the Audit will be made available to the facility providers and any action points raised by the Audit will be followed up by the Air Traffic & Operations Manager.

### 2.3 CONTAMINATION OF JET FUEL BY FATTY ACID METHYL ESTER (FAME)

Jet Kerosene has been successfully transported in multi-product pipelines for many years and strict procedures exist to ensure cross-contamination is minimised. Bio-diesel has been used in the UK since 2002. However, since the Renewable Transport Fuel Obligation came into force on 15 April 2008, significant amounts of bio-diesel are now transported by multi-product pipeline systems.

The introduction of bio-diesel into a pipeline has the potential to impact upon other forms of fuel being transported. The main issue is that the bio-component in bio-diesel, Fatty Acid Methyl Ester (FAME), is a surface active material and there is a potential for Jet Kerosene, when transported in pipelines following a batch of bio-diesel, to be degraded if FAME desorbs off the pipeline wall; referred to as "FAME carryover".

Fuel suppliers at BOH have procedures in place to address the potential for FAME carryover and to ensure that the fuel is fit for use in aircraft. However, should contamination occur, the relevant fuel supplier will immediately inform ATC (ext 150) and then cascade the information to each of their airline customers.

Where a FAME incident has been identified, details must be reported to the CAA through the Mandatory Occurrence Reporting (MOR) Scheme.

## 3. FLIGHTS CARRYING EXPLOSIVES – PARKING ARRANGEMENTS

### 3.1 CLASSIFICATION

Dangerous Goods are assigned to one or more of nine UN Hazard Classes. Explosives fall within Class 1, which is further divided into six Divisions and several Compatibility Groups.

A few types of explosives are permitted on passenger aircraft, while some may only be carried on cargo aircraft. Many types of explosives are not permitted to be carried unless a specific exemption has been granted by the Civil Aviation Authority.

### 3.2 LOADING / UNLOADING AREAS

The following conditions must be applied for the loading / unloading of dangerous goods:-

- a) Where explosives are permitted to be carried on either passenger or cargo aircraft, without the need for an exemption, there is no restriction on where the aircraft must be parked during loading or unloading of the explosives. Where an exemption has been granted by the CAA (Dangerous Goods Office) to permit the carriage of normally forbidden explosives, the aircraft must be parked at one of the five specified surveyed sites during loading or unloading of the explosives.
- b) At each site no other aircraft are permitted within 75m.
- c) At each site the minimum distance, which should be maintained by persons in the open not involved in the loading/unloading operation is 50 metres.

The five surveyed loading / unloading sites are:-

LOADING / UNLOADING SITE		CONDITIONS THAT APPLY DURING ACTIVITY	DIVISION			
			1.1	1.2	1.3	1.4
1	Taxiway Tango 830m from Runway Edge	Taxiways Victor & Whiskey Closed	3,000Kg	3,800Kg	85,000Kg	Unlimited
2	Taxiway Tango Intersection with Taxiways Delta / Mike	Taxiways Delta, Mike, November and Whiskey Closed	2,300Kg	2,300Kg	45,000Kg	Unlimited
3	Taxiway Romeo 330m from Runway Edge	Taxiway Bravo Closed; West Apron Stands 7-11 closed	800Kg	800Kg	8,000Kg	Unlimited
4	Taxiway Bravo Compass Base	Taxiways Romeo and Alpha Closed	1,150Kg	1,150Kg	12,000Kg	Unlimited
5	Taxiway Bravo Compass Base	None	450Kg	450Kg	2,700Kg	Unlimited

Each site allows for a maximum quantity of Class 1 Dangerous Goods to be loaded / unloaded. This quantity varies and is dependent upon the Division.

The maximum quantity shown is that for any one of the above figures; it is not intended that each apply when there is more than one Division on the same occasion. In such circumstances, the most restrictive single quantity applies.

*For example, on Taxiway Bravo (Compass Base) there may be a total of 450Kg of explosives in Division 1.1 or Division 1.2, or a combination of the two Divisions. If the explosive is in Division 1.3 the quantity may be up to 2,700 Kg but if there are also explosives in Division 1.1 &/or Division 1.2, the maximum quantity will be 450Kg.*

Any aircraft diverting to, refuelling or tech. stopping at BOH, whilst carrying dangerous goods, will be subject to the same NEQ restrictions as detailed above.

The defined net explosive quantities relate to carriage by civilian aircraft. Military aircraft do not fall under the jurisdiction of the CAA. Should a request be received to handle a military aircraft, carrying quantities greater than prescribed, a specific risk assessment should be undertaken, which should be signed off by the BOH Accountable Manager (MD) or Head of Technical Services.

### 3.3 NOTIFICATION

Airlines / Handling Agents are to ensure that if they are operating, or receive notification of, dangerous goods flights, which require an exemption and therefore use of specific loading / unloading sites, they are to inform Fire Control as soon as possible, to arrange aircraft parking in accordance with the above requirements. They must also take into account any conditions/restrictions specified above.

The CAA may impose additional conditions, which may affect the loading/unloading site.

## **4. CARRIAGE OF ELECTRIC MOBILITY AIDS**

### **4.1 CHECK-IN AND LOADING**

Upon arrival, the PRM passenger is to proceed to the relevant airline check-in desk and follow standard passenger check-in procedures.

The mobility aid is to be checked in along with the passenger's luggage and issued with appropriate luggage label. The mobility aid will remain with the PRM passenger who will proceed to the dedicated PRM Reception Area.

PRM handling personnel will facilitate the movement of the PRM passenger, with their mobility aid, to either the out of gauge hold baggage screening or through to the Departure Lounge and onwards to the dedicated waiting area.

Before the PRM passenger leaves the mobility aid, for onward loading on to the aircraft, they should disconnect / disable it so as to ensure the electrical drive system cannot be re-activated. This process should be witnessed by the PRM handling personnel present and an Electric Mobility Aid Checklist should be completed. See Appendix 1

### **4.2 DEPARTING PASSENGER**

PRM operatives will receive all pre-notification of passengers via SITA; this gives the passengers status and the classification of mobility equipment used, including weight and size of the equipment.

PRM operatives will escort the PRM passenger from their designated point of arrival through Check-in and Security to the Departures designated collection point.

Prior to boarding the PRM operatives are to collect the PRM passenger from the Departure Lounge designated collection point, escort to the Aircraft and position them into their allocated seat. However, prior to boarding, whilst within the Ambulift, the passenger is to be asked to disable their mobility equipment.

Once the PRM passenger has been boarded, the PRM staff are to handover the mobility equipment to the ground-handling agent, normally at the base of the aircraft steps, who will load it onto the aircraft.

The Ground Handling Agent will load the mobility equipment onto the aircraft following the ground handling guidelines, which have been issued to them by the Aircraft Operators. They will then give written confirmation to the Captain that the equipment is loaded correctly and safe for carriage.

### **4.3 ARRIVING PASSENGER**

PRM operatives will receive all pre-notification of passengers via SITA; this gives the passengers status and the classification of mobility equipment used including weight and size of the equipment

PRM operatives will meet the PRM passenger on the aircraft from where they will then disembark the passenger using the Ambulift.

Once the passenger has been disembarked they are to be taken to their mobility equipment, which will have been positioned at the base of the aircraft steps by the Ground Handling Agent. The passenger should then be asked to enable the equipment.

PRM staff will then escort the passenger to Arrivals where they will reclaim their baggage. Once all baggage has been retrieved the passenger is to be taken to their chosen point of departure from the Airport.

#### **4.4 RECORDS**

No PRM records are actually generated from this task. However, the Ground Handling Agent will retain records for the carriage of the mobility equipment.

APPENDIX 1 ELECTRIC MOBILITY AID FORM

		<h1 style="margin: 0;">ELECTRIC MOBILITY AID</h1>
<b>SECTION 1 – PASSENGER HANDLING</b>		
PAX Name: _____		Reservation no: _____
Flt No: _____	Seat No: _____	Travel Date: _____
Make / Model: _____		Tare Weight (Kg): _____
Battery Type: <span style="color: red;">Wet Acid</span> <input type="checkbox"/> not accepted chair may go without Battery <span style="color: red;">Dry</span> <input type="checkbox"/> <span style="color: red;">Gel</span> <input type="checkbox"/> <span style="color: red;">Lithium</span> <input type="checkbox"/>		
Are you aware and able to disconnect the battery: Yes <input type="checkbox"/> No <input type="checkbox"/> if no able chair will not be carried		
<b>Instructions for protecting from short-circuit:</b>		
The battery is fully encased with no exposed terminals: Yes <input type="checkbox"/> No <input type="checkbox"/>		
<b>SECTION 2 – OCS / OMNISERV IN CONJUNCTION WITH PASSENGER</b>		
<b>Instructions for inhibiting electrical circuits:</b>		
<input type="checkbox"/> Passenger Has isolated the device		
<input type="checkbox"/> Separate battery cable connector by: _____		
<input type="checkbox"/> Non- spillable batteries specifically designed to be removed for ease of transport, contained in strong, rigid packagings (hold stowage only).		
<input type="checkbox"/> Lithium batteries specifically designed to be removed for ease of transport, protected from short circuit and taken by Pax for cabin stowage.		
<input type="checkbox"/> Other: _____		
<input type="checkbox"/> Wet acid batteries will not be carried Chairs with batteries revoved can.		
<b>SECTION 3 – PASSENGER</b>		
I confirm that I have protected the device from short circuit and have inhibited the electrical circuits as specified above.		
Name (print) _____		Sign: _____
<b>SECTION 4 – OCS/ OMNISERV OPERATIVE</b>		
I confirm that I have witnessed that the mobility aid does not operate electrically.		
Name (print) _____		Sign: _____
<b>SECTION 5 – LOADING SUPERVISOR/TURN AROUND COORDINATOR</b>		
I confirm that all relevant sections are completed and the electric mobility aid is securely loaded.		
Name (print) _____		Sign: _____
<b>DISTRIBUTION</b>	<b>YELLOW COPY TO BE ATTACHED TO ELECTRIC MOBILITY AID</b>	
WHITE COPY TO BE RETAINED FOR FLIGHT FILE	BLUE COPY TO LBIA PODM	