

Appendix 6.2 - Aircraft Refuelling Procedure

This appendix is prepared to provide an overview of the aircraft refuelling operation with reference to the Airport Operations Manual (AOM) issued by AAHK. The purpose of the AOM is to provide airlines, government departments, aircraft ground services franchisees and other airfield agencies with aerodrome information, as well as regulations and procedures required by AAHK in governing the airfield operations to ensure safe, orderly and efficient movements of aircrafts, air passengers, baggage, air cargo, mail, vehicular traffic and other apron activities at the HKIA. The refuelling operator must also observe CAD748 Aircraft Fuelling and Fuel Installation Management which provides guidance on safety measures during fuelling operations, as well as the internationally recognized operating standards maintained by the Joint Inspection Group (JIG) for into-plane fuelling services.

All aircraft parking stands on the Passenger Apron and Cargo Apron are equipped with underground fuel hydrants to facilitate refuelling of aircraft. Majority of refuelling operations are carried out after passengers are disembarked and before passengers board the plane although circumstance might prevail where this is deemed to be impractical. At most about 17 ground crews (2 of them are hydrant refuelling operators) will be working on the apron area during refuelling a wide bodied aircraft and the following precautions will be taken prior to refuelling the aircraft and during refuelling operations.

Precautions prior to aircraft refuelling

- Aircraft operator shall appoint a refuelling in-charge to supervise the refuelling procedures and handle the refueling process, including irregular situations. The refuelling in-charge shall identify himself to the into-plane refuelling operator.
- Fire extinguishers and an aviation fuel system emergency shutdown valve are available at readily accessible positions at the aircraft parking stands and on all refuelling vehicles.
- Regular emergency response training would be conducted to ensure the refuelling crew is conversant with the contingency procedures in alerting the Airport Fire Contingent (AFC) and the Apron Control Centre (ACC) in the event of fuel spillage or fire.
- The refuelling in-charge shall ensure that:
 - the aircraft wheels are adequately chocked before refuelling starts;
 - a refuelling zone extending not less than 6 metres radially from the filling and venting points of the aircraft, and from the hydrant valve in use for the refuelling is established;
 - a refuelling zone radiating from the tank vent of the bowser during defuelling; and
 - the refuelling does not take place if hot brakes occur after landing are observed, until the brakes have been cooled to reduce potential fire danger.
- The aircraft, refuelling vehicle, hose coupling or nozzle, filters, tunnels or any other appliance through which fuel passes, shall be effectively bonded to each other before filler caps are removed, and shall not be disconnected until the filler caps have been replaced.
- Refuelling vehicles and equipment should be positioned in such a way that reverse departure is not required and they can leave the stand immediately in a forwards direction in the event of an emergency.
- Personnel engaged in refuelling shall not carry lighters or other means of ignition, and shall not wear footwear with exposed iron or steel studs.
- Ground power units must be positioned at least 6 metres from the aircraft fuel coupling and venting points, hydrant valves and other refuelling equipment.

- All hand torches, inspection lamps and their cable connections used within the refuelling zone must be safe to use.
- The into-plane refuelling franchisees are required to display a red flag at the fuel hydrant point to alert other personnel in the vicinity that aircraft refuelling is taking place.
- Mobile phone or TMR shall not be used in the vicinity of the refuelling truck during the refuelling operation.

Precautions during aircraft refuelling operations

- Aircraft engines shall not be running during the refuelling operations.
- Refuelling vehicles and equipment shall be positioned in such a way that:
 - the aircraft settling from the fuel load will not impinge on the equipment underneath;
 - an exit path is kept clear from the aircraft to allow for a quick departure for refuelling vehicles and equipment in the event of an emergency;
 - they shall not obstruct the escape route of persons from the aircraft in the event of an emergency;
 - the access to aircraft for rescue and fire fighting vehicles is not obstructed;
 - sufficient clearance is maintained between the refuelling equipment and the aircraft wing as fuel is transferred; and
 - they are not positioned beneath the wing vents.
- If an aircraft auxiliary power unit located within the refuelling zone is stopped during the refuelling operation, it shall not be restarted until refuelling has ceased and there is no risk of igniting fuel vapours.
- Work activities which may generate a source of ignition shall not be carried out in the refuelling zone.
- Oxygen system on-board the aircraft shall not be refilled during refuelling.
- The refuelling in-charge shall maintain constant control of the vicinity around the aircraft during refuelling operations to ensure the correct positioning of service equipment and parking of refuelling vehicles.
- Only qualified personnel acquiring adequate training on refuelling operation shall be permitted to operate the refuelling equipment and to ensure that the fuel flow is cut off quickly in the event of emergency.
- The airline or aircraft operator shall ensure that all personnel working inside or in the immediate vicinity of the aircraft are made aware that refuelling is taking place.
- Refuelling vehicle engines shall be kept running whilst aircraft refuelling is taking place. This is to maintain the operation of the fuel pump system, and to ensure the vehicle can vacate immediately in the event of emergency.
- Bonding shall be carried out:
 - between aircraft and refuelling equipment; and
 - between aircraft fitting and hose nozzle.
- Cable, clips and plugs for bonding shall be kept in good condition without signs of damage or cracks.
- All vehicles performing aircraft servicing functions shall not be driven or parked under aircraft wings while refuelling is in progress.

Additional precautions to be taken when passengers remain on board during refuelling operations

- Prior notification to carry out refuelling with passengers on board should be made to ACC.
- The Captain of the aircraft and the Station Engineer of the airline concerned must be informed.
- The areas below the aircraft doors must be cleared to enable the deployment of emergency chutes should this be required. Minimum sizes of clearance zones are:

Aircraft Type	Area
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	Width	Length
Aircraft of Code D and above	3m	10m
Aircraft of Code C and below	2m	5m

- A free and unobstructed passenger escape route must be maintained from the airbridges, aircraft steps or emergency chutes to a safe area.
- The on board illuminated “NO SMOKING” and “EXIT” signs must be switched on.
- The cabin aisles and the emergency exit areas must be kept clear of obstructions.
- Announcements must be made to advise passengers of the no smoking requirement and restriction on operating electrical equipment or producing sources of ignition.
- The same number of airbridges or aircraft steps as normally used for passenger disembarkation must be positioned at the doors and opened. Cabin staff must be stationed at each door throughout the period of refuelling to direct emergency evacuation if the need arises.
- During refuelling, if the presence of fuel vapour is detected in the aircraft interior, or any other hazard arises, refuelling and all cleaning activities using electrical equipment within the aircraft should be stopped until conditions permit resumption.
- When passengers are embarking or disembarking during refuelling, the passenger route should avoid areas where fuel vapours are likely to be present. Passenger movements should be supervised by airline staff.
- Communications shall be maintained by aeroplane inter-communications system or other suitable means between the refuelling in-charge and the pilot.
- Additional cabin staff should be available to assist any invalid, wheel-chair or incapacitated passengers in case of emergency evacuation.