

Aerodrome Vehicle Maintenance Procedure

Sofema Aviation Services (SAS) www.sassofia.com considers typical practices employed to manage Aerodrome Vehicle Maintenance Procedures. Aerodrome operators can minimize risks and ensure the safe operation of vehicles by complying the following:

Introduction – Ref AMC1 ADR.OPS.B.026 & AMC1 ADR.OPS.B.026

(EU) No 139/2014 provide a clear framework for the maintenance and oversight of vehicles operating in aerodrome movement areas with the following objectives:

- Implementing comprehensive maintenance programs
- Conducting daily inspections
- Adhering to defect reporting systems,

The role of these guidelines is to support an environment essential for preventing accidents, protecting aircraft from damage, and ensuring smooth airport operations.

Aerodrome operators are responsible for establishing a comprehensive maintenance program that includes both preventive and corrective maintenance:

- **Preventive Maintenance:** This involves regular servicing to prevent breakdowns and ensure vehicles are always in a safe operational condition. Vehicles should undergo routine checks, including oil changes, brake inspections, and tire checks, to mitigate risks associated with vehicle failure.
- **Corrective Maintenance:** If a vehicle shows signs of malfunction, immediate corrective actions must be taken. A system for defect reporting must be in place so that any issues are swiftly addressed, and vehicles with defects should be removed from service until repairs are completed.
- **Scheduled Maintenance:** All vehicles must adhere to a pre-defined schedule of inspections, servicing, and repairs. This includes routine tasks such as oil changes, fluid checks, tire rotation, brake inspections, and engine diagnostics. By following a regular schedule, vehicles are kept in optimal working condition, minimizing the likelihood of unexpected breakdowns during operations.

The maintenance program should be documented, with detailed records of all vehicle maintenance activities to ensure compliance and accountability. (Records including vehicle authorisations and aerodrome operator's vehicle maintenance records, should be available for at least four years after a vehicle is removed from operations, or until this area has been audited by the competent authority.

Regular Vehicle Inspections

Daily inspections are mandatory for vehicles operating on the movement areas of the aerodrome, such as aprons, taxiways, and runways. EASA guidance emphasizes the importance of inspecting key vehicle functions:

- **Steering and Brakes:** These systems are critical for safety, and daily checks must confirm their functionality. Any issues must be reported immediately, and vehicles that do not meet operational safety standards should be taken out of service.
- **Tires and Suspension:** Proper tire pressure, tread depth, and suspension integrity are crucial for safe vehicle operation, especially near aircraft.
- **Communication Systems:** Vehicles must have functional two-way radios for communication with air traffic control or ground control. Regular checks ensure that these systems work properly, avoiding any communication breakdowns that could lead to safety incidents.
- **Lighting and Visibility:** Vehicle lights and reflective markings must be inspected to ensure they are operational and visible, particularly during night operations or in adverse weather conditions.

Daily Vehicle Check - List

As a minimum, the following items should be checked on a daily basis, prior to the operation of a vehicle:

- malfunction/warning indications;
- steering wheel;
- lighting system;
- braking system;
- communication systems, including transponder (or equivalent) if applicable;
- tyre condition;
- external mirrors;
- windscreen wipers (as appropriate);
- items that need to be secured on the vehicle;
- leaks; and
- new external damages to the vehicle.

Vehicle Safety - GM1 ADR.OPS.B.026 vehicles that are found to be unserviceable must be immediately removed from operational areas and should only return to service after undergoing the necessary repairs and inspections.

Defect Reporting and Unserviceable Vehicles - AMC1 ADR.OPS.B.015

A defect reporting system is essential for ensuring safety. Drivers must report any defects immediately, and these vehicles must not operate in critical areas such as aprons, taxiways, or runways until repairs are made.

- Unserviceable vehicles should be replaced with operational vehicles to prevent delays or risks in ongoing operations.

Key Issues in Vehicle Management

Managing vehicle operations in high-traffic areas such as aprons, taxiways, and runways is critical to ensuring safety. Some of the significant concerns include:

- **Runway Incursions:** One of the primary risks is vehicles inadvertently entering active runway areas, which can lead to dangerous runway incursions.
- **Foreign Object Debris (FOD):** Vehicle movement on aprons and taxiways can contribute to the risk of FOD, which can damage aircraft or impair their systems.
- **Collisions and Ground Safety:** On the apron, preventing vehicle collisions with aircraft or other vehicles is a major operational safety concern.

Ensuring Appropriate Oversight

To maintain proper oversight of vehicle operations, aerodrome operators must implement a robust system of control, focusing on the following key areas:

- **Authorization and Identification:** All vehicles operating on the movement area or in other operational areas must have clear authorization. This authorization process includes the following key elements:
 - **Vehicle Authorization:** Every vehicle that operates in the movement areas, such as those used for maintenance, baggage handling, or emergency services, must be registered and authorized by the aerodrome's management.
 - This includes verifying that the vehicle is equipped with the necessary safety equipment, such as lighting and radios, and meets the operational requirements set forth by the airport.
 - **Driver Authorization:** The personnel operating these vehicles must undergo specific training that includes vehicle operation, communication procedures, and safety protocols.
 - Aerodrome authorities should issue special permits or licenses to qualified drivers to ensure that only trained individuals are allowed to drive within restricted areas.
 - **Vehicle Type-Specific Authorization:** Different vehicles serve different purposes (e.g., firefighting vehicles, maintenance trucks, or aircraft tugs), and their operational needs differ.
 - The aerodrome must ensure that vehicles used for specialized tasks have the proper certification and are operated by trained personnel to perform specific functions safely.
- **Ensuring Appropriate Oversight of Vehicle Operations**

- Maintaining strict oversight of vehicles operating on an aerodrome's movement area (which includes aprons, taxiways, and runways) is essential for preventing accidents, runway incursions, and other operational disruptions.
- A robust system of control ensures that only authorized vehicles are permitted in these high-risk areas, minimizing the likelihood of collisions and communication errors.

- **Vehicle Lighting and Marking**

- Vehicles operating near aircraft or in other critical areas must be equipped with proper lighting systems to increase visibility.
- Vehicles may require reflective markings or specific color schemes (such as yellow and black for airside vehicles) to differentiate them from other airport equipment.

- **Call Signs & Vehicle Communication**

- Communication between vehicles and air traffic control (ATC) is essential for coordinating safe movements in high-traffic areas.
- Vehicles that need to access the movement areas (runways and taxiways) must be assigned specific call signs to avoid confusion with aircraft call signs.
- Vehicle operators must follow standardized communication protocols when interacting with ground control.
 - Clear and concise language,
 - Following established radio procedures,
 - Understanding the correct terminology for aerodrome operations.

Note - Miscommunication between ground vehicles and ATC can lead to hazardous situations, so these procedures are essential for preventing incidents.

Continuous Monitoring and Compliance

Aerodrome operators should ensure that vehicle authorization and identification procedures are regularly reviewed and monitored. This can be achieved through:

- **Audits and Inspections:** Periodic audits of vehicle operations, including reviewing vehicle authorizations and communications records, help identify any potential gaps in compliance. These audits should be conducted to ensure that all vehicles and personnel adhere to safety protocols.

- **Driver and Vehicle Recertification:** Drivers and vehicles must undergo regular recertification to maintain their authorization to operate in movement areas. This recertification process ensures that all personnel are up to date with the latest safety standards and communication procedures.
- **Incident Reporting:** Any incidents involving vehicle miscommunication, unauthorized vehicle movements, or near-miss situations should be reported, investigated, and addressed promptly. This feedback loop is essential for continuously improving vehicle oversight procedures.

Next Steps

Sofema Aviation Services Provides Regulatory Training covering Airside Safety please see the following <https://sassofia.com/course/airside-safety-training-3-days/> for questions and comments please email team@sassofia.com