

Vehicle and Fleet Management

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Common Terms in Vehicle and Fleet Management

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| Four Wheel Drive (4WD) vehicle | Specific type of vehicle able to transfer traction from the engine to the front and rear axis, enabling grip to all four wheels. Also referred as “all terrain” vehicles. |
| Car | A four wheel motorised vehicle commonly used for transport of people. |
| Discharge of Liability | A printed form signed by passengers not working for the organisation operating the vehicle, discharging the agency of any legal claims in case of accident. |
| Driver | The person operating a vehicle. He/she must hold a valid driving license specific to the type of vehicle. |
| Fleet | A set of assets with similar characteristics that are jointly managed. A vehicle fleet is a group of managed vehicles used to achieve a particular operational purpose. |
| Fuel | Combustible material - normally in liquid form - that when burnt releases the energy required to power the mechanical engine in a vehicle. Petrol and Diesel are the most common fuels used for road motorised vehicles. Jet-A1 is the most common fuel used for air vehicles. |
| Fuel voucher | A printed form used to access fuel under certain agreement with a particular fuel station. The holder of the fuel voucher will receive a specific amount of fuel on behalf of the organisation in exchange of the voucher. This is a common practice to avoid the management of cash among drivers and to ease the refilling process. |
| Hard-top vehicle | A vehicle with rigid roof. As opposed to pick-up vehicles, “hard top” is a common term for all 4WD vehicles, except for pickup vehicles. |
| Light vehicle | A commercial carrier vehicle with a gross vehicle weight of no more than 3.5 metric tons (EU definition); sometimes referred to as light commercial vehicle (LCV), |
| Mileage | The distance (miles or kilometres) covered by a vehicle for a certain journey. It also refers to the total distance covered by a vehicle since its first use. |
| Odometer | Counter in the vehicle dashboard to measure distances. Motor vehicles are equipped with at least one odometer to count the mileage since its first use. Additional odometers are available in some vehicles or external devices (such as GPS) to measure trip distance. As opposed to the main vehicle odometer, additional odometers can be paused or reset to 0. |
| Pickup Vehicle | A light vehicle with an enclosed cabin and an open cargo area, sometimes covered with a soft roof. Generally, pickup vehicles are 4WD. |
| Sedan | A passenger vehicle with separate compartment for passenger and small cargo (trunk). The trunk compartment is normally positioned in the back of the vehicle. They are also commonly referred as “city-cars”. |

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| Fleet Standardisation | The process of reducing the degree of diversity in the managed fleet by homogenising vehicle make, model, major components and/or equipment. |
| Truck | A motorised vehicle specifically designed for transport of goods and with a gross weight that exceeds 3.5 metric tons. Trucks often require a specific driving license for its operation. |
| Van | A type of road vehicle used for transporting goods or people in one single compartment. |
| Vehicle | Any asset operated by a person (driver) with the purpose of transporting goods or people between two different locations. Assets can be motorised or animal-drawn and have from two to more than four wheels. |
| Vehicle Logbook | A records book for a unique vehicle. A logbook is always kept in the vehicle glove box compartment under the responsibility of the driver assigned to the vehicle. Normally they have two different parts: one to register all repairs and maintenance activities and a second to register mileage and fuel consumption. |

Introduction

Scope and Definition

Humanitarian action frequently requires vehicle-based mobility work and often demands the management of a fleet of vehicles. Vehicle fleet management refers to the knowledge and practices of managing a set of vehicles to achieve a particular operational purpose. Fleet management allows agencies to minimise risks, reduce costs and improve efficiency related to transportation of goods and people. In addition, it ensures compliance with local legislation and duty of care.

Depending on the organisation, fleet management may include commercial motor vehicles such as cars, vans, trucks, and motorbikes but also air or water transport means such as planes, helicopters, boats, and more. Other sets of assets such as generators, shipping containers, computers or even mobile phones are sometimes also treated as a fleet. The common ground for these sets of assets to be considered as a fleet, includes characteristics such as:

- Managing a considerable number of similar assets.
- Being the set of assets essential for the organisation goals achievement.
- Incurring in significant running costs.
- Facing significant risks if poorly managed.

This section covers only vehicle fleet management, with special focus on motor ground vehicles. Although the same principles and logic could be applicable to other means of transport or other types of assets, these are not specifically covered here.

Furthermore, fleet management is closely related to "Asset management" and "Road transport".

Owned vehicles are commonly considered as part of the asset/equipment inventory. Therefore, all management processes affecting assets/equipment should also be applied to vehicles belonging to the organisation's fleet. This chapter complements asset/equipment management information with specifics related to the motorised vehicles.

It is common for humanitarian agencies manage a fleet of vehicles (cars, vans or motorbikes) to transport people. Agencies specialised in humanitarian logistics may also have to manage a fleet of trucks to regularly transport goods, water or construction materials. This chapter mainly focuses in the management of light vehicle fleets used for the transport of people. For complementary considerations and technical information related to cargo transport, such as cargo configuration, route planning and scheduling or documentation for goods transport, please refer to the [road transport chapter](#).

Alternatives to Vehicle Fleet Management

In some circumstances managing a fleet of vehicles for the given transport requirements could end up being inefficient, expensive, administratively difficult, or dangerous. Staff movement can be also enabled by combining transportation services from public and private transportation providers.

Humanitarian logistics professionals often validate and contract different transport services that users can access according to their needs. Once a transport services have been identified and enabled, the burden lies in monitoring its use and paying the service providers accordingly. Agreements with the service providers are normally done per trip or/and distance. It is recommended to regularly assess (at least annually) the quality of the service offered by outside transport providers, ensuring its compliance with the contractual terms and its usefulness.

Assessing the operational needs and the context and comparing existing transport alternatives is prerequisite in order to choose the most suitable transport option.

Common alternatives to fleet management are:

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| Other Humanitarian Agencies | It is very common for humanitarian agencies to operate simultaneously in certain locations. Pooling resources is a simple manner of optimising costs and recovering an investment. This is valid not only for transportation but also for common fleet facilities or resources, like a mechanical garage, a mechanic or a communications/radio room for movement tracking. |
| | For sporadic use of other agencies vehicles, sharing of information and basic coordination mechanisms might be sufficient. In situations where agencies might make regular use of other agency fleet resources, both parties are strongly recommended to formalise partnerships through a Memorandum of Understanding, clearly outlining the benefits of the shared resources and clarifying the terms of accessing it. The contribution of each agency should grant equitable share of management efforts and expenditures. |

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| Collective Public Transportation | <p>In some locations collective transportation can result useful and cost-effective for moving people at regional or national level. This method can cover sporadic travels through safe routes not regularly covered by the agency. In addition, public road collective transport companies usually offer the service of transporting small parcels at low rates which can be useful in certain occasions.</p> <p>Safety of public use vehicles and reliability of the service are major concerns when assessing collective public transportation means, and should be specifically evaluated for each candidate company offering the service. This is especially important in developing countries. Overall condition of the vehicles and availability of the basic safety means, maintenance routines, loading of the vehicle and drivers' capabilities are some of the basic parameters to assess.</p> |
| Individual Public Transportation (Taxi) | <p>In urban settings, the use of taxis is one of the most common individual transport means. A taxi's flexibility, affordability and ease of management make of it a very good alternative or complement for the organisation's fleet in urban operations. Taxis can be very useful for managing unplanned requests, and for scaling-up of transport based on need.</p> <p>Safety and reliability of the taxi service are main concerns and should be specifically evaluated for each candidate company offering the service.</p> <p>Where taxi companies are not well established or are not reliable, agreements with a specific pool of trustworthy taxi-drivers can be a solution. This is a common practice to cover the transport to and from the airport. This kind of agreements allow extended services such as prolonged stand-by time, wearable visibility from the agency, transport of goods, or handover of necessary material at arrival or departure such as mobile phone or keys.</p> |
| Third-party Transport Providers | <p>Although third-party transport providers are usually specialised in the transport of goods, in some locations they can also be trusted for the transport of people. The transport of people privately operated is mostly handled by renting companies that hire vans, minibuses or coaches with driver. This solution for transporting people is a suitable alternative for punctual and specific needs such as events gathering a significant number of people or for preventative security evacuations.</p> <p>When regularly using third-party transport providers, a framework agreement can be useful to ease the management process. It is strongly recommended to include particular terms and conditions related to safety in the agreement and to duly assess that they are respected prior to the delivery of each service.</p> <p>Please reference the road transport section of this guide for more information on the advantages and disadvantages of using third-party transportation, and the recommended terms for developing contracts for third-party transport.</p> |

The topic on rental of light vehicles (with or without driver) is covered below.

Fleet Management Process

Vehicle fleet management can be a simple or complex working process depending on the number and diversity of vehicles and the intensity of their use.

Basic Workflow

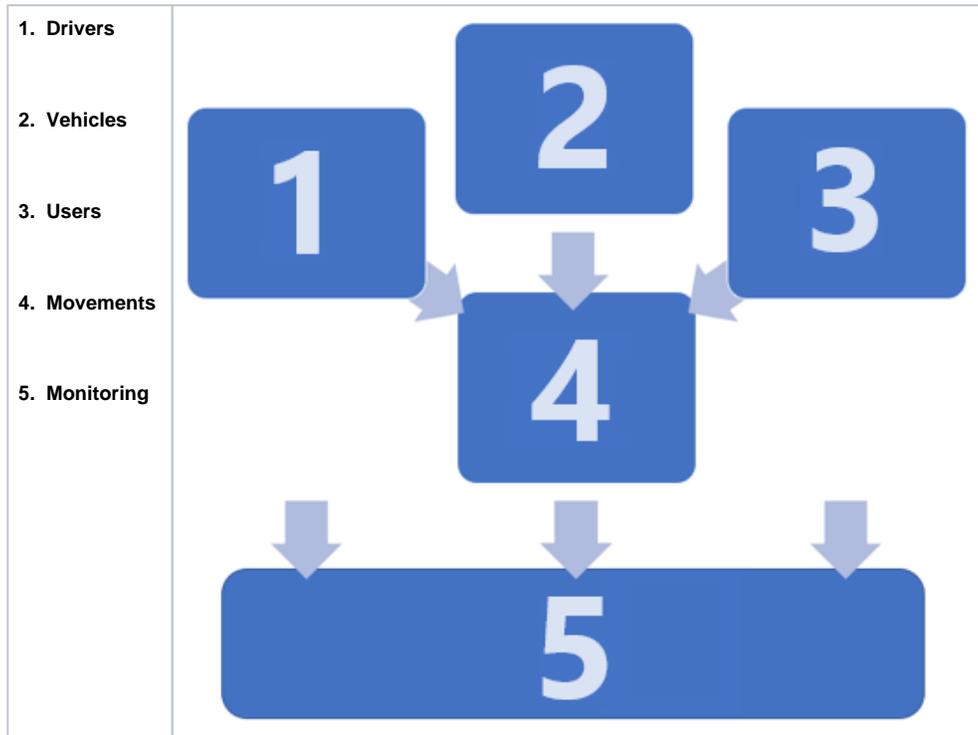
Fleet management can be broken down into four basic components:

1. Drivers
2. Vehicles
3. Users
4. Movements

Following this logic, vehicle fleet management can also be looked at as several work streams that are simultaneously executed by one or several people:

- **Managing Vehicles** - Ensuring vehicles are available and fit for purpose, performing regular checks, maintenance and repairs, administrative clearances, etc.
- **Managing Drivers** - Ensuring drivers are available and fit for purpose, organising the roster, providing training, sharing relevant information, obtaining medical clearance, etc.
- **Managing Users** - Ensuring that the users can access the fleet services in a timely and safe manner. This includes understanding user needs and dealing with requests, allocating the pertinent resources, providing the required information for the movement to be duly accomplished and collecting feedback on the service provision.
- **Managing Movements** - Ensuring that movements are achieved satisfactorily, organising movements according to the needs expressed by users, monitoring of movements to ensure they are performed according to the plan, and ensuring standard working and security procedures.

All these workflows should be monitored - individually and as a whole (fleet) - ensuring due performance, proper balance and adjusting when required. Overuse of resources and mechanical failure, burnout of drivers and bad behaviour, or discontent among the passengers are typical symptoms of fleet dysfunctions that should be addressed. All four of the main categories flow into a fifth basic work stream: Monitoring.



Fleet Management Functions

Managing fleet and workflows can help define a typical set of roles and responsibilities for different parties. Combining or dividing tasks between one or several profiles will depend on the scale of the fleet, the intensity of its use and the given operational context. In a field office with a fleet of 1 to 6 vehicles and an outsourced garage, one single person could supervise all workflows and a team of 6 to 8 drivers. If the number of vehicles and drivers is significantly larger or the mechanical garage used to service the vehicles is self-managed by the agency, new and specialised profiles could be added to the team.

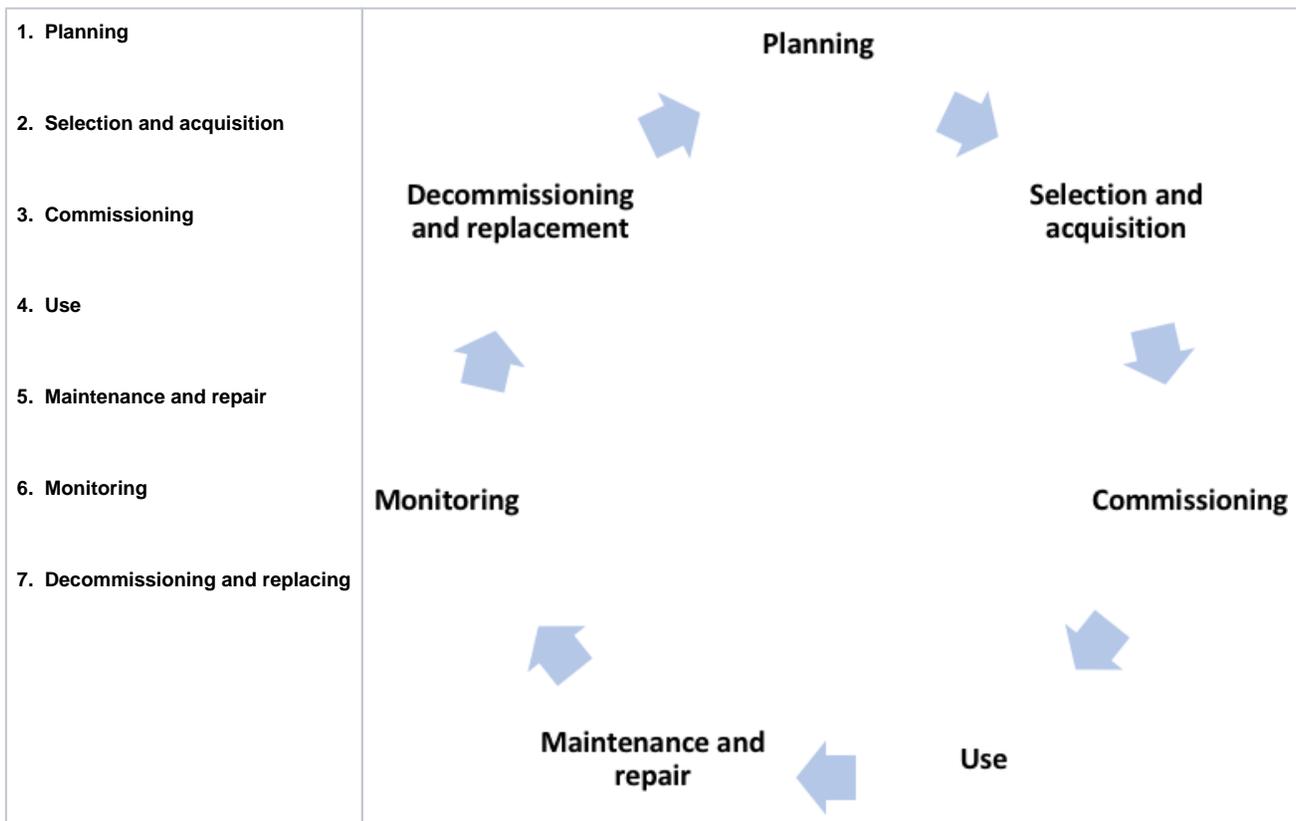
Typical roles and responsibilities in vehicle fleet management might include:

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| Driver | <p>Drivers are in charge of transporting goods and passengers in the organisation's vehicles, ensuring its technical and safety conditions and respecting the country's traffic rules and the organisation's working and security procedures to provide a safe, smooth and efficient service.</p> <p>To achieve this, he/she should perform the assigned vehicle regular checks, ensure that all vehicle documents and driving licenses are valid and available in the vehicle, refilling the fuel tank when necessary and ensure correct loading and unloading of the vehicle.</p> <p>In addition, he/she is in charge of informing agency management of any incidents involving the transportation of passengers or goods and should know how to use all types of required equipment, for communication (telephones, satellite phones or radios), safety (first aid kit and fire-extinguisher), recovery of the vehicle and to perform basic repairs and maintenance (changing tires, checking tire pressure, etc.).</p> |
| Head Driver | <p>The head driver is a specific profile employed when a significant number of drivers are used in a given fleet. The head driver can sometimes take over many of the duties normally ascribed to a fleet manager, provided the working arrangements make sense. The head driver coordinates the team of drivers, preparing and overseeing their work: regular checks of vehicles, vehicle inventory, refilling, etc. He/she is in charge of reporting any problems with the vehicles as well as ensuring maintenance on the fleet of vehicles and that cars are serviced at the desired time to ensure good use of it and to deliver services.</p> <p>In addition, the head driver organises training courses for drivers, conducts driving tests for all new drivers and performs regular drivers' assessments.</p> <p>The head driver can also be in charge of the allocation of vehicles according to the availability of drivers, the preparation of rosters and replacements in case of absence. He/she can be also involved in some monitoring tasks such as monthly reports on services, repairs and fuel consumption of each vehicle.</p> |

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| Mechanic | <p>A mechanic performs the necessary servicing, maintenance and repair of vehicles (and other engines as generators) to ensure that they are in usable running conditions. He/she also briefs and train the team of drivers regarding vehicle services and maintenance.</p> <p>A mechanic is strongly advised when agencies are running a self-owned mechanical workshop, however mechanics can be employed to also conduct repairs and maintenance on vehicles in a variety of contexts. The mechanic is responsible of the equipment and tools in the garage, checking they are correctly and safely used, maintaining and renewing them when necessary and keeping the inventory updated. Although the mechanic can manage a stock of some basic consumable items, it is not advised that he/she manages the stock of spare parts - this would hinder accountability and goes against the basic division of supply chain responsibilities.</p> <p>The mechanic can also support the evaluation of external workshops for eventual sub-contracting as well as checking light and heavy vehicles before its rental.</p> <p>An intermediary solution commonly used when a full-time mechanic is not required, is combining the role of driver and mechanic, allocating a number of (full) days for mechanic duties.</p> |
| Mobility / Movement Manager | <p>The movement manager ensures that all movements are organised and implemented. He/she gathers regular and ad-hoc movement requests and assigns available resources accordingly (vehicle, driver and communications equipment when necessary), informing the relevant people about the movement plan and any change on schedules.</p> <p>In addition, he/she monitors and registers any movement, of people, vehicles and cargo, ensuring its implementation under the established working and security procedures: departure, arrival, number of passengers, route taken, standard contact points, etc. He/she should inform of any delay or incident reported by any of the on-route vehicles.</p> |
| Fleet Manager | <p>The fleet manager is the overall supervisor of the fleet. He/she should elaborate and implement strategies to guarantee the adequacy of the fleet. This includes development and review of the annual plan and budget for maintenance, renewal and scale up when necessary and planning and supervising the human resources to ensure both the sizing and the necessary knowledge and competencies. Depending on the size of the organisation and the vehicle needs, the fleet manager may assume the duties of the movement manager and head driver, or may choose to employ separate distinct job profiles to help manage a wider set of tasks in larger operations.</p> <p>The Fleet manager should monitor the fleet performance and support decision taking with regular reports. He/she should also advise on fleet related topics such as vehicle insurance, type and frequency of maintenance, evaluations of all the hired vehicles and transport companies, drawing up the necessary contracts.</p> <p>In addition, and if applicable, the fleet manager should define the order for spare parts, and assess and identify potential local providers.</p> |

The Fleet Management Cycle

Fleet management can be looked at as a sequential set of steps. This overview is especially advisable when the scale of a fleet is large and when an agency owns of most of the fleet related assets and services.



Fleet Planning

Fleet planning is a key strategic activity used to shape fleets and their corresponding management model to support adequate and sustainable solutions to organisational needs. Fleet planning encompasses the operational, technical, administrative and financial dimensions of individual organisations, and therefore tends to be very organisational specific.

A fleet plan may depend on donor specific requirements, and may be linked with other organisational policies, such as human resources, daily operations or security policies. Some organisations may require vehicles be restricted to specific projects while others utilise vehicle pools to serve multiple projects. Driving policies can vary from a strict reliance on a dedicated driver from the organisation to using staff to drive the vehicles.

The administrative policies of individual organisations will dictate which fleet management approach will be utilised, and the custodian of the fleet management function is very dependent on organisational policies and structures. In any case, the following elements should be considered:

- The transport needs in a given period:
 - Frequency.
 - Destinations.
 - Passengers.
 - Cargo.
- The context and the available infrastructure:
 - Urban or remote settings.
 - Other transport means available and how secure are they.
 - Condition of roads.
 - Administrative requirements for an agency to own a vehicle and for people to drive it.
 - Basic supplies available like fuel and consumables.
- The costs of running a fleet and the available funding.
- The risks (financial, legal and security related) of owning and/or managing a fleet of vehicles.

The number of vehicles required should be determined in the planning phase. To do so, evaluate the different activities requiring vehicle transport and determine the number of people and the frequency required for each activity. Typical activities to consider, include:

- Field missions.
- Staff transportation:
 - Between offices in the same region.
 - Between accommodation and office or other working sites.
 - Between offices and transport hubs (i.e., airport).
- Support of daily activities such as:
 - Administration.
 - Meetings and coordination.
- Private use of vehicles.
- Cargo movement.

Plans should be developed and resources made available to reallocate, dispose or purchase vehicles in case of scaling up or down, or to renew obsolete vehicles. Additionally, the right number and types of drivers should be evaluated and adjusted to match operations. HR policies such as maximum working hours per day or holidays should be considered. If the organisation is experiencing significant changes in terms of mobility demand or the operational context significantly changes, a deeper revision of the management model may be required, including:

- Outsourcing some of the fleet related services such as maintenance.
- Type of insurance.
- Recruiting more staff to deal with fleet related workflows.
- Shifting earliest departure time or latest arrival time.
- Incorporating security clearance or convoy procedures for specific movements.

All planning revision should incorporate budget requirements and the strategies to reduce fleet costs. A specific annual budget for fleet activities is strongly recommended including costs of vehicles, maintenance, consumption of fuel and other consumable items.

Costs to consider when making vehicle related decisions include acquisition, importation, fuel, insurance, repairs, maintenance, labour, toll and parking and disposal among others. The investment required for equipment to be installed in the vehicle, such as communications or safety equipment, shouldn't be neglected when budgeting. If organisations do not take all the costs related to owning a fleet of vehicles, it can lead to funding challenges such as insufficient funds to maintain and repair the vehicles, to hire a fleet manager or to organise driver training.

Vehicle Selection and Acquisition

Vehicles

The basic considerations in choosing the most suitable passenger vehicle are related with its intended purpose, the number of passengers requiring simultaneous use, and length and frequency of the journeys. Three main options are to be considered at this first stage: motorbike, light vehicle or van /minibus. If transporting cargo, the required cargo capacity should be anticipated. Vehicles with independent trunk or hybrid solutions such as pick-up vehicles can be considered. Visit the [road transport](#) chapter for more information on cargo truck selection. The operating context, environmental and road conditions will affect the decision and determine technical requirements of the vehicle such as 4WD, air conditioning, or other extra features. Availability of spare parts in the local market and local knowledge and capacity to achieve all type of maintenance and repairs is also an important factor to consider.

Other factors that can limit the selecting options can be the available budget, donor's requirements or organisational policies on standardisation of vehicles. Donor regulations can restrict the type or origin of vehicles that they will fund.

Standardisation

Fleet standardisation can be useful when similar functions are to be achieved by the given set of vehicles. Standardising a fleet consists of reducing fleet vehicle diversity, contributing to significant cost savings and gaining efficiency in key processes such as:

- **Planning** - Costs, assignments, maintenance.
- **Vehicle daily operation** - Regular checks, use of controls and displays, driving "feel".
- **Maintenance and repairs** - Diagnosis, tools, expertise.
- **Inventory management** - Spare parts, fuel, fluids.
- **Procurement and vendor relations** - Market research, contracts, invoices.
- **Monitoring** - Comparing performance among vehicles and drivers, expenditures.

It is important to undertake standardisation not only at vehicle make and model level, but also for vehicle major components and equipment. Purchasing one type of filter, for example, can help track consumption and while enabling fleet managers to negotiate bulk purchases. Improperly managed standardisation can lead to suspicions of collusion: all decisions about standardising the fleet must be done transparently and with high levels of accountability.

Ownership Modalities

When it comes to vehicle selection and acquisition, ownership modality becomes a relevant debate. Vehicles belonging to a self-managed fleet can be owned, rented or leased.

Owned Vehicles:

If an organisation decides to acquire its own vehicles, there are a number of areas to be considered. For more information on the advantages and disadvantages of managing self-owned vehicles, please reference the section on [self-owned vehicles](#) in the road transport section of this guide.

Rented Vehicles:

Rented vehicles have become available almost everywhere in the world. Depending on the context, rentals are offered by private companies or individuals, with or without driver. The reasons to use rented vehicles can be various; financial, programmatic, technical or due to insecurity. Some key factors to consider when renting a vehicle might include:

- The duration of the activities is unknown, and recovering the investment of a vehicle purchase may be difficult.
- The cost of importing a vehicle is too high and there are no vehicles of suitable quality in the country of operation.
- There is an urgent need for increasing the fleet and procuring one or several vehicles will take an unreasonable amount of time.
- There is a sudden increase of demand for transport, such as rapid assessment or new activities.
- There is insufficient work for a full-time vehicle.
- The standard type of vehicle is not suitable for the work, the context, or the environmental conditions.
- Insecure environments where risk of damage or theft is so high that economically it is not worth the risk of purchasing a vehicle.

In all cases some considerations and specific actions must be undertaken before and during a vehicle rental:

- A proper inspection of the vehicle.
- Validation and induction of the rental driver.
- Developing a contract for the service provision.

Technical and Administrative Inspection of Rented Vehicles

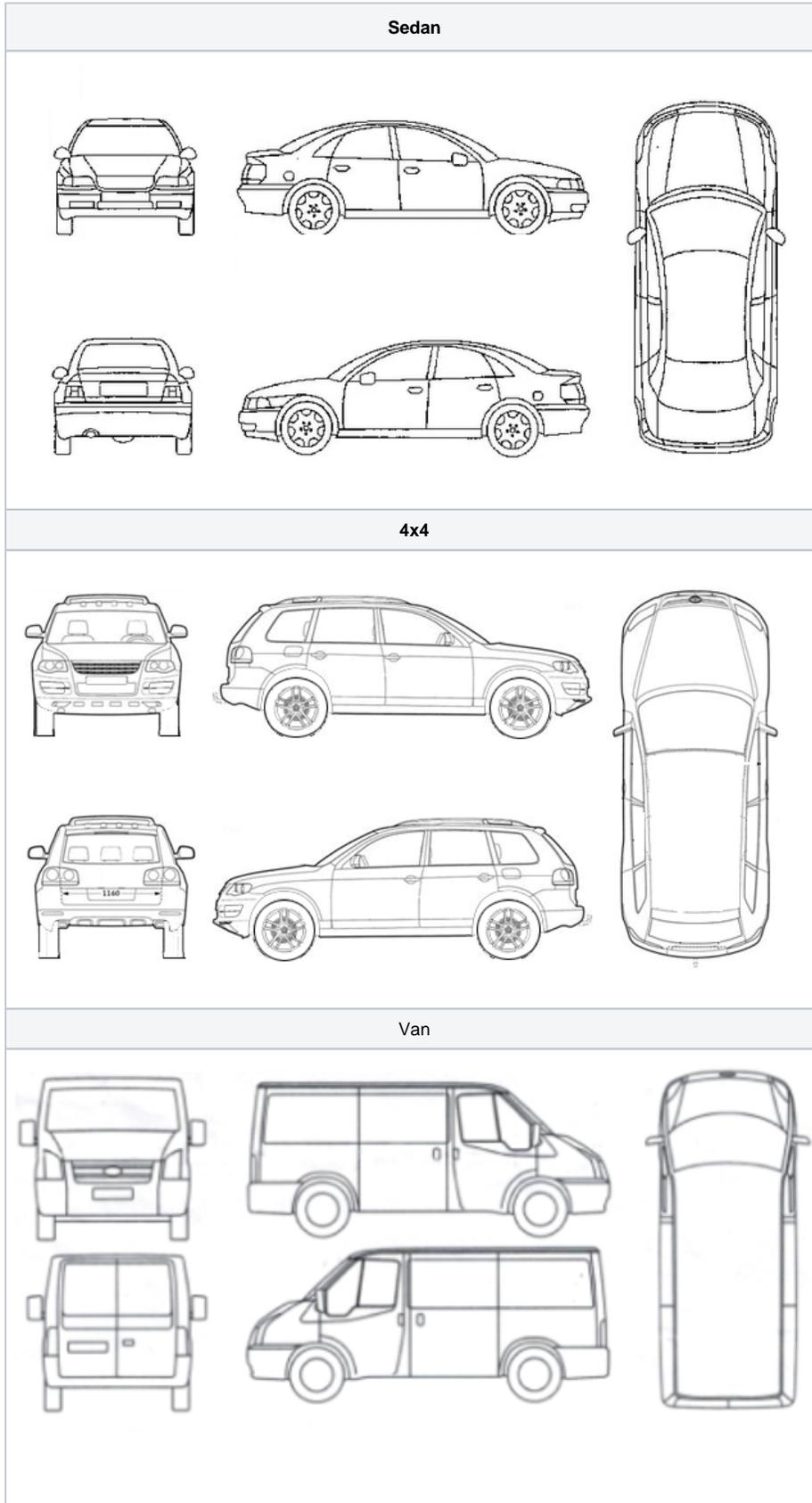
When renting a vehicle it is important to assess its general mechanical and administrative condition. This is done for several purposes:

- Avoiding delays to programmed activities due to vehicle breakdown.
- Enhancing safety of the people involved in the movement.
- Avoiding being blamed of damages already present in the vehicle.
- Ensuring compliance with all national and local regulations.

Ideally all inspections should be performed by a qualified mechanic. It is recommended to use an inspection template that will allow automatic and homogeneous inspection of all vehicles, enabling a reasonable comparison and validation prior to contracting. It is suggested to keep the separate records for each vehicle inspected. An inspection template could cover the following fields^[1]:

- Km reading
- Fuel level
- Engine (Noise, leakage, smoke)
- Lubrication System (Leakage, filters, pressure)
- Cooling System (Leakage, radiator, liquid, fan, belt)
- Air admission & injection (Air filter, fuel filter)
- Exhaust System (fixing, leakage)
- Fuel Tank (leakage, pipes)
- Brake System (leaks, noise, pedal, parking brakes)
- Suspension (soft/hard, springs, shock absorbers-bushes)
- Tyres (pressure, tread, state and spare wheel)
- Chassis (Cracks, fastening)
- Body (impacts, bumpers, bonnet)
- Doors (windows, hinges, adjustment, locks)
- Visibility (windshield, mirrors, sun visors)
- Seats (seat belts, fastening)
- Electrical System (battery, starter motor, front and rear lights, Indicators, roof lights, dashboard warning/indicators, wiping system, horn)
- Availability of Jacks & Tools
- Administrative Documents (Registration, Chassis & Engine N^o, Vehicle insurance)

A guide for users to mark where physical damages might show on the body:



A [template for a daily physical inspection](#) might look like:

DAILY VEHICLE INSPECTION REPORT

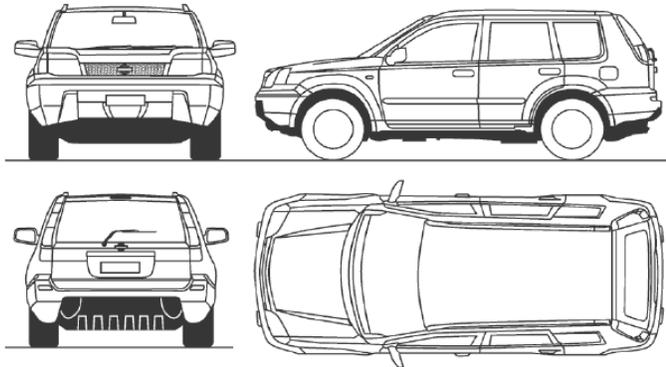
VEHICLE CODE

| INSPECTION | |
|------------|---------|
| DATE | VEHICLE |
| NAME | |

| KM |
|--------------|
| CURRENT |
| NEXT SERVICE |

| FUEL | | | | |
|-----------|-----|-----|-----|------|
| MAIN TANK | 1/4 | 1/2 | 3/4 | Full |
| SECONDARY | 1/4 | 1/2 | 3/4 | Full |

| EQUIPMENT | VEHICLE - INTERIOR |
|--|--|
| <input type="checkbox"/> FIRST AID KIT | <input type="checkbox"/> REGISTRATION AND INSURANCE PAPERS |
| <input type="checkbox"/> FIRE EXTINGUISHER | <input type="checkbox"/> LOG BOOK |
| <input type="checkbox"/> WARNING TRIANGLES | <input type="checkbox"/> LIGHTS AND SIGNALS *(functioning) |
| <input type="checkbox"/> SPARE WHEEL AND TYRE | <input type="checkbox"/> SEATS AND SEAT BELTS SECURITY |
| <input type="checkbox"/> JACK AND HANDLE | <input type="checkbox"/> RADIO - CODAN |
| <input type="checkbox"/> WHEEL SPANNER | <input type="checkbox"/> RADIO - VHF |
| ENGINE | VEHICLE - OUTSIDE |
| <input type="checkbox"/> OIL LEVEL | <input type="checkbox"/> BODY PANEL CONDITION |
| <input type="checkbox"/> COOLANT LEVEL | <input type="checkbox"/> INSURANCE STICKER |
| <input type="checkbox"/> BRAKE FLUID LEVEL | <input type="checkbox"/> WINDSHIELD AND WINDOWS |
| <input type="checkbox"/> POWER STEERING FLUID | <input type="checkbox"/> WINDSHIELD WIPER BLADES |
| <input type="checkbox"/> WINDSHIELD WASHER FLUID | <input type="checkbox"/> SIDE MIRRORS |
| <input type="checkbox"/> FAN BELTS AND FAN | <input type="checkbox"/> TYRE CONDITION AND PRESSURE |
| <input type="checkbox"/> BATTERY AND TERMINALS | <input type="checkbox"/> WHEEL NUT TIGHTNESS |



DAMAGES AND OBSERVATIONS

Adapted from IFRC

It is required to cross-check the vehicle identification (chassis number and engine number) with the administrative documents and the owner identification. Any uncertainty about the ownership or mismatch between the vehicle and the presented documentation should immediately disqualify the vehicle from service.

Validation and Induction of Rental Drivers

Equally important to the mechanical condition of the rental vehicle are the rental driver's health condition, driving skills, administrative permits, driving and working behaviour and required knowledge to operate the vehicle in the required context, such as speaking local language and the geography that will be travelled. For further information on this matter, refer to the below section on [recruitment: selecting and testing drivers](#).

If rental of vehicles is a long-term strategy, consider keeping a pool of "rental" drivers that can be engaged upon request. Validating and instructing batches of several drivers in a single session will reduce the time spent in this important activity.

Rental Agreement

In order to draw up a convenient rental agreement, the following should be considered^[2]:

- Define the time-frame of the rental and the time unit used for the rate - hour, day, week, month. If the rental exceeds a single day, it is recommended to agree on a daily rate and charge based on days worked. If a monthly rate is used, clarify if calendar month, a period of four weeks or 30 days is covered in the contract.
- Clarify who provides the driver - the humanitarian agency or the owner. If the owner provides the driver, clarify that the driver's cost is included in the rental. In addition, the hours the driver can work must be agreed together with the rate for additional worked hours. If required, the owner should provide a second driver. It is advised that the owner provided drivers come with per diem/accommodation.
- Define the party responsible of providing fuel:
 - If the agency provides fuel, make sure that the tank is full prior to its first use.
 - If the owner/rental company who provides fuel, ensure that the quantity in the tank is enough to achieve the programmed daily movements, avoiding losing valuable time going to the fuel station.
- Identify the site where the vehicle will be parked at night - the agency's compound or the owners. Where fuel is provided by the agency, the vehicle should be parked in the its compound.
- Ensure that there are no restrictions as to where the vehicle can go in any given country. This is especially important on particularly bad roads or in conflict areas.

- Ensure the owner provides insurance and proof of insurance cover. Are passengers already insured or is additional cover required? A comprehensive insurance coverage preferred. The agency should avoid any liability related to car crashes with rental vehicles. Failure to clarify this can lead to dispute and legal demands between vehicle owners and humanitarian agencies.
- Define who is responsible for breakdowns and regular maintenance. It is strongly recommended that responsibility for recovery and repairs falls under the vehicles owner's responsibility: avoid the responsibility for maintenance or repairs on vehicles which are not owned, as the initial condition of the vehicle can lead to frequent breakdowns, abusive practices and enormous levels of investment. If possible, agree on getting the owner to provide a replacement vehicle at no extra charge in the event of a breakdown or maintenance, without causing undue delay to programmed activities.
- Conduct a complete inventory of tools/utensils, keep a record of these items, and ensure the vehicle carries at least the minimum required tools in case of flat tire or minor repair.

Leasing

In some circumstances leasing could be the most financially advantageous method of renting vehicle for a limited period of time. Vehicle leasing is defined as a long-term rental with certain obligations on the lessor to ensure that the vehicle is properly operating and kept in good condition^[3].

Before deciding to lease a vehicle, the 'whole-life cost' should be calculated and compared to other procurement options. If leasing is the cheapest option, whole-life costing can then be used to identify the optimum lease period and supplier.

The things to consider when purchasing, renting, or outsourcing can be summarised in the following table^[4]:

| Method | Advantages | Disadvantages |
|---|---|---|
| Local Purchase | <ul style="list-style-type: none"> • Lower transport costs. • Fast delivery. • Supports the national economy. | <ul style="list-style-type: none"> • Might not have the quality or quantity needed. • High demand for vehicles can generate competition among organisations and lead to extremely high prices. • Donors might be reluctant to fund in short term emergency. |
| Foreign Purchase /Import | <ul style="list-style-type: none"> • Possible to acquire more vehicles of good quality. • Might lead to lower costs if the organisation has global framework with vehicle manufacturer. | <ul style="list-style-type: none"> • Longer delivery times. • Higher costs to ship and import vehicles. • Organisations might not be able to import a vehicle into a country, depending on national policy and custom regulations. |
| Renting Vehicles (using local rental providers) | <ul style="list-style-type: none"> • Vehicles will only be ordered/used when necessary and can accommodate short trips. • Routine maintenance costs usually are included in rental contracts. • No overhead costs in garage set-up and maintenance. • No high initial purchase costs. • Rental companies might provide insurance and drivers who understand environment and route. | <ul style="list-style-type: none"> • The organisation loses control over some aspects of its fleet management. • Discontinuation of services can cause disruptions in the day-to-day operations. • If the rental contract is cancelled for any reason, the organisation may have to make heavy investments in vehicle purchase or temporary hire to ensure business continuity. • If rental vehicle comes with a driver the quality of the driver needs to be guaranteed. |
| Outsourcing Transport | <ul style="list-style-type: none"> • External provider will take care of everything: drivers, vehicles, fuel, maintenance, insurance, telematics, reporting and more. • Fleet management is not the core activity; organisations can focus strictly on programmatic delivery. • Increases cost savings, human resource productivity and cash flow. • Multiple contract options: per vehicle per journey, per vehicle per day or by the ton. | <ul style="list-style-type: none"> • The organisation loses control of some aspects of its fleet management. • Realistically, safety, speed and quality must be carefully assessed. • Discontinuation of services will cause disruptions in day-to-day operations. |

Driver Selection and Management

Drivers are an essential component to self-managed fleets, equally as important and the vehicles themselves. Even if an organisation has a perfectly maintained fleet, poor quality drivers or lack of investment in driver training can lead to accidents, damages, cargo loss and possibly issues with fines or lawsuits.

Required Skills and Competences

Organisations must ensure that all employees involved in driving activities have the necessary competency to drive safely. Competence entails having appropriate knowledge, skills, attitudes, as well as behaviour.

Some of the required skills and competences for drivers are:

- Driving license.
- Respect of humanitarian values and adherence to the humanitarian charter and principles.

- Fitness to drive.
- Ability to apply different driving techniques: defensive driving, off-road driving, eco-driving, etc.
- Literacy in the working language and able to speak the local language.
- Respect and willingness to work with people from different ethnics and origins.
- Experience with specific vehicles to use (4x4, motorbikes, etc.).
- Knowledge of basic mechanics.
- Good knowledge of country roads.
- Knowing what to do in an accident or emergency.
- Willingness for continuous improvement (driving skills deteriorate with time; possession of driving license of itself does not necessarily imply such competence).

Driving for work often entails lone driving without direct supervision from managers or other colleagues for prolonged periods. Drivers may also be required to travel and stay outside a base or find their own accommodation overnight.

Recruitment, Testing and Selecting

Agencies seeking to maintain their own vehicles and have a staff pool of drivers should ensure that the hiring is carried out conscientiously and skills and knowledge are clearly demonstrated. When recruiting drivers, agencies might consider:

- Asking for documentation to prove authorised license to operate the vehicle in question.
- Request a background check.
- Ask the applicant to demonstrate their driving skill first-hand in a safe location.
- Have technical questions prepared in advance.
- If possible, conduct drug screening.

Drivers' competence to drive safely should be assessed at the interview level and/or prior to the allocation of driving tasks. Assessment should take account of the driver's attitude, road safety knowledge and driving skills at the wheel as well other evidence such as age, experience, accident and enforcement history, including penalty points status and past training record. The following can be used as assessment checklist^[5]:

1. General

- Years of driving experience.
- Health issues or regular use of medicines which could affect driving.
- Conduct a simple eyesight test by having the driver read a license plate number from a distance of 20 meters. When in doubt consult a medical person for a proper eyesight test.
- Assess knowledge on local driving laws (i.e., maximum speeds in certain location, meaning of particular traffic signal).
- Ask about previous experience with the type of test vehicle.
- Familiarity with 4WD controls.
- Knowledge on basic vehicle service.
- Good practices to load a vehicle, specifically heavy or hazardous goods.
- How to react in case of an accident.
Use of the Logbook.

2. Vehicle and Driving Test

2.1) Vehicle check: Assess knowledge on what should be checked before starting the engine, why this should be checked and what should be done when faults are detected. Checks may include engine fluids; tires; spare wheel, jack and tools; looking for stains under the vehicle.

2.2) Before Starting Engine:

- Adjusts the seating and mirrors (yes/no)
- Ensures that **seat-belts** are fastened (yes/no)
- Is the vehicle out of gear, the clutch lever up and the handbrake on?
- Checks the instrument panel, lights and indicators (yes/no)
Assess the knowledge on the meaning of the instrument panel lights

2.3) After Starting Engine:

- Listens for abnormal noise (yes/no)
Checks the instrument panel, e.g. oil pressure light (yes/no)

2.4) Before Driving:

- Uses of mirrors and indicators (yes/no)
- Shows consideration for other traffic (yes/no)
Drives off smoothly (yes/no)

2.5) While Driving:

- Respects the traffic rules and road signs (yes/no)
- **Manoeuvres** and control the vehicle correctly (yes/no)
- Uses mirrors and indicators (yes/no)
- Uses gears and controls correctly (yes/no)
- Maintains the right speed considering road condition, load and other traffic (yes/no)
- Drives defensive (i.e., leaving space between vehicles) (yes/no)
- Anticipates hazards (yes/no)
- Shows consideration for other traffic and passengers (yes/no)
Shows consideration for the vehicle (i.e., no hard breaking) (yes/no)

2.6) Check Particular Manoeuvres:

-
- Emergency stop (Good/Correct/Bad)
- Hill start (Good/Correct/Bad)
- Reversing (Good/Correct/Bad)
- Urban driving (Good/Correct/Bad)
- Lane changing; overtaking (Good/Correct/Bad)
- Off-road driving (Good/Correct/Bad)
- 4W driving (Good/Correct/Bad)

3. Security Awareness

-
- Assess knowledge on main driving hazards in the area and measures to mitigate it
- Handling main present hazards (i.e., checkpoints, car-jacking, crashes, etc.)
Behaviour during the assessment (i.e., confident, calm, ability to communicate)

4. Use of Equipment and Tools

-
- High-jack
- Vehicle recovery tools
- Communications equipment (radio, sat-phone, etc.)
Uses equipment while driving (yes/no)

Non-Professional Drivers (Staff)

In some circumstances, relying in professional drivers will be unnecessary and other staff will take the responsibility of driving themselves. This may happen when enrolling a driver is not cost-efficient but still there is a need of managing an owned fleet, including when reliable taxi services are not available, specific security risks require it, and more.

On some occasions a mixed solution may be possible, where professional drivers are the only ones allowed to drive during office hours and some categories of staff could be allowed to drive after office hours. Certain restrictions might be established in case of non-professional staff driving, including: distances and time limitations, restrictions people to be transported, limits on leisure usage, or other areas of concern.

In the case were non-professional staff is allowed/requested to drive the agency's vehicles, it is strongly recommended to define a policy framing the access to the service: who has the right to access it and for which purposes, administrative actions to do so, responsibilities from organisation and workers. There should also be basic procedures on sharing vehicles, including: schedules, reservation, keys management, parking instructions, and steps to take in case of incident.

In addition to holding a valid driving permit, the skills of the driver should be duly tested to ensure that he/she has the skills to drive the given vehicle in the given context.

Insurance policies should be reviewed to adapt coverage to the organisation's needs. If necessary, a clear policy on covering repair costs should be established and accepted by the staff.

Commissioning

Commissioning refers to the process of bringing vehicles and users up to the required point of readiness for movements implementation. Commissioning can encompass the following matters:

- Installing required equipment.
- Driver and user briefing and training.
- NGO Visibility/identification.
- Compliance and administrative matters.

Required Equipment

For operating in a given context, additional equipment and vehicle customisation may be required. Typical modifications for harsh road conditions may include:

- Bull bar with mosquito mesh.
- Reinforced front and rear bumper with high-lift jack supports.
- Second spare wheel mounted where safe and appropriate.
- High-lift jack mounted where safe and appropriate.
- Flagpole.

These modifications can be done by vehicle supplier if properly specified during the procurement process. If not, modifications should be performed by a specialised workshop.

For movement tracking purposes and security, reliable communication with the vehicle may be required. This can be addressed by mobile phone with adequate connection, satellite phone, or radio. Depending on the technology and models, certain radio equipment may require specialised installation. The modifications may include: antenna support bracket, grounding wires installed on bonnet, dash mounted installations, and internal wiring and cabling.

For safety purposes, basic equipment may include a fire-extinguisher and a first aid kit.

Briefings and Training

Given the risks incurred while operating in certain environments, a proper induction to both drivers and users should be done. For the new drivers, this can be addressed by the fleet manager or other drivers. For the people making use of the fleet, other profiles in the organisation can be assigned to deliver the briefing. In any case, the time needed to instruct drivers and users shouldn't be neglected.

Topics to be covered for driver's induction may include:

- Driver responsibilities (see the box below).
- Humanitarian principles.
- Communication protocols.
- Reporting procedures in case of accident or break down.
- Internal driving regulation (the organisation's regulation could be more restrictive than the national).
- Movements standard operational procedures.
- Hygiene and infection control.
- Programs and activities.
- Administrative arrangements: how to deal with overtime, contractual arrangements with per diem, etc.
- Use of visibility/identification material such as t-shirts, vests.

Standard Driver Responsibilities [6]

- Ensure safety and security of the persons and goods being transported.
- Respect traffic rules.
- Respect speed limits as defined by the agency.
- Adapt speed according to the conditions of the road, to the carried load, and pedestrian on streets.
- Wear safety belt at all times and ensure all passengers do the same.
- Use correct and secure loading for transported goods, and ensuring cargo is tied down.
- Properly report and notify any mechanical problems.
- Update daily logbooks.
- Take care of the tools and spare parts in the car.
- Ensure cleanliness of the car.
- Proper notification of accidents, break downs, or other incidents.

Topics to be covered for user's briefing may include:

- Journey: schedule, duration and stops in the trip.
- Safety and security: main threats, hot spots and expected behaviour.
- Roles and responsibilities during the movement. Roles of the driver, and assigned movement focal point within the vehicle(s) and at the office level.
- Communications protocol.

Visibility/Identification

Vehicles are a very visible part of the humanitarian operations. When operating in volatile context or in areas with restricted access, clearly displaying the humanitarian nature of the movement may enable access or increase security. For this purpose, specific colours and visibility material such as stickers or flags, can be displayed on the vehicle.

It is recommended that - based on a risk assessment -basic criteria are established for the use of visibility material. Why, what and when identification material should be used, and where in the vehicle they should be located are among the basic questions to be answered.

Paint, magnetic banners, or stickers are the typical solutions for the body of the vehicle. For obvious reasons, permanent logos shouldn't be the option if there is a risk of car-jacking. When requiring vehicles to carry flags, assess the environment to ensure a proper balance between adequate flag visibility and the impact on other objects such as trees or street furniture.

If requiring intensive use of visibility material in a vehicle, make sure there is enough stock to replace them regularly. If using rental vehicles, ensure that the visibility material is returned once the service is terminated.

Compliance and Administration

There are certain liabilities related to the use of vehicles that must be considered by any agency managing a fleet of vehicles.

Drivers

Drivers should have a valid driving license for the specific vehicle they operate. The driving license has an expiry date and should be renewed on a regular basis. Other permits could be required for the transportation of certain categories of goods, such as a commercial license or special permit for transporting some cargo items. Refer to the local/national regulation to learn which are applicable to your activity.

Except for limited bilateral or regional international agreements, national driving licenses are not recognised in foreign countries. For driving in a country where the driving license is not recognised, an international driving license should be obtained. Visit internationaldrivingpermit.org to learn about bilateral or regional international agreements on driving permit recognition and how to get an international driving permit.

Vehicles

Whether the vehicles are owned, hired, or are managed by a third-party, it is important to ensure that all local laws are adhered to. There are different norms that are commonly applicable:

The use and ownership of motor vehicles are strongly regulated by most countries. All vehicles must be officially allocated to a physical person or

| | |
|---------------------------|--|
| Registration | organisation who will be liable for any duties or responsibilities linked to the vehicle. It is therefore important to go through the required registration process when acquiring a new vehicle or when decommissioning an old one. |
| Circulation Permit | Depending on the local regulation, annual license fees may be required for every motor vehicle used on the road. The fee is normally proportional to the gross weight or the engine power of the vehicle, but can be specific to its purpose and type of loads such as oversized or hazardous goods. |
| Insurance | Insurance is a legal requirement for motor vehicles which aims to provide financial coverage against physical damage or bodily injury resulting from traffic collisions or other incidents. Vehicle insurance may also cover theft, weather or natural disasters and damage sustained by colliding with stationary objects. Vehicles should be insured to at least the minimum level required by the local law. Different organisations will have internal policies regarding the extent to which their own vehicles should be insured. This must be established according to the operational context and a risk assessment. |
| Technical | Vehicles may also require a technical clearance certifying that the vehicle is safe for operation in public spaces. Technical clearance may include environmental considerations such as type of fuel used or levels of CO ₂ emitted by the exhaust. Technical inspections may be related to the type of vehicle and its purpose, certifying the maximum permissible passengers and weights in terms of gross vehicle weight, axle weight and payload. |

Fitness to Drive and Medical Clearance [7]

Driving a motor vehicle is a complex task requiring perception, good judgement, responsiveness, and reasonable physical capability. A range of medical conditions, as well as some medical treatments, may impair driving ability. Common examples include blackouts or fainting, sleep disorders, vision problems, diabetes, epilepsy, psychiatric disorders, heart disease, and age-related decline.

It is advised that professional drivers pass a fitness test every year and to install bi-annual checks for staff that drives occasionally. All staff should be advised to undertake a health check whenever they suspect they have a problem. Eye tests should be carried out by qualified optometrists, and should include a test of the driver's horizontal and vertical range of vision.

It's important to ensure that your drivers are mentally and physically fit to drive using a process of self-declaration. Drivers should notify management if they have disabilities or conditions that could prevent them from driving safely.

Movement Planning and Resource Allocation

Movement planning and resource allocation are key activities for successful fleet management. The aim of movement planning is to respond to all movement requests while making the most efficient use of resources. Planning must take into consideration elements such as destination, number of passengers, cargo, and match them with available drivers and vehicles ensuring that their condition fits for purpose and is compatible with maintenance schedule.

To ease the planning process and avoid poor resource allocation, inefficiency and discontent among users, a weekly plan is recommended. Transport requests should be completed, approved and delivered to the person in charge of planning movements before an agreed deadline (sufficient time to allow a proper planning). The following is an example template for managing weekly movement requests[8]:

DAILY MOVEMENT SCHEDULE

DATE: _____

| | Driver | Vehicle | Max. Capacity | 06:00 | 07:00 | 08:00 | 09:00 | 10:00 | 11:00 | 12:00 | 13:00 | 14:00 | 15:00 | 16:00 | 17:00 |
|----|--------|---------|---------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 1 | | | | | | | | | | | | | | | |
| 2 | | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | | |
| 7 | | | | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | | | | |

For proper planning it is necessary to know all itineraries and road conditions in advance. In unknown areas, a route assessment could be necessary to collect information on distances, timings, intermediary milestones, indications, communication networks coverage, etc. For this purpose, the use of road-books is recommended. A road-book is a matrix with basic indicators about different legs of a journey between two different locations.

A typical road-book will have the following example outline [10]:

| ROAD: | Blantyre - Lilongwe | | Duration: | 4h 30min | LAST UPDATE: 24/5/2010 |
|--------------------|---------------------|---------------|-----------|----------------|-------------------------------------|
| | | | Distance: | 305 Km | |
| LOCATION | CONTIN. TIME | CONTIN. KM | GPS | Comms coverage | Remarks |
| Blantyre | 0:00 | 0 km | | | |
| Round about | 0:10 | 7 km | | | |
| Lunzu | 0:17 | 15 km | | | trading centre |
| Lirangwe | 0:31 | 31 km | | | trading centre |
| Mdeka | 0:40 | 42 km | | | |
| Zalewa | 0:48 | 52 km | | | police station |
| Cross M1 - M6 | 0:49 | 53 km | | | |
| Phalula | 1:09 | 81 km | | | |
| Senzani | 1:20 | 99 km | | | |
| Manjawira | 1:25 | 108 km | | | |
| Chingen | 1:30 | 115 km | | | police station + 1st petrol station |
| Cross M1 / M5 / M8 | | | | | |
| Kampebuza | 1:48 | 137 km | | | trading centre |
| | 1:58 | 147 km | | | Border Ntcheu DC |
| Ntcheu | 2:01 | 149 km | | | Capital District - Hospital DC |
| Tsangano | 2:20 | 158 km | | | Police station + border Malawi-Moç |
| Lizulu | 2:46 | 195 km | | | Trading centre |
| Bembeki | 2:54 | 207 km | | | Diversion secondary Rd to Mangochi |
| Dedza | 3:05 | 219 km | | | Police station + petrol station |
| Chimbiya | 3:35 | 243 km | | | Trading centre |
| Kampata | 3:55 | 272 km | | | |
| Nathenje | 4:04 | 283 km | | | Customs police |
| Nanjiri | 4:12 | 292 km | | | Trading centre |
| | 4:16 | 295 km | | | Border Lilongwe DC |
| Mitundu | 4:18 | 297 km | | | Police station + petrol station |
| Lilongwe | 4:30 | 305 km | | | Town entry |

The road-book has indications or milestones based on data points form along the route: distance, time and other relevant information for the journey, such as communications coverage, hospitals, police stations, petrol stations, etc. Road-books can also help for briefing during driver's induction or to determine communication points for movement tracking purposes.

Movement Implementation and Monitoring

Knowing the whereabouts of the vehicles at all moments is essential for a coordinated and reactive fleet, especially when the size of the fleet is large, simultaneous movements take place, and when operations are deployed in volatile contexts.

Different vehicles must have the capability to communicate with organisational offices at any moment, allowing the reporting of any incident or event. Organisational focal points should also have the capability to contact any vehicle at any moment to communicate about changes in plans or the latest contextual updates requiring a change in the route. Having functional communication equipment and a basic communication procedures specifying when to communicate, to whom and with which means is highly advisable for any planned movement.

On some occasions having a specific person to track the movements and record the current location of the vehicle and last contact made is highly advised. When relying on radio communication systems, this role is usually assumed by a designated and trained radio-operator. In locations with sufficient mobile phone coverage and where communications rely on mobile networks, instant messaging applications can be the mean to monitor movements.

Tracking devices are another option to monitor movements. Tracking devices vary in their functionality, but generally they gather information such as vehicle's position, speed, heading and other data using GPS, sensors and other accessories, and sends tracking data via mobile phone or satellite networks to a remote server enabling authorised fleet managers to monitor performance in real time. The information collected is generally used to improve driving patterns, movements plans or fleet performance. In addition, some tracking devices can also send alerts to specific phone numbers when a predefined event happens: high speeds, locations reached, or even crashes. Tracking devices do not substitute communication devices and in all cases, an operational communication device should still accompany the vehicle movement.

Fleet Performance Monitoring

Fleet Management should contribute to the cost efficiency and effectiveness of the organisation while achieving its operational goals. Capturing data, analysing data, and taking informed decisions is a basic three step process to monitor and improve the fleets' performance.

Data Collection

Fleet data should be captured in a structured way, always keeping in mind that collected data should contribute to decision making. Fleet performance criteria can be classified in the following blocks:

| | |
|-------------------------------------|---|
| Usage | <ul style="list-style-type: none"> • Availability rate: What is the time that the vehicles are available for use (not broken-down or in the workshop). • Utilisation rate: what is the time that the vehicles are used? |
| Driving Habits and Condition | <ul style="list-style-type: none"> • Average fuel consumption: is it within the expected range? • Maintenance and repair costs. |
| Costs | <ul style="list-style-type: none"> • Fuel costs. • Maintenance and repair costs. • Running costs. • Cost per km. |
| Security | <ul style="list-style-type: none"> • Incidents per 100,000 km • Injuries per 100,000 km • Fatalities per 100,000 km |

In order to generate basic indicators, it is recommended that the following information should be collected on a monthly basis:

- Number of working days for the current period.
- Number of days the vehicle was used during the current period.
- Number of days during the current period the vehicle was at the workshop for service or repair.
- Distance covered during the current period.
- Fuel consumed during the current period.
- Costs incurred during the current period for:
 - Fuel.
 - Maintenance.
 - Repair.
 - Tire.
 - Other/Miscellaneous (cleaning, tire pressure check).
- Crashes and vehicle incidents
 - Number of vehicle incidents during the current period.
 - Number of injuries during the current period.
 - Number of fatalities during the current period.

Vehicle Logbook

Monitoring information is captured at different levels and from different sources. The primary repository of vehicle movement information is the vehicle logbook. The vehicle logbook is a book used to record all the relevant information for a specific vehicle. It is always kept in the vehicle, and is the responsibility of the driver assigned to the vehicle. Normally logbooks have two different parts: one to register all repairs and maintenance activities and a second to register mileage and fuel consumption.

Below is a [template vehicle maintenance logbook](#):

| Vehicle Maintenance Logbook | | | | |
|---|------------|---|-----|---|
| Vehicle Number / Plate: _____ | | Date: _____ | | |
| Mini Service "A" | Kilometers | Maintenance detail- Remarks-Work still to be done | | |
| <input type="checkbox"/> Clean the engine. | | | | |
| <input type="checkbox"/> Change the engine oil. | | | | |
| <input type="checkbox"/> Clean and drain the water separator. | | | | |
| <input type="checkbox"/> Clean the air cleaner. | | | | |
| <input type="checkbox"/> Check the oil level: gearbox, transfer box, axles (if water mixed in, change oil). | | | | |
| <input type="checkbox"/> Clean the axle breathers union and hose. | | | | |
| <input type="checkbox"/> Grease the transmission (8 nipples) and steering system. | | | | |
| <input type="checkbox"/> Check the condition of the suspension: insulators (rubber bushes), spring blades and shock absorbers. | | | | |
| <input type="checkbox"/> Check the condition of the rear and the front engine mountings. | | | | |
| <input type="checkbox"/> Check the condition of the exhaust pipe and the insulators (rubber mountings). | | | | |
| <input type="checkbox"/> Check the condition and tension of the belt. | | | | |
| <input type="checkbox"/> Check the different warning lights of the dashboard. | | | | |
| <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="padding: 5px;">Next service filter « B » at:</td> </tr> <tr> <td style="text-align: right; padding: 5px;">Kms</td> </tr> </table> | | Next service filter « B » at: | Kms | Post a sticker with the mileage of next service on the dashboard. |
| Next service filter « B » at: | | | | |
| Kms | | | | |

Adapted from ACF

A [template vehicle logbook](#):

1. Take the distance between 2 fill-ups.
2. Distance at the last fill-up minus the distance at the previous fill-up:
2,046 - 1,380 = 666 Km
3. Quantity Fuel put in the tank in the last fill-up:
80 litters
4. Fuel consumption per 100 Km is:
80/666 x 100 = 12 L/100 Km

Other Data Sources

Information on vehicle usage that can assist calculating the availability rate or the utilisation rate could be extracted from the movement planning and workshop records.

Information on vehicle crashes should be also duly recorded to enable monitoring of safety related fleet indicators. Fleet Forum has accessible a comprehensive toolkit for managing crash reporting and analysis^[12].

Collecting regular feedback from the users of the service may provide qualitative information like level of satisfaction, driving practices, driver behaviour and service mindset, safety, and others.

Vehicle Condition and Maintenance

Good vehicle condition is key in proper fleet management, helping attain operational goals in a safe manner, optimising the use of resources and complying with the national laws and regulations. Good vehicle condition is achieved through appropriate vehicle use and maintenance.

Generally, maintenance can be approached in two different ways:

- **A preventative scheme** consists in scheduling periodic maintenance services.
- **A reactive scheme** consists of waiting for a breakdown to happen before repairing it.

Vehicle fleet management aims to make transport available for the maximum amount of possible time. This is achieved by planning maintenance interventions and limiting the downtime to a minimum.

It is always bad to lose the use of a vehicle for a day. But when vehicle maintenance is scheduled in advance, teams or staff can plan around the absence to reduce impact with other activities requiring the use of the vehicle.

Furthermore, running a vehicle without preventive maintenance results in inefficiencies because the subsequent breakdowns tend to cost significantly more and the repairs take much longer to complete. Certain breakdowns can affect the vehicle reliability and consequently the user's safety. Repairs and maintenance should be timely done without delay to keep the vehicle in a trustworthy state during its whole life cycle.

Frequency of Preventative Maintenance [13]

Preventative maintenance starts with daily and weekly checks. These inspections are the responsibility of the driver with the goal of proactively identify possible mechanical issues. A recommended preventative maintenance schedule is listed below:

Before starting the vehicle engine for first use in the day, the driver should take 10 minutes to check:

- Engine oil level.
- Coolant level.
- Brake and clutch fluid level.
- Windscreen washer water level.
- Cleanness of radiator.
- Condition of all tyres, including the spare tyre (pressure by sight, cracks on both sides).
- Possible leaks under the car.

After starting the vehicle, the driver should listen for abnormal noises, check indicators, lighting and dashboard warning lights, and look for the presence of all required equipment.

Once per week (recommended at the end of the week), the driver should take 1 hour to:

- Clean the vehicle inside and outside.
- Clean the air filter.
- Check the battery (proper fixation and water level).
- Check power steering oil level.
- Check steering wheel free play.
- Check tyre pressure and condition of the tyres (see tyre pressure table).
- Check for presence of valve caps.
- Check and clean front and rear axle breather.
- Check exhaust pipe and silencer condition and fixation.
- Check the springs and all bushes from the front and rear suspension.
- Check shock absorbers (check bushes and no leaks).

- Check front and rear stabiliser bar bushes control.
- Check functioning of doors, locks, seat belts and (warning) lights.

In case of any identified problems, the driver should record them in the vehicle logbook and inform the fleet manager, who will evaluate the scale of the damage and to plan all relevant arrangements.

Besides the regular checks under the driver's responsibility, specific maintenance services are regularly required to keep the vehicle up to a good functioning standard. Different parts or fluids in the vehicle require different frequency for its replacement: for instance, engine oil requires changing with a higher frequency than the axles oil. Other interventions, like changing brakes pads or replacing the tyres will be done according to the part's current condition.

Fleet managers should check with the vehicle manufacturer about what regular maintenance is required for the vehicle and the recommended frequency for repairs and maintenance. The maintenance schedule is usually available in the vehicle manual, but is usually also available online. The frequency of maintenance should be adapted according to the conditions of use specific to every operational environment, and periodic maintenance should be conducted of a qualified mechanic.

Owned or Subcontracted Mechanical Workshop

In general, the choice between setting up and managing a workshop or using a mechanic services provider is based on:

- The size of the fleet and the scope of maintenance requirements, based on what is needed, for how many vehicles, and how often and what tasks need to be performed.
- The availability and quality of available service providers and spare parts.
- The cost of every alternative solution.

Organisations should consider all factors before settling on possible alternatives.

A mixed solution where the basic services are performed in a self-managed workshop and more complex interventions are outsourced is often a suitable solution when operating in remote locations where services and infrastructure are limited and the distance to the closest mechanic workshop makes frequent use impractical.

Although evaluating the "availability" could be the easiest part, assessing the quality of service can be difficult. Some of the following things could be used to assess service providers:

- Deviations from initial diagnosis, repair costs estimate and time.
- References from other clients.
- Number of ad-hoc repairs attributable to lack of maintenance, or were required despite of making the recommended regular maintenance service.
- Recurrent faults in a particular vehicle. If a vehicle is brought to service with specific issues, these should be solved (preferably "permanently") when the service is done.
- Number of vehicles reaching their estimated lifespans. All vehicles following the recommended regular maintenance should be in reliable running condition until their normal lifespan.

In addition, some basics could be assessed in a visit to the workshop premises:

- Safety and security, with special attention to access control.
- Availability of specific suitable tools in good condition and their safe use: tyre assembly, welding, power equipment, grinding wheel, etc.
- Availability of specific premises and capacity to work on simultaneous lanes for light vehicles, trucks, motorbikes, generators.
- Type of mechanical interventions possible: Engine, body, paint, electrical, vehicle computer programming.
- Availability, sourcing, and control over spare parts.
- Cleanliness and general condition of the workshop.
- Working conditions and care for occupational risks.
- Procedures with used parts and general and hazardous waste management.

Costs should never be the guiding principle- quality of service is paramount. Running costs, especially the initial investment for an owned workshop, can be considerable. The time period covered by any self-managed workshop is of key importance as the time to recover the investment can be significant.

If the final decision is to outsource maintenance, it is important to carry periodic assessments of the quality of service and to keep records of all repairs and maintenance. It is recommended for the assigned driver to be present during the whole repair process and avoid overnight stays for vehicles if the premises are not considered secure. It is recommended to request a visual inspection of all the parts that have been replaced and invoiced.

Refuelling

Fuel is essential for vehicle functioning and is a significant expenditure in most humanitarian operations. Poor quality fuel can cause serious (sometimes irreversible) mechanical problems and considerably reduces the vehicle's lifetime. Therefore, fuel refilling is a basic activity but must be carefully controlled.

An average light vehicle consuming 10L of fuel every 100 Km, travelling 100Km daily will have to refill at least once weekly (more or less often depending on fuel tank capacity). Basic rules for fuel use:

- Always drive with more than half of the tank full, to avoid an "almost empty tank" situation in the middle of a journey.
- Always refill out of service hours, to avoid affecting regular activities.

It is recommended to schedule at least 1 refill per week, regardless of the tank level of the vehicle. Refills should be done up to full tank capacity. This will ease fuel consumption calculations and reduce the frequency of refills. Fuel refilling can be a hazardous and time-consuming activity, especially when managing large fleets or in congested gas stations.

It is suggested to incorporate a fuel refilling procedure within the fleet management policies. In addition to the above-mentioned issues, procedures should include basics on fuel quality and payment methods.

Fuel should be protected against all accidental or intentional contamination - no impurities, dust, other liquids, or chemical additions should interact with or mix with fuel. Fuel quality should be checked throughout the supply chain, especially if transported or stored in barrels, as barrels may be dirty or water from humid air condensation.

Managers must ensure that vehicles are refilled with the correct fuel type: filling up a diesel vehicle with petrol has irreversible consequences and can end up destroying the engine.

Use of Outside Fuelling

If regular refilling is done by vehicles directly at an outside fuel station a refilling procedure should be defined and include the following basic topics:

- Which fuel stations are valid for refilling: a regular procurement procedure should be applied to select the most appropriate fuel supplier. Basic criteria such as: price, fuel quality, proximity, reliability, payment conditions, other available services (tire pressure check, cleaning) should be included in the evaluation.
- The persons authorised to acquire fuel
- The maximum quantity that can be drawn.
- The payment method. Vouchers or post-paid cards are suitable options. Cash should be avoided due to the risks and the administrative burden, especially with large fleets and multiple drivers. For the use of vouchers and post-paid cards an agreement must be reached with the supplier specifying the terms of use. Below is an [example fuel voucher](#):

FUEL VOUCHER

N°: _____

To be used only for the purchase of fuel when not paid on delivery.

Fuel station name: _____

For a vehicle

ID: _____

For stock

AUTHORISATION

Type of fuel to be delivered:

Diesel

Gasoline

Kerosene

To deliver in the vehicle tanks(s):

Full tank(s)

Specified quantity: _____ liters

Other:

Jerrycan(s) _____ liters

Drum(s) or cistern(s) _____ liters

Authorized by (name and signature): _____

Date: _____

FUEL DELIVERED

Quantity delivered in _____ liters

Date of delivery: _____

in letters _____ liters

Received by (employee name and signature): _____

Signature of the station manager and stamp: _____

When the fuel is for the vehicle, do not forget to fill the fuel logbook.

Adapted from ACF

To allow reconciliation and payment, the voucher should be printed/filled with carbon copy in three sheets:

1. Responsible for authorisation.
2. Fuel station.

3. The employee receiving the fuel for subsequent delivery at office for reconciliation and payment purposes.

For an overview of self-managed fuel supplies, please review the section on [stocking and managing fuel](#) at the end of this guide.

End of Vehicle Life

Managing the entire vehicle life-cycle of vehicles is essential to achieve an efficient use of resources, including the eventual decommissioning or disposal of vehicles. It is preferable to sell and/or replace vehicles before they become too expensive to maintain, and so ensure that their optimal resale or replacement value can be achieved.

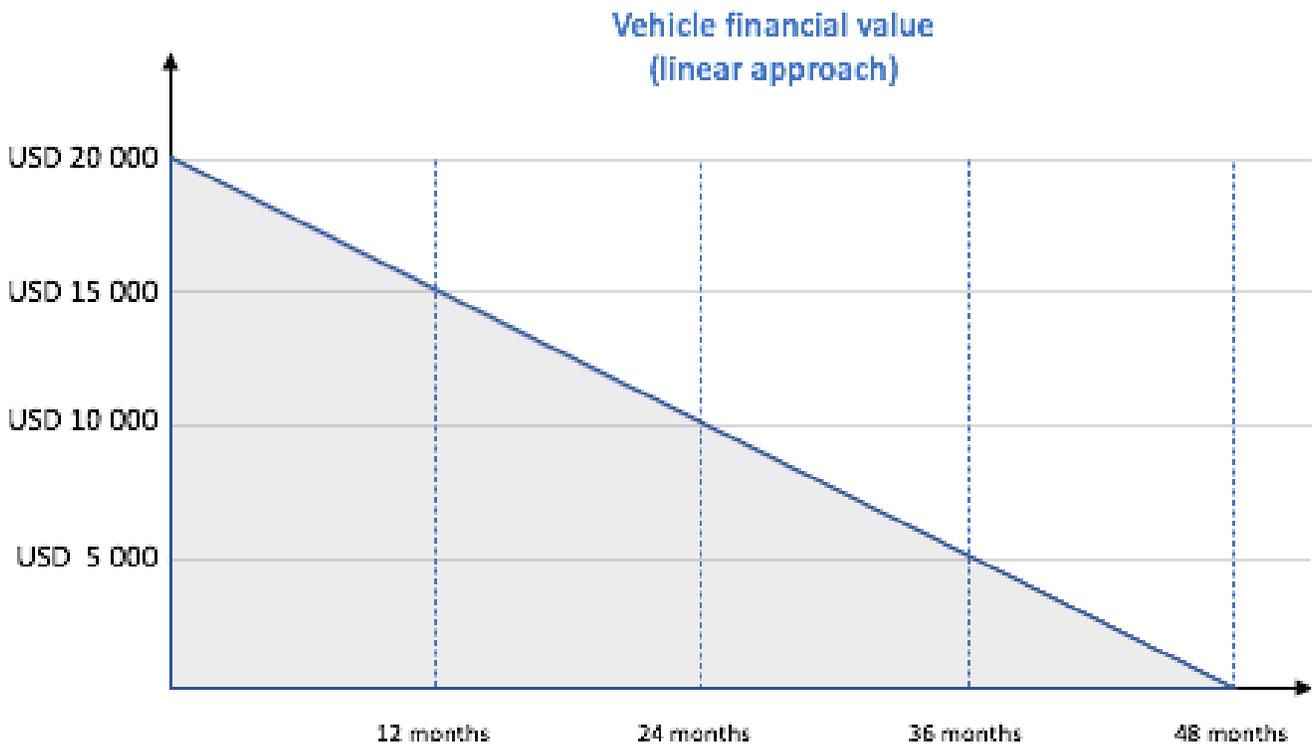
Benefits of properly decommissioning, disposing and replacing vehicles, include:

- Contributing to lower maintenance costs.
- Lower CO₂
- Optimising the selling price of the vehicle.

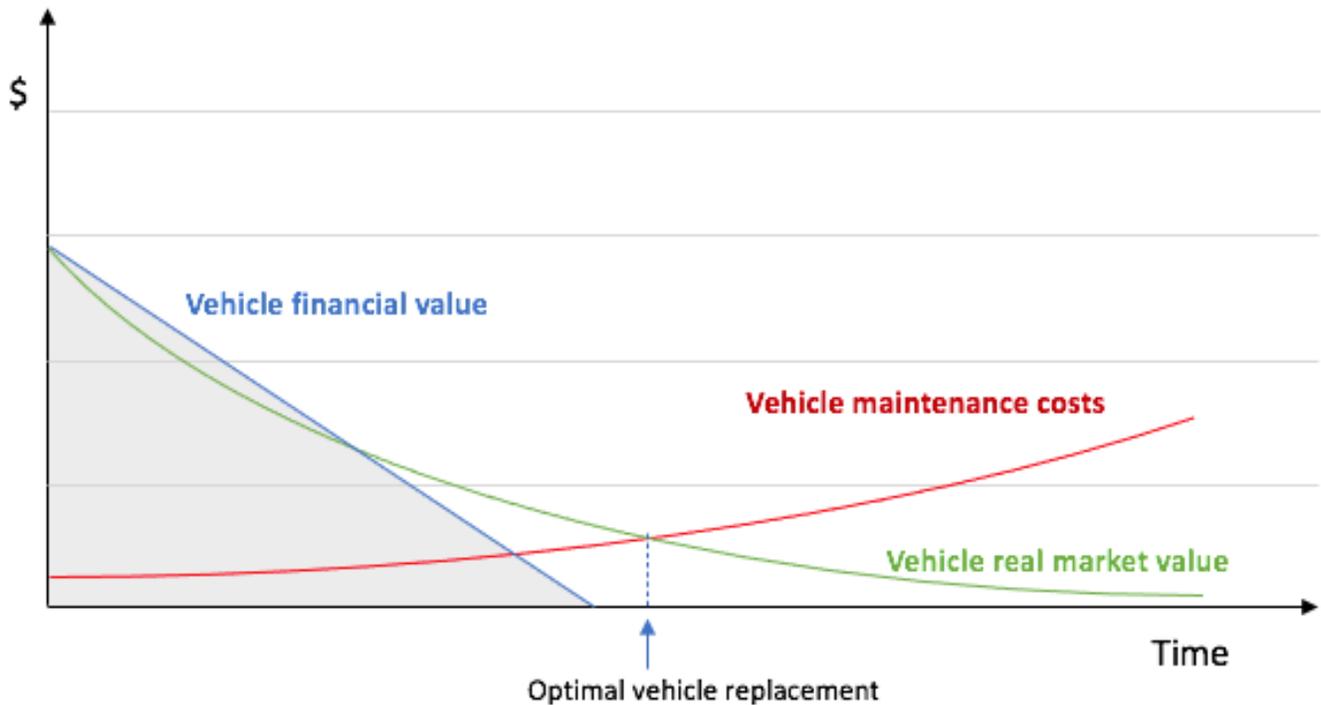
Economic Life

“Economic life” is the expected period of time during which an asset remains useful to the average owner. When an asset is no longer useful to its owner, it is considered past its economic life. The economic life of the vehicle should be defined by each agency as part of its asset management policy: some may consider 48 months, some other consider 60 months.

The example below shows a linear estimation over time of the value of a vehicle procured valued at USD \$20,000, considering 48 months of economic life.



More complex models can be applied to represent the vehicle value over time. As an example, a curved exponential approach may be more accurate for certain purposes, as the vehicle loses much of its value after its first usage. Economic life can be calculated by determining the point at which the estimated resale value of a vehicle becomes lower than the annual operating costs.



Due to the nature and cost of many vehicles owned and operated by humanitarian agencies, many organisations may choose to sell a vehicle well before the maintenance cost reach the same level as the repair costs. This holds especially true for operations in which the risk of an inopportune break down is more than just the cost of repair. This might include:

- The real safety of the vehicle may diminish if agencies operate in insecure environments that require emergency vehicles at all times.
- Rugged or off-road terrain that requires consistent performance from vehicles.

Below is an example of the changing resale costs vs maintenance costs compared to the original purchase value:

| Year | Original Purchase Cost | Estimated Resale Value | Annual Cost of Maintenance and Fuel |
|------|------------------------|------------------------|-------------------------------------|
| 1 | \$50,000.00 | \$45,000.00 | \$5,000.00 |
| 2 | \$50,000.00 | \$40,000.00 | \$5,500.00 |
| 3 | \$50,000.00 | \$38,000.00 | \$6,000.00 |
| 4 | \$50,000.00 | \$35,000.00 | \$6,500.00 |
| 5 | \$50,000.00 | \$32,000.00 | \$7,000.00 |
| 6 | \$50,000.00 | \$29,000.00 | \$7,500.00 |
| 7 | \$50,000.00 | \$25,000.00 | \$8,000.00 |
| 8 | \$50,000.00 | \$22,000.00 | \$8,500.00 |
| 9 | \$50,000.00 | \$19,000.00 | \$9,000.00 |
| 10 | \$50,000.00 | \$16,000.00 | \$9,500.00 |

Agencies should always keep in mind that the economic life of an asset is different than its actual physical life. Vehicles will usually always live longer than their respective economic lives to an agency, and the relationship between the two will depend on the utilisation of the vehicle and the operational conditions. In this sense, it is common to set a limit in mileage to start considering replacing a vehicle - 200,000 Km (+/- 50 000 Km) is often used as a basic rule.

Some agencies may decide to extend the life of a vehicle beyond its economic life. This is especially pertinent when a good maintenance scheme has been applied and records show that the costs of maintaining the vehicle is still below its market resale value. The decision of replacing a vehicle should be sustained by consistent fleet management records reflecting costs, utilisation, safety, and asset age.

Furthermore, depending on the country legislation related to the humanitarian agencies and the funding mechanisms used to purchase the vehicle, some limitations to this logic may be applicable. Some countries don't allow private NGOs to resell assets like vehicles and some donors require the donation or transfer of vehicles at the end of the project to another funded agency or project. Being aware of country legislation and donor's specific procedures related to assets and vehicle management is of key importance to avoid incurring significant legal or financial risks.

Decommission and Disposal

Once the decision for vehicle replacement is taken, different options for old vehicle decommissioning and disposal should be considered. The most common disposal methods are:

- **Donation** - vehicles in good condition and meeting safety requirements may be subject to donation to partner agencies or key stakeholders. Donations must follow national legislation and internal policies and need to be properly documented.
- **Sale** - vehicles that are not needed and have a viable market value may be subject to resale. To avoid any suspicions on favouring particular entities or people, a fully documented auction is recommended. Resale of a vehicle must follow national legislation and internal policies and need to be properly documented.
- **Transfer** - vehicles in good condition and meeting safety requirements may be subject to transfer to another entity or programme. This is the preferred option by most donors when the vehicle remains within its economic life. Also, it is a convenient solution when closing projects or dismantling local offices with vehicles assigned.
- **Destroy or harvest for spare parts** - vehicles in poor condition or not meeting safety requirements should be destroyed or dismantled to recover usable parts. A public or private institution with capacity to properly perform the task should be identified. Environmental risks assessment needs to be performed and a certificate of destruction may be required by the authorities to update the vehicle registry and to formalise the vehicle withdrawn from circulation. Notifying authorities may be especially important to avoid further tax charges or liabilities.

As part of the decommissioning process, agencies should remember to recover and reassign all the vehicle equipment that could be reused, including communications equipment, safety material, recovery kits, identification/visibility, and more. Agencies should also remember to inform authorities and insurance companies once vehicles are no longer in use.

Safety and Security

Duty of Care

Whether vehicles are owned or rented, it is essential to ensure that movements are carried out safely, both for the occupants of the vehicle and for other users of the road. It should be noted that road traffic injuries are the leading cause of death globally among people between the ages of 5 and 29. Furthermore, of the total number of deaths from traffic accidents worldwide (1.35 million per year), 90% occurs in low and middle-income countries.^[14]

According to Aid Worker Security Report 2020, the most dangerous place for aid workers in general remains the while in a vehicle on the road, especially where law enforcement may be relaxed, and where armed groups and criminal elements can easily set up illegitimate checkpoints, roadblocks or improvised explosive devices (IEDs), or carry out armed ambushes on humanitarian actors and convoys.^[15] Although security management often falls under the responsibility of other persons with an aid agency, it is encouraged to exchange regular information and to integrate as much as possible safety and security procedures into fleet management working processes.

Basic Minimum Standards

To ensure that movements are carried out safely, logistics must actively work on three key elements:

- Movement planning.
- Vehicle safety.
- Driver and team's competence.

Though, in the first instance, organisations should seek to control risk on the road by reducing or eliminating the need to travel.

1. Regarding Movement planning, it is recommended to make an "in-depth" analysis of threats and vulnerabilities linked to vehicle movements, plan movements accordingly and create adequate travel protocols as per context and movement type. Additionally, an integral system for movement tracking and follow-up adapted to the context should be implemented.
2. Vehicle safety includes the good mechanical condition of all parts of the vehicle in motion, and to the extent possible, avoiding accidents; braking, steering, suspension, adherence to the ground (tires) and lights. Vehicle safety also includes elements that minimise the damage that can occur when the accident occurs: airbags, functioning seat belts, headrests, and windows/bodywork.
3. The driver and team's competence encompasses: personal skills, physical condition, knowledge of the environment and awareness of potential hazards and the ability to properly manage possible critical situations: such as weather events, accidents, check-points, demonstrations, harassment.

Vehicle Accidents

Agencies are strongly advised to design and implement an internal management system for vehicle accidents. The system should include: reporting mechanisms, basics on crash management, and analysis and reporting on road crashes. When possible and available, all tools should be coordinated together with security managers.

Reporting a road traffic crash, or a potentially unsafe situation such as a near miss is the first step to reducing future crashes. Anytime a vehicle is involved an accident, near miss or other incident, an accident/incident report form should be filled out, detailing all information pertaining to the accident. If operating in an area with functioning police, a police report should be filled out if required, and all information on witness and other vehicles should be capture. A report should only be filled out after the vehicle and persons are safe and free from additional danger, and after all injuries have been attended to. It is recommended that blank copies of accident/incident report forms accompany each vehicle. Fleet Forum offers a comprehensive crash data analysis tool^[16], including actions to take at a crash scene, capturing information at-the-scene and driver post-crash report, insurance claims, and basics on logging and recording information about a crash.

Policies relating to how drivers/passengers should respond to a crash vary from agency to agency. As a general guide:

- Drivers nor passengers should ever admit fault at any location other than safely back at the office/compound with a security officer present. If a driver or vehicle is at fault, it should be settled by insurance.
- National regulations may require a vehicle to come to a full stop and wait for a police report before a vehicle can move after an accident. The need to stop should be context specific, however - if the area is unsafe, large crowds are gathering, or local law doesn't require it, vehicle may choose to move to a safer location.

- Payments and negotiations for damages should never occur on the scene, nor should they be undertaken by the driver or occupants. All exchange of money and negotiations should occur in a safe location, and between authorised persons following the regulations of the law and respective insurance companies.

Special Movements

Special movements vehicle movements that require special planning and organisation.

Typical special movements might be:

- Movements with heavy planning requirements.
 - Exploratory missions into unknown areas.
 - Convoy travels.
- Movements of special items.
 - Transport of dangerous goods.
 - Transport of valuable assets.
 - Transport of special passengers (patients, kids, human remains).
- Movements of special vehicle types.
 - Ambulance services.
 - Armoured vehicles.

Usually, two or more of the above listed movements are combined. For instance, an organisation may plan a convoy because of the inherent value of the transported assets.

Basic considerations for any special movements are:

| | |
|---|---|
| <p>Movements in Unknown Areas</p> | <ul style="list-style-type: none"> • Organise the planned movement well in advance. • Minimise the number of passengers. • Define the roles and responsibilities among the team members. Ensure that at least one driver plus a passenger are in each vehicle. • Communicate with relevant stakeholders in the area and assess their capacity to deliver assistance in case of need. Inform them about the journey schedule and itinerary. • Assistance may be unavailable: bring vehicle recovery kit. A second vehicle is highly recommended in order to provide assistance in case of severe breakdown. • Resources could be scarce: bring food and water. • Depending on the duration of the journey and if overnights are possible, consider bringing additional fuel and the appropriate number of sleeping sets. • Assess communication networks in the areas of the planned movement • Bring several communication devices using different technologies. • Ensure one person is monitoring the movement and recording all milestones through the planned journey. Allocate a back-up for this person. |
| <p>Convoy Movements</p> | <ul style="list-style-type: none"> • Define positioning within the convoy, especially the first and the last car in the convoy. • Define the distance between convoy elements. • Allocate sufficient time for preparation before departure. • Agree on basic procedures to be applicable by the vehicles to ensure certain discipline within the convoy: departure, stop-over and contingency plans for common scenarios: vehicle breakdown, accident, checkpoints, etc. • Define which are the communication means internally and external to the convoy. Agree on the hierarchies. • Compile a vehicles list, drivers list, passengers list and any other list that could be useful during the journey. |
| <p>Movement of Dangerous Goods</p> | <ul style="list-style-type: none"> • Refer to the LOG Chapter on Dangerous Goods |
| <p>Transport of Valuable Assets</p> | <ul style="list-style-type: none"> • Be discrete. Don't disclose the nature of the movement. • Inform the occupants of the vehicle about the nature of the movement, but not in advance. Give them the chance to decline the assignment and remain at departure point if not comfortable. • Avoid regularly scheduled movements, schedule for different days and different hours. • Consider organising as part of a convoy. • Reduce the number of stopovers to those strictly necessary. |
| <p>Transport of Special Passengers (patients, kids, human remains, etc.)</p> | <ul style="list-style-type: none"> • Ensure that the vehicle is fit for purpose and has the necessary equipment to transport the specific passengers. • Have clear rules on who is allowed to travel and in which conditions: who authorises the passenger, how much luggage is allowed, safety considerations, point(s) of destination, etc. • Brief passengers about the movement: schedule, itinerary, stopovers, etc. Consider including information about the return trip. • If minors are transported, they should be always accompanied by an adult. |

| | |
|---------------------------------------|---|
| <p>Ambulance Services</p> | <ul style="list-style-type: none"> • Ensure that the vehicle is fit for purpose and has the necessary equipment and medical supplies to transport patients. • Children patients should always be accompanied by an adult. • One medical staff should be present during the transfer in case medical needs are required. • Provide basic PPE and Infection Control SOPs and training to the staff working in the ambulance to avoid cross infection from transported patients. • If the patient is seriously ill, inform the receiving medical facility in advance that the patient being transferred. • If providing oxygen to the patient, for safety purposes, oxygen concentrators are a preferred option rather than Oxygen cylinders. |
| <p>Armoured Vehicles (AVs)</p> | <ul style="list-style-type: none"> • Ensure that the vehicle is fit for purpose and is armoured according to the threats present in the area of operation: armoured steel floor, armoured rear cargo area, etc. • Technical specifications should be provided by a subject matter expert. • Consider import and export restrictions, and any laws regarding use of the vehicle around the planned area of movement. • Ensure that drivers have gone through specific training programs and certification required for AVs. • The costs of managing a fleet of AV increases significantly compared with a fleet of regular vehicles. • Maintenance of AVs requires specialised knowledge and capacity as vehicle configuration differs from regular vehicles, especially the electronic components. Spare parts are often manufacturer specific, and can be very hard to come by. • All communication equipment must be operable from the inside, which may impact some communications devices such as regular mobile phones. Additional communication equipment and specific installation and setup will be required. • Disposal at end of life is not easy and should be planned far in advance. |

Other Logistics Considerations

In addition to vehicle fleet management, other aspects may be considered when managing a fleet of vehicles. The most pertinent could be the management of special stocks and the environmental impact of the fleet. When managing a fleet of vehicles, it may be useful to stock particular commodities such as fuel and spare parts. The information in this section is complementary to the chapters on sections on [physical stock management](#) and on [dangerous goods](#). Rather than focusing in safety issues, the content below is more related to the good conditioning and management of stocks for optimal use:

Self-Managing Fuel

There are two commonly used types of storage for fuel:

1. Drums
2. Tanks/Fuel Bladders

Fuel Tanks/Bladders

Tanks or fuel are a preferred option though are less flexible in terms of setup. Tanks and fuel bladders are good for long term projects where there is a known need for refuelling vehicles for the foreseeable future, and where refuelling is consistent. The installation of fuel tanks or bladder come with their own problems, however; Large quantities of fuel can be heavy, and installing a fuel tank on infirm ground or an unstable structure can lead to damage and bodily harm. Depending on the size of the fuel tank, there may also be extremely large quantities of fuel that may pose security risks:

- A single flame can ignite the entire reservoir.
- Large quantities of fuel may attract the attention of thieves or armed bandits.

Tanks and bladders should be installed on relatively elevated positions, at least as high or higher than the fuel tanks of the prospective vehicles, usually at least one meter off the ground. Tanks and bladders should only be fabricated out of materials that are specifically designed to hold fuel.

Fuel tanks also usually require refilling from a tankered fuel truck, meaning the tank or bladder must be physically reachable by the refuelling vehicle. Compounds should have enough room for a refuelling truck to enter and turn, or the tank must be accessible from a hose. A pump will also be required to push fuel from a delivery truck to the tank, meaning if the truck does not have a pump with it, one will need to be available nearby.

Fuel tanks can be refilled from drums by hand, but this is time consuming, requires physical labour, and can lead to spilling. If at all possible, if refilling from drums is required, a pump should be used in place of pouring fuel from the drum into the tank.

Fuel tanks or bladders should be well marked and highly visible. The tank and area around it should also be clearly labelled as dangerous.

Fuel is usually withdrawn from drums using a pump. It is highly advised that any fuel pump has a gauge on it to record how many litres are pumped, both at the time of vehicle refuelling, and over the life of the pump itself. Organisations may also wish to use as clearly visible measuring stick outside of the tank to monitor the height of the fuel. Cross referencing the count on the fuel pump vs. the height of the fuel can indicate if fuel is being stolen or if it is leaking slowly.

Inspections around a fuel tank should be conducted several times a year to look for signs of degradation, warping on leaking.

Drums

Fuel drums may be used in situations where required fuel quantities are small, where the only refuelling capacity is delivery by drum, or where it is unsafe or inappropriate to maintain a large fuel tank for whatever reason.

Drums should be stored upright on wooden pallets in order to avoid rusting at the bottom of the drum, especially in humid conditions. The pallets should be on waterproof plastic sheeting, and a bed of sand or sawdust should surround the pallets to absorb leaks during handling. Plastic sheeting should be cleaned regularly and the sand/sawdust should be replaced regularly to avoid build-up of hazardous chemicals.

When possible, it is best to buy new, sealed drums directly from the refinery. This to avoid:

- Leaking drums due to existing damage.
- Drums whose content quality is difficult to monitor through transport and storage.
- Drums with rusty inner walls that release particles.
- Drums which have contained products other than fuel and which have not been cleaned properly.

Fuel contained in a leaking drum should be transferred without delay to a drum in good condition. Be aware that there is no effective way to seal a leaking drum that is full. Drums can be sealed by welding, which should never occur around any amount of fuel.

Leaks are often caused by improper handling of drums. For the loading / unloading of drums from vehicles, it is recommended to build a permanent ramp. Alternatively, warehouse or base personnel can use boards designed for the purpose, and built in place. When rolling a drum on the ground, be sure to sweep the surface in front of it to prevent hard points like nails or stone from puncturing the drum or damaging it.

The contents of the drum must always be correctly written on the container to avoid filling a diesel vehicle with petrol and vice versa. It is a good practice to assign a colour for each type of fuel and mark all the related articles - jerrycans, drums, pumps - with it to assist persons with different languages or different reading capabilities.

In both cases, drums or tank, the containers must be waterproof and dust-proof.

Fuel Purity

As fuel settles during storage, all the impurities including dust and suspended matter will settle to the bottom. If water is present in the fuel, it will also separate and settle to the bottom. This natural settling over time will provide acceptable quality fuel for users, while impure fuel may damage equipment, increase maintenance requirements, and shorten its useable life span. There are several recommendations to follow to avoid filling the vehicles with dirty fuel:

- Before pumping, the drum or tank should rest for three days to allow the fuel to settle and separate.
- Avoid distributing by gravity; use a pump to draw from the container.
 - Never pump from the bottom of the tank otherwise all the impurities and water will be transferred to the vehicle fuel tank. The suction tube must be positioned at minimum 20 cm above the bottom of the tank.
 - Avoid also pumping from above the first 10 cm on the top of the tank.
- Use retention filters to capture water and impurities, especially when pumping from the last 25 cm of the tank or drum. It is a good practice to replace the filter every year (more often if the quality of the fuel is poor).

All fuels are corrosive and should not be used with plastic accessories, such as plastic buckets or plastic pipes. Also avoid contact with Teflon and tire inner-tubes.

Terminology

It is common to use the term "fuel" to refer to different products. Furthermore, equal terms in different languages refer to different product types. The following translation sheet, illustrates the basics on fuel terminology:

| French | English (US) | English (UK) | Spanish | Use | Handling Specifics |
|-------------------------------|----------------------|----------------------|-----------------------------|---------------------------------------|---|
| COMBUSTIBLE (Carburant) | FUEL (Motor fuel) | FUEL (Motor fuel) | COMBUSTIBLE (Carburante) | | |
| METHANE | METHANE | METHANE | METANO | Town gas | Gas |
| ETHANE | ETHANE | ETHANE | ETANO | | Gas |
| PROPANE | PROPANE | PROPANE | PROPANO | Bottled gas for fridge, heating, etc. | Gas |
| BUTANE | BUTANE | BUTANE | BUTANO | Bottled gas for fridge, heating, etc. | Gas |
| G.P.L. | L.P.G. | L.P.G. | G.P.L. | Liquefied Petroleum Gas | Gas used for car fuel, (adapted engine) |
| AVGAS, LL100 Essence Avion | AVGAS, LL100 | AVGAS, LL100 | AVGAS, LL100 | Aviation Gasoline: for piston engines | Very volatile, fluid, blue colour, same smell as petrol. Very flammable, explosive. Can be used in a petrol engine with 3% oil added |
| ESSENCE | GASOLINE | PETROL | GASOLINA | | Volatile, fluid, colourless (or almost). Very flammable, explosive. Cannot be replaced by diesel, but can replace Avgas in some aircraft. Various octane indices between regular and super |

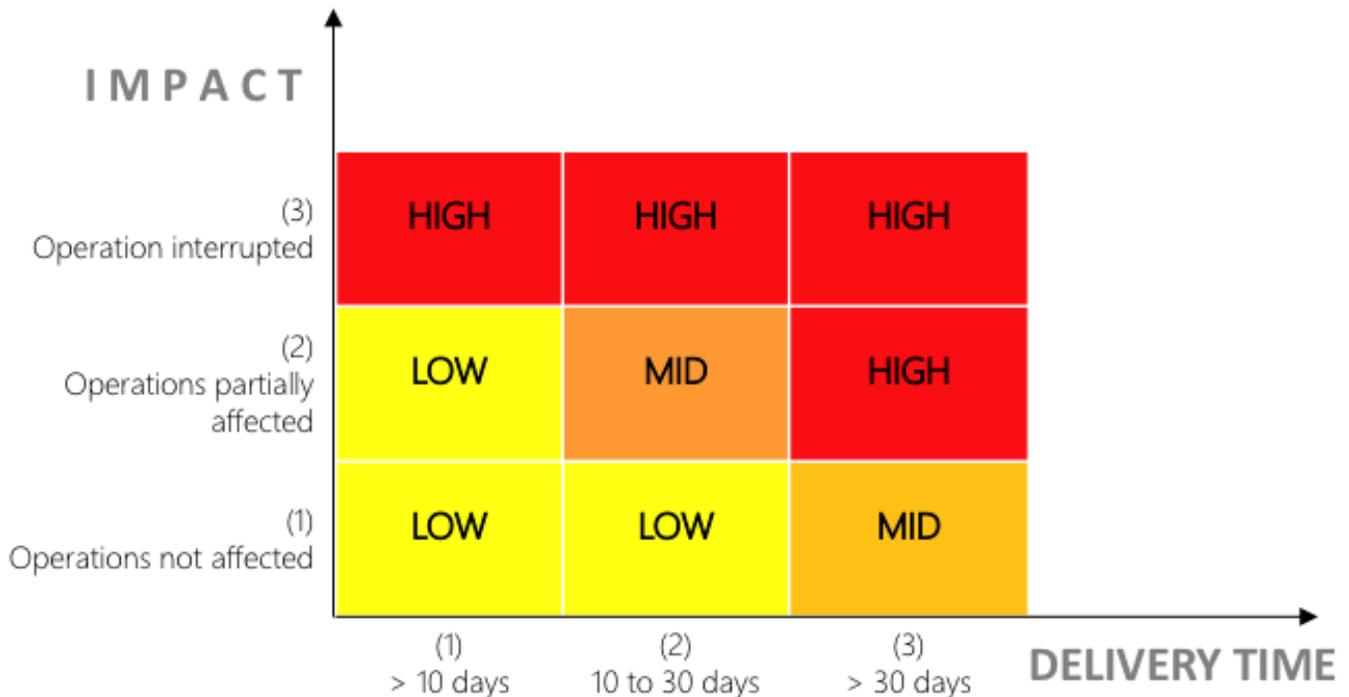
| | | | | | |
|--|--------------------------------------|---|------------------------------------|------------------------------------|---|
| - super - normale - sans plomb | - premium - regular - unleaded | - super - regular - unleaded | - super - normal - sin plomo | | |
| KEROSENE, JETA1 | KEROSENE, JETA1 | KEROSENE, JETA1 | KEROSEN O, JETA1 | Turbine engine aircraft | Same as for Paraffin but with aeronautical specifications: Filtering, packing and storing. |
| PETROLE (Lampant), PARAFFINE (Canada) | KEROSENE (Lamp oil) | KEROSENE (Lamp oil), PARAFFIN (Oil) | KEROSEN O, PETROLEO | Lamps, fridges, burner, etc. | Colourless, specific smell. Fuel for so-called "lamp oil" equipment |
| GASOIL, GAZOLE | GASOIL, DIESEL | GASOIL, DIESEL | GASOLEO, DIESEL | Cars | Greasy, yellowish, frequently coloured, heavy smell. When pure, solidifies at -5°C and requires an additive (or 20% lamp oil). This also acts as the injection pump lubricant. |
| FUEL, FIOUL, MAZOUT | FUEL OIL | FUEL OIL, PARAFFIN | FUEL | Heating | Same as diesel without additives for low temperatures and lubrication |
| HUILE | OIL | OIL | ACEITE | Lubrication | Greasy, different viscosities for different uses |
| PARAFFINE | PARAFFIN, WAX | PARAFFIN, WAX | PARAFINA | Candles | |
| PETROLE LOURD | HEAVY FUEL | HEAVY FUEL | | Slow engines | Heavy combustibile for marine engines and power plants |
| ASPHALTE, BITUME | ASPHALT | ASPHALT | ASFALTO | Road surfaces | |
| PETROLE (BRUT) | CRUDE PETROLEUM, KEROSENE | ROCK OIL, PARAFFIN | CRUDO | Natural state | |

Adapted from MSF

Managing Spare Parts

It is important to know when to self-manage a stock of spare parts. The decision is usually linked to the convenience of a self-managed workshop and to the use of owned and standardised fleet of vehicles. Given the complexity, it is not recommended to hold a stock of spare parts if the variety of vehicles in the fleet exceeds two or three different models.

Managing a fleet of self-owned vehicles in contexts where a supply chain remains uncertain imposes a high degree of autonomy in terms of spare parts availability. The risks of not having spares at the wrong moment must be assessed. The following matrix can be adapted and used as guidance for decision taking.



Also consider the reliability of local markets: the cost of original parts purchased locally can be double or even triple that of buying internationally. Generally, most of the parts available locally consist of high demand parts such as filters or brake linings, while less demanded parts may be less available but just as important. Some consumables - such as lubricants and tires - can be easily found locally.

It is recommended to perform market research with a comprehensive list of parts and carefully assess the quality of available parts and validate suppliers. Original quality supplies should be always demanded as the consequences of using counterfeit or substandard parts can seriously affect the condition of the vehicle and jeopardise rider safety.

Once organisations decide to hold a stock of spare parts, they should define the type and quantities of each part required. This can be calculated based on the scale of the fleet, the frequency and types of the preventative maintenance services and the average number of kilometres completed per month per vehicle.

Managing Environmental Impact

Logistics teams must guarantee an efficient use of resources, optimising costs and reducing the environmental impact of movements.

Movement planners should look for opportunities to combine, or in some cases avoid travel. Fleet managers should try to reduce the size of the fleet or replace vehicles with smaller, cheaper and more efficient ones wherever possible. Pooling logistics resources, such as vehicles, with other organisations may also provide significant cost and emissions cutbacks through optimised fuel consumption and smaller fleets.

A vehicle's good mechanical condition and proper use will reduce fuel consumption, extend the life of all vehicle parts, avoid unnecessary expenses, and ultimately, reduce environmental impact.

Templates and Tools

[TEMPLATE - Accident Incident Report Form](#)

[TEMPLATE - Daily Movement Plan](#)

[TEMPLATE - Daily Cargo Vehicle Checklist](#)

[TEMPLATE - Discharge of Liability](#)

[TEMPLATE - Fuel Consumption Log](#)

[TEMPLATE - Fuel Voucher - External](#)

[TEMPLATE - Fuel Voucher - Internal](#)

[TEMPLATE - Maintenance Request](#)

[TEMPLATE - Movement Request Form](#)

[TEMPLATE - Vehicle Daily Inspection Report](#)

[TEMPLATE - Vehicle Maintenance Logbook](#)

[TEMPLATE - Vehicle Movement Logbook](#)

[TEMPLATE - Weekly Movement Plan](#)

[Guide - Vehicle Servicing - Motorcycle](#)

[Guide - Vehicle Servicing](#)

[Full Template Package](#)

Sites and Resources

- [UNECE Road Safety Special Envoy](#)
- [WHO Road Safety Strategies](#)
- [WHO: "Save Lives" A Road Safety Technical Package](#)
- [FIA Foundation](#)
- [Occupational Road & Fleet Safety Guide](#)

References

[1] Adapted from MSF Checklist for vehicle rental.

[2] Adapted from MSF Guideline for vehicle rental.

[3] ULS, Universal Logistics Standards, <https://handbook.ul-standards.org>

- [4] Fleet Forum, <https://knowledge.fleetforum.org/knowledge-base/article/developing-ability-to-scale-up>
- [5] Adapted from MSF Drivers Recruitment Test
- [6] Extracted from MSF Logbook
- [7] Extracted from Fleet Forum, <https://knowledge.fleetforum.org/knowledge-base/article/minimum-standards-for-fitness-to-drive>
- [8] Transport request extracted from Action against Hunger Logistics Kit.
- [9] Weekly plan template extracted from Action against Hunger Logistics Kit.
- [10] Roadbook template extracted from MSF OCBA Logistics Library
- [11] <https://knowledge.fleetforum.org/knowledge-base/article/fleet-monthly-report>
- [12] Fleet Forum, Managing Crash Reporting & Analysis, <https://knowledge.fleetforum.org/knowledge-base/article/managing-crash-reporting-analysis>
- [13] Adapted from MSF Vehicle maintenance logbook.
- [14] Global Status on Road Safety, WHO, 2018 (<https://www.who.int/publications/i/item/9789241565684>)
- [15] <https://www.humanitarianoutcomes.org/AWSR2020>
- [16] <https://knowledge.fleetforum.org/knowledge-base/article/managing-crash-reporting-analysis-part-ii-how-to-report-a-crash>