



Inkoop

Conformiteitenlijst Eisen

Rijksdienst Caribisch Nederland

Bezoekadres

APNA gebouw
Kaya International z/n
Kralendijk, Bonaire
Caribisch Nederland

Meer informatie

inkopen@rijksdienstCN.com

Appendix 1 - Program of requirements

PR16768

For the delivery and maintenance of a Aircraft Rescue and Fire Fighting (ARFF) Vehicle with agent for The Fire Department Caribbean Netherlands, Bonaire (Brandweerkorps Caribisch Nederland te Bonaire)



1. INTRODUCTION

In this document the word "shall" indicates a mandatory requirement. Tenderers must declare that they meet all the requirements in this Program of requirements unconditionally. If a tenderer does not meet a requirement in the Program of requirements, it will be excluded and its tender will be set aside and not further assessed.

In this document the word the word "**should**", indicates a recommendation or that which is advised, but not required. All "shoulds" are identified in bold letters.

Technical specification

This specification covers the supply of a new, unused, well-designed, diesel powered Aircraft Rescue and Fire Fighting (ARFF) vehicle.

With delivery/supply the vehicle is not older than one year of age.

The 6x6 Aircraft Rescue Fire Fighting vehicle shall have a minimum capacity of 3,000 gallons (11.356ltr) of water, 420 Gallons (1.590ltr) of AFFF (Aqueous Film Forming Foam) and 550 pounds (250kgs) of dry chemical.

The unit shall comply with category 9 airport and all ICAO Standards for ARFF vehicles.

The 6x6 Aircraft Rescue Fire Fighting vehicle shall be delivered to Bonaire by the manufacturer / dealer.

Expected vehicle requirements

The ARFF vehicle shall be designed for aircraft fire fighting with on/off- road capabilities, which allow the vehicle to respond to aircraft accident sites across and outside airport terrain.

The vehicle shall be capable of discharging water only, water with proportioned foam, or auxiliary agent (dry chemical) through the roof turret and handline(s) as detailed hereafter in these specifications. The vehicle shall be capable of discharging water only, water with proportioned foam through the bumper turret.

The vehicle shall be designed for maximum stability and maneuverability under all operating conditions and all conditions of loading.

The vehicle shall have all-wheel drive to permit the vehicle to perform both, on and off road in all weather conditions.

Approval drawings

There shall be a complete set of drawings that are designed from the specifications and/or any change orders signed by the purchaser before construction begins. These drawings shall indicate the chassis make and model, location of lights, siren, horns, compartments and all major components of this unit. The signed drawings will become part of the contract documents. This shall be signed after the building meeting.

Standards

This Rescue Truck shall meet the latest ICAO standards for ARFF.



2. AUTOMOTIVE SYSTEM

Performance

The design objective for the vehicle shall be performed in accordance with ICAO Annex 14, table 5.1 Airport Service Manual and other ICAO standards for this kind of vehicles.

Engine

1. The diesel engine shall be a Euro 3 engine (no use of AdBlue), capable of developing sufficient power under operating conditions, to give the full loaded vehicle an acceleration from 0 to 50 miles per hour (0 to 80 km/h) on dry level pavement within 25 seconds and shall give the vehicle a max top speed from at least 65 mph (105 km/h).
2. The exhaust of the engine shall be completely at the back in the middle or on the right. This in connection with the extraction system of the exhaust gases in the garage.
3. The exhaust will bend 90 degrees backwards and **should** be fitted with a coupling to fit the extraction system. It concerns an extraction system of the brand Plymovent.
(This will be discussed further during the building meeting.)
4. The engine shall comply with local diesel specification which is a low sulphur diesel.

Suspension

The vehicle shall have a suspension system in such a way that the vehicle can drive safely in a safe way, and adequately through the uneven terrain, next to the runway at the Flamingo airport.

Transmission

The vehicle shall have an automatic gearbox, where switching from one gear to another, with empty or full water and foam tank, is as smooth as possible.

Tire and rims

The vehicle shall be fitted with single wheels and tires on all axels. All rims and tires are interchangeable without restrictions on all axels.

Steel wheel rims, and tires 24R21 shall be provided with the vehicle.

Data plate

A data plate shall be provided. The data plate shall be installed in the cab of the vehicle and visible to the operator. The data plate indicates:

- engine;
- acceleration;
- top speed;
- braking;
- single rear wheel configuration;
- all-wheel drive capacity;
- automatic transmission;
- side Slope Stability;
- pump & Roll;
- steering Max Cramp Stability;
- dynamic Balance;
- pump performance.

Fluid Data Plate

One (1) fluid data plaque containing required information shall be provided based on the applicable components for this apparatus:

- engine oil;
- engine coolant;
- chassis transmission fluid;
- drive axle lubricant;
- power steering fluid;
- pump transmission lubrication fluid;
- other NFPA applicable fluid levels or data as required.

Location shall be in the driver's compartment or engine compartment.



Unit of meters.

1. All pressure gauges shall be delivered in PSI and Bar or only in PSI.
2. Pressure for the tires shall be indicated on the sides of the vehicle above the tires in PSI.
3. Odometer shall be indicated in km/h and MPH.
4. Pressure in airtanks shall be indicated in PSI and BAR or only in PSI.
5. Temperature will be indicated in degrees Celsius (°C).

3. BODY CONSTRUCTION

Truck body

1. The body shall be constructed of aluminum alloy or equivalent material, including fenders.
2. Body access doors shall be provided for easy access to:
 - pump and pump systems;
 - engine compartments;
 - all other compartments.
3. All exterior surfaces designated as stepping, standing, and walking areas shall comply with the required average slip resistance.
4. The body and compartments shall be fabricated of aluminum extrusions, smooth aluminum sheet and aluminum tread plate.
5. The compartment floor shall be of the sweep out design.
6. The compartment door opening shall be framed by flanging the edges.
7. Wherever tools are stored, they must be accessible without or via a staircase mounted on the vehicle.

Cabine

1. General: The (2) door crew cab shall have seats for four (4) crew members complete with approved seats belts. Three point seats belts with belt tensioners must be applied to the vehicle seats.
2. The driver and the seat next to the driver must be fully adjustable and positioned to allow visibility to the front, side and front below of the vehicle.
3. The following applies to all seats:
 - they shall be suitable for attaching the breathing apparatus (the reference type for the breathing apparatus is the Dräger PPS7000, with 6 liter cylinders);
 - The vehicle will be equipped with an easy to unlock scba lock system, which does not use a rope. They shall be adjustable, so that in the future, potential other types and/or dimensions of breathing apparatus may also be used.
 - The Cab shall have at least offer space for staff equipment, namely:
 - universal holder for at least 4 fire helmets;
 - universal holder for at least 4 face protectors (masks);
 - a complete set of breathing apparatus Dräger PPS7000, with 6 liter cylinder or equivalent;
 - small equipment such as four atex streamflashlights incl. holders/chargers, Charger for four Motorola radio's, mouth caps, latex gloves, insulation blankets;
 - at least three, 3 inch folders.
 - Cooled water bottle drawer for at least 24 bottles of 50cl. Separate compartment is allowed. Drawer is with constant power equipped either or with wall connection.
4. The Vehicle shall be provided with air pressure meter with built-in buzzer and indicator lamp on the dashboard, which are triggered if the air pressure in the air cylinders goes below the lowest pressure that is needed for the braking system to function properly.
5. The vehicle **should** be equipped with two (2) folding chairs, one on the left of the driver and the other on the (right) passenger side.
6. The chairs will open when seated, and close when you stand (theater style)
7. This option must be possible to create space in the direction behind the driver's and the seat next to the driver.
8. There shall be retractable sunblinds placed in the windshield and wherever glass is in the ceiling.

Color coded controls

The vehicle shall be equipped with color coded controls to clearly identify what function and or agent you are utilizing.



Steering

1. A tilt/ telescoping steering wheel shall be provided. The chassis shall be equipped with power assisted steering/ emergency power steering pump, that shall permit manual steering to bring the fully loaded vehicle to a safe stop in the event of power assist failure.
2. The steering wheel will be positioned on the left in the middle of the cab.
3. The turning circuit from wall to wall shall be as small as possible and no larger than 32m/104.987 feet.

Steps

The vehicle shall be equipped with an aluminum folding ladder at the rear to go on the top of the vehicle. The ladder has two extended side arms of 63cm (24.8") above the roof of the vehicle. The first step down will not be higher than 40cm (15.75"). The ladder shall not be placed in the extension of the exhaust in connection with the exhaust and extraction system of the exhaust gases in the garage.

Handgrips and rails

1. Aluminum handgrip and rails or a guardrail shall be provided for personal safety at all steps and walkways, including along the top of the vehicle. The finish shall be slip resistant.
2. The rails on the roof of the vehicle shall have a height of 60cm (23.6").

Cabin roof access door

The vehicle shall be designed with a well-sealed cabin roof access, this would allow easy access to the Roof.

Cabin outside

1. Engine start button for quick starting.
2. The vehicle must be equipped with conventional exterior mirrors including cameras. The vehicle must have a camera system that displays the required fields of vision around the vehicle.
3. On both sides of the cabin, at the level of the end of the windscreen (inside), rectangular, upright monitors must be placed on which the camera image from the sides is visible.
4. In addition, the driver in the cabin must have a permanent view of the front of the vehicle via an integrated screen.
5. The screens must be positioned so that they are clearly visible to the driver without obstructing the view outside.

Cabin inside and accessories

1. Driver's instruments and vehicle operation controls (positioned in front of the driver and to the left side of the dashboard).
2. Logical ergonomics color-coded controls and instruments clearly identifying the functions shall be installed.
3. The following cab mounted instrument and controls shall be provided as a minimum:
 - engine coolant temp. gauge warning;
 - air Pressure gauge;
 - speed-o-meter KM/H calibrated;
 - RPM-meter;
 - fuel gauge;
 - head light beam indicator;
 - engine-oil pressure gauge;
 - Amp-meter;
 - voltmeter;
 - instrument panel lighting;
 - warning light indicating when compartments doors are not properly closed;
 - accelerator pedal;
 - brake pedal;
 - high idle switch;
 - Windshield Wiper and Washer;
 - Ignition Switch;
 - Engine Shutdown Switch;
 - Master Electrical Disconnect Switch;
 - Air Conditioner Controls;
 - Starter Switch;



- Horn Control;
- Headlight Switch;
- Transmission Range Selector;
- Parking Brake Control;
- Panel Lights Switch with Dimmer;
- Power Adjustable Mirror Control;
- back – up camera.

Cabin center console (firefighting section)

1. A center console shall be designed and installed between the driver and the seat next to the driver.
2. The top face of the console shall be designed as the switch panel for all emergency light switches and firefighting controls. The switch panel shall be removable for easy access to the switch connections.
3. Logical color coded emergency switching and firefighting controls will be positioned to provide either driver, or the seat next to the driver equal access to the controls.
4. The console controls shall include:
 - water / foam / dry chem. activation switch;
 - switch panel for all emergency light switches and firefighting controls;
 - bumper turret agent system activation switches;
 - roof turret agent system activation switches;
 - turret control joystick with agent selection and movement control for both turret;
 - hose reel agent system activation switches;
 - windshield deluge system;
 - siren/PA with microphone;
 - emergency lighting switch panel;
 - agent level indicator displays (LED);
 - system propellant pressure indicator;
 - one (1) map slot located at the rear of the console;
 - one (1) console light with red or white lens;
 - area for the installation of up to two (2) radios;
 - generator activation switch;
 - the activation switch for the flood lights;
 - Four (4) Stream light Survivor® LED;
 - infrared camera activation switch.
5. A tablet with more color option, **should** be placed accessible to the officer (on the (right) passenger side) and with LED lighting above the officer's chair with a choice between white or red light.
6. The tablet 43x30cm (17"x 12") for note-taking with a stylus, shall have the following options:
 - To come forward so that the officer can write.
 - turn around so that the driver and crew can see. Preferable a Getac.

Radio and antenna installation

1. Two dedicated 12-V radio leads shall be provided in the cab console and marked and tagged.
2. There shall be two (2) antenna mounts provided and installed on the roof of the cab/ chassis. The end of each radio antenna shall be ended in the cab console.
3. In the cab console space will be made for the installation of two radios.
4. The openings made will temporarily be sealed with a plate.

Airconditioning

An air conditioning system shall be installed in the cab. The system shall give and maintain the temperature in the cab at between 19 and 23 Celsius all the time.

Dash mounted fans

Two (2) 12 volt fans with protective shrouds shall be provided and mounted in the cab.
One (1) each on the left and right side, above the windshield.



Compartment

1. The compartments shall be weather-tight, vented, drained to allow collected water to run out under the vehicle.
2. Compartments shall be supplied with locking roll-up doors. Each door shall include a pull strap to aid access to the door when in open position.
3. An anodized aluminum drip rail shall be mounted over the compartment opening to assist with water runoff.
4. Each compartment shall be provided with weather proof LED lights that are switched to automatically when compartment doors are open with vehicle master switch "On".
5. All doors shall be provided with a warning device to indicate "door in open position" in the cab.
6. All compartments shall include rubber matting in the trays and floor.
7. All compartments **should** have tool board panels in the back of the compartment. This can be discussed during the building meeting.
8. Compartments **should** be provided with roll-out adjustable shelves, adjustable shelves or roll-out drop down trays. This can be discussed during the building meeting.
9. Compartments at the left/driver side:
The left/driver side shall have suitable compartments.
10. Compartments at the right/officer side:
The right/officer side **should** have suitable compartments.
11. The vehicle shall have storage space for four 6 liter breathing air cylinders. two on each side of the vehicle.

Engine access

1. For an easy service and maintenance to the engine, the vehicle shall be outfitted with a easy access to engine compartment. The easy access to the engine compartment shall give easy access to all filters and fluid check. The air filter must be easy to replace and there shall be a dust indicator.
2. A main switch shall be placed at the back of the vehicle to prevent vehicle starting during maintenance.

Fuel tank

The fuel tank shall be placed on the right side of the vehicle. The bottom of the fuel tank compartment shall have a drain and a tap with an easily replaceable valve. This is to drain fuel in case of overfilling the tank.

4. FIRE FIGHTING SYSTEM

Watertank

1. The tank shall have a capacity of 3000 US Gallons equivalent of 11356 Liters and be constructed of UV protected polypropylene plastic or equivalent.
2. Tank shall have top fill possibility with fill overflow port direct to the ground. Baffles shall have vent openings to permit movement of air and water between compartments.
3. Both side shall have 4.5-inch (115 mm.) and 2.5 inch (65 mm.) side fill connection with piping sized to permit filling in no more than 2 minutes from an 101.5-psi (7.0 bar) supply source.
4. 2.5 inch filling connection shall have a Storz coupling (nok 81) with cap.
5. Mounting provisions shall be provided to keep the tank in position while the vehicle is moving. Mounting system shall be approved by the tank manufacturer.
6. There shall be water level indicators on both right and left side of the vehicle, in the cab console and the pump service panel.
7. The level gauge shall indicate the liquid level on an easy to read LED display.
8. Tank shall have a lifetime warranty.

Foam tank

1. The foam tank shall be an integral portion of the water tank. The dual cells have a total usable capacity of 420 Gallons (1.590ltr) with the intended use of Class B foam.
2. The foam tank shall be filled via an onboard foam pump system. Hose and connection shall be deliver with the vehicle.
3. The foam cell shall have a screen in the fill dome and a breather in the lid for overflow.
4. It just be possible to fill the foam tank without foam forming in the tank.



5. Backflow of foaming mixture to the water tank and of water to the foam tank shall always be avoided.
6. There shall be foam level indicators on the cab console, pump service panel, and on both right and left side of the vehicle.
7. The level gauge shall indicate the liquid level on an easy to read LED display.
8. Tank will have a lifetime warranty.

Foam system

1. An around-the-pump foam proportioning system or equal shall be installed. It shall be capable of mixing class B 3% till 6% F3 foam concentrate with water.
2. It shall be possible to set one of the foam percentages between 3% and 6% F3 foam concentrate with water.
3. The system shall provide the following features and capabilities:
 - valve position selector;
 - valve position table;
 - instruction plate;
 - maximum flow induction rate;
 - discharge flow rate;
 - proportioning ratio.

Flushing system

A flush system will allow the foam metering valve, all water system plumbing and the discharge devices to be cleaned. The flushing capability will allow water to pass through the foam valves and plumbing.

Water Pump and Pump Drive

1. The water pump shall be a Centrifugal pump with bronze metal housing, brass impeller, and stainless steel shaft.
2. The water pump shall be rated to deliver and discharging according ICAO Cat. 9.
3. The water pump shall deliver at middle pressure to the booster hose reel.
4. The water pump shall be gravity primed from the vehicle water reservoir.
5. The vehicle shall have a pump and roll system.
6. The pump drive shall be through a power divider to allow the pump to be engaged at different speeds.
7. When in pump mode, the pumping RPM shall increase automatically only after a discharge orifice is opened, to minimize heat build-up during standby operation.
8. Pressure relief shall be back to the suction side and thermal relief shall discharge to ground.
9. It shall be possible to switch the pump on and off from both the Cab, and from the structural panel outside.

5. TURRETS AND UNDERTRUCK NOZZLES

Roof turret

1. One (1) dual agent joystick controlled Roof turret nozzle shall be provided and installed that incorporates a foam solution or water application simultaneous, which projects dry chemical through the center of the foam/water stream to achieve ranges not possible with conventional equipment.
2. The roof turret discharge controls shall provide a variable pattern of water or water/foam from a stream to a full dispersal, low to high flow and allow discharge of dry chemical individually or simultaneously from control buttons on top of the joystick.
3. Any or all selected agents as selected by controls on the joystick in the cab, shall discharge from the turret at one time.
4. The roof turret shall be able to rotate in accordance to the required angle to either left and right side and depressed and raised elevations.
5. When the turret is switched on, it automatically positions itself in a preprogramed attack position.
6. When the turret is switched off, it automatically returns itself to a transport or parking position.
7. In case of electronic failure, the operation of the roof turret valve shall be done manually.
8. A LED spotlight shall be provided and mounted on the roof turret.
9. Roof turret shall have a discharge rate in accordance to at least category 9 (ICAO).



Bumper turret

1. One (1) dual agent joystick controlled bumper turret nozzle shall be provided and installed that incorporates a foam solution or water application simultaneous.
2. The bumper turret discharge controls shall provide a variable pattern of water or water/foam from a stream to a full dispersal, from control buttons on top of the joystick.
3. The bumper turret shall be able to be rotated in accordance to the required angle, to either side and depressed and raised elevations.
4. Both agents will be selected by controls on the joystick in the cab, shall discharge from the turret at one time.
5. The bumper turret **should** have a discharge rate of 300 GPM.

Under truck Nozzles

Under truck nozzles shall be provided, capable of dispersing sufficient foam/water combined spray pattern to cover and protect the total under truck area as well as the inner sides of the wheels and tires.

Side Hose reel system

1. The vehicle shall be equipped with Two (2) electric rewind water/foam pull out and turn middle pressure hose reel. The hose reel shall be located one (1) in the left lower front compartment and one (1) in the right lower front compartment.
2. Each of these hose reel shall have at least 60 m of 1 inch (or smaller) hard rubber hose and a Akron 1702 nozzle with trigger shutoff that automatically shuts off flow when released. The nozzle shall provide a water/foam variable pattern from stream to full dispersal at a discharge rate of 13-25-40-60 GPM.
3. The hose reel for handlines shall be easily grabbed from ground level and operated by one person.
4. As part of injury and damage prevention, the fire hose reels need to be visible in the dark while being folded out.

Pre-Connects handline

1. Two (2) 200' (60 m) (1½") quick attack, pre-connected soft jacketed handline with nozzle shall be provided and supplied with the vehicle.
2. Each hose exists of 60m of 4x 15mtr hose.
3. Each 60m hose has a different color (package blue and red).
4. The handlines (crosslay) **should** be installed in a left and right lower side enclosed compartment for easy access.
5. The handline shall have coupling connection. Of storz 38 nok 52 mm.
6. The handline shall be equipped with an adjustable gallonage 30-60-95-125 GPM Akron 1720 Turbo Jet nozzle. The nozzle shall provide a water/foam variable pattern from stream to full dispersal.
7. The handline shall be easily operated by a single firefighter. A pressure regulator shall be installed in the low-pressure system to adjust the pressure to a certain pressure (108 psi / 7,5 bar).

Dry chemical system

1. The vehicle shall be equipped with a minimum of 450 pound dry chemical system with the ability to deliver dry chemical powder at the Roof turret and hose reel. Amount and discharge rate at least 3 kg/sec according ICAO Cat. 9.
2. Provisions are made to activate and charging the system, both from within the cabin and at the separate handline for powder. The system shall incorporate gauges to indicate storage pressure and system charged pressure.
3. Blow-down and re-servicing valves shall be supplied and incorporated in the system plumbing.
4. Dry chemical shall be delivered using on-board high pressure nitrogen. The high pressure nitrogen shall be easy accessible to check and change.
5. Two (2) fully charged nitrogen cylinders shall be supplied with the vehicle.
6. The spare cylinder also remains on board.
7. The dry chemical storage vessel can be filled through the fill neck on the vessel with the use of a funnel. The vehicle shall be delivered with Chemguard purple K drychemical.



Dry chemical hose reel

1. A dry chemical hose reel shall be mounted in an upper right side compartment equipped with 150 ft. (46 m) of 1 inch booster hose with nozzle.
2. The reel shall be equipped with a 12 VDC electric rewind motor with manual rewind provisions and a tension device to prevent the unreeling of the hose.
3. The handline nozzle shall be capable of discharge dry chemical with a minimum rate and straight stream pattern reach through the hose reel according ICAO Cat. 9.
4. The switch in the cab to activate the powder and foam system must have a protection to prevent accidental switching the system.

Structural operators panel

1. A structural operator's panel will be provided on the left side (driver side) of the pump module.
2. The vehicle shall be provided with a structural firefighting system with fill from draft feature.
3. The system shall be provided with the following:
 - One 5-inch (127 mm) suction on the left side of the vehicle and one 2.5-inch (64 mm) and 4.5-inch (115 mm) pump fill inlet on the left of the vehicle.
 - The vehicle shall have a take-off point for low pressure foam/water on the right side, which is restricted to an operating pressure of 7,5 bar, and is equipped with a valve with a 2½' Storz connector with a 81 mm nok distance and a cap.
 - The vehicle shall have on both side, a take-off point for low pressure foam/water, which is not restricted, and is equipped with a valve with a 2½' Storz connector with a 81 mm nok distance and a cap.
 - Two (2) 10-foot (3m) sections of 5-inch (127 mm) hard suction hose, roof mounted, with 5-inch (127 mm) long handled female coupler and rocker lug male coupler.
 - One (1) 5-inch (127mm) barrel suction strainer with NST threads stored in a compartment.
4. The operator's panel shall include:
 - pump engine rpm gauge;
 - pump engine oil temp gauge;
 - pump engine voltage gauge;
 - pump engine hour meter;
 - pump engine warning light;
 - pump engine diagnostic outlet;
 - pump engine ignition/start switch;
 - pump engine stop switch;
 - pump engine throttle control;
 - water pump intake pressure gauge;
 - water pump discharge pressure gauge;
 - pump vacuum & pressure test ports ;
 - panel light;
 - "tank to pump" control valve;
 - "fill from draft" control valve;
 - 1,5" discharge pressure gauge;
 - pump prime control valve;
 - overheat protection indicator;
 - foam system controller;
 - discharge relief controller.



6. ELECTRICAL SYSTEM

Electrical

5. All 12-volt electrical equipment installed by the apparatus manufacturer will conform to modern automotive practices.
All wiring shall be high temperature crosslink type or equivalent.
6. Wiring will be color, function and number coded. Function and number codes will be continuously imprinted on all wiring harness conductors.
7. Corrosion preventative compound will be applied to all terminal plugs located outside of the cab or body. All non-waterproof connections will require this compound in the plug to prevent corrosion and for easy separation (of the plug).
8. Electronic components such as sensors must be covered as much as possible against the salty air.
9. All lights and reflectors, required to comply with Federal Motor Vehicle Safety Standard.
10. An operational test shall be conducted to ensure that any equipment that is permanently attached to the electrical system is properly connected and in working order.
11. The apparatus shall be electrically tested upon completion of the vehicle and prior to delivery. The electrical testing, certifications, and test results shall be submitted with delivery documentation.
12. As built wiring diagrams will be furnished with the completed apparatus.

Electronic load management

A Load Manager system shall be provided on the apparatus. The device is an electronic load management system that monitors the vehicles 12-volt electrical system, and automatically reduces the electrical load in the event of a low voltage condition and by doing so, ensures the integrity of the electrical system.

Battery conditioner

1. There shall be a Kussmaul Auto Charge Super kit installed on the chassis. It shall consist of an Auto Charge1000 120 / 220 volt AC 50/60 Hz battery conditioner with a Super Auto Eject, and remote bar graph.
2. The battery conditioner (charger) system shall be wired to the chassis batteries and will recharge them to required levels.
3. Conditioner shall provide full 15 amps of output as well as supplying up to 3 amps for loads connected directly to the battery such as radio memory, etc.
4. System shall be connected through a 110 or 220 volt shoreline inlet or receptacle located on the cab.
5. A LED charge indicator shall be mounted on the driver's side of the cab near the shoreline inlet.

110/220 Volt connection in the cabin

1. The vehicle shall have two 110 volt and two 220 volt connection in the Cabin with enough space to connect an explosion meter and a thermal imaging camera.
2. The 110/220 volt connection must receive power via the shoreline and the on board generator.
3. Location will be discussed during the building meeting.

12 Volt DC outlet

The vehicle will be equipped with two built-in 12 volt DC outlets in the cabin.

Auxiliary air compressor

1. An onboard auxiliary 12 volt air compressor shall be installed in a suitable and easy access compartment.
2. The air compressor shall maintain the air brake system at operating pressure to allow immediate start-up and operational ready.
3. System shall be connected through a 110V/shoreline.
4. Water in all the vehicle's working air tanks must be easily accessible without crawling under the vehicle. The primary system is electronically controlled, and the secondary system is manually controlled in case the electronic system malfunctions.
5. The working air entering the vehicle's air system must pass through at least two air/water separators after leaving the primary and auxiliary air compressors to prevent moisture from entering the system.



Switches

The vehicle shall be provided with lighted colored code switches.

Emergency switch

A switch shall be provided to activate and power the emergency lights system. The emergency lights shall be activated by a single "MASTER SWITCH" on the electrical console.

Battery disconnect switch

A master battery disconnect switch shall be installed in a convenient location to the driver.

Master battery switch

1. A master battery switch, to activate body lighting and firefighting system, shall be provided inside the cab left of the driver seat.
2. A green "battery on" indicator light, visible from the driver's position will be provided.
3. A main switch to turn off the electricity of the complete vehicle and prevent starting during maintenance, will be placed at the rear of the vehicle or in the engine compartment.

Do not move apparatus indicator

A flashing red DO NOT MOVE APPARATUS indicator light located in the driving compartment shall be provided. The light will be labeled "Do Not Move Apparatus If Light Is On".

High idle system

There shall be a high idle system furnished and installed on the apparatus. The high idle system shall have an on/off switch located on the cab console. The system shall have an interlock that will disable the solenoid if the parking brake is not completely set.

Engine compartment light

There shall be 12 volt LED light with switch mounted in the engine enclosure. Light shall give enough light in the engine compartment.

Back up alarm

One (1) automatic electric back-up alarm shall be wired to the back-up light circuit, and mounted under the rear of the apparatus body.

Back up camera system

1. The vehicle shall be equipped with a backup camera and inbuild cab monitor with audio system for rear view safety.
2. The camera and monitor shall be capable of transmitting a full color display.

Infrared thermal imaging camera system (FLIR) – pan and tilt

1. A Infrared Thermal Imaging Vehicle Vision System shall be installed on the front roof side to provide enhanced visibility for low light, smoky or heat conditions.
2. For a wide angle field of view horizontally and vertically, the camera shall have pan and tilt capabilities.
3. The camera shall be capable to operate in open ambient air temperatures.
4. A flat screen monitor shall be provided for the camera and shall be mounted in de cab.

Open door indicator light

A large red flashing "open door" indicator light shall be provided inside the cab, in clear view of the driver, to warn of an open compartment door or extended scene light.

Compartment lights

The body compartments shall be equipped with low voltage LED, tubular lights or equivalent.

License plate bracket

1. One (1) license plate bracket shall be provided at the rear bumper.
2. The bracket shall have a LED light and shall be chrome plated.

Ground lightning, cabine

There shall be weatherproof LED light provided for each side of the cab. Lighting will be designed to provide illumination in cab area, which will be activated automatically when the doors are opened.

Top of body warning lights

1. Emergency Lighting
 - Four (4) Whelen, model L series super LED Blue warning lights or similar shall be provided. One (1) each side at the top rear and top front of the body.
 - One (1) switch located on the cab center console will activate these lights.
 - Model can be discussed during building meeting.
2. Non-Emergency Lighting
 - Two (2) Whelen, model L series super LED amber beacon lights or similar shall be mounted on middle top of the vehicle. One (1) switch located on the cab center console will activate these lights.
3. Front chassis warning lights
 - One (1) pair of Whelen, SUPER-LED Blue flashing LED lights or similar with flange kit shall be mounted to the chassis grill or in the front of the vehicle.
 - One (1) switch located on the cab center console shall activate these lights.
4. Intersection warning lights
 - Two (2) pair of Whelen surface mounted Blue Super LED warning lights or similar shall be installed, one each side of the chassis cab.
5. Electronic siren
 - One (1) Federal Signal PA-300, model 69003, 200 watt full function electronic siren shall be nice flush mounted in the cab on the cab console.
 - The siren shall have the following features: electronic air horn, wail, yelp,
 - Priority, P.A. and shall have a hard wired microphone.

Generator

1. One (1) Hydraulic powered generator system up to 6 kw, 110/220 volt, 50/60 Hz, shall be provided in a suitable compartment.
2. The system shall be switch ON and OFF and controllable from the cab via a switch with an indicator to advise of the system's operation.
3. The system shall automatically shut down in the event of a malfunction.
4. A circuit breaker box shall contained all high voltage wiring.
5. A meter shall be provided that indicates system operation, hertz and voltage being supplied by generator.

Outlets

Two (2) 110V/20A and two (2) 220V/30A twist lock receptacle with spring loaded weatherproof cover shall be provided on both left & right side. Mailplug for these receptacle shall be delivered.

Telescopic led floodlight

1. Four (4) LED Scene Light, side mount push up telescopic light **should** be installed.
2. The light pole shall be anodized aluminum and have a twist lock mechanism to secure the extension pole in position.
3. The extension pole shall rotate 360 degrees. **Should** be manually operated.

Spotlights

1. Two LED spotlights shall be mounted on front cab corners (one each side).
2. Two (2) high intensity, LED fog lights shall be mounted below the front bumper.

Computer connect system

It **should** be possible to have the ability to connect a computer/diagnostic tool onto the system, making it possible to troubleshoot the engine and other components/sensor remotely.

Telematics

The vehicle has telematics to read the vehicle history and remotely monitor the vehicle's condition.

Training / practice mode

The vehicle has a practice mode where you can practice handling foam or powder, but in reality only water comes out.



7. PAINTING

Color

1. The vehicle shall be painting lime yellow.
2. 1 Gallon paint "lime yellow" shall be delivered together with the vehicle.

Lettering and striping (details about this item will be discussed at the building meeting)

1. Reflective letters, numbers and striping shall be provided and install on the unit.
2. The following lettering and numbers shall be placed on the trucks;

- Lettering:

BRANDWEERKORPS CARIBISCH NEDERLAND

Bonaire

Flamingo Luchthaven

- Numbering: **CT 16-02**

- Logo:



Reflective white

Electrolysis corrosion control

1. The apparatus shall be assembled using ECK or electrolysis corrosion control, on all high corrosion potential areas, such as door latches, door hinges, trim plates, federates, etc. This coating is a high zinc compound that shall act as a sacrificial barrier to prevent electrolysis and corrosion between dissimilar metals. This shall be in addition to any other barrier material that may be used.
2. All 1/4" diameter and smaller screws and bolts shall be stainless steel with a powdered aluminum coating. This coating shall be bonded metallurgical to the stainless screws to prevent peeling and flaking. This coating is designed to reduce the potential for electrolysis and corrosion to occur where items are assembled and attached.
3. Due to the expected life of the vehicle, proposals will only be acceptable from manufacturers that include these corrosion features.

8. ACCESSORIES ATTACHED OR DELIVERED WITH THE VEHICLE

Access ladder

One (1) aluminum access ladder to the top of the vehicle with non-slip rungs shall be installed on the back top of the apparatus. The bottom portion of the ladder shall fold up in a secured position when not in use to maintain a high angle of departure. The ladder shall provide access to the top of the body.

Wheel chocks

One pair of folding aluminum wheel chocks shall be deliver whit the vehicle and remains on the vehicle.

Spare tire and rims

1. The vehicle shall be delivered with one spare tire mounted on rim. A set of suitable hydraulic jack and wrench shall be delivered with the truck.
2. The tires shall be 24R21 XZL steel belted radials or similar.
3. All rims are painted black

Fire extinguisher

1. four(4) portable fire extinguisher shall be provided with mounting brackets on the vehicle.
2. One 1) ABC dry chemical fire extinguisher 6kgs.
3. One (1) Fire extinguisher carbon dioxide of 5kgs.
4. One (1) 9kgs foam fire extinguisher
One (1) E-Fire hand extinguisher 6ltr.
5. All fire extinguisher shall have a pressure gauge and filled with desired extinguishing agent.



Handlight and survivor led stream light

1. Four (4) Streamlight Survivor® LED orange personal right-angle flashlight shall be delivered and installed.
2. The flashlight shall include a mounting bracket, with fast charge 12 volt charger wired to the apparatus battery system to allow the light to recharge when not in use on the cab console.

Equipment to be delivered with the truck

The following equipment shall be delivered and to be mounted with brackets in the trucks compartment:

- one (1) Pro Response Basic kit shall be provided mounted in the vehicle;
- two (2) plastic Backboard (Darley AR 226) mounted in the vehicle;
- one (1) Holmatro Forcible entry tool T1 mounted in the vehicle.
- one (1) Standard Crash Axe (Darley J729) mounted in the vehicle;
- one (1) Serrated Crash Axe (Darley J728) mounted in the vehicle;
- one (1) Bolt cutter 24" mounted in the vehicle;
- four (4) 50' 1.5" Storz Nok 52 attack hose; 2x rood en 2x blauw
- two (2) 1,5" 1720 Akron Turbo Jet pistol grip nozzle; (NOK52) met een aparte koppeling om op de middeldruk slangenhaspel van het voertuig te koppelen.
- two (2) Quick Attack Foam Tube for 1,5" turbo jet nozzl;
- one (1) 1" 1702 Akron Turbo Jet pistol grip nozzle;
- four (4) double end spanner wrench for the booster hose mounted in the vehicle;
- four (4) spanner wrench and holder for Storz coupling N 81 and N52 mounted in the vehicle;
- two (2) "V" Blade Rescue knife and extra blade mounted in the vehicle;
- one (1) Holmatro battery powered combination tool cut/ spread Pentheon PCT50. With battery indicator mounted in the vehicle;
- two (2) extra battery and a charger shall be supplied and installed in the cab or compartment;
- one (1) cut-off machine. Stihl TSA300 with 3 extra diamond blades mounted in the vehicle;
- two (2) extra battery and a charger shall be supplied and installed in the cab or compartment;
- one (1) Ladder General Purpose, mounted on top of the vehicle;
The vehicle will be equipped with a horizontal roller at the rear of the roof to enable the ladder to be placed on the roof.
- one (1) folding evacuation chair mounted in the vehicle (evacuation chair model 6253 stryker);
- four (4) Survivor Atex LED streamlights incl. holders and 12 volt chargers (Right angle) mounted in the cabin;
- nineteen(19) drums 55 US gallon of 3% fluor free foam;
- fourteen(14) 50lbs (22.7 kg) bucket of Chemguard PurpleK dry chem.class B used with the system;
- The powder tank shall be delivered completely filled;
- one (1) high Performance Ventilation Fan Propeller diameter: 420 mm
- 220V, with a plug to connect to the sockets on the vehicle, mounted in the vehicle;
- two (2) extension cords with a length of 30 meters for connecting the fan
- mounted in the vehicle;

Spare parts

One set of useable and critical spare parts shall be supplied with the vehicle. The Tenderer shall, based on his experience and expertise and taking into account the special conditions at Bonaire, advise about which and which amount of minimum spare parts must be delivered directly together with the supply of the vehicle. This is to ensure that the vehicle is able to guarantee its minimum required availability.



9. MANUALS AND TRAINING

Manuals and other requirements

1. Operation manual which describes the total operation of the unit and the operation of all components attached to that unit, and any other supporting documents which are necessary to be thoroughly familiar with the total operation of the unit (both hard and soft copy) shall be delivered:
 - Operator's Manual;
 - Service Manual;
 - Parts Manual.

Familiarization and training

1. A qualified technician after delivery and acceptance by the purchaser shall provide training to acquaint local fire department personnel in the proper use and application of the ARFF unit.
2. Familiarization and training for fire fighters shall consist of the following:
 - Classroom instruction on proper operation and maintenance of this ARFF vehicle to include visual inspection of vehicle, indicating various controls and instruction in proper operation of the unit;
 - Actual operation/driving of the ARFF vehicle to include instructions in proper driving of the vehicle, foam and water discharge, pump operation, and familiarity with all necessary firefighting functions;
 - Familiarization will include the use of computer aided programs, manuals and hands-on familiarization;
 - A familiarization and training for technical department / maintenance personnel shall be given on the vehicles major systems and lubrication points.

Special tools

A torque wrench for securing the rims shall be delivered, along with the necessary tools for loosening and securing the rims.

Life cycle

The vehicle shall have a technical life-cycle of at least fifteen (15) years.

Spare parts

The supplier guarantees that all consumables and all critical spare parts of the Vehicle shall remain available on the open market for at least 15 years after the delivery of the Vehicle under this Contract.

Special test equipment

The supplier of the vehicle shall have a connection cable/diagnostic tool on the island to connect to the vehicle in case of breakdowns and make contact with the factory. The login code shall only be known to the supplier and also to the head of technical department.

10. MAINTENANCE

Maintenance training

1. Maintenance training shall be provided on the vehicle for the mechanic.
Within one year of vehicle delivery, comprehensive training must be provided on both preventive and corrective maintenance. This training must include a thorough description of the vehicle's entire operation, enabling our technicians to perform maintenance effectively and independently.
2. During this training, adaptive maintenance can be performed immediately, if necessary, to adapt the vehicle to any changing operational requirements.
3. During the vehicle's economic lifespan, we also want to be able to utilize innovations and improvements that can increase the vehicle's operational effectiveness and efficiency.



Technical assistance / corrective maintenance

1. Technical assistance shall be provided in a timeframe of 48 hours. That means, that within 48 hours after reporting the defect, the supplier of the vehicle will repair the vehicle. If parts are required, the supplier will also supply the necessary parts so that the repair work can take place.
2. In case the vehicle fails, the factory/ supplier shall deliver parts to Bonaire.

Preventive maintenance

1. The supplier of the vehicle shall give advice on where to maintain the engine for the period of the engine warranty. This is to guarantee the warranty of the engine.
2. The first service/ maintenance for the whole vehicle will be done by a certified person from the factory. This will be according the principle of "train the trainer" for the mechanic of Bonaire.

Availability

The vehicle shall not be out of service for more than 8 days (4 times (2 x 24 hours) separately from each other) in a year due to possible defects. This means that the vehicle shall be available for at least 97.8 %.

11. WARRANTY

Limited warranty and service

The manufacturer/ dealer shall warrant the new apparatus for a period of at least 5 years from the date of delivery to the original retail purchaser. The warranty will ensure that the vehicle will be free from defects in material and workmanship that may appear under normal use and service within the warranty period. A copy of the warranty shall be supplied with the bid.

Engine warranty

The manufacturer/ dealer shall give a warranty of at least 5 years on the engine. manufacturer/ dealer will indicate the requirements to guarantee the warranty on the engine.

Paint warranty

The body manufacturer shall warrant the new apparatus paint finish for a period of ten (10) years or 100,000 miles (whichever occurs first) from the date of delivery to the original retail purchaser. The warranty will ensure that the vehicle will be free from peeling, cracking, loss of gloss caused by cracking, and any paint failure caused by defective finishes as determined by the manufacturer under normal use and service within the warranty period.

Electrical warranty

The body manufacturer shall warrant the new apparatus electrical system for a period of five (5) years or 60,000 miles (whichever occurs first) from the date of delivery to the original retail purchaser. The warranty will ensure that the vehicles will be free from defects in the electrical harness and connections under normal use and service within the warranty period. A copy of the warranty shall be supplied with the bid.

Body structural warranty

The body manufacturer shall warrant the new apparatus for structural integrity for a period of fifteen (15) years from the date of delivery to the original retail purchaser. The warranty will ensure that the vehicle will be free from all structural defects of both material and workmanship that may appear under normal use and service within the warranty period. A copy of the warranty shall be supplied with the bid.



12. MEETINGS, TRAINING AND INSPECTION

Meeting and training

1. A building meeting shall be organized by the dealer at the factory prior to the start of the construction. All the costs (3 people) involved shall be put in the quotation (see Price form);
2. An inspection meeting shall be held at the factory to inspect and test the unit before shipping. All the costs (3 people) involved shall be put in the quotation (see Price form);
3. An operation training, "train the trainer", for the vehicle when delivered on Bonaire. All the costs involved shall be put in the quotation (see Price form);
4. A basic maintenance training for technician for this unit. All the costs involved shall be put in the quotation (see Price form).

Inspection

1. Supplier will carry out an inspection on the vehicle after two years under his cost, and submit a report of the state of the vehicle, including recommendations for the user.
2. The vehicle will be inspected for functionality and legal requirements.

13. SIMULTANIOUS

Important information

1. The location of Bonaire as an island in the Caribbean sea together with a tropical climate and a hurricane season, makes that special attention is needed for carrying out the maintenance of the vehicle. Tenderer shall take in account these special conditions.
2. Regarding the production of the Vehicle, the supplier shall as much as possible use standard commercial products and components that are easy to obtain.
3. The chassis and metal parts underneath the vehicle will be treated against corrosion. All electrical cables and labels will remain clean and easily recognizable after the corrosion treatment.

Export preparation

1. Prior to shipment, the vehicle shall be completely coated to prevent corrosion during overseas shipment.
2. Concentrate cleaner shall be supplied with the shipment.
3. The cab doors shall be keyed differently than the body compartments to insure security of loose equipment during shipment.
4. All loose equipment shall be suitably packed.

