



**DEPARTMENT OF AIR TRANSPORT PARO INTERNATIONAL
AIRPORT MINISTRY OF INFORMATION & COMMUNICATIONS
ROYAL GOVERNMENT OF BHUTAN**

TECHNICAL SPECIFICATION

CRASH FIRE TENDER

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TECHNICAL SPECIFICATION OF CRASH FIRE TENDER (CFT) VEHICLE

1. General:

In accordance with the provision of ICAO annex. 14. Doc 9137-AN/898. The Department of Air Transport (DoAT) is required to provide Rescue and Fire Fighting Service (RFFS) to all the aircraft operating in and out of Paro airport of category 6 level protection and category 4 level protection for domestic airports to meet ICAO standard and safety requirement.

These technical specification outline the features of the Crash Fire Tender (CFT) on Rosenbauer MAN or equivalent imported chassis (6X6) powered by not less than 480 HP (Euro-3) having sufficient acceleration power determined by ICAO.

This vehicle is for the rapid control of major fire fighting and to facility rescue operations in the event of an aircraft accident in line with ICAO recommendations. When it is fully loaded, it should be able to drive on airport runway and over rough, soft or sandy terrain in the immediate vicinity of the airport.

Irrespective of whether the CFT is on run, whether it is manoeuvring forwards or backwards, full, uninterrupted pump operation should be possible and the vehicle can discharge foam from the monitor immediately it comes within reach of the fire.

TECHNICAL DATA

2. Engine & Chassis

- Type : Rosenbauer MAN or equivalent or Higher imported
- Engine : chassis (6 X 6) Euro -3, not less than HP 480 HP Turbo Diesel Engine
- Method of Operation: 6 cylinders diesel engine with direct injection, exhaust turbochargers and intercooler.
- Cooling System : Temperature controlled fan
- Exhaust system : Exhaust outlet, direction backwards on the side, to prevent that exhaust gasses will be blown to the fireman working with the pump control panel.
- Gear Box : Automatic transmission
- PTO : Suitable to operate the water pump
- Drive/power axle : 6 X 6
- Steering : Right hand drive (hydraulic power steering)
- Tyres : 365/85 R 20
- Brakes : Service brakes – dual circuit brakes
Parking brakes – spring loaded and air controlled without Linkages, acting on all wheels.
- Electric system : Voltage - 24 V with two batteries
Battery - capacity each 12 V/175 Ah
Alternator - output max. 100A, 28V, 2.800 watt
Reverse warning- with buzzer
- Fuel Tank : not less than 300 L aluminum tank for diesel, fitted with

- Bumper : removable strainer. Provide lock system on fuel tank cap. heavy duty front and rear bumpers.
- Towing coupling : automatic coupling
- External Air Supply : A manual release air connection system for the charging of air tanks from external air source will be provided on the L/H side.
- Steering : Right hand drive

3. Vehicle Performance

- Acceleration : 0-80 km/h.approx.40 sec
- Top speed : 100 km/h

4. Cabin:

- Type : Forward control type, hydraulically operated tilting cabin in All steel construction. The cab should adequately insulated Against noise, vibration and extreme temperatures.
- Seating capacity : Minimum 1 + 4
- Design : the cab is a rigid safety cell, offers well tuned suspension And ensures good comfort. Modern design offers excellent all round vision. All labels and plates in the cab are in English language.
- Doors : Two lockable doors, with electrically operated roll down windows for driver and co drivers
- Wind shield : Laminated safety glass
- Seats : One air sprung suspensions driver's seat, fully adjustable. One fixed co-driver's seat with adjustable backrest. Between the driver's seat and the co-driver's seat is a seat for a third crew member. All seats are should be fitted safety belts.
- Control box : A separate control box, holding all controls and switches for the Public Address System, mounted within the easy reach of the drivers or crews
- Instrumentation : Dashboard will all instruments and controls within easy reach from driver
- Air condition : Standard air condition to provide
- Other : All necessary mirrors to be provided.

5. Water Tank:

- Capacity : Minimum 7,500 l useable
- Maximum tank pressure : 0.2 bar
- Tank level indicator : Fludometer
- Material : Made of glass-fibre reinforces polyester corrosion Proof

6. Foam Compound Tank

- Capacity : Minimum 1000 L useable
- Maximum tank pressure : 0.2 bar
- Tank level indicator : Fludometer (compulsory)
- Material : Made of glass-fibre reinforces polyester corrosion Proof

7. Foam Proportion System

- Type : Automatic
- Induction ratio : **1% to 3%**

8. Water Pump:

- Type : Rosenbauer N45 or equivalent, single stage Centrifugal type.
- Location : Rear mounted
- Materials : made of corrosion resistant light alloy
- Drive : By vehicle engine via PTO actuation from cabin
- Discharge rate : Output 4000 l/min. at 10 bar
- Priming : Automatic priming by double piston pump, priming time within 21 seconds at 3 m suction head, max. suction height up to 7-9 m
- Connections : All connections between tank and pump with flexible connections
: Suction line to the water tank, with butterfly valve
: Valved filling line to the water tank

9. Water/Foam Monitor (Roof Turret)

- Type : Combined for water and foam operation, with air aspirating foam barrel, suitable for all foams, complete with O-stream nozzle.
- Control : remotely control via single hand joystick from the driver's cabin or manually from the vehicle's roof.
: 1 x wireless remote control, mounted in the pump compartment.
- Output : up to 4,000 l/min (nominal) at 10 bar
- Throwing range : approx. 70 m with full option
- Rotation : 270 degree
- Elevation : -15 to + 70 degree
- Deflector : for producing a dispersed pattern

10. under Truck Nozzles

- Type : Under truck nozzles to be fitted onto the vehicle

- Ground sweep nozzles : 3 in front of front of the first axle.
- Performance : 75 l/min at 10 bar per nozzle
- Range : 170degree, 6 m diameter
- Nozzle rear : 1 nozzle in front of the rear axle and other 1 in front of second rear axle.
- Performance : 75 l/min at 10 bar per nozzle
- Range : 360 degree, 6 m diameter
- Control : all together from driver's cabin

11. Bumper Turret

- Location : on front bumper
- Material : light alloy
- Performance : 1000 l/min at 10 bar
- Control : electrically from cabin
- Range : approx. 35 m with water full jet and 15 m with spray jet

12. Electrical & Communication Equipment

- Traffic installation : In compliance with national highway codes, comprising head lights, brake stop lights, turn lights, indicators, back-up lights, license plate light and fog lights.
- Signal system : 2 rotating halogen beacons (blue or red) mounted on the cabin roof.
- Public address system : One public address system (PA 300), complete with a cabin mounted hand microphone, is dashboard mounted within easy reach of the driver or co-drivers.
: A 100 watt loudspeaker to mount on the vehicle roof.

13. Dry Chemical Powder Unit:

- Capacity : ABC powder container, filled with not less than 250 kg.
- Discharge rate : 2.25 kg/sec
- Throw range : approx. 9m
- Control : Manually
- Nitrogen cylinder : 25 LTR
- Filling pressure
- : 200 bar

14. Fire Fighting Systems and Superstructures

- DCP hose reel

- Structural fire fighting panel
- Equipment locker
- Pump compartment
- Emergency lighting and PA/siren system
- Hoses, branches etc

15. Accessories:

- To supply standard accessories with CFT vehicle.

16. Equipment Lockers/Compartments

Adequate compartment and lockers should be provided for the storage of equipment and tools with water proof aluminum roller shutter with key lock on both sides of the vehicle.

17. Warranty Conditions

- Two year warranty for all component parts. The supplier/manufacturer shall undertake to remedy any defect resulting from faulty design materials or workmanship appearing during the warranty period of two years for the whole vehicle starting from the date of acceptance. The warranties shall be covered against defects in materials or workmanship for a two year period.

18. Documentation

- Chassis Manuals : two sets of instruction books for the chassis
- Superstructure Manuals : two operation manual
Two service maintenance manual
Two Illustrated spare parts catalogue
- Soft copy : All manuals will be delivered as soft copy (CD or DVD)
- Language : All manuals are in English language
All instructions are in English language where pictographs do not serve the purpose

19. Operation Maintenance Training and Commissioning

Operation and maintenance training shall carry out at Paro International Airport for 4 working days by one of the CFT manufacturer engineer (mandatory). For this, the supplier or manufacturer has to provide air passage, food, lodge and internal transport for engineers. The certificate with full qualification of minimum 3 engineers has to be submitted.

20. Delivery Condition

- The CFT shall be delivered in complete condition, ready for operation, and completed with accessories as specified in the specifications.
- The fully built CFT shall be delivered within 10 months from the date of placing purchase order or signing contract.

21. Sales after Service

The supplier shall depute service engineer of the CFT before the expiry of warranty period to check the performance of the CFT and to carry out periodical maintenance. The date and time of visit will be informed by the DoAT.

22. The bidder should provide the Manufacturing Authorizations and the dealership certificate during the tender submission. Failing to submit the documents will lead to the rejection of the tender documents and will be treated as non-responsive during the evaluation.

23. CFT super structure (Body), roof monitor, bumper monitor, fire pump, roller shutter, etc should be from the same brand to maintain quality. Failing to provide as per the required structure will be treated as non-responsive.

24. GSM diagnosed: - The CFT has to be equipped with GSM Transponder system, which reports anomalies of vehicle control system to be centralized database. The system should be maintained by the manufacturer and the information should be reported back to the DoAT via automated Email system. SMS system is not allowed.

GSM certification should be submitted and failing to submit the certificate will be treated as non-responsive.

25. CFT design: The truck should be designed and engineered as per the ECE-R29 (crash test). The ECE-R29 should provide certification and failing to submit along with the SBD will be treated as non-responsive.

26. GPS module: the vehicle should also be equipped with the GPS system, allowing visualizing the location of vehicle on a satellite image in a permanent basis. Visualization shall be enabled on any commercially available personal computer connected to the World Wide Web utilizing a standard web browser. The certification should be provided and failing to provide the documents will be treated as non-responsive.

27. The bidders must visit the site for verification of the CFT during the office hours (i.e Fire Section, DoAT, Paro).

28. The evaluation will be based on the brochure submitted and failing to submit the brochure during the opening and evaluation will be treated as non-responsive.