



# Burning need for ISUZU

BY JOHN MURPHY

When rural fire authorities choose a new fire truck, it is an even more important buying decision than usual – literally, a matter of life and death.

The Te Uri farming community in the Tararuas is, according to locals, famous for its wind. It is isolated, too, being 35 kilometres from the east coast and a similar distance from Dannevirke. When fires destroyed a home and a substantial area of bush in 1997, on both occasions it took fire

trucks about an hour to reach the blaze via narrow, steep country roads. Local farmers Noel and Lola Percy counted the cost and decided Te Uri needed a local volunteer Rural Fire Force.

The region mostly depends on sheep and beef farms, but forestry is playing a bigger role,





with more blocks being planted. The area's location on the east of the ranges means it becomes dry over summer, so one of its primary incomes is particularly vulnerable to fire.

Ian Millman, manager national resources and development with the National Rural Fire Authority (NRFA), says many isolated communities like Te Uri recognise the fire danger and ask for help in procuring a suitable vehicle. Where they can, the NRFA works with the district council to link up the volunteers with a retired fire truck and provide training to national standards, hopefully enabling the community to deal with the emergency and keep it under control until reinforcements arrive.

Noel, Lola, the community and the Tararua District Council developed their fire force and received an ex-Fire Service 1975 Dodge V8, petrol-powered truck. Noel kept the Dodge in a shed at his place, and the community raised funds to build a new shed beside the hall and add to the fire fighting gear – proof that they were serious about providing a decent emergency service.

Recently Te Uri became one of the lucky stations to receive one of the latest batch of five Isuzus, the first with bodies built in New Zealand. "It has really changed our image," Lola says.

Te Uri didn't get the new truck for nothing; the NRFA came up with two-thirds and the Tararua District Council with the other third for the basic truck, with the local community footing the rest of the bill for equipment. Fund raising is an important part of the volunteers' role.

For six years, Ian has been allocating Isuzu 4x4 seven-tonners as rural fire trucks and now has 45 of them around the country. He says it was quite a change in mindset to go to the smaller 4x4s after traditionally using larger trucks with 13 or 14 tonne GVMS.

Most of the volunteers manning the trucks are



farmers. When surveyed, they said they wanted a fire fighting vehicle that would drive like a four-wheel-drive ute and get to the same places. The older designs were really a hang-over from the days of the Forest Service when it was necessary to carry a large amount of water, and the roads were generally good and designed for trucks. Roads in the farming communities are often steep, narrow and winding. Access to farm buildings and houses are often through narrow gateways with overhanging trees. The trucks carry 1800 litres but, as water can usually be found nearby, they don't need to carry large volumes.

When Ian drew up the specification list, the Isuzu NPS300 was the only model that really made the grade, largely because the strong little

*The omnipresent fireman's axe is always within easy reach.*

*The tyres are a compromise, providing reasonable on and off-road performance.*

*Dash layout is clean and practical.*

*An additional guard protects the lower radiator and other vulnerable parts.*

*Couplings and valves abound on the small but important truck.*



*Isuzu's five-speed transmission with high and low ranges is ideal for the National Rural Fire Authority. Good map pocket storage is available above the windscreen. An adjustable map reading light is an essential addition to the Isuzu.*

Japanese had a seven-tonne GVM, while the competition mostly had a six-tonne rating. The design weight came to about 6.3 tonnes with three people and equipment on board, so a six-tonner was out of the picture. Last year Isuzu dropped the model's rating to 6.5 tonnes, so the new units are sitting close to maximum GVM. Ian says they have to be careful not to overload the front axle. Every locker and tray on the unit has a maximum weight clearly indicated on the opening.

When searching for the ideal truck, Ian visited Australia and was happy to find that his counterparts in Queensland were using the same Isuzu units and adding about 30 every year. He brought three of them to New Zealand and,



after a few changes to the pumping system, they went on duty.

With a width of only two metres, the truck can easily fit through tight gateways and negotiate narrow winding roads and farm tracks comfortably.

Naturally enough there were some grumbles, you're never going to satisfy everyone, especially such a wide group of volunteers. Things like a single cab and not being allowed to tow a trailer with extra hoses and equipment upset a few, but Ian was adamant that the truck would be to a national standard so that any volunteer could leap in a truck and be instantly familiar with it. The fire trucks are designed to be operated by two or, ideally, three volunteers, so

the extra space of a double cab was of limited value and would reduce the water capacity by half. Volunteers arriving later usually follow in another vehicle.

The fire trucks need a reasonable power to weight ratio; again, some of the competition did not come up to the 22hp per tonne criteria specified. Ian says the Isuzu engine's performance is fantastic. A disadvantage of the older, secondhand units is their lack of acceleration, and the authority found drivers tried to overcome the issue by going into corners too fast, rather than lose speed. Since the Isuzu has the grunt to get back up to speed quickly, they are happy to slow down to enter the corner at a safe speed. Likewise, it performs well on hills and they don't

*Noel Percy (left) and David Livingstone hold the trophy that Te Uri has won by beating the other three Tararua Rural Fire Authority teams in competitions for the last two years.*





*The Isuzu excels on narrow farm tracks.*

have to suffer the embarrassment of being overtaken on their way to an emergency. The drivers are not allowed to exceed the speed limit, even though they are all trained and certified to drive an emergency vehicle.

Ian admits to a Henry Ford mentality that likes to keep things simple, and here the Isuzu has several advantages. These include its proven, straightforward vacuum-boosted, hydraulic brake system. Ian prefers this over air brakes which are a concern in a rural fire truck, especially if they lock on when a leak occurs. Ian explains that on the cross country terrain, an airline could be vulnerable to sticks and rocks. In the unlikely event that the truck needs to outrun a fire, it's better to have no brakes than brakes that are locked on.

Also for reliability reasons, the suspension is all steel leaf springs. Most road trucks go for the comfort and advantages of air, but Ian doesn't want the risk of, say, a waratah post through an airbag in an emergency. Fire trucks can sit around between outings, but they need to be ready to go in an instant; the time taken to charge an empty air system could cost a life or a property.

The trucks also have a battery saver system fitted, so that if someone leaves a light or radio on for a few days, the batteries will retain enough charge to start the truck. The volunteers also appreciate having a truck that can be roll-started.

One of the authority's guidelines is that a truck should clock up a minimum of 30 kilometres a week. Ian says this means the trucks cover more distance on routine driving than emergency work, but they have fewer problems such as leaking seals which in turn reduces maintenance. Taking the truck for a spin makes the crews more familiar with the truck and their territory, too. Ian also ensures the trucks have at least 2000 kilometres on them before they are handed over. "We've found that having 2000

kilometres is pretty critical, otherwise the engine just doesn't bed in," he says. Often the trucks do only about 2000 kilometres a year. "By not running the trucks enough we find a whole array of problems that a commercial operator would never encounter," Ian adds.

Ian is sometimes called overseas when more fire officers are needed to fight a major bushfire, usually in Australia. The experience has given him good insights on rural fire truck concepts and keeps him up to speed with international developments, which can quickly be implemented locally. Other changes to the trucks make safety a priority: the centre seat has a lap and diagonal belt fitted, the top mount is an engineer-certified brace spanning the rear window of the cab, and a map reading light and a powerful handheld spot light are mounted on the dash.

Underneath the front bumper, a guard protects the radiator and a bush bar is mounted above the bumper. One of the reasons for these additions is to protect the truck should it be necessary to drive through a fence. As Noel Percy explains, farm machinery occasionally starts a fire in a hay paddock during haymaking and, as every farm driver knows, the shortest way out is straight through the fence. The same option must be available for the fire truck.

For previous batches of trucks, Ian bought the trucks here and shipped them to Australia where it was significantly cheaper to have the cabs stripped and painted, and the accessories and bodies fitted. Recently, the local body builders have become more competitive, and the Te Uri truck is from the first batch with locally made bodies. Spel in the Hutt Valley built these – as good as the Aussie ones, Ian says.

The trucks have evolved over six years, as Ian has actively sought and applied feedback from the volunteers.

He says the trucks have a couple of compromises. Some of the off-road military designs

*A bull-bar is a handy addition, along with ferry tie-downs that double as towing eyes.*



SPECIFICATIONS

**ISUZU** NPS300

would be more effective than the basic Isuzu general off-roader, but they are two or three times more expensive than Isuzus.

The tyres are a compromise, too, as they use a general all-purpose pattern that is not a fantastic tyre off-road, but is more forgiving when cornering at speed on-road. Neither do the trucks carry a spare tyre, due to the risk of catching it on an obstacle off-road. If a truck gets a flat during an emergency, it is unlikely there would be time to change it and still effectively attend the emergency anyway so a spare is kept at the station. The Isuzus' 17.5-inch wheels are easily changed by volunteers, whereas the larger wheels are more difficult to change.

Isuzu's exhaust system includes a diesel particulate filter to meet Euro 4 emission standards; this system may require static regeneration from time to time, as we have explained before. Ian says some tests have been carried out on the fire trucks in Australia to ensure the systems are safe.

On the road, the truck is an excellent performer and easy to drive. Noel easily slips through the five-speed synchromesh gearbox and the truck attacks the steep hills as if it is empty rather than close to its maximum weight. The gear ratios have proven ideal, on and off-road. A low ratio is fitted for more serious off-road work.

Although the drivers are chosen for their driving skills, adrenaline fuels them in an emergency so they are likely to push themselves and the truck to their limits. They undergo extra training to cover driving at the top end of the vehicle's capabilities. It is a credit to the training and the Isuzu that none has rolled, however, there is a frame behind the cab just in case.

The drivers have found the exhaust brake useful too. It holds the truck without braking, even in steep terrain. "If it doesn't hold it, you just change down and it will," Ian says.

Noel is particularly impressed with the steering and the overall handling of the truck – especially after driving the Dodge with no power steering and a ridiculous number of turns of the wheel from lock to lock. Noel's farm truck is an Isuzu, so he is familiar with the driving style, but he still raves about how well this one handles. Part of the reason is the body's low centre of gravity, despite the narrow track and high ground clearance – Isuzu's design engineers have done a superb job.

Off-road on wet ground the wheels spin, but Noel simply hits the control button to slot the truck into four-wheel-drive; the fire crew leave the front hubs engaged so that four-wheel-drive is immediately available in high and low ratios. The limited slip rear diff also helps to ensure traction.

Overall, the Isuzu couldn't be a better vehicle for the local Volunteer Rural Fire Forces and the National Rural Fire Authority. Ian keeps saying that they're bullet proof, and it's impossible to disagree with him. □

<i>Tare weight:</i>	2,840kg (cab & chassis)
<i>GVM:</i>	6,500kg
<i>GCM:</i>	10,000kg
<i>Wheelbase:</i>	3,395mm
<i>Engine:</i>	4HK1-TCN
<i>Capacity:</i>	5.193 litre
<i>Maximum power:</i>	114kW (155hp)
<i>Maximum torque:</i>	419Nm (309lb/ft)
<i>Air cleaner:</i>	Rear of cab vertical intake
<i>Clutch:</i>	Single plate
<i>Diameter:</i>	325mm
<i>Transmission:</i>	MYY5T 5-speed
<i>Rear axles:</i>	Isuzu RO66
<i>Ratio:</i>	5.125:1
<i>Rear axle capacity:</i>	6,600kg
<i>Chassis:</i>	Cold riveted ladder, SAPH440 steel
<i>Chassis dimensions:</i>	216mm x 70mm x 6mm
<i>Front suspension:</i>	Alloy steel, multi-leaf with helper
<i>Front axle:</i>	Isuzu FDO28, manual lock hubs
<i>Front axle capacity:</i>	2,800kg
<i>Rear suspension:</i>	Multi-leaf with helper
<i>Steering:</i>	Power assisted recirculating ball
<i>Brakes:</i>	Hydraulic drums with vacuum boost & load sensing
<i>Park brake:</i>	Transmission mounted
<i>Auxiliary brake:</i>	Exhaust
<i>Wheels:</i>	17.5 x 6
<i>Tyres:</i>	8.5R17.5
<i>Electrical system:</i>	24V
<i>Cab:</i>	All steel with side impact beam, 45° tilt, liquid filled mounts, 70° opening doors, cab mounted mirrors, polycarbonate bumper with steel backing, driver side SRS airbag, vinyl floor covering, overhead storage, adjustable steering column, electric windows, engine immobiliser, remote central locking.
<i>Instruments:</i>	Speedo, digital odometer, tachometer, temperature, fuel, high/low range and 4WD switches, DPD manual regeneration control.

*The Te Uri team, from left; Mike Bealing, James Livingstone, Lola Percy, Noel Percy, Reid Taylor and David Livingstone.*

