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Gurkha Xtreme
Army's Light Strike Vehicle for civilians

Evo India

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National - Feb 01, 2019

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I'M IN THE ARMY NOW

Well, not really but you do have to thank the Army if you like extreme off-roading. Thanks to them, you have this mother of a 4x4 that is the Gurkha Xtreme!

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PHOTOGRAPHY by GAURAV S THOMBRE

ATTACK ON SUNDAY, SELL ON MONDAY

*You have the Indian Army's Light Strike Vehicle requisition
to thank for the Gurkha Xtreme*

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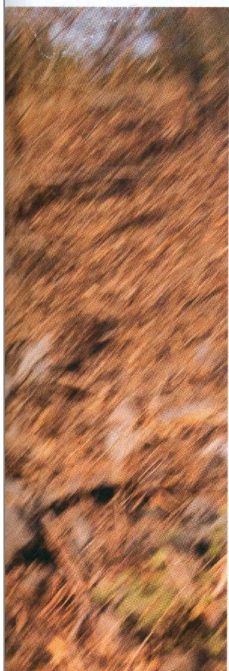
FORCE GURKHA XTREME

THE FORCE GURKHA HAS BEEN around for so long, it pre-dates automotive websites, social media, YouTube and my two decades as an automotive journalist. But then again so does the legend that is the G-Wagen, pre-dating not just my career but my birth certificate too. Nevertheless, these King-Kongs of the automotive world have endured the ravages of time, proliferation of tarmac roads and the burden of legislation to offer a time machine back to a much simpler era — an era where you could cross the Sahara without fear of being murdered; an era where men were men; an era where vehicles were built for war and then offered to the surviving civilians.

Surprisingly though, the Force Gurkha had no military back story to speak of, save for the fact that it is (unashamedly) based on Merc's G. That is addressed with the Gurkha Xtreme — a direct result of the Indian Army's requisition for a Light Strike Vehicle. Turns out the Army has a tough new baseline for power-to-weight and to meet it, Force Motors had to swap out the OM616 engine for the OM611, the rights and tooling for both the engines purchased lock, stock and four



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diesel barrels from Mercedes-Benz ages ago. With 60 per cent more power and 40 per cent more torque, the reconfigured Gurkha sailed through the tests to bag the Army order, and now with the development taken care of, why not offer it in the civilian version?

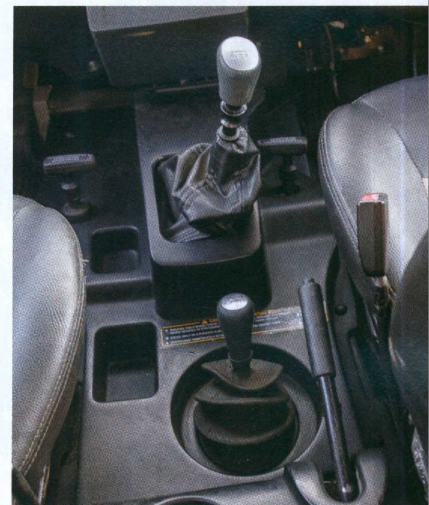
Power goes up in the Xtreme from 84bhp to 138bhp, while torque goes up from 230Nm to 321Nm — and it is the latter that Force Motors' engineers are keen to point out, especially that 321Nm peaks at 1600rpm and stays flat till 2400rpm. Force Motors have also got Bosch to program a crawl mode on the engine management, which we will come to in a bit.

A word on the engine. This OM611 engine is from Force Motors' parts bin and until last year powered their range of hugely popular Traveller mini-buses, which now accounts for over 65 per cent of its segment. It's not like Force Motors have the segment all to themselves, but the popularity is down to immense reliability of the Mercedes-origin aggregates and also the grunt of the motor that not only makes overtaking them on the highway a pain but is sufficient enough to pull even the 35-seater variant of the Traveller.

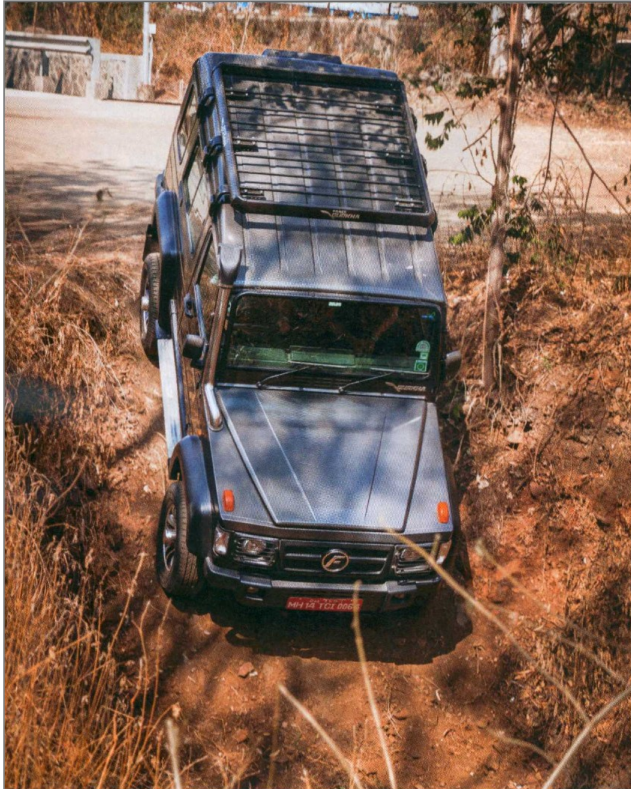
Of course the OM611 in the Gurkha is a far more refined version than what was in the Traveller, and is more closely related to what was installed in the short-lived Force One SUV. Even though this engine is built in India a lot of the components including the liners and the new dual mass flywheel (which, we will come to) are imported. It is mated to the G32 gearbox that has a higher torque capacity and better shift quality — again this is from Force Motors' parts bin but has its gears ground down for better refinement compared to the commercial vehicles it is used in. The final part of the powertrain rejig is the new transfer case from Divgi-Warner, the Indian joint venture of Borg Warner.

Facing page, top: Live front axle is a new development on the Gurkha Xtreme, giving it improved abilities over the Army's Light Strike Vehicle. **Right:** New transfer case means the 4x4 lever has been relocated behind the gear lever

THE GURKHA XTREME AND ITS OM611 ENGINE IS A DIRECT RESULT OF THE INDIAN ARMY'S REQUISITION FOR A LIGHT STRIKE VEHICLE



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Front axle comes alive

Even though the Gurkha Xtreme has been derived from the Army Light Strike Vehicle, it is actually a bit more capable and that's because of the live front axle that replaces the independent front suspension. Now, the IFS vs solid axle debate is endless and truth is, the former is always preferred for its better on-road dynamics and ride comfort. For hardcore off-roaders solid axles are non-negotiable, it is why the new Jeep Wrangler continues with solid axles and that's the reason why Force Motors have gone through the effort of engineering a solid front axle for the Gurkha Xtreme.

The live axles with coil springs on all four corners makes the Gurkha Xtreme's specification unique among off-roaders sold in India. The immediate benefit is the ground clearance; with the IFS the arms were the first thing to get caught while off-roading and that's sorted with the solid axle. Also when you're indulging in really extreme off-roading and one side of the solid axle is up in the air the other one is forced down, the added weight giving the wheel that has contact more chance of gaining traction.

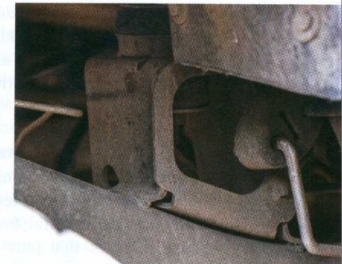
The Gurkha Xtreme also gets a 3-inch body lift kit already in place, evident by the increased gap in the wheel arches. There are multiple benefits to this, not only has the ground clearance gone up but now the



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FORCE GURKHA XTREME



LIVE AXLES WITH COIL SPRINGS ON ALL FOUR CORNERS MAKES GURKHA XTREME'S SPECIFICATION UNIQUE AMONG OFF-ROADERS

arches can take tyre upsizes up to 35 inches without any major body modifications, just remove the plastic wheel arch cladding and you're good to go. Also the suspension geometry doesn't go for a toss with larger tyres, maintaining the camber which is critical for a good off-road mod and ensuring highway driving isn't compromised. And finally Force Motors have beefed up the spec of the front axle and, while made in-house, is now equivalent to the Dana 44 axles on the new Jeep Wrangler. This allows the Gurkha Xtreme to take the load of a heavier mud tyre and I must also mention another benefit of live axles — if you want to go crazy with the tyres you only need to swap the axles for beefier items, with the IFS that's practically impossible.

Lessons learnt from the Rain Forest Challenge

Remember the monsters Force Motors built for the Rain Forest Challenge in Goa? Not only has that powertrain migrated to the Gurkha Xtreme but the team that worked on the RFC Gurkhas are also behind the Gurkha Xtreme making it a perfect case of 'Win on Sunday, Sell on Monday'. And we are on the test track where the RFC Gurkhas were developed... time to pop a few brave pills.

It starts with a steep decline that highlights those crucial off-road angles on the Gurkha, something they are happy to share unlike their rivals. Gradeability is 40 degrees while the approach, departure and ramp over angles are 44, 40 and 30 degrees respectively. Ground clearance is 210mm while the full length floor boards

are bolted on and when unscrewed increases the departure angle to 42 degrees.

Nothing obviously grounds out as we descend and that's followed by a steep incline that's nearly 50 degrees at the top. And the surface is loose. This is where power becomes critical; heck it looks way too difficult so I ask Force's senior engineer Anant Gurav to first demonstrate that the Xtreme can actually do it — I'm not interested in crashing on my first test of 2019. Turns out it can do it with ease, so I jump in behind the wheel, low ratio and the rear diff lock engaged for maximum traction, gas it hard, shift to second and the Xtreme makes the climb with revs and grunt to spare. I'm not exaggerating, this is seriously impressive. No way would the old Gurkha have made it. And we did this with the standard Yokohama Geolander all-terrain tyres, not the optional mud tyres we later slapped on to make it look good for these pictures.

Next, Anant is keen for me to check out the crawl function. Now the Xtreme does not have any fancy rock, sand, ice, etc modes nor does it have hill descent and other fancy electronic aids. Heck it doesn't even have ABS though that is coming soon (calibrated to deactivate at very low speeds so as not to hamper off-road ability). What the Xtreme does have is a crawl function — get going, feet off the accelerator, brake and clutch, and the Xtreme chugs along at a steady 1000rpm, up the hill, down the hill, all at a steady 2-3kmph. All the driver has to do is steer, the Gurkha

Top left: Sumeer Tandon, responsible for the RFC Gurkhas, also worked on the Xtreme, keeping in mind requirements of the off-road community. **Top:** 3-inch lift blocks raise ride height and also leave space for 35-inch wheels. **Above:** Gear hubs are more reliable

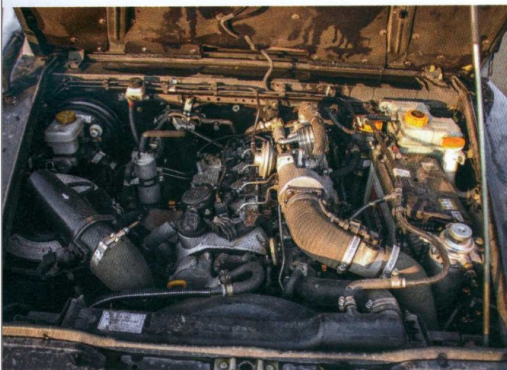
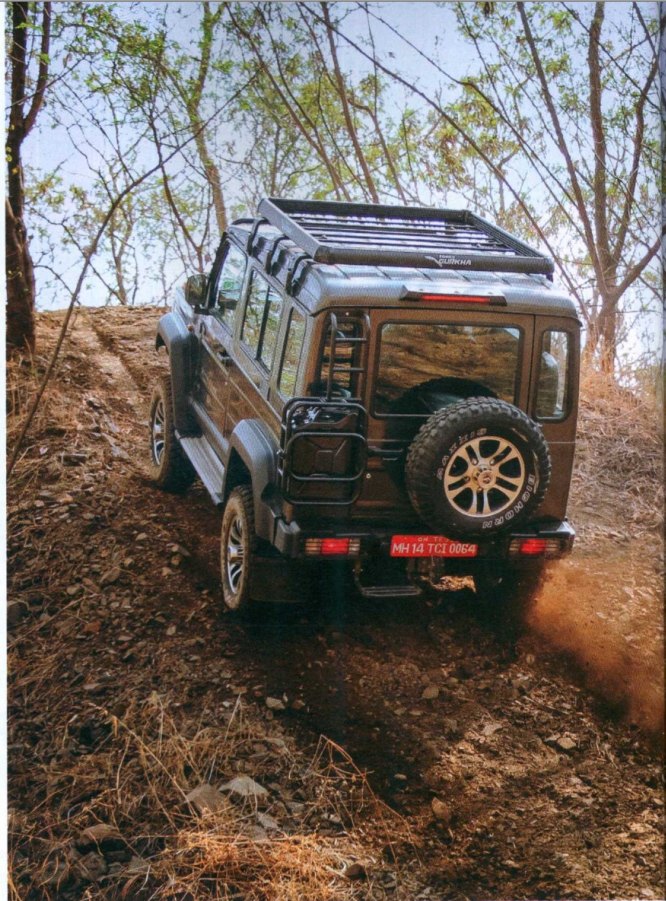
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moves along at a very, very slow speed giving full confidence and control on extreme terrain. It can even crawl up gradients as steep as 40 degrees in this mode, only requiring heavy gas to tackle the more heavy-duty sections. Doing this requires a dual mass flywheel to damp out the vibrations and stresses of the engine battling extreme terrain.

Two locking differentials retained

Next we try out the water wading which is claimed at 550mm but can go up to 4 feet with the snorkel that is standard fitment. And finally, we go to the axle articulation track that puts to use the locking differentials. The diff locks are only required in very extreme situations where one wheel is in the air and so you lock the diff to direct equal torque to both the wheels and ensure all the torque is not wasted away in (uselessly) spinning away the wheel without traction. First to get locked is the rear diff, which is enough for most situations and the front diff lock is only used where the Xtreme is nose down into a ditch where only one front wheel has traction and the remaining three are in the air. Yup, the Gurkha can pull through such situations as well! Here, it's important to remember to disengage the diff lock as soon as the obstacle is cleared as you cannot steer with the diff locks engaged, especially on tarmac. There are big warning signs highlighting this and to prevent drivers from chewing up the front axle, the front diff lock is positioned far away, nearly out of reach of the drivers so that in enthusiasm he doesn't yank the lever and only uses it when absolutely required.



Above: OM611 engine is from Force's parts bin and makes for a massive bump in power and torque over the old OM616 – both engines acquired from Mercedes-Benz
Facing page: 550mm water wading depth thanks to standard air snorkel

Sumeer Tandon who consulted with Force Motors' engineers on the RFC-spec Gurkhas also had a hand in development of the Xtreme. "On the first RFC we had major failures", he tells me pointing to the hubs. "The moment we increased power the bolts would shear off". To sort that out the hubs now have a gear and the torque at the wheel is transferred through the gear, not the bolts on the casing, ensuring a very high level of reliability. And the engineers then point out that the axles already have a provision for hub locks. It's all Sumeer's effort to engineer the Gurkha Xtreme to be just right for the burgeoning off-road community, to be a platform for customisation and added off-road cred without ruining the base setup.

On the road?

Good news! That big worry, that the live axles will ruin the ride quality, are unfounded. The ride quality remains almost unchanged from the IFS-equipped Gurkha Xplorer and that means a soft ride that is far more comfortable than any of its rivals — Thar, Gypsy, everything. The soft suspension does mean a fair bit of wallow and bouncing around on bumpy roads and

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FORCE GURKHA XTREME

Engine 2149cc, 4-cylinder, turbo-diesel
Transmission 5-speed
Power 138bhp @ 3800rpm
Torque 321Nm @ 1600-2400rpm
Weight 2510kg
0-100kmph 18.60sec (Tested)
Top speed NA
Price ₹12.99 lakh (ex-showroom)

FORCE GURKHA XTREME

I must also warn you that the nose is heavy so you're better off not trying to jump it and break the suspension or hole the sump. Then again nobody jumps off-roaders, these are not Dakar-spec vehicles.

Back to the road and the Gurkha is quite comfortable and, for a change, doesn't struggle to get to triple-digit speeds. The aerodynamics are of a brick wall and 138bhp can only do mild triple digits on the highway, our Vbox registering 18.6 seconds for the 0-100kmph run. But that's sufficient for the on-road capabilities of the Gurkha, after all, the highways aren't the end but just the means for getting to the off-road tracks, the real destination! The Gurkha won't tire you out and the hard top makes a big difference to the liveability of the 4x4. The refinement of the engine is also a big step up over the old Gurkha with both engine and transmission noise going down a fair bit.

On the outside the Xtreme looks unchanged from the Force Gurkhas gone by, the most visible change being the reduction in the number of stickers slapped on to her flanks (Made For War! E.O.V: Extreme Overland Vehicle! 4x4x4! All gone!) and an increase in the ground clearance. The vehicle tested here was fitted with ₹1.2 lakh worth of optional accessories, mainly the mud tyres on alloy rims. As for the cabin, things are still very basic, especially for something that costs ₹12.99 lakh. You will struggle to turn a blind eye to the bare-bones dash and the lack of creature comforts. Bluetooth? The Gurkha doesn't even get a stereo, forget power windows, central locking or even forward facing rear seats. But you do get air-con and (as optional accessories) a shovel and jerry can for spare fuel — which is all you will need to cross the jungles and desert. Just ask the Army. ❌

