



The Gondwana Project

Expedition:

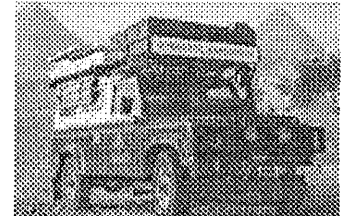
Vehicle & Equipment

[Vehicle] [Tools] [Camping] [Office] [Expedition] ...

Our intention by publishing the list of equipment we have carried on is to help other travellers with similar needs.

▀ Vehicle ...

In Apr '94, we bought a second hand Land Rover Defender 110 born in 1981. It was a red/white hardtop version with 2 windows on each side and a rear door with upper and lower part. The jeep was completely empty without options (no powersteering, no air-conditioning). We decided to put a new 2.5 TDI engine in replacement of the original 2.25 D. The kit included all accessories such as clutch, exhaust, injection pump, turbo, radiator... and was installed free of charge by Vic Tilborghs.



Later on, we installed the following accessories inside the cabin:

- pair of seats RECARO fixed on a quick release support to access the battery & tools
- autoradio/tape AUTOSOUND A640 received from Krautli
- 4 home-made 2-way loudspeakers JBL (4 x 30 W)
- home-made sliding brown plexiglass sun-roof (100 x 100 cm)
- electric fan for fresh air
- set of VDO instruments & gauges (engine & gear-box oil thermometer, engine oil barometer, amperemeter, voltmeter, odometer)
- indoor/outdoor electronic thermometer
- 2 electric plugs for recharging computers (12 v)
- 2 fire extinguishers (2 x 1 kg)
- navigation compass RITCHIE PowerDamp (ø 10 cm)
- portable global positioning system GARMIN GPS 45
- converter (12 v DC -> 110/220 v AC / 600 W) COMPOWER
- universal Ni-Cd battery charger (12 v DC)

- relay switch to charge the second battery by the alternator
- inside isolation with 2 cm thick polypropylene foam + 3 mm thick rubber floor

We renewed, modified or reinforced the following parts:

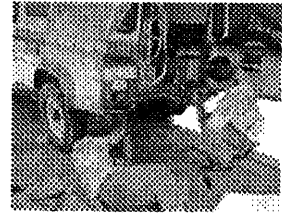
- 6 new tyres BF GOODRICH All Terrain with tubes received from Kléber Belgium
- second pair of mounting for extra rear shock absorbers
- double bottom & top plate on front shock absorber cylinders
- 3 new pairs of shock absorbers MONROE 4x4 (original on front + double mounting on rear) received from Monroe Belgium
- pair of coil springs PEUGEOT 504 fitted inside the rear original heavy duty springs
- 2 new batteries TUDOR (12 v - 95 & 130 Ah) received from Tudor-Fulmen

We also installed the new following accessories:

- electric winch WARN M8000 (12 V - 8 T with double cable) with relays in the engine cabin and remote switch plug on the front hood
- strong home-made bull-bar with light protection grill
- additional pair of head lights (2x 60/65 W)
- hi-jack fixed on the front bumper
- alarm centrale TEXALARM AV 754 H on all doors + ultra-sound module MD1010 received from Krautli
- central door locking system with infra-red remote switch PEREL
- home-made roof rack (160x320 cm) specially adapted for the sun-roof, the tent & the metallic boxes
- rack with 4 jerrycans (3x 20 l diesel + 1 x 20 l motor oil)
- 2 metallic boxes (120x80 + 80x50 cm) fixed on the roof-rack & the tent roof
- air filter with cyclone CIKLON
- steel 5 mm plate fixed on front bumper & chassis to protect steering bars
- 2 extra home-made diesel tank (2x 50x40x30 cm - 55 l) fixed on each side just before rear wheels
- electric pump for diesel (12 v)
- 4 orientable projectors on each corner (4 x 55 W)
- support for spare wheel on front bonnet
- support for spare wheel on back door
- support for 2 sand-plates on the right side of roof-rack
- support for a shovel on the right side of roof-rack
- support for satellite antenna THRANE & THRANE CapSat on roof-rack
- support for GPS antenna GARMIN GPS 45
- soft radio antenna on roof-rack

▲ **Tools & co ...**

Our maintenance/repairing equipment gets bigger & bigger every month, due to the many technical faults encountered on the road.



It includes the following tools:

- electric air compressor with monometer (12 v - 15 A - 250 PSI)
- 2 hydraulic jacks with levers (4 & 10 T)
- strong pieces of wood (2x 30x30 cm) for lifting the jeep
- plastic tank filler with two pipes
- wheel spanner (60 cm)
- 2 tyre levers (2x 70 cm)
- mini axe
- machette
- saw for wood
- saw for metal with 2 new blades
- manual winch (2 T)
- pouley WARN for winching
- 2 steel cables with bukles (2 x 2 m)
- elastic towing strap (12 m)
- fixing straps (3 m)
- tyre pressure jauge
- 4 hooks with bolt (4x 10 cm)
- 3 snaps (3x 6 cm)
- 4 carrying catch straps (4x 10 m)
- portable working lamp (12 v / 21 W - 5 m)
- powerful torch lamp (12 v / 55 W)
- 2 electric starting cables with pincers (2 x 3 m / 400 A)
- box of sockets (4-19 mm & 5/32-13/16 ") with 2 ratchets & 1 driver
- set of open/close end wrenchs (6-7-8-9-10-11-12-13-14-17-19-22 mm)
- set of open end wrenchs (10:11-12:13-14-17:19 mm & 5/16:3/8-1/4:5/16-7/16:1/2-9/16:5/8 ")
- set of hexagonal allen wrenchs (1.5-2-2.5-3-4-5-6-7-8 mm)
- universal wrench
- 2 hammers (big & small)
- chisel
- multipurpose screwdriver with different heads & tools
- screwdriver with 5 heads
- 3 strong screwdrivers (philips, normal long & extra long)
- 3 mini screwdrivers
- grip pincer
- long nose pincer
- cutting pincer
- universal pincer
- pop rivet pincer
- electric pincer
- car electric pincer
- cutter STANLEY
- limer/granter
- set of bits (ø 2-10 mm + 1 conic ø 5-20 mm)
- set of screw heads (3x philips)
- steel pincer
- eyelet mounter

- electronic multimeter MICRONTA
- pair of tester wires for multimeter (2 x 1 m)
- 6 small crocodile pincers
- 6 banana cinches
- rolling meter (2 m)
- "pied coulisse"
- 4 pair of working gloves
- accu-drill BOSH (7.2 v)
- accu charger BOSH (220 v / 11 W)
- glue gun STEINEL Glufix 2000 (100-240 v / 50 W)
- soldering iron ENGEL-LOTER 60S (220 v / 60 W)
- grease gun
- silicone/mastic gun
- bench vice with rear hook mounting kit (2 bolts & nuts, wood & metal piece)
- tyre-to-tyre connection pipe

plus numerous spare parts:

- TDI engine block GKT kit LAND ROVER STC363
- LT77 gearbox (#50A0018496D) GKT kit LAND ROVER RTC6797
- transferbox GKT kit LAND ROVER RTC1557
- overhall GKT kit LAND ROVER STC3890
- 4 air filter LAND ROVER NTC6660
- 10 oil filter LAND ROVER ERR3340 & FRAM PH5443
- 6 fuel filter LAND ROVER 17EU2147L
- conveyor belt LAND ROVER ETC7939
- turbo pipe \varnothing 50 mm 90; LAND ROVER ESR2932
- turbo pipe \varnothing 50 mm 90; LAND ROVER ESR2934
- radiator/water pump pipe \varnothing 36 mm LAND ROVER NTC4895
- radiator/water pump pipe \varnothing 36/14 mm LAND ROVER ESR536
- injector spill rail LAND ROVER ERR3652
- oil seal \varnothing 155/155 LAND ROVER FTC3401
- 2 rear axle oil seal \varnothing 50/80 LAND ROVER AEU2515
- 2 front axle oil seal \varnothing 45/70 LAND ROVER FRC4586
- 2 front shaft oil seal \varnothing 28/52 LAND ROVER 571718
- 2 front hub oil seal \varnothing 33/49 LAND ROVER FRC3099
- 2 front/rear hub oil seal \varnothing 60/84 LAND ROVER RTC3511
- o'ring seal \varnothing 23/28 mm LAND ROVER NTC5171
- 3 axles & boxes drain plug LAND ROVER 608246
- fuel tank drain plug LAND ROVER NRC62
- gearbox filler plug \varnothing 20.5 mm LAND ROVER NTC4609
- TDI block drain plug
- 5 wheel nut LAND ROVER 90577473
- 4 flexible bush LAND ROVER ANR3410
- 4 flexible bush LAND ROVER NTC1772
- 4 flexible bush LAND ROVER NTC7307
- 4 front suspension arm-to-chassis bush LAND ROVER NRC4514
- injectors copper washer \varnothing 10/6 mm LAND ROVER ERR1304
- 2 TDI engine drain plug joint washer \varnothing 21/12 mm LAND ROVER 243958
- 2 oil filter joint washer \varnothing 28/19 mm LAND ROVER 213961

- 2 clutch master cylinder repair kit LAND ROVER 8G8837L
- 2 bolts ϕ 9.5 x 42 mm LAND ROVER 90576626
- 8 hub bearings LAND ROVER 18RTC3429
- 4 universal joints LAND ROVER RTC3346
- clutch kit LAND ROVER STC8358
- 2 bottom link-to-frame mounting rubber LAND ROVER NTC9027
- rear lamp lens (red)
- rear/front turn lamp lens (yellow)
- 6 tubes 7.50 x 16 TR15 KLEBER
- 2 front bulbs (12 v - 5 W) OSRAM 5007
- 4 rear bulbs (12 v - 5/21 W) OSRAM 7528
- 4 turn bulbs (12 v - 21 W) OSRAM 7506
- 2 head projector bulbs (12 v - 45 W) OSRAM 7301
- 4 H4 bulbs (12 v - 55 W)
- 2 H3 bulbs (12 v - 55/60 W)
- 2 TL lamps (12 v - 6 W)
- 2 roof bulbs (12 v - 10 W)
- roof bulb (12 v - 15 W)
- 4 electric relays (12 v / 30 A)
- 2 pairs of wiper rubbers
- set of fuses (5x 0.5, 5x 2, 5x 5, 10x 10, 10x 15, 10x 20 & 10x 25 A)

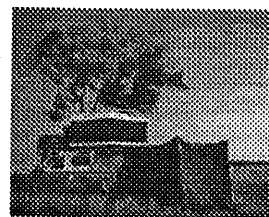
and a lot of repair material:

- universal glue tube
- contact glue tube PATEX
- 2-component glue tube BRIO
- silicone sealer tube LAND ROVER RTC3254
- set of electric wires (misc)
- steel wire (ϕ 1 mm x 10 m)
- steel wire (ϕ 3 mm x 3 m)
- fishing nylon string (ϕ 1 mm x 50 m)
- nylon string (ϕ 1 mm x 50 m)
- nylon rope (ϕ 3 mm x 5 m)
- nylon rope (ϕ 5 mm x 20 m)
- nylon rope (ϕ 7 mm x 20 m)
- nylon strap (20 mm x 5 m)
- silicone pipe (ϕ 10 mm x 10 m)
- rubber pipe (ϕ 13 mm x 50 cm)
- rubber pipe (ϕ 40mm x 50 cm)
- soldering wire (.5 mm x 25 m)
- fixing tape (40 mm / gray & black x 50 m)
- 2-side sticking tape (40 mm x 25 m)
- insulating tape (20 mm / black & yellow x 25 m)
- set of bolts - nuts - washers (ϕ 6 mm)
- set of bolts - nuts - washers (ϕ 8 mm)
- set of bolts - nuts - washers (misc : 6 mm > ϕ > 8 mm)
- 10 butterfly nuts (ϕ 6 mm)
- 50 screws for wood (misc)
- 50 screws for metal (misc)

- 10 nails (10 cm)
- 20 PVC glue bullets
- repair kit for tubetype tyre
- grease gun cartridges
- sealing fluid for radiator leak (2x 12 ml for 25 l each)
- hydraulic oil (2 x 250 ml)
- grease pot (500 g)
- silicone spray (200 ml)
- multipurpose lubricant spray (200 ml)
- piano hinge (30 cm)
- 10 iron flat & corner plates (misc)
- 2 rubber mounts (ø 40/10 mm) for exhaust pipe
- set of rubber clippers (misc)
- cable ring (ø 10 mm)
- 2 set of shock absorber mounting washers & rubbers
- 5 spare blades for STANLEY
- 2 spare blades for metal saw
- 4 switches (12 v / 30 A)
- 4 fuse bearers (ø 5 - 20 mm)
- 20 plastic clips (20 cm)
- 4 LED (12 v / red)
- 10 electric screw connectors (misc)
- 50 car connectors (misc)
- 10 screw clips (misc)
- 10 tube clips (misc)
- 5 springs (misc)
- 10 rubber sandows (misc)
- sunroof handle
- 20 S hooks (25 mm)
- 6 pipe connectors (misc)
- 20 goopils (ø .5-1-2-3-5 mm)
- 10 canvas eyelet (ø 20/10 mm)
- 10 curtain hooks
- 10 rubber eyelets (misc)
- gear box oil AIT70 (2 l)
- transfer box & axle oil SAE90 (2 l)
- motor oil (20 l)

🐾 Camping & Cooking ...

We designed the jeep to be comfortable and safe to drive, to live and to sleep. So we decided that the tent on the roof of the jeep should communicate with the cabin through the sunroof. As the entrance of the roof tent we received was on its longest side -- corresponding to the side of the car in the driving position -- we had to fix the tent on a swivel system made out of 2 marine wooden pannels. Thus in sleeping position, the entrance of the roof tent is just above the sun roof and can be sheltered by a waterproof canvas "tunnel". The



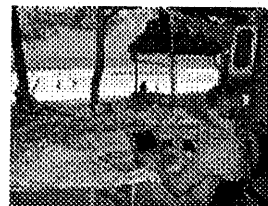
made-to-measure rear waterproof canvas tent attached above the rear door protects us from the rain, the sun or indiscreet looks. It can be closed on its 3 sides which can be opened independantly too. We installed a 100 l water tank in the middle of the cabin. Thanks to an automatic electric pump, we have a direct output and a drinkable output through a porous resine filter. Solar pannels charge an extra battery through a special regulator for the fridge, the computers and the lights. For cooking, we rely on a petrol stove.

Most of the gear below has been offered by Camping Relax & Siemens.

- roof camping tent MAGGIOLINA Family (210 x 165 cm - 75 kg)
- home-made tent entrance waterproof canvas tunel (100x100x80 cm)
- rear waterproof canvas tent (3x3x2 m)
- plastic water tank (75x40x35 cm - 100 l) with filling pipe & tap, level control pipe & output pipe
- automatic water pump FIAMMA Superflow S20 (12 V - 1.5 A - 6 l/min)
- water filter KATADYN HSFK
- 5 solar electric modules SIEMENS M55 (12 v - 53 W)
- solar charge regulator SIEMENS LR16 (12 v - 16 A)
- compressor refrigerator ELECTROLUX RB2265 (12 v or 110/220 AC - 7 A - 75 l)
- electric fan with thermoswitch ELECTROLUX (12 v)
- 2 folding chairs LAFUMA
- folding table
- duel fuel camplamp COLEMAN
- duel fuel campstove COLEMAN 424

Office ...

We are fully independant for several weeks, for example working on the preparation of our multimedia seminar on the marvelous beach of Zanzibar.



Our "mobile office" includes:

- laptop computer APPLE Macintosh PowerBook 540c - RAM 20 Mb - HD 320 Mb - internal 19.2 Kbps fax/modem with 100-250 v AC & 12 v DC power adapters
- laptop computer APPLE Macintosh PowerBook 165c - RAM 16 Mb - HD 240 Mb - internal 19.2 Kbps fax/modem with 100-250 v AC & 12 v DC power adapter
- external fax/modem SUPRA 288 28.8 Kbps with MNP 2-10 with 220 v AC power adapter
- portable inkjet printer Hewlett-Packard DeskWriter 310 with extra B&W & color ink cartridges & 100-250 v AC power adapter
- portable scanner PAPERPORT VX with 100-250 v AC power adapter
- optical drive FUJITSU 128/256 Mb
- CD drive (CD-ROM, CD-Photo & Music) APPLE PowerCD with 100-250 v AC power adapter
- multimedia projector IN FOCUS Lite Pro 550 with set of cables
- set of cables (SCSI, RJ11 phone line, RS232 serial...)
- portable satellite communication system THRANES & THRANES IMNARSAT Standard-C

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<http://www.biol.ucl.ac.be/gondwana/Gondwana.html>

Gondwana, the Art of Internetworking Global Information
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Regional Office
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