



a guide to
Land-Rover
expeditions

**A GUIDE TO
LAND-ROVER EXPEDITIONS**

**ROVER TRIUMPH—BRITISH LEYLAND UK LIMITED
SOLIHULL . WARWICKSHIRE**

INTRODUCTION

It is estimated that last year more journeys were made overseas by Land-Rovers than ever before. An even larger number of people will be globe-trotting this year, some for the first time, others who are now experienced travellers.

It is most important to organise your expedition by Land-Rover well ahead as detailed planning will save time, trouble and money later on.

Consequently these notes are offered for your guidance although of course every expedition will have its own individual requirements.

One thing is certain. Provided you maintain and service your Land-Rover with care, and treat it with respect, you will reach your destination.

THE VEHICLE

Vehicle Specification

Body Style

It is generally considered that a closed Land-Rover is most suitable for the long-distance traveller.

A station wagon or hard top on a short- or long-wheelbase chassis will not only be more dust-proof, but with locks and security catches fitted, pilfering is made more difficult.

However, if a hard top purchased in the U.K. is fitted with windows, V.A.T. and car tax must be paid unless the vehicle is to remain out of the country for at least 12 months. Also, tax is payable if the vehicle is sold within 24 months of its return to the U.K. irrespective of the age of the vehicle. Full information on this subject can be obtained from:

H.M. Customs and Excise
V.A.T. Office
Northgate House
1 Remnant Street
Lincolns Inn Fields
London WC2A 3JH

General

There is always a tendency to take too much equipment, thereby overloading the vehicle. The

recommended maximum axle loading, as specified in the Land-Rover Brochure, should never be exceeded. Remember, the more lightly laden the vehicle, the faster and more economical it will be. It is not recommended that a trailer be taken but if it is considered necessary, and cross-country travel is expected, the trailer should be fitted with as large a wheel as possible to reduce rolling resistance. It is a good idea to use the same size Land-Rover wheels and tyres as fitted to the vehicle. If consideration is given to a roof rack, it should only be used to carry bulky items evenly dispersed, the normal maximum loading being 150 lb (inclusive of the roof rack).

If the expedition is to a hot climate with a hard top vehicle a tropical roof is strongly recommended. Not only does it shield the vehicle roof from direct sunlight in daytime but it also retains heat during cold nights. Alternatively a complete station wagon roof assembly comprising roof (with Alpine lights and ventilators), tropical roof panel, trim and interior light can be fitted to hard top models.

If the Land-Rover is returning to the U.K. it is advisable to purchase a right-hand steering vehicle. There is no difference in cost between left-hand steering and right-hand steering if purchased in the U.K. It is therefore advisable if the Land-Rover is remaining overseas to purchase

a vehicle with the steering-wheel on the appropriate side.

It is recommended that no more than two or possibly three people should travel in a short-wheelbase, and no more than four in a long-wheelbase Land-Rover. By the time personal baggage is loaded the payload will be near the maximum limit. However, it is difficult to generalise and much depends on the itinerary and distance to be covered by the expedition.

Engines

Land-Rover engines in standard form can operate over an extremely wide temperature range, and for most expeditions modifications need not be considered. Certainly contrary to popular belief, oil coolers are not normally required on four cylinder models unless the vehicle is to be used to drive ancillary equipment whilst stationary.

The following ambient temperatures at which the standard vehicle can normally be started and operated are given for guidance:

Minimum: Petrol models -30°C (-22°F)
Diesel models ditto, subject to low temperature fuel being available

Maximum: 2.25 litre Petrol engine 48°C (118°F)
2.6 litre Petrol engine 45°C (113°F)
2.25 litre Diesel engine 40°C (104°F)

Note: These maximum temperatures are for a vehicle operating continuously at peak torque second gear high transfer (i.e. representative of a vehicle working in soft sand or towing a heavy trailer up a hill). Under lighter load conditions the Land-Rover can operate in ambients of about 50°C (122°F). When driving in high ambients the driver must always keep a watchful eye on engine temperature and coolant levels. If the vehicle is to be used to drive ancillary equipment, the Land-Rover Special Projects Department at Solihull should be consulted.

Except in Europe and areas with similar or lower ambient temperatures, six-cylinder models should be fitted with an oil cooler for expedition purposes.

A heavy duty cooling specification is available ex works for 2.25 litre petrol engined vehicles for use in ambient temperatures above 48°C (118°F). This comprises the fan, radiator cowl and shroud as fitted to 2.25 litre diesel units. It is essential to use high grade fan belts only with this feature.

Petrol versus Diesel

Advantages of the Petrol Engine

1. The petrol engine has a higher power and torque output.
2. The maximum speed is higher than that of the diesel.
3. A petrol engine is quieter.

4. It is generally more easily understood than a diesel.
5. A petrol Land-Rover is less expensive to purchase.
6. Petrol is a cleaner fuel than diesel and less pungent.

Advantages of the Diesel Engine

1. The diesel engine has no ignition system, which is an advantage when wading, and where there is a fire risk.
2. Diesel fuel is generally less expensive.
3. Fuel consumption is considerably better than that of a petrol engine.

Major oil companies can usually supply a list of petrol and oil prices appertaining to most parts of the world, and also indicate where fuel is difficult to obtain.

Preparation

Expeditions and long-distance journeys are best undertaken in a new Land-Rover, but if you decide to use a second-hand vehicle, it is essential that it be thoroughly overhauled and serviced by reliable mechanics before the journey starts. Although there are Land-Rover Distributors and Dealers throughout the world it cannot be over-emphasised that the further away from civilisation the more difficult and expensive it is to obtain spares.

Particular attention should be given to suspension and engine performance. Faulty suspension may, in the course of time, and depending on the nature of the terrain traversed, cause structural and mechanical damage. Reduced engine performance and poor compression may lead to other defects besides loss of power. Tell-tale oil leaks should be examined and rectified and all nuts and bolts securely tightened at the earliest opportunity. It is also desirable that drivers should possess sufficient mechanical aptitude and knowledge of their vehicle to perform servicing and repairs which will often have to be carried out in adverse conditions. A vehicle handbook and workshop manual should also be considered indispensable, and can be obtained from a Rover Dealer or Distributor. A list of overseas Rover Dealers and Distributors can be obtained from:

Technical Service Department
Rover Triumph—British Leyland UK Limited
Birmingham Road
Allesley
Coventry
Telephone: Allesley 3211

Vehicle Extras

When preparing a vehicle for an expedition we feel that the items in the following list of Land-Rover Extras are desirable.

Those items marked * are only required when arduous off-road conditions are contemplated:

- * 9 $\frac{1}{2}$ " diaphragm spring clutch (Standard on current models)
- Door locks
- Bonnet lock
- Locks for spare wheel on bonnet and rear door
- Lock for fuel filler
- De-luxe seats
- Spare wheel carrier on bonnet
- De-luxe trim for doors and floors
- * Capstan winch with 50 ft. of rope (preferably manilla, but keep it dry so that it does not rot)
- Covers for propeller shaft universal joints (for use in grassland)
- Cover for propeller shaft sliding joint
- Fire extinguisher
- Flyscreens for dash vents (Standard on current models)
- Gaiter for rear propeller shaft sliding joint
- Jerricans and fixing kit (in radiator recess or on tailgate if appropriate)
- Boomerang external wing mirror
- Heavy duty axle casings (standard on current models)
- Reverse lamp kit
- Seat belts
- Sun visors
- Towing and lifting rings
- Swivel pin housing gaiter set (for use in sand only)
- Wire-mesh guards for all lights
- Laminated windscreens
- Extra fuel tanks (available on special order only)

A full list of Optional and Proprietary Equipment and Specialist Conversions can be obtained from Technical Sales Department, Rover Triumph—British Leyland UK Limited, Lode Lane, Solihull.

Extra containers for petrol and water may be carried. Metal jerricans containing water can be fitted in the radiator recess, although this may interfere with the fitting of other equipment (winches, chaff guards, etc.). Jerricans cause a restriction in the flow of air to the radiator; consequently overheating may occur in very hot countries, so the driver must keep a close watch on engine temperature, this particularly applies to diesel and six-cylinder petrol models. Front-mounted jerricans should not be used to carry fuel due to fire hazard in the event of an accident. If jerricans are carried inside the vehicle they should be properly secured, care being taken with regard to the fire hazard. In some countries it is illegal to carry fuel inside the vehicle. Plastic cans should never be used for carrying fuel. The usual place for carrying extra fuel is in roof-mounted jerricans, but remember one jerrican full of petrol weighs approximately 50 lb. Provision should also be made for carrying an adequate supply of oils and distilled water, brake fluid, etc.

When extensive cross-country usage is contemplated with permanent payloads in excess of 500 lb (88 in. models) or 1,500 lb (109 in. models) we advise the use of heavy duty suspension. Under normal circumstances with a high proportion of light load duty on metalled roads, the heavy

duty suspension would be considered to give a harsh ride, returning from an expedition it may be preferable to refit the standard springs, etc.

A hydraulic steering damper is available to reduce 'steering kick'. This, however, is not necessary for normal road use.

Fit a propeller shaft universal joint cover for use in long grass. If the expedition will operate a great deal in sandy conditions fit swivel housing gaiters. After wading in mud or muddy water, cleaning out the brake-drums will improve brake lining life.

Chaff guards restrict the flow of air to the radiator, and consequently they should only be fitted when essential, e.g. when operating in long grass where seeds may clog the radiator.

All vehicles should be fitted with safety harnesses, and by wearing these cross-country, the driver will be held more firmly in the seat and so will have better control over the vehicle.

A horn emitting a loud and penetrating noise is often necessary in many countries.

Flyscreens on dash vents are essential in tropical climates (Standard on Series III models).

Locks on doors, spare wheels, petrol cap and bonnet prevent pilfering.

External mirrors of the boomerang type are advisable when baggage inside the vehicle is likely to obscure the driver's visibility.

On long journeys de-luxe seats greatly increase

comfort and provide improved support for the driver.

2 $\frac{1}{4}$ petrol engined vehicles have alternative carburettor jets available for prolonged use above altitudes of 5,000 ft.

However, when returning to low altitudes it is essential to refit the standard jet to prevent engine damage occurring due to the weak fuel/air mixture.

Painting the bonnet and top of the wings matt black can reduce dazzle in bright sunlight.

Tyres

The choice of tyres is a compromise as there is no one type suitable for all conditions. Consequently a tyre must be selected for the predominant terrain. Information regarding some Land-Rover approved tyres is given below:

Standard tyres—Suitable for all road and track
Dunlop RK3 or usage and cross-country terrain
Avon Ranger in favourable conditions.

Michelin XY —Road and track use together with hard, rough terrain.

Dunlop T28 —Rugged, rough terrain, mud and other difficult conditions.
and T29A
(Trakgrip)

Michelin XS —Sand, scrub and mud where high flotation is required.

On 88 in. models, fitting the 109 in. type 7.50×16" tyres and wheels can be advantageous, giving

higher overall gearing and increased ground clearance.

A spare wheel can be carried on the bonnet, the rear door, or on a roof rack bearing in mind that a spare wheel weighs approximately 75 lb. For rough cross-country driving the rear door is least satisfactory as in deep ditches the wheel may hit the ground and damage the door. Obviously it is most satisfactory to carry the wheel on the outside of the vehicle, preferably on the bonnet as this will assist weight distribution.

An extra inner tube and self-vulcanizing puncture repair outfit with a clamp is recommended. For emergencies sleeve patches are useful for making temporary repairs in case cracks develop in the tyre wall. Always use metal dust caps as unlike the plastic type these will form an air seal. Other useful items available from Schrader Ltd. are:

- 5-in-1 valve repair tool

- Valve core kit

- Spark plug air pump (Petrol models only).

The latter is extremely useful, as manually inflating large tyres in hot conditions can be very exhausting.

If driving in conditions where the night temperature is very low and mid-day temperatures are very high, set the correct pressures before starting off in the morning and do not bleed the pressures during the day. Damage could result. Pressures will return to normal when the temperature drops at night.

A 20 per cent overload can reduce tyre life by as much as one-third!

General

A tow rope (tested to at least 2 tons) and a shovel are recommended. An extra fold-up trenching tool is light and takes up little room. Towing points on the front and rear of the vehicle are very useful.

Some expeditions have found a hand throttle useful, especially when covering long distances over bad country. This is standard on diesel Land-Rovers.

A winch will be found most useful in an emergency. Trees, rocks, a 'dug in' spare wheel, or some other form of anchorage are of course necessary adjuncts in winching. Our front capstan winch with 3,000 lb pull generally satisfies all expeditions' needs for self-recovery, obstacle removal, etc. The winch is protected by a shear pin to prevent damage through overload. Remember to take several spare shear pins. A drum winch, although easier to use, is much more expensive and is heavier than the capstan winch. When fitting a winch it is also advisable to fit diesel front springs.

A fire extinguisher of at least 1 kg capacity and preferably larger is essential and should be stowed in an easily accessible place.

For improved ventilation the top half of each front door can be removed by undoing two nuts.

If long distances on good road surfaces are envisaged, free-wheeling hubs may be considered. The function of these hubs is that of reducing the rolling resistance of the vehicle when four-wheel drive is not required. They isolate the front wheels from their drive shafts and transmissions both in forward and reverse directions.

If severe sand storms are encountered the grille should be covered to prevent radiator blockage by sand. Also cover the windscreen since sand abrasion could turn it opaque.

Tools

All Land-Rovers have the following tool kit:

- Licence holder
- Wheel brace
- Double lifting jack, shaft and handle
- Tyre pump, hand operated
- Tyre pressure gauge
- Grease and oil gun
- Starting handle
- Tool roll
- Combination pliers
- Screwdriver, $\frac{3}{8}$ " blade, $9\frac{3}{8}$ " long, Standard and Phillips
- Spanner, $\frac{3}{16}$ " \times $\frac{1}{4}$ " Whitworth
- Spanner, $\frac{5}{16}$ " \times $\frac{7}{16}$ " Whitworth
- Spanner, single-ended, $\frac{3}{8}$ " Whitworth

Spanner, $\frac{5}{16}$ " \times $\frac{3}{8}$ " AF (bleed screw for DPA pump, Diesel only)

Spanner, $\frac{7}{16}$ " \times $\frac{1}{2}$ " AF

Spanner, $\frac{11}{16}$ " \times $\frac{3}{4}$ " AF

Spanner, $\frac{5}{8}$ " \times $\frac{9}{16}$ " AF

6" adjustable spanner, large, $1\frac{1}{2}$ " adjustment

Sparking plug spanner and extension (Petrol models only)

Box spanner

Tommy bar

For travelling off the beaten track the following extra equipment is worth taking:

Set of socket spanners

Electrical screwdriver

Valve lifter or spring compressor

Pin punch

Feeler gauges, 0.0015" to 0.025"

Hammer, 1 lb

Large 'Mole grips'

Chisel

Small magnet with bar

Hand drill with bits

Brake bleeding kit

Inspection lamp and extension lead

Steel tape (metric and imperial)

Hacksaw and spare blades

Flat file, smooth and rough

Round file

Box spanner, $1\frac{1}{8}$ " \times $1\frac{1}{4}$ " Whitworth

Oil can

Box of assorted nuts and bolts, screws and jubilee clips

Length of electrical wire and electrical connectors
 Large flat metal drip tray for mechanical repairs
 Long nose pliers
 Roll of electrical insulation tape
 Roll of masking tape
 Tyre levers
 Puncture repair outfit or spare inner tubes
 Radiator sealer (emergency use only)
 Assorted strands of welding wire
 A hydraulic jack may be substituted for the standard jack
 Flat plates to support jack on soft ground
 An axe.
 Length of flexible petrol pipe
 Penknife.

Distributor cover	1
Rotor arm	1
Condenser	1
Coil	1
Petrol pump (electrical or mechanical)	1
Fan belt	1
Flexible petrol pipe	1
Brake fluid	1 can
Bulbs	1 set
Wiper blade	1
Exhaust valve	1
Puncture outfit	1
Schrader valves	2
Fuses	1 set
Set of water hoses	1
Oil filter and joint washer	1

Spares

Spare parts will depend on the age and type of Land-Rover. For touring, the following lists may be of assistance:

Petrol Touring Pack

Description	Quantity
Decarbonising gasket set	1
Spark plugs	1 set
Spark plug covers	2
Spark plug cover seals	2
Distributor contact set	1

Diesel Touring Pack

Description	Quantity
Decarbonising gasket set	1
Fuel lift pump	1
Fan belt	1
Flexible fuel pipe	1
Brake fluid	1 can
Bulbs	1 set
Wiper blade	1
Exhaust valve	1
Puncture outfit	1
Schrader valves	2
Fuses	1 set
Set of water hoses	1

Oil filter and joint washer	1
Injector	1
Heater plugs	2
Fuel filter element	1

For more ambitious journeys Rover will provide a suggested list of spares on receipt of the following information :

- Engine number
- Chassis number
- Date of first registration
- Type of Land-Rover
- Destination
- Duration of expedition

Enquiries should be directed to Technical Service Department, Rover Triumph—British Leyland UK Limited, Birmingham Road, Allesley, Coventry.

Maintenance

Routine inspection of the vehicle should be carried out right from the start. Daily checks are advisable, for a few minutes spent checking the tightness of nuts and bolts can prevent major difficulties later.

The Handbook for the appropriate model of Land-Rover indicates the full scope of routine checks and lubrication to be carried out and these should be adhered to. More frequent inspection of sparking plugs is recommended in countries where only inferior grade fuel is available. Remember, in such countries it may be necessary to retard the ignition in accordance with the details given in the Instruction or Workshop Manuals. Lubrication checks must be scrupulously observed since failure to do this may cause irreparable damage. If sandy conditions are encountered, more frequent oil changes are recommended. Fuel obtained in these areas is frequently dirty; a filter should be used when filling the tank.

Garage and service facilities in most undeveloped countries usually fall short of British standards. Mechanics are often quite good, though it is advisable to supervise all repairs carried out. In many countries the village blacksmith is the only person who can undertake structural repairs; it is surprising at times how effective they can be. Since spare parts may be hard to come by, improvisation must often be resorted to.

HINTS ON CROSS-COUNTRY DRIVING

When a Land-Rover is used on cross-country it is most important that regular inspection and maintenance are provided. Wear and tear is greater than on normal roads, and although the increase

can be kept to a minimum by a good driver, special attention must be paid to ensure that the vehicle is operating correctly.

The following notes are intended to give guidance

on some of the more important aspects of driving technique which in the end, of course, only experience can perfect.

1. Adopt a relaxed, upright sitting position ensuring that the safety belts are correctly adjusted and maintain a firm grip on the steering-wheel. However, do not attempt to "fight" violent steering-wheel movements but allow the wheel to slip through your fingers.
2. Never wrap your thumbs round the steering-wheel rim. If the vehicle hits an obstacle the steering-wheel could be jerked so hard that the spokes could catch and break your thumbs. Many people have learnt this the hard way.
3. It is generally desirable to use four-wheel drive in conditions of poor adhesion. When the low range of gears are selected four-wheel drive is automatically engaged. Contact between the right foot and the adjacent body (side) panel will improve accelerator pedal control.
4. Where the conditions are soft, i.e. marsh or sand, reduced tyre pressures will increase the contact area of the tyres with the ground. This helps to improve traction and to reduce the tendency for sinking. Tyre pressures should, of course, be brought back to standard when such situations have passed.
5. Where conditions appear particularly difficult the shape of the ground surface, possible obstacles, and a selected path may be dis-

covered by a preliminary survey on foot and thus chances of damage and 'bogging down' are reduced.

6. Before attempting a difficult section select a suitable gear and remain in it whilst crossing. For most purposes second gear low range is very practicable.
7. Keep the application of the clutch and brake pedals to a minimum.
For descending steep and slippery slopes first gear should be selected and the engine allowed to provide the braking retardation. This it will easily do without the assistance of the brakes. Braking on slopes can induce sliding and loss of control.
8. Exercise care in applying the accelerator pedal as sudden power surges may induce wheel spin.
9. The momentum of a fast-moving vehicle will overcome drag and reduce the traction needed from the wheels. When it is clear that no obstacle is in the way to cause damage, a fast approach to steep slopes, soft sand, waterlogged sections, etc., is very often most effective.
10. Bearing in mind the action of differentials, select a path so that the condition under each wheel of the same axle is similar.
The same applies in assessing the correct angle of approach to an obstacle so as to avoid wheels being lifted off the ground.

11. Be aware of the need to maintain ground clearance under the chassis and a clear approach and departure angle. Avoid existing deep wheel ruts, sudden changes in slope, and obstacles, etc., which may cause interference with the chassis and/or differentials.
12. The maximum advisable fording depth is $1\frac{1}{2}$ feet (0.45 metres). Before fording make sure the clutch housing drain plug is in position and, if the water is deep, slacken off the fan belt and avoid overspeeding of the engine to prevent saturation of the electrical system, although if the exhaust pipe is submerged engine speed should be high enough to prevent stalling. There are many water-repellent agents on the market which are extremely effective in protecting the ignition system.
13. After being in water, make sure the brakes are dried out immediately, so that they are fully effective when needed again. This can be accomplished by driving a short distance with the foot brake applied. Also remove the clutch housing drain plug. If the ford has been unexpectedly deep, check the air cleaner for water ingress.
14. Should it be found that the vehicle is immobile due to loss of wheel grip, careful thought and practical experience will usually provide the solution to this problem, but improved driving technique will in itself

ensure that such instances are kept to a minimum or avoided completely. Certainly a little practice before leaving on a journey does not go amiss. The following hints will be useful:

Where the vehicle is fitted with a winch the recovery becomes relatively straightforward. Avoid prolonged wheel spin. This only makes matters worse. Additional resistance to the spinning wheels must be provided by some means.

Attempt the removal of any obstacles, i.e. rocks, parts of trees, etc. This may also involve the clearing of earth piled in front of the wheels, bumper or the chassis.

Part or complete removal of the payload, or the equalizing of front and rear axle loads, can improve traction.

If the ground condition is very soft, reduced tyre pressures may give an improvement in adhesion.

Clogged tyre treads should be cleared.

Reverse as far as possible; the momentum gained in going forward again may get the vehicle over the obstacle.

Brushwood, sacking, or any similar 'mat' material placed in front of the tyres will help in procuring tyre grip. If necessary, jack up the vehicle to place material under the wheels.

15. In soft sand or marsh conditions avoid following the tracks of the preceding vehicle.

16. It is of note that when negotiating difficult country two vehicles are better than one as they can assist each other, particularly if one

or both are fitted with winches. Always get one vehicle across an obstacle before attempting with the second.

GENERAL INFORMATION

Visas

In some countries travel and visas are restricted. If you have doubts you should check with the Embassy concerned **WELL IN ADVANCE** of your departure date. Also vehicle carnets are required before entry is permitted to some countries: e.g. Iran requires 25 per cent of the value of the vehicle. Carnets are obtainable through the R.A.C. or your local Chamber of Commerce. Also make enquiries regarding unusual local entry regulations.

Information concerning visas, health and currency regulations, customs and climate etc., can be obtained from a booklet entitled *Guide to International Travel* available from: ABC Travel Guides Ltd., 33-40 Bowling Green Lane, London EC1.

Routes

Transcontinental routes are many and varied. Seasonal changes in weather will have a marked bearing on which route to choose. It is advisable to ascertain the best time of year to travel to your

destination as some roads are impassable during the rainy season. Delays due to weather conditions which follow a pattern are most frustrating. A compass is a useful item to carry.

International road information can be obtained from the two motoring organisations whose addresses are as follows:

Royal Automobile Club

Touring Services

P.O. Box 92

Croydon

Surrey CR9 6HN

The Automobile Association

Overseas Touring

Fanum House

Basingstoke

Hants.

Local permission is occasionally required for some routes and may vary according to the season, e.g. the north-south route across the Sahara.

All expeditioners are strongly advised to make themselves acquainted with the basic motoring laws of the various countries as an offence can be

committed unwittingly, and in some countries the penalties for motoring offences can be very severe.

Maps, etc.

These organisations are also able to advise concerning maps appropriate to the journey, but the following are especially recommended:

Bartholomew's World Series, scale 1 :4,000,000
G S G S Map, scale 1 :1,000,000
Carte Michelin.

Embassies, Consulates and High Commissions often issue tourist maps and supplementary information of interest and use.

Photography

Most travellers take a camera with them. A photographic dealer can offer the best advice on equipment. However, the following tips may be of help.

Be fully conversant with all your equipment and correct any faults before you leave. Please read the instruction book before you leave, not when you come back.

Insure your equipment adequately.

For 35 mm users a 36 exposure cassette is no larger than a 20 exposure cassette.

Excessive heat, sand or dust, and water, particularly sea-water, can quickly damage your camera and films. A polythene bag offers general protection, but remember that changes in temperature

may cause moisture to condense on the inside of the bag. This danger may be eliminated by use of silica gel crystal sachets which absorb the moisture.

Have exposed film processed as soon as possible to prevent deterioration. This is particularly relevant in humid conditions. Films purchased abroad can be of a different process rating to that supplied in Great Britain. Consequently, before developing, ensure that the correct rating is used for development.

If you intend to expose a large amount of film and are unable to have it processed on your travels, it is advisable to see the results of one early reel to confirm that your camera is working properly and that you are judging the exposure correctly.

Keep sensitized materials in the manufacturers' containers as long as possible. Some customs checks use infra-red/X-ray detectors, and these can damage film negatives, so care must be taken.

Particular care should be taken of lenses, since they are more likely to be contaminated with airborne grit under tropical conditions. A lens cap should be used when not filming. Plain glass in a filter mount is a permanent lens protector.

To get the best use out of your camera take plenty of pictures. The more you take the more proficient you become, and you may never be there again.

Remember, in some countries even the most innocent of buildings or structures can be classed

as 'of strategic importance'. Also, some peoples object to having their photographs taken.

It may be cheaper to purchase photographic supplies in some foreign countries rather than in the United Kingdom.

Domestic

Land-Rover travellers are usually campers, and adequate equipment is therefore necessary. This will naturally depend upon the size of the party and its field of operation. Consequently an exhaustive inventory for all possible contingencies would involve too long a list. However it is emphasised that weight and space are important factors. If in doubt don't take it.

Care should be taken when loading the Land-Rover to ensure correct balance. An even weight distribution should be aimed for. Remember, rattles and clanks are infuriating, so plan the stowage carefully.

Some suggestions are as follows:

A gas cooker of adequate size is probably the best type to use. A large gas reservoir will last for weeks with normal use. Petrol stoves are almost as convenient and fuel is more readily available, it being possible to commonise with the vehicle supply. Unbreakable, light plastic containers and polythene utensils should be carried and glassware avoided.

An inflatable or Dunlopillo mattress and a light

camp (Safari) bed are both comfortable and demand little stowage space.

Lightweight, good-quality sleeping bags are usually as warm as the heavier and bulkier ones. Choose a bag with a side zip for ease. Washable bags are now available. Remember, when, appropriate check your sleeping bag for spiders, scorpions, etc., before using it, and also look in your shoes before you put them on in the morning.

A canvas groundsheet is useful for effective repairs under the vehicle in adverse ground conditions; as a sunshade or windbreak; or to lash down stores on the roof.

Creaseless and non-iron clothes are a great boon, and present-day materials afford a combination of convenience and sartorial elegance. They must, however, possess the stamina necessary to withstand really hard wear and be appropriate to the climatic conditions expected.

Paper towels are more hygienic than cloth towels where laundry facilities are limited. Don't forget the toilet rolls!

A length of clothes line and pegs should be carried. Elastic straps are very good for lashing down equipment inside the vehicle. A roll of strong string is also very useful.

Large Thermos containers for hot food or cold drinks are most useful, but secure them properly.

A lockable container bolted securely to the vehicle can be used to carry valuables and documents.

A convenient way of washing clothes whilst travelling is to put them in a waterproof, sealed container in the back of the vehicle with a suitable amount of water and washing powder. After 100 miles they should be clean! Water for rinsing must of course then be available.

Food and Health

Rover has sought the advice of its Medical Officer on this section but the information given is for guidance only and is not intended to be comprehensive or necessarily applicable to everyone. For more specific advice the reader should consult his doctor, who from his own knowledge or by contact with one of the Schools of Tropical Medicine or specialised units in the country, will be able to amplify any of the points raised.

In the same way as an efficient and well-equipped vehicle inspires confidence, so foresight can allay any anxiety about your health whilst you are abroad and thereby add appreciably to your enjoyment of the trip.

Water

As a guide to the quantity to take, well organised expeditions in hot desert areas allow approximately two gallons of water per person per day.

Food

There is no need to be unduly squeamish about eating strange dishes as they are usually prepared from the staple food of vast populations and can be eaten with enjoyment and benefit, provided certain precautions are observed. Generally all hot, well-cooked food is harmless; on the other hand cold food should be viewed with suspicion in hot countries. Such things as shellfish, salads and ice-cream are best avoided. Make sure that all food is fresh when purchased and cleaned before being eaten.

Only a limited quantity of tinned food should be carried as an emergency supply because of the weight involved. An insulated box can be used to carry some foods or keep drinks cool, although small portable 12-volt refrigerators are now available for those who like 'Scotch on the Rocks'.

Health

BOWEL UPSET

However much care is taken, this remains one of the commonest hazards of journeying abroad. If in doubt, water should be boiled before drinking and the same applies to milk. One tablet of Streptotriad taken twice a day is a useful precaution, increasing the dose to three, three times a day if trouble arises. In hot climates it is essential to maintain a high fluid intake and at the same time imperative to take additional salt.

IMMUNISATION

Immediately you learn that you are going abroad you should consider your state of immunisation in relation to the countries that you will be visiting and calling at *en route*. The best people to advise on this are your doctor, the R.A.C. and A.A., shipping companies and airlines, or the Embassy of the country concerned. Frequently these immunisations are left until the last minute which can result, for example, in there being time for only one injection against cholera instead of two, or a successful vaccination against smallpox may manifest itself at an inopportune time. If you are likely to be called upon to go overseas as part of your routine duties it is well worth while to adhere to a comprehensive and regular schedule—by so doing your immunisation levels are kept at a peak and last minute panic is obviated. Immunisations generally may be divided into the obligatory and the optional but the latter can often be looked upon as a good investment especially for the seasoned traveller and the unpleasant but short-lived reaction to a T.A.B. injection, for instance, is a small price to pay for the immunity conferred. Remember to present your International Certificates to the doctor for signature and make sure that they are countersigned by the local Medical Officer of Health.

SUNBURN

Beware of the sun, particularly if you have a fair skin, until you have had time to acquire a protective

tan. Reflected sunlight from the sea, light sand or snow is a frequent source of trouble and it is not appreciated that sitting under an awning does not offer the protection it would appear to do.

A multitude of skin preparations are on the market for the prevention and treatment of sunburn—of these Sol Tan cream for application before exposure and After Sun lotion later are probably as good as any. Considerable work has been done in recent years on the use of oral preparations to combat sunburn and for anyone who is especially susceptible Sylvasun (a vitamin A compound) can be taken in a dose of two tablets at night for prevention, increasing if necessary to two tablets hourly until relief is obtained. For the highly sensitive individual a barrier cream such as Uvistat is indicated, the only objection to this being that it prevents tanning altogether. Whilst on the subject of the sun, remember to take a good pair of polarised sun-glasses.

MALARIA

This disease is still endemic in many parts of the world and if your journey is to involve even a transient stay in a malarial zone you should take a tablet of Paludrine twenty-four hours before you are due to arrive and then continue with one daily until a month has elapsed after leaving the area. In addition the usual anti-malarial precautions should be observed during the hours of darkness. These include mosquito-proofing and the use of an insect repellent such as Flypel.

SNAKE BITE

The danger of snake bite tends to be exaggerated. First aid treatment consists of reassurance and aspirin, at the same time covering the site of the bite with a handkerchief or cloth. It should not be cut or sucked as these measures may introduce infection and incisions may produce bleeding or damage to important tissues. The amount of venom which has been injected can be judged by the presence or absence of swelling at the site ten minutes after the bite. Even if swelling is present there is no need to do anything further unless there is likely to be a delay of at least one hour between the occurrence of the bite and the provision of medical treatment. If local swelling has appeared and medical treatment cannot be started within the hour a firm but not tight, repeat not tight, ligature should be applied a few centimetres above the swelling using cloth or a handkerchief. It should be left on until the victim reaches the nearest hospital. Also, the affected limb should be moved as little as possible to inhibit the spread of venom. If possible try to identify the snake, as it will help the doctor to find the appropriate antidote.

FIRST AID KIT

Take with you a small but adequate kit including a supply of sealed sterile dressings of various sizes, eye pads and Micropore Tape. In addition, several tins of 3" Elastoplast which should be kept

in as cool a place as possible, triangular bandages for use as slings and an antibiotic preparation such as Fucidin ointment. A book on First Aid should be included and kept readily available.

GENERAL COMMENTS

Obviously when you are away and travelling in remote areas good medical care is unlikely to be near at hand. If you are prone to any particular ailment and know from experience that this responds to a specific drug, make sure that you provide yourself with an adequate supply as this may be difficult to obtain or marketed under a name which you do not recognise.

Finally, if you develop any illness after returning from abroad make a point of telling your doctor where you have been as this may give a clue to the diagnosis or the line of investigation indicated to try and establish it.

FINANCE

Adequate currency should, of course, be carried. American Express or Cook's cheques are commonly recognised by most foreign banks, sterling bank-notes and dollar bills command ready acceptance. Always make a note of travel cheque serial numbers and keep this separately, revising it as the cheques are used. Then if the cheques are lost the appropriate company can be immediately notified giving details of the serial numbers. In a few remote areas only hard cash will be accepted ;

however, the overseas department of your local bank will be able to offer sound advice with regard to finance generally. The free market rate of exchange in some countries often differs appreciably from the official bank rate and whilst profitable results are to be had through dealing in this market, travellers should be aware that it is illegal and could lead to serious consequences. However, you should always know the official bank rate of countries to be visited as it is often more advantageous to buy foreign currency in some countries than others.

For costing purposes it can be taken that the four-cylinder petrol Land-Rover fuel consumption should be in excess of 15 m.p.g., the six-cylinder petrol 10 m.p.g., and the diesel at about 20 m.p.g. These figures include an allowance for the arduous conditions an expedition might encounter. Oil consumption for an engine in good condition should be better than 250 miles per pint.

Embassies and Consulates

British representatives abroad will always assist in an emergency. This does not extend to lending money to disorganised travellers who cannot afford the return fare to the U.K. Adequate funds must always be reserved to get you home from wherever you are; you may have to return in a hurry.

Documents

Particulars of insurance and documentation of the vehicle can be supplied by the A.A. or R.A.C., who have this information readily available. They can also advise concerning visas, and it is desirable to have all papers in order before starting the journey to avoid subsequent inconveniences and delays. Where any doubt exists concerning visas, the appropriate Consular Authorities should be consulted.

Passport Photographs

A small supply of passport photographs should be included since various countries, Afghanistan, for instance, require travellers to fill in supplementary forms on arrival for circulation and route permits, and possession of photographs of the right size will forestall possible delays.

Vehicle Purchase

Land-Rovers are available through the Personnel Export Department at Solihull or from a Land-Rover Dealer. Home or Export Dealer address books are available from Technical Service Department (see page 5).

It should be noted that the factory does not deal in secondhand vehicles but a Land-Rover Dealer will be able to give advice regarding vehicle choice, availability and purchase.

Insurance

Arranging Land-Rover insurance outside Europe is a complicated business. It is advisable to consult an insurance broker, as few insurance companies offer cover.

Comprehensive cover, if obtainable, would be exorbitant but third party excluding passenger liability need not prove too expensive. Passengers and valuables can be covered under separate policies.

Sponsorship

The Land-Rover has been associated with expeditions for many years and the publicity we can gain from these and similar ventures is now very minimal. Consequently, as a rule any request for monetary or material assistance will not be considered.

As a guide when approaching a potential sponsor ask yourself if you are offering him value for money. There are few philanthropists in the world!

Language

The ability to say a few words in the native tongue goes down very well with people, who will be more willing to help when required. A phrase book can be of assistance especially in times of 'need'.

Further Information

Further information and advice is available from:

1. Public Relations Department at Solihull.
2. Publishers of the *Quest* Magazine:
Duckhams Oils
Summit House
West Wickham
Kent BR4 0SJ. Tel. 01-777 0600.

Also advice, guidance, selected reading lists and many other services are available to members of:

The Young Explorers Trust
c/o Mr. A. B. Ware, O.B.E.
Brathay Hall
Ambleside
Westmorland.



**ROVER TRIUMPH—BRITISH LEYLAND UK LIMITED
SOLIHULL WARWICKSHIRE ENGLAND**

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