

Robison on Rovers

Factory Recalls, Air Conditioning and Cooling Tips, Summer Maintenance for Land Rovers, and hints for Successful Vehicle Resuscitation when flooded.

Welcome to the fourth installment of Robison on Rovers in the Rovers North News.

Many of you have read my posts on the Rovers North and DiscoWeb bulletin boards, and some have corresponded with me on various topics. For those who don't know me – I manage J E Robison Service – on the web at www.robisonservice.com – an independent Land Rover specialist shop in Springfield, Massachusetts. I've worked continuously with Land Rovers since their re-introduction to North America some fifteen years ago. In my column, I can answer your questions at greater length than is possible on the bulletin boards. Each issue, I will take on a few of the interesting questions I receive or will address a topic of interest to Land Rover owners.

I am a longtime Land Rover owner. I've had many Land Rovers over the years, and currently have a 2000 Range Rover P38A, a 1996 Discovery I, and a 1966 Series. My father has a 1995 Range Rover Classic, and my brother has a 2003 Discovery II. So we're a Land Rover family.

If you have questions or issues you'd like discussed email: robison@robisonservice.com

Greetings to all of you in Land Rover land!! The weather is certainly better than it was for my last column. I hope you have been able to get out in the warm weather and take your Land Rover through some trails and swamps this spring. Look for the red Robison Service Discovery on trails throughout New England this summer – maybe I'll see you out there!

Preparing for Summer Driving

In this summer issue I will tell you about some recalls that may affect you, and I have some tips on taking care of your cooling system and air conditioner in the hot weather. Before taking your Land Rover on the highway this summer I suggest you check these things:

Are your tires in good shape, and free of nails, cuts, or sidewall damage? A blowout on any sport utility is a serious matter, and the summer heat is hard on tires. Are your tires inflated properly? Tires that don't have enough air in them will overheat, and in the summer they will blow without warning. Remember that most Land Rovers need 8-10psi more air in their rear tires for optimum stability on the highway. Check your vehicle to be sure.

Are all your fluids full? The stress of driving in summer is hard on lubricants. I recommend synthetics because of the extra margin of safety they provide if things go wrong. Don't believe synthetics are safer? Check this out: A customer of ours was in Newport, Rhode Island for the weekend. He had an oil cooler line blow out and lost all his oil. The light came on and the engine started rapping but it was a Sunday so he drove it home. After driving 200 miles he drove the vehicle to us Monday. After fixing the leak and filling it with oil the customer kept this vehicle two more years. The engine never failed, despite running 200 miles without oil. Why? Because we had filled it with synthetic oil all its life.

Is your cooling system working properly? Does the temperature gauge sit solidly in place no matter what or does it creep up in traffic? If it creeps up on a 100,000 mile vehicle that's a sign your radiator is getting clogged. A clogged radiator puts great strain on other systems – replace it before you have a failure.

Also make sure your electric fan is working, and make sure the engine driven fan works properly. Be sure your cooling system is full of the proper coolant – most Land Rovers take the traditional green coolant. Newer trucks use the orange Dex-Cool. Make sure you use the right coolant for your Land Rover.

Are your belts in good shape? Look for cracks and tears on the inside, and replace the belts if you see problems. The serpentine belts used on newer vehicles are more reliable but they still require replacement at 30-50,000 mile intervals. Watch for noise from the idler rollers on all Land Rovers – the rollers on 1999 and newer vehicles are particularly prone to get noisy. A noisy roller will turn into a failed roller one day with no further warning, and at that point you will be walking – so don't neglect them. 1999 and newer Rover engines were built with plastic tension rollers. The metal replacement roller (RNH356) is much more rugged.

Check the condition of your water pump. Land Rover water pumps tend to get a little loose in the shaft before failure. If you feel any play in yours, change it now. If you are near 100,000 miles and the pump is original, I would replace it now regardless of play.

While you are checking the water pump take a look at the viscous coupler. There is some confusion about these parts – they are not vicious. They do not attack. They are viscous. They turn sluggishly. At least, they are supposed to. Furthermore, while we are talking about viscous couplers – there are two of them on Range Rovers. The other one is inside the transfer case connecting the front and rear drive shafts. We're not talking about that one in this article.

So when the fan couplers – also referred to as fan clutches – fail, they stop turning sluggishly. Sometimes the unit gets wobbly and falls apart. Sometimes they lock up solid and spin all the time when the motor turns. Sometimes they spin freely because the viscous fluid has leaked out. If any of these things have happened to your coupler, replace it. There is a special tool available from Rovers North (RNVT001) that simplifies removal.

Is your air conditioner working right? In particular, make sure the electric fan under the hood is running whenever the AC is on. If the electric fan does not come on, you can overheat in traffic. Also make sure the condensate drains under the car are working. On a humid day look

under the car between the front seats. You should see a steady drip of clear water. If not, slide under the car with a piece of wire and clear the drains. Watch out for a gush of lukewarm water when you poke the wire up the drain tubes!

Finally, how's your battery looking? If you see corrosion or furry growth around the terminals that's a sign that your battery is releasing gases, either because it is failing or because your vehicle has a charging system problem. Batteries in modern cars tend to fail without warning. Therefore, I suggest replacement of a 3-year-old battery as a preventative measure. Land Rover recommends Interstate batteries for many of their applications. Interstate stamps the production date into the battery case near the top. The year is the middle figure. For example, a battery with A2T stamped in the plastic case was made in 2002.

Some news on Recalls - Fuel tank problems

Land Rover has determined that the plastic fuel tanks fitted to Range Rover Classic and Discovery models from April 1993 to November 1996 are prone to develop cracks and leaks. Land Rover believes that somewhat fewer than 10% of the vehicles in the time range mentioned will develop this problem.

Cracks can develop at the plastic weld joints such as the filler pipe stub, the vent hose fitting, or the ring on the top where the pump is fitted. Land Rover believes the problems are aggravated by heat and humidity, so users in cooler, drier areas may not notice these problems.

Your Land Rover may have a tank problem if you notice a fuel odor, particularly after filling up, or if you notice fuel leakage in the tank area.

As of this writing (June, 2004) Land Rover is working to build a supply of new fuel tanks to support this recall. Land Rover anticipates that notification of owners and replacement of tanks will begin later this year. Land Rover owners who believe they may have a fuel tank problem can obtain more current information by calling Land Rover customer assistance directly at (800) 637-6837.

In addition to the upcoming recall above, Land Rover had a recall on the metal gas tanks fitted to 1987-1989 Range Rovers sold in North America. The bottom seam on those tanks rusted and they began dripping fuel. Most older Range Rovers have already had fuel tank replacements under this recall.

Additional Recalls you should know about

Land Rover has identified three problems that could affect 1999 through 2004 Discovery II models. If you own one of these vehicles you should be receiving notice of the recalls below. If you purchased your vehicle used, and do not receive a letter I urge you to contact your nearest dealer to have the issues addressed. You can locate the nearest dealer by calling (800) 637-6837.

Certain screws holding together the ABS modulator valve cover can crack from stress. If this happens your vehicle could be considerably harder to stop. All Discovery II models are subject to this recall. This recall is referred to by dealers as **B148**.

Land Rover has found that some vehicles experience throttle sticking as a result of a machining error in producing the throttle housing. If your throttle sticks, remember that the brakes can still stop the truck, but it will be harder to control. All 1999 and newer Discovery models should be inspected for this. This campaign is referred to as **B150**, and it replaces an earlier recall, D117.

Finally, vehicles with active cornering enhancement (ACE) may develop a problem with fluid leakage at the pump. This leak could result in a fire. This recall is **B149**.

[Editor's note: To find out more information about the recalls listed above or to determine if there are outstanding recalls for your vehicle you are not aware of, please visit the National Highway Traffic Safety Administration at www.nhtsa.dot.gov. In addition to a wealth of safety information, you may enter your vehicle model and year, and the site will find and list any applicable recalls.]

Air conditioning – Problems and Solutions

This is the time of year when Land Rovers with weak or non-existent air conditioners start appearing at our shop. I'd like to tell you about a few things you can do to check and service your system.

Air conditioning works by transferring heat from one place to another. Refrigerant is pumped in a loop by a compressor. The refrigerant "transports" heat from one area of the system to another. Specifically, the heat inside the car flows into the evaporator unit in your dash, and it is released under the hood by the condenser. The compressor moves the refrigerant around, and the expansion valve regulates its flow. A final component – the receiver drier – removes moisture from the system and filters the refrigerant.

Vehicles built before 1995 used R12 refrigerant. R12 is no longer produced because it damages the atmospheric ozone layer. The current replacement is called R134. If you have an older Land Rover that still uses R12 you can have it converted fairly easily to R134. In most parts of the country, conversion costs less than \$250.

Most problems with air conditioners stem from one of two causes – leaks or electronic control troubles. Here are some tips that may help if your Land Rover has A/C trouble this season.

Your A/C condenser is a radiator-like unit located in front of the coolant radiator, behind the grille. There are three problems you should know about that relate to the condenser.

First, condensers are prone to develop leaks. If you remove the grille and fans you can often see condenser leaks by the traces of refrigerant oil that surrounds the leak. Condensers develop leaks where the inlet and outlet pipes connect, and they also develop leaks if they are hit by small stones coming through the grille or if the paint gets chipped and they corrode from winter salt. This is a particular problem in New England.

Second, condensers are prone to get clogged with leaves, bugs, and debris. A clogged condenser will not work well, and may cause your Land Rover to overheat because air flow to the radiator is blocked.

Third, the condenser cannot shed heat from inside the vehicle if the underhood area is too hot. This can happen if the electric cooling fans fail, if the radiator is clogged, or if the vehicle runs hot for any other reason.

New Land Rover products use pollen filters to remove dust from the incoming air. When these filters clog it strains the blowers, and, in some cases, will cause failures. Change them whenever they are dirty – every 20-50,000 miles depending upon local conditions.

Land Rover air conditioning systems are either manually controlled or electronic, depending upon model. All Discovery I ('94-'99) and Range Rover Classic models use manually controlled heat and air conditioning. Discovery IIs ('00-'04) and P38A Range Rovers ('95-'02) use electronic systems. The Discovery II system signals a problem by sounding "beep beep beep" when started, and the AUTO display flashes for 20 seconds. The Range Rover P38A system signals a problem by displaying a notebook symbol in the bottom right corner of the control panel.

Discovery II fault codes may be read by an owner, but specialist tools may still be needed to fix the problem. Range Rover P38A codes can only be read with the Land Rover specialist test systems (the dealer TestBook or T4, or the aftermarket Rovacomm, ROVACOMLITE, or Autologic.)

Here is how to read codes in a Discovery II:

1. Switch the ignition OFF
2. Press and hold AUTO and AIR DISTRIBUTION
3. While holding these buttons switch the ignition ON

The fault codes will flash in the left hand window of the climate control panel.

Here are the possible codes:

- 00 – No fault
- 11 – in car temp sensor fault
- 12 – ambient temp sensor fault
- 13 – thermistor fault
- 14 – heater coolant temp sensor fault
- 21 – sunlight sensor left side fault
- 22 – sunlight sensor right side fault
- 31 – left hand temp control servo fault
- 32 – right hand temp control servo fault
- 33 – air distribution servo motor fault

Owners of P38A Range Rovers can't read codes at home without a diagnostic tool as mentioned above, but there are a few things you can do:

If your air conditioner comes on, but then gets warm after a little while check your compressor. If the clutch is not engaged but the system is on tap the end of the clutch (the part that isn't spinning) with a ball peen hammer. If it snaps into engagement, shut the vehicle off and check the gap between the two clutch plates on the compressor. This gap can increase with age to the point where the compressor will stop engaging reliably. You can usually fix this by removing a shim from shaft after removing the outer clutch plate.

If your fans do not blow at high speed open the fuse box behind the battery and pull out the yellow relays one by one. Inspect them for brown discoloration and replace any damaged ones. These relays are a common cause of blower trouble.

If your system is adjustable on one side, but not the other – meaning one side is stuck on hot, cold, or somewhere in between you probably have a bad servo motor set. Land Rover sells these servos in sets of three (left, right, and center blend). A VERY resourceful owner could replace these items at home, but most people will do better to find a specialist. This repair takes most of a day to complete.

Charging air conditioners

All Land Rovers (and all other cars sold in America, for that matter) have labels under the hood giving the capacity of the air conditioning system. It is very important that you maintain correct refrigerant levels when repairing your air conditioner.

Something most people don't realize: A system that is 25% low on refrigerant will have 90% or better cooling capacity. Most people won't even know it's low. But a system that is 25% overfilled will lose more than 50% of its cooling capacity!! In this case, more is not better.

For that reason you should always evacuate the system and fill with the correct quantity of refrigerant following repairs. That's the only way to be sure the level is right.



Some watery off-road tips

If you plan to take your Land Rover wading, I suggest you buy 2 tubes of dielectric grease and pack all the under-vehicle electrical connectors. This will help keep water out and increase the chances your Land Rover will keep running when the water gets deep.

Despite this, your Land Rover may one day come to a halt in deep water. The advice below may save you thousands of dollars.

As the water swirls around the debris on your floor you may be wondering what to do. The first thing to do is shut off the key. Just as in a sinking ship, the rising water will short your electronics if they are powered up. Wait for the water levels inside and outside the vehicle to equalize, then open the door and exit the vehicle. If you were smart you attached a recovery strap before entering the water. If not, you will now have to dive down and attach one.



When diving under water to attach the strap, you foolishly left off remembering that some snakes and alligators can bite underwater. Most leeches are harmless, even though the blood-filled slimeballs hanging from your legs look repulsive. Some less intrepid Land Rover drivers may even wish to shut off the key, climb on the roof, and await rescue.

Once you drag your truck from the water, open the doors and tilt it to both sides to drain the water. Leaving the doors closed while the vehicle is in the swamp will minimize the chances that reptiles and fish will take up residence inside during the submergence. If the area is well traveled, I strongly suggest removal of the vehicle as soon as possible, as an abandoned, half-sunken Land Rover will be an irresistible target for vandalism.

Remove the engine ECU, CD changer, and other flooded devices from under the seat. Open the cases and wash with clean tap water. Then rinse with distilled water. Then blow dry with compressed air and spray with electric contact cleaner to clean and dry all the wire harness connectors, especially the big ECU plugs. Finally, apply dielectric grease to all contacts and reassemble.

Remove the carpets and spray with Fantastik or 409 or similar cleaner. Scrub hard with a brush, then rinse with a power washer or the spray at a self-serve car wash. Allow to dry in the sun and refit. Clean the mud from the subfloor first.

If your Rover has stereo speakers down low in the doors, you'll probably be needing new ones now.

There is at least a 90% chance this process will get you going with no damage, as long as you are able to resist the temptation to start the vehicle as soon as it comes out of the water. Remember, thoroughly dry everything first before attempting to restart your Land Rover.

See you in the fall.

John Robison

The Solihull home page

Land Rover Announces 2005 G4 Challenge

08 June, 2004. From the jungles of Southeast Asia to the high plains of South America; The 2005 Land Rover G4 Challenge promises to be even tougher and more spectacular than the inaugural 2003 event. This time the action starts amongst the intensity of Bangkok city, and ends at high altitude on the plains of Bolivia. In between lie thousands of miles of vehicle-based adventure, strategy and sweat, with a new Range Rover as the ultimate prize.

All Land Rover models will be used during the 2005 Challenge, including the all-new Discovery 3, as well as a fifth vehicle that is yet to be announced. These near-standard vehicles will form the base of operations for the competitors as they bike, climb, kayak and 4x4 drive their way towards victory. Painted in a custom orange body colour, the vehicles will not only carry an array of equipment that will aid the competitors in their global quest for victory, but will also form an integral part of the competition, with daily 4x4 driving challenges.

"The first Land Rover G4 Challenge proved itself as one of the toughest, most spectacular adventure challenges in the world," says Matthew Taylor, Managing Director, Land Rover. "Its authenticity and global reach allowed us to prove that Land Rover is synonymous with adventure. And in 2005 we will be doing it again."

Working in bi-national teams, men and women representing 18 nations will pit stamina and skill in an arena stretching across four countries on two continents, over a four-week period in October 2005. From June 21, 2004, would-be competitors can apply online at www.landroverG4challenge.com, or complete an entry form at a local dealer.

With many thousands of entries expected, each nation will hold a National Selections even, in order to identify its top three competitors. These competitors then go through to International Selections, which will be held at Eastnor Castle in the U. K. Ultimately, only one competitor will be chosen to represent his or her nation in the 2005 Land Rover G4 Challenge.

During the 2003 Challenge, former fighter pilot Rudi Thoelen made history by becoming the first winner of the Land Rover G4 Challenge. The Belgian's resolve, driving ability, stamina and mental agility were the key elements that put him ahead of the pack.

"I had nothing left at the end," says Thoelen of his victory. "The Challenge pushed me further than I had ever pushed before. It is a tough test of both body and mind. And I can still hardly believe that I won it!"

The following nations will be represented during the 2005 Land Rover G4 Challenge:

Argentina, Brazil, Germany, Italy, South Africa, Taiwan, Australia, Chile, Costa Rica, Greece, Japan, Spain, Turkey, Belgium & Luxembourg, France, Ireland, Netherlands, Russia, and the United Kingdom.

Employees of Land Rover, Ford or its agencies are not allowed to enter the Challenge.

Ford Threatens to close Solihull plant if Quality does not Improve

28 May, 2004. Ford has again threatened the possible closure of Land Rover's Solihull manufacturing facility if quality does not improve. Yesterday, Ford's most senior executive in Europe, Mark Fields, spoke frankly to management and unions at the Lode Lane Facility.

"You have just eight weeks to save your jobs" was the message to Solihull's 8,000 plus workforce. Mark Fields demanded that both unions and management deliver a "road map" by August for big improvements to bring the plant up to world-class standards.

The unions agreed to draw up a joint "road map" with management, from which, will provide changes at the factory to match the performance of Jaguar and Volvo plants within three years and a promise to be in the top five in the annual JD Power quality survey.

Matthew Taylor, managing director of Land Rover said, "This is pretty much crunch time for Solihull."

When asked what would happen if the work force was unable to meet new standards, Mr. Taylor said, "Nobody is contemplating such a scenario. If we are unable to produce a plant that has world class standards, investment decisions will be made on where we are and inevitably it will mean the steady decline of investment coming into the plant and put pressure on long term viability."

Land Rover is predicting the market for global sports utility vehicles will grow by 40 percent over the next five years.

Land Rover at Solihull is seen as an integral part of Ford's Premier Automotive Group with a long and proud history. Following yesterday's meeting the trade unions said they are confident it will have an equally bright future.



The new LR3 G4 – ready to play

Early press photos of the LR3 in Southeast Asia (Discovery 3 to the rest of the world) set up for the 2005 G4 Challenge. Accessories include a custom raised air intake, roof rack and rear ladder, winch bar with integrated winch, underbody protection, and front and rear light guards. Not available to the public yet, the LR3 G4 kit is a good indicator of how the newly designed LR3 will look when ready for the trail.

