LAND ROVER SOLIHULL WARWICKSHIRE ENGLAND
Association of Land Rover Owners of Canada

OTTAWA VALLEY LAND ROVERS

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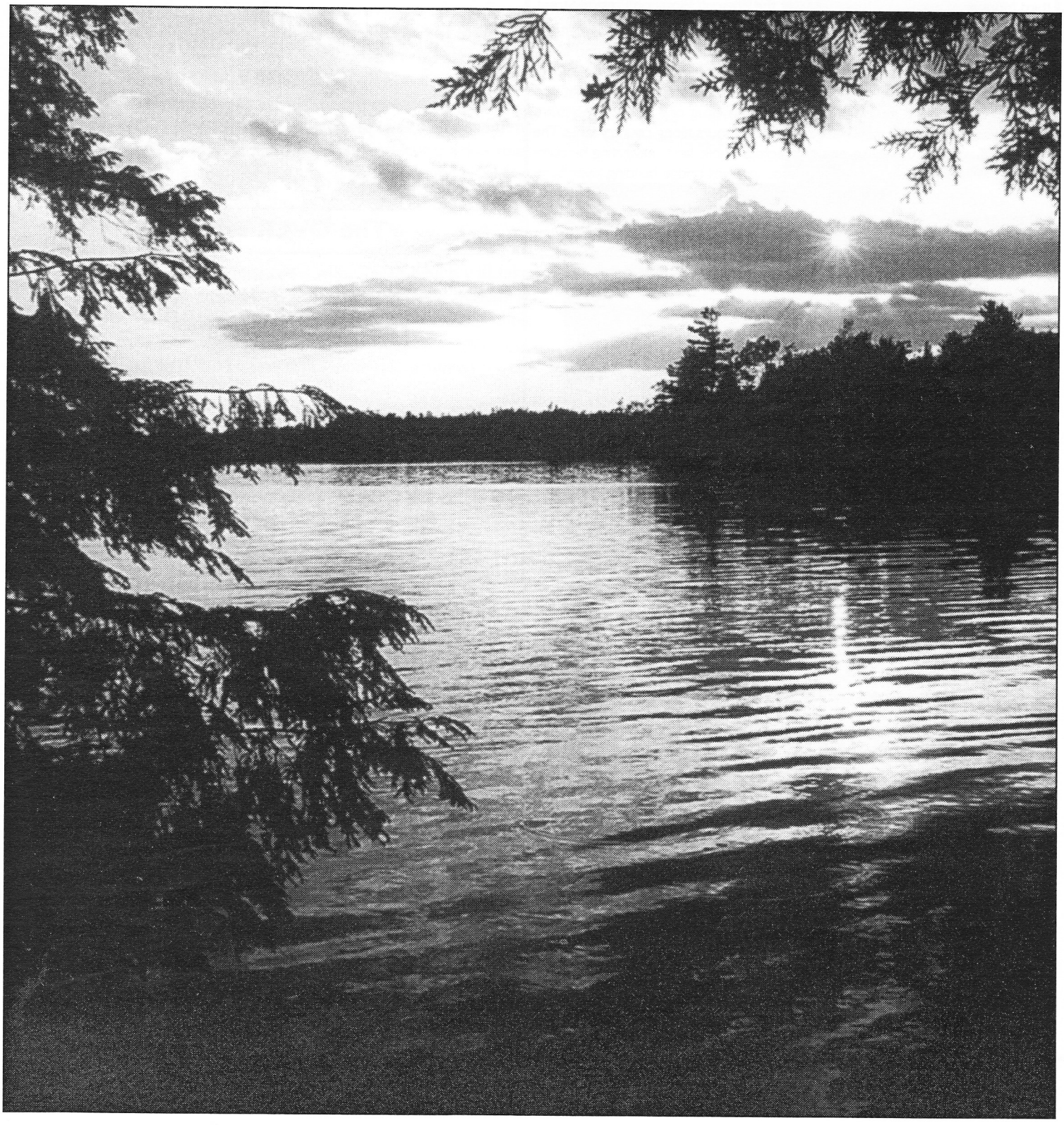

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General Information

Ottawa Valley Land Rovers is the oldest and largest Land Rover club in Canada. Membership is open to all Land Rover enthusiasts. Executive meetings are held on the first Monday of every month. Social meetings are held on the third Monday of every month, generally at the Prescott Hotel on Preston Street.

OVLR offers a monthly newsletter and a variety of activities throughout the year, from mechanical seminars and off-road rallies to social events and family oriented outings. Members receive discounts on parts from a number of North American suppliers. Off-road activities come in several categories. The light version, which is usually entertainment during a rally or at one of our family summer events, consists of a little "mud bogging" or tours along country lanes. The heavy stuff, which is usually several days across public lands navigating by compass, topographical maps and aerial photos, involves bridge building, river barging, and driving conditions ranging from cedar swamp to rocky hill winching.

Membership: Canadians joining throughout the year pay CD$30 per year, Americans and others pay US$25 per year. membership is valid for one year.

The Ottawa Valley Land Rovers Newsletter

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is published twelve times per year for club members. The editor welcomes submissions of text and photographs for publication.

Submissions: Articles may be submitted to the Editor, Dixon Kenner (dkenner@fourfold.org) or via post, to the club address. Photographs should be sent directly to Spencer Norcross at **1631 N. Barton Street, Arlington, VA 22201, USA.** Please include captions and a return address with photographs.

Deadlines: Submissions to the OVLR Newsletter must be received by the first of every month for inclusion in that month's newsletter. All items submitted for publication should be legible and signed. Names maybe withheld at the request of the writer. This is your newsletter. If you wish to write anything, we welcome your input of any kind.

Editorial Policy: The Editor of the OVLR newsletter reserves the right to edit any submitted material for space and content considerations. Articles, statements, and opinions appearing in the OVLR newsletter do not necessarily reflect the position of the officers, board of directors, members of the OVLR, or its sponsors or advertisers. Where specific data regarding operation, safety, repairs, or legislation are concerned you are advised to obtain independent verification. The Club, officers, and contributors can accept no responsibility for the result of errors or omissions given in this newsletter or by any other means.

The OVLR Newsletter

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OVLR Radio Frequencies:

VHF: 146.520
CB Radio: Channel 1
FRS: Channel 1 sub 5
Shortwave: 14.160Mhz

More details regarding Land Rover events can be found at:
http://www.ovlr.org/OVLR.events.html

Land-Rover FAQ:
http://www.lrfaq.org/

OVLR/Land Rover HAM:
14.160Mhz @ 01:00GMT Tuesdays

"If you took a look at some of us... Well, hell, we *are* fanatics!
On my last review at work my boss put down that I was a 'Land Rover *Zealot*'."
– Mike Loiodice

Greetings;

Nothing much really to report after producing three newsletters in quick succession. February will have a number of annual tables. The membership list will appear in the February issue along with the various financial statements presented by the Secretary-Treasurer at the Annual General Meeting this coming Wednesday.

For some trivia for 2000, Spencer Norcross and I, with legions of help from a lot of contributors and people at the stuffings managed to produce (albeit hugely late at times...) three hundred and nine pages of newsletter over the year. This is an increase from two hundred and sixty pages in 1999. (899.5 megabytes of newsletter) Be forewarned, such output is not sustainable without your help! To encourage some of you budding photographers, who ever gets a photo on the cover of the newsletter, we'll send you a OVLR window decal with your newsletter. Not much I know, but something!

In other trivial, yet bottom line news, Communist Post has upped the rates again. Postage is up by twenty four cents for domestic mail, or ninety four cents an issue. When OVLR first started sending out newsletters, we spent seventeen cents an issue. For those outside Canada, postage is up sixty cents to the United States, and by a dollar eighty to the UK on an annual basis.

In General Servicing you will find an article about how to trace your chassis number via several different routes. Of these different methods, an interesting one is through Land Rover Traceability at Lode Lane. They will enclose with their response, on Land Rover letterhead of course, a photocopy of the log book showing what other Land Rovers were build at the same time as yours and where they went. Why do I mention this? Well, Ben Smith and I are asking people to send us a copy so we can put this information into the Land Rover FAQ at www.lrfaq.org.

other News, Rebuilds/Projects, Lies, Rumours, Trivia

From the Editor: Hey, we are finally catching up now that things are settling down on the US election front, and my French course is hopefully drawing to a close in the next month or so.

The Production Team for the November newsletter was quite extensive! Fred Joyce, Murray Jackson, Bruce Ricker, and Andrew Finlayson rounded out the team of veterans who helped initiate new "volunteers" into the circle. Peter Gaby, Shannon Lee Manion and Roy Parsons all put in appearances and worked diligently. We found that four people can take upwards of three hours to put one of these suckers to bed, while with eight, we can get it done in an hour and a half! With all of the spare time Fred, Murray, ndrew and Peter launched into an extensive discussion about all of the arcane ways that automakers have gone to create new, and innovative ways to change gears. From the Renault Dauphin, to the magic wand in the early Mini, to the through the dash variety found on the Renault R4, as well as a pile of other cars I have never heard of... In other trivia, Francois Juneau didn't make it, thus missing out on a Unimog manual Bruce found, and it was Bruce's birthday.

December followed down the chute a couple of days later, but it was after this newsletter was fired off to Washington, DC for all of the production magic that Spenny bestowes upon this effort.

Peter Gaby did relate one misfortune recently that he was worried was potential award material, but was quick to point out that it happened with his old Jag. Seems he was undercoating it just prior to the onset of whitness and managed to get much of this undercoating on his overalls. No big deal, this is what overalls are for, right? Well, recently he had to do some cutting with a grinder. Said resulting sparks were busily flying at his overalls, which we recall are coated in undercoating. Upon finishing cutting he felt something warn below the belt. Yep, the overalls had kind of caught fire. Happily Peter is a very fast undresser, or has presence of mind, unlike one nameless soul who had a fire in a similar sensative place and put the fire out by patting *ahem* it hard. *ouch*!

For those interested in seeing what Spencer's new Land Rover looks like, and have a copy of the January Land Rover World magazine, check out page 76. The PA Blanchard ad in the January LWM has a picture of "65 IIA, prepped to customer's spec. Destined for USA".

This Month's Cover:

The calm before the storm, Silver Lake, Saturday afternoon.
Photo: Bill Maloney

Upcoming Events

in the next month or so...

February 5	**Executive Meeting**
February 19	**Social at the Prescott,** Preston Street, Ottawa
February 16-19:	**The Winter Romp,** Unity Maine
March 5	**Executive Meeting**

future events:

(Dates & times subject to change)

April 9	**Executive Meeting**
April 23	**Social at the Prescott,** Preston Street, Ottawa
April	**The Maple Syrup Rally**

MAINE WINTER ROMP

February 16-19

The Maine Winter Romp is an annual "informal" gathering of Land Rover owners and enthusiasts hosted by Bruce Fowler. Set in Unity, Maine during the Presidents' Weekend, the Romp provides a non-competitive opportunity to test your Rover and driving skills in conditions that can be rather extreme. The event is generally non-damaging (though of course accidents can happen) and there will be experienced offroaders available to provide guidance to novices.

This years Winter Romp will also host the second ever North American Land Rover Polo match. For some interesting photos and video of the first match, please visit RoverPolo.org.

There is no charge for the event itself, but there will be a moderate collection for various meals. You can view an itinerary and list of equipment, download or print a registration form or see a list of local lodgings. If you have any questions, contact Bruce: bf71iia@mint.net, or check out the Winter Romp Web Page at http://www.roverpolo.org/winter_romp/intro.html

Friday 16 February

1200 - 2200 Pick-up reg. packet at School St. Variety
1900 - Unity public supper
2100 - Late night off roading

Saturday 17 February

0700 - 0900 Catered Breakfast
1015 - Registration / Romp Briefing
1030 - Morning off roading through the Maine woods.
1300 - 1430 Catered BBQ Lunch
1500 - Off Road Course
1800 - Dinner at Unity College Student center.
2030 - Late night off roading

Sunday 18 February

0800 - 1000 - Catered Breakfast
1100 - Rover Polo
1300 - Catered Lunch @ polo site
1400 - Rover Polo Finals
1500 - Heavy off roading
1900 - Dinner location TBA

Monday 19 February

1000 - Breakfast @ Big G's
1100 - Raid Marden's industrial complex

Equipment List:

Recovery points on your vehicle! Please dress appropriately, conditions might be cold & wet - probably both. Broom of choice for Rover Polo. Tools, Flat shovel, tow strap,1st aid kit, spare tire, compass, full size blanket, etc.

A reponse from Niall Forbes! "Oh man, loose lips everywhere. I can't talk to anyone. I think it's being blown all out of proportion. I don't know what the big deal is, just because I had one loose lug nut.

OK, here's the whole story. During the Moose Trophy, as I was headed in to town on Saturday morning for breakfast, I noticed a vibration in the front end. "Oh, must be mud on the tires throwing the balance off". So I, uh, sped up to try and knock it off. It seemed to work, sort of. Well, as I was driving down the main road, the vibration was getting worse. More of a wobble really but I was almost there. Finally I pulled over, because something was definitly wrong. To my astonishment I saw that all the lug nuts save one were missing on the drivers side front wheel. The remaining nut was held on by about two threads! I walked to the diner and told my sorry tale. Gerald Rudderman happened to have a box of brand new lug nuts that he very generously gave to me. I borrowed a jack, and then a wheel wrench (*can you tell how well prepared I was?*) and put the wheel back on. I went on to the diner and ordered breakfast.

From the table in the corner where Jeff Berg and Bruce Fowler were sitting I heard "Hey Niall, are you an OVLR member? We think you should join..."

Anyway, I've heard all of the awards have been handed out for this year so I should be safe, right? (*The OVLR Supreme Court is expected to be handing down a ruling on the statute of limitations for truly lugnuttable crimes sometime in the near future—ed.*)

Since the report from the AGM will not appear until next month, the exceptionally curious can look on page 2 to see who is taking what position in the new Executive.

New Members

3 new members this month

Wayne Robinson of Oshawa, Ontario, with a 2000 Disco, a 1994 D90, and a 1984 SIII 109

Tom Bache of Avondale, Pennsylvania, with a 1997 Disco, and a 1957 SI 86

Pierre Deschamps of Ottawa, Ontario, with a 1994 LWB RR

Some Non-OVLR News & Rumours

Newsletters recieved recently: The Rover Reference from the Bay State Rover Owners Association, (Volume 9, Number 3); The Greenlaner from the Southern Land Rover Association (November 2000, Volume 5, Number 2); The newsletter of the Speciality Vehicle Association of Ontario (November 2000); and the Review from the Land Rover Owners of Victoria (September 2000)

A note from a fan over in the UK: Princess Anne's daughter has recently stuffed her new Land Rover Freelander through a dry stone wall and parked it on its roof, the local garage says she drives just like her mum and they are looking at getting rich keeping her in spares.

Alan Richer contributes an interesting web site. It lists the BCI group size chart for auto batteries: http://www.rtpnet.org/~teaa/bcigroup.html

A note received by the club: Dear fellow Land Rover lover: A group of us, based out of Toronto (Canada), are planning a trip up the East side of James Bay to within 150 Km (100 miles) of Hudson's Bay. Some of us did a similar trip up the west side of James Bay two years ago.

Our current plan is to drive as far north as you can drive in this part of the continent beginning in mid-February,2001, for either a 10-day or a 14-day (you choose) tour, visiting historic former trading post locations,a polar bear sighting excursion, ending up in Radisson, Quebec (Canada), then turning east to the caribou herding area.

Total trip distance from Toronto is approximately 4200 KM (2700 miles).The region is also accessible via Montreal. Today's temperature is -29 degrees celsius (about -15 F)up there. It can get colder.

Motel/Hotel costs C$40-$72 (US$28-$50) per night for basic accomodation; gas could be up to 90 cents per litre.

This will be an exciting and beautiful trip, but space will be limited due to limitations re local accomodation. Vehicle condition and cold weather servicing and cold weather gear are a consideration. For more information, E-mail me for a larger detailed file, including map.

General Servicing: Repairs, Humour, Tales & Trivia

Chassis numbers

Compiled with the help of various club members

Chassis numbers on Land Rovers can lead to you obtaining quite a bit of information on your vehicle. On the other hand, if you own something like a IIA where the serial number prefix didn't change for years what you learn maybe limited. However, these tables form a guide to seeing if your serial number is actually correct and what you may have (Is it a CKD? et cetera). Under these pages are specific build information for Land Rovers where known for specific serial numbers sequences.

The Land Rover FAQ also includes information on General Information/Decoding or what does your chassis number mean; Chassis numbers in Alphabetical Order; Chassis numbers for a given type of Rover; and by year or so you really think your Land Rover was built then... There is also a VIN Registry for NAS Defenders.

Getting build Information If anyone wishes to obtain build information on when your vehicles was started on the production line, when it got off, what colour is was and where it was dispatched to, you can write Land Rover in the UK. Allow three to four weeks to get a response. Please send a copy of the build record to the Editor at the OVLR mailing address! The address for Land Rover Traceability is:

Mr. Eric Pagan, Project Eng.,
Traceability,
Land Rover,
Lode Lane, Solihull,
West Midlands,
B29-8NW,
England.
Tel: 0121 700 4524

You can also write British Motor Industry Heritage Trust for production records. BMHIT offers a production record certificate. If you have a car of one of the makes below, the archive can research the details from the original production records for a fee of L20.00. Most records date from the post-1945 period. Obtain a production certificate application form from the reading room and return it with your cash or cheque (made payable to BMIHT). We regret that credit cards are not acceptable. Please allow 28 days from the application for the delivery of your certificate.

Austin, Austin-Healey, Land Rover, MG, Morris, Riley, Rover, Standard, Triumph, Vanden Plas, Wolseley

They also offer a Statement of origin. If you only require confirmation of the year and place of manufacture of your vehicle in order to re-register it with the DVLA or to clear customs on re-importation, this alternative service is offered for a fee of L10.00. BMIHT's statements of origin and full production certificates are accepted by the DVLA as authenticated documents from the manufacturer (Rover Group). Please allow 7 days from your application for delivery of your statement.

A final certificate available is Technical data certificates. These specialised certificates are offered to clients wishing to import an older car into certain European countries. The cer-

Scenes from the first Jeff Berg Birthday Offroad
Photo: Bill Caloccia

tificate details the technical data required to meet the relevant import regulations and costs from L30.00 (depending on the country). Please allow up to 2 months from your application for delivery of this type of certificate.

Heritage Motor Centre
Banbury Road, Gaydon
Warwickshire, CV35 0BJ
Telephone: (01926) 641188
Fax: (01926) 641555
Web: http://www.ipl.co.uk/MG/heritooa.htm

Tracing British MoD Vehicles To do this, you need to contact the Vehicle Research Department at the Museum of Army Transport in Beverley. They're very helpful, and for GBP 12.50 will send you a copy of what information they can find. Ideally, you should send them the military registration and chassis number. If you have both, you should be sent a copy of the vehicle record copy detailing regiments and battalions... If it isn't British Army (eg. RAF), then they'll pass the address of the relevant RAF contact to you (I'm guessing it's at the RAF Museum in Hendon). If they can't find any information, they'll return your cheque. The address and telephone number (an International extension will be required, for you people in the States - the UK International Code is 44)

Vehicle Research Dept,
Museum of Army Transport,
Flemingate, Beverley
East Riding of Yorkshire
HU17 0NG
Tel. 01482 860445
web: www.museum-of-army-transport.co.uk/

Registration Letter Suffix and Prefix List

Frank Elson

Below is the Reg letter list. It starts in 1963 when the letter began to denote the year, before that numbers/letters had a different meaning. Then in July 99 it went daft again and I haven't finished putting those letters together - cars that new aren't a lot of interest to us yet! There's a brand new system coming out this spring so I'll not update it until then. It changed from January/December to Aug/July in 1967 because car sellers complained that most of the cars sold in a year were in January. It has changed again because, surprise surprise most of the new car sales were in August...

Suffix letters:

A.. Jan 63 - Dec 63
B.. Jan 64 - Dec 64
C.. Jan 65 - Dec 65
D.. Jan 66 - Dec 66
E.. Jan 67 - Jul 67
F.. Aug 67 - Jul 68
G.. Aug 68 - Jul 69
H..Aug 69 - Jul 70
J.. Aug 70 - Jul 71
K.. Aug 71 - Jul 72
L.. Aug 72 - Jul 73
M.. Aug 73 - Jul 74
N.. Aug 74 - Jul 75
P.. Aug 75 - Jul 76
R.. Aug 76 - Jul 77
S.. Aug 77 - Jul 78
T.. Aug 78 - Jul 79
V.. Aug 79 - Jul 80
W.. Aug 80 - Jul 81
X.. Aug 81 - Jul 82
Y.. Aug 82 - Jul 83

Prefix letters:

A.. Aug 83 - Jul 84
B.. Aug 84 - Jul 85
C.. Aug 85 - Jul 86
D., Aug 86 - Jul 87
E.. Aug 87 - Jul 88
F.. Aug 88 - Jul 89
G.. Aug 89 - Jul 90
H.. Aug 90 - Jul 91
J.. Aug 91 - Jul 92
K.. Aug 92 - Jul 93
L.. Aug 93 - Jul 94
M.. Aug 94 - Jul 95
N.. Aug 95 - Jul 96
P.. Aug 96 - Jul 97
R.. Aug 97 - Jul 98
S.. Aug 98 - Jul 99

Scenes from the first Jeff Berg Birthday Offroad
Photo: Bill Caloccia

Tricking the Alarm

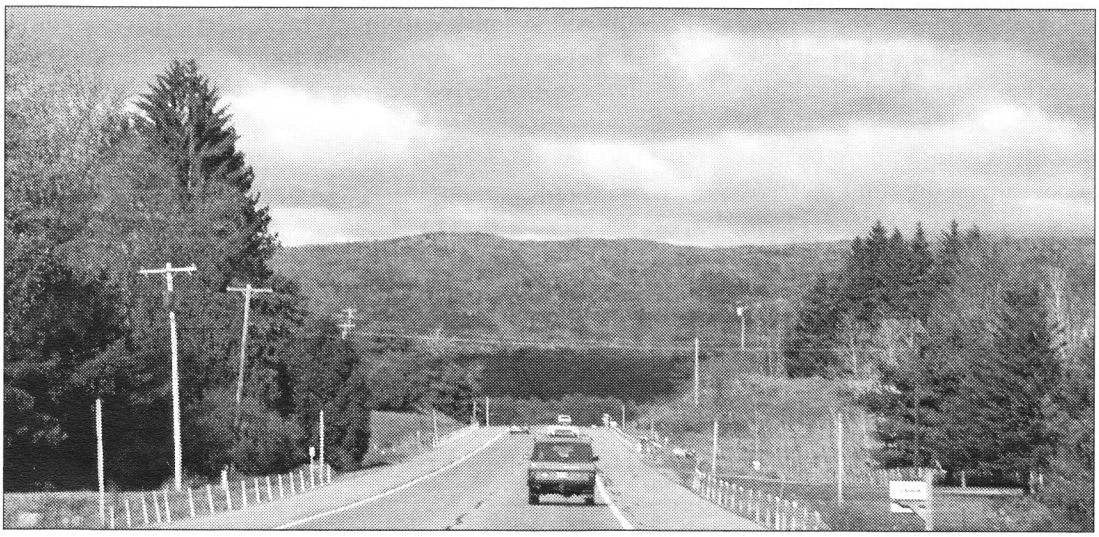
Ben Smith

Last Friday was a bad day. After putting in 16 hours at work, I left the office around 2am to get in the Disco and head home. I had with me one of our expensive pieces of equipment to bring home so that I could install it at a remote facility Saturday afternoon. Since I work in downtown Austin, my employer has secured valet parking for some of the employees. After hours the valets leave the cars parked in their open-to-the-street lowest level. I get to the parking and find that 3 of the 4 doors on the Black Watch (Disco I) are unlocked. Only the passenger front door is locked. What the heck? A quick scan and nothing appears to be broken. I open the drivers door and all appears well. I open the left passenger door to put my laptop and the cryptopod in the back seat and the alarm goes off.

Ok, that's strange. Now the keyless entry system hasn't been working for a year. It isn't the remote battery. I've bought a new remote. And I've tried the multistep process to get the Disco into "new remote" mode and it refuses to do that. So I've been using the key to lock and unlock the doors. It is very strange that the doors are not locked, but the alarm is set. But this isn't that critical. All you have to do of the alarm was set by the key is to close the doors, relock the system with the key and unlock it. So I put the key into the hole and turn it. And there is no resistance. The lock just spins and spins. What? I try locking and unlocking from the passenger front door. That lock and unlocks, but doesn't disable the alarm. Fortunately, the horn stops honking after 20 or so iterations and you close the offending door.

I really can't work on the car in a parking space with a car next to me. So I start the Disco. The alarm goes off. The horn sounds and the lights flash. But the engine does start. So I move the Disco to a spot were I can work in the middle

Land Rover is the name associated with ruggedness, durability and high performance in any type of terrain. British Leyland's workhorse is the top four-wheel-drive seller in most world markets.



Scenes from the first Jeff Berg Birthday Offroad
Photo: Bill Caloccia

of the lot and turn it off. And the horn stops sounding. Ok, first I put the computers back in the office so that I don't have to worry about them. Then to take the door apart and see what is wrong with the lock.

First off came 4 screws holding the speaker in. Out popped the speaker. Two wires needed to be disconnected and that got tossed on the passenger seat. One screw is removed and then the plastic shell under the inside door opener comes off. Next up I figured that the molded foam door panel had to come off. By using the screw driver blade on my Swiss Tool I could pry up this panel. It is held on in a bunch of places by serrated plastic rods that catch in the door. The panel is still held on by the arm rest. Which has two, recessed, 10mm bolts. I tried with the swisstool pliers but they wouldn't budge. (Ben uses some nasty words.) So it was into the office to see if there was a socket set. The fates smiled on me and there was. Armed with the kit the arm rest came off quickly. As did the molded panel. Under this is a piece of plastic that is sealed to the perimeter of the cutouts on the inner door. This came off with some encouragement.

And now I found the first problem. The key cylinder of the lock drives a cam with a lobe. This lobe activates a button and it pulls on a locking/ unlocking rod. This plastic cam had split in half. The pieces of which were in the bottom of the door. About now I considered driving home (20 miles) with the lights flashing and horn sounding. But the idea of driving like this right in front of the Austin Police Headquarters building just at the time when all of the bars had closed didn't seem to good.

My first attempt at a repair was to use the handy man's special weapon, duct tape, which I had on my desk, to tape the broken bit together. I didn't expect it to work and it didn't. A search of the office failed to turn up any epoxy or glue.

By pulling a retaining clip in the end of the lock I could remove the locking rod and the switch. Now the way that the locking system works is that the lobe from the cam depresses the switch button. When you turn the key it first releases the button, then engages the locking rod. When you let go of the key it

Scenes from the first Jeff Berg Birthday Offroad
Photo: Bill Caloccia

returns to the normal position and depresses the button again. Of course now that I have the mechanism apart, the door is ajar and the button is unpressed for a long time, the red alarm light has stopped blinking and is now solid red. It is angry. But I figure if I can trick the system, I might be able to get the alarm disabled. So I crawl across the front seat and lay in the front over the cubby. I shut the driver's door. I have the locking rod and one hand and the switch with the button depressed in the other. Ok, first, let go of the button, lock the doors and then depress the button. In the corner of my eyes I see the yellow lights flashing. Which means that everything armed. Let got of button, unlock doors, depress button. And the alarm is disabled! The timing between the releasing the button and activating the locking mechanism is about 1/4 to 1/2 of a second.

I recovered the computers and headed home. It was only 3am by then. On Monday I get to find out how much RTC6690, "Barrel Lock door, LH" costs at the local (and only) dealership. And if they have it in stock. All just to get a 50 cent plastic bit.

Shocks 101
(no, we aren't talking about Joseph Lucas)

Michael Ings

Andy Grafton and I were having a discussion regarding shocks. I took the liberty of talking to someone who has been invloved in shock design for over 30 years. The response is below which you may find interesting. Several points are raised in these two letters.

First. Resistance values (softness or hardness) of shocks is almost entirely dependent upon the valving used. Springs, orifice plates, leak plates, flexible valve plates and other things are used to create the desired resistance at different operating velocities. Velocity refers to the speed of the collapse or exrension of the shock itself. Typically on 4X4 work this will be between about 0,1m/s and 1,5m/s. This has no direct connection with the speed of the vehicle. Therefore the resistance depends on the way the engineer designed it, i.e. what valving he used.

Secondly. Since oil (and most liquids) are almost incompressible it is necessary to have a gas space of some sort in the shock operating system. This is normally a gas space inside the shock. This is because when you compress a shock you put the rod inside the tube and there has to be room for it. This room is created by allowing the gas space to be compressed. In "twin tube" shocks the basic difference between conventional units and gas units is that this gas space is charged at about a thousand kilopascals in "gas units" and left at atmopheric pressure in "conventional". (Other changes are made but these are not significant in terms of effect on the vehicle.) Note. There are also "mono-tube" gas shocks. e.g. Bilstein and a few others. I will say more of these at the end. They are slightly different animals.

The advantages of "gas" units derive from the fact that the ambient internal pressure is higher with the result that foaming, vapourisation, etc., occur at a higher temperature.

Also the replenishment of oil during the upstroke is better as it is dependent upon the pressure differential between the top surface and bottom surface of the replenishment valve in the base assembly. This differential is enhanced by the high ambient pressure. (The low pressure on the so called suction side will not be significantly changed on rapid movement to detract from this.) However, to set against this, gas units are doing a little bit of the work of the spring as they do support some weight by virtue of their tendency to extend. (They normally try to extend with a

Scenes from the first Jeff Berg Birthday Offroad
Photo: Bill Caloccia

force of about twenty kilogrammes if my memory serves me correctly.) This means that the shock is doing additional 'work' in terms of energy. This additional energy tends to translate into heat which causes the gas unit to run a little hotter than the conventional unit.

All shocks are merely devices to change unwanted movement energy into (equally unwanted) heat energy. The heat can then be dissipated into the surrounding atmosphere.

This brings us to the remark that "bush bashing" doesn't normally cause fade in shocks. Probably substantially true. The worst condition for shocks is fairly slow forward speed combined with rapid wheel/suspension movements. The sort of thing you would experience when driving aross a series of ruts about 70 to 100mm high and a forward vehicle speed of around 20 to 25kmh. The shocks are working hard and the cooling air around them is quite slow. Very slow severe terrain is not putting movement energy in fast enough to be serious and rough but quicker road keeps a good air flow around the shocks to cool them.

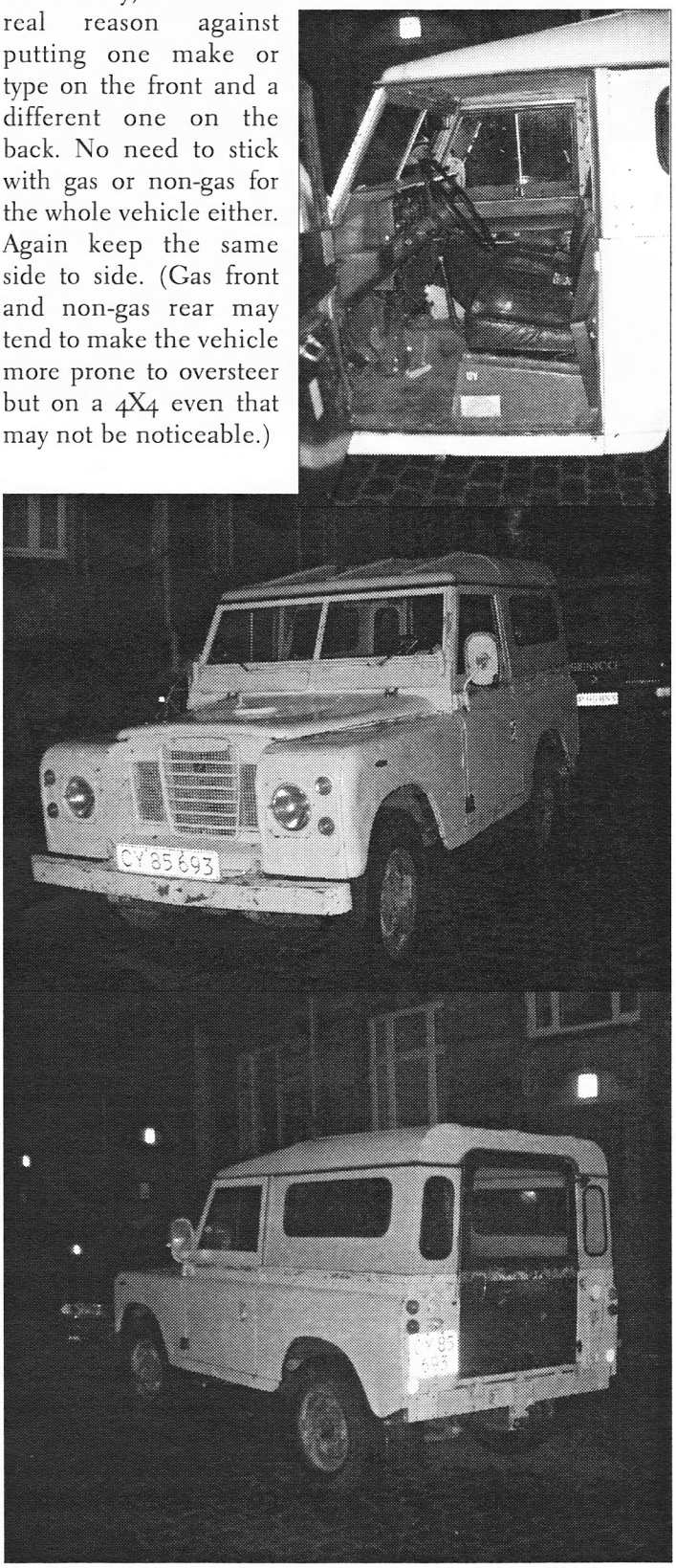
Gas and non-gas "normal" shocks have a seal failure temperature at around 150 degrees C although prolonged use at around 135 degrees C may well cause failure. Some units which are made for high energy usage utilise "viton" seals which will take 200 dgrees C for short bursts and run for prolonged periods at around 150. All (I think) mono-tube shocks of the Bilstein type use viton seals. This very high temperature problem is rarely serious in off road work unless it is being done competitively.

Gas or non-gas?

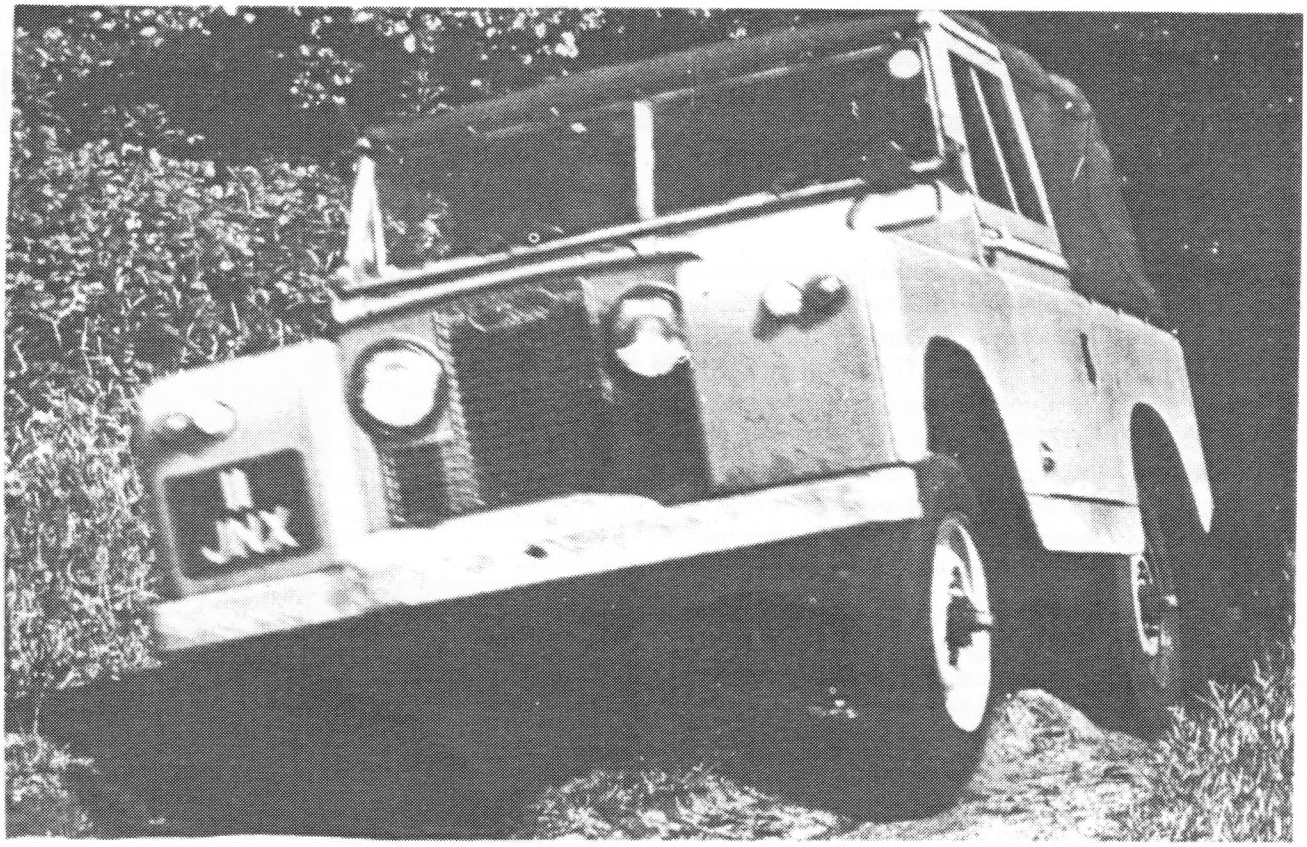
If your priority is rapid response of damping to changing conditions then go for gas. If your priority is keeping temperatures down go for non-gas. Or, go for one of the mono tube types a la Bilstein with high temperature capability.

Mono-tubes. A quick word on these. They are different. There is a single shock tube which carries two pistons. One is attached to the rod and has the valving on it. The other piston is not attached to anything but is free to move inside the single tube. This floating piston has the gas chamber between it and the end of the tube and has the oil chamber with the normal piston on the other side. The volume change of rod inside or rod outside during normal shock movement is compensated by the floating piston moving and causing the gas chamber to get smaller or larger. All the valving is on the piston so there is no replenishment from an external chamber as in the two tube variety. Mono tubes are expensive as they have to be built to tighter tolerances and with more finicky materials. Consequently they are much more expensive. Mono- tubes are very good shocks but not necessarily any better for off road applications. There are many good arguments for not going this route for off road work, even for off road racing. Failures on mono-tubes tend to sudden and total when they happen.

The comments about Monroe being softer etc. This depends on the way the engineer designed them. Any good shock manufacturer can achieve hard or soft shocks so the choice is theirs. Mixing shocks? Never mix from left to right - keep the same brand side to side. Front and back is a different story, there is no real reason against putting one make or type on the front and a different one on the back. No need to stick with gas or non-gas for the whole vehicle either. Again keep the same side to side. (Gas front and non-gas rear may tend to make the vehicle more prone to oversteer but on a 4X4 even that may not be noticeable.)



Club member Andy Grafton's new ride.
1980 SIII ex-military SWB



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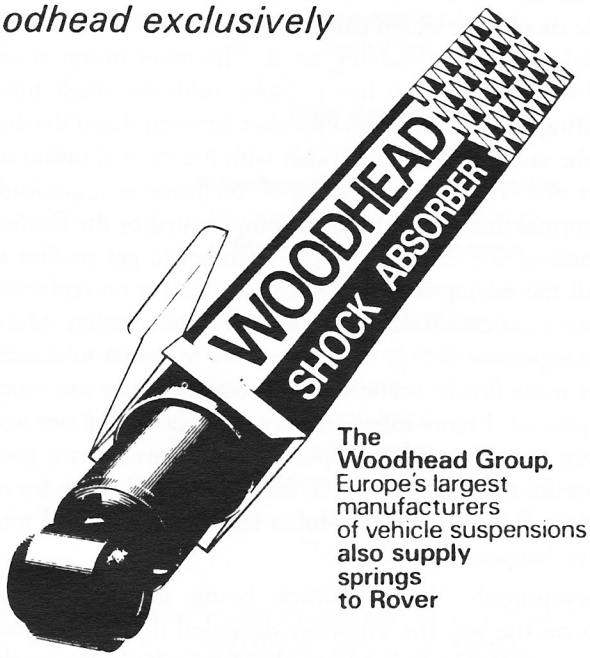

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