

Historians believe the first off-road vehicle was built in Russia for Czar Nicholas II in the early s. Designed as a half-track (front wheels with continuous tracks in the rear) by French.

It can be fitted to a conventional car or truck to turn it into a half-track suitable for use over rough or soft ground. A huge wheeled vehicle designed from to under the direction of Thomas Poulter called Antarctic Snow Cruiser was intended to facilitate transport in the Antarctica. While having several innovative features, it generally failed to operate as hoped under the difficult conditions, and was eventually abandoned in Antarctica. After World War II , a huge surplus of light off-road vehicles like the Jeep and heavier lorries were available on the market. This was also the start of off-roading as a hobby. These were all alike: Later, during the s, manufacturers started to add even more luxuries to bring those off-road vehicles on par with regular cars. This eventually evolved into what we call the SUV today. It also evolved into the newer crossover vehicle , where utility and off-road capability was sacrificed for better on-road handling and luxury. They need to have a low ground pressure , so as not to sink into soft ground, they need ground clearance to not get hung up on obstacles, and they need to keep their wheels or tracks on the ground so as not to lose traction. Wheeled vehicles accomplish this by having a suitable balance of large or additional tires combined with tall and flexible suspension. Tracked vehicles accomplish this by having wide tracks and a flexible suspension on the road wheels. Russian GAZ The choice of wheels versus tracks is one of cost and suitability. A tracked drivetrain is more expensive to produce and maintain. Wheeled drivetrains are cheaper and give a higher top speed. The tracked drivetrain has greater off-road capability. Most off-road vehicles are fitted with especially low gearing. An internal combustion engine coupled to a normal gearbox often has an output speed too high. The vehicle often has one of two things, either a very low "granny" first gear like the all wheel drive Volkswagen Transporter versions or an additional gearbox in line with the first, called a reduction drive. Some vehicles, like the Bv in the picture on the right, also have torque converters to further reduce the gearing. For a typical four-wheel vehicle this is known as four-wheel drive. Vehicles designed for use both on and off road may be designed to be switched between two-wheel drive and four-wheel drive so that the vehicle uses fewer driven wheels when driven on the road. Criticism of off-road vehicles[edit] Main article: Criticism of sport utility vehicles SUVs are built with higher ground clearance for off-road use and thus have a higher center of gravity , [3] therefore increasing the risk of rollover. SUVs are more likely to be in rollover accidents than passenger cars. According to a study conducted in the United States , SUVs have twice the fatality rate of cars and have nearly triple the fatality rate in rollover accidents. They are involved in about half of the fatal two-vehicle crashes with passenger cars, and 80 percent of these fatalities are to occupants of the passenger cars. In addition to noise pollution that can cause hearing impairment and stress in wildlife, [15] according to the U. Forest Service , old-style two-stroke engines no longer a component of new off-road vehicles, although some are still in use "emit about 20 to 33 percent of the consumed fuel through the exhaust" and "discharge from two-stroke snowmobile engines can lead to indirect pollutant deposition into the top layer of snow and subsequently into the associated surface and ground water.

Chapter 2 : A Brief Beginner's Guide to Off-Roading in Colorado

Register your vehicle as off the road (SORN) Use the digit number on your vehicle log book (V5C) to take the vehicle off the road immediately. On the first day of next month.

There is a lot of overlap between off-road enthusiasts and mechanics. So, being located in Boulder, Colorado is one of the reasons we are able to staff our auto repair shop with some very talented techs. Off-roaders are from every walk of life, but there are two major groups: Both groups, however, are adventurers and see the journey itself "not the destination" as the reason they do what they do. We spoke to Eric Olsen, who has been off-roading for more than a decade. He says he likes to practice with the dudes on day trips, and then goes overlanding by himself, trips which usually run several days. Sometimes, of course, even the best laid plans go south. Still was able to make it to my hotel around 1: I used to run around with a tire repair kit, but after having had to use it once on a two-flat day, I stopped bringing it. Prefer the weight penalty of the extra spare. I now have a winch installed in the front bumper and carry four recovery ramps, a farm jack with accessories, a shovel, axe, and various straps and shackles and a snatch block. A two-way satellite communicator transmits a position every 10 minutes, so someone who cares about your status can compare your location on an interactive map with what they know of your itinerary. You can also send and receive email via satellite, so they can help you get local help if necessary. And, if it all really hits the fan, there is the SOS button. The cardinal rule of off-roading: Sand dunes, for example, are more difficult than gravel or dirt trails. Here are four particularly helpful resources for the planning stages of your off-roading adventure: Why is it important how you hold the steering wheel? It includes advice on when to go high-altitude passes may not be open until August and reasons to respect No Trespassing signs on abandoned mining sites vertical shafts, flooded mines, poisonous gases. Joining an online club or forum is an easy way to meet up with wheelers in your area and plan group excursions. Many off-roading groups are organized by vehicle make. Another easy way to find off-roaders in your area is to go to Off-Road Vehicle Meetups and plug in your in your zip code. There are directories, as well, including:

Chapter 3 : Road and Off-Road Vehicle System Dynamics Handbook - CRC Press Book

While the focus is on automobiles, this book also highlights motorcycles, heavy commercial vehicles, and off-road vehicles. The authors of the individual chapters, both from automotive industry and universities, address basic issues, but also include references to significant papers for further reading.

You get to an area where the ground becomes unfriendly. Although ordinary cars cannot get far and stay on four wheels, you continue driving onto an area where the ground is bedecked with rocks of various sizes and there are wetland areas and even sand dunes. Maybe, but still you eventually become the envy of your friends because, alas, they arrive at a real AHA moment when they see you riding in your sporty All-Terrain-Vehicle ATV. It is tempting to say an ATV can do just about anything, and yet, that would not be far from the truth. To begin with it is a useful off road vehicle ORV. The range includes three, four and six wheelers. The wheels come with deep grooves making them capable of traversing the uneven and challenging environment associated with farming, hunting, ranching and cross country motor racing competitions. Fitted with a handlebar the ATV was built to carry one person in a straddle seating posture, though there are a few equipped to carry two persons. They are predominantly four wheel drive 4WD with cargo carrying capability and towing versatility. The technical features vary but it is usual to find these vehicles equipped with automatic transmission, electronic fuel injection, power steering and modern hydraulic disc and drum brakes. Les Kelley, a twentieth century car dealer is renowned for using his mechanical experience and expertise to remodel and then resell used cars which he had previously bought. He became the authority on estimating current value on automobiles and published a book for that purpose. If you have a lot of chores to do this is a handy motorized equipment you will enjoy spending time on. If you have a large farm for instance it is a challenge to monitor the boundaries from end to end. Thankfully this task becomes easier with this energized road runner. You may also round up cattle and other herd with its help. By the way, do you have any bricks, soil or other farm material needing to be hauled? Throw away the tired wheel barrow and save your back by using an ATV. Have you ever felt the desire to go speedily around corners with great maneuverability, or to simply accelerate in a hurry? Just make sure it is done safely and legally. When it is time to trade in for a newer model, the KBB ATV value will be the guide to ensure that you benefit from the true value of your investment.

Chapter 4 : ATV Blue Book Price Guides - Locate Kelly NADA and other Price Sources

Tips On Choosing Off-Road Truck Books. Off-road trucks are a unique breed. To our knowledge there is no specific book covering the design and construction of these scratch-built off-road racing machines.

Chapter 5 : Design of High Speed Off-Road Vehicles | BookFlare

We have compiled a list of Best Reference Books on Off Road Vehicles Subject. These books are used by students of top universities, institutes and colleges. Here is the full list of best reference books on Off Road Vehicles.

Chapter 6 : Off-road Truck Books! BEST BOOKS!

The handbook begins with a short history of road and off-road vehicle dynamics followed by detailed, state-of-the-art chapters on modeling, analysis and optimization in vehicle system dynamics, vehicle concepts and aerodynamics, pneumatic tires and contact wheel-road/off-road, modeling vehicle subsystems, vehicle dynamics and active safety, man.

Chapter 7 : California DMV Vehicle Code | www.nxgvision.com

The only book to cover the principles of off-road vehicle and terrain engineering, a rapidly developing sector that

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includes SUVs, tractors and agricultural vehicles, military vehicles, and construction equipment.

Chapter 8 : Road And Off-Road Vehicle System Dynamics Handbook PDF

To begin with it is a useful off road vehicle (ORV). The range includes three, four and six wheelers. The wheels come with deep grooves making them capable of traversing the uneven and challenging environment associated with farming, hunting, ranching and cross country motor racing competitions.

Chapter 9 : Offroad Trail Guide

An off-road vehicle is considered to be any type of vehicle which is capable of driving on and off paved or gravel surface. It is generally characterized by having large tires with deep, open treads, a flexible suspension, or even caterpillar tracks.