



# AN INTRODUCTION TO X-1R

Celebrating 30 years as a technology partner to  
NASA at the Kennedy Space Centre, Florida.

## ABSTRACT

The X-1R Corporation was founded in Daytona Florida in 1989 with the mission of formulating and pioneering the next generation of scientifically proven and demonstrably superior lubrication products for use in the Motor Sports industry. Our early success were noticed by NASA and soon after our product range was proven by their engineers to provide superior protection to all others.

Nigel McKenzie

## **INTRODUCTION**

X-1R Corporation was founded in Daytona Florida in 1989 with the mission of formulating and pioneering the next generation of scientifically proven and demonstrably superior lubrication products for use in the Motor Sports industry. Since that time X-1R has continued to maintain the same high standards and also managed to broaden our product range to include award winning lubricants, fuel detergents, octane and cetane boosters and greases. Our early successes caught the attention of the engineers over at the Kennedy Space Centre in Florida who tested our product range and proved that the X-1R Corporation manufacture the best product available on the market at that time and still do.

### **30 Years Supplying NASA**

The X-1R Corporation is celebrating its twenty first anniversary supplying products to the National Aeronautical and Space Agency (NASA). Of course we proud of the relationship with NASA after all they probably are the most prestigious engineering organisation in the world and they chose to use the X-1R range of products to lubricate their massive machines simply because they have proven our products to be the best.

In today's ever shifting business environment isn't it nice to know that there is one company that has been managed to stay ahead of their competition and maintain the quality and efficacy of their product to a level that exceeds the requirements set by NASA. At X-1R Corporation we have been able to prove time and time again that our products provide superior protection than any other on the market. It is because of this that we continue supplying products to one of the most prestigious engineering customers in the world for twenty one years now.

Our story with NASA actually began way back in the early 1990's when NASA's Kennedy Space Centre needed the best lubricant on the market to provide a lubrication solution for the heaviest lift vehicle in the world, the mammoth NASA Mobile Launch Crawler they turned to the same company that so many NASCAR teams had already discovered, they turned to X-1R. After a million dollar research and develop program and rigorous testing at the NASA Kennedy Space Centre X-1R lubricants were proven to provide the best lubricant on the market and have become an integral part of the preventative maintenance program for the past twenty one years.

X-1R performance products are the only lubricants to be inducted in to the Space Technology Hall of fame and to be Certified Space Technology products. The reason for this is simple; we are proven in the laboratory, proven in space, proven in industry, proven on the high seas, proven on the race track but most importantly proven in every day cars like the ones we all drive.

We haven't sat still in the past twenty one years though we have had to continuously research and innovate and utilise new technology to continue to be the best. Our success also comes because we focus on what you the business owner and vehicle operator need; a product that works like it should, a product that delivers excellence and efficiency and peace of mind. All around the world Factory owners, power companies, shipping companies and winning race car drivers have switched to X-1R. In fact millions of users have already discovered the benefits of X-1R's range of performance enhancing products when it comes to keeping machinery running smoother, longer and more efficiently isn't it time you found out as well.

## **What we can do for you.**

When you pour new oil into your engine it goes from the controlled world of the oil refinery into a completely uncontrolled chemical factory, the engine. The ever more crowded roads that we drive on are helping to destroy the oil in your engine earlier than expected leaving your engine without effective lubrication and contributing to the development of harmful deposits and sludge that will rob your vehicle of power and efficiency and may eventually stop your engine for ever.

Our range of lubricants can minimize the negative effects caused by daily stop start traffic by conditioning the metal in your engine so that the load bearing capabilities of the metal surfaces can be greatly increased. With the application of a little heat, pressure and time the active ingredients in our lubricants go to work seeking out the microscopic imperfections, the tiny porous terrains, that when viewed under a microscope make any metal surface look like an aerial view of a mountainous landscape.

X-1R lubricants penetrate into these imperfections as heat and pressure are applied through the normal operation of the engine. This action occurs at the molecular level where X-1R forms an electro chemical bond with the loosely bonded molecules forming a metal hybrid that smooth's out the metal thus allowing the load forces to be distributed over a wider surface resulting in a reduction in friction this of course means that your engine runs more efficiently. Because we reduce friction we also increase the life of the oil and are proven to inhibit the formation of sludge giving you the vehicle operator greater confidence during your daily drive.

X-1R also provide a complete range of fuel products that are designed to condition the fuel that you are using making sure that it provides not only the correct Octane or Cetane that your engine needs but also works effectively to control and eliminate power robbing deposits caused by dirty fuel delivery systems. X-1R petrol and diesel additives contain a range of controlled action detergents that work with the fuel to eradicate the gum and varnish that clog the fuel lines and the carbon that coats the combustion chamber returning your engine to an "as-new" condition and allowing you to regain lost power and efficiency in your engine.

We never rest on our laurels and continue to strive to innovate. The chemists at X-1R have successfully created and are now the owners of a number of patented formulation that are used by top engineering organisations around the world to help deliver customer satisfaction to their customers. We are seen as leading the field in fuel enhancement products with our detergents and octane boosters, which are proven to be industry leaders. But we also help with some of the more mundane items such as our award winning engine flushes that are designed to work gently to remove all sludge from your engine whilst not harming any of the seals or gaskets in your engine.

We are proud to be your technology partner.

## **Technology and testing.**

Our range of products are probably the most tested and proven products on the market today some of our highlights would include;

ASME White Paper; Prepared by Dr Gerald Micklow, Consultant to NASA Engine Design and Development Department conducted a series of tests to establish the fuel saving ability of X-1R engine treatment. His proven conclusions showed a saving of 7-10% was achievable.

Chinese Government Engine Oils Evaluation Centre; undertaken by Professor Yang of Tianjing University the MIETOC tests using ASTM protocols established that the use of Engine Treatment and Petrol Treatment will reduce fuel consumption by 9.4% increase power by 4.1% and reduce Carbon Monoxide emissions by 33%.

ASTM 4742 Oxidation Stability Test; Performed by Dr Shashank Nakhare of AFD Technology Corp proved that X-1R engine Treatment demonstrated an increased time before the oil oxidised and thus would delay the onset of sludge formation in the engine by as much as 61%.

ASTM D4683 HTHS Viscosity; Performed by Dr Shashank Nakhare of AFD Technology Corp showed that the inclusion of X-1R in oil will not affect the viscosity of the oil in the engine under extreme loading conditions.

Cummins L-10 Test; Performed by Dr Brian Taylor of AFD Technology Corp proved that X-1R Diesel Treatment out-performed the industry standard requirements by keeping injectors clean and stopping carbon build up in the combustion chamber.

Intertek Octane Booster Test; Performed at the Intertek facility in Singapore proved that the standard Octane Boost of X-1R Octane Booster would increase the Research Octane Number of a standard fuel from 95 RON to 98 RON, in fact test at other facilities have proven that we are the most effective on the market.

Camin Cargo Control Octane Testing; Performed a series of comparative tests on X-1R Octane Booster compared to the competitor brands the results showed that in all categories X-1R Octane Booster out-performed the competition.

Four Ball and Pin Wear Test, Oakland University; Conducted by Dr Gary Barber a consulting engineer to Detroit Diesel proved that the use of X-1R Engine Treatment would reduce wear by 48%, reduce friction by 40% and improve fuel consumption by more than 7%.

Swedish National Research and Testing Institute; Using sophisticated Falex machines found that the case hardness of the metal had significantly increased thus reducing wear in the engine.

Hyundai Motor Corporation Emissions Test; Undertaken by the Head of Engineering (Philippines) X-1R diesel treatment significantly increased fuel economy, eliminated pre-ignition and reduced emissions. X-1R is now recommended for use in all common rail diesel engines as a part of the preventative maintenance program.

University of North Carolina Steady State Dynamometer; Test conducted by Dr Gerald Micklow showed that in fuel efficiency tests based on data obtained through controlled dynamometer testing comparable to steady state driving conditions a measurable reduction was found at all driving conditions. These test showed that the use of X-1R products can lead to substantial improvements in engine performance and economy

BMW Keep Clean ASTM5500; Passed at the UNLIMITED APPROVAL level proving that X-1R fuel treatments will protect against corrosion in the fuel system.

Vanderbilt Chemical, LLC; ran the TEOST MHT-4 using the ASTM test procedure D 7097 on your two commercial oils. The TEOST MHT-4 is used by the industry to measure the high temperature deposit formation tendencies of a fully formulated engine oil. The test results showed the new top treat dramatically reducing TEOST MHT-4 deposits for the Syntium 800 oil, and delayed oxidation by as much as 61%.

Mitsubishi Qatar Compression test; The afore listed results showed a consistent improvement on all the cylinders tested, the average percentage of 4 cylinders is 27.78%, with the older engine showing a bigger improvement understandably due to the wear factor. But even a relatively new (over 1 year old) engine already showed a marked improvement as well.

Professional Mechanical Engineer, Report on Lubrication Reliability and Extended Oil-Change Interval Central Visayas (Cebu Province); data derived from the oil trending results of Intertek Laboratories Philippines on the five (5) trucks of CBPI's Central Visayas (Cebu Province), the consistent efficacy of X-1R Engine Treatment in protecting, preserving and even prolonging the oil quality and physical properties of Mono-grade Engine Lubricating Oils, so that it can reach the standard oil change intervals and even extend it to over 50% of standard intervals.

JASO Engine Oil Standards Implementation Panel; in summary at lower temperatures and slide speeds we were able to improve performance by more than 30%. However, at the higher range of temperature and sliding speeds we managed to extend the ability of the oil to resist shuddering by over 132 hours or more than 50%.

Intertek Caleb Brett Cetane test; proved that X-1R Octane Booster outperformed all other commercially available Octane Boosters.

Multi-purpose gasoline detergent/inhibitor; showed reduction in emissions whilst managing to increase fuel efficiency by 2.2% and power by 1.2%

Water stabilizer for Ethanol/Gasoline Blends; demonstrated X-1R Five in One Decarbonisers would successfully eradicate moisture from fuel tanks and prevents/reverses ethanol separation due to water contamination

Mitsubishi Motors Corporation, after an extensive number of ASTM protocol tests X-1R Engine Treatment was awarded Buy/Sell status.

Thank you.