

**Proposal to
THE INTERNATIONAL HOT ROD ASSOCIATION**

Presented by:
Rocket Propulsion, Inc.
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INTRODUCTION

We believe that the Rocket Powered Funny Car is the safest, most dependable vehicle ever to traverse the Quarter Mile. Our endeavor to explain why is broken into an explanation divided into four sections:

1. **THE ROCKET SYSTEM:**
How and why it works and why it is safe.
2. **THE CAR ITSELF:**
How and why it works and why it is safe.
3. **THE OPERATIONAL PROCEDURES:**
What makes the operation of such a vehicle safe.
4. **SUMMARY:**
Things that we have found to be true.

Realize that in the past 50 years or so, technical advances in all fields have been overwhelming. With the current economic situation being what it is, environmental situation deteriorating, and our increasing dependence on petroleum products, something will have to change drastically in the near future. We enter the Space Age, and that change is here in the form of Rocket Propulsion as applied to a motor vehicle in Drag Racing.

SECTION I

THE ROCKET SYSTEM

The System is a true liquid mono-propellant using 90% Hydrogen Peroxide (H_2O_2) for fuel. Every part of the system is designed for prolonged Space Flight. Every part is non-corrosive, requiring the very minimum of maintenance. The system has no moving parts.

This system can be divided into three basic sub-systems: **Air, Fuel, and Motor.**

Air

This sub-system consists of two air storage bottles, an air manifold, a pressure regulator, a Dome Loader, and misc. hoses, valves and fittings.

The air used is 100% dry, 100% clean compressed air with certain exotic gases filtered out. It is manufactured by us at a rate of 5.5 CFM. The air is stored in two cylindrical air bottles, manufactured, tested, inspected, and approved for use in commercial High Pressure Oxygen systems. Their burst pressure exceeds 5500 PSI. The maximum pressure ever stored in these bottles is 2150 PSI.

The air manifold is the means of distributing the high and low pressure air and incorporates most of the safety systems. The manifold is machined of the finest quality materials, to exacting tolerances. All fittings, lines, and connections are tested at pressures over 5000 PSI.

On the high pressure side it incorporates a mechanical Burst Disc. (non-adjustable) calibrated at 3000 PSI. This can only get weaker with age and use and can never get stronger. (SAFETY #1) With the Disc, it is totally impossible to load the high pressure air system to over 3000 PSI, should all else fail. It also incorporates a mechanical relief valve (non-corrosive) calibrated to automatically relieve pressure in excess of 2150 PSI. (SAFETY #2) The system can not be loaded over 2150 PSI. This manifold also incorporates a mechanical Dump Valve that, when manually operated, relieves *all* air pressure at any time or given pressure. (SAFETY #3) The manifold has three direct reading pressure gauges: one for Fuel tank pressure, one for Bottle pressure, one for Dome pressure. Between the high pressure system and the low pressure system, there is a one-way

check valve that allows air to flow only in the down stream direction. It is impossible to contaminate the sterile high pressure system.

On the low pressure side it incorporates a mechanical Burst Disc. (non-adjustable) calibrated at 900 PSI. This can only get weaker with age and use and never get stronger. (SAFETY #4) With this Disc, it is totally impossible to load the low pressure system and fuel tank to over 900 PSI, should all else fail. It also incorporates a low pressure mechanical relief valve (non-corrosive) calibrated to relieve pressure in excess of 650 PSI. (SAFETY #5) The low pressure system and fuel tank can not be loaded over 650 PSI.

There are two valves in the manifold: one allowing high pressure air to proceed to the Regulator and another which vents the entire low pressure system to the rear of the car. These valves are mechanically linked together so that one is open, the other is closed. (SAFETY #6) I must once again stress that all components are non-corrosive, space quality and require the minimum of maintenance. All lines are covered with Stainless Steel Wire Braid.

The Air Pressure Regular steps the high pressure air down to low pressure air for loading the fuel tank and holds this pressure constant throughout the run. This is absolutely the finest space quality regulator made.

The Dome Loader Valve, which is the heart of the Air Control System, incorporates a down stream pressure sensor (SAFETY #7) which detects a 1 PSI pressure differential between the top and bottom of the regulator and automatically vents the Dome pressure to 0 PSI, should this ever occur. It also incorporates a 650 PSI pressure relief valve (SAFETY #8) that vents off Dome pressure over 650 PSI. In line with the Dome Loader Valve we have yet another 650 PSI vent that vents off automatically all Dome pressure over 650 PSI. (SAFETY #9) The load Knob on the Dome Loader Valve is spring loaded to the Neutral Position. (SAFETY #10) One direction loads the Dome, the other vents it, and the Knob, when released, automatically returns to neutral.

There are 10 major safety systems on an already over-designed, and under-pressurized air sub-system. Anyone of these will prevent a malfunction of the air system.

Fuel

The Fuel sub-system consists of a 3/8 inch thick 304 Alloy Stainless Steel fuel tank that was Heli-Arc welded and every weld x-rayed. The tank is then sandblasted and subjected to a Nitric-Acid Rinse, a 35% H₂O₂ Passivation and Pickled with 90% H₂O₂ prior to installation in the system. This tank was tested to 2000 PSI and can not be pressurized over 650 PSI. It has a rapid drain system to enable fuel to be removed rapidly in case of emergency. The explode point of this tank is well over 10,000 PSI and should it burst only a hair line crack would appear and relieve pressure. This is due to construction with 300 Series Stainless Steel, a material that will not shatter. The tank incorporates a totally sealed refueling valve.

The main fuel line to the throttle valve is covered with Stainless Steel Wire Braid and routed outside the cockpit. It is a commercially tested 5500 PSI hose that never carries over 650 PSI pressure, maximum. The tank is located 5½ feet from the throttle valves in order to prevent boil back.

There are two throttle valves. These valves were designed for prolonged use in 90% H₂O₂ Systems. The first Valve is the primary throttle valve and is opened and closed by means of mechanical linkage to the cockpit. The second Valve is a FAIL CLOSED VALVE. It is held open by air pressure. Should that pressure be interrupted by any means or by means of a solenoid valve in the cockpit, it automatically closes shutting off fuel to the Motor (SAFETY #11).

The fuel used is 90% Hydrogen Peroxide, purchased from FMC Corporation. It is by definition, a colorless, odorless, tasteless, non-flammable, non-volatile inert liquid. It is the safest, most dependable rocket fuel ever discovered and very stable. It decomposes completely, in the motor, to oxygen gas and distilled water in the form of super-heated steam.

Motor

The motor is constructed of 347 Alloy Stainless Steel. It is a true mono-propellant Rocket motor. It has a fuel inlet which is simply a hole for fuel to enter where it goes through an aerator plate and is sprayed onto the Catalyst Pack. The aerator plate acts like a shower head, evenly distributing the fuel to the pack. The Catalyst Pack is made of Nickel and Silver wire mesh screens mashed together in a mat. This metal completely decomposes the fuel on contact. There is no ignition, no flame, simply a chemical decomposition. The chamber pressure in the motor

during this rapid decomposition of 90% H₂O₂ reaches a maximum of 300 PSI. At the end of the Rocket Motor is the Rocket Nozzle, simply a double cone which makes the power. Once again, due to construction with 347 Stainless Steel, should the motor totally explode (which is impossible with a 5/8 inch-thick 347 Alloy Chamber) only a hair line crack would occur and result in a loss of chamber pressure.

I have explained the Rocket System and how it works. We feel that this is the safest form of propulsion in the world. We constructed with this in mind. It is our intent to prove this, and we invite anyone to find fault with our system and point out to us a potential danger. It is our desire to produce the ultimate in safety and should anyone find fault with our system, we would improve upon it immediately.

There is ABSOLUTELY No form of propulsion in existence today that can come even close to this system in first SAFETY, the DEPENDABILITY, and PERFORMANCE. These are not idle statements, they are mathematically proven facts.

N.H.R.A. requires an inspection of this system every two years. We require a Test and Inspection of the system prior to every use.

To simplify the system, you place fuel in the fuel tank, apply air pressure to it, open a valve allowing the air to force the fuel into the motor which decomposes it into 100% pollution free oxygen and distilled water. Compared to other more complex propulsion systems design, this is unbelievable.

By virtue of the quantity of fuel placed in the tank, the amount of air pressure applied to that fuel, how fast, how far, and how long the throttle valve is opened, the performance characteristics of this system are infinitely controllable. This system operates exactly the same, every time, regardless of environmental conditions. It will operate in space where there is no environment.