



Cain's Quest Sled Build

with **Grip N Rip Racing**

Here at Grip N Rip Racing we have been putting together a team to compete in the Cain's Quest snowmobile race in Labrador & Newfoundland that starts on March 14, 2009. This is an extreme snowmobile race where teams of two riders and two sleds travel nearly 1,400 miles across rugged terrain in Labrador and Newfoundland, Canada. While many snowmobilers in the states have never heard of this extreme test of man and machine, last year this race had more website hits than the Baja 1000.

Why would we do this?

I've always wanted to race in a long race like the I-500 but never had the opportunity. I heard about Cain's Quest two years ago and have been following the race ever since. Ever since I stopped racing snocross I have missed the thrill of competition, so this looked like a good way to get back into racing without the high flying risk of injury. Although this race still has significant risk, it's not a full speed race and has a lot of strategy and luck instead of the fastest sled/driver for a short burst of time. Plus, this is an ultimate durability test for a



sled and we have developed quite a few products for the Ski-Doo XP as a result of preparing for this race. This is one of the best ways to test new products and get good exposure for them as well.

We chose the 2009 Ski-Doo E-TEC Renegade X as our sleds to compete with. Ski-Doo dealer Jackman Power Sports (Jackman, Maine) gave us a good deal on our sleds and really helped us out with spare parts and technical help. They also helped us identify common issues with the sleds, how to troubleshoot them and correct them out on the trail.

My teammate Eric Hall is a friend of mine and was also very interested in running this race. He has been to Labrador a few times and was up for the challenge, so we teamed up to do it. It's going to be quite the experience to race for 1,400 miles instead of going in circles for a couple of hours!

Grip N Rip Racing Products

Isovibe SX - This race is long and is hard on your body. Our Isovibe SX mounts to the existing handlebar riser and reduces the hand-numbing vibration. The E-TEC is a fairly smooth motor, but with the addition of the 1.75" track the vibration definitely increased. Our Isovibe also dampens the shock transferred to the rider from hitting bumps and the occasional rock or stump. It's designed to flex in the front to back, side to side and vertical directions. We will also be testing some new prototype bushings during the race.

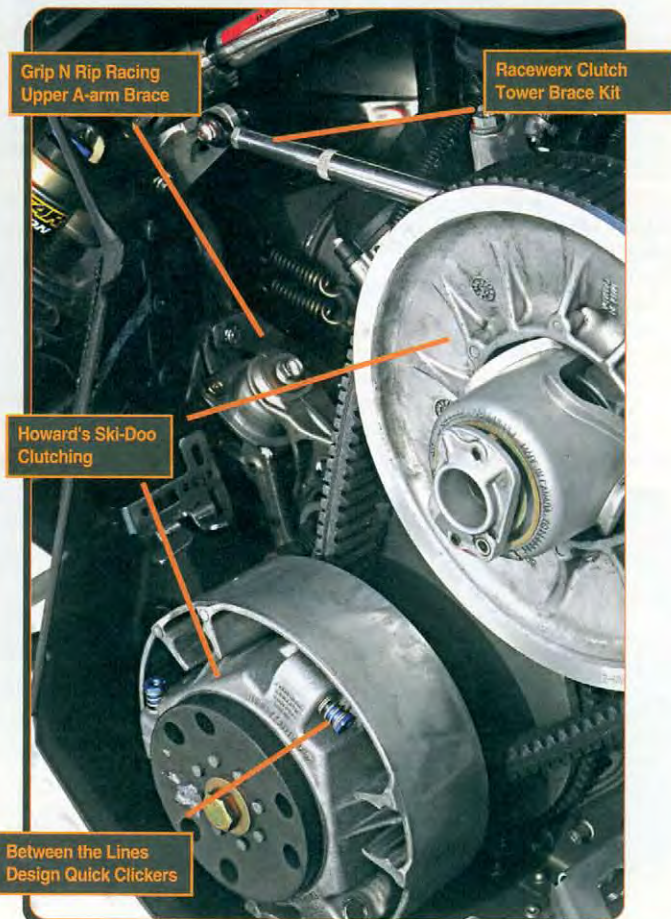
Upper A-arm mount brace kits - We are planning to carry an extra set of A-arms with us in case we hit a rock or stump during the race. But, with certain impacts to the XP chassis, the A-arm mounting points can bend before the A-arms will. To take care of this issue we've developed two A-arm brace kits; one for the lower A-arm and one for the upper A-arm. These kits greatly strengthen the A-arm mounting points to make sure the A-arm bends before the mounting points do.

Running Board Supports - We wanted to strengthen the running boards to make sure they didn't bend with the abuse we were going to put the sleds through. We developed braces that are larger and thicker than other braces on the market to really strengthen this area.

Rear axle billet aluminum wheel spacers - Another area of concern was the rear axle and the three wheels. There is a lot of stress on the rear axle with all the extra weight we need to carry, the deep lug track and the pounding we are going to put the sled through. We added the fourth wheel but took it a step further with our billet aluminum rear axle spacers. These aluminum spacers are much stronger than the stock plastic spacers and really beef up the rear axle, keeping the wheels parallel to the rails under high loads. They also allow the axle to really clamp to the rails, taking the load off the track adjuster bolts.

Hygear Suspension

Custom Axis Shock Package - We felt the shocks were going to be very important since this race is over 1,400 miles long and covers every type of terrain imaginable. We didn't want to have to change shocks during the race so we needed the most dependable setup that would take the pounding without fading or failing. After talking to a few different shops we decided to work with Ross at Hygear Suspension in Lansing, New York. He really knows his stuff when it comes to shocks and setups. We decided to go with Custom Axis Clicker shocks with dual rate springs. These are top of the line aftermarket shocks that are externally adjustable so you can dial in the ride you want without taking them apart. Ross also took one set of our stock X-package shocks and set them up with his sport package valving and dual rate Twisted Spring kits. This is a really good upgrade package for



the stock shocks and was a huge improvement over the stock setup. These will be our backup shocks for the race.

Vortech Manufacturing

Rear Rack - We need to carry extra gas and a lot of gear on our sleds for this race. We contacted Vortech Manufacturing in Kalispell, Montana and he set us up with their racks that are easy bolt on kits. This rack makes a nice base to keep your gear up off the rear cooling extrusions. You can also move the cross rods around on the rack to get the shape you want to hold any size gas tank you choose to use. The racks sides also strengthen the tunnel so you can carry more weight.

Tracks USA

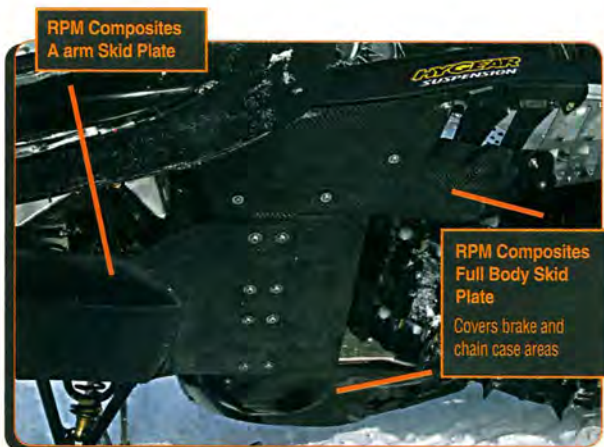
1.75" Challenger Lite Track - We needed tracks that were more capable off trail than the stock 1.25" Ripsaws that came on our Renegades. Bruce at Tracks USA gave us a great deal on two of the 16" x 137" x 1.75" Challenger Light tracks. They hookup a lot better off trail than the stock track and we didn't lose as much speed at we thought with taller lug. This is a very nice upgrade for the Renegade if you do a lot of off trail riding in deeper snow.

RPM Composites

Carbon Fiber/Kevlar Skid plates - One area we were really concerned about was the belly pan area. In particular, the chaincase and brake areas because they hang down under the belly pan, making them targets for rocks. Having followed this race for the last two years we knew rocks were an issue and they have taken out quite a few teams. We experimented with making different deflectors to deflect rocks over these areas. We weren't really happy with that solution and then found out about RPM Composites. Raffi at RPM Composites makes really nice Carbon Fiber/Kevlar skid plates that not only protect the A-arm area but also the chaincase and brakes. It is like having armor for the belly pan area. They even wrap up in front of the primary clutch protecting it from a hit as well. Raffi also makes Carbon Fiber intake deflectors to keep snow out of the intake and to protect the delicate material from punctures from things like sticks.

Howard's Ski-Doo

Clutching - We need a clutch setup that works well in all conditions and is consistent over the duration of this long race. I heard about Billy Howard and how well his setup was working on the E-TEC Renegade. I contacted Billy and he helped us out with different helix, springs and adjustable pins. Billy hadn't tested a Renegade with a 1.75" track, but worked with us to dial it in. We ended up with a setup that works well at picking your way thru the woods at just over engagement without trenching, yet works really well in the midrange and top end.



Vendor List

Grip N Rip Racing Products	www.gripnripracing.com	207-933-6279
Vortech Manufacturing	www.vortechmfg.com	406-257-7828
Tracks USA	www.tracksusa.com	320-382-6128
RPM Composites	www.rpmcomposites.com	508-896-7313
Howards Ski-Doo	www.howardsinc.net	814-274-9800
Hygear Suspension	www.hygearsuspension.com	607-533-7434
Racewerx		612-396-7011
Between the Lines Designs	www.betweenthelinesdesigns.com	208-868-3308
JC Custom Vents	www.jccustomvents.com	208-221-9282
ArcticFX	www.arcticfxgraphics.com	586-786-9851
Avid Products	www.avid-products.com	406-862-6296
Jackman Powersports	www.jackmanpowersports.com	207-668-4442
RSI	www.rsiracing.com	952-225-0452
Mission Trailer	www.missiontrailers.com	207-861-9800
Scotts Recreation	www.scottsrecreation.com	207-622-0672

Cain's Quest

Cain's Quest Snowmobile Endurance Race is the ULTIMATE in extreme racing. At 1,400 miles, this race is that longest race of its kind in the country, a true northern adventure that gives racers the experience of a life time. Teams of two travel through a variety of topography, deep snow, thick wooded areas and across lake drifts. The race runs day and night guided by GPS and gut instinct to get teams from checkpoint to checkpoint. Teams must make it through each checkpoint and stop at mandatory layover points in Churchill Falls and Happy Valley-Goose Bay along the way.

This event requires a solid strategy, skilled driving, the will to keep going, a good machine and a whole lot of luck. Each team is equipped with a Guardian Mobility tracking unit which enables visitors to log onto www.cainsquest.com and watch the race in near real time. Not only is this an added safety feature for the teams, but it allows race followers to cheer on the favorite teams and watch the race changing from moment to moment.

Team Grip N Rip Racing "Team #31"

Eric Hall - 29

Lives in Jackman, Maine and has ridden snowmobiles all his life. Eric has worked as an Allagash Park Ranger and put in four winters in the Allagash Lake region riding thousands of off trail miles on state sleds. He is a very experienced off trail rider and puts thousands of miles a year all over northwest Maine. Eric has great navigation and woodsman skills that are very important for this race.

Tim Lessard - 39

Owner of Grip N Rip Racing Products located in Monmouth, Maine. I grew up in Jackman, Maine and have ridden snowmobiles all my life. I'm a mechanical engineer and have also worked for a while in the engine department for Arctic Cat in Thief River Falls, Minnesota. I'm also a private pilot and am experienced with navigation and GPS. I've raced snowmobiles for years in drags, Rock Maple Snowcross, and 200 mile endurance lake races. I'm experienced in race sled preparation and setup, and realize how this race will be yet another goal to conquer.

Racewerx

Clutch Tower Brace - We wanted to get our clutch alignment right on to eliminate any belt issues and to help with efficiency. We added a clutch tower brace from Racewerx to strengthen the driven clutch tower and reduce any flexing which will keep the clutches in line. This is a nice kit that really keeps the driven clutch where it belongs.

Between The Lines Designs

Quick Clickers - Since this race is so long and we will encounter so many conditions from lake and river running to deep snow and sea ice. We needed to be able to quickly adjust the clickers on the primary clutch to keep us in the power band. The Quick Clicker kit from Between the Lines Designs enables us to make clutch adjustments in seconds without any tools.

Ice Scratchers - We wanted to be prepared if we ran into snow conditions that caused us to overheat or melt the hyfax. These ice scratchers from Between the Lines are unique because you can back-up with them deployed without damage unlike all the other ice scratchers on the market.

JC Custom Vents

Vent covers - We will be running in deep snow, so we needed to keep the snow out but still let the air in the vents. We contacted Jon at JC Custom Vents in Pocatello, Idaho. Jon set us up with his really durable vent kits that let the air in but keep the snow out. These are really high quality kits with laser cut aluminum frames for strength. We shouldn't have any belt heating issues in the deep snow with the addition of these kits. We also installed them to keep snow out of the engine compartment that can cause issues and add weight.

Arctic FX - Sled Wrap

Custom Graphics - We wanted to do something custom with the graphics on the sleds. Jordan at ArcticFX makes really high quality graphic wraps and designed us a custom "Ripped" look to go along with our Grip N Rip logo. He was very easy to work with and provided with a cool look for the sleds.

Avid Products

Drive Shaft Insert - Some of the 2008 XPs had problems with the drive shafts. We didn't want to take the chance in this race so we con-

tacted Robbie at Avid Products. He set us up with his drive shaft insert that really strengthens the drive shaft and eliminates any material or weld issues.

Billet Plastic Track drivers - Avid Products also makes CNC billet plastic drivers that are stronger, truer and have a different shape so you can run your track looser without ratcheting.

RSI - Handlebars

Aluminum Handlebars - RSI out of Shakopee, Minnesota set us up with their aluminum race handlebars. These have nice hooks in the ends and the bend feels more comfortable than the stock bars. These bars also have a 1 1/8" diameter clamping area and RSI supplied us with their 1 1/8" bar clamps that bolt onto the top of the stock riser block. We completed the bar setup with RSI's high output grip heaters and Gel Grip Wraps. This setup is more comfortable than stock, which will be important in this long race.

Mission race trailer supplied by Scott's Recreation and Mission Trailer.

*Photos by DeeDee Grant at Captured Moments Photography.
www.capturedmomentsmaine.com*

