



K.J.BEER



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Hi Sponsors, Supporters, Crew, LSR fanatics and friends, welcome to our March 2010 newsletter and as the old saying goes, "there is no rest for the wicked". Boy have we been flat strapped this past month, as we have a filming date with Australia's ABC Catalyst Programme in a week's time. Having to juggle the construction phases of our car around media stories is proving very stressful but the upside is it does motivate us into action and makes us all work to a very tight schedule.

Currently our car is in an inverted position and we are fitting all of the "V" underbelly frames in position and welding them directly to our mainframe. A central stringer was aligned and welded in place first and all the "V" frames hang from that. This has to be right and takes a lot time.



The car can clearly be seen upside down and Pete Taylor lining up "V" underbelly frames



Our Design Engineer John "Ackers" Ackroyd had us working overtime with the design of these frames. Their main purpose is to divert the ground generated shock wave away from our missiles underside and reduce the risk of this force lifting our vehicle into the air in her transonic to supersonic journey. The picture on the left shows an F18 fighter flying at a transonic speed and demonstrates the problem. The shock wave can be clearly seen coming off the aircraft, but unlike a plane where the shock wave can dissipate in all directions, ours cannot, it will hit the ground, bounce back up and hit the car and want to do nasty things to it.



**SPRINT3D
ENGINEERING**





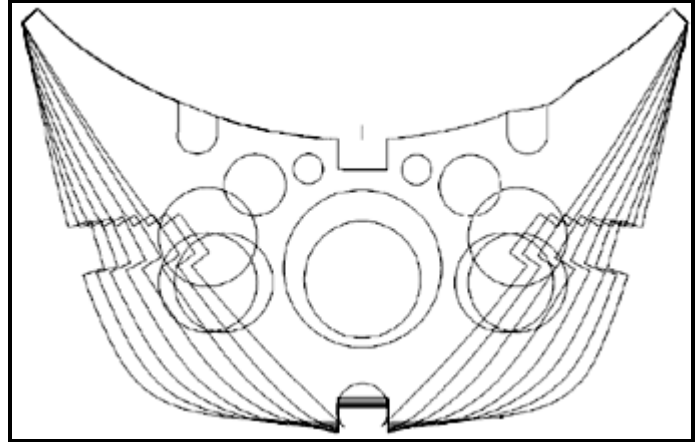
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Apart from deflecting the shock wave, the "V" underbelly frames must also support our 4" diameter High Test Peroxide (HTP) stainless steel feed line, our two 2.5" N2 balance lines, our HTP and Fuel pressure dump lines, our steering and brake lines.

The flanges on our HTP line need to fit safely inside this area and it was decided that the depth of our "V" frames should be made a further 25mm (1 inch) deeper, to allow for better clearance.

This proved a major headache for Ackers, Mike Annear (who drew them up) and all who helped complete this big job. By going deeper with the "V" frames we were losing valuable ground clearance and with a 12 metre (40 foot) mainframe setup, with a 1 degree nose down incidence, it meant we had to flatten out our frames approaching our front wheel skirt.

This is highlighted in the image to the right, where the flattening can be clearly seen as the frames are laid against each other.



Perth's Prochem (www.prochem.com.au) have agreed to supply our project with the 4" 316 stainless steel oxidiser feed line, stainless nitrogen tanks balance lines and the dump lines for our fuel and HTP tanks. The sponsorship also included all the associated hardware needed to plumb in our cars rocket motors. Special thanks to State Manager Mark Ridout and Assistant Sales Manager Paul Adams, your support is a fantastic boost for the Aussie Invader project.





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In between all this activity our Team Manager Pete Taylor and long time helper Chris "Monkey" Demunck managed to find a spare 100 or so hours to build a sensational model of Aussie Invader 5R. This model is complete down to the finest details including seat, rollcage and belts, front suspension, rocket motors, and she is an absolute work of art.

Thanks a million for this huge effort guys, this model is already being displayed in potential sponsors boardrooms, an incredible effort.



We had a visit this week from the Fast-Track Apprenticeships folk who I had recently worked with in promoting the role of motor trade apprenticeships. Dave May a lecturer from TAFEWA put me in contact with a very professional company who we had been trying to excite with our mission and we were blessed to have Darren and Nick Rowe (Rowe & Sons, Maddington, WA) pay us a visit and give us their professional opinion on how we should skin our "V" underbelly and top-hat sections. These guys do some fantastic restoration work.





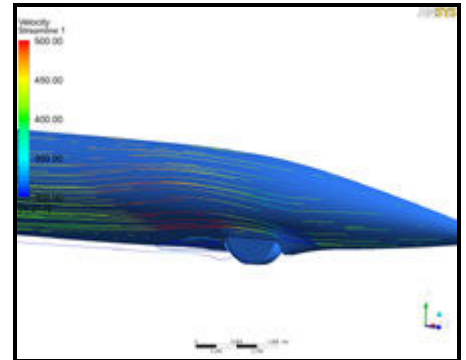
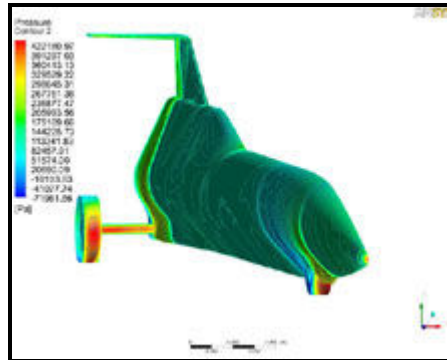
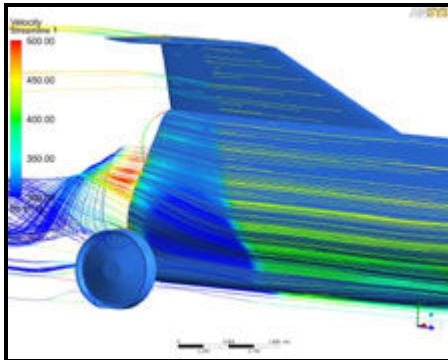
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This month saw some very heavy welding on the car and this involved hours of hot and uncomfortable work for the guys concerned. WA has gone about 90 days without rain and we are in the middle of our summer, with outside temperatures often exceeding 40c (104f), so working in an unconditioned workshop with a metal roof for several hours, can be quite a task.



Brian Cailles welding our suspension box and Sean Patterson prepping our frames before welding

Soto (formerly Frank Soto) has recently completed some of our CFD (computational fluid dynamics) predictions which look very positive. CFD allows us to test our cars design through computer modelling and hopefully predict its performance and safety at subsonic, transonic and supersonic speeds. The CFD programs have to run on super computers that crunch billions of mathematical calculations and can take several hours to complete.



We have a lot more work to do and our resident CFD man Dan McKeon is already working on some new ideas to improve aero performance and eliminate the current hot spots seen in our report.

Mark Read has put together a new section on the website with some of the CFD images and a brief explanation. It can be viewed at www.aussieinvader.com/the_CFD.php.

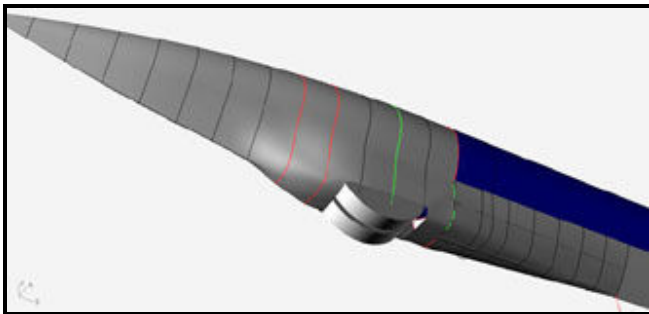
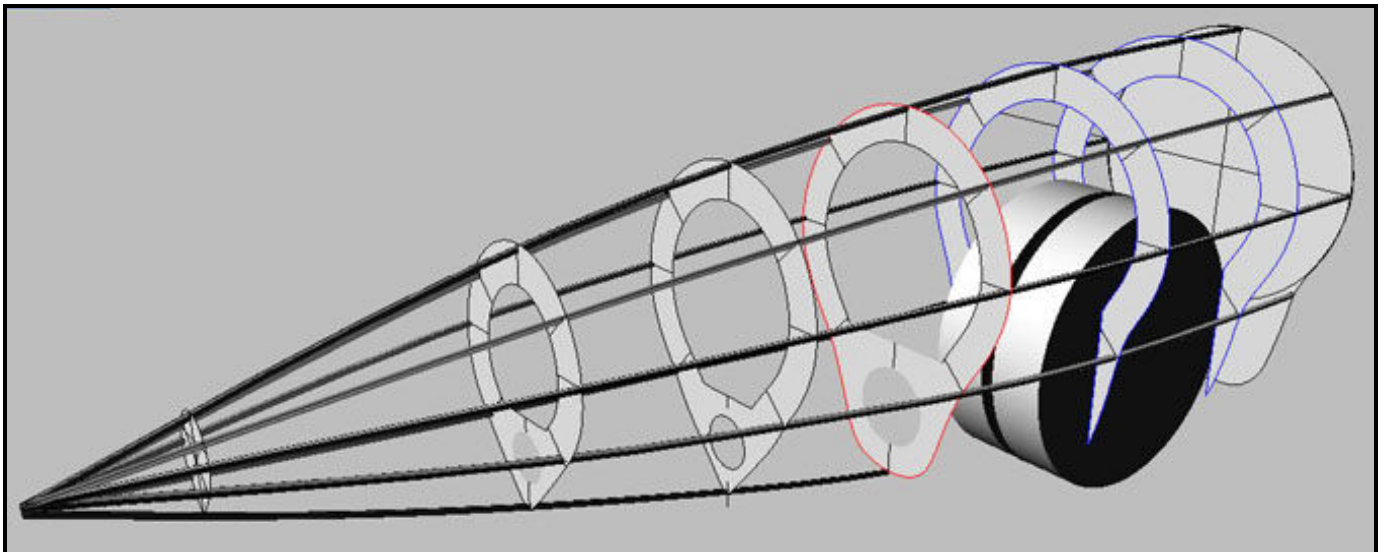




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This month PPG Industries have contacted me with regard to the paint supply for our unique race car. We look forward to working closely with them in the future, to make the World's best land speed record car, the World's most beautiful.

Just last week, with several film shoots coming up and the front suspension and nose still a little way off, we felt that we still needed something on the front end of the car, to convey the size and shape of the whole structure. We keep talking about the mainframe of the car being 12 metres long, but we have another 4 metres of nose cone. This car is going to be around 16 metres long (52 feet). Mike Annear said he could produce CAD drawings for the nose sections, we could then have them laser cut and could easily make up a frame to support everything.



This was a great idea, as it gave us a shape to experiment with, allowing us to fit all the front suspension, wheels, steering and ancillary equipment we need in the nose.

It will also allow us to work out clearances needed for wheel movement and give us input to the final nose design in composite materials.

Anyway that's about it for this month, but special thanks to all of the following companies and individuals for a superhuman efforts and a fantastic result.





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John Ackroyd, Mike Annear, C.R. Kennedy, Stephen Sugden, Progress Equipment, Sean Patterson, Topline Welding, Brian Cailes, Pete Taylor, Mark Read, Dave Flynn and all of the Fielders Crew (service beyond the call of duty) Unique Laser, Prochem, Powerlift, Braeco Sales, K J Beer, Rocket Lab and our great sponsors and mates at Di Candilo Steel City.

If you wish to help us achieve our goal and donate towards the project, however large or small, you can donate online at www.aussieinvader.com/donations.php.

Until next month, be your very best.

Rosco McGlashan

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