

BENAN SALIH
REDESIGNING A POD RACER
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FINAL REPORT
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Benan Salih, Redesigning the pod racer.

The extreme galactic sport of 'pod racing' has been rejuvenised into the modern day. Investments from many transport manufacturers have helped fund the reimagined sport. One of which being 'Porsche Galactic'; known for their highly experienced engineers, will change the design of the veteran 'pod racer'. The designing process looked into the vehicle as well as its practicality. Details and function.

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Introduction

Foreword

“Imagination is the stuff of what if: the uniquely human ability to invent fantastical scenarios peopled and equipped with marvellous machines, soaring environments and all the attributes of the usual multiplied a thousand times, by the combination of skilled design talent, a Highly developed sense of proportion, scenarios and above all, the facility to convincingly be there.

The journey of imagination can take us to far off galaxies or just slightly ahead of now in the time continuum.”

SYD MEAD,

PASADENA, CALIFORNIA JULY 21 2007

Back story

After studying Design for 5 years, 3 of which being the study of transportation design, I have come to my final project towards my undergraduate degree. Choosing to go outside of my comfort zone and really challenge myself with how far my imagination could take me. I'll be moving away from the present day of road vehicles and more towards the science fictional path of transportation.

After looking into the work of transport designers; Syd mead & Daniel Simons, seeing how much material and labour they implement to illustrate their designs as photo realistically as possible to really challenge the viewers mind.

Using this mind set, I set myself a goal to design futuristic concept form of transportation using the power of theoretical technology in the universe of one of my favourite cinematics known as Star-wars. Aiming my design to the target market of Movie directors and animators working in the cinematic industry.

Brief

A long time ago in a galaxy far far away,

Rising from the ashes of the fallen empire, The First order are the current rulers of the galaxy. Bringing forward a strong connection to the government with the imperial state, making them top of the food chain.

The exciting and dangerous intergalactic sport originating from the vast desert of Tatooine known as 'Pod Racing' has been revitalised into a Highly televised high class form of motor racing. With the governing body of the 'First order' funding the sport, bringing in large investors from civilians as well as independent manufacturers of rocket ship and transportation into the competitor's market.

Spreading across 12 planets with 18 of the most terrifyingly dangerous tracks and becoming the most viewed and biggest incoming sport in the galaxy's history.

THE IDEA

After the large investments from many transport manufacturing companies into the sport, one of which being 'Porsche Galactic'; known for their highly experienced engineers, will change the design of the veteran 'pod racer'. I will be designing the vehicle and liveries for this company in my project. The previous bootleg design of the pod racers is far too untrustworthy, being known for large mechanical faults in the engines during the race, common Entanglements within the body work of one pod to another when colliding etc. Creating a far more life risking environment for racers and the fans.

Therefor the design will be made to be safer, stronger and more reliable whilst capturing the highly demanded & stimulated thrill of the sports history.

Design Process

Inspiration

Moving from automotive towards transportation, I began to look into images which influence me between the two contrasting design styles of the elegant Porsche, as well as the robust pod racer.

I looked towards images and designs that correspond with the elegance of a Porsche. A sleek stylish design whilst having a very aggressive and powerful engine that's hidden beneath the subtle and smart exterior.

Whereas with the pod racer, The design style is very different. The loud, obviously aggressive exterior of the monstrous separated engines that provide a sharp accelerating side profile to the vehicle. A towering set of engines pulling the smaller cockpit behind.

Initial Sketches

The first inspirational sketches for the Reimagined Pod Racer were looking towards different volumes of forms in various shapes and sizes whilst trying to implement the sharp yet robust DNA from both factors.

By creating these speed form like shapes gives the mind a starting point to reimage the ideas into more realistic attributes towards the design process therefor creating more options of styles and theoretical ideas of what it can become. Once finding a shape and style that reflects the details of what I'm looking for, I would begin to add details to them.

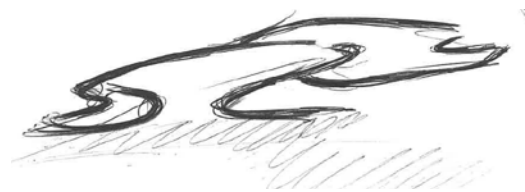
Looking into Porsche DNA

Porsche is known for its iconic design DNA which is implemented within its entire company. Every Porsche follows a specific set of lines to keep its DNA making a Porsche unique and unmistakable. This means keeping the relationship between a flat hood, and highly pronounced fenders. Also noticeable are the dynamic tapering of the lines in the front of the vehicle. The typical fly line becomes the basis of a sports car in every model. The pronounced fender correlate towards the extended lines to the rear of the vehicle. The 911 has kept the same silhouette throughout its entire history with slight changes to the model every few years only to compete with modern times. However keeping its style all these years has created the unmistakable exterior of the car.

Porsche sketches

A modern concepts of Porsche; such as the mission e, uses a much more futuristic, organic style to the front of the vehicle. A very sharp sleek design whilst being very open. Widely exposed parts of the body are covered with plenty of detail not often seen on exteriors, such as highly tech surrounding exhaust systems from other concepts. Attempting to recreate the iconic lines from these by sketching large intakes and body works to create a strong iconic exterior.

With the feeling of moving towards the right path, began the quick sketching of a side profile for the vehicle. Capturing a sense of an overpowering front end to the pod and portraying the idea of which the silhouette could become whilst having a large sense of ambiguity at the same time.



A key sketch that helped figure out what was needed was the correlation between the two front engines connected by the dynamic tapering of the lines. Creating an elegant and smart looking front end.



Solid body

The large single chassis race-ship used on the next set of concept sketches were inspired by the late 'Porsche galactic 811 military unit'. Used as protectors' ships for the early empire and the late republic. Imperial escorts used to follow/guide high security vehicles during travels. Known for their strong and sturdy body accompanied by its quick and agile engineering made it a heavily prioritised vehicle used in the galaxy. The original accompanied two passengers.

The re-inspired vehicle is single seated race-ship partnered by a safety maintenance droid that would be placed on board within the vehicle exterior.

Due to a larger engine being fitted as well as a magnetically charged pulse system; used to keep the vehicle hovering yet still grounded to the planets gravitational pull, the cockpit position will be asymmetrical in order to keep all the engineering hidden beneath the bodywork a safe distance from the pilot to prevent overheating.

Exposed pipework

A huge detail 'Porsche Galactic' implement to their designs are the smooth clean body works covering 70% of the vehicle, whilst the other 30% will be exposed segments of the engineering. The pipework and parts of the aircraft engines become exposed to prevent overheating. Due to such high speeds it's the only way for the cooling to act.

Drivers Details

With the first order being the new governing body of Pod Racing, Safety regulations have become stricter, with vehicles hurdling through top speeds of up to 700 Kph. Risk of crashes and collisions are through the roof. And for a single vehicle to last an entire season of pod racing without collisions or impacts is rare.

Ideas were placed forward with how to solve this issue, which were then narrowed down to 2 options.

OPTION 1:

Neuroscientific gelatine

Neuroscientific gelatine is the act of extracting a small amount of the thoughts and nervous system from within the body of a living being and injecting it within a gelatine like substance. This can then be poured into a system to apply all the thoughts of the racer into the vehicles operating system to then be controlled by the racer from outside of the vehicle. If the vehicle was to crash with the gelatine substance in operation, the driver would not be harmed as he will be in stable condition outside of the vehicle.

OPTION 2

Hybrid body replacement system

A combination between Artificial intelligence and the living muscle and tissue of a life form in coalesce to create a hybrid body. Designed and perfected by creating the body to adapt to its job of high g forces and extreme damage which normal life forms would struggle with if they were to pilot.

The hybrid body would be larger than most life forms whilst having all the capabilities a normal racer would hold. Quick responses, stronger more tactile skin to prevent injuries, and a quicker blood flow provided by mechanics to prevent movement of blood flow through extreme g forces.

The original racer will enter a replacement capsule and his thought and mind will be transferred into the immobile body. The racer will be able to pilot the immobile body as if it was his own.

If the vehicle was to crash and the hybrid body was damaged, the racer would not and instead regain consciousness within his own body. As it was only the secondary body destroyed and the racer was of no harm, providing only a simulation in his memories of the crash.

Option 2 was the preferred option by racers and teams. The Hybrid body replacement system was selected. The hybrid body is created and manufactured from the first order and not the team, to make sure there is equity within the races.

Droid

Many of the galactic ships used within transportation or battle hold an open space for a maintenance/protocol droid to be placed. Used as either a companion when racing, as well as an on-board maintenance droid to fix engine faults or problems when flying.

The pod racer will be fitted with the droid to provide a mobile pit crew, this then can fix minor faults to the system as well as a guide to provide information throughout a race, feeding all the statistics of the current race to the driver and the teams back at the race terminal. For any major damages to the vehicle the pod will have to fly back into the terminal pits for replacements of body works or components that are unable to be fixed by the droid itself.

The droid will be able to detach itself from the given compartment on the vehicle and magnetically orbit its way around the vehicle whilst it's driven at high speeds. There will be chances the droid could be lost mid race due to collisions. The pilot will be able to carry on the race without the maintenance droid, however it will not be as efficient and there will be a risk that faults could occur and not be able to be fixed mid race by the lost droid.

Alias Designing

With this project, the 900.17B Pod racer was created using Autodesk Alias 2019 Software, The package gives me control of the lines and curves applied to the surface areas onto the 3-D model. In most cases I try to express my 2d visual drawings as best as I can into a 3 dimensional piece and avoiding digital design accidents.

Bringing the design into Alias and seeing what the vehicle would become in a 3d format caused a few issues. The entire exterior held some issues by not providing a Porsche essence towards the design. The rear intakes became too large, distracting the rear of the vehicle from looking as sleek and elegant as most Porsches. Holding sharp rigid lines towards the rear of the vehicle when ideally needing to become smooth and graceful as I was hoping for. The fly line then started to vanish from the side profile and instead became too augmented.

The front fenders then conflicted with the rear body creating a more diverse looking face of the pod racer. Flattening them down and creating a larger more aggressive frontend created a more aerodynamic flow to the body whilst feeding the acceleration of the design from the front to the rear of the vehicle.

The original bay from an old z wing bomber has been changed into a cockpit for the driver, placed on the left side of the vehicle which kept a silhouette to the Porsche galactic 818 military unit. Whilst keeping is a simple dome created a more retro modernised feel to the design, looking out of place whilst at the same time, blending into the body nicely.

From the top of the vehicle a slowly descending slope of the side created a more teardrop shape than wanted by pulling the sides in created a more rigid outer skirting to the body, with enough area space left to provide panels able to fit technology and controls to the vehicle.

From the face of the car, the dynamic tapering line of the nose did not correspond to the bottom of the body work, leaving a huge difference from the lines. By cutting the bottom back to fit the nose and replicating the current lines created a cleaner more retro feel to the panels leaving sharper feel to it.

All these details created a good concurring look to both Porsche galactic and the retro pod racers design.

Finalising

Racers and aliens

With Porsche Galactic being one of the highest marketing investments of the First orders Pod racing era, having some of the biggest history creating well made vehicles. Huge favourites to being one of the top competitors of the championship.

Only the best of the best pilots are able to secure a contract with the veteran company. Two First order pilots were chosen, one from the Alpha division (the highest grade of pilot squadrons) and then second from the special stealth forces (the special operation).

Alpha Division Jem Tangent, holds the most space missions within the first order. Completing over 250 infiltrations to his name.

Special Stealth Forces Ako Boetag, successful has the fastest lap in history around the Dagobah System.

Both fearless pilots, both racing for Porsche Galactic.

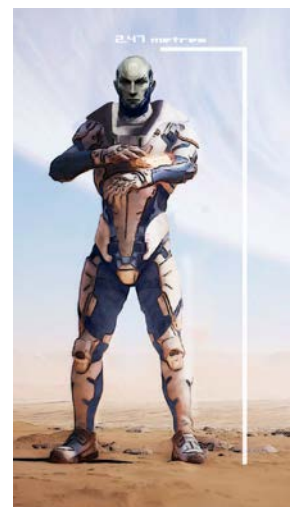


Suits.

Electromagnetic stimulating body suits are developed for the racers to wear when connected to the replacement chambers. Reacting to the bodies' nerves and movements collected from the resting body, transmitting towards the immobile hybrid.

Alien

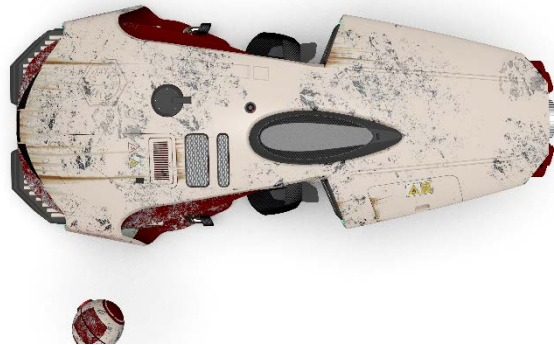
Created in the biomechanical Cloning lab on a Star Dreadnought. The Vuteran Hybrid has been designed specifically to replicate the actions of the pilot's body movements. Standing at 2.47 metres tall and weight around 135 Kilograms, the Vuteran is larger and stronger than most living beings. Using the tough and flexible webbing from Degobahian Swamp spiders combined with the impenetrable skin of a Rancor to create a strong skin like substance, preventing major harm to the body when involved in crashes. Enlarged muscles from a human body are fitted to a mechanical skeleton beneath the structure.



Ship

This top view shows the layout of the First Reimagined Pod racer, **900.17B Porsche Galactic**: A widened front body – Holding 4 large **Vacuum V Tron engines**; Air guiding side panel and air breaks, a Bomber Bay – turned into a cockpit, Aerodynamically shelves – Forming from the distinctive nose and feeding through to the side panels; Two additional vacuum engines – placed either side of the cockpit, feeding through to the exhaust turbines at the very rear.

Refer to the pilot for scale. An unsurfaced and fully surfaced blank wire-frame model as they were in Alias Auto studio.



Top: the finished digital model, staged and rendered in Autodesk Vred Professional 2019.

I always try and finish my designs with as much detail as possible through alias, being shot lines of the vehicle to express how it would be fitted together, Riveting of bolts, exposing of mechanical elements as well as detailing to the textures. Always paying off and putting more expression into the design.

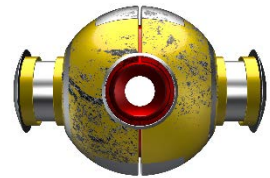
Since your eye has no relation to the model, it will always resemble a scaled model when finished with a polished surface. So when finishing a production space vessel, applying a “used / weathered” look to areas such as paint chippings, oil marks or the appearance of rust, can really put the vehicle into perspective of how it is to look.

The underbody of the 900.17b is dominated by the exposed exhaust and cooling system hidden on the shelves of the body grounded plate. Safety warning stickers have been applied to create the image of the vehicle being powerful yet unstable in the hands of an inexperienced driver and/or engineer team.

Below: The two 900.17b bolting their way across the sandy dunes side by side.



Right: The P-18 on board maintenance droid finished and replicated detailing of the 900.17B vessel. The spherical body is the static shape of the droid when in place of the ship. The expandable cylinders extend and retract when needed during maintenance. Tools and replaceable items such as fuses, spark plugs and hydro cells are kept within the body of the droid in case of event when needed. Retractable arms are also fitted for welding and accessing the control panel. A transmitting device chip is capable of feeding information back to the pilot of the vessel as well as to the behind the scenes team at HQ.



Blueprints

The given orthographic and measurements for the 900.17B. Involved are the measurements and all angles of the given vehicle. Measuring at a huge 9,950 mm and the width of 4,600mm. Smaller than the late Pod racers which were between 12,000 mm – 15,000mm.

The package for the droid are also on show to compare the sizes of the droid when the retractable arms are extended out.

Entire workings of the vessels engines was also made on within the model, showing the connection of the entire mechanic and how they feed throughout the vehicle. From the Vacuum engines; the cockpit, the engine block as well as the electromagnetic power supply given on either side of the vehicle. Exposed for the viewers to see.

A few more renders of the 900.17B and P – 18 together in different scenes and lightings to understand the entire vehicle in its full perspective.

Evaluation

This being the longest project I have worked on & having the most freedom on designing and concept styling so far. I am proud with what I have achieved, really thinking I have gotten the most out of the brief as far as experimentation. The final outcome works with the scenario well, giving off the aggressive and rustic look to a science fictional racer. Whilst at the same time managing to apply characteristics of design DNA from a brand towards the appearance.

Time management wise has been fairly good, with finishing my alias model 5 weeks prior to the deadline giving me plenty of times for rendering etc. The final design didn't come to me properly before I placed it into alias, however by working off my alias to create a final design gave me a better perspective of how it worked in 3d and if any amendments were needed. This meant when I decided a detail to the face wasn't correct, it expanded into more time redoing surfaces and details of the vehicle. If I had more time to amend my design, I would create moving parts such as the flooring of the vehicle to extend casing the entire body to rise up and creating a stance for the vehicle when grounded.

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