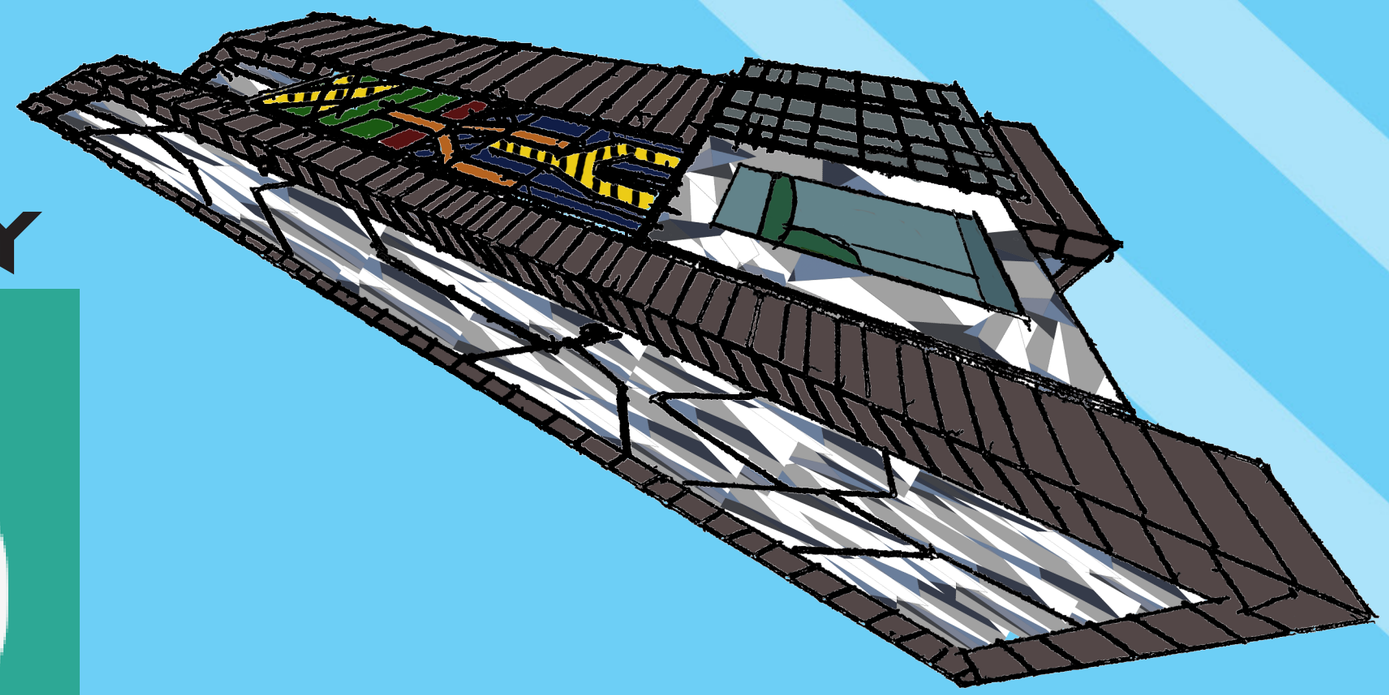
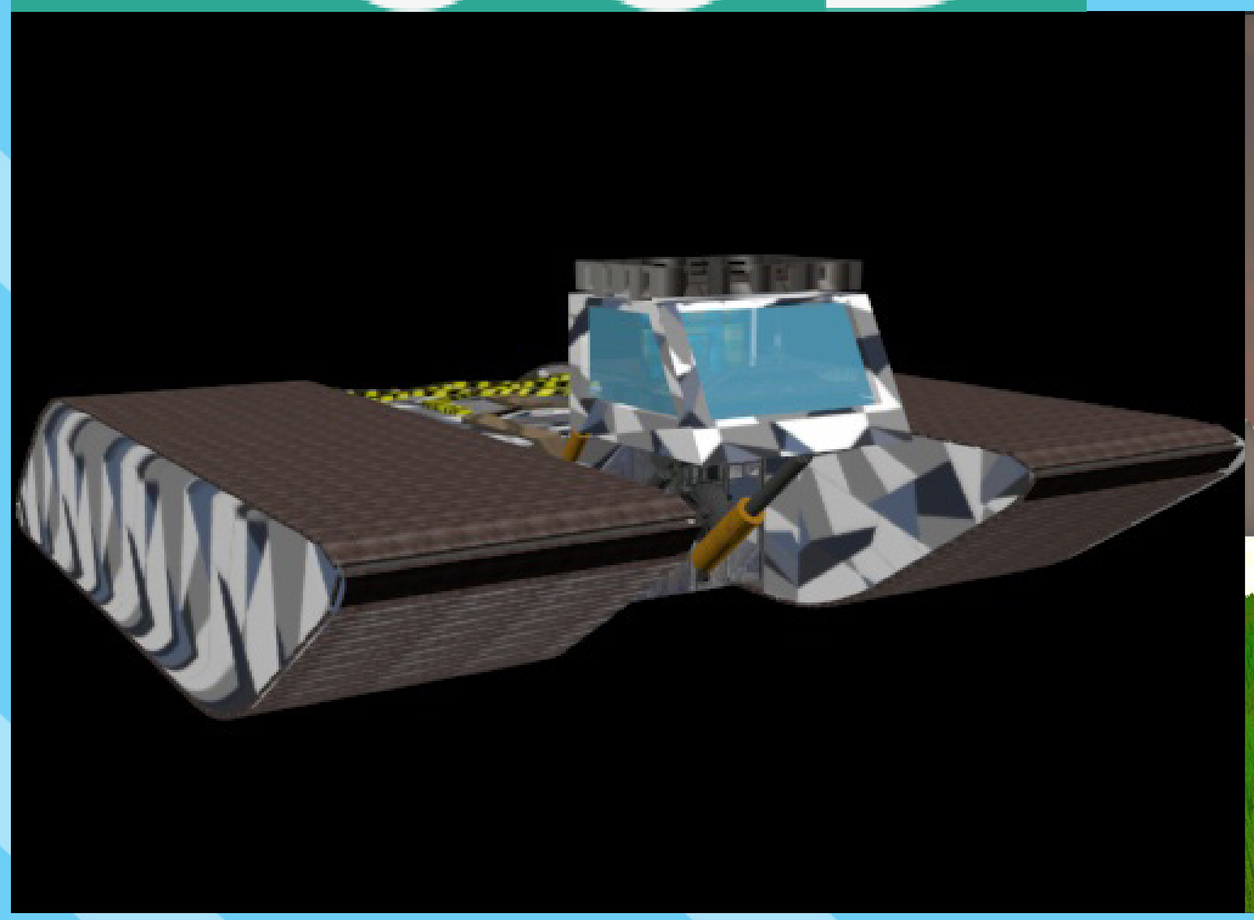
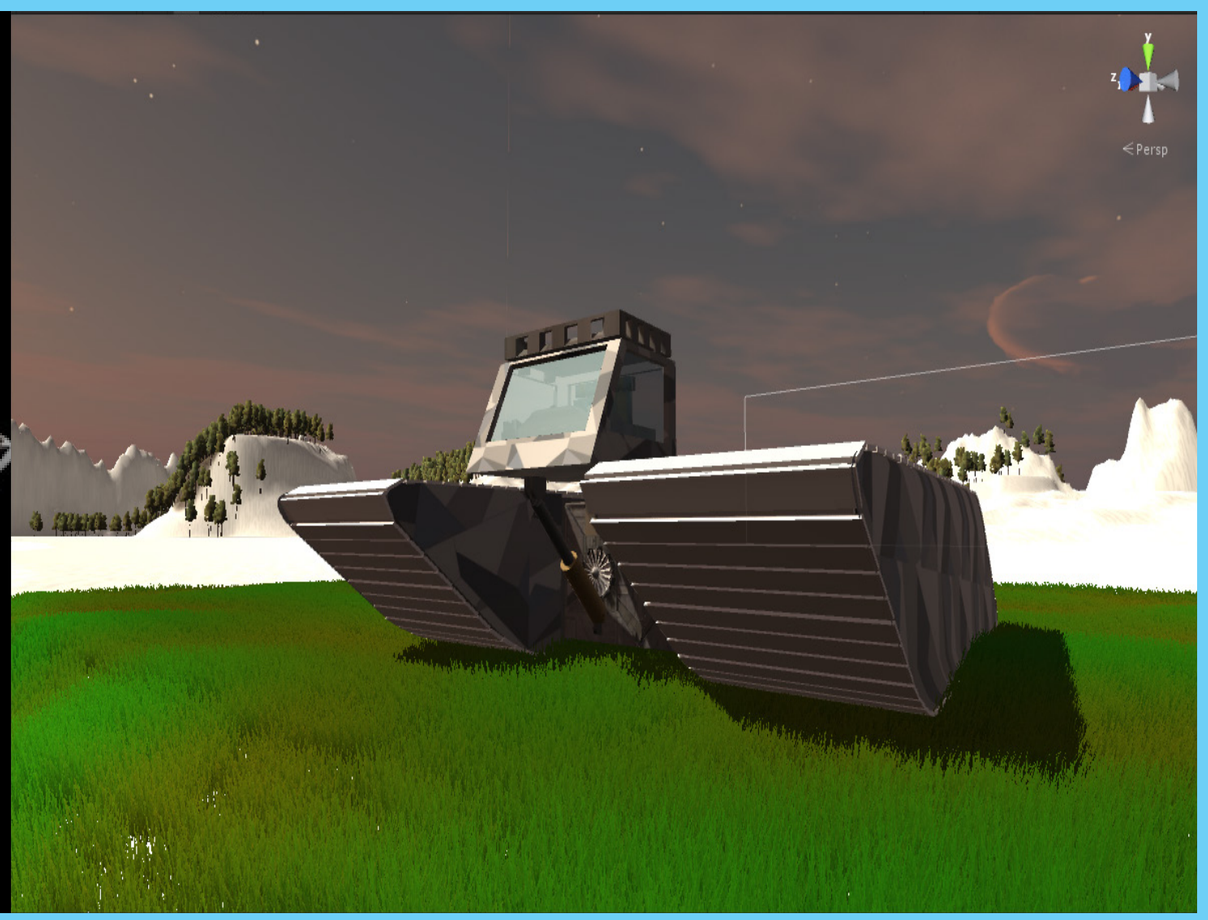
UNITS 51 & 3
TRANSPORT
BY ISAAC MURPHY

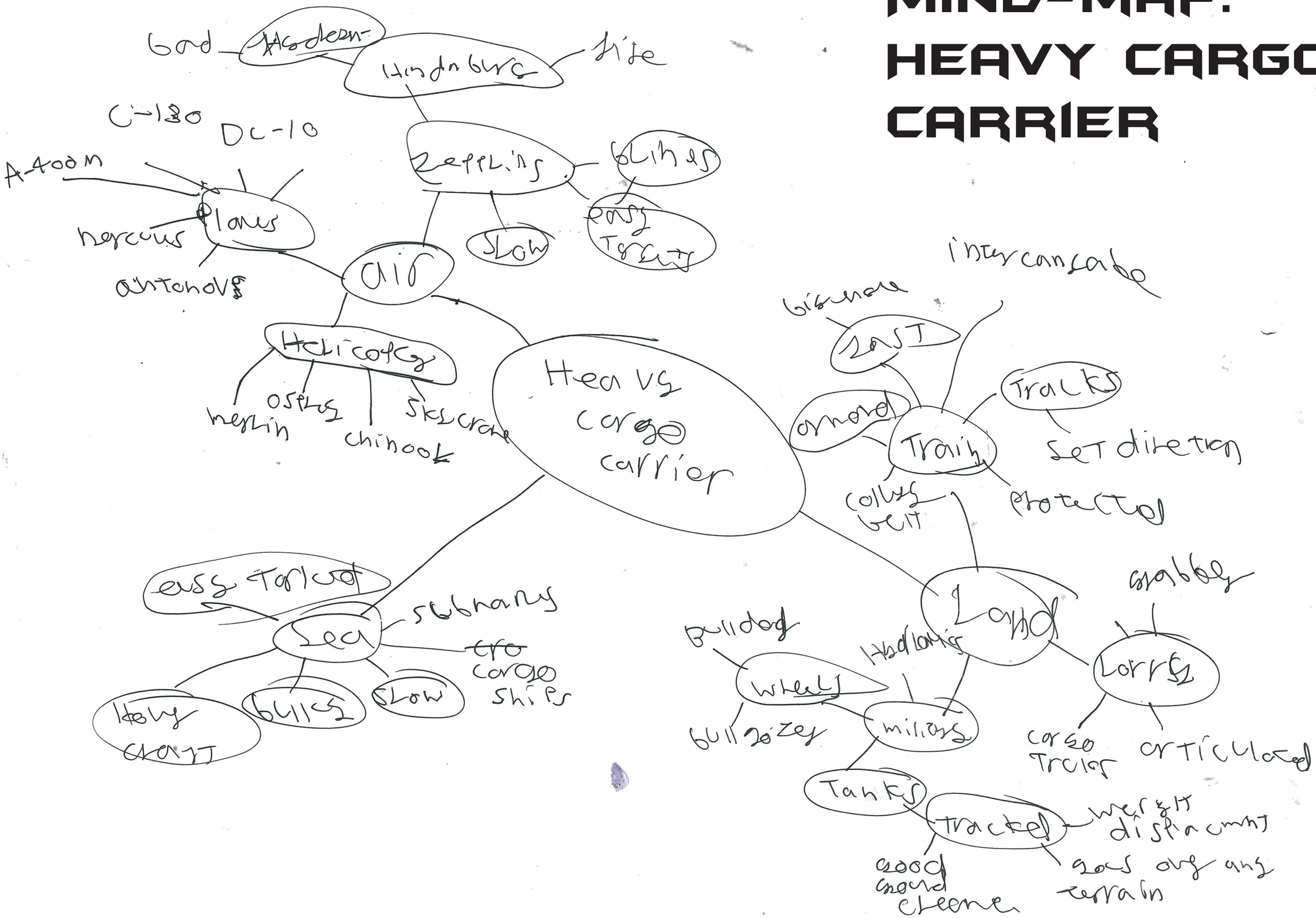
C·G·D



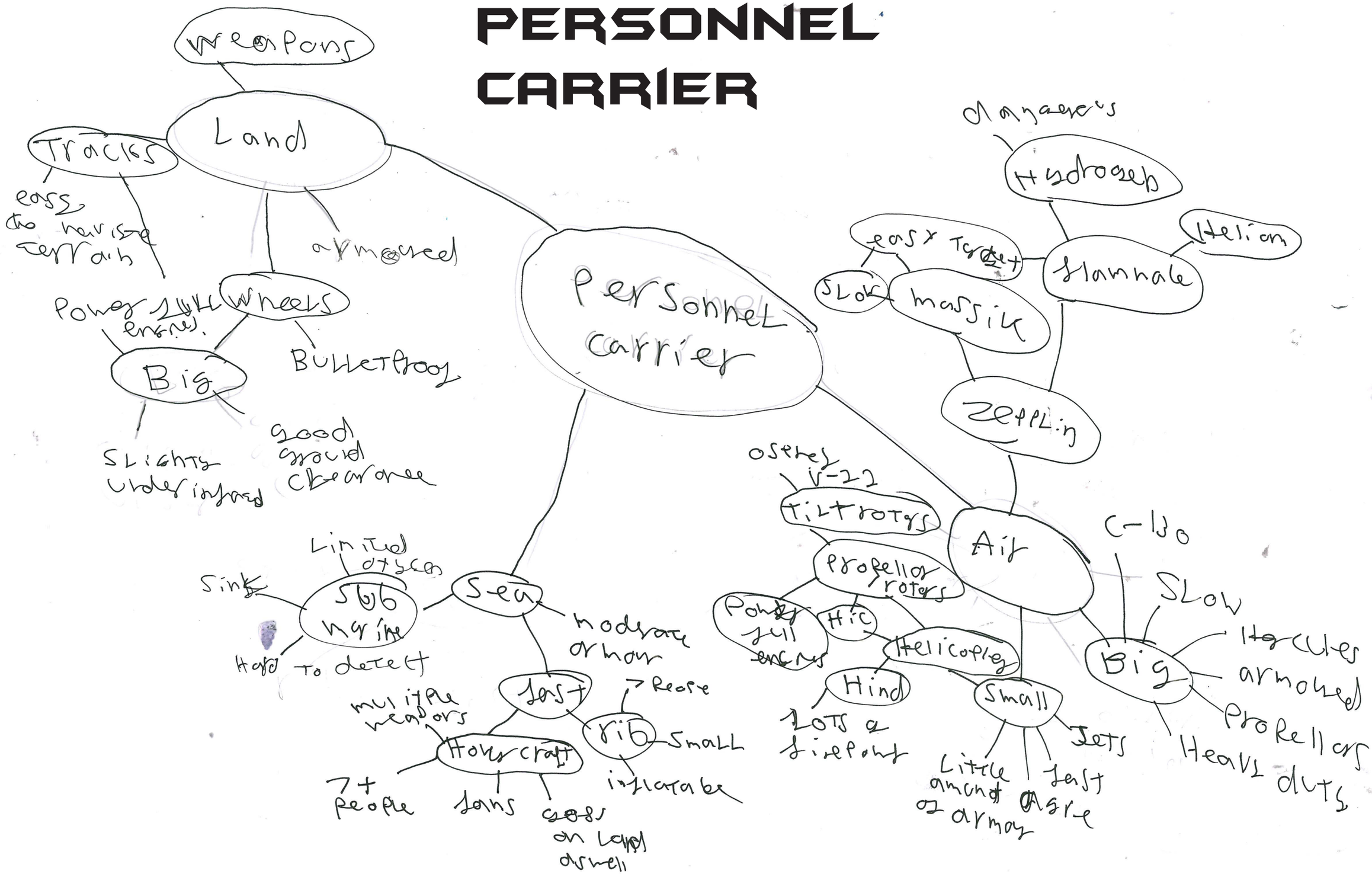




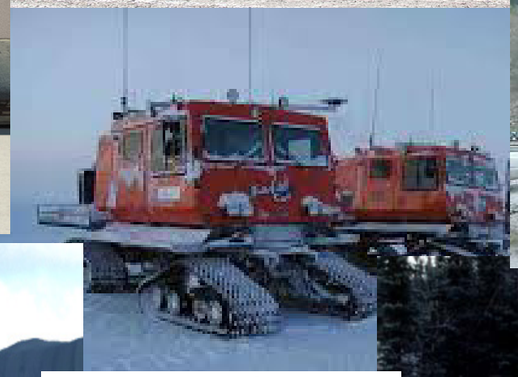
MIND-MAP: HEAVY CARGO CARRIER

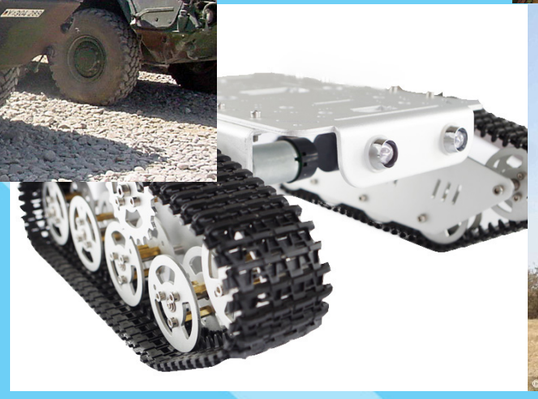


MIND-MAP: PERSONNEL CARRIER

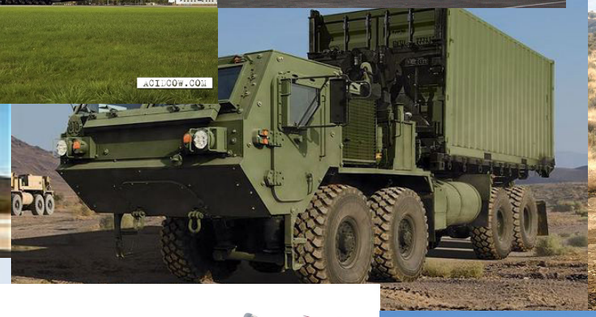


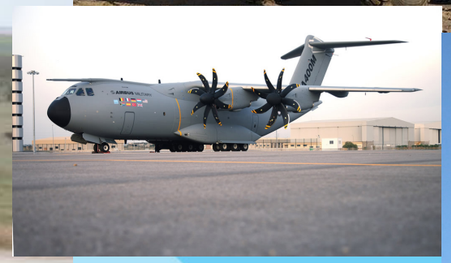
MOOD-BOARD; PERSONNEL CARRIER





MOOD-BOARD; HEAVY CARGO CARRIER





MOOD-BOARD; ANIMAL INSPIRATION

Jumping wolf (a)

ANIMAL INSPIRATION

Cats; I'm talking inspiration from cats because of their natural shock absorbers in their legs and the way the leg bends when the cat lands from a height or jump. I can use these features in my design process do help develop the suspension and shock absorber system within my design.

Millipedes/Caterpillars; The inspiration Im getting from millipedes and caterpillars are the way they move, they move in a tracked fashion with the majority of their legs/body making contact with the surface they are moving along while and the legs follow a wave motion to propel them in their desired direction.

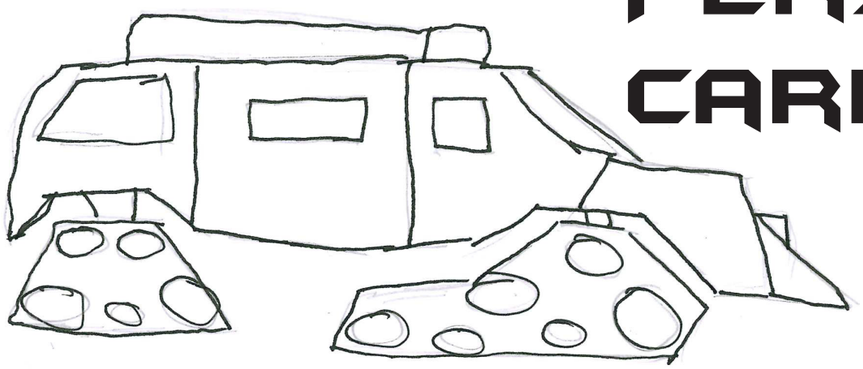
Wolves; my inspiration from wolves are that they are extremely good at endurance which I will implement into my vehicles power and drive system so that it is efficient and powerful. also the wolves ears prove good for pinpointing distant entities by sound which I could implement into my vehicles navigation and Radar system.

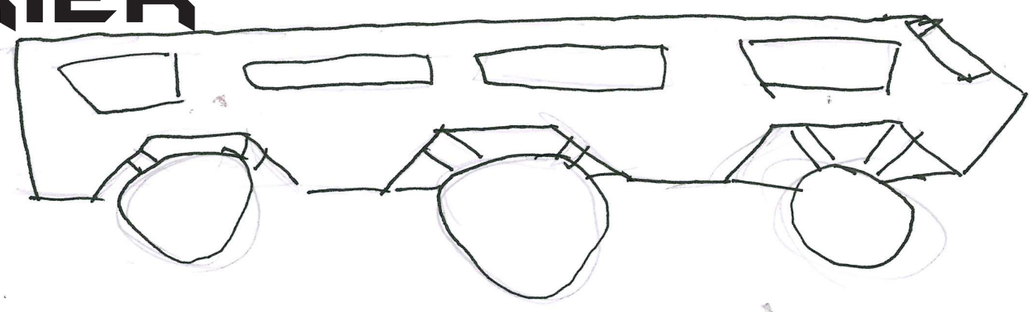
Armadillo; the armadillos natural hardened shell prove good inspiration for an armour system on my vehicle.

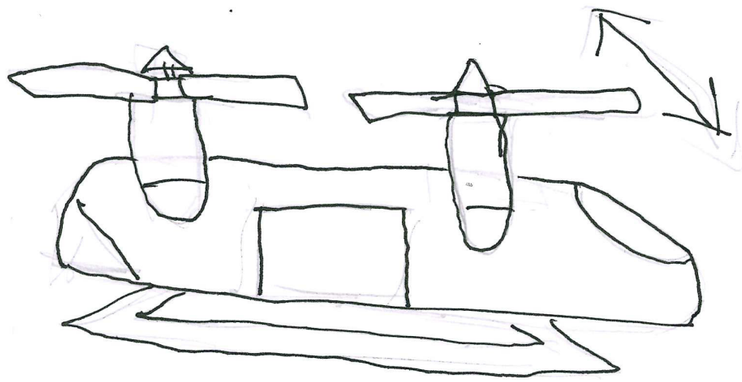
Chameleon; I can implement the chameleons natural camouflage techniques into my vehicle design to help keep it hidden.

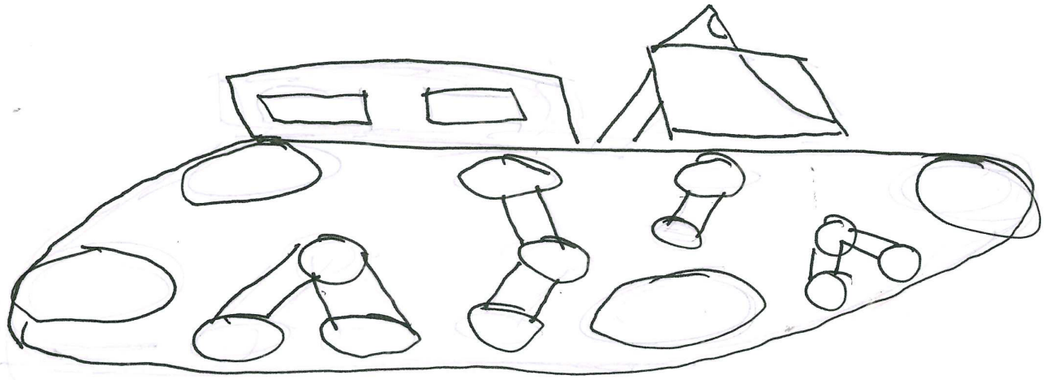
Shire horse; the shire horses natural strength and pulling power provides great inspiration for my vehicle because my vehicle needs to be able to navigate tough terrain while carrying either heavy cargo or passengers.

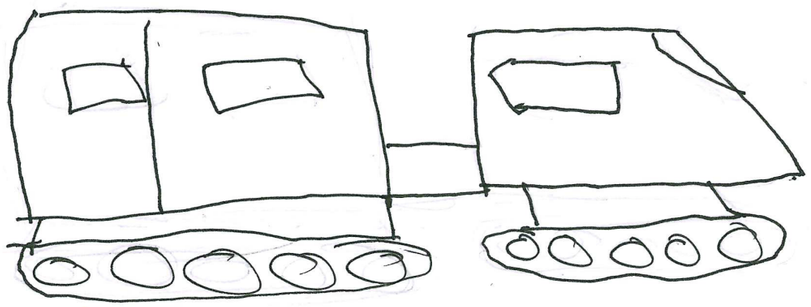
INITIAL DESIGNS; PERSONNEL CARRIER

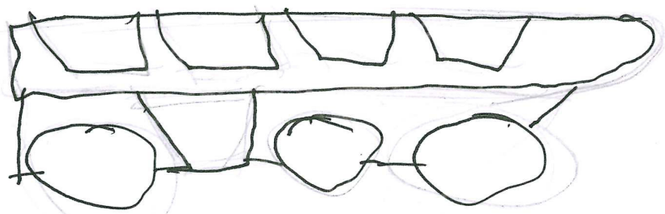


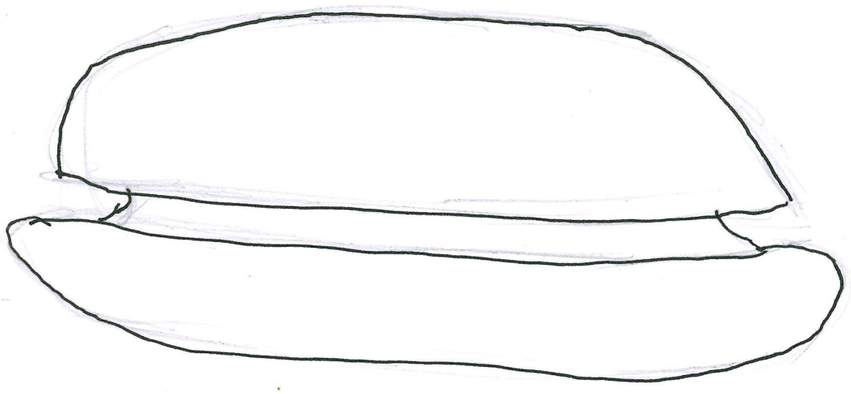


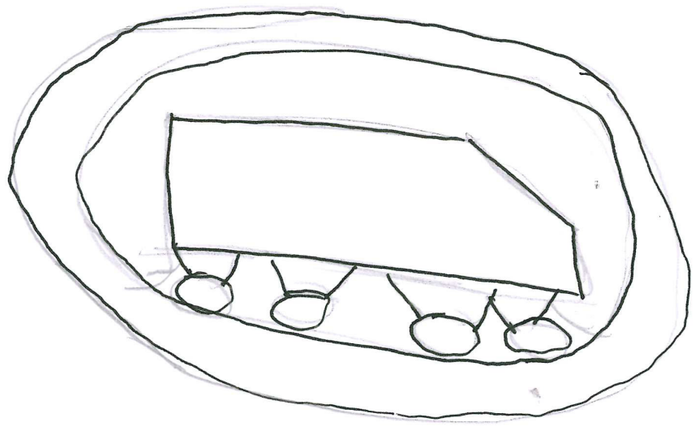


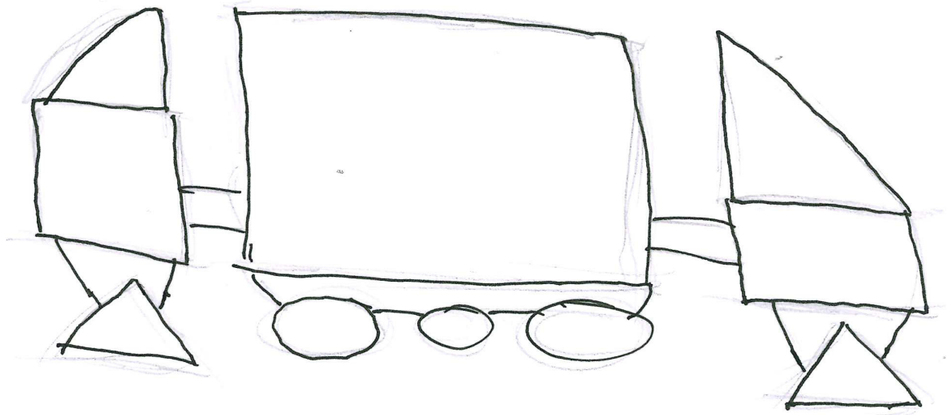


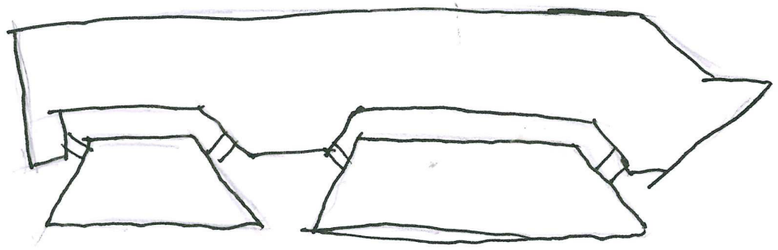


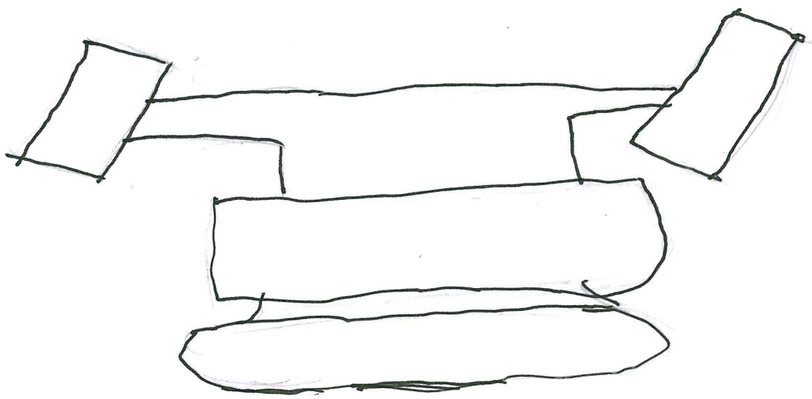


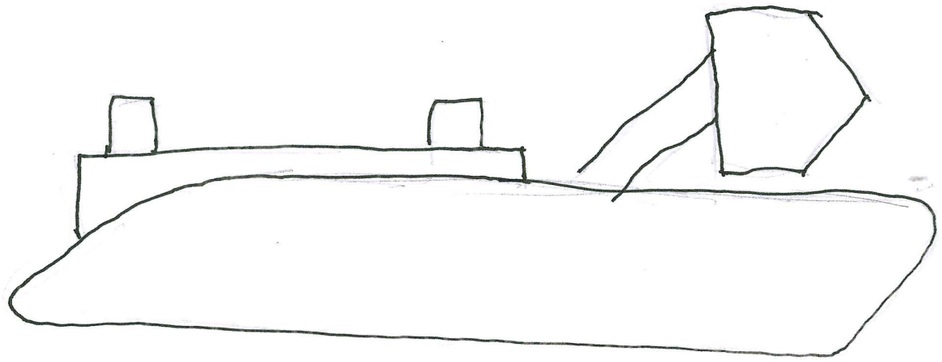


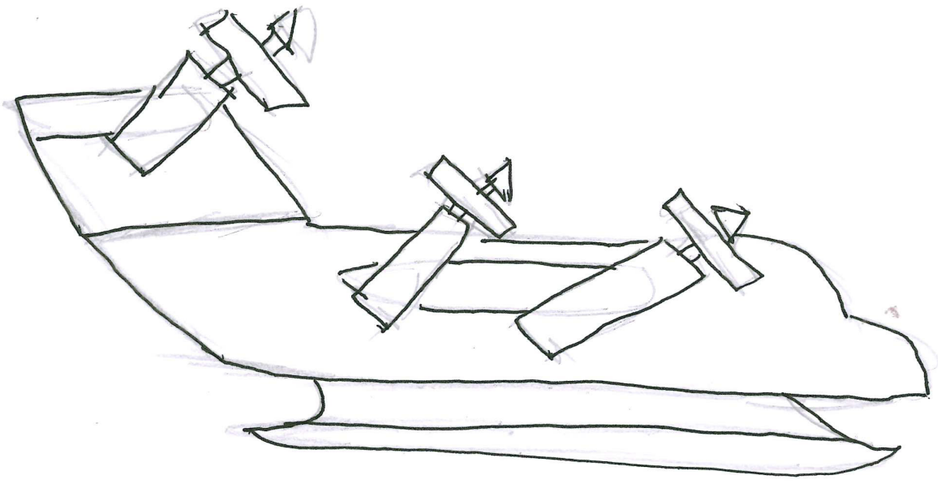


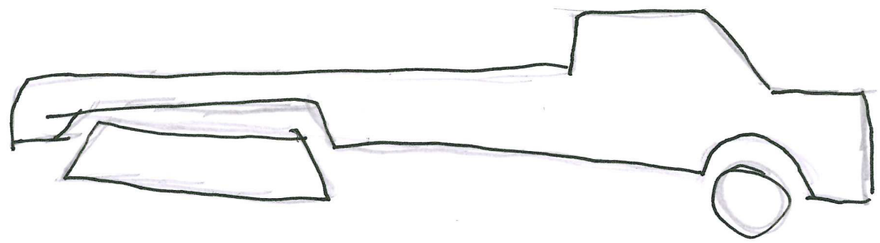


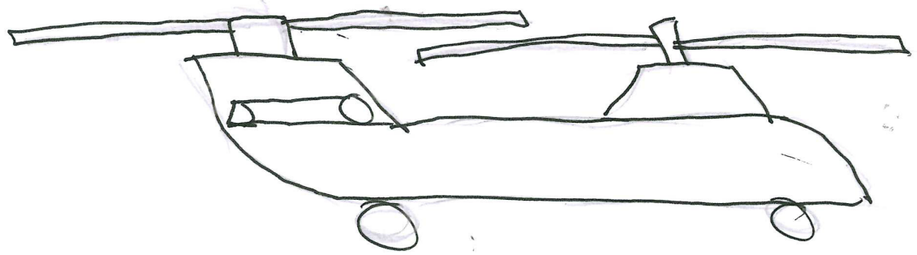


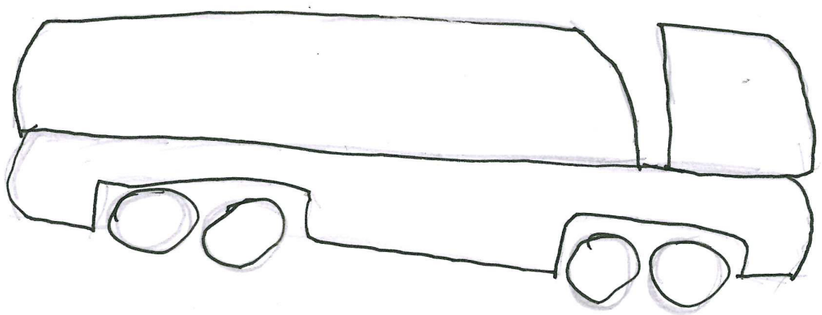


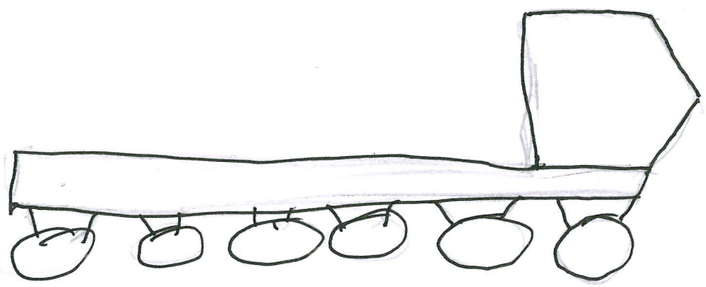


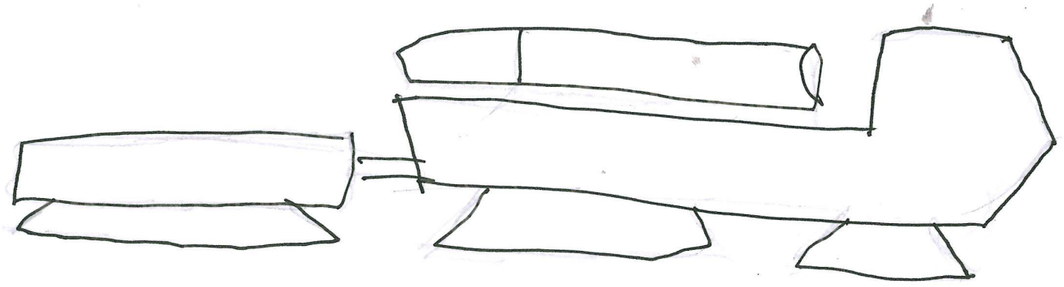




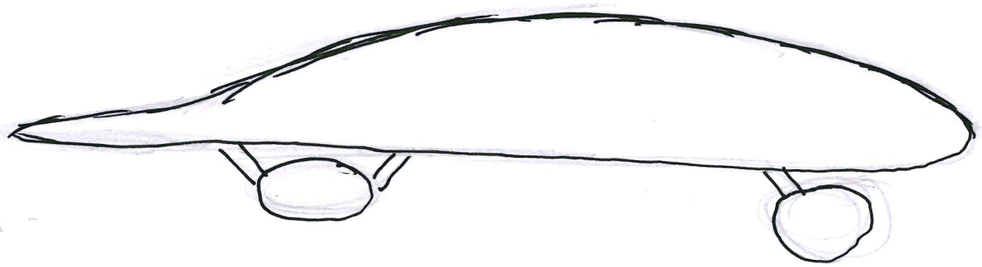


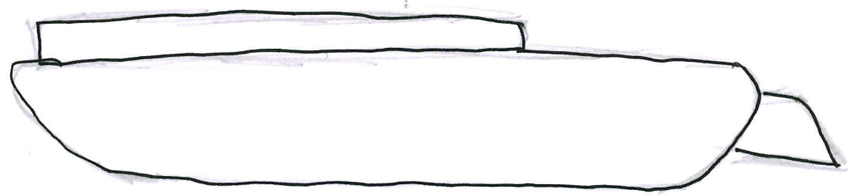


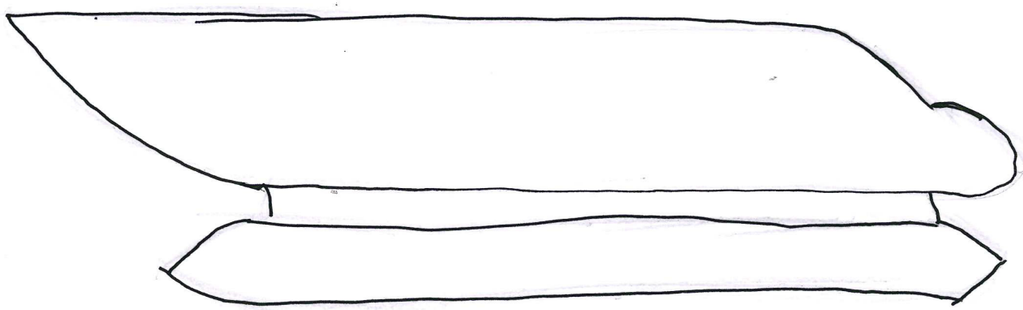


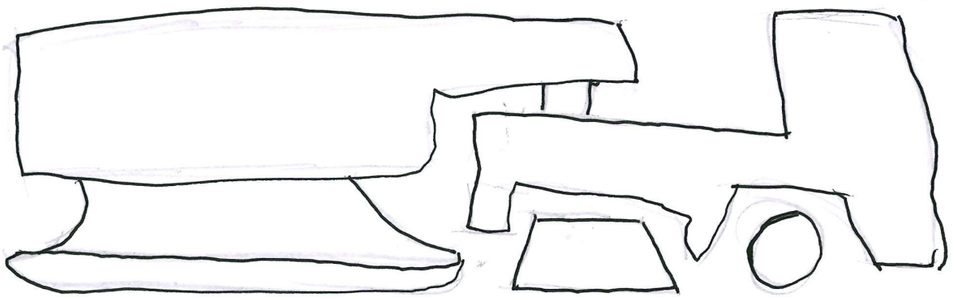


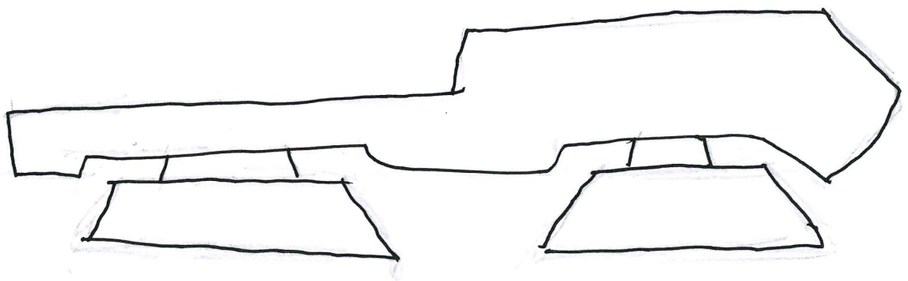
INITIAL DESIGNS: HEAVY CARGO CARRIER

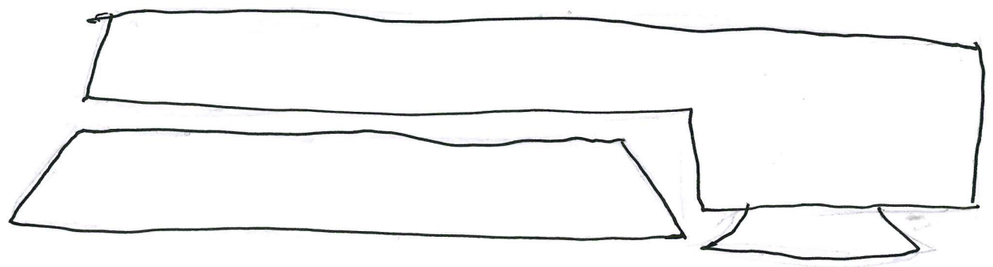




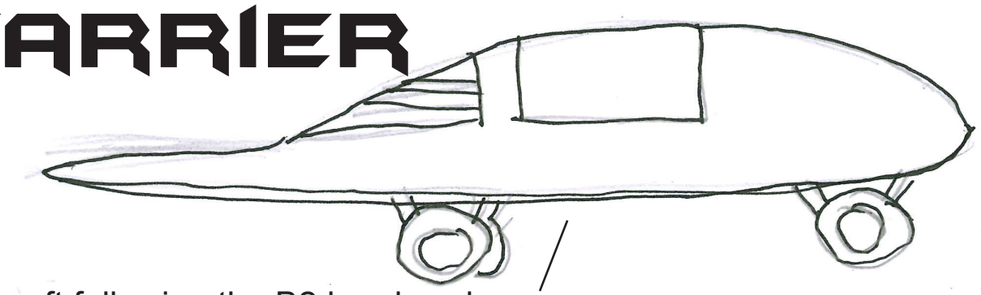






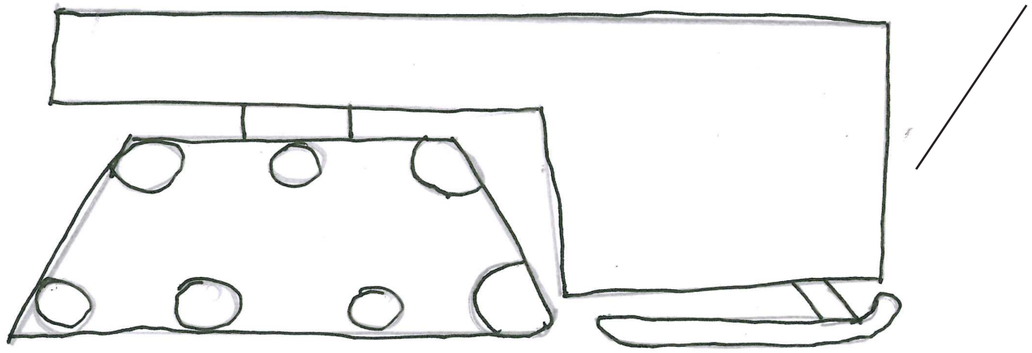


DEVELOPMENTS: HEAVY CARGO CARRIER

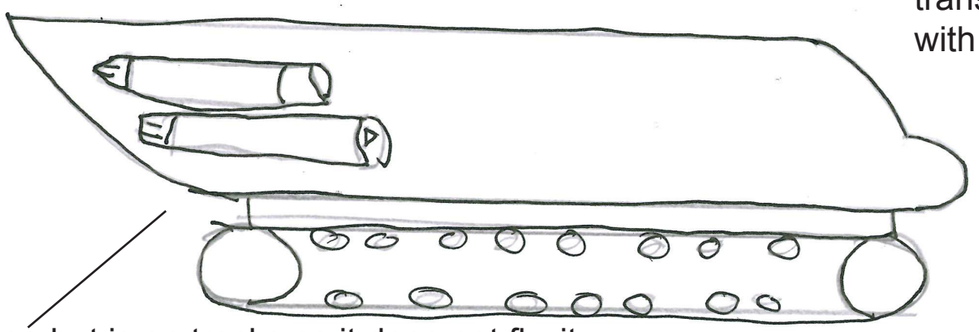


Aircraft following the B2 bomber design but for carrying cargo undetected.

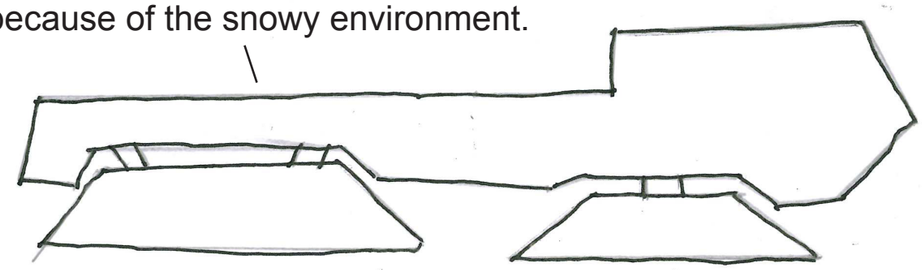
The vehicle follows a similar design to the TUG vehicles you would normally see at an airport, moving planes around. But this has a massive set of caterpillar tracks at the rear for traction with a set of ski's at the front for steering.

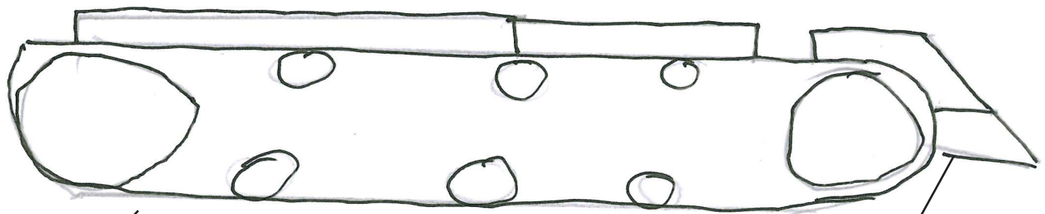


The main body of this vehicle shares the same body type as what you would see from a military cargo transporter truck, only I have replaced the wheels with tracks because of the snowy environment.

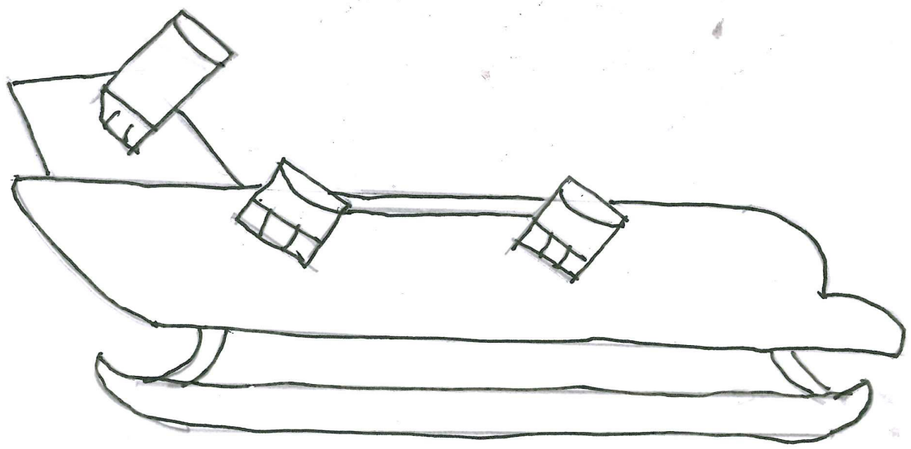


Aircraft fuselage but is on tracks as it does not fly, it also uses jet engines for a bit of extra power.

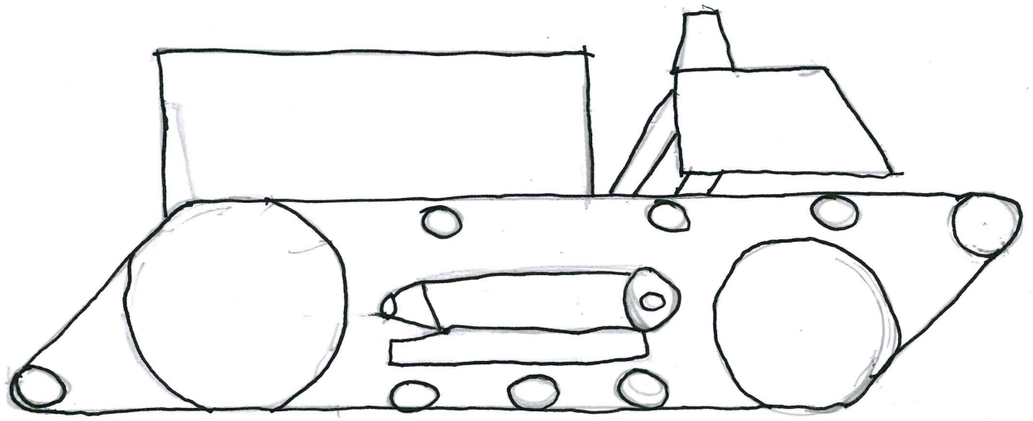




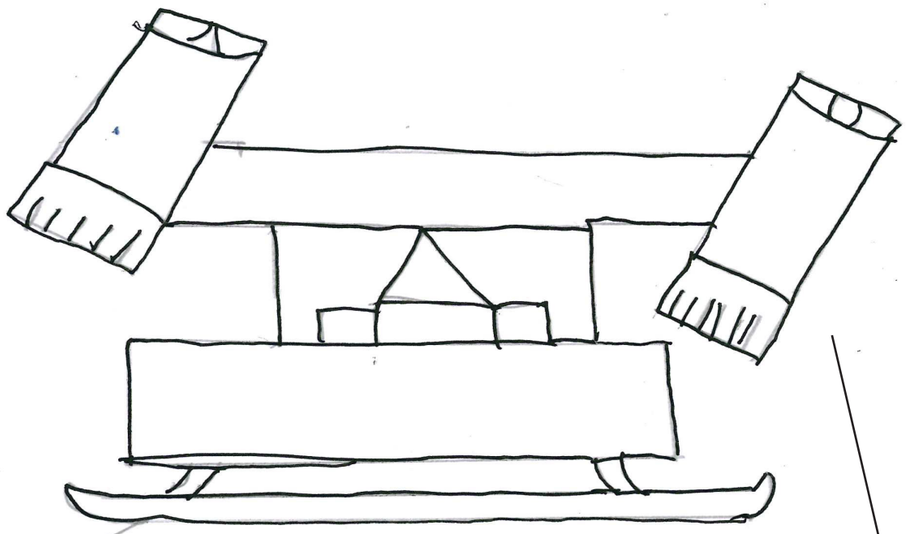
Main body of vehicle is sat in-between the two massive tracks, to help with weight displacement, the drivers cab is a separate part of the vehicle so it can safely be detached if anything goes wrong.



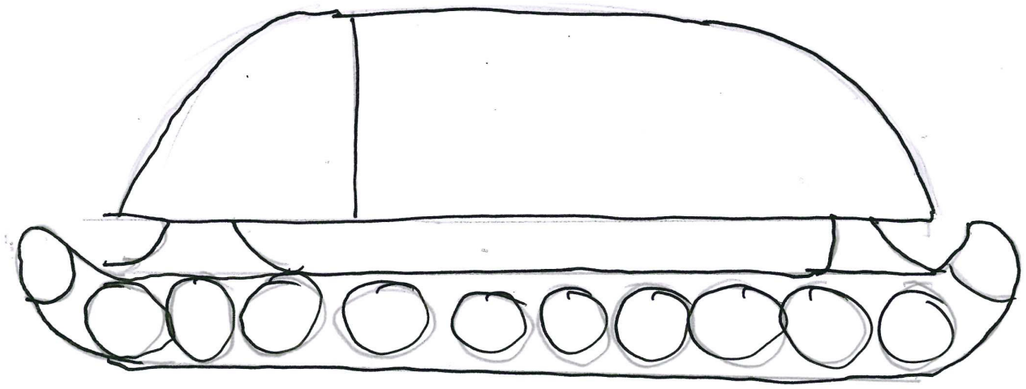
This vehicle shares the same body type as another one of my designs only this one can fly, the engines are of a "tilt-jet" design so it can achieve level flight and it also has a pair of ski's that run the length of the aircraft so it can land on snow and ice.



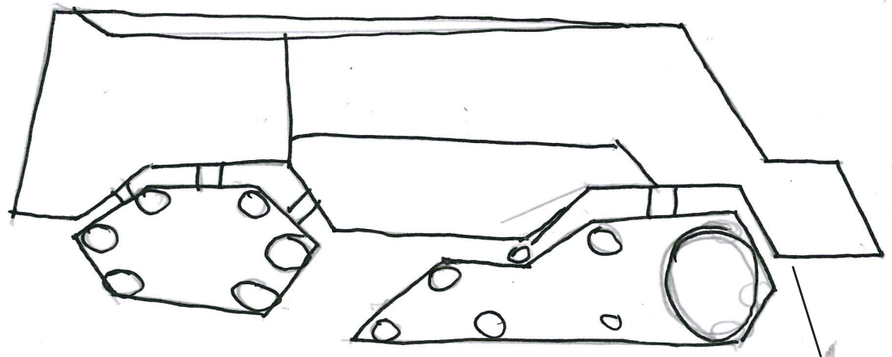
The drivers cab and the crew cab sit in-between a set of wide caterpillar tracks that follow early tank designs from the first world war, both cabs are attached to the tracks by a set of hydraulic pistons to raise them off the ground and allow for good ground clearance.



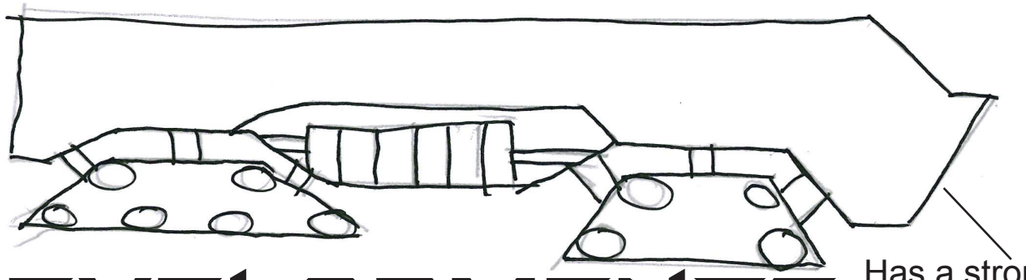
This design follows what you most likely see from a drone but it has a passenger cabin for a pilot and crew. Also it features a “tilt-jet” engine design.



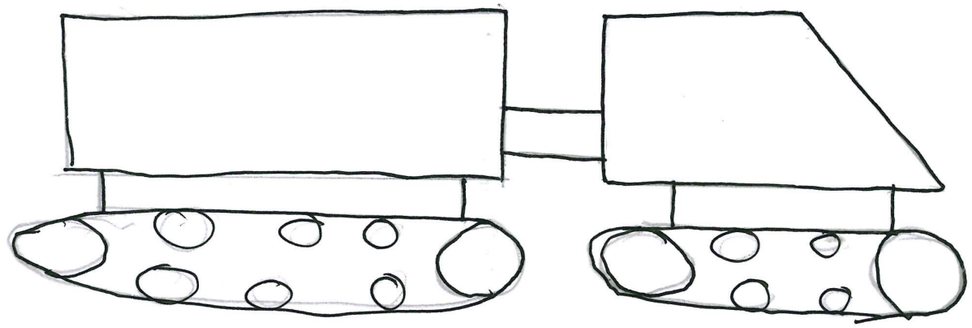
This design follows a tortoises shell for it cab making a safe and strong place to be if the vehicle comes under attack or flips over.



The vehicles design is similar to what you would see with a private armoured personnel carrier only with wheels substituted for tracks as the environment it would be used in is snow.



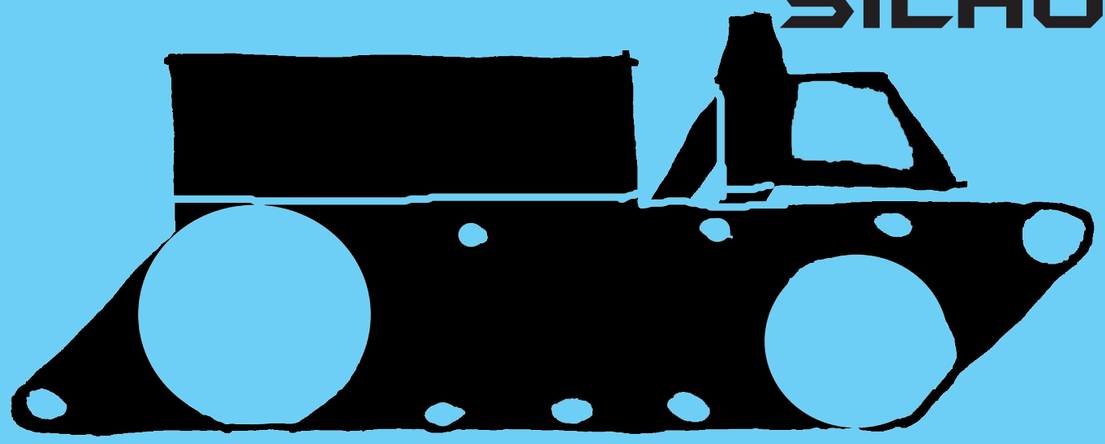
Has a strong angled body to help keep it camouflaged and it also runs on tracks.

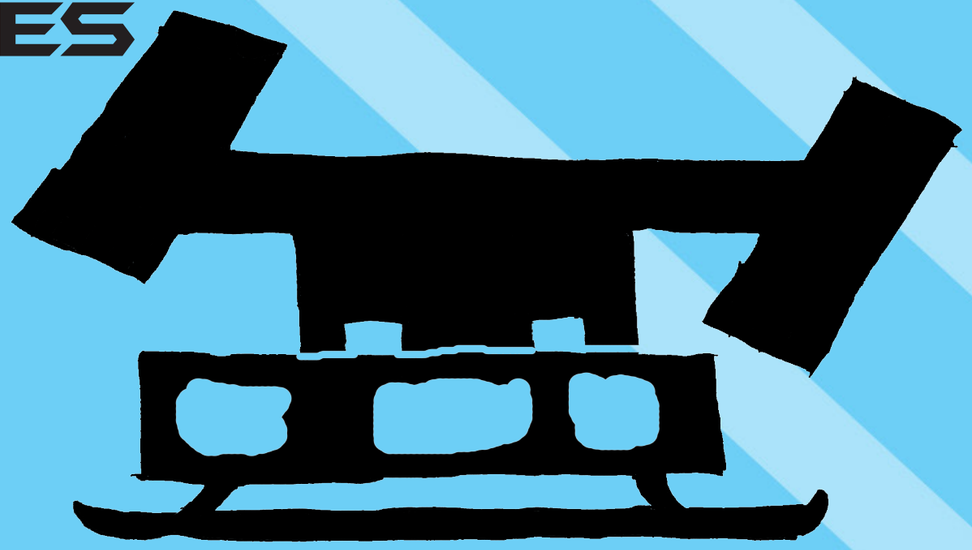


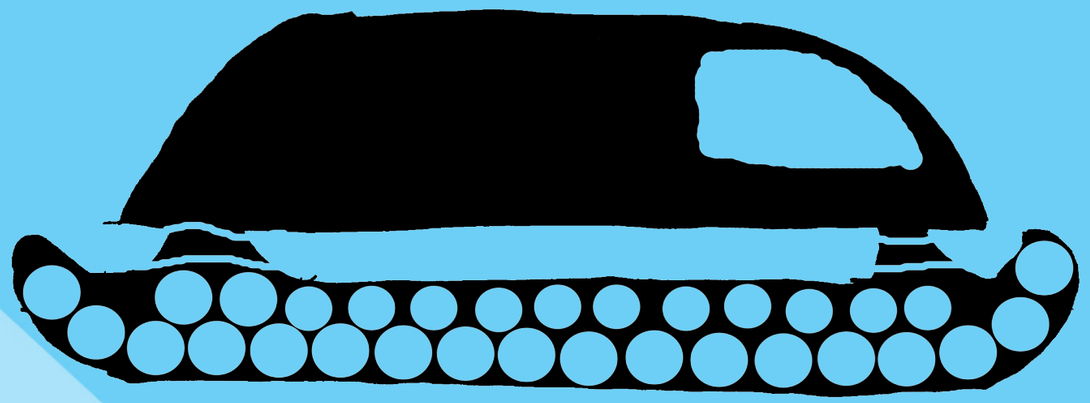
This design follows what you most likely see from a mountain rescue vehicle with the drivers cab and passenger cab separated by a co-axial joint.

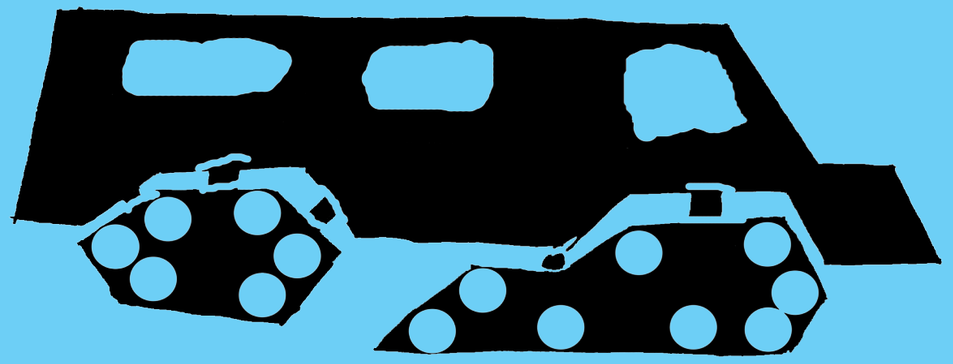
DEVELOPMENTS: PERSONNEL CARRIER

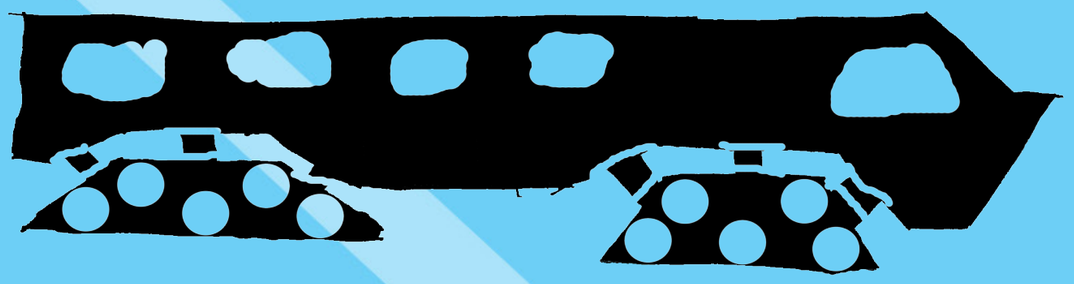
SILHOUETTES

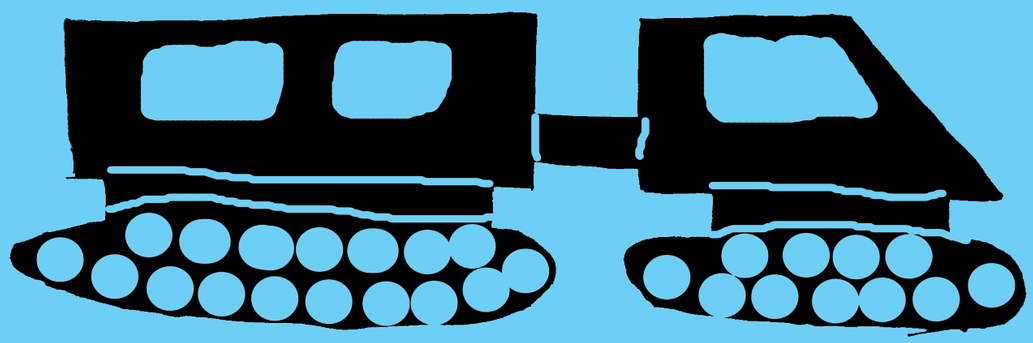




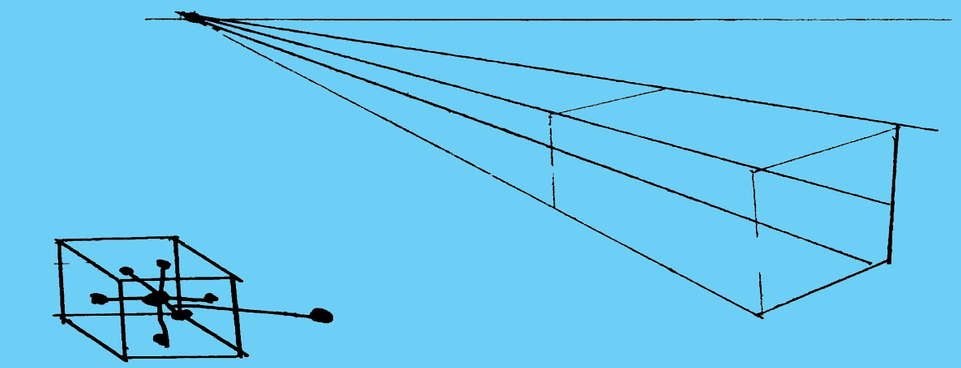


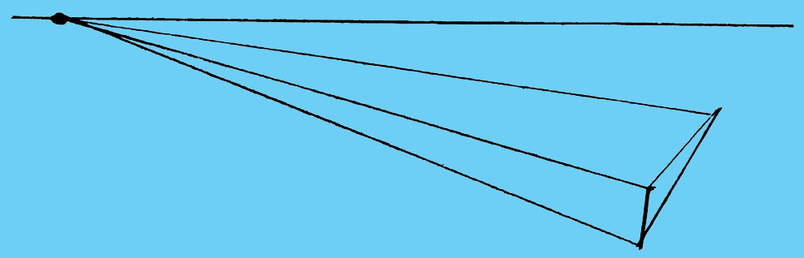


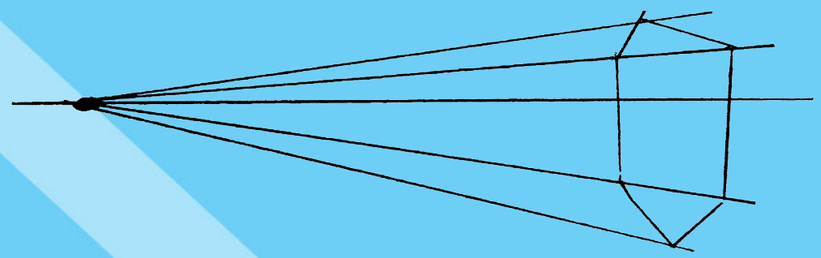


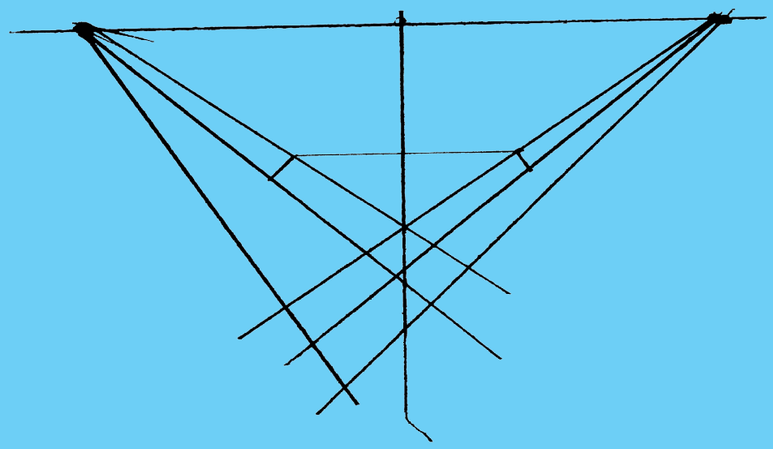


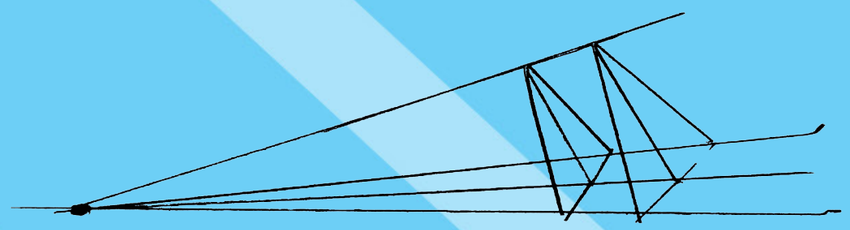
PERSPECTIVE DRAWING PRACTICE



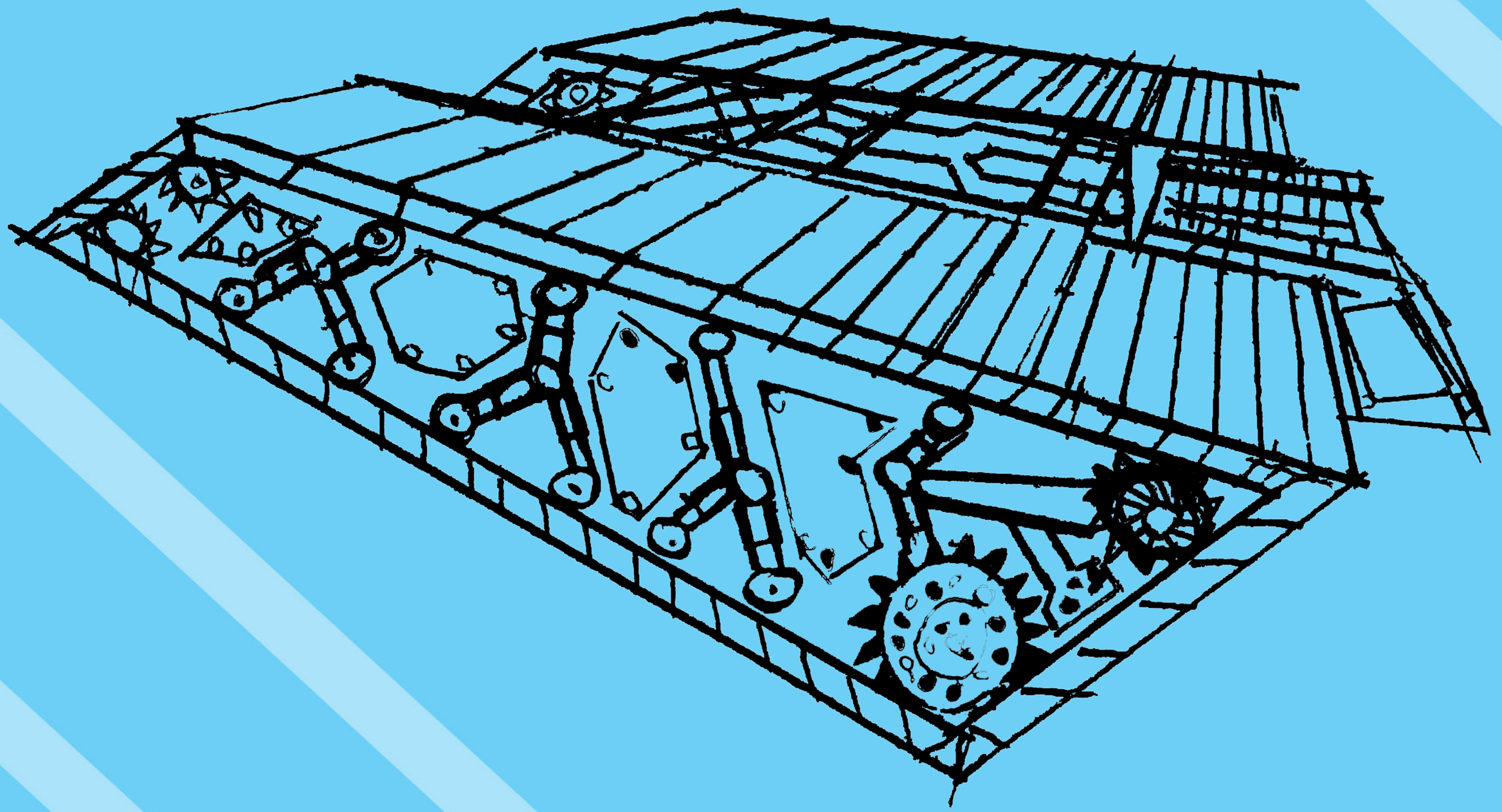




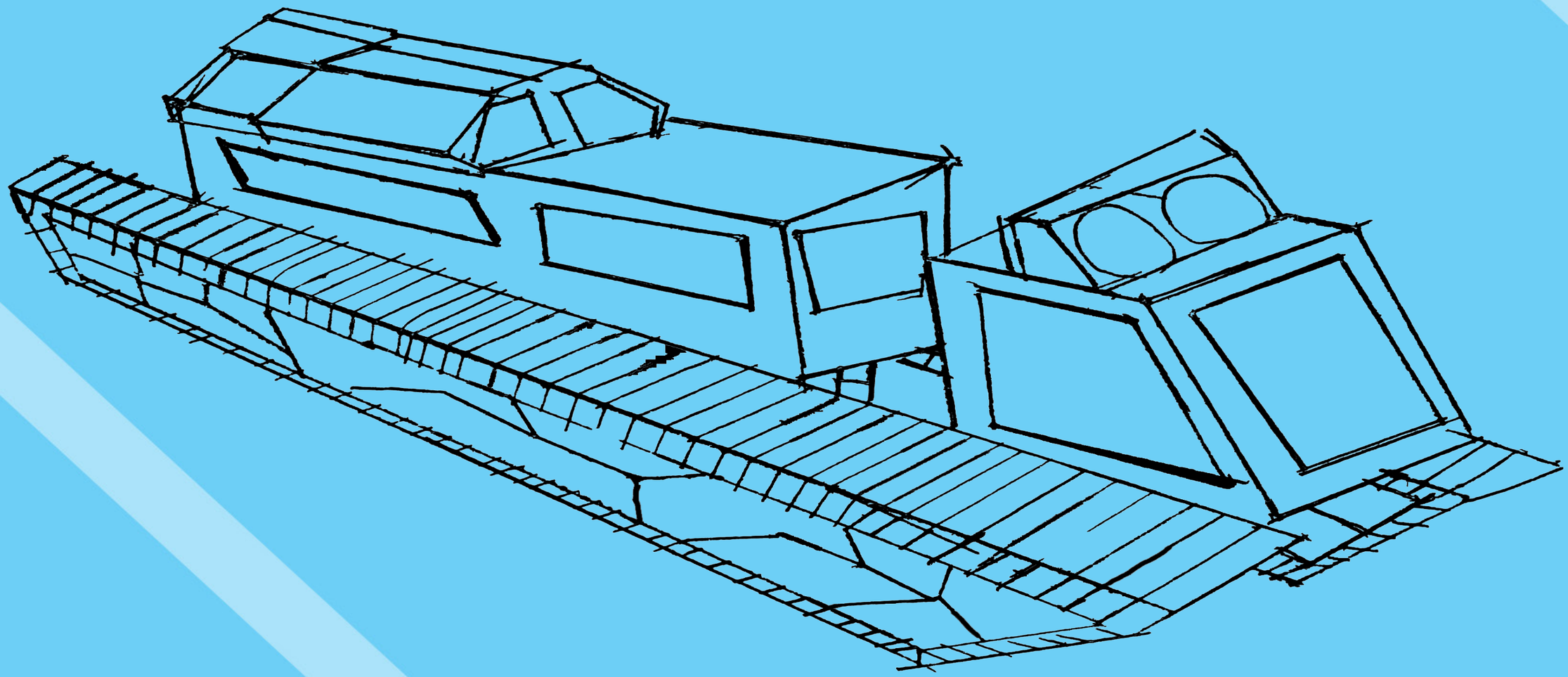




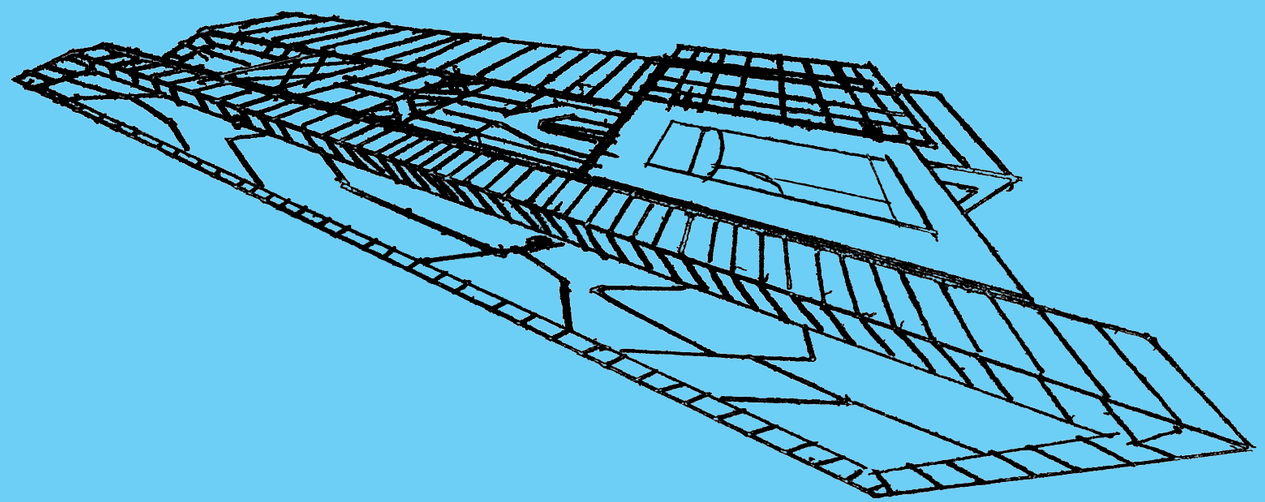
HEAVY CARGO CARRIER PERSPECTIVE

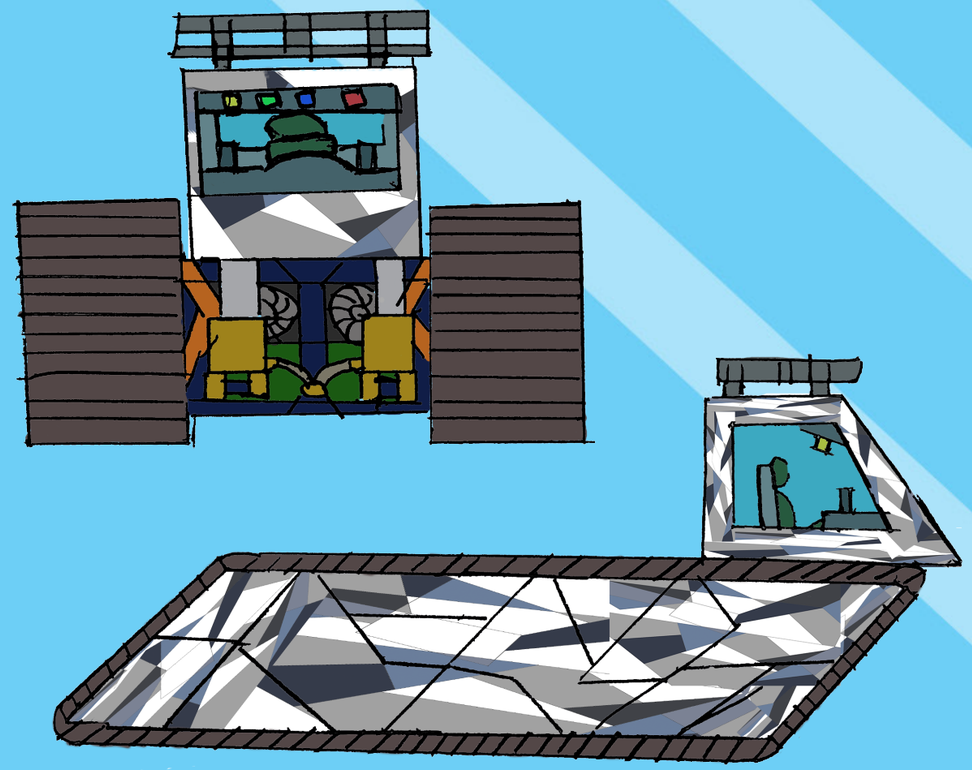


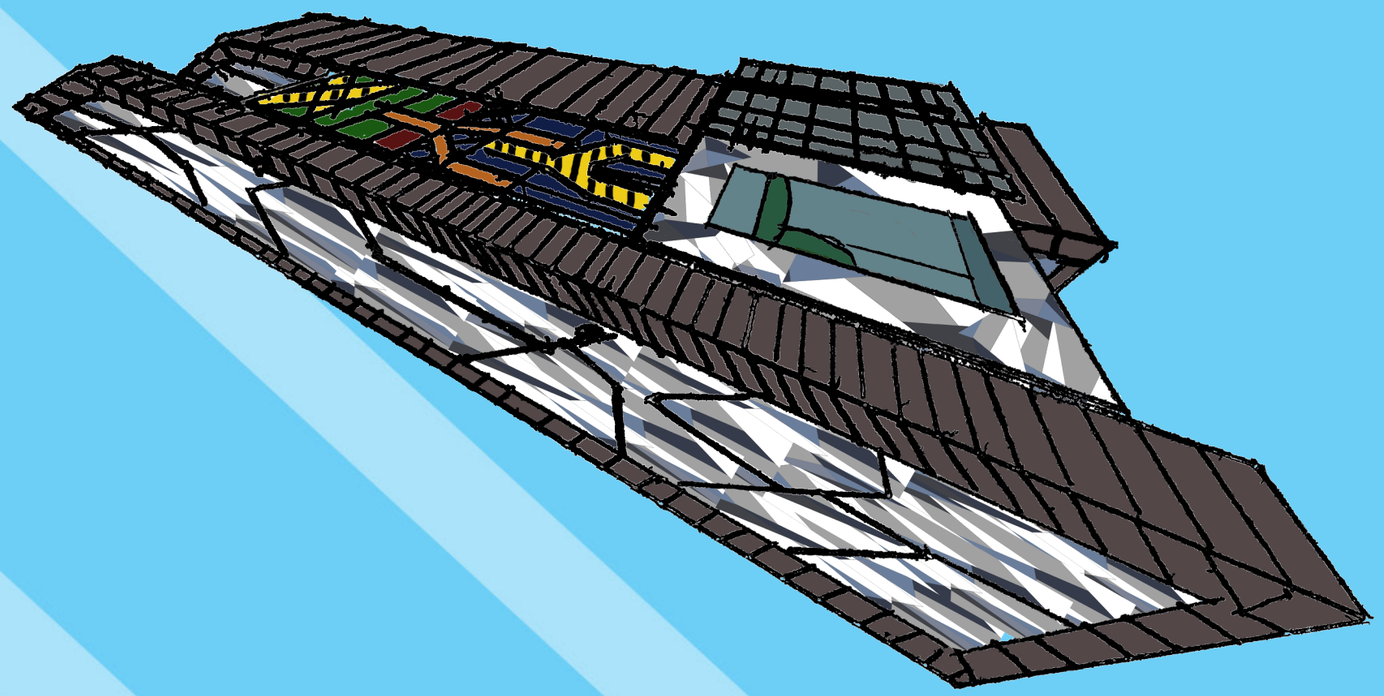
PERSONNEL CARRIER PERSPECTIVE

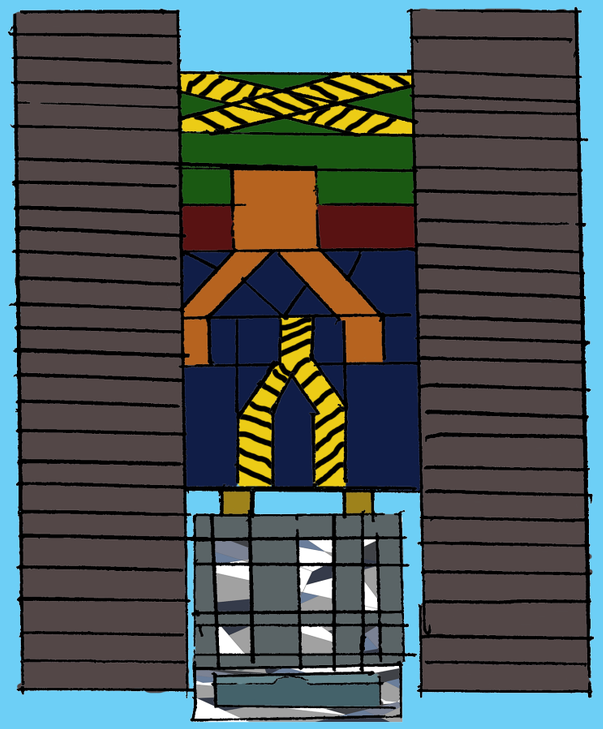


HEAVY CARGO CARRIER
FINAL DESIGN

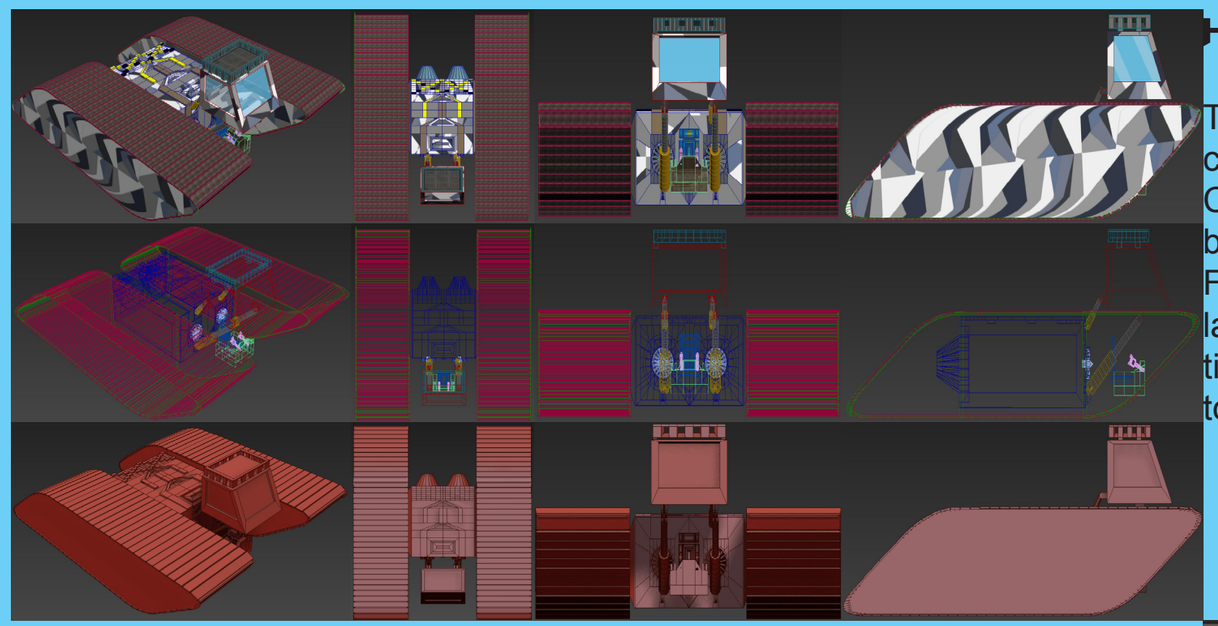






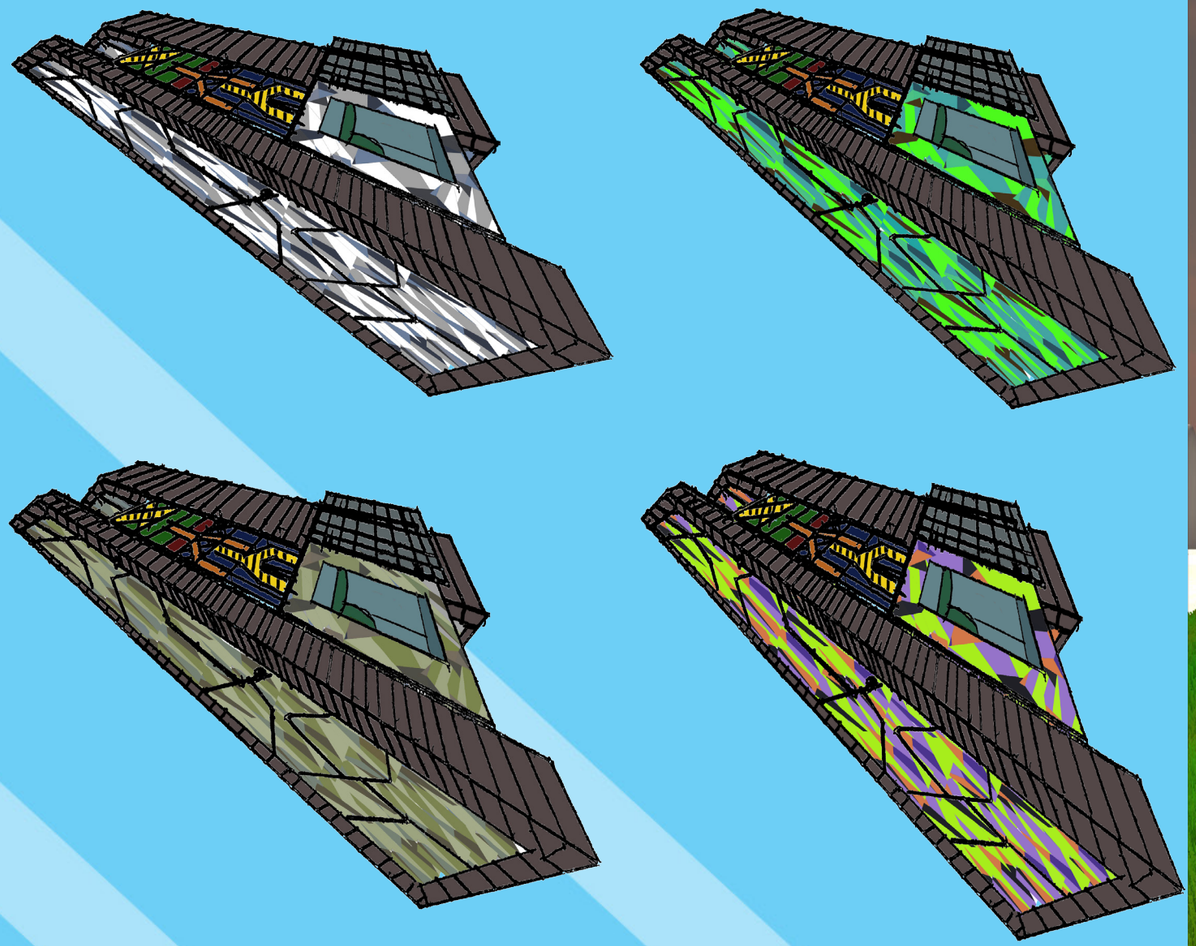


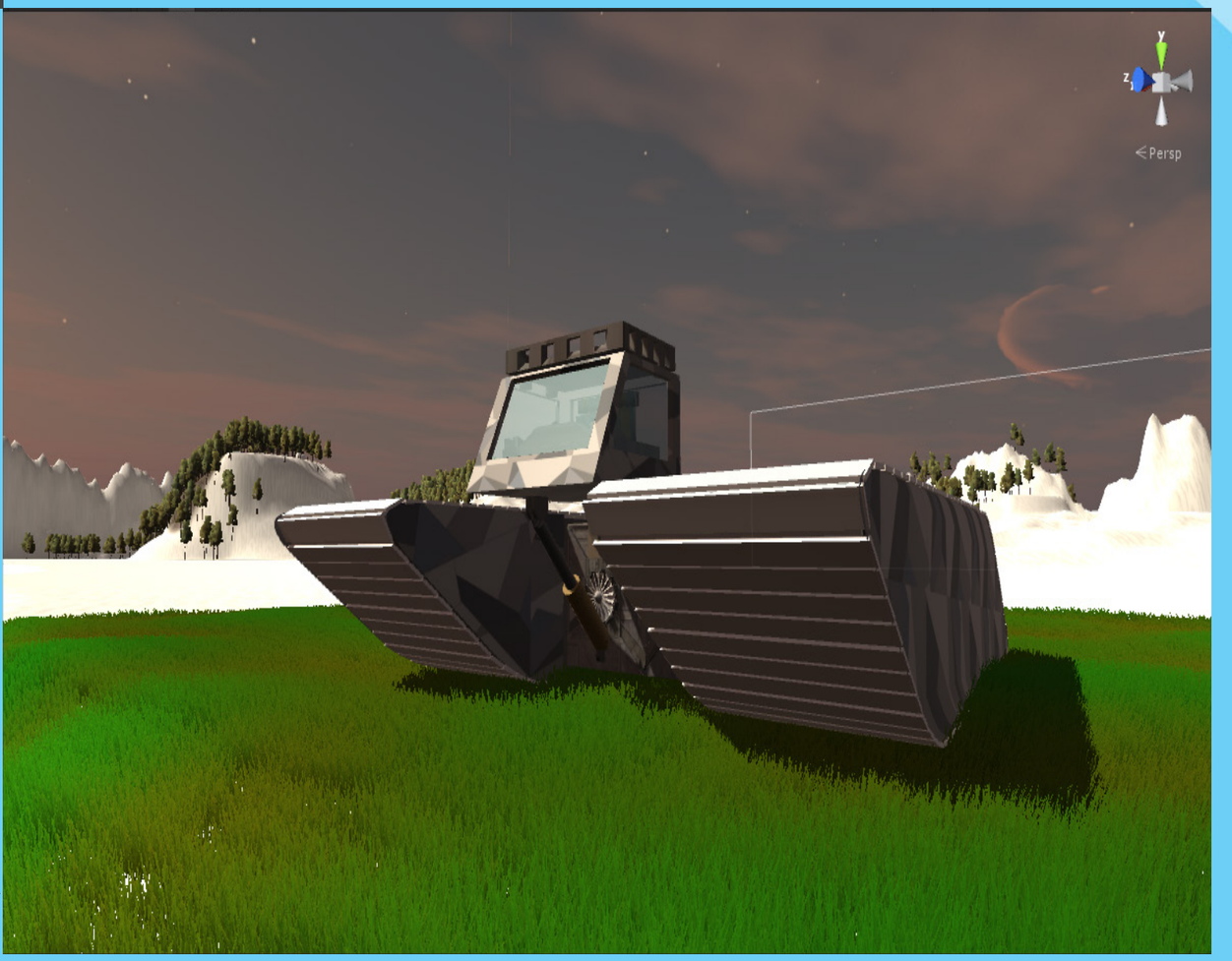
Heavy Cargo Carrier Concept Sheet



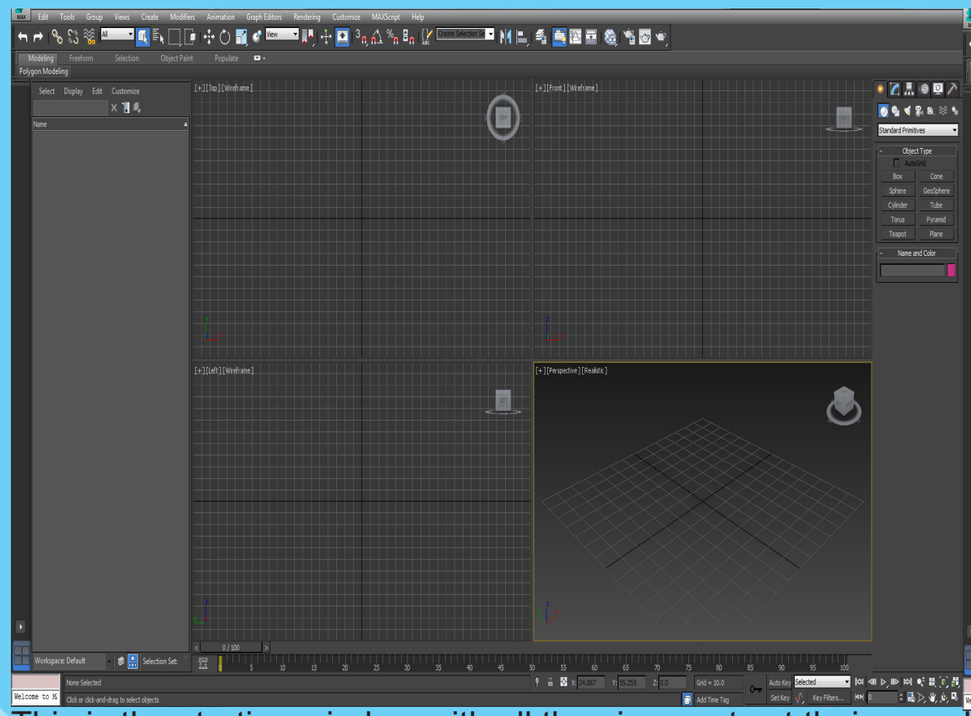
Heavy Omni-terrain Load Operator : HOLO

The Heavy Omni-terrain Load Operator or HOLO for short is a Heavy Cargo class Transport Vehicle Used for Transporting a Variety of Heavy objects From Containers of “Dust” to buildings and aircraft parts. This specific HOLO is owned by the Atleasian military for use at “Lake frontier” military outpost in the solitas Forrest. The base has now been deserted due to violent Grimm attacks with large amounts of materials and supplies being left behind. This HOLO in particular nicknamed “Lupus” is one of the only working vehicles at the outpost due to it being put into storage shortly before the last major Grimm attack.

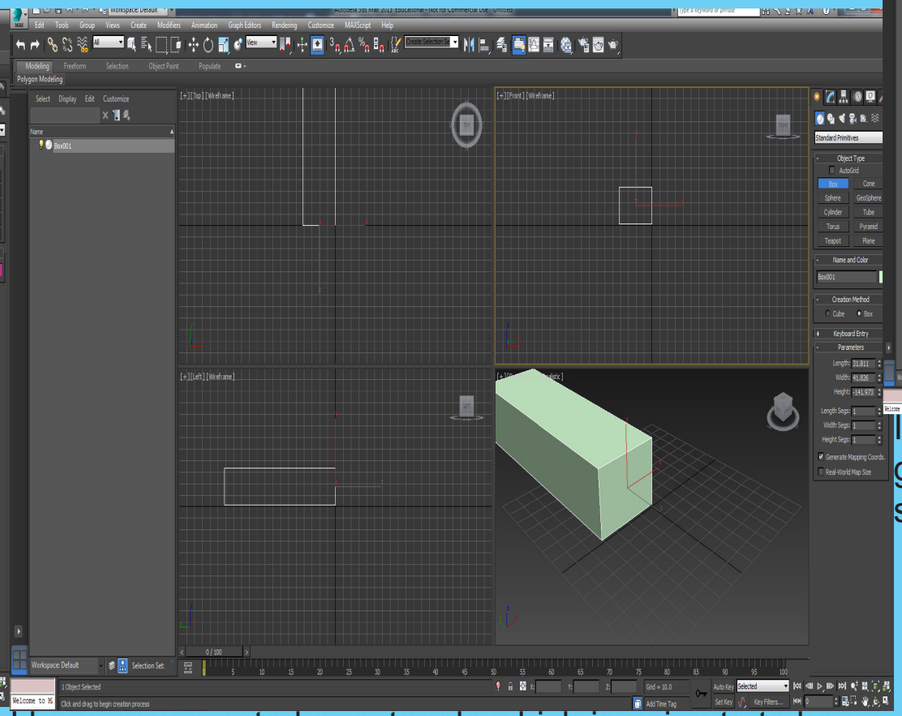




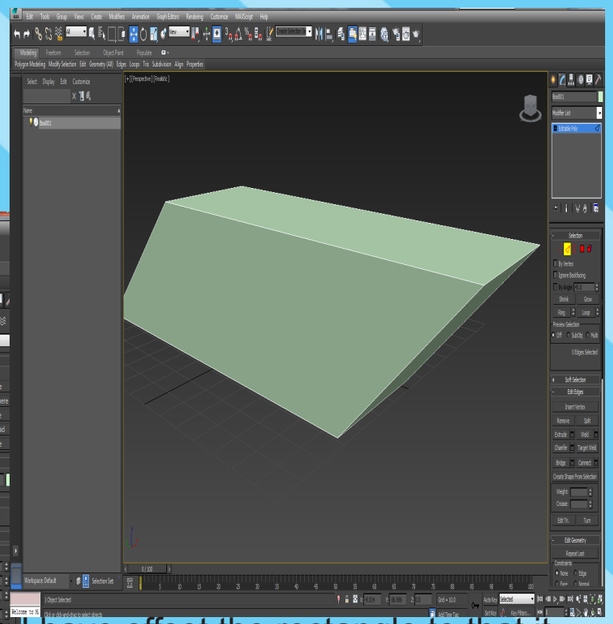
HEAVY CARGO CARRIER MODELLING



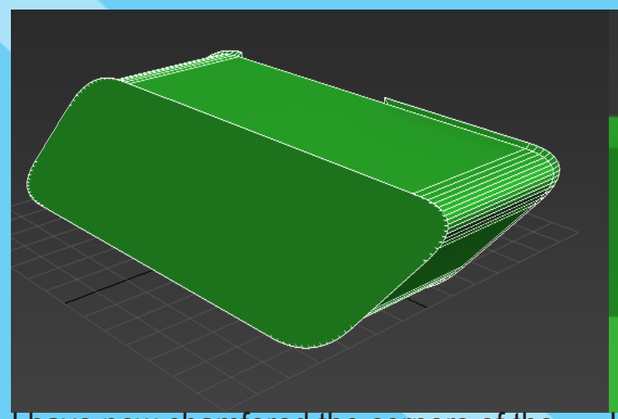
This is the starting window with all the view ports at their normal settings



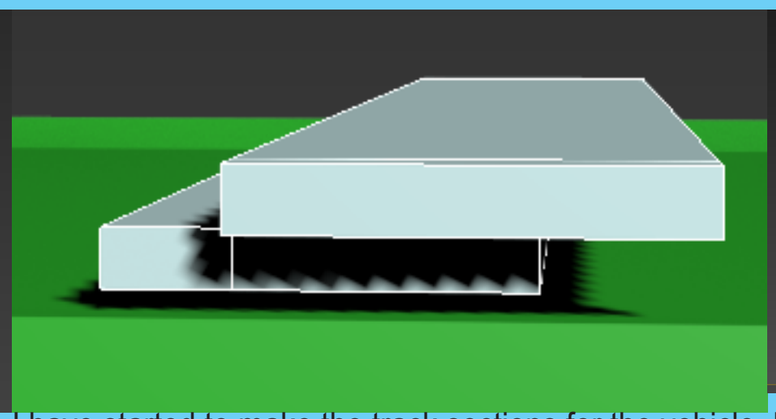
I have now created a rectangle which is going to to be my starting point for my tracks.



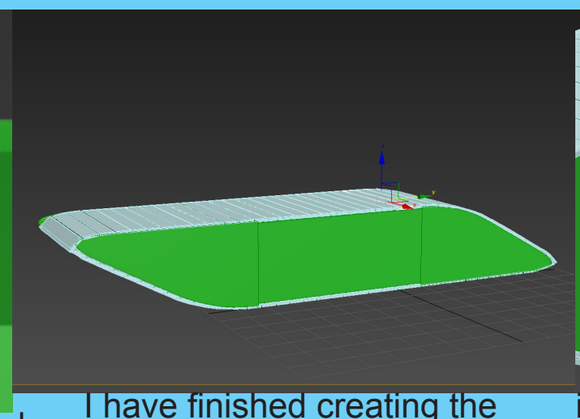
I have offset the rectangle to that it gives the basic look for the tracks design.



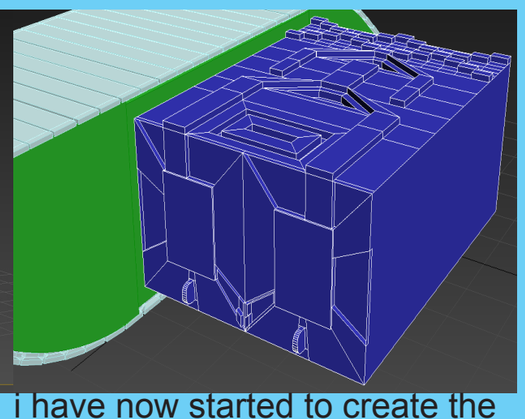
I have now chamfered the corners of the track base so that the tracks do not catch against the body, I have also extruded the sides and expanded them by a bit so they create armour panels.



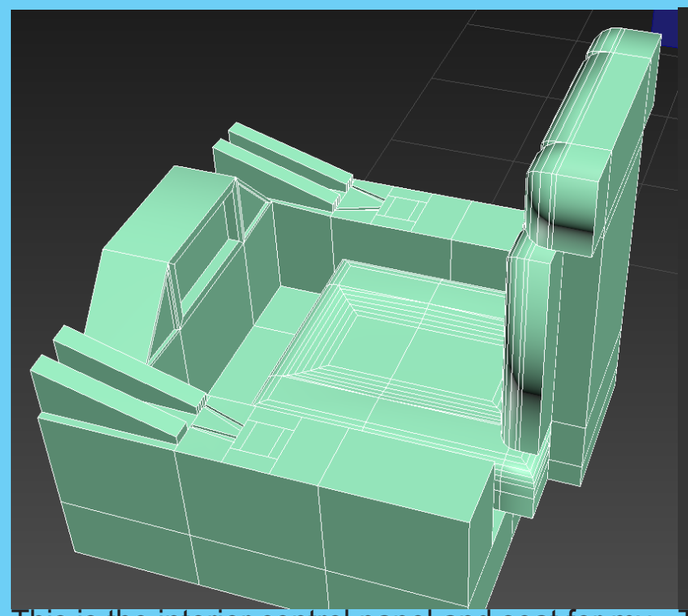
I have started to make the track sections for the vehicle. I have started this by creating another rectangle and I have extruded it out by a small margin to the front and up by a small margin. From there I have extruded the top left and right sides to give an overlap and I have dragged the lower rectangle inward to give an over hang for the tracks to join up.



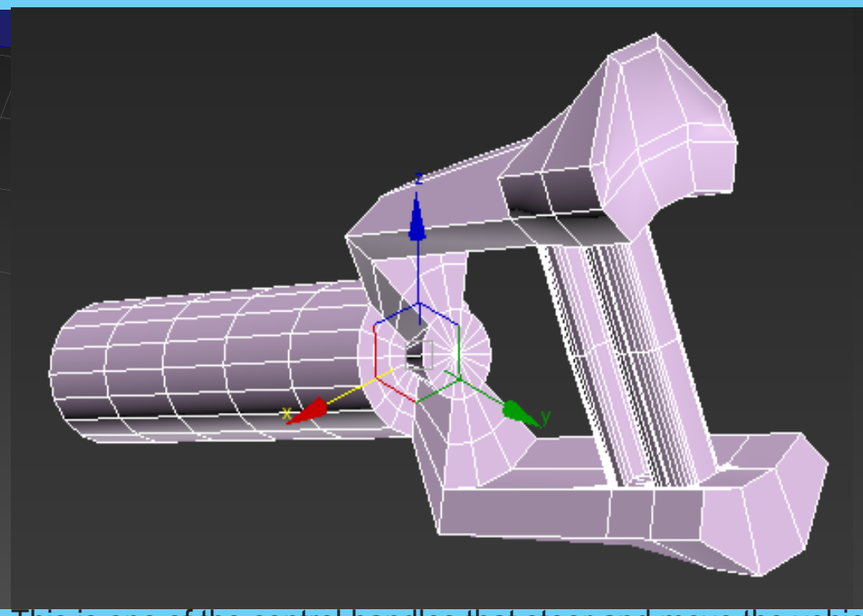
I have finished creating the tracks that I have now linked together , in total there are 78 individual track segments.



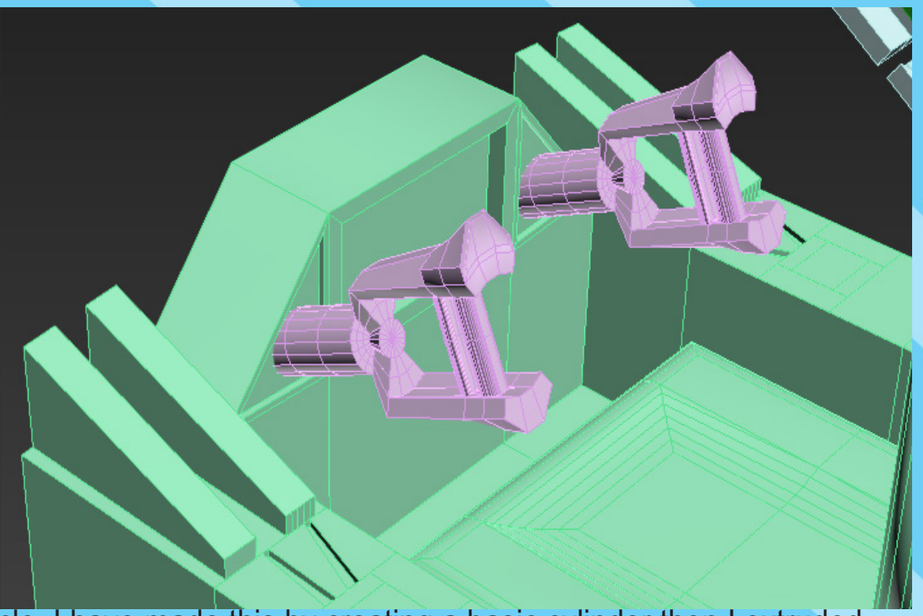
i have now started to create the main body for my vehicle which will house the jet engines and the hydraulic power supply, I have done this by using a mixture of the inset tool and extrusion tools.

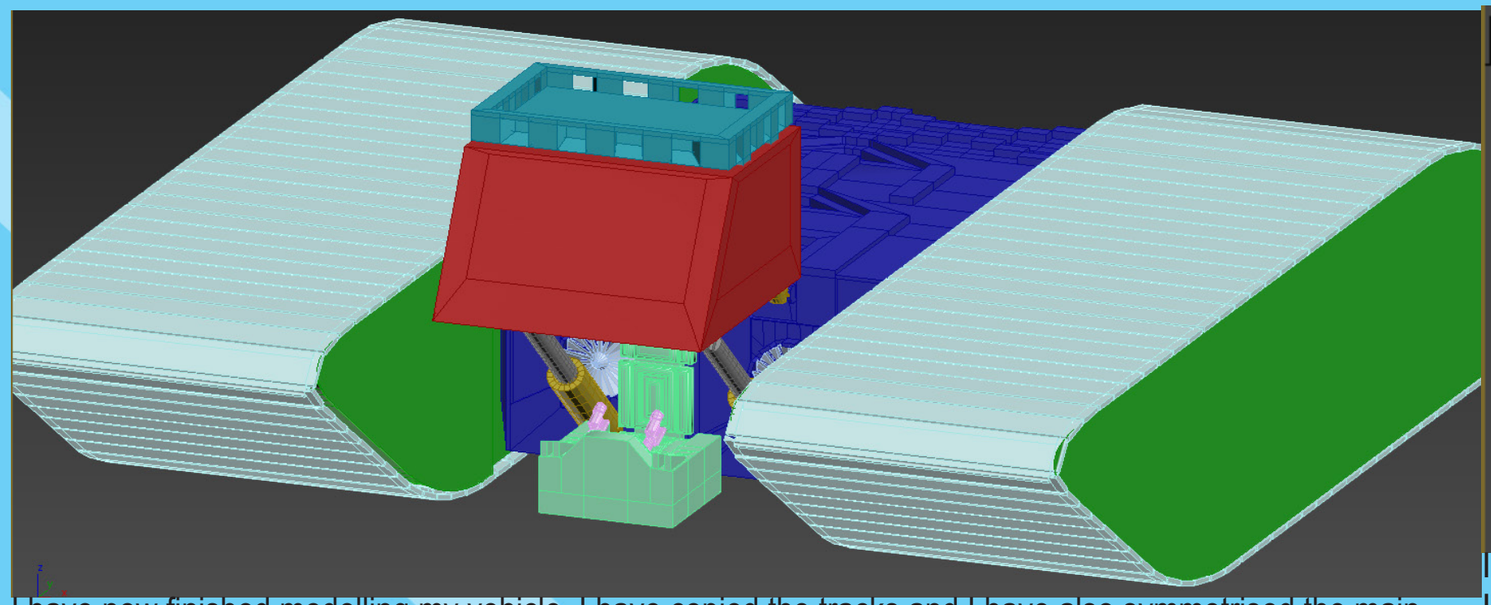


This is the interior control panel and seat for my vehicle, I created this by creating a rectangle plain, then adding some extra lines and extruding them, from there i used a mixture of the inset, extrude, drag and chamfer tools.

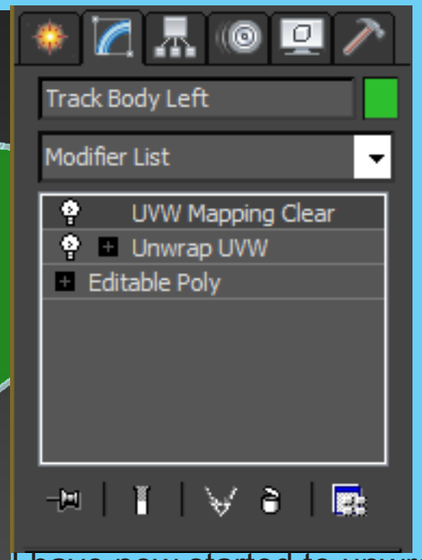


This is one of the control handles that steer and move the vehicle, I have made this by creating a basic cylinder then I extruded the top face of it, after that I then dragged out the top sides up awards and extruded them, I then connected the two side together twice to create the grip and the lever , I have also made a little panel at the top to act as quick use buttons. I then duplicated it and placed both of them within my control panel where the seat is attached.

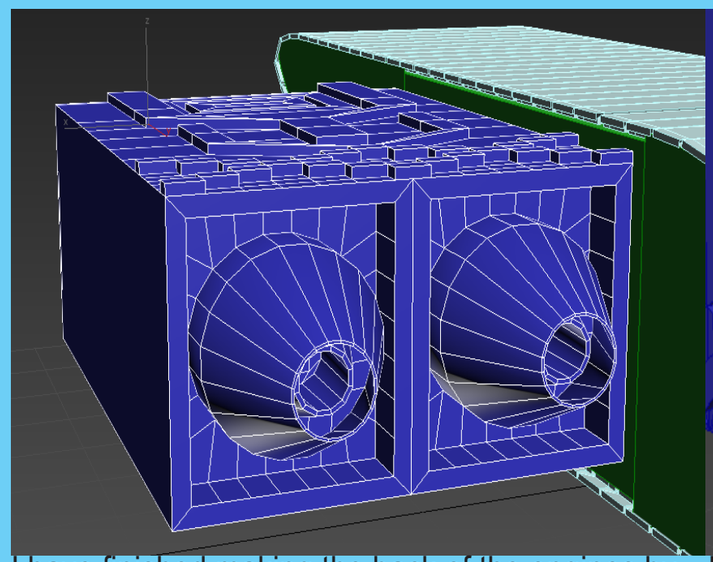




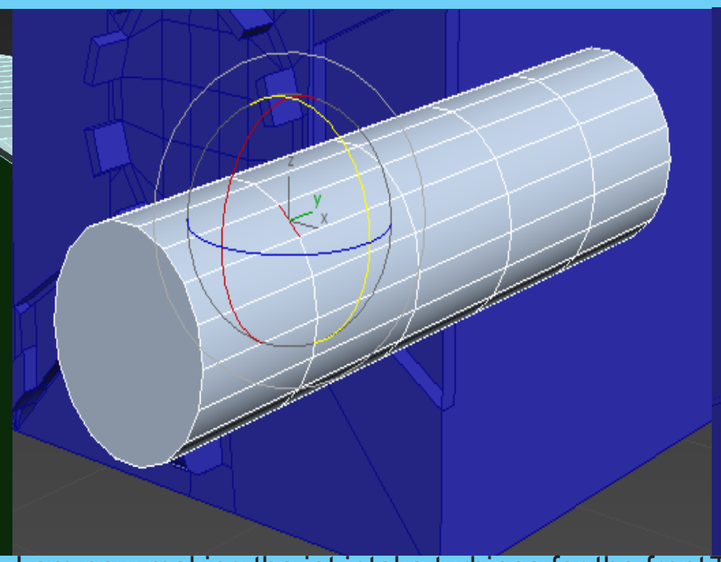
I have now finished modelling my vehicle, I have copied the tracks and I have also symmetrised the main body so it is even on both sides, I just have to texture the vehicle and also I will place the seat and interior within the cab when they are textured.



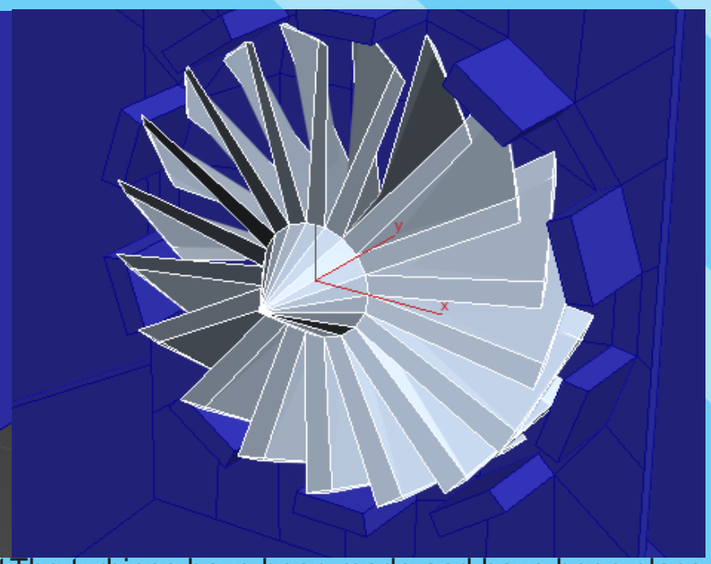
I have now started to unwrap my models now, I do this by selecting Unwrap UVW then UVW Mapping Clear which will get rid of the breaks that the software has selected so I can add my own, I then collapsed the modifiers in the window and opened up a new Unwrap UVW.



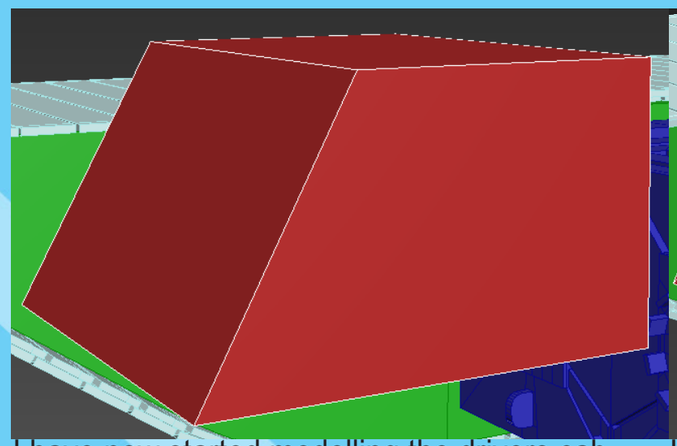
I have finished making the back of the engines by using a mixture of regularize, inset, extrude and resize tools. all these gave the look of jet engine manifolds.



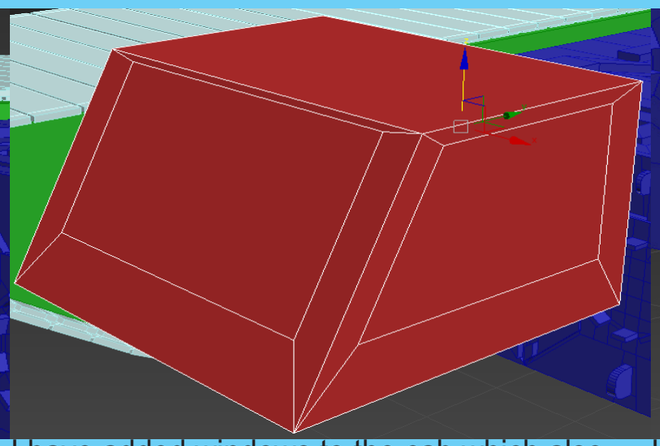
I am now making the jet intake turbines for the front of the body.



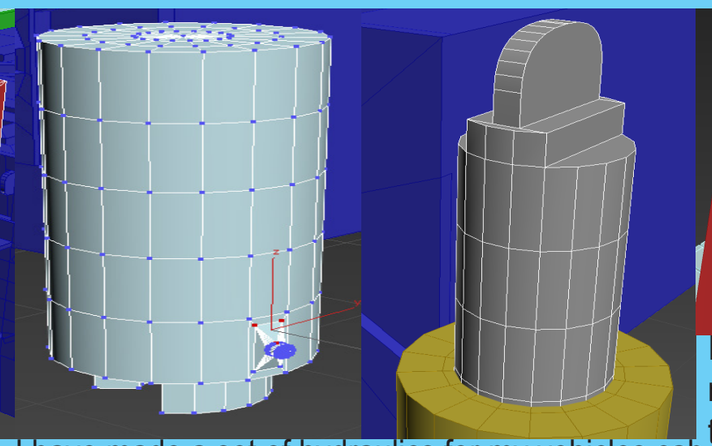
The turbines have been made and have been placed into the body of my vehicle, they where made by rotating a section of the cylinder and then extruding each face, the nose has been made with the bevel tool.



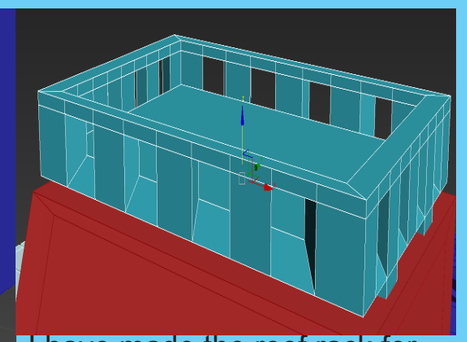
I have now started modelling the drivers cab Exterior.



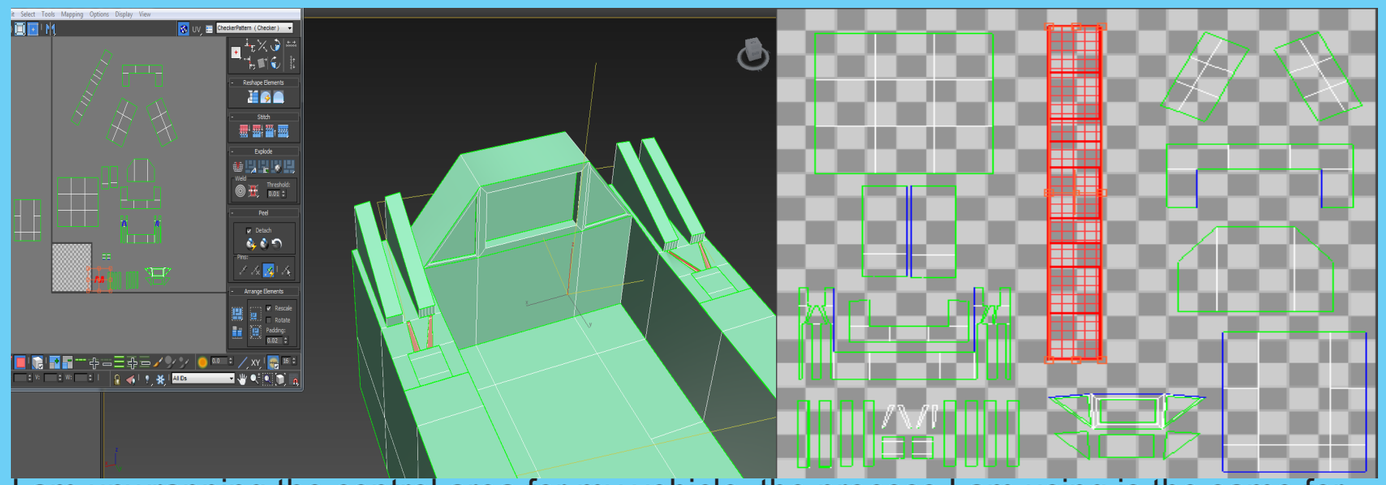
I have added windows to the cab which also act as doors, I did this by insetting 3 of the faces and moving them up slightly. I have also done the other half of the hydraulic points



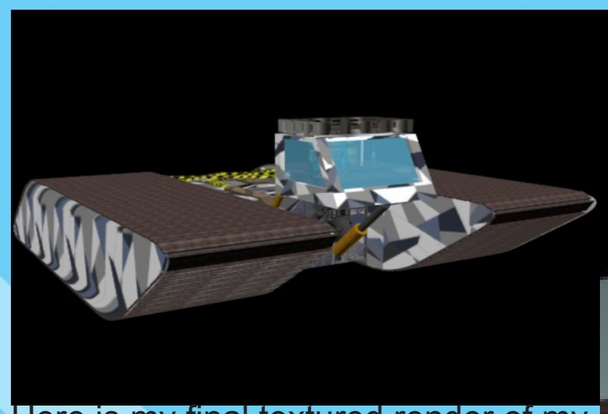
I have made a set of hydraulics for my vehicles cab which will allow the driver to have an elevated view of the terrain, I made these from two separate cylinders then I parented the base to the arm



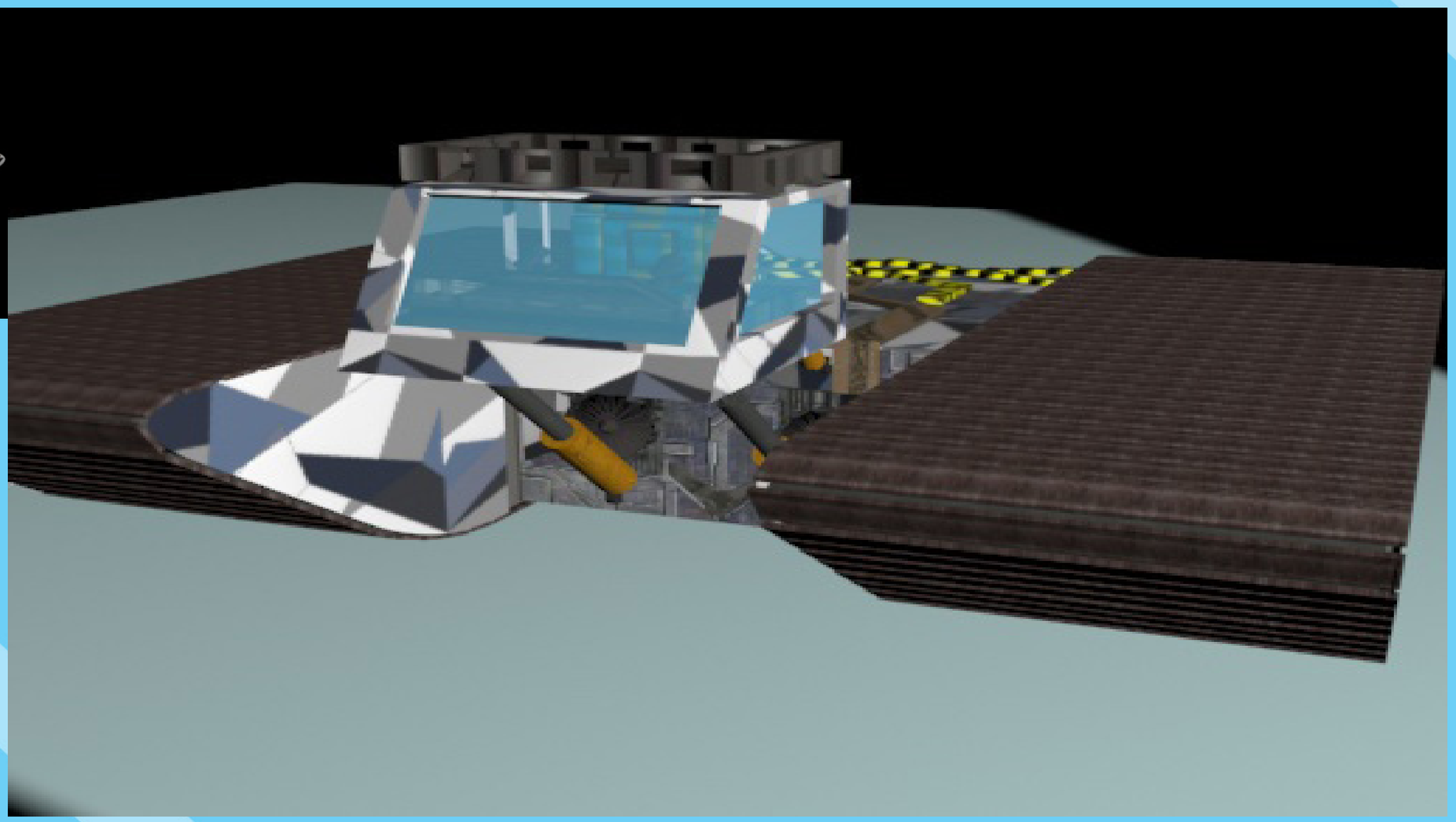
I have made the roof rack for me vehicle by creating a rectangle I then inset and extruded inwards, I then made the bars by connecting he sides and removing every other section then I bridged the edges and capped the sides



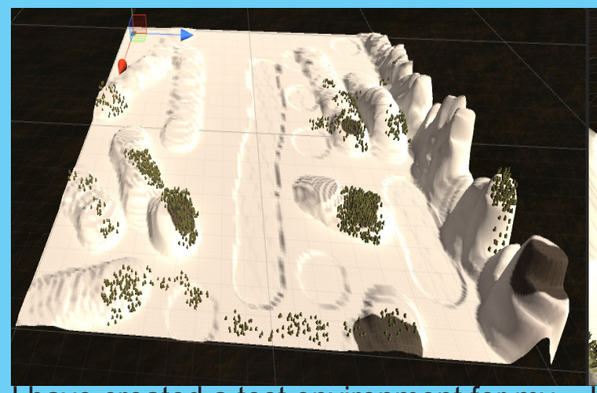
I am unwrapping the control area for my vehicle, the process I am using is the same for all the parts of my vehicle. I highlight the polygons that I want, I then break them and peel them, on some I will pelt them to stretch them out if they did not peel well. After I have separated all the faces I will then place them within the chequered box



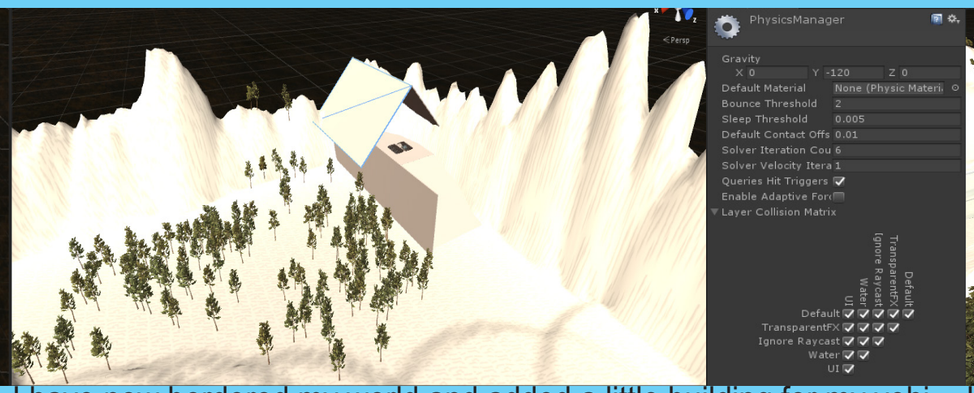
Here is my final textured render of my Vehicle.



TEST ENVIRONMENT FOR MY VEHICLE



I have created a test environment for my vehicle, For this environment I have added a few trees and mountains as well as some hills and a lake in the middle



I have now bordered my world and added a little building for my vehicle to stay in. I have also changed the gravity of my world to -120 to make my vehicle fall realistically.

I have now created a bridge for my vehicle to travel over and I have added a sky-box to give the world some more detail and realism.

I have now added my final model into its environment, it ... moves... just not in the way i want it to.

EVALUATION

For this project I was asked to produce a mode of transport what would be suitable for a certain role and environment.
The starting points for my research was the two vehicle categories that I chose which would set what my vehicle would do, I chose heavy cargo carrier and personnel carrier.
When I started this project I needed to take into consideration; my skills within 3DSMAX and UNITY and also the time frame and what type of environment I have.

My influences for this project where old WW2 tanks and cargo vehicles I have also had some influences from nature with designing certain parts of my vehicle such I have used caterpillars for my inspiration for tracks.
I have used a range of media and techniques in my work from using a graphics tablet and Photoshop for creating digital versions of my final designs,
To creating silhouettes. I have also used the clay and wire-frame views for my concept sheet. When creating my final designs I used 2 point perspective Techniques to give a give representation of my design.
My development progressed by the use of new techniques and tools.
The parts of my development that worked best where my final designs because they look the best and where the most rewarding to produce.
The areas I was most pleased with in the work I produced where the final design drawings and the model itself before i textured it because it looked good but the textures ruined the model a bit.

The strengths of my final design where the details on the main body of my vehicle and also the drivers seat and console, because they look really well made.
The weaknesses of my final design where my textures as they where all low quality also another weakness of my design is track body's as they had too sharp of a curve for the tracks to go around as well as my models being too complex making them difficult to texture smoothly and of a high quality.
My work somewhat communicate my ideas and designs, its not as high of a quality as I would have liked and the design is slightly different to what I originally wanted but it turned out okay in the end.
I did manage my time relatively well until the last week where I had to redo my textures and that I still had to finish my concept sheet and port my model into UNITY.
If I could work in a different way in the next project I would use higher standard textures and also I would simplify my models so they we not such a pain to Texture.
The most important thing I have learnt from this project is to simplify my models by breaking them down.