



ANTI FIRE TECHNOLOGY

INTRODUCTION:

Hi Friends, this concept is called as the Anti fire technology and it is about how to make a car not catch fire by making some addition to design.

REASONS FOR THE CAR CATCHING FIRE:

1. Electrical Short Circuit
2. Fuel system leakage
3. Engine overheating
4. Fluids Leakage
5. Fuel Tank Heating
6. Battery Power Leakage
7. Car crash

Now, let me explain how these reasons lead to a fire accident.



(i) Electrical Short Circuit:

Basically there's wiring all around the car which runs from the car's battery to front and rear also the interiors, So when there is an electrical short circuit, The wirings starts creating spark and when it reaches an extent the sparks ignite itself into a fire, When it starts spreading to all the wiring it finally reaches car's engine bay where the battery is located and when the battery catches fire it lights the entire Car in fire using the Fuel, fluids and coolant oil.

(ii) Fuel System Leakage:

This is one of the main reasons that lead to a car catching fire, when the fuel is been leaked through supply pipes, the fuel starts dripping on a burning hot engine, which can easily catch a fire, it mainly happens because of a cracked, or a broken connector of the Fuel Supply Pipes.

(iii) Engine over Heating:

The engine gets overheated mainly because insufficient engine oil or coolant and Less Air Ventilation provided,

Let me explain how.

Insufficient amount of engine oil or leads to a dry Engine Blocks so when the Engine Blocks gets dry, and the Pistons keep Igniting fuel in a dry engine cause it to overheat, In this



condition the plastics tanks of the Fluid tanks will melt and end up dripping the oil's and Coolant on the exhaust piping's and all other hot engine parts which will ignite itself into fire and burn the whole car.

Lack of Sufficient Coolant Will make the engine overheat which will also lead to exact same issue as described above.

Lack of Deserved air ventilation to an engine could also lead to an engine to overheat.

(iv) Fluids Leakage:

A car has a lot of fluids like Brake Fluid, Transmission Fluid, Engine Oil, Coolant Fluid, and Power Steering Fluid. All these fluids and oils will be in circulation when it car is turned on, so the leak could occur with a crack on the lines or on the reservoir itself by taking a hit, when the oil/fluid starts to leak they quickly starts spreading all over the car and when the fluids spill on the engine components, it has a chance to the catch fire.

(v) Fuel tank heating:

Fuel Tank Heating is mainly caused by the exhaust systems as they are mostly located close to the fuel tank, when the fuel tank starts to get heated up, the fuel starts to boil which will create a pressure in the fuel tank that could either result in the fuel tank blowing up when the internal pressure reaches its extent or catching fire by the boiled fuel especially with petrol.



(vi) Battery Power Leakage:

Battery Power Leakage happens when the battery connector is not connected properly making the terminals to spark that leads to a fire. or when a car battery charges while driving, Electrolyte vapour mixing with hydrogen can escape and vent out the plastic shell of the battery and starts creating corrosion on batteries power post and terminals avoiding to clean that up might end up in a fire accident.

(vii) Car Crashes:

When a car gets into and severe crash the fuel supply lines get ruptured which means that the fuel starts leaking all over the car and mostly on exhaust and engine components which will be extremely hot and catch fire. This is the main reason why a fire accident occurs while a car gets into a collision.

So, These are the most common reasons for a fire accident and a basic addition to the design of the car would reduce the case of fire accidents. Now, let me explain the same.

The design is to add a fire extinguishing system in the car so that, Whenever the system senses a chance of fire in the car or overheating it will set the fire down.



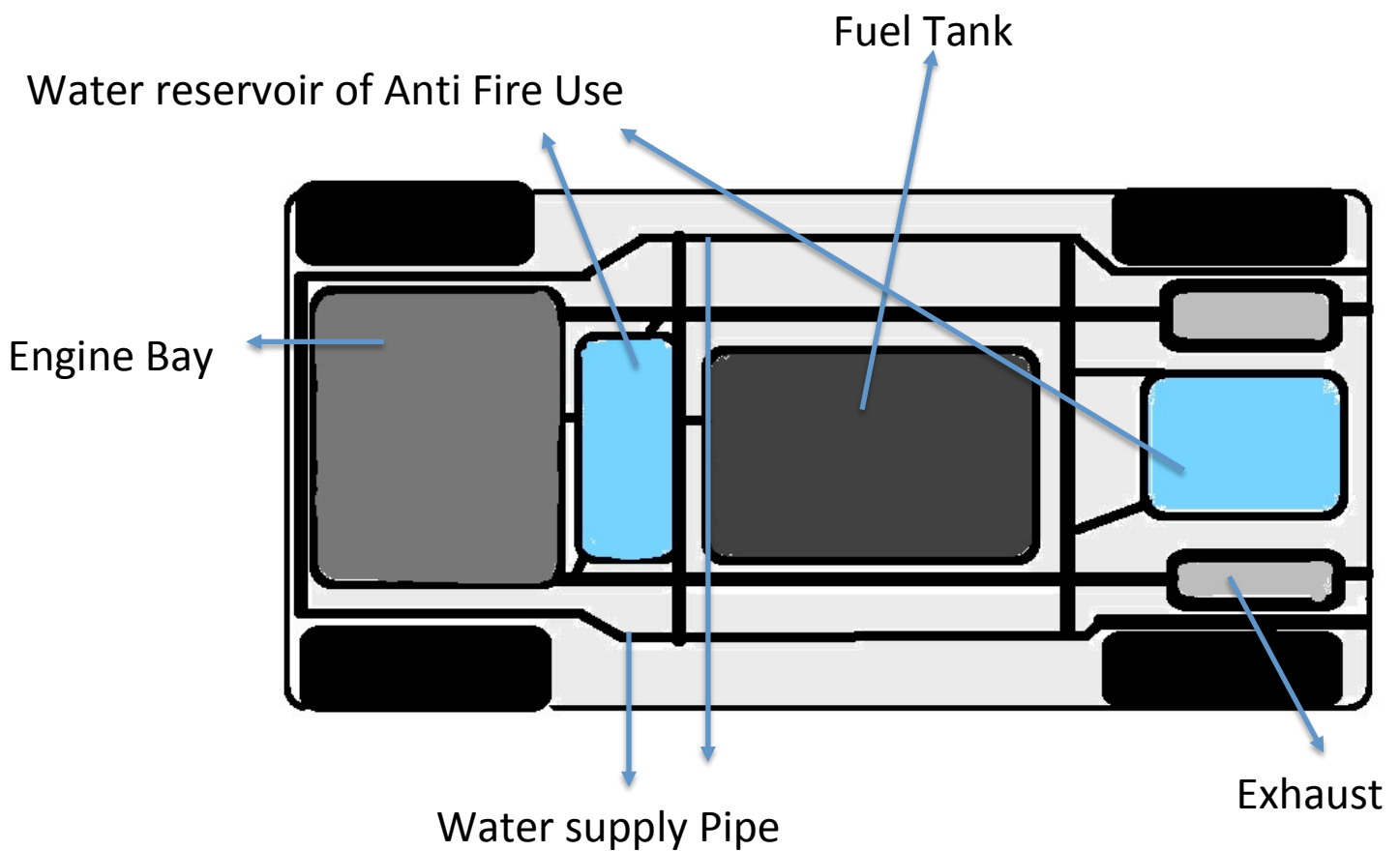
HOW DOES IT WORK?

There will be metal pipes that run across either side of the car in which whenever a fire accident occurs a pressurised extinguishing water will be sprayed to suppress the fire, And the storage container for the water will be placed in the engine bay and under the trunk of the car, The Piping will start from the engine bay and work it all the way till the rear end of the car, So wherever the fire might be it will be easily extinguished,

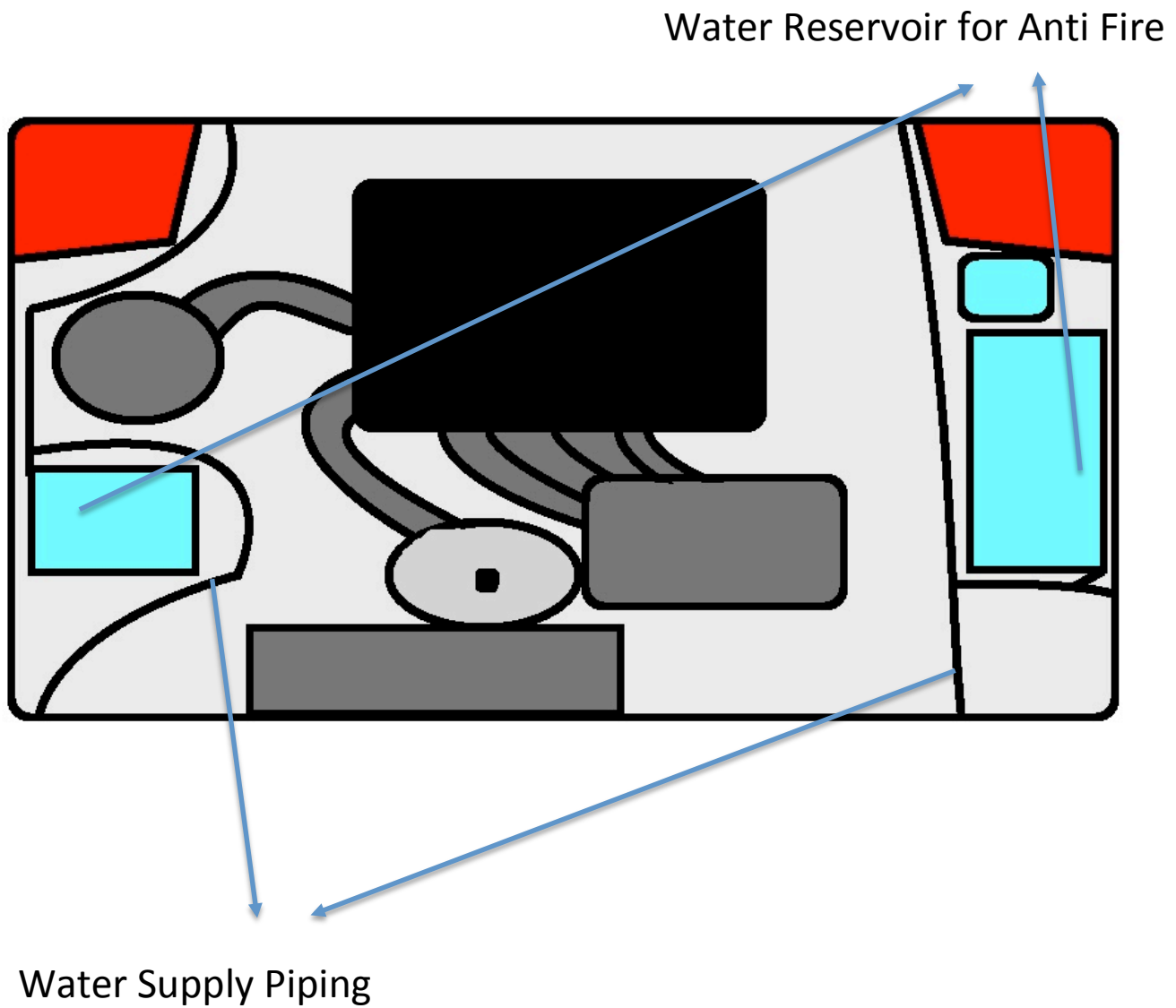
There will be sensors placed under the car so whenever there is a sudden increase in temperature this system will start working to set the heat down. And the water can be refilled.

Now, Let me add the basic diagram for the same,

1. Underbody View



2. Engine Bay





BENEFITS:

The benefits of this system would be less major fire accidents on road, that helps in setting the fire down at the beginning stage. It gives a more safe and confident ride, saving Lives from accidental situation.

I thought of doing this project because of the increasing car fire accidents as it would help reduces that kind of fire accidents.

Thank you...

Regards,

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