International Journal of Future Generation Communication and Networking
Vol. 13, No. 4, (2020), pp. 3656–3661

# An Investigation on Blackout Projectile Missile

Sathish Kumar D.[1], Srinath L.[2] , Naveen S.[3], Sanjay Singaravelu R.[4]

& Sanjeva Kumar S.A.[5]

*[1]Assistant Professor (Sr.G.), [2,3,4,5]Final Year Students,*

*Department of EEE, KPR Institute of Engineering and Technology, Coimbatore, Tamilnadu.*

***Email:** [1]d.sathishkumar@kpriet.ac.in, [2]srnth007@gmail.com, [3]naveenselva.777@gmail.com, [4]sanjayvelu50@gmail.com & [5]sanjevaaaru@gmail.com*

***Abstract***

*In world history each nation has always researched for a weapon that would increase the chance of winning. The main source of any military activity is the well-developed power system all along the nation. A weapon that could paralyze at least 70% of the power system of the nation is considered to be a great one. The weapon is called as "blackout missile". The name blackout is given since it wipes out the entire power system. It uses a special kind of smoke that contains small graphite filament plumes that spreads in air and comes in contact with electrical systems, mostly systems that are air insulated such as towers, transformers etc. This creates a short circuit in the power lines causing a blackout. The blackout starts to spread all over the system and causes a total of more than 70% of the country's power system to fail, thus any night time surgical strike can be conducted and this would make the foe country lose the war as well as push the country into a tragedy that would take several years to recover.*

***Keywords:*** *Smoke, Graphite Filament Plumes, Blackout.*

## I. Introduction

A graphite bomb is meant to become a non-lethal gadget designed to interrupt an electrical grid. The bomb operates via spraying a dense layer of incredibly thin, chemically processed carbon filaments across air-insulated high-voltage utilities like transformers and power lines, causing short circuits and ultimately interrupting the energy supply in a city, a region or maybe even a small country.

## II. Proposed System

The missile is launched from launch pad or warplane based on the target i.e. nearest substations. The missile body consists of two enclosing hemispheres which get separated in mid-air. This is done by a timer as well as having minute amount of gun powder between the joints.

An igniter based on the counter functions and ignites the gun powder and so the hemisphere cracks open. The several munitions are placed in the spine of the missile. Once the missile enclosure opens, the munitions are released in the mid-air.



ISSN: 2233-7857 IJFGCN

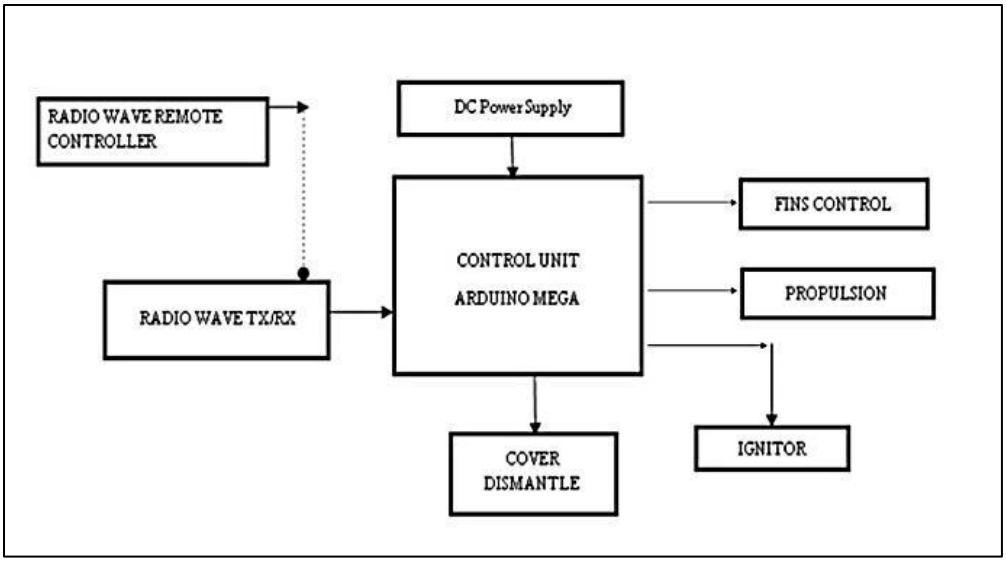


**Fig.1** Block Diagram

These munitions may or may not have thrusters and shower down over the substations. Each munitions contains Smoke composite, Explosive composite as well as special conductive Graphite filament spools. Each munitions explodes releasing a huge amount of smoke as well as Graphite spools. Since the Graphite spools are thin fibres as the munitions explode these spools get converted in to tiny plumes which float in the smoke. The plumes fill the entire dense smoke as minute particles and make the entire smoke cloud highly conductive. When the smoke comes in contact with the transformer or live wire or electric grid, the entire power system gets short circuited. This can black out the entire nation's power.

According to a war theory, If 70% of nation's power is cut down then there is a high chance of nation getting defeating in the war.

## III. Hardware Description

### *1. ARDUINO MEGA*

The Arduino mega is a microcontroller board comprising of 54 digital input/output pins, UARTs, one crystal oscillator, one USB interface, one power port, an ICSP header, and one reset switch. It assists the microcontroller merely over linking it to a desktop with a USB cable, or it can be powered with an AC to-DC adapter or battery. The controller supports most shields built for the Arduino Duemilanove.

### *2. RF TRANSMITTER / RECIEVER*

Radio control means the use of radio-transmitted power signals to control the system remotely. Few categories of simple remote control systems include garage door openers and keyless vehicle entry systems where doors are enabled or unlocked by a tiny handheld wireless module. Remote access is often used to power model cars from a portable wireless transmitter. Industrial, military and science testing agencies are now utilizing radio-controlled vehicles. Rapidly growing usage is the operation of unmanned aerial vehicles (UAVs or drones) for both commercial and military usage, but they have more complex control systems than conventional applications Remote control military systems usually do not provide direct-to-air communication access, specifically functioning aeronautical control surfaces and impulsion power configurations, but rather in the form of guidance given to a fully automated, electronic involuntary model. Rather of a "turn left" signal that is implemented once the airliner is in the correct direction, the machine guides a sole command that states "travel to this level."

### *3. THRUSTERS*



ISSN: 2233-7857 IJFGCN

The engine of reaction-propulsion might be a form of engine which expels a fast-moving jet which generates a thrust of reaction-propulsion. Although this broad definition could include rocket, water jet and electrical propulsion, the term jet engine typically refers to just an air jet engine, including a turbojet, ramjet or pulse jet. Generally, aircraft engines are petrol engines. An air jet engine usually consists of a rotary piston run by a generator, with the residual power supply to the propeller nozzle. This system is recognised for the thermodynamic process of Brayton. Jet aircraft use such engines for the purposes of long journeys. Existing jet aircraft mostly used are inefficient turbojet engines for subsonic activities. The innovative subsonic jet planes are fitted with sophisticated turbofan high-pass engines. We have such an aero engine with greater speed and fuel effectiveness over greater distances than the piston and the propeller. Some air-conditioning engines designed for high-speed applications (ramjets/scramjets) use the ram effect of speed of the vehicle instead of the hydraulic compression. Jet motors are usually combustion engines. Air-breathing jet engines usually incorporate a turbine-powered rotating air compressor, only with propeller nozzle providing residual control. Such cycles are termed as Brayton thermodynamic cycles. Jet aircraft use such engines to travel long distances. Current jet planes utilized turbojet engines which were fairly inefficient for subsonic flight. But many contemporary subsonic jet aircrafts are fuelled by potent high-bypass turbofan engines. We shall notice greater performance and fuel performance over greater distances than the piston and propeller aero engines. Only few high-speed air-breathing engines (ramjets/scramjets) just use ram control from the height of the vehicle instead of hydraulic compressor.

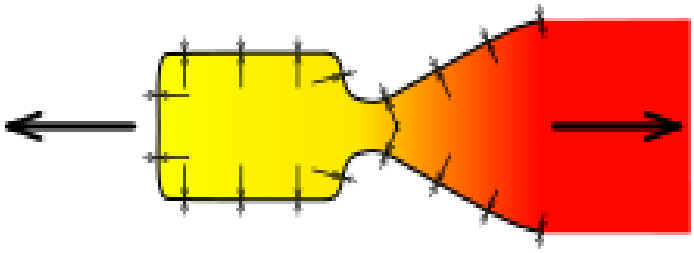

**Fig.2** Thruster

### *4. PROPELLING NOZZLE*

The propeller nozzle is the core function of all jet engines as it generates a production surge. The propeller nozzles transform internal and external energy into high-speed kinetic energy. Overall pressure and temperature do not shift through the pump, but their steady value decreases as the gas speeds up.

### *5. MUNITIONS*

Ammunition (informally ammo) is a material fired, dispersed, dropped or detonated from any weapon. Ammunition is both expendable weapons (e.g. rockets, guns, explosives, landmines) and parts of certain weapons that have an impact on the target (e.g. bullets and warheads). Nearly all mechanical guns need some type of ammo to be used. The purpose of ammunition is to project a force against a target to have an impact (usually, though not always, lethal). The most emblematic form of ammo is a handgun round, which contains all the parts needed to produce the weapon impact in a single box.



ISSN: 2233-7857 IJFGCN

**Fig.3** Munition Cartridges

### *6. GRAPHITE FILAMENT*

Graphite filament maintains energy which really dissolves scrap steel and iron, most of which are often Direct-Reduced Iron (DRI) boilers in electric arc furnaces, which are mostly steel. They are shaped from petroleum coke after the pitch of coal tar is varied. These are then compacted and molded, parched in order to carbonize the binder (pitch) and ultimately graphised by heating it to temperature close to 3000°C at which carbon atoms generate graphite. They vary in lengths up to 3.5m (11ft) and in diameters up to 75cm (30in). Using electric arc furnaces, increasing amount steel is produced, and the furnace is itself appropriate with extremely large, generating ever more steel per ton of electrode.

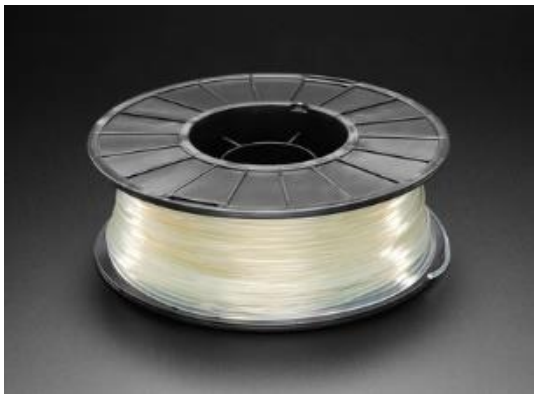

**Fig.4** Graphite Filament

A calculation based on USGS data suggests that, in 2005, the consumption of graphite electrodes was 197,000 tons. The smelting of electrolytic aluminum necessitates carbon graphite electrodes as well. Synthetic graphite electrodes are being used on electric discharge (EDM) over a much lesser scale, primarily used for production of injection molding in plastics.

### *7. SMOKE COMPOSITE*

Smoke bombs are normally made up of potassium chlorate (KClO3-oxidizer), sugar (dextrin-fuel), sodium bicarbonate (otherwise known as baking soda) to decrease the reaction rate and prevent it from getting too hot) and a powdered organic dye (colored smoke). The process produces white smoke whenever an artificial smoke bomb is switched on, and the fire fades away the organic dye. Commercial



ISSN: 2233-7857 IJFGCN

smoke bombs include small holes that eject smoke/dye, ending up with a stream of finely dispersed particles.

**Fig.5** Smoke Composite

### *8. EXPLOSIVE COMPOSITE*

Gunpowder, also identified as black powder to differentiate it from conventional smokeless precipitate, is the original well-known normal explosive. It comprises of a mixture of sulphur (S), carbon dioxide (C) and potassium nitrate (saltpeter, KNO3). Sulfur and carbon dioxide serve as fuels, whereas saltpeter is an oxidizer. Owing to its volatile properties and the volume of heat and gas it produces, gunpowder has been commonly used as a propeller in weapons, artillery, rockets and fireworks, and as a blasting powder in quarries, mines, and road building.

**Fig.6** Explosive Composite

### *9. DESIGN METHOD*

The figure given above is the basic system design of the projectile missile. The projectile missile consists of two sheaths in the main body. The outer sheath and the inner perforated sheath. The outer sheath is used to cover the smoke composite from spreading in air before combustion. The inner perforated sheath allows the smoke to be highly pressurized and release to the atmosphere. The smoke composite is placed in the form of a solid disc. Like the normal projectile missiles the war-heads contains small explosive. This explosive ignites the smoke and explosive composite that is inside the main body covered by the two sheaths. Below the war-head the control unit of the missile is placed. The connections are made to the rudders, throttle, and the ignitor of war-head explosive and explosive in the main body. The throttle or the engine and the nozzle is placed at the base of the entire main body. The fuel used is normal rocket and missile propellant placed in a small tank inside the main body at the lower end. In the future advancements GPS and radar systems will be attached along with the control unit for the missile to be autonomous and for accuracy in the target.



ISSN: 2233-7857 IJFGCN

## IV. RESULT

The missile is launched and the munitions are released in the mid-air. Munitions explode releasing a huge amount of smoke as well as Graphite spools. The plumes fill the entire dense smoke as minute particles. The smoke comes in contact with the transformer or live wire or electric grid, the entire power system gets short circuited.

## V. CONCLUSION

The proposed project thus shows the advantage of a country of winning over the foe with no collateral damage and affecting no public, yet the foe losses all its power to fight back. Further advancements and developments can be made such as installing a GPS controlled guide that can be used as a target striking missile. Further nano-technology can be adopted to make the missile into smaller warheads which release nano-particles to contact with the electrical systems and create a short circuit and finally lead to blackout.

## REFERENCES

[1] Blackout missile concept from archives – BBC NEWS
http://news.bbc.co.uk/2/hi/americas/2865323.stm

[2] Korean blackout missile usage and structural definition
https://www.youtube.com/watch?v=kQvTZM4YTRI.

[3] Preparation of smoke and explosive composite - wikihow

[4] Missile build and control systems – Aerospaceweb organization



ISSN: 2233-7857 IJFGCN