

Night vision technology

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NIGHT VISION TECHNOLOGY

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INTRODUCTION

Night vision technology is basically allows us to saw in night. It is originally developed for military use.

All humans have very poor night vision as compare to other animals. With the poor night vision we cannot see a person standing over so far away (many miles) on a deep dark cloudy night. It is first time invented for military purpose to see the enemy in deep dark and target them easily.

The german army gave the idea of night vision and from that time it is fastly develops so strong. They gave the idea in 1935 and start working on it so fastly to cover all battle condition in night time.

Then they develop night vision items in their rifles and in other necessary materials of battle field. From there this technology is grown up and all other countries also make sure to use this technology and also to modify this

according to their need. These all equipment are use in camera (either simple or in gun front) for the purpose of hunting at night time and in battle affected areas.

But they are so advance technology made up of. Then with the help of this equipment they are visible clearly in front of human eyes as in full light to saw it clearly. Today also in houses security and high alert situation these technology is used in vast for the purpose of safety.

DEFINITION

The definition of night vision technology is basically the detail of its work that how this technology work and what is this in real word.

Every one defines it in their own word of experiences, but in my opinion its definition is not its word of expression but its definition is expressed as:"
Night vision technology is basically the ability to see things in dark night condition. (Whether by biological or technological mean). Night vision is the combination of two approaches.

TYPES OF NIGHT VISION TECHNOLOGY

There are two types of night vision technology:

1) Biological Night Vision Some animal like cat and deep sea animal can see in night because they are tissue present in their eye which is called tiputem lucidum.

Which is present on the back side of retina?

But this layer is not present in human eyes, thus they cannot be able to see in night. They need to use some material to see in night.

RODOPOSIN is used for night see. This is a chemical. With help of this chemical human can see for few hours in dark and deep night. Biological is even God gifted senses in humans and animals, by which they saw things in night.

These senses are used for night vision. Commonly green eyes of human have the ability to see in night and even in dark night. These all are the naturally created senses in humans and animal eyes.

2) Technical Night Vision Technical night vision is working in two different ways. In this type of vision many lens are used to achieve pictures in night time. All the material used for this is released specific type of electron which is felt on the picture and they capture the same picture and show on the front of human eyes.

Then they saw easily all the things in dark night. As same in the war situation the advance developed material for night vision is used to see the enemy easily in night and mountain dark then with the help of this advance technology they hit the enemy on exact target. Simply technical vision technology is those devices include in which advance technique is used to able one to see in night time in deep dark.

Night Vision Devices Night vision devices are called observation equipment. They observe and detect the pictures and other things in dark night. It is also some time known as night vision goggles.

It does work as: the light from night vision excrete and felt on the targeted area this particle is made up of photons which includes all the colors.

Then they reflect back and entered in the lens and the whole area is seen to be visible in dark, but it is so sensitive case. Its the same as we see in the games which is made in night scenes. There the whole environment is dark but we clearly saw the targeted area of enemies. All devices which are uses in night vision is shown below: these all devices is used in night time.

GENERATIONS

1) 0 GENERATION: The early generation was establishing in (1950-1955) which is not in complete vast Form.

2) 1st GENERATION: In the first generation tubes are used in the equipment in series. They work so will. They also work so perfect than 2nd and 3rd generation.

But one defect is present in this generation that the image is show clear at the center but it can distort at all its adages. This heaviest and largest one of first three generation, later is modified and the name has change in other generation.

3) 2nd GENERATION: This generation was made in (1970-1972). A high micro channel plate is used in it. And it is also called high electron multiplier. They also magnify the image in clear form. Its magnifier and resolution is under well developed technology.

These channels are built from millions of microscopic hollow glass, and each glass is of 0.0125 in diameter. Sensitive lenses are used in it; they detected the images by its sensitive wavelength.

4) 3rd GENERATION: the previous generations are made advanced and name as 3rd generation. The advancement take place in (1971-1978). the photocathode rays is used in it as an ion barrier.

Then they detect images from far distances clear in dark night. It is much better than firstly built generations but not perfect because further development take place fastly in very day life in advance technology world.

5) 4th GENERATION: The American army made advance the 3rd generation with highly developed photocathode lenses and rays and made sure the work of these devices to detect all images in deep dark night clear at center and all of its edges. The ion barrier is also removed which is used in 3rd generation for the purpose to finish the background noise.

The switch on and off system made sure rapidly. This generation is used all over the world because it is well developed equipment at all. Higher magnifying lenses are used in it. They are full of all needed and advanced technology materials.

APPLICATION

The main purpose of night vision technology is to detect enemy target in dark night. Security officers, police officers and also investigating officers use

night vision technology broadly according to their need. They trace their position and places in dark night and then perform action on it.

Application of night vision is as under below:

I. For hunting purposes

II. For military purposes

III. For security purposes

IV. For law enforcement

V. For entertainment

VI. For navigation purposes

VII. For hidden object detection

VIII. For surveillance

IX. For wildlife observation

X. And for automatic brightness control purposes.