



ALLU ANUSHA PRESENTATION

Building a better
working world

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- Types of Night Vision
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INTRODUCTION

- The word 'Night vision' itself means the ability to see in low light conditions.
 - Humans have poor night vision compared to many other animals.
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WORKING OF TECHNICAL NIGHT VISION

Technical Night vision can work in two very different ways

➤ Image Intensifier

- Night vision amplifies light to achieve better vision .
- A conventional lens, captures ambient light.
- The gathered light is sent to the image-intensifier tube.
- The light energy released electron from the cathode and accelerated.

NIGHT VISION DEVICES

Night vision devices are basically divided into three categories

➤ SCOPES

- They are monocular normally handheld or mounted on a weapon.

➤ GOGGLES

- They are binocular and worn on the head.

➤ CAMERAS

- Used for transmission or recording of images mostly if the location is fixed.



GENERATIONS

- NVDs have been around for more than 50 years. They are categorized by **generation**.
- Each substantial change in NVD technology establishes a new generation.

APPLICATIONS

- Military
- Hunting
- Wildlife observation
- Surveillance
- Security
- Navigation
- Hidden-object detection
- Entertainment

- Automobile



BMW's Night Vision with Pedestrian Detection system allows drivers to see what (or who) is down the road -- even on the darkest nights.

ADVANTAGES

- This is used in military
 - An increase in night time situations for pilots
 - It permit user to see object which cannot be seen by our aided eye
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Disadvantages

You can get blind if u look at something bright.

Blooming(state of anti-reflectiveness)-
night vision images gets partially distorted or
completely distorted.

Optical distortion during manufacturing.

PRINCIPLE OF OPERATION

NIGHT VISION SYSTEM IN AUTOMOBILES

works on two phenomenon :-

ACTIVE ILLUMINATION

THERMAL IMAGING



(Contd...)

AUTOMOBILE



BMW's Night Vision with Pedestrian Detection system allows drivers to see what (or who) is down the road -- even on the darkest nights.



Conclusion

- Think of what happens when this night vision technology falls into the hands of hijackers or terrorists or rival forces ?
- Thus just like other technologies, it's a boon when used in a right way but poses a curse when misled

Thank you