IQRA NATIONAL UNIVERSITY PESH.

Sessional Assignment # 01

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Programe : Radar and Satelite Communication.

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Q3:- Target Radar Cross Section?

Ans:- Radar cross section (RCS) is a measure of how detectable an object is by radar.

A larger RCS indicates that an object is more easily detected.

An object reflects a limited amount of radar energy back to the source.

The factors that influence this include:

⇒ The material of which the target is made;

⇒ The size of target relative to the wavelength of the illuminating radar signal;

⇒ The absolute size of the target;

⇒ The incident angle (angle at which the radar beam hits a particular portion of the target,

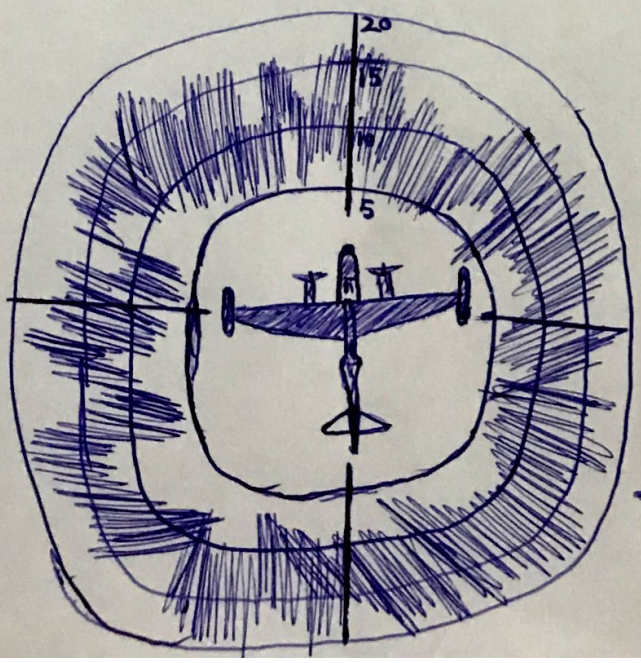
⇒ The reflected angle (angle at which the reflected beam leaves the part of the target hit; it depends upon incident angle);

⇒ The polarization of the transmitted and the received radiation with respect to the orientation of the target.

- While important in detecting targets, strength of emitter and distance are not factors that affect the Calculation of an RCS because RCS is a property of the target's reflectivity.

$$\sigma^0 = \left\langle \frac{RCS_i}{A_i} \right\rangle$$

- RCS_i is the radar cross section of a particular object
- A_i is the area on the ground associated with the object.



Typical RCS diagram