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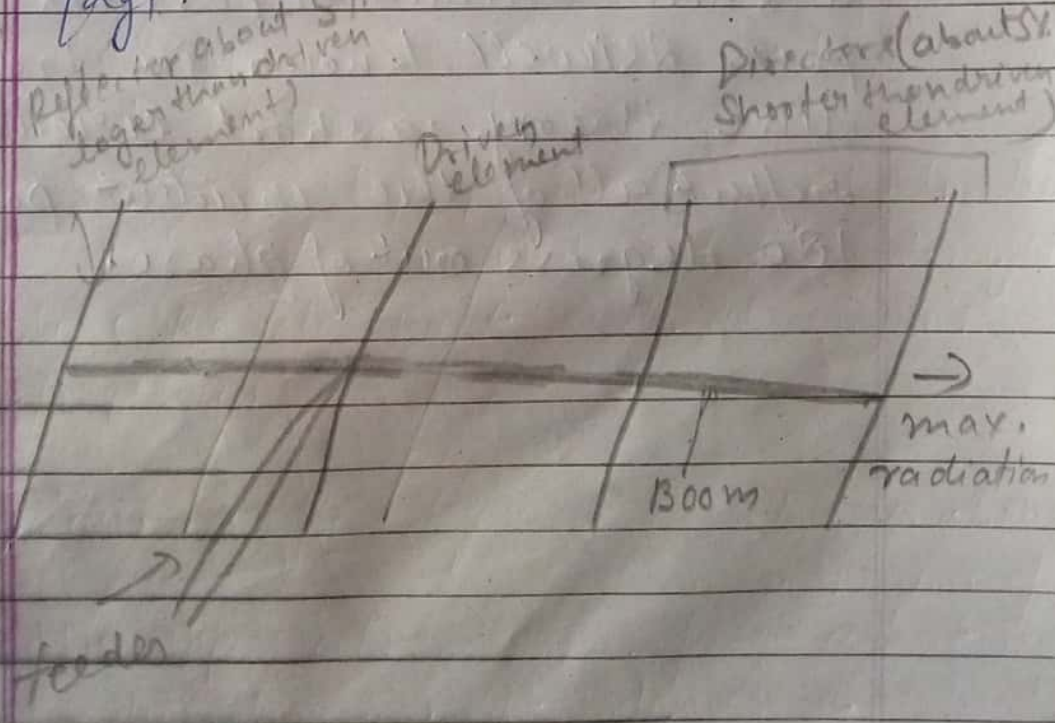
Yagi-Uda antenna :→

A Yagi-Uda antenna commonly known as a Yagi antenna is a directional antenna consisting of multiple parallel element in a line usually half wave dipole made of metal rods. Yagi-Uda antennas consist of a single driven element connected to the transmitter or receiver with a transmission line and additional "parasitic elements which are not connected to the transmitter or receiver : also called reflector and one or more directors. It was invented in 1926 by Shintaro Uda of Tohoku Imperial University Japan and Hidetsugu Yagi.



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Theory of operation :→

Consider a Yagi-Uda consisting of a reflector, driven element and a single director as shown here. The driven element is typically a $\lambda/2$ dipole or folder dipole and is the only member of the structure that is directly excited. All the other elements are considered parasitic that is they reradiate power which they receive from the driven element. One way of thinking about the operation of such an antenna is to consider a parasitic element to be a normal dipole element of finite diameter fed at its centre with a short circuit across its feed point. As is well known in transmission line theory, a short circuit reflect all of the incident power 180 degrees out of phase.