

ARC-54 Homing

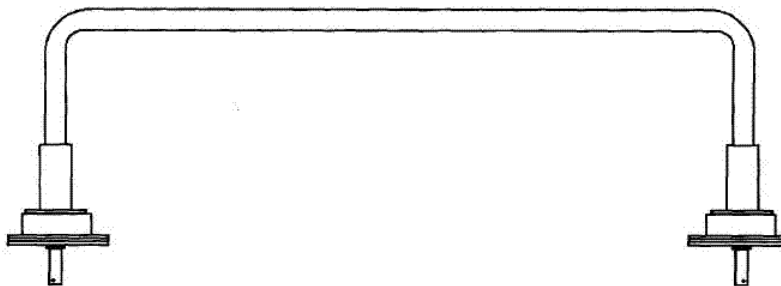
20 April 2011 kb

In the ARC-54 or ARC-131 system, a horizontal bar antenna was used on the roof front of the helicopter, in the form of a towel rack. Either the left or right end is connected to the receiver in a 100Hz rhythm. The result is presented on a cross-needle indicator ID-48, the vertical needle gave direction, the horizontal needle the signal strength. Both needles have an "OFF" flag, which are operated in parallel from the squelch output of the ARC54 or ARC-131

To use the homing mode of the ARC54 or ARC-131, a special antenna and an indicator is required. The antenna is the AS-1922/ARC ("towel rack") that is used in combination with the normal communications (whip) antenna. The indicator is a course indicator type, usually the ID-48.

Antenna AS-1922 / ARC

TB 43-0123
AS-1922/ARC
[5985-00-089-8048](#)
EIC: N/A



AS-1922/ARC Antenna

1. Brief Description: The AS-1922/ARC (Collins 637A-2) is a FM Homing Antenna used in conjunction with FM radio communication sets. This antenna is commonly referred to as the "Towel Rack" due to its physical resemblance to this standard fixture.

Used with ARC54 and ARC131

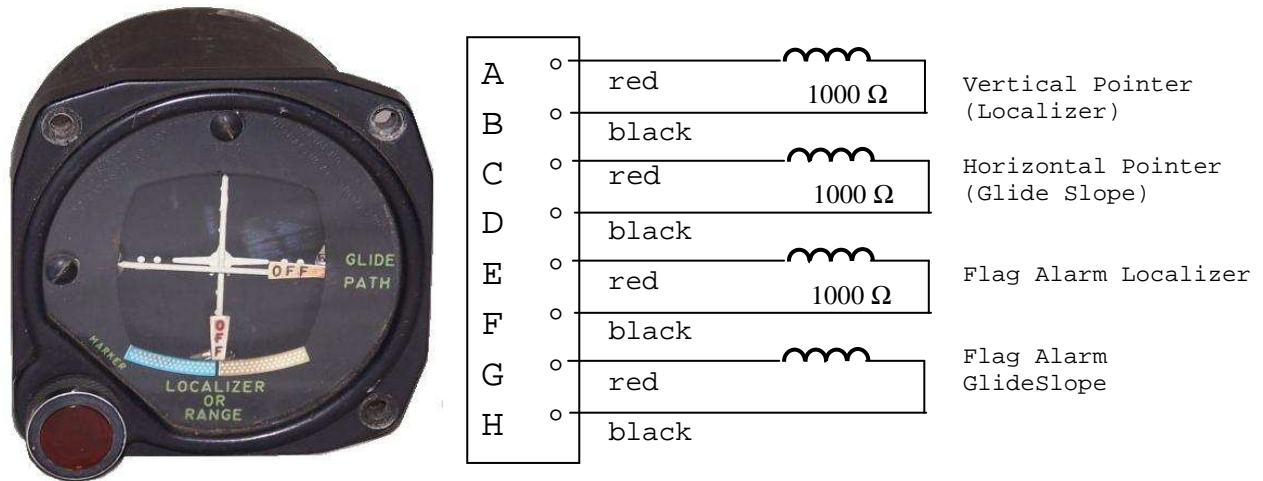
This antenna is used for reception in the homing mode of operation (transmit is still via the communication antenna). The receiver has a fast relay that connects the left end to the receiver for 5ms, while the right end is terminated into 50 Ω. The next 5ms, these connections are reversed etc.



This results in a 100Hz amplitude modulation of the received signal from a CW or FM radio station. An AM detector inside the receiver detects the modulation, and applies the signal to the + side coil of the indicators's vertical needle during the time the antenna is receiving on the left side, and to the - side when receiving on the right side. This way, the vertical needle roughly indicates the course to the radio station. The towel rack antenna is on the top of the helicopter:

Indicator ID-48

The ID-48 is a simple course indicator with two connectors. The homing function for the ARC-54 or ARC-131 is shared with the glide path/localizer functions from the instrument landing system when fitted.



For homing, the two flag alarms are connected in parallel, and driven by the squelch status from the receiver. The vertical needle is driven by the relative strength of the signal from left or right end of the antenna, while the horizontal needle is connected to the absolute strength of the received signal, measured on the AGC line.