

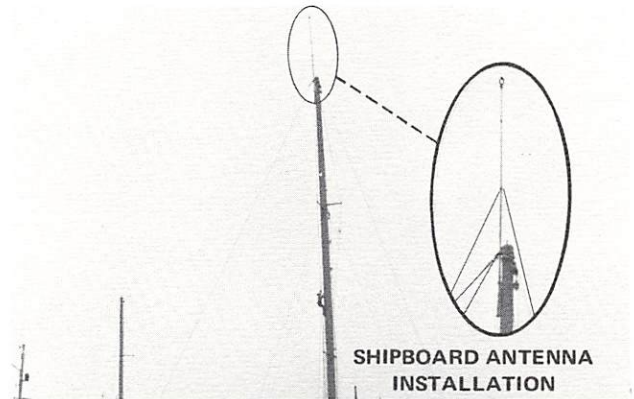


MODEL ADFS-210 AUTOMATIC DIRECTION FINDER SYSTEM

PRODUCT BULLETIN 4-71



CONTROL/INDICATOR UNIT



SHIPBOARD ANTENNA
INSTALLATION

- INSTANT RESPONSE TO R.F. SIGNALS RECEIVED FROM ANY DIRECTION – *NO MOVING PARTS*
- DIRECT, UNAMBIGUOUS READOUT OF RELATIVE BEARING – *CATHODE RAY TUBE DISPLAY*
- COMPACT, BATTERY POWERED SYSTEM – *PORTABLE OPERATION*

- POSITIVE TRACKING OF LOW POWER, INTERMITTENT TRANSMISSIONS – *SIGNALS AS SHORT AS 10 MILLISECONDS*
- ACCURATE HOMING UP TO WITHIN A FEW FEET OF SIGNAL SOURCE – *WIDE DYNAMIC RANGE PERFORMANCE*
- FLEXIBLE INSTALLATION CAPABILITIES – *FIXED OR MOBILE STATIONS*

The OAR Model ADFS-210 is an Automatic Direction Finder System designed for tracking 11 meter radio transmissions in the field, and is adaptable for use on land vehicles, ships or aircraft. The unit responds instantly to short duration or continuous transmissions and is ideal for tracking "free vehicle" instrument packages at sea, transmitters mounted on marine or terrestrial animals, and other low-profile targets that are difficult to locate with conventional equipment.

The system consists of two basic units – a remote multi-element loop antenna array and a control/indicator unit. The control/indicator unit contains the CRT direction display, a channel selector for any one of ten crystal controlled channels in the 26 to 28 MHz band, and relative field strength indication and receiver audio output. The antenna array consists of two fixed loops plus a vertical whip, and can be assembled to suit various installation conditions.

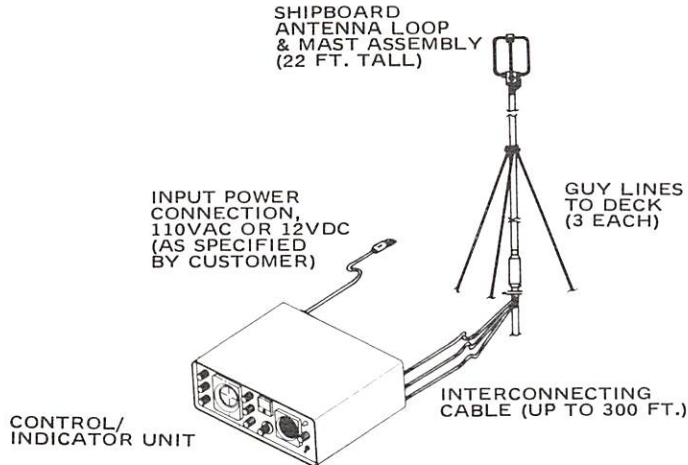
The direction to the target transmitter, relative to the ship or vehicle heading, is presented on the cathode ray tube as a straight line trace from the center of the tube to a screened compass rose on the periphery. A unique sensing loop and receiver circuit eliminate the need for any moving parts in the Model 210 ADF, and provide a direction indication without ambiguity.

When used with low-power (100 milliwatt) radio beacons such as the OAR ST 206 Submersible Transmitter, or PT 200 Series of Animal Transmitters, a range of six to ten miles is normal in moderate seas. 15 to 20 miles range is typical over open water with 0.5-watt transmitters.

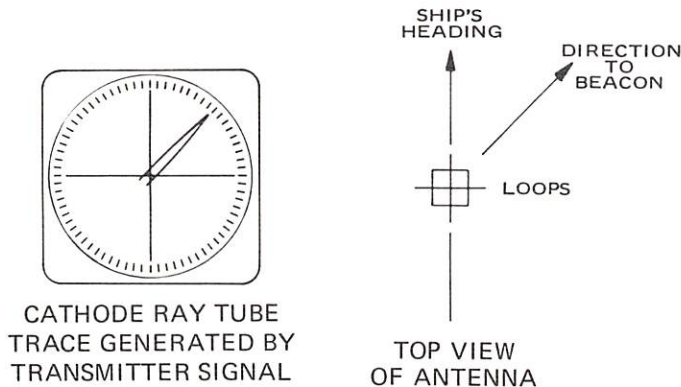
Use of all solid state components (except CRT) in the design results in compact, lightweight packaging and simplified power requirements. The unit operates from any 12 VDC source at only 1.2 amps, making it readily adaptable to use with ship or vehicle power.

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SYSTEM CONFIGURATION



DISPLAY



ORDERING INFORMATION

Model No.	Description	Unit Price
ADFS-210-1	Automatic Direction Finder System, incl. control indicator unit; 2-piece antenna mast; loop antenna; and interconnecting cables.	\$4,100.00
-2	With 1-piece self-supporting antenna mast	200.00 addl.
-3	With telescoping antenna mast	400.00 addl.
-A	Incl. 3-hour rechargeable battery pack	200.00 addl.
-B	Incl. 110 VAC, 60 Hz power supply	150.00 addl.

SPECIFICATIONS

SYSTEM PERFORMANCE

- Output** — Relative compass bearing between receiver antenna axis and location of transmitter
- Azimuth Coverage** — Full 0 to 360°
- Bearing Accuracy** — ± 3 to 5° @ 0°, 90°, 180°, and 270° compass bearings (± 5 to 10° @ bearings in between)
- Range** — Line of sight; 6 to 10 miles typical over open water when using matched 100-milliwatt transmitters, 18 to 20 miles with 0.5-watt units.
- Receiver Sensitivity** — Less than 10 microvolts at input terminals for rated signal-detection range and bearing accuracy.
- Receiver Tuning** — 10 crystal-controlled channels
- Selectivity (Channel Bandwidth)** —
 - 3 db down: ± 2.5 kHz
 - 6 db down: ± 3.6 kHz
 - 12 db down: ± 6.1 kHz
- Frequency Range** — 11-meter radio band, 26 to 28 MHz standard (30 to 32 MHz optional; other HF, VHF, and UHF bands available on special order)
- Power Requirements** — Unregulated 12 VDC standard (AC operation optional)

CONTROL/INDICATOR UNIT

- Dimensions** — 14.8 inches (37.6 cm) wide by 5.4 inches (13.7 cm) high by 11.9 inches (30.2 cm) deep
- Weight** — 12 pounds (excluding battery rack)
- Video Display** — 3-inch cathode ray tube with compass rose graduated every 5° from 0 to 360°
- Auxiliary Signal Indicators** — 3-inch (7.6 cm) panel speaker for monitoring receiver audio output. Relative field-strength meter for determining "opening" or "closing" range to target
- Frequency Selection** — 10 separate channels (5 pre-set with crystals for 26.995, 27.045, 27.095, 27.145, and 27.195 MHz)
- Controls** — ON/OFF and channel-selector switches; receiver volume and video display adjustments
- Power Supply** — External 12 VDC (10-14 VDC) at 1.2 amperes, standard (115 VAC, 60 Hz optional)
- Fittings** — Power input, antenna cable, and audio tape recorder output connections on rear panel
- Construction** —
 - Cabinet: Aluminum, splash-proof sealing
 - Electronics: Latest solid-state elements (except CRT)
- Accessories** —
 - External Power Cable: Included
 - Antenna Cables: 3 each, 50-foot long (included)
 - Internal Battery Pack: 3-hour Nicad, rechargeable (optional)