## APPLICATION

## REVISIONS

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| | | **Wulfsberg Electronics** |
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# Wulfsberg Electronics

## *OPERATOR'S MANUAL*

*Engineering and Production of FliteLine Components by
Wulfsberg Electronics, A Cobham Avionics & Surveillance Group Company.*

# WULFSBERG
# CDM-451

## FLITELINE
## DISTANCE MEASURING
## SYSTEM

*MANUAL NUMBER 150-041762
REVISION B, JULY 2006*

**Wulfsberg Electronics**

**CDM-451 DISTANCE MEASURING SYSTEM**
**OPERATOR'S MANUAL**

Wulfsberg Electronics, A Cobham Avionics & Surveillance Group Company, located in Prescott, Arizona, designs and manufactures the Wulfsberg Electronics FliteLine™ suite of products, including the CDM-451 Distance Measuring System. For more than 25 years, Wulfsberg Electronics has distinguished itself by providing top quality avionics products for civil, air transport, and military applications.

## PROPRIETARY NOTICE

**CDM-451 DISTANCE MEASURING SYSTEM**
**OPERATOR'S MANUAL**

1.      <u>General</u>

This section describes the displays and controls of the FliteDME Distance Measuring System.

The FliteDME System requires the use of a frequency tuning unit, such as the VNS 41A VHF Navigation System, or other ARINC 429 tuning control unit.  However, if the CDM-451 being used is a 400-041181-0012/0112 part number, then King Serial tuning information can be supplied via the KDI-572, part number 066-1069-15.

An aircraft audio system, including headphones and/or speaker amplifier and speaker, is required to process DME ident audio outputs.

2.      <u>Operation</u>

All controls and displays used to operate the FliteDME Distance Measuring System are located on the SD-442B Selector-Display or the KDI-572 Master Indicator.  Refer to Figure 1 and Figure 2 for the following discussions:

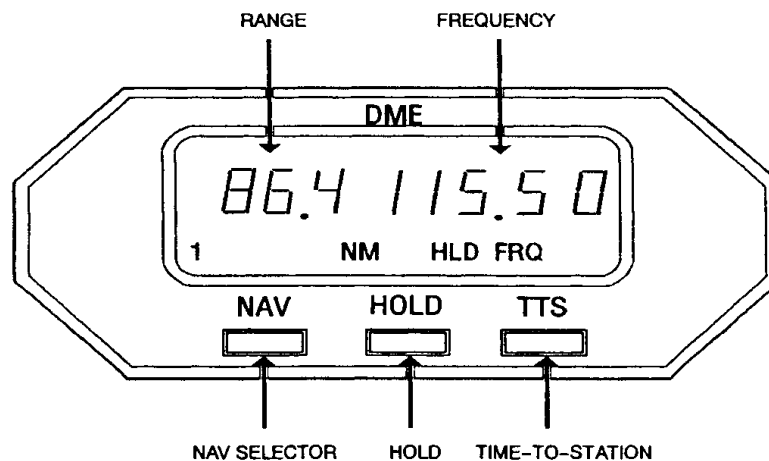   A.  **SD-442B Selector-Display**



**Figure 1.  SD-442B Control and Display Functions**

(1)   NAV PUSHBUTTON selects the NAV 1, NAV 2, or RNAV frequency tuning source.  A1, 2, or RNV is displayed in the lower left corner of the display window, to annunciate the tuning source.

(2)   HLD PUSHBUTTON holds the last frequency selected by the NAV< freeing the NAV receiver to change frequency.  The frequency to which the DME is tuned is displayed in the right portion of the display window, with HLD and FRQ annunciated.  If the SD-442B is strapped as an RNAV repeater, RNV flashes for RNAV related functions when the HLD button is pressed.

(3)   TTS PUSHBUTTON displays the time-to-station in hours and minutes, from 0 to 8 hours, in the right portion of the display window, when pressed.  TTS annunciates below time.  The ground speed display returns when the TTS pushbutton is released.

(4)   DISTANCE DISPLAY shows distance to station in nautical miles.  From 0 to 99.9 nautical miles, the distance is displayed in one tenth mile increments.  From 100 to 300 nautical miles, the distance is displayed in one nautical mile increments.

(5)   GROUND SPEED DISPLAY shows ground speed from 25 to 800 knots in 1 knot increments.

(6)   The audio circuits will scan NAV 1 and NAV 2 stations for DME audio identification.  When an audio signal is detected the audio ident signal will appear on the aircraft's audio system, on the selected NAV/DME combination (DME 1 or 2).

(7)   The system can accommodate an optional RNAV/VOR mode switch for the display of RNAV distance to waypoint, and ground speed, or time-to-station when in the RNAV mode.

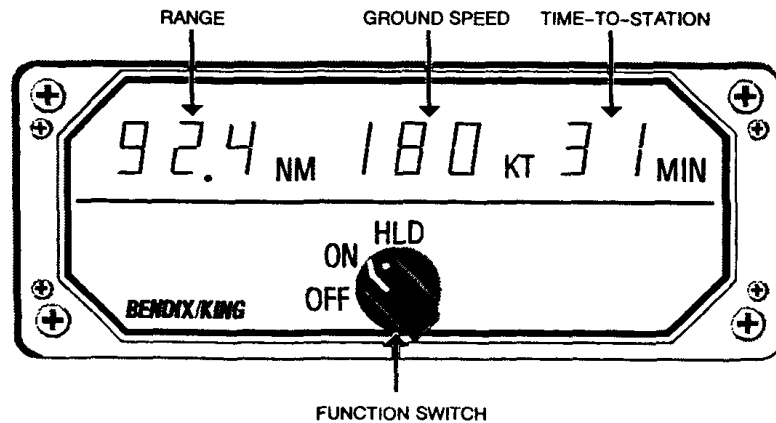**B.   KDI-572 Master Indicator**



**Figure 2.  KDI-572 (P/N 066-1069-15) Control and Display Functions**

(1)   The FUNCTION SWITCH on the front of the KDI-572 has three positions OFF, ON, and HLD.  In the OFF position, the master indicator and the remote mounted DME are turned off. In the ON position, the DME is channeled from the NAV 1 control head.  In the HLD position, the DME is channeled to the last selected NAV 1 frequency.  To prevent the display of false information, the KDI-572 will display dashes and the CDM-451 will stay in "search", whenever power is turned on, or momentarily interrupted in frequency HLD mode.  Normal operation is re-established by switching to the ON position.

(2)   The KDI-572 displays DME range, speed, and time-to-station, as shown in Figure 2.  In HLD mode, an "H" is displayed to indicate the unit is in hold.  "RNV" will be displayed when the displayed distance, speed, and time-to-station are derived from an Area Navigation System.

(3)   When the CDM-451 is locked to a ground station, range is displayed to the nearest 0.1 nautical mile, from 0 to 99.9 nautical miles, and to the nearest 1 nautical mile, from 100 to 389 nautical miles.

(4)    Ground speed is displayed to the nearest knot from 0 to 800 knots.

(5)    Time-To-Station is displayed to the nearest minute, from 0 to 99 minutes.  The indicator also displays 99 minutes for any computed time-to-station, g reater than 99 minutes.

(6)    When the CDM-451 is in the search mode, dashes are displayed instead of range.

(7)    The indicator has an automatic dimming circuit that adjusts the brightness of the display to compensate for changes in ambient light level.  Dimming is controlled by a photocell mounted behind the front panel, below the display.

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