Society of Automotive Engineers, Inc.
29 West 39th Street
New York City

# AERONAUTICAL STANDARD AS 278

## COCKPIT FLIGHT INSTRUMENT PANEL ARRANGEMENT

Issued 3-15-53
Revised

1. PURPOSE: The purpose of this standard is to set forth the flight instrument panel layouts as recommended by the SAE Cockpit Standardization Committee S-7.

2. SCOPE: The recommendations cover the type of flight instrumentation in use today or planned for use in the near future on transport category aircraft. Four instrument panel arrangements are shown based on the use of flight instruments presently available.

Systems 1 & 2 show layouts adaptable to transport aircraft employing flight instruments in general use today.

The arrangements shown in Systems 3 & 4 using computer type instruments dictate the use of an instrument **combining the Direction and ADF functions** - the RMI. It was felt that this was necessary in order to arrive at a better all-around standard layout and to conserve instrument panel space.

3. INSTRUMENT ARRANGEMENT:

3.1 For the Captain's Flight panel only - The four complete panel arrangements shown in Systems 1, 2, 3 & 4 are considered STANDARD. For exception see Paragraph 4.3.

3.2 For the Co-Pilot's panel - The four panel arrangements shown in Systems 1, 2, 3 & 4 are STANDARD for only the basic six instruments shown. The remaining auxiliary instruments are shown in a RECOMMENDED location but may be re-arranged if desired to arrive at a more functional layout.

4. INSTRUMENT PANEL LOCATION:

4.1 The flight instrument panel shall be of sufficient size to accomodate at least 12 standard size (3-1/8 inches Dia.) instruments comprised of three horizontal rows of four instruments each plus the radio marker beacon lights.

4.2 The center line of the instrument panel shall be within two inches of the vertical plane passing through the center of the pilot's seat and parallel to the longitudinal axis of the airplane.

4.3 The full panel of 12 instruments shall be located to provide unrestricted visibility of the basic six instruments and if possible the auxiliary instruments. Should it be impossible to meet this condition, the auxiliary instruments in the bottom row may be relocated horizontally not more than one instrument space away from the position shown.

5. ABBREVIATIONS: The following is a listing of abbreviations shown in the layouts in this Aeronautical Standard:

| Proposed Standard | Abbreviation |
|---|---|
| Airspeed Indicator | AS |
| Approach Horizon | APPR. HOR. |
| Automatic Direction Finder Indicator | ADF |
| Clock | CLOCK |
| Collins Course Indicator | CI |
| Cross Pointer (Instrument Landing System) | ILS |
| Gyro Directional Indicator | DG |
| Gyro Horizon | HOR |
| Heading Selector | HS |
| Omni Bearing Selector | OBS |
| Pressure Altimeter | ALT |
| Radio Magnetic Indicator | RMI |
| Radio Marker Lights | RML |
| Rate of Climb Indicator | R/C |
| Turn and Bank Indicator | T/B |
| Zero Reader | ZR |

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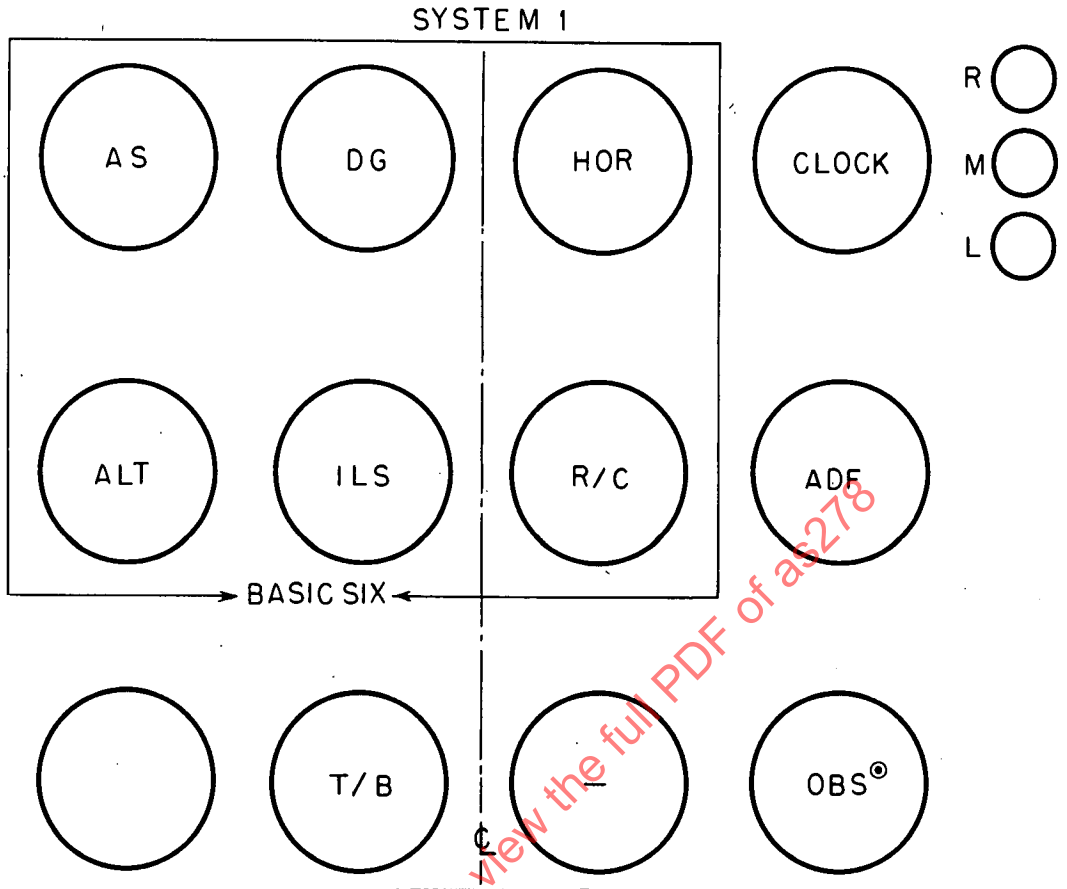


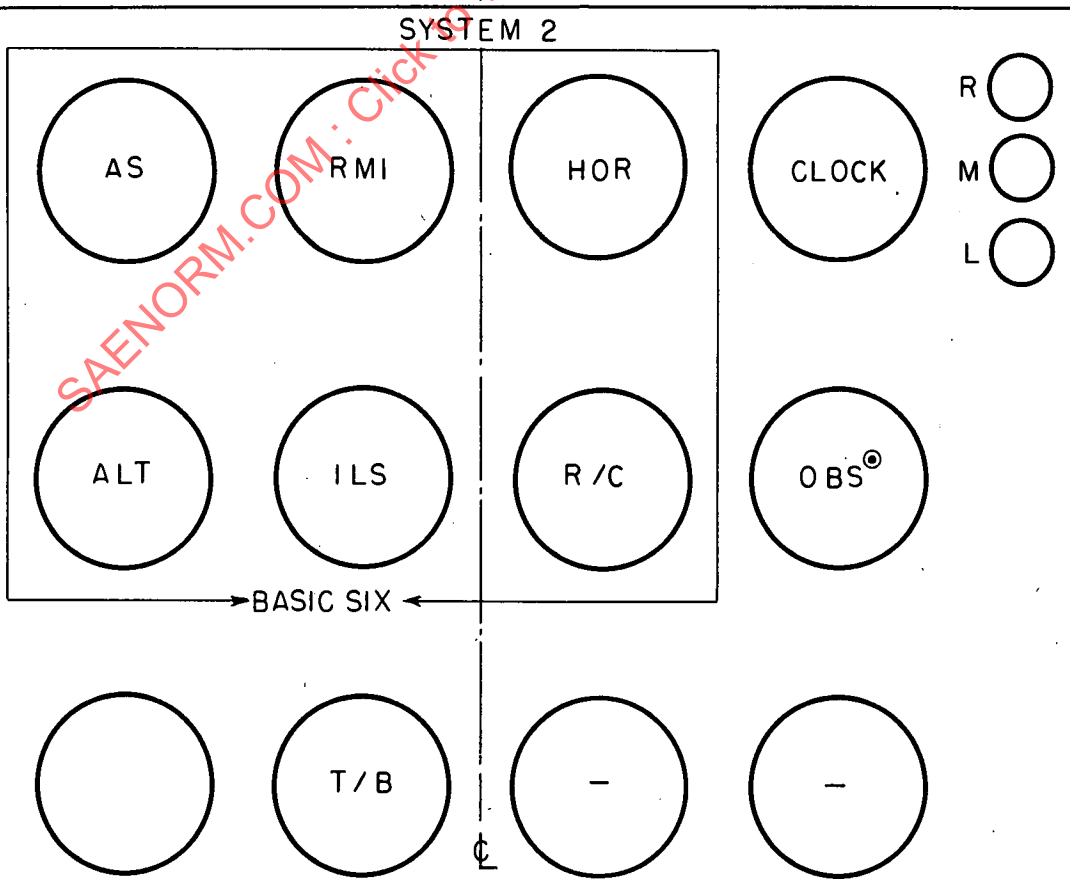


⊙ IF ILS AND OBS FUNCTIONS COMBINED INTO A SINGLE INSTRUMENT, IT SHOULD BE LOCATED IN SPACE DESIGNATED FOR ILS.