



# AEROSPACE RECOMMENDED PRACTICE

Society of Automotive Engineers, Inc.  
TWO PENNSYLVANIA PLAZA, NEW YORK, N.Y. 10001

## ARP 1166

Issued 5-15-70  
Revised

### INSTRUMENT PANEL ARRANGEMENT FOR FIXED WING AIRCRAFT UNDER 12,500 LB

#### 1. INTRODUCTION

Instrument panel arrangements have varied greatly between different models of aircraft. This has been the cause of some pilots experiencing difficulty in moving from one model aircraft to another. To efficiently perform either VFR or IFR tasks the pilot frequently has been faced with relearning the locations of the flight instruments, radios, navigation displays, switches, and controls.

To make transition easier and help eliminate pilot confusion and possible mismanagement of the airplane which could contribute to causing an accident, it is deemed desirable to improve the commonality between aircraft instrument panel arrangements, switches, and controls.

As a first step to achieving commonality this ARP is directed at placement of the basic six flight instruments and the primary navigation instruments.

#### 2. PURPOSE

This recommended practice sets forth the flight instrument panel layout as recommended by SAE Committee A-23C, Cockpit/Cabin Standardization - General Aviation Aircraft.

#### 3. SCOPE

- 3.1 The recommendations cover the arrangement of flight instruments and navigation indicators in fixed wing aircraft under 12,500 pounds.
- 3.2 The arrangements are applicable to the circular dial instruments in use at the date of issue of this ARP. It is not intended to restrict future design or display concepts or to anticipate vertical tapes, integrated displays or other new developments.
- 3.3 The recommended panel arrangement may be modified to enhance the performance of particular missions or to accommodate special capabilities of the airplane and/or instrumentation.

#### 4. INSTRUMENT ARRANGEMENT

- 4.1 Figure 1 shows the general relationship of the flight and navigation indicators for one pilot aircraft or the Captain's position when two pilot position instrument panels are used.
- 4.2 When two instrument panels are used for two pilot aircraft the flight instruments for the copilot should use the same arrangement as the Captain's except that the VOR No. 1 and VOR No. 2 may be disregarded.
- 4.3 The No. 2 VOR position is the preferred position for the second VOR indicator. If only one VOR is used or if another navigation instrument is used nearly equally with the VOR, that indicator may be placed in the No. 2 VOR position.
- 4.4 An Instrument Landing System glide slope cross-pointer, when used, should be incorporated into the VOR No. 1 position.

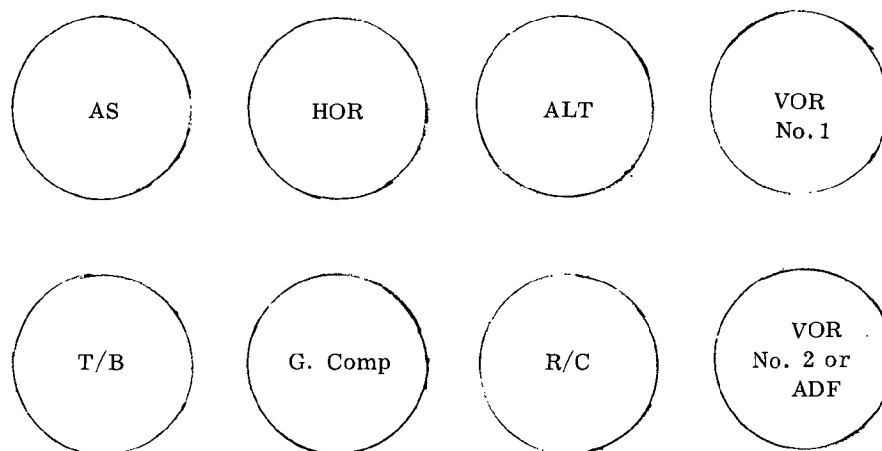
SAE Technical Board rules provide that: "All technical reports, including standards approved and practices recommended, are advisory only. Their use by anyone engaged in industry or trade is entirely voluntary. There is no agreement to adhere to any SAE standard or recommended practice, and no commitment to conform to or be guided by any technical report. In formulating and approving technical reports, the Board and its Committees will not investigate or consider patents which may apply to the subject matter. Prospective users of the report are responsible for protecting themselves against liability for infringement of patents."

CANCELLED

## 5. INSTRUMENT PANEL LOCATION

- 5.1 The gyro horizon or instrument that most effectively indicates attitude should be as near as possible to the top most position and as near as possible to the center of the pilot's position.
- 5.2 Other indicators should be located in the general position shown in Figure 1. It is not intended that they be placed in rigid horizontal and vertical lines (although it is preferred). The indicators should be in uniformly spaced groupings in front of the pilot position.

PREPARED BY  
SAE COMMITTEE A-23,  
COCKPIT/CABIN STANDARDIZATION-GENERAL AVIATION AIRCRAFT



|          |                                                      |
|----------|------------------------------------------------------|
| AS       | Airspeed Indicator                                   |
| HOR      | Gyro Horizon Indicator                               |
| ALT      | Pressure Altimeter                                   |
| T/B      | Turn and Bank (Slip) Indicator                       |
| G. Comp. | Gyro Compass                                         |
| R/C      | Rate of Climb Indicator                              |
| VOR      | Course Deviation Indicator and Omni Bearing Selector |

FIGURE 1