

INTRODUCTION

The center section of the main instrument panel of any type of transport aircraft flight deck shall be used for the installation of those primary indicators, controls and condition displays that are not specified in AS 278 and must be immediately visible to the two pilots for the safe and expeditious performance of their duties. Readability requirements must be considered for those displays which are also required by the Flight Engineer in the performance of his duties.

The Flight Engineer's instrument panel shall be used for the installation of those indicators, controls, and condition displays associated with the systems assigned as primary to the Flight Engineer by ARP 268, Figure 3 and which are not provided on the center or overhead panels.

The pilot's overhead instrument panel may also be used for the installation of those auxiliary indicators, controls and condition displays that are required to be within normal reach and observation of the pilots and/or the flight engineer for the performance of their duties.

1. INSTALLATION CRITERIA:

1.1 Center Instrument Panel: The following classes of items are acceptable for installation on the center instrument panel.

1.1.1 All primary engine power and condition instruments and displays.

1.1.2 Supplementary type flight and engine instruments, displays, controls or condition indicators necessary for the pilots in the normal performance of their duties.

1.1.2.1 Examples of 1.1.2 are: OAT Gauges, flap and gear position indicators, Flight Director mode selector, traffic control displays, autopilot servo indices, thrust reverser condition displays, engine overheat, composite system warning annunciator panels, etc.

1.2 Flight Engineer's Panel: The following system indicators, controls or condition displays are acceptable for installation on the Flight Engineer's panel.

1.2.1 The fuel system, hydraulic system, pneumatic system, electrical system, air conditioning and pressurization system controls, indicators and condition displays necessary for the operation and monitoring of these systems. Auxiliary engine controls and indicators not necessary on the forward center panel shall also be installed on this panel.

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- 1.3 Pilot's Overhead Panel: The following airplane system indicators, controls and condition displays are acceptable for installation on the pilot's overhead panel.
- 1.3.1 Those ancillary systems that are operated only under certain flight conditions, do not require continuous monitoring and are not immediate action items in the event of an emergency. Secondary items that require pilot judgment and are operated by the pilots may be located on the overhead panel also.
- 1.3.1.1 Examples of the above are external airplane lights, seat belt - no smoking switches, pitot heat, as well as various systems the pilot or flight engineer might operate but do not require continuous monitoring. Examples of the latter are engine, wing and empennage anti-ice and de-ice controls, engine start and ignition switches, anti-skid switch, individual flight control and flap by-pass switches, etc.
2. INSTALLATION ARRANGEMENT:
- 2.1 Center Instrument Panel: The following rules shall be used for laying out main center instrument panels for transport aircraft.
- 2.1.1 Power plant instruments shall be aligned horizontally by function in the same relative order with respect to the flight crew as to the power plant with which they are associated. If five or more engines are installed the power plant instruments shall be numbered to correspond with the power plant with which they are associated regardless of their orientation in the flight deck.
- 2.1.2 Power plant instruments located on the center instrument panel shall be arranged vertically in the following order from top to bottom.
- (a) Primary and secondary engine power or thrust parameters and in that order (such as torque press, BHP, EPR, P_{T7} , manifold press, RPM).
 - (b) Primary engine limitation indications (such as RPM, EGT, Turbine Inlet Temperature, Cyl, head temperature, etc.).
 - (c) Secondary engine limitation and functional instrumentation (such as fuel flow, oil pressure, etc.).
- 2.1.3 The center instrument panel is an acceptable location for immediate action engine malfunction warnings.