

COCKPIT DESIGN FOR SAFETY HUMAN ENGINEERING GUIDES

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In line with safe engineering practice several engineering principals are followed in aviation when it comes to warnings and warning devices. Within the design of an airplane itself there are certain design criteria as how warnings are to be conveyed.

The principals to be followed in aircraft lights are;

1. The color red is reserved to convey an emergency Cat I. nature.
2. The color amber is reserved for abnormal situations, conveying the need to react.
3. The color blue is reserved for a satisfactory status analysis.
4. The color green is reserved for a safe situation status.

In cockpit design of warning devices several principles have evolved, they are:

- A. In cockpit design it is recognized that a distinct audible noise is the best attention grabber to reflect an emergency or warning (bell, clacker, siren, whistle etc.)
- B. In cockpit design it is recognized that an illuminated light that is flashing intermittently is the next best attention grabber
- c. It is recognized that a steady light is next best.
- d. It is recognized that a warning label is least desirable
- e. For a light to be effective it must be placed in the pilots directed line of sight. (A thirty-degree cone)
- f. For a critical emergency it is usual to combine an audible with a flashing red light. Some systems use a computer generated warning voice as well (nick named Bitching Betty)
- g. Since cockpit dashboard space is limited it is recognized that all warning lights can't be placed in the pilots directed line of sight. Thus a master caution will be provided to attract attention to other lights not so well situated.

Military Manuals and some civilian manuals utilize standard phraseology in flight manuals.

Warnings are highlighted in Red block and use the word WARNING in all capital letters. The word is reserved for data that if ignored could cause loss of aircraft or life. Immediate action is required.

Caution is a word in all capitals that means a failure to take corrective action may result in mission or system loss. Delayed action will not result in immediate harm.

Note is used when a failure to comply will result in some adverse but routine situation that can be avoided.

Whenever possible cockpit design criteria require that a warning light be placed adjacent to the switch that needs to be moved in order to correct the situation. The same holds true for warning and informational labeling.