

STATEMENT OF ISSUE

CS 23.562 requires dynamic seat testing as well as compliance with the head injury criteria (HIC).

BACKGROUND

The aircraft affected is a small two-seater aircraft for training purpose. The two pilot seats are located behind each other (trainee in the forward seat and instructor in the rear seat). The aircraft shall be certified in *Normal* and *Acrobatic* category. The aircraft is equipped with two ejection seats defined as primary escape means for the crew.

ELOS

If full compliance with the requirements of CS 23.562 cannot be met due the design of the seats or their installation constraints, an investigation about possible head injuries shall be conducted.

While the installation of ejection seats as primary emergency escape means already avoid occupancy of the aircraft in the majority of crash cases, occupancy of the aircraft cannot be avoided in all possible cases. The head path measured at crash tests under conditions described in CS 25.562 shall be compared with the obstruction free envelope provided at each pilot station in accordance with Def Stan 00-970 section 4.16.16.

4.16.16 Head Clearance

A minimum Spherical envelope of 254 mm shall be provided from the aircraft design eye position to ensure a minimum of 51 mm head clearance from the canopy. In aeroplanes where ejection through the canopy is possible, head clearance shall be sufficient to enable canopy breakers to penetrate the canopy and provide a clear path for the seat and crew member; where canopy break up is effected by explosive means (e.g. detonating cord) head clearance shall be sufficient to prevent injury to the pilot. When overhead actuation of ejection seat is provided, sufficient space between head gear and canopy to ensure access to and actuation of the control shall be provided.

Compliance

These clearances shall be based on the most critical size aircrew member specified wearing appropriate personal protective equipment.

Guidance

Figure 1 below for Head Clearance requirements

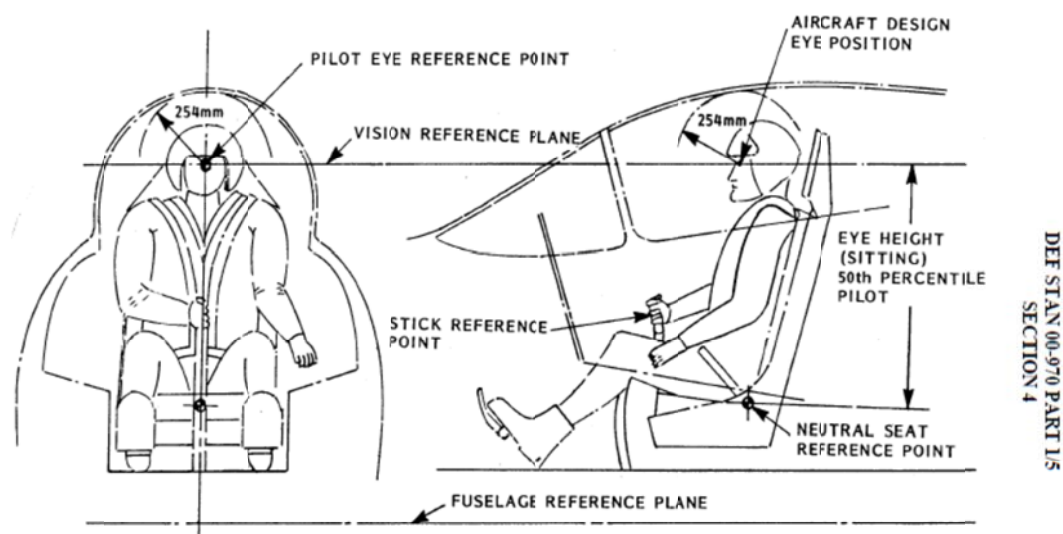


FIG.1

AIRCREW STATION DEFINITION AND GEOMETRY LAYOUT
FOR FIXED WING AEROPLANES