

## Safety Recommendation

### **REC 28/13.**

The regulatory requirements established in terms of para-traffickers that must be recorded in the flight data recorders (DFDR), and which are defined both in ICAO Annex 6 and in the operating regulations applicable in Spain, set some margins of measurement.  $\pm 1g$  for longitudinal and lateral accelerations. In the case of vertical accelerations the range extends from  $-3g$  to  $+6g$ . As previously mentioned, it has been considered necessary in the investigation of this accident to resort to theoretical formulations to evaluate the longitudinal accelerations supported by the aircraft during its movement in the ground because the data registered in the DFDR for this parameter are limited to the interval  $\pm 1g$ .

The design requirements for this type of aircraft (FAR 25, amendment 25-91), however, provide for situations in which it should be possible to prove the suitability of this design when longitudinal accelerations of  $9g$  forward and  $1.5g$  rearward are reached, laterals of  $3g$  in the cell and  $4g$  in the seats and their restraints, and verticals of  $3g$  upwards and  $6g$  downwards.

It seems that, as far as vertical accelerations are concerned, the performance of the data loggers will allow the evaluation of the design characteristics associated with these accelerations. It is not the same if we talk about longitudinal and lateral accelerations. For the case at hand, the availability of records for those accelerations in more adjusted ranges than those included in the design standards, would have facilitated the investigation of the aspects related to these variables and improved the results obtained.

ICAO is recommended to promote initiatives to expand the established measurement margins of longitudinal and lateral accelerations in flight data recorders.