EASA Safety Information Bulletin

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Subject: **Pilot Training – Artificial Pitch Control Feel**

Ref. Publication: Commission Regulation (EU) 965/2012 of 5 October 2012

Commission Regulation (EC) No 859/2008 of 20 August 2008

Annex III (EU-OPS) to Commission Regulation (EC) No 859/2008 of 20 August 2008

Annex I (Part-FCL) to Commission Regulation (EU) No 1178/2011 of 3 November 2011

Annex III (Part-ORO) to Commission Regulation (EU) No 965/2012 of 5 October 2012

Finnish Safety Investigation Authority - Final report C12/2010L “In-flight upset of a Business Jet in the Moscow Terminal Control Area on 23 December 2010”.

Romanian Ministry of Transport, Civil Aviation Inspectorate – Final Report on the “Accident of a Falcon 900B on 14 September 1999”

Applicability: Aeroplane Manufacturers, National Aviation Authorities, Operators, Training Organisations.

Background:

1. On 14 September 1999 an accident occurred with a Falcon 900B. During climb after flap and slats were retracted, the flight crew noticed, on the warning panel, the "PITCH FEEL" light came on. The "PITCH FEEL" warning light, remained continuously ON, during cruise and descent until SLATS were extended.

   During descent, the Indicated Air Speed (IAS) increased from 240 Kts to 332 Kts. At approximately FL 150, the A/P disengaged and for the next 1 minute and 36 seconds the aircraft was manually flown by the Pilot In Command (PIC).

   Between FL 150 and FL 140 the aircraft experienced 10 oscillations in pitch axis which exceeded the limit manoeuvring load factor.

This is information only. Recommendations are not mandatory.

The impact of the unfasten passengers with cabin ceiling and aircraft furniture, due to accelerations occurring during the pitch oscillations caused fatal injuries to 7 passengers, serious injuries to 1 crew member and 1 passenger and minor injuries to 2 passengers.

Following the investigation, several safety recommendations were issued by the Romanian Civil Aviation Inspectorate, including the following one: *"Conservatively, the JAAs and the FAA should make sure that training programs and documentation of all operating airplanes provide sufficient information and illustrative examples of Aircraft Pilot Coupling and of possible unsafe crew/automation interactions."*

2. On 23 December 2010, another accident took place in the north-western part of the Moscow Terminal Control Area (TMA). While en-route from Moscow to St Petersburg, a Bombardier BD-100-1A10 Challenger 300 business jet experienced a sudden in-flight pitch upset during the climb. There were three passengers and three crewmembers on board. As a result of the occurrence, two passengers were injured and some of the cabin interior was damaged. The aircraft returned to Sheremetyevo Airport and the injured passengers were taken to hospital in Moscow.

   The Finnish Safety Investigation Authority, following analysis of the events that led to the accident, issued three safety recommendations, one of which addressed to EASA: "*Safety Investigation Authority, Finland recommends that the European Aviation Safety Agency (EASA) call attention to the content of the type training classroom instruction and simulator training of artificial feel system operating principles, especially with regard to aircraft types in which the system does not directly adjust in relation to airspeed."*

Recommendations: The content of the above recommendations addresses an issue that occurred more than once and does not appear to be related to a single type of aeroplane. Therefore, EASA consider appropriate to provide the following general recommendations in the area of pilot type rating training for Operators, Approved Training Organisations and Manufacturers:

1. Operators and Approved Training Organisations are encouraged to include, in their pilot training syllabi, considerations regarding the aeroplane flight control feel behaviour as a function of airspeed and other parameters, especially during failure conditions.
2. Aeroplane Manufacturers should provide relevant information to support type rating training, where available.
3. During the appropriate phases of the type rating training, pilots should be made aware of the implications of pitch trim or other relevant failures on control artificial feel. Particular emphasis should be put on the sensitivity of the control changes with airspeed in such systems. All training should be

consistent with the Manufacturer's procedures and techniques.

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