EASA	COMMENT RESPONSE DOCUMENT
	Proposed Special Condition C-xx on Rudder Control Reversal Load Conditions (Applicable to Large Aeroplane category)

Commenter 1 : Boeing

Comment #[1] - Special Condition

The pilot force requirements are provided in each of the appropriate sub-paragraphs (a) – (d), so inclusion in the initial paragraph results in unnecessary repetition.

Comment :
The current wording :
"…In computing the loads on the aeroplane, the yawing velocity may be assumed to be zero. A pilot force of 890 N (200 lbf) is assumed to be applied for all conditions."

is proposed to be amended as followed :
"…In computing the loads on the aeroplane, the yawing velocity may be assumed to be zero. ~~A pilot force of 890 N (200 lbf) is assumed to be applied for all conditions.~~"

EASA response: Agreed.
The sentence is corrected as proposed.

Commenter 2 : Embraer

Comment #[1] – Special Condition

Based on available service history data it appears that significant rudder reversal events are very rare, on the order of 10-8/FH. While single rudder control doublets cannot be completely ruled out in the future, through adequate crew training and awareness multiple large rudder

control doublets would be even rarer. Therefore, the more severe regulatory action regarding multiple full-stroke rudder control doublets (proposed draft 14 CFR 25.353(a)-(e) of Version 2) is unnecessary.

Comment
The single full-stroke rudder control doublet of proposed draft 14 CFR 25.353(a)(b)(c) (Version 1 single-doublet) is a sufficient design standard to provide additional protection against rudder control reversals. There is no need for requirements beyond the single doublet.

EASA response: Disagreed.
Multiple rudder reversal pedal inputs have already occurred in service, therefore EASA believes it is necessary to protect against these events.
Considering the ARAC FCHWG ended on a dissenting opinion, EASA retains the position 3 supported by ALPA, ANAC, EASA, FAA, Transport Canada.
It is noted that this position is supported by the FAA IP currently being applied.

Commenter 3 : Airbus

Comment #[1] – General comment

Airbus disagrees with EASA that it is necessary to issue a Special Condition to ensure that aeroplanes are design tolerant to two rudder pedal doublets on all aircraft models to be certified.

Comment :
Airbus requests EASA to consider that some aircraft can show in-service experience evidencing no safety issue and that some applicants could propose some means to limit inappropriate rudder control inputs and/or mitigate their consequences, by incorporating some design features.

EASA response: Partially agreed.
This EASA Special Condition will be applied equally to new Type Certificates for which an application is made after the publication of this CRD. It will also be applied on a case-by-case basis to changes to the rudder control system or changes that affect the response of the aeroplane to rudder control inputs, in particular when service experience has shown that unsafe conditions may exist. ~~It might also be applied on a case-by-case basis to significant changes determined through Changed Product Rule (CPR) Part 21.A.101.~~
This comment does not lead to any modification of the Special Condition text.

Comment #[2] – Statement of Issue

Airbus position is to consider that, in addition to CS 25.351 requirements, the addition of a design load requirement that would consist of a single full-stroke rudder control doublet manoeuver (full displacement input, following by one reversal and return to neutral) is a sufficient design standard to provide additional protection against rudder control reversals.

Comment :
The current wording :
"With no foreseeable way of preventing inadvertent inputs, EASA find it is necessary to issue a Special Condition to ensure that aeroplanes are design tolerant to two rudder pedal doublets.'."

is proposed to be amended as followed :
"With no foreseeable way of preventing inadvertent inputs, EASA find it is necessary to issue a Special Condition to ensure that aeroplanes are design tolerant to one rudder pedal doublet"

EASA response: Disagreed.
Multiple rudder reversal pedal inputs have already occurred in service, therefore EASA believes it is necessary to protect against these events.
Considering the ARAC FCHWG ended on a dissenting opinion, EASA retains the position 3 supported by ALPA, ANAC, EASA, FAA, Transport Canada.
It is noted that this position is supported by the FAA IP currently being applied.

Comment #[2] – Special Condition

Comment :
It is proposed to delete items (c) and (d).

EASA response: Disagreed.
Multiple rudder reversal pedal inputs have already occurred in service, therefore EASA believes it is necessary to protect against these events.
Considering the ARAC FCHWG ended on a dissenting opinion, EASA retains the position 3 supported by ALPA, ANAC, EASA, FAA, Transport Canada.
It is noted that this position is supported by the FAA IP currently being applied.