



Stuknummer OVV:	14 000 971
Dossiercode:	
Registratie-datum:	5 AUG 2014
In behandeling bij:	
Naam:	Afdeling:

DE ONDERZOEKERS AFD. VOOR VEILIGHEID

John Vincent  
Deputy Director for Strategic Safety  
Executive Directorate

2014(D)53500 ZOL/RSO/E.2

Cologne, - 1. AUG. 2014

Dutch Safety Board

Chairman Aviation Chamber DTSB  
P.O. Box 95404  
2509 CK Den Haag  
Netherlands

**Subject:** Safety recommendations related to Pitch-up Upsets due to ILS False Glide Slope

Dear Mr [REDACTED]

Following the Safety Recommendations mentioned above addressed to the European Aviation Safety Agency, please find thereafter the Agency's response.

Yours sincerely,

John Vincent

Copy: Certification Director  
Rulemaking Director  
Standardisation Director



Subject: Pitch-up Upsets due to ILS False Glide Slope

Reply to Safety Recommendation NETH-2014-004 received on 25/06/2014

<p><b>Safety Recommendation:</b></p>	<p>To the regulators involved with the manufacturing of transport category aircraft; European Aviation Safety Agency (Europe), Federal Aviation Administration (USA), Agência Nacional de Aviação Civil (Brasil), Civil Aviation Administration of China, Federal Air Transport Agency (Russian Federation), Japan Civil Aviation Bureau, and Transport Canada.</p> <p>4. Occurrence reporting and analyses</p> <p>Assess the aviation Safety Management System occurrence reporting and analyses methodology, including the use of the existing ECCAIRS databases on the levels (operator, Air Navigation Service Provider, manufacturer, national-international level) whether measures are required to achieve the goal of the system to identify potential safety deficiencies in a timely manner. The review should also take into account:</p> <p>(a) the possibility to add internal investigation results into the ECCAIRS databases (feedback-loop), (b) the necessity to exchange investigation information with the manufacturer.</p>
<p><b>Response:</b></p>	<p>Following a review of the European Directive 2003/42 on occurrence reporting, the new Commission Regulation (EU) No 376/2014 of the European Parliament and of the Council of 3 April 2014 on the reporting, analysis and follow-up of occurrences in civil aviation set new requirements for the reporting scheme in Europe.</p> <p>Subsequent to a notification of an occurrence, any organisation established in a Member State shall report to the competent authority of that State. Additionally, each organisation established in a Member State, which is certified or approved by the Agency, shall report to the Agency. Furthermore, the Regulation introduces the requirement for organisations to provide follow up analysis of individual occurrences or specific safety risks within 30 days of the occurrence. It will provide the feedback loop from internal investigations into the European Central Repository (ECCAIRS database).</p> <p>Member States and the Agency shall participate in an exchange of information by making the content of their respective reporting databases available to the competent authorities of the other Member States, the Agency and the Commission, through the European Central Repository in ECAIRS/ADREP compatible format. This exchange also includes all occurrence reports collected by the Agency under Regulation (EC) No 216/2008 and its implementing rules which covers the exchange of information with manufacturers as recommended.</p> <p>Where an organisation established in a Member State or certified or approved by the Agency identifies an actual or potential aviation safety risk as a result of its analysis of occurrences or group of occurrences reported, it shall transmit to the agency or competent authority the results of the analysis performed and any action to be taken. Where available, information relating to the analysis</p>

	<p>and the follow-up of individual occurrences or groups of occurrences shall be stored in the European Central Repository providing the recommended feedback loop.</p> <p>EASA is working in cooperation with the European Commission, Member States and reporting organisations in the implementation of this Regulation and its implementing act that shall apply from 15 November 2015.</p>
<b>Status:</b>	Closed – Agreement

2014(D)53500 ZOL/RSO/E.2







Rachel Daeschler  
Head of Safety Intelligence & Performance Department  
Strategy & Safety Management Directorate

2014(D)54163  
ZOL/RSO/SM.1  
Cologne, 22. SEP. 2014

Dutch Safety Board (DSB)  
Mr. [REDACTED]  
Chairman Aviation Chamber DTSB  
P.O. Box 95404  
2509 CK Den Haag  
THE NETHERLANDS

**Subject:** Safety recommendations related to the Pitch-up Upsets due to ILS False Glide Slope

Dear Mr [REDACTED]

Following the Safety Recommendations mentioned above addressed to the European Aviation Safety Agency, please find thereafter the Agency's response.

Yours sincerely,



Rachel Daeschler

Copy: Certification Director  
Flight Standards Director  
Strategy & Safety Management Director



**Subject:** Pitch-up Upsets due to ILS False Glide Slope

**Reply to Safety Recommendation NETH-2014-001 received on 25/06/2014**

<b>Safety Recommendation:</b>	<p>To the regulators involved with the manufacturing of transport category aircraft; European Aviation Safety Agency (Europe), Federal Aviation Administration (USA), Agência Nacional de Aviação Civil (Brasil), Civil Aviation Administration of China, Federal Air Transport Agency (Russian Federation), Japan Civil Aviation Bureau, and Transport Canada.</p> <p>1. Information and awareness</p> <p>Ensure that the established False Glide Slope characteristics and the possible associated consequences for aircraft are made widely known and are modified accordingly in the published manuals and training material used in the aviation sector. This specifically refers to:</p> <ul style="list-style-type: none"> <li>a. the area above and below the published or nominated ILS Glide Path;</li> <li>b. the absence of warnings in the cockpit when flying with the automatic flight systems engaged in the area above the published or nominal ILS Glide Path.</li> </ul>
<b>Response:</b>	<p>As an initial step, the Agency issued on 25 March 2014 the Safety Information Bulletin (SIB) 2014-07 "Unexpected Autopilot Behaviour on Instrument Landing System (ILS) Approach" advising owners and operators of aeroplanes and Air Navigation Service Providers (ANSPs) to take appropriate mitigating actions.</p>
<b>Status:</b>	<p>Open</p>

2014(D)54163





Rachel Daeschler  
Head of Safety Intelligence & Performance Department  
Strategy & Safety Management Directorate

2014(D)54166  
ZOL/RSO/SM.1  
Cologne, 30 SEP 2014

Dutch Safety Board (DSB)  
Mr. [REDACTED]  
Senior Project Manager/Investigator  
P.O. Box 95404  
2509 CK Den Haag  
THE NETHERLANDS

**Subject:** Safety recommendations related to the Pitch-up Upsets due to ILS False Glide Slope

Dear Mr [REDACTED]

Following the Safety Recommendations mentioned above addressed to the European Aviation Safety Agency, please find thereafter the Agency's response.

Yours sincerely,

  
Rachel Daeschler

Copy: Flight Standards Directorate - Air Operations Department  
Flight Standards Director

Stuknummer DVY:	14001411
Dossiercode:	
Registratie-datum:	3 OKT 2014 
In behandeling bij:	
Naam:	Afdoening:

DE ONDERZOEKRAAD VOOR VEILIGHEID





**Subject:** Pitch-up Upsets due to ILS False Glide Slope

**Reply to Safety Recommendation NETH-2014-005 received on 25/06/2014**

<b>Safety Recommendation:</b>	<p>To the regulators involved with the manufacturing of transport category aircraft; European Aviation Safety Agency (Europe), Federal Aviation Administration (USA), Agência Nacional de Aviação Civil (Brasil), Civil Aviation Administration of China, Federal Air Transport Agency (Russian Federation), Japan Civil Aviation Bureau, and Transport Canada.</p> <p>5. Training regulations</p> <p>Review the applicable regulations on initial and recurrent flight crew training to assess whether they adequately address the potential degradation of situational awareness (basic pilot skills) and flight path management due to increased reliance on aircraft automation by flight crews.</p>
<b>Response:</b>	<p>The current set of EU civil aviation safety regulations provides the framework for teaching and assessing basic airmanship skills through initial training, skill tests, proficiency checks, type training, operator's recurrent training, line flying under supervision (LIFUS) and line oriented flight training (LOFT). This should ensure that any weaknesses related to the issue described in the safety recommendation are identified and corrected.</p> <p>However, the trend towards increased automation in aircraft design calls for a review of the rules to consider training on the potential degradation of situational awareness and flight path management due to increased reliance on automation by flight crews.</p> <p>The Agency is currently reviewing the initial and recurrent flight crew training requirements in the context of rulemaking tasks RMT.0581 and RMT.0582 'Loss of Control Prevention and Recovery Training'. This safety recommendation is therefore being considered during this review.</p> <p>In addition, provisions for Crew Resource Management (CRM) training on automation management are currently being considered within the framework of RMT.0411 'Crew resource management training', including training on the recognition of systems and human limitations associated with the use of automation. The associated Notice of Proposed Amendment NPA-2014-017 was published on the Agency's web site on 26 June 2014.</p> <p>Furthermore, the Agency has published the following Safety Information Bulletins (SIBs) to improve awareness of the risks associated with increased reliance on aircraft automation by flight crews:</p> <ul style="list-style-type: none"> <li>• SIB 2010-033 'Flight Deck Automation Policy - Mode Awareness and Energy State Management';</li> <li>• SIB 2014-07 'Unexpected Autopilot Behaviour on Instrument</li> </ul>

	<b>Landing System (ILS) Approach’;</b> <ul style="list-style-type: none"><li>• SIB 2014-17 ‘Aeroplane Mode Awareness During Final Approach’.</li></ul>
<b>Status:</b>	Open

2014(D)54166







Rachel Daeschler  
Head of Safety Intelligence & Performance Department  
Strategy & Safety Management Directorate

2014(D)54165  
ZOL/RSO/SM.1  
Cologne, 30 SEP 2014

Dutch Safety Board (DSB)  
Mr. [REDACTED]  
Senior Project Manager/Investigator  
P.O. Box 95404  
2509 CK Den Haag  
THE NETHERLANDS

**Subject:** Safety recommendations related to the Pitch-up Upsets due to ILS False Glide Slope

Dear Mr [REDACTED]

Following the Safety Recommendations mentioned above addressed to the European Aviation Safety Agency, please find thereafter the Agency's response.

Yours sincerely,



Rachel Daeschler

Copy: Flight Standards Air Traffic Management/  
Air Navigation Services (ATM/ANS) & Aerodromes Department  
Flight Standards Air Operations Department



**Subject:** Pitch-up Upsets due to ILS False Glide Slope

**Reply to Safety Recommendation NETH-2014-003 received on 25/06/2014**

<b>Safety Recommendation:</b>	<p>To the regulators involved with the manufacturing of transport category aircraft; European Aviation Safety Agency (Europe), Federal Aviation Administration (USA), Agência Nacional de Aviação Civil (Brasil), Civil Aviation Administration of China, Federal Air Transport Agency (Russian Federation), Japan Civil Aviation Bureau, and Transport Canada.</p> <p>3. Long term measures</p> <p>Stimulate that aircraft manufacturers in the long term develop new landing systems to accommodate new approaches for aircraft with automatic flight systems engaged and ensure that airports are equipped with these landing systems.</p>
<b>Response:</b>	<p>EASA is promoting the development of new landing systems under the umbrella of the Ground Based Augmentation System (GBAS) CAT III is being developed, under Single European Sky ATM Research (SESAR) activities, and EASA is involved in the recognition process for that technology. Specifically, the operational requirements for GBAS CAT III will be considered in RMT.0379 'All weather operations'. Additionally, from an AIR OPS perspective, EASA enabled a safe use of such landing systems through Regulation (EU) 965/2012.</p>
<b>Status:</b>	<p>Closed – Partial agreement</p>

2014(D)54165



Rachel Daeschler  
Head of Safety Intelligence & Performance Department  
Strategy & Safety Management Directorate

2015(D)52985  
MHI/RSO/SM.1  
Cologne,

Dutch Safety Board (DSB)  
Mr. [REDACTED]  
Senior Investigator  
P.O. Box 95404  
2509 CK Den Haag  
THE NETHERLANDS

10. AUG. 2015

**Subject:** Safety recommendations related to the event to - registered STUDY ILS GS, on , at -

Dear Mr [REDACTED]

Following the Safety Recommendations mentioned above addressed to the European Aviation Safety Agency, please find thereafter the Agency's response.

Yours sincerely,

Rachel Daeschler

Copy: Certification - Certification Chief Experts - Avionics & Electrical Systems  
Certification Director  
Flight Standards Director  
Strategy & Safety Management Director

Stuknummer OW:	15001364
Dossiercode:	
Registratie- datum:	13 AUG 2015
In behandeling bij:	
Naam:	Afdoening:

DE ONDERZOEKSRAD VOOR VEILIGHEID







**Subject:** - registered STUDY ILS GS, on , at -

**Reply to Safety Recommendation NETH-2014-002 received on 25/06/2014**

<p><b>Safety Recommendation:</b></p>	<p>To the regulators involved with the manufacturing of transport category aircraft; European Aviation Safety Agency (Europe), Federal Aviation Administration (USA), Agência Nacional de Aviação Civil (Brasil), Civil Aviation Administration of China, Federal Air Transport Agency (Russian Federation), Japan Civil Aviation Bureau, and Transport Canada.</p> <p>Short term measures: ensure with oversight that aviation operators, manufacturers, and Air Navigation Service Providers take mitigating actions to prevent pitch-up upsets due to aircraft exposure to False Glide Slope Reversal as a result of flying with the automatic flight systems engaged in the area above the published or nominated ILS Glide Path. This can be achieved by means of:</p> <p>a. operational measures;</p> <ul style="list-style-type: none"> <li>- raising the interception of the ILS Glide Slope from below to a Standard, or in the event of an interception from above,</li> <li>- developing additional operating procedures.</li> </ul> <p>b. technical measures;</p> <p>automated on-board systems when in use should not cause a pitch-up upset, at least not without a preceding clearly recognizable warning and with ample time for flight crew intervention.</p>
<p><b>Response:</b></p>	<p>Initially, EASA published the Safety Information Bulletin (SIB) 2014-07 on 25 March 2014 on "Unexpected Autopilot Behaviour on Instrument Landing System (ILS) Approach". This SIB is now being revised to raise further awareness on training for Aircrew and Air Traffic Controller Officers.</p> <p>Furthermore, EASA has published ED Decision 2015/012/R (4th May 2015) on Upset Recovery Prevention and Training (UPRT).</p> <p>The safety issue is also being considered by EASA within the framework of the following ongoing Rulemaking Tasks (RMTs):  RMT.0581 and RMT.0582 on loss of control prevention and recovery training;  RMT.0411 on Crew Resource Management (CRM) training;  RMT.0464 on Requirements for Air Traffic Services (ATS).'</p> <p>Moreover, in the frame of possible technological enhancements to prevent similar occurrences in the future, EASA has identified two main features to:</p> <ul style="list-style-type: none"> <li>- warn flight crews of an "High Approach" condition;</li> <li>- inhibit the automatic glide slope capture arming in "High Approach" conditions.</li> </ul> <p>Since the system is intended to prevent runway excursion by alerting the crew of their position and energy in relation to the runway, EASA has</p>



	<p>therefore submitted a document to EUROCAE WG-101 on "Runway Overrun Awareness and Alerting System (ROAAS)" recently established, in order to include the abovementioned warning function into the objectives for the WG, assuming that it could be eventually implemented as an industry standard.</p> <p>This Agency will closely follow the future activity of the WG on this specific subject.</p>
<b>Status:</b>	Open

2015(D)52985





Rachel Daeschler  
Head of Safety Intelligence & Performance Department  
Strategy & Safety Management Directorate

2015(D)52988  
MHI/RSO/SM.1  
Cologne,

Dutch Safety Board (DSB)  
Mr. [REDACTED]  
Senior Investigator  
P.O. Box 95404  
2509 CK Den Haag  
THE NETHERLANDS

10. AUG. 2015

**Subject:** Safety recommendations related to the event to - registered STUDY ILS GS, on , at -

Dear Mr [REDACTED]

Following the Safety Recommendations mentioned above addressed to the European Aviation Safety Agency, please find thereafter the Agency's response.

Yours sincerely,



Rachel Daeschler

Copy: Flight Standards - Air Operations  
Certification Director  
Flight Standards Director  
Strategy & Safety Management Director





**Subject:** - registered STUDY ILS GS, on , at -

**Reply to Safety Recommendation NETH-2014-001 received on 25/06/2014**

<p><b>Safety Recommendation:</b></p>	<p>To the regulators involved with the manufacturing of transport category aircraft; European Aviation Safety Agency (Europe), Federal Aviation Administration (USA), Agência Nacional de Aviação Civil (Brasil), Civil Aviation Administration of China, Federal Air Transport Agency (Russian Federation), Japan Civil Aviation Bureau, and Transport Canada.</p> <p>1. Information and awareness</p> <p>Ensure that the established False Glide Slope characteristics and the possible associated consequences for aircraft are made widely known and are modified accordingly in the published manuals and training material used in the aviation sector. This specifically refers to:</p> <p>a. the area above and below the published or nominated ILS Glide Path;</p> <p>b. the absence of warnings in the cockpit when flying with the automatic flight systems engaged in the area above the published or nominal ILS Glide Path.</p>
<p><b>Response:</b></p>	<p>Initially, EASA published the Safety Information Bulletin (SIB) 2014-07 on 25 March 2014 on "Unexpected Autopilot Behaviour on Instrument Landing System (ILS) Approach". This SIB is now being revised to raise further awareness on training for Aircrew and Air Traffic Controller Officers.</p> <p>Moreover, in the frame of possible technological enhancements to prevent similar occurrences in the future, EASA has identified two main features to:</p> <ul style="list-style-type: none"> <li>- warn flight crews of an "High Approach" condition;</li> <li>- inhibit the automatic glide slope capture arming in "High Approach" conditions.</li> </ul> <p>Since the system is intended to prevent runway excursion by alerting the crew of their position and energy in relation to the runway, EASA has therefore submitted a document to EUROCAE WG-101 on "Runway Overrun Awareness and Alerting System (ROAAS)" recently established, in order to include the abovementioned warning function into the objectives for the WG, assuming that it could be eventually implemented as an industry standard.</p> <p>This Agency will closely follow the future activity of the WG on this specific subject.</p>
<p><b>Status:</b></p>	<p>Open</p>

2015(D)52988



Rachel Daeschler  
Head of Safety Intelligence & Performance Department  
Strategy & Safety Management Directorate

2015(D)56294  
MHI/RSO/SM.1  
Cologne, 22. DEZ. 2015

Dutch Safety Board (DSB)

Mr. [REDACTED]  
Senior Investigator  
P.O. Box 95404  
2509 CK Den Haag  
THE NETHERLANDS

**Subject:** Safety recommendations related to the event to - registered STUDY ILS GS,

Dear Mr [REDACTED]

Following the Safety Recommendations mentioned above addressed to the European Aviation Safety Agency, please find thereafter the Agency's response.

Yours sincerely,



Rachel Daeschler

Stuknummer OVY: 1500 2068	
Dossiercode:	
Registratie- datum:	29 DEC 2015 
In behandeling bij:	
Naam:	Afdoening:

DE ONDERZOEKSGRAAD VOOR VEILIGHEID

Copy: Flight Standards - Air Operations  
Certification Director  
Flight Standards Director  
Strategy & Safety Management Director





**Subject:** - registered STUDY ILS GS, on , at -

**Reply to Safety Recommendation NETH-2014-001 received on 25/06/2014**

<p><b>Safety Recommendation:</b></p>	<p>To the regulators involved with the manufacturing of transport category aircraft; European Aviation Safety Agency (Europe), Federal Aviation Administration (USA), Agência Nacional de Aviação Civil (Brasil), Civil Aviation Administration of China, Federal Air Transport Agency (Russian Federation), Japan Civil Aviation Bureau, and Transport Canada.</p> <p>1. Information and awareness</p> <p>Ensure that the established False Glide Slope characteristics and the possible associated consequences for aircraft are made widely known and are modified accordingly in the published manuals and training material used in the aviation sector. This specifically refers to:</p> <p>a. the area above and below the published or nominated ILS Glide Path;</p> <p>b. the absence of warnings in the cockpit when flying with the automatic flight systems engaged in the area above the published or nominal ILS Glide Path.</p>
<p><b>Response:</b></p>	<p>EASA published on 24 March 2014, Safety Information Bulletin (SIB) 2014-07 entitled 'Unexpected Autopilot Behaviour on Instrument Landing System (ILS) Approach'.</p> <p>Since receiving safety recommendation NETH-2014-001, EASA reviewed the above-mentioned SIB and published, on 12 August 2015, a revised version numbered SIB 2014-07R1. This revision further emphasises the need to ensure that established false glide slope characteristics and possible associated consequences for aircraft are made widely known, and are documented accordingly in the operations manuals and in the flight crew training material. This provides mitigation through procedures and training in the absence of warnings in the cockpit when capturing a glide path with the automatic flight systems engaged in the area above the published or nominal ILS glide path.</p> <p>In SIB 2014-07R1, EASA recommends, amongst other things, that:</p> <ul style="list-style-type: none"> <li>• Operators develop procedures in their operations manuals for pilots' decision-making on intercepting the glide slope, with explicit operational limits also defined.</li> <li>• Operators design and deliver dedicated flight crew training on the false glide slope inversion phenomenon, including means to mitigate the related threats.</li> <li>• Air Navigation Service Providers ensure that Air Traffic Controllers apply prescribed navigation procedures which support flight crew workload and the positioning of an aeroplane for intercepting the glideslope from below.</li> </ul>



	Furthermore, this safety issue was presented and discussed during the EASA air operations standardisation workshop on 08 October 2014, to increase awareness amongst EASA Member States.
<b>Status:</b>	Closed – Agreement

2015(D)56294

