

Safety Recommendation Number:	IRLD2021003
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Safety Recommendation:

CHCI should review its guidance, operating and training procedures in relation to the use of EGPWS in its operations, ensuring crews are aware of the limitations of the system and that the EGPWS manufacturer's guidance on the use of Low Altitude mode is followed.

Response:

On 01 February 2022, and in subsequent engagement with the AAIU, the Operator provided the following response to this Safety Recommendation:

"The Operator has reviewed its guidance, operating and training procedures in relation to the use of EGPWS in its operations, including the manufacturer's guidance on the use of the Low Altitude mode. The following actions have been taken as result of this review:

- *OMA provides guidance on the use of EGPWS in Low Altitude in line with the manufacturer's guidance;*
- *OMB, current version provides further information on the use of the EGPWS low altitude mode when specifically performing offshore platform IMC approach procedures or SAR operations only, recognising it is outwith the manufacturer's guidance. When low altitude mode is selected, OMB includes information on the reduction in terrain warning expected;*
- *OMC includes information that there may be errors and omissions in the EGPWS terrain and obstacle database. As a result, navigation shall not be predicated on the use of EGPWS information (as specified in OMB chapter 1 'Limitations') and the EGPWS shall not be relied upon for accurate terrain and obstacle information;*
- *OMF is updated to remove contradictory information with OMB with regards to use of EGPWS and to remove radar cross- referencing.*
- *OMF FSI drafted for submission (Expect to be submitted to IAA week commencing 23/05/2022) with the following text/caution:*

A.3 CHC's SAR policies

Note:

The term 'SARA to landfall' refers to radar approaches from over water to a point on the coastline. The SARA to land fall procedure is conducted by using

a combination of aircraft radar, SAR AFCS modes, FMS, EGPWS, and a moving map system for horizontal / vertical course guidance and lateral separation from obstacles. Below MSA, the radar shall be used as the primary navigation aid to ensure adequate clearance from obstacles.

Caution: The EGPWS look-ahead function (in both normal and LOW ALT modes) reduces sensitivity below 100 KIAS until 70 KIAS. Below 70 KIAS, the look-ahead function is completely inhibited.

- A specific EGPWS Technical Knowledge Instruction (TKI) was prepared in 2017 and is updated as required. This includes system limitations, and the use of low altitude mode. It also includes information that the EGPWS database may contain errors and omissions in the EGPWS terrain and obstacles database. The TKI is included in initial training and reinforced on a 3 year cycle;

- Simulator training was enhanced to include Line Orientated Flight Training (LOFT) scenarios, which include a night and poor weather mission. This would typically require the use of the low altitude mode in accordance with the operator's procedures in the degraded visual environment;

- EGPWS Technical Knowledge Instruction (TKI) is now included in Technical Crew SAR training;

- Limitations in terms of obstacles database is included in the TKI."

On 12 January 2023, the Operator provided the following update to the AAIU:

"FSI 2022-409 issued 29th June 2022. Please see attached."

The attached FSI-2022-409, titled 'CHC's SAR policies', states:

"OMF is amended as follows:

A.3 CHC's SAR policies

(...)

Note:

The term 'SARA to landfall' refers to radar approaches from overwater to a point on the coastline. The SARA to landfall procedure is conducted by using as guidance a combination of aircraft radar, SAR AFCS modes, FMS, EGPWS, and a moving map system for horizontal / vertical course guidance and lateral separation from obstacles.

Below MSA, the radar shall be used as the primary sensor for maintaining adequate separation from obstacles and to support situational awareness.

a. The EGPWS look-ahead function (in both normal and LOW ALT modes) reduces sensitivity below 100 KIAS until 70 KIAS. Below 70 KIAS, the look-ahead function is completely inhibited.

b. The EGPWS database may not contain all obstacles.

This FSI is reviewed annually until withdrawn or incorporated into OMF."

On 31 March 2023, the Operator provided the following update to the AAIU:

"CHCI have noted the response from the AAIU and are undertaking a review of the response."

AAIU Comment:

The AAIU notes the Operator's response of 01 February 2022.

The AAIU had recommended inter alia that 'the EGPWS manufacturer's guidance on the use of Low Altitude mode is followed'. The AAIU notes that the Operator states that its use of the EGPWS low altitude mode when performing offshore platform IMC approach procedures or SAR operations 'is outwith the manufacturer's guidance'.

The Investigation also notes that an FSI has been drafted but is yet to be promulgated.

The AAIU Notes the Operator's response of 12 January 2023.

The AAIU notes that FSI 2022 - 408 SARA procedure, states 'The screens should be set-up to optimise situational awareness for example: i. In the littoral environment with PF in the left hand seat: EGPWS (arc), EuroNav, EICAS, Radar (arc), EGPWS (arc) ii. In the offshore environment clear of all land obstacles: Radar on MFD 2 and 3'. A consequence of the example screen configuration provided in this procedure is that, in the littoral environment, both pilots would be looking at EGPWS displays using a database which the Operator has warned them '[...] may not contain all obstacles [...]'. The AAIU is concerned that suggesting the use of a system that the Operator acknowledges may be incorrect has the potential to introduce bias as explained in Finding 71 of the Final Report—if obstacles are missing from the database then using the EGPWS terrain display has the potential to degrade the pilots' situational awareness rather than enhance it. Furthermore, the AAIU notes that in response to SR IRLD2021004 the Operator has stated ' [...] The operator is satisfied that current mapping imagery used in its Euronav and laptop systems are suitable, current and sufficiently comprehensive for their intended uses [...] [the Operator] updated the OMC to include fully documented and robust measures to ensure mapping imagery used is current and sufficiently comprehensive for their intended use [...]'. Accordingly, it appears to be sub-optimal to suggest that both pilots use EGPWS with its acknowledged potential shortcomings, while the Operator has available a different system which has been subjected to 'robust measures to ensure mapping imagery used is current and sufficiently comprehensive for their intended use'. In light of the foregoing, the AAIU has asked the Operator to review FSI 2022 - 408 SARA procedure to ensure that the procedure encourages the maximum possible safety margins through the use of mapping imagery that has been subjected to 'robust measures to ensure mapping imagery used is current and sufficiently comprehensive for their intended use'.

The AAIU Notes the Operator's response of 31 March 2023.

The AAIU awaits further updates from the Operator on this ongoing work.

The AAIU considers the status of this Safety Recommendation to be 'In process of implementation'.