

Safety Recommendation Number:	IRLD2021018
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Safety Recommendation Status:	In process of implementation

Safety Recommendation:

CHCI should review its policies, manuals, training and guidance in relation to the operational use of radar in the SAR role and ensure that manuals and training accurately reflect the limitations of the systems used.

Response:

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

"The operator carried out a review of its policies, manuals, training and guidance in relation to the operational use of radar in the SAR role. The operations manuals were redrafted to address a number of issues including:

- to increase the minimum clearance distance between the aircraft and radar contacts from 0.5nm to 1nm unless the radar contact is visually identified, this is in line with established procedures within the industry and*
- to inform crew that "Below MSA, the radar shall be used as the primary navigation aid to ensure adequate clearance from obstacles."*

This amended text has been accepted by the regulator and sent to the radar manufacturer for comment. To date, the operator has received no comments from the OEM. Use of the radar in the SAR role is assessed and checked during the LPC/OPC cycle and the limitations of the radar system are included in the triennial Technical Knowledge Brief.

- OMF FSI drafted for submission (Expect to be submitted to IAA week commencing 23/05/2022) with the following text:*

The periodic deselection of the flight plan overlay function should be considered when ranging in to identify possible targets and to ensure no targets are masked by the flight plan overlay."

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

"CHCI reviewed its policies, manuals, training and guidance in relation to the operational use of radar in the SAR role and are satisfied that the manuals and training accurately reflect the limitations of the systems used. FSI 2022-408 and 2022-409 were issued, and accepted by the IAA, please see attached.

CHCI have contacted the OEM with no response as of 11th January 2023."

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

"CHCI have not received a response from the OEM."

AAIU Comment:

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

The AAIU notes that the Operator has increased ' the minimum clearance distance between the aircraft and radar contacts from 0.5nm to 1nm unless the radar contact is visually identified'.

The AAIU notes the Operator's statement that 'Below MSA, the radar shall be used as the primary navigation aid to ensure adequate clearance from obstacles.'

The AAIU awaits confirmation from the Operator that the radar manufacturer has no objections to the proposed amended text.

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

The Operator provided a response to SR IRLD2021003 on 1 February 2022 which it stated, '[...] 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 [...]'. The Operator provided an updated SARA procedure in its 12 January 2023 response to this SR which stated, '[...] 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. [...]'. The AAIU notes that the aircraft radar is no longer the 'the primary navigation aid to ensure adequate clearance from obstacles' and is now described as 'the primary sensor for maintaining adequate separation from obstacles and to support situational awareness'.

The Operator previously informed the Investigation that 'we require to operate at a safe altitude, which is always going to be 1000 feet above the highest likely obstacle, and in general terms therefore, over the sea, the minimum safe altitude is 1500 feet. When we get on to the final approach track, now we have decided on the approach direction we want, we have checked on the radar to ensure that we can't see any obstacles within one mile either side of that track, and also, as we said earlier, on the missed approach track, and we therefore feel comfortable that we can descend.' The AAIU has asked the Operator to explain, by reference to current Operations Manuals, how these considerations are incorporated into the current SARA procedure.

The Operator previously informed the AAIU that radar system presentation of terrain data was in the form of a topographical map that could be employed as a supplement to standard navigation procedures. The Operator also asserted that it was not allowed to use the ground mapping function as a sole means of navigation. The AAIU has

pointed out to the operator that these previously expressed opinions appear incongruent with the Operator's latest policy which states that during a SARA the radar system is 'the primary sensor for maintaining adequate separation from obstacles and to support situational awareness'.

The AAIU considers it essential that the Operator should secure the radar manufacturer's opinions on its procedures for radar use, and in particular the Operator's instruction to its crews that 'Below MSA, the radar shall be used as the primary sensor for maintaining adequate separation from obstacles and to support situational awareness.'

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

As previously stated to the Operator, the AAIU considers it essential that the Operator should secure the radar manufacturer's opinions on its procedures for radar use, and in particular the Operator's instruction to its crews that 'Below MSA, the radar shall be used as the primary sensor for maintaining adequate separation from obstacles and to support situational awareness.'

The AAIU awaits the Operator's explanation, by reference to current Operations Manuals, as to how minimum safe altitude considerations, which the Operator indicated was 1,500 ft when operating over the sea, are incorporated into the current SARA procedure.

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'.