



**AIR TRAFFIC CONTROL**  
SERVICES LIMITED

# **RISK ANALYSIS 064 2023**

## **Assessment of MLLR Report**

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## ATS HAZARD IDENTIFICATION - RISK ANALYSIS FORM

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### 1. Clarification Request

In July 2023, the CAA released the MLLR Report. The MLLR reports states:

19. In May 2021, ORS4 No.1489 (superseded by [ORS4 No.1545](#) in May 2022) was introduced. Both the current and extant ORS4 regulations require pilots to adhere to specific conditions in order to operate within the airspace, and in accordance with additional radiocommunications and secondary surveillance radar transponder operation procedures as notified at UK AIP EGCC AD2.22. This was necessary due to the change to the VMC minima introduced by the Aviation Safety (Amendment) Regulations 2021. The CAA published a report: [CAP2093: CAA Impact Analysis – Changes to VMC Minima in UK Class D Airspace](#) which committed the CAA to address the increased risk of mid-air collision to helicopters operating within the MLLR, by 20 May 2021.
20. The specific issue for helicopters operating in the MLLR was the reduction of the VMC minima, such that they would only require 1500m flight visibility, with all other aircraft requiring an in-flight visibility of 5km. In UK class D airspace, the risk associated with reduced in-flight visibility is mitigated by the provision of ATC service. However, in the MLLR, the requirement for an ATC clearance was not enforced for VFR flight, therefore this mitigation did not exist. This was considered to be an unacceptable level of risk.

Please can clarification be provided as to why an ATC clearance is not being enforced?

CAP 2093 states that the primary and acceptable mitigation to reduce the risk of MAC within the revised VMC minima in class D airspace is by the way of an air traffic control service.

The CAA has concluded that, whilst the revised VMC minima in class D airspace reduces the efficacy of the 'see and avoid' barrier to the risk of mid-air collision (MAC), they consider that the negative effects of this can, generally, be mitigated to an acceptable level; primarily by the way that an air traffic control service is provided in UK class D airspace. However, these statements reflect the general situation and the CAA is concerned that, at present, the changes to the VMC minima have an unacceptable impact on the safe operation of helicopters in the **Manchester** Low-Level Route.





CAP 2093 makes specific reference to the unacceptable impact on the safe operation of helicopters in the MLLR. Is this because in practice they are not in receipt of an air traffic control service when the visibility is less than 5km?

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Because the MLLR Guidance & MAN AIP state:

1. An ATC clearance is not required for VFR flight in visibility of 5km+.
2. However, a helicopter operating in less than 5km visibility shall/must request a clearance from MAN Radar with a Radar Control Service provided:

**NATS** Manchester **PILOTS GUIDE TO THE MANCHESTER LOW LEVEL ROUTE**  
Effective May 20<sup>th</sup> 2021

In Flight Visibility - 5km or greater		In Flight Visibility - Less than 5km		
LLR flight without individual ATC clearance		LLR flight requires individual ATC clearance		
All Types	VFR	Helicopters	VFR	SVFR
  	<p><b>YOU SHOULD USE THIS OPTION WHENEVER FLIGHT CONDITIONS PERMIT</b></p> <p>Fly in accordance with published rules. <u>No contact with ATC required.</u></p> <p>No ATC clearance required Fly at 140kts or less Select SSR code 7366 (if equipped) Monitor 118.580 (if equipped) No ATC service provided</p> <p style="color: red;"><b>DO NOT 'SQUAWK' 7000</b></p> <p><b>YOU ARE RESPONSIBLE FOR SEPARATION FROM ALL OTHER AIRCRAFT AT ALL TIMES</b></p>	  	<p>You MUST request a clearance to fly <b>VFR</b> within LLR when the in-flight visibility is below 5km.</p> <p>You will be provided with Radar Control Service.</p> <p>Be aware of potential <b>VFR</b> traffic unknown to ATC.</p> <p><b>YOU ARE RESPONSIBLE FOR SEPARATION FROM ALL OTHER AIRCRAFT AT ALL TIMES</b></p> <p>VFR flight is not permitted in such conditions.</p>	<p>You MUST request a clearance to fly <b>SVFR</b> within the LLR.</p> <p>A transponder is required, expect to be issued a discrete Manchester SSR code.</p> <p>You will be provided with Radar Control Service.</p> <p>Be highly aware of potential <b>VFR</b> traffic unknown to ATC.</p> <p><b>SEPARATION FROM VFR AIRCRAFT IS NOT PROVIDED BY ATC</b></p> <p>Expect a delay as ATC must provide separation from <b>IFR</b> and other <b>SVFR</b> aircraft before your <b>SVFR</b> clearance can be issued.</p> <p><b>SVFR</b> flights to land within, depart from or transit 'across' the LLR will be issued a routing to keep <b>SVFR</b> time in the LLR to a minimum. North to South transits (or vice versa) are unlikely to be possible.</p>
<p>Pilots should be aware of the possibility of wake turbulence at all times, particularly when flying in the vicinity of the Liverpool and Manchester extended runway centrelines.</p> <p style="font-size: small;">TO BE READ IN CONJUNCTION WITH ORS4 1545 and UKAIP EGCC AD 2.22, SECTION 7.</p>				

NATS Public Issue 2

### 7 MANCHESTER LOW LEVEL ROUTE

- The Manchester Low Level Route is that part of Manchester CTR bounded by the following coordinates: 533124N 0023102W - 531411N 0023105W - 531050N 0022814W - 531050N 0023224W - 531130N 0023744W - 532708N 0023744W - 533011N 0024123W - 533124N 0023102W to an upper limit of 1300 FT AMSL Manchester QNH (Manchester QNH available from Manchester ATIS frequency 128.180 MHz).
- The Manchester Low Level Route is not aligned on the M6 Motorway, or on any railway line, and these should not therefore be used as navigational line features to be followed when flying along the route. However, to the northwest and southeast of the route, stubs are aligned on the M6 and the Crewe-Winsford railway line to enable pilots to access the route accurately.
- Aircraft operating VFR in accordance with the procedures notified for the operation of the Manchester Low Level Route are exempt from the provisions of an air traffic control service (ORS4 No.1489). As such, within the Manchester Low Level Route, aircraft may be flown by day or night, without individual ATC clearance, subject to the aircraft being flown:
  - in accordance with SERA.5005 (VFR);
  - at a speed which according to its airspeed indicator is 140 KT or less, to give adequate opportunity to observe other aircraft and any obstacles in time to avoid a collision;
  - in a flight visibility of at least 5 KM;
  - in accordance with the radiocommunications and secondary surveillance radar transponder operation procedures applicable to the Manchester Low Level Route.
- Suitably equipped aircraft are to be flown in the Manchester Low Level Route with SSR code 7366 selected (unless displaying a special purpose code or code allocated/agreed by Manchester ATC) and listening out on Manchester Radar frequency 118.580 MHz, to enable the use of an alerting service if necessary, or to facilitate the early resolution of an airspace infringement.
- Pilots of non-transponder equipped aircraft operating within the Manchester Low Level Route are to monitor Manchester Radar, frequency 118.580 MHz to enable the use of an alerting service if necessary, or to facilitate the early resolution of an airspace infringement.
- Pilots of aircraft flown within the Manchester Low Level Route in accordance with the conditions in paragraph c) are responsible at all times for their own separation from all other flights, however Manchester Radar will endeavour to pass traffic information as far as practicable.
- In circumstances where pilots are unable to comply with paragraph c):
  - For VFR flights wishing to transit the Manchester Control Zone, a clearance shall be requested from Manchester Radar, frequency 118.580 MHz. For VFR flights wishing to transit the Liverpool Control Zone, a clearance shall be requested from Liverpool Approach, frequency 119.855 MHz;
  - For all Special VFR flights wishing to transit the Manchester Control Zone, a clearance shall be requested routing to the east of the Manchester Low Level Route from Manchester Radar, frequency 118.580 MHz, or to the west within the Liverpool Control Zone from Liverpool Approach, frequency 119.855 MHz;
  - Aircraft wishing to land or depart from an aerodrome inside the Manchester Low Level Route, or transit across the route, may request a VFR or Special VFR clearance from Manchester Radar frequency 118.580 MHz. Aircraft are responsible for their own separation at all times from all other flights within the Manchester Low Level Route.
- For the purposes of SERA.5005(c)(5) and SERA.5005(f), aircraft flying within the Manchester Low Level Route are permitted (ORS4 No.1496) to fly below 1000 FT above the highest obstacle within a radius of 600 M from the aircraft if:
  - it is operating in accordance with the procedures notified for the route;
  - it is flown no closer than 500 FT to any person, vessel, vehicle or structure;
  - it is flown at a height that will permit, in the event of an emergency arising, a landing to be made without undue hazard to persons or property on the surface.
- Pilots should be aware of the possibility of wake turbulence at all times, particularly when flying in the vicinity of the Liverpool and Manchester extended runway centre-lines. Pilots operating in accordance with paragraph c) above will not be passed wake turbulence warnings.
- See AD 2-EGCC-4-1 CONTROL ZONE AND CONTROL AREA CHART - ENTRY/EXIT LANES AND VRPs.

So, in reduced visibility, helicopters should be in receipt of an ATC service.

**ATS HAZARD IDENTIFICATION - RISK ANALYSIS FORM**

**2. Summary Statement:**

<b>Options</b>	<b>Description</b>	<b>Residual Safety Criteria without additional ALARP measures</b>
Option 1	Conversion to Class G with defined Restricted Area (Speed) South of Ship Canal.	Unacceptable (2)
Option 2	Conversion to Class G with defined Restricted Area (Speed) Entire Route.	Unacceptable (2)
Option 3	Conversion to Class G with defined Restricted Area with Wake Turbulence Category Restriction.	Unacceptable (2)
Option 4	Conversion to Class G (which would permit the use of any pressure setting).	Unacceptable (2)
Option 5	Raising the Upper Vertical Limit of MLLR by 200ft from 1300ft to 1500ft.	Unacceptable (2)
Option 6	Extending the lateral boundaries to the West.	Unacceptable (2)
Option 7	Do nothing i.e., extend the Class D Exemption.	Acceptable (12)

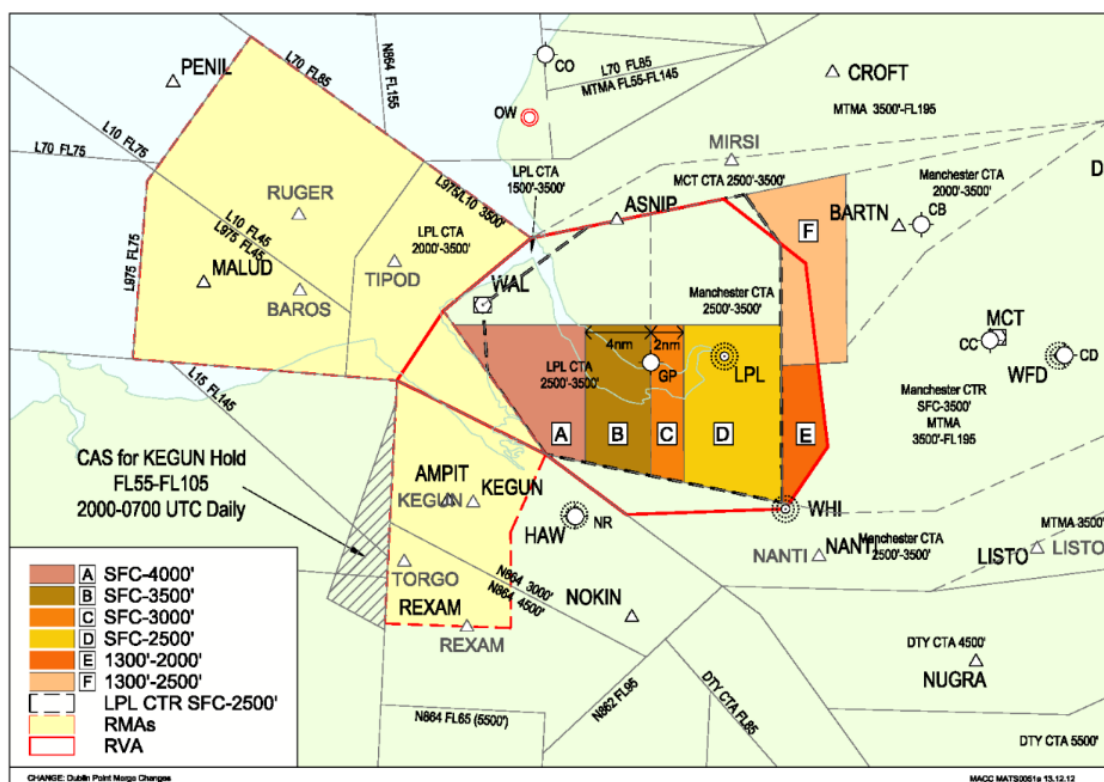
Without additional ALARP (As Low As Reasonably Practicable) measures being introduced, Liverpool John Lennon Airport and ATCSL consider the proposed changes contained within the MLLR Report, and considered at 'MLLR Amend Kick Off Meeting', to be unacceptable.

These ALARP measures are contained within each of the applicable Hazards under each Option in the table below.

1. To convert the MLLR to Class G, the following restrictions or Class G exemption must be considered:
  - a. Speed Restriction ( $\leq 140$ kts) along entire route.
  - b. Weight Cat/Wake Turbulence Restriction along entire route.
  - c. Visibility restriction ( $\geq 5$ km) along entire route.

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2. To raise the ceiling of the MLLR, the following must be considered:
  - a. Mandate the use of a single pressure setting within the MLLR, preferably Liverpool's.
  - b. Suspension of current Liverpool-Manchester Interface Procedures to enable Liverpool to use all its delegated airspace north of the extended centreline for runway 27 (Area F).
  - c. Explore options for Liverpool to use airspace south of extended centreline for runway 27 up to 2500ft (Area E).
  - d. A change to the Liverpool final approach fix/UVERI for runway 27.



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3. Risk Analysis - Proposal		
1	RA Number:	LJLA RA 064-2023
2	If a review, previous RA Number:	Not Applicable
3	Title:	Assessment of MLLR Report
4	Date Review will be Due:	N/A
5	Details of Change (Include any Benefits):	Options are being discussed for potential changes to the Manchester and Liverpool airspace, as part of the ACP. Some of the changes have the potential to introduce hazards to the Liverpool operation, so these are assessed within this RA.
6	ATCSL Participants:	<u>Initial RA Production:</u> Chris Borthwick – Head of Air Traffic Services (HATS) James Ryan – ATC Watch Supervisor (WS) Claire Hatton – Safety Manager (SM) Jon Stewart – Compliance and Operational Support Manager (COSM)
7	External Participants/Interested Parties:  (CONSIDER WHETHER INTERESTED PARTIES REQUIRE INVOLVEMENT IN THE INITIAL RA, AND IN THE SUBSEQUENT REVIEW OF THE RA.)	CAA NATS MAG BRTN
8	Proposed Date for Introduction:	N/A
9	Originator Comments:	RA compiled following the MLLR Amend Kick Off Meeting held on the 4 Oct 2023. The purpose of this meeting was to discuss the MLLR report and its findings, as well as identify what each stakeholder is looking to achieve by amending the MLLR in line with the available options for change.
10	Originator  Post: HATS	Name: C Borthwick  Date: 24 Oct 23

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PART 1 – PROPOSAL (continued) Hazard Identification		
<i>Please include Human Factors/Human Performance considerations at all stages of the RA process.</i>		<b>Residual Risk:</b>
<b>Option 1</b>	<b>Conversion to Class G with defined Restricted Area (Speed) South of Ship Canal.</b>	<b>Unacceptable (2)</b>
Hazard 1.1	Pilots unaware of speed restriction and assume normal Class G rules apply.	Review (9)
Hazard 1.2	Difference in VFR visibility minima in Class D (5km) vs Class G (1500m) increases risk of MAC due to reduced pilot reaction times.	Unacceptable (2)
Hazard 1.3	Reduction in time for see and avoid north of the Ship Canal resulting in MAC in the confines of the MLLR.	Unacceptable (6)
Hazard 1.4	Navigational confusion around where the speed restriction exists – River Mersey, Manchester Ship Canal, Bridgewater Canal and River Weaver all run parallel E-W.	Unacceptable (6)
Hazard 1.5	Pilots do not see Ship Canal due to confusion or lookout/cockpit workload when travelling south at greater than 140kts i.e., not slowing down by Ship Canal.	Unacceptable (6)
Hazard 1.6	Distraction associated with looking out for geographical feature (Ship Canal) resulting in reduced lookout for other aircraft within confines of MLLR.	Unacceptable (6)
Hazard 1.7	Increased navigational difficulty with reduced Class G VFR visibility minima (1500m).	Unacceptable (6)
Hazard 1.8	When an aircraft needs to land clear, the reduction in VFR visibility minima from Class D (5km) to Class G (1500m) impacts the pilot's ability to do so.	Unacceptable (4)
Hazard 1.9	Increased chance of Vortex/Wake Turbulence event within MLLR or with Liverpool commercial traffic with no MLLR weight restriction, or speed restriction north of the Ship Canal.	Unacceptable (6)
Hazard 1.10	Increased traffic levels in the northern section of the MLLR west of Barton due to change to Class G, resulting in Airprox or MAC	Unacceptable (6)
Hazard 1.11	Increased speeds underneath Liverpool 27 arrivals (which can be at 1800ft) result in higher closure rates with reduced pilot reaction time resulting in airspace infringement and LOS, Airprox, or MAC.	Unacceptable (6)

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Hazard 1.12	Increased noise levels at lower altitudes due to increased speed north of the Ship Canal, which result in more noise complaints.	Acceptable (10)
Hazard 1.13	Negative environmental impact of higher speeds at lower level.	Acceptable (10)
Hazard 1.14	Workload increase for Liverpool ATCOs due to more GA requests for UK FIS, particularly in marginal weather conditions with higher speeds north of the Ship Canal.	Review (8)
Hazard 1.15	Increased risk of bird strike north of the Ship Canal due to higher speeds at lower levels, over bodies of water/built up areas.	Unacceptable (6)
<b>Option 2</b>	<b>Conversion to Class G with defined Restricted Area (Speed) Entire Route.</b>	<b>Unacceptable (2)</b>
Hazard 2.1	Pilots unaware of speed restriction and assume normal Class G rules apply.	Review (3)
Hazard 2.2	Difference in VFR visibility minima in Class D (5km) vs Class G (1500m) increases risk of MAC due to reduced pilot reaction times.	Unacceptable (2)
Hazard 2.3	Reduction in time for see and avoid within confines of the MLLR resulting in MAC.	Unacceptable (6)
Hazard 2.4	Increased navigational difficulty with reduced Class G VFR visibility minima (1500m).	Unacceptable (6)
Hazard 2.5	When an aircraft needs to land clear, the reduction in VFR visibility minima from Class D (5km) to Class G (1500m) impacts the pilot's ability to do so.	Unacceptable (4)
Hazard 2.6	Increased traffic levels in the MLLR due to change to Class G, resulting in LOS, Airprox or MAC.	Review (8)
Hazard 2.7	Workload increase for Liverpool ATCOs due to more GA requests for UK FIS, particularly in marginal weather conditions.	Review (8)
Hazard 2.8	Increased chance of Vortex/Wake Turbulence event within MLLR or with Liverpool commercial traffic, with no MLLR weight restriction.	Review (9)
<b>Option 3</b>	<b>Conversion to Class G with defined Restricted Area with Wake Turbulence Category Restriction.</b>	<b>Unacceptable (2)</b>
Hazard 3.1	Pilots unaware of weight restriction and assume normal Class G rules apply.	Review (9)
Hazard 3.2	Difference in VFR visibility minima in Class D (5km) vs Class G (1500m) increases risk of MAC due to reduced pilot reaction times.	Unacceptable (2)



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Hazard 3.3	Reduction in time for see and avoid within confines of the MLLR resulting in MAC.	Unacceptable (6)
Hazard 3.4	Increased navigational difficulty with reduced Class G VFR visibility minima (1500m).	Unacceptable (6)
Hazard 3.5	When an aircraft needs to land clear, the reduction in VFR visibility minima from Class D (5km) to Class G (1500m) impacts the pilot's ability to do so.	Unacceptable (4)
Hazard 3.6	Increased traffic levels in the MLLR due to change to Class G, resulting in LOS, Airprox or MAC.	Review (8)
Hazard 3.7	Workload increase for Liverpool ATCOs due to more GA requests for UK FIS, particularly in marginal weather conditions.	Review (8)
<b>Option 4</b>	<b>Conversion to Class G would permit the use of any pressure setting.</b>	Unacceptable (2)
Hazard 4.1	Unable to define the vertical boundary of MLLR (ceiling of Class G/base of Class D) without reference to one specific pressure setting.	Unacceptable (2)
Hazard 4.2	Aircraft not flying on Liverpool's QNH could result in reduced vertical separation between VFR within MLLR and IFR commercial operations above.	Unacceptable (2)
<b>Option 5</b>	<b>Raising the Upper Vertical Limit of MLLR by 200ft from 1300ft to 1500ft</b>	Unacceptable (2)
Hazard 5.1	Significant reduction in vertical separation against Liverpool inbound instrument traffic to Rwy27 which will be at 2000ft or sometimes 1800ft on Liverpool QNH.	Unacceptable (2)
<b>Option 6</b>	<b>Extending the lateral boundaries to the West.</b>	Unacceptable (2)
Hazard 6.1	Moving the entire western edge of MLLR closer to Liverpool would bring MLLR traffic and Liverpool IFR and VFR traffic into closer proximity.	Unacceptable (2)
Hazard 6.2	Creating a fan on southwestern corner of MLLR would reduce the available space for Liverpool VFR inbound and outbound traffic and create congestion around Tarporley Roundabout.	Unacceptable (3)
Hazard 6.3	Reducing the space available around the outside of the Hawarden RMA when Liverpool also have VFR traffic in the area.	Unacceptable (3)
<b>Option 7</b>	<b>Do nothing i.e., extend the Class D Exemption.</b>	Acceptable (12)

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PART 2 – RISK ANALYSIS	
<p><b>Option 1</b></p> <p><b>Hazard 1.1</b></p> <p><b>What is the Safety Risk?</b> <i>(The probability of the hazard occurring.)</i></p> <p><b>If the hazard did occur, what would be its Severity Classification?</b> <i>(The harmful effect that may result.)</i></p> <p><b>What would be the resultant Safety Criteria?</b> <i>(Safety Risk x Severity, i.e. Tolerability)</i></p> <p><b>Proposed Safety Requirements:</b> <i>(Mitigations)</i></p> <p><b>Revised Safety Risk after Safety Requirements applied:</b> <i>(The revised probability of the hazard occurring.)</i></p> <p><b>Revised Safety Criteria after Safety Requirements are met:</b> <i>(Residual Tolerability)</i></p> <p><b>Hazard 1.2</b></p> <p><b>What is the Safety Risk?</b> <i>(The probability of the hazard occurring.)</i></p> <p><b>If the hazard did occur, what would be its Severity Classification?</b></p>	<p><b>Conversion to Class G with defined Restricted Area (Speed) South of Ship Canal: Unacceptable (2)</b></p> <p><b>Pilots unaware of speed restriction and assume normal Class G rules apply.</b></p> <p>Frequent (1)</p> <p>Major Incident (3)</p> <p><b>Unacceptable (2)</b></p> <ul style="list-style-type: none"> <li>• Airmanship/threat and error management.</li> <li>• Speed restriction rules promulgated via AIP entry.</li> <li>• Speed restriction added to charts.</li> <li>• Speed restriction rules promulgated by Skywise comms.</li> <li>• MOR filed if aircraft observed exceeding the speed restriction south of the Ship Canal.</li> <li>• If multiple MORs received by CAA, increase Skywise comms.</li> <li>• Stakeholder engagement such as LAIT.</li> <li>• <i>Observation: Despite extensive communication and promulgation of the current rule set, there are still many technical infringements.</i></li> </ul> <p>Remote (3)</p> <p><b>Review (9)</b></p> <p><b>Difference in VFR visibility minima in Class D (5km) vs Class G (1500m) increases risk of MAC due to reduced pilot reaction times.</b></p> <p>According to SERA 5001:</p> <ul style="list-style-type: none"> <li>• Aircraft at or below 140kts can reduce visibility to 1500m in Class G. 10.4 seconds reaction time for a head on interaction versus current reaction time of 34.7 seconds (5km and 140kts).</li> <li>• Aircraft between 141-250kts require 5km. 19.4 seconds reaction for a head on interaction versus current reaction time of 34.7 seconds (5km and 140kts).</li> </ul> <p><i>Note: Any change made needs to be as safe or safer than the current operation. A change to Class G without a visibility exemption/restriction would reduce safety.</i></p> <p>Frequent (1)</p> <p>Serious Incident (2)</p>

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<p><i>(The harmful effect that may result.)</i></p> <p><b>What would be the resultant Safety Criteria?</b> <i>(Safety Risk x Severity, i.e. Tolerability)</i></p> <p><b>Proposed Safety Requirements:</b> <i>(Mitigations)</i></p> <p><b>Revised Safety Risk after Safety Requirements applied:</b> <i>(The revised probability of the hazard occurring.)</i></p> <p><b>Revised Safety Criteria after Safety Requirements are met:</b> <i>(Residual Tolerability)</i></p>	<p><b>Unacceptable (2)</b></p> <ul style="list-style-type: none"> <li>• Generally fewer VFR flights occur in reduced visibility.</li> <li>• Stakeholder engagement such as LAIT.</li> <li>• <i>Observation: Despite extensive communication and promulgation of the current rule set, there are still many technical infringements.</i></li> </ul> <p>Frequent (1)</p> <p><b>Unacceptable (2)</b></p> <p><b>ALARP Measure would result in a revised Safety Risk of Improbable (4) and a revised Safety Criteria of Review (8):</b></p> <ul style="list-style-type: none"> <li>• Class G visibility restriction/exemption for 5km.</li> <li>• Introduce weight restriction.</li> </ul> <p><b>Additional ALARP measures would result in a revised Safety Risk of Extremely Improbable (5) and a revised Safety Criteria of Acceptable (10):</b></p> <ul style="list-style-type: none"> <li>• Mandatory TMZ/RMZ.</li> <li>• Mandatory Electronic Conspicuity (EC).</li> <li>• LARS service introduced for MLLR.</li> </ul>
<p><b>Hazard 1.3</b></p> <p><b>What is the Safety Risk?</b> <i>(The probability of the hazard occurring.)</i></p> <p><b>If the hazard did occur, what would be its Severity Classification?</b> <i>(The harmful effect that may result.)</i></p> <p><b>What would be the resultant Safety Criteria?</b> <i>(Safety Risk x Severity, i.e. Tolerability)</i></p> <p><b>Proposed Safety Requirements:</b> <i>(Mitigations)</i></p> <p><b>Revised Safety Risk after Safety Requirements applied:</b> <i>(The revised probability of the hazard occurring.)</i></p> <p><b>Revised Safety Criteria after Safety Requirements are met:</b> <i>(Residual Tolerability)</i></p>	<p><b>Reduction in time for see and avoid north of the Ship Canal resulting in MAC in the confines of the MLLR.</b></p> <p>Frequent (1)</p> <p>Serious Incident (2)</p> <p><b>Unacceptable (2)</b></p> <ul style="list-style-type: none"> <li>• Airmanship/threat and error management.</li> <li>• Class G see and avoid principles could be promulgated via AIP enroute section.</li> </ul> <p>Remote (3)</p> <p><b>Unacceptable (6)</b></p> <p><b>ALARP Measure would result in a revised Safety Risk of Improbable (4) and a revised Safety Criteria of Review (8):</b></p> <ul style="list-style-type: none"> <li>• Class G visibility restriction/exemption for 5km.</li> </ul> <p><b>Additional ALARP measures would result in a revised Safety Risk of Extremely Improbable (5) and a revised Safety Criteria of Acceptable (10):</b></p>

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<p><b>Hazard 1.4</b></p> <p><b>What is the Safety Risk?</b> <i>(The probability of the hazard occurring.)</i></p> <p><b>If the hazard did occur, what would be its Severity Classification?</b> <i>(The harmful effect that may result.)</i></p> <p><b>What would be the resultant Safety Criteria?</b> <i>(Safety Risk x Severity, i.e. Tolerability)</i></p> <p><b>Proposed Safety Requirements:</b> <i>(Mitigations)</i></p> <p><b>Revised Safety Risk after Safety Requirements applied:</b> <i>(The revised probability of the hazard occurring.)</i></p> <p><b>Revised Safety Criteria after Safety Requirements are met:</b> <i>(Residual Tolerability)</i></p>	<ul style="list-style-type: none"> <li>• Mandatory TMZ/RMZ.</li> <li>• Mandatory Electronic Conspicuity (EC).</li> </ul> <p><b>Navigational confusion around where the speed restriction exists – River Mersey, Manchester Ship Canal, Bridgewater Canal and River Weaver all run parallel E-W.</b></p> <p>Frequent (1)</p> <p>Major Incident (3)</p> <p><b>Unacceptable (3)</b></p> <ul style="list-style-type: none"> <li>• Airmanship/threat and error management.</li> <li>• Speed restriction rules promulgated via AIP entry.</li> <li>• Speed restriction added to charts.</li> <li>• Speed restriction rules promulgated by Skywise comms.</li> <li>• Stakeholder engagement such as LAIT.</li> <li>• <i>Observation: Despite extensive communication and promulgation of the current rule set, there are still many technical infringements.</i></li> </ul> <p>Occasional (2)</p> <p><b>Unacceptable (6)</b></p>
<p><b>Hazard 1.5</b></p> <p><b>What is the Safety Risk?</b> <i>(The probability of the hazard occurring.)</i></p> <p><b>If the hazard did occur, what would be its Severity Classification?</b> <i>(The harmful effect that may result.)</i></p> <p><b>What would be the resultant Safety Criteria?</b> <i>(Safety Risk x Severity, i.e. Tolerability)</i></p> <p><b>Proposed Safety Requirements:</b> <i>(Mitigations)</i></p> <p><b>Revised Safety Risk after Safety Requirements applied:</b></p>	<p><b>Pilots do not see Ship Canal due to confusion or lookout/cockpit workload when travelling south at greater than 140kts i.e., not slowing down by Ship Canal.</b></p> <p>Frequent (1)</p> <p>Major Incident (3)</p> <p><b>Unacceptable (3)</b></p> <ul style="list-style-type: none"> <li>• Airmanship/threat and error management.</li> <li>• Manchester Ship Canal, River Mersey, and Bridgewater Canal are all within 1 mile of each other.</li> <li>• Speed restriction rules promulgated via AIP entry should include a map to prevent confusion.</li> <li>• Speed restriction added to charts.</li> <li>• Speed restriction rules promulgated by Skywise comms should include a map to prevent confusion.</li> <li>• Highlight importance of lookout through stakeholder engagement such as LAIT.</li> <li>• Use of moving maps for navigation.</li> </ul> <p>Occasional (2)</p>

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<p><i>(The revised probability of the hazard occurring.)</i></p> <p><b>Revised Safety Criteria after Safety Requirements are met:</b> <i>(Residual Tolerability)</i></p>   <p><b>Hazard 1.6</b></p> <p><b>What is the Safety Risk?</b> <i>(The probability of the hazard occurring.)</i></p> <p><b>If the hazard did occur, what would be its Severity Classification?</b> <i>(The harmful effect that may result.)</i></p> <p><b>What would be the resultant Safety Criteria?</b> <i>(Safety Risk x Severity, i.e. Tolerability)</i></p> <p><b>Proposed Safety Requirements:</b> <i>(Mitigations)</i></p> <p><b>Revised Safety Risk after Safety Requirements applied:</b> <i>(The revised probability of the hazard occurring.)</i></p> <p><b>Revised Safety Criteria after Safety Requirements are met:</b> <i>(Residual Tolerability)</i></p>  <p><b>Hazard 1.7</b></p>          <p><b>What is the Safety Risk?</b> <i>(The probability of the hazard occurring.)</i></p> <p><b>If the hazard did occur, what would be its Severity Classification?</b> <i>(The harmful effect that may result.)</i></p> <p><b>What would be the resultant Safety Criteria?</b> <i>(Safety Risk x Severity, i.e. Tolerability)</i></p> <p><b>Proposed Safety Requirements:</b> <i>(Mitigations)</i></p>	<div style="background-color: #e0e0e0; padding: 5px; margin-bottom: 10px;"><b>Unacceptable (6)</b></div>   <p><b>Distraction associated with looking out for geographical feature (Ship Canal) resulting in reduced lookout for other aircraft within confines of MLLR.</b></p> <p>Frequent (1)</p> <p>Serious Incident (2)</p> <div style="background-color: #e0e0e0; padding: 5px; margin-bottom: 10px;"><b>Unacceptable (2)</b></div> <ul style="list-style-type: none"> <li>Airmanship/threat and error management.</li> <li>Manchester Ship Canal, River Mersey, and Bridgewater Canal are all within 1 mile of each other.</li> <li>Use of moving maps for navigation.</li> </ul> <p>Occasional (2)</p> <div style="background-color: #e0e0e0; padding: 5px; margin-bottom: 10px;"><b>Unacceptable (6)</b></div>   <div style="background-color: #e0e0e0; padding: 5px; margin-bottom: 10px;"><b>Increased navigational difficulty with reduced Class G VFR visibility minima (1500m).</b></div> <p><i>Note: Any change made needs to be as safe or safer than the current operation. A change to Class G without a visibility exemption would reduce safety. Currently aircraft in 1500m visibility in the MLLR shall request and receive a radar control service from MAN.</i></p> <p>Frequent (1)</p> <p>Major Incident (3)</p> <div style="background-color: #e0e0e0; padding: 5px; margin-bottom: 10px;"><b>Unacceptable (3)</b></div> <ul style="list-style-type: none"> <li>Airmanship/threat and error management.</li> <li>Manchester Ship Canal, River Mersey, and Bridgewater Canal are all within 1 mile of each other.</li> <li>Use of moving maps for navigation.</li> <li>Aircraft would not be flying between 141-250kts in 1500m visibility.</li> </ul>
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<p><b>Revised Safety Risk after Safety Requirements applied:</b> <i>(The revised probability of the hazard occurring.)</i></p> <p><b>Revised Safety Criteria after Safety Requirements are met:</b> <i>(Residual Tolerability)</i></p>	<p>Occasional (2)</p> <p><b>Unacceptable (6)</b></p> <p>ALARP Measure would result in a revised Safety Risk of Remote (3) and a revised Safety Criteria of Review (9):</p> <ul style="list-style-type: none"> <li>Class G visibility restriction/exemption for 5km.</li> </ul> <p>Additional ALARP measures would result in a revised Safety Risk of Improbable (4) and a revised Safety Criteria of Acceptable (12):</p> <ul style="list-style-type: none"> <li>Mandatory TMZ/RMZ.</li> <li>Mandatory Electronic Conspicuity (EC).</li> <li>LARS service introduced for MLLR.</li> </ul>
<p><b>Hazard 1.8</b></p> <p><b>What is the Safety Risk?</b> <i>(The probability of the hazard occurring.)</i></p> <p><b>If the hazard did occur, what would be its Severity Classification?</b> <i>(The harmful effect that may result.)</i></p> <p><b>What would be the resultant Safety Criteria?</b> <i>(Safety Risk x Severity, i.e. Tolerability)</i></p> <p><b>Proposed Safety Requirements:</b> <i>(Mitigations)</i></p> <p><b>Revised Safety Risk after Safety Requirements applied:</b> <i>(The revised probability of the hazard occurring.)</i></p> <p><b>Revised Safety Criteria after Safety Requirements are met:</b> <i>(Residual Tolerability)</i></p>	<p>When an aircraft needs to land clear, the reduction in VFR visibility minima from Class D (5km) to Class G (1500m) impacts the pilot's ability to do so.</p> <p>Occasional (2)</p> <p>Serious Incident (2)</p> <p><b>Unacceptable (4)</b></p> <ul style="list-style-type: none"> <li>Airmanship/threat and error management.</li> <li>Use of moving maps for navigation.</li> </ul> <p>Occasional (2)</p> <p><b>Unacceptable (4)</b></p> <p>ALARP Measure would result in a revised Safety Risk of Improbable (4) and a revised Safety Criteria of Review (8):</p> <ul style="list-style-type: none"> <li>Class G visibility restriction/exemption for 5km.</li> </ul>
<p><b>Hazard 1.9</b></p> <p><b>What is the Safety Risk?</b> <i>(The probability of the hazard occurring.)</i></p> <p><b>If the hazard did occur, what would be its Severity Classification?</b> <i>(The harmful effect that may result.)</i></p> <p><b>What would be the resultant Safety Criteria?</b> <i>(Safety Risk x Severity, i.e. Tolerability)</i></p> <p><b>Proposed Safety Requirements:</b> <i>(Mitigations)</i></p>	<p>Increased chance of Vortex/Wake Turbulence event within MLLR or with Liverpool commercial traffic with no MLLR weight restriction, or speed restriction north of the Ship Canal.</p> <p>Occasional (2)</p> <p>Major Incident (3)</p> <p><b>Unacceptable (6)</b></p> <ul style="list-style-type: none"> <li>Airmanship/threat and error management.</li> </ul>

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<p><b>Revised Safety Risk after Safety Requirements applied:</b> <i>(The revised probability of the hazard occurring.)</i></p> <p><b>Revised Safety Criteria after Safety Requirements are met:</b> <i>(Residual Tolerability)</i></p>	<p>Occasional (2)</p> <p><b>Unacceptable (6)</b></p> <p><b>ALARP Measure would result in a revised Safety Risk of Improbable (4) and a revised Safety Criteria of Acceptable (12):</b></p> <ul style="list-style-type: none"> <li>Vortex category restriction within MLLR confines.</li> <li>140kts speed restriction introduced north of the Ship Canal to increase pilot reaction time and improve pilot lookout.</li> <li>Ensure 1000ft separation exists between Liverpool inbounds and MLLR traffic.</li> </ul>
<p><b>Hazard 1.10</b></p> <p><b>What is the Safety Risk?</b> <i>(The probability of the hazard occurring.)</i></p> <p><b>If the hazard did occur, what would be its Severity Classification?</b> <i>(The harmful effect that may result.)</i></p> <p><b>What would be the resultant Safety Criteria?</b> <i>(Safety Risk x Severity, i.e. Tolerability)</i></p> <p><b>Proposed Safety Requirements:</b> <i>(Mitigations)</i></p> <p><b>Revised Safety Risk after Safety Requirements applied:</b> <i>(The revised probability of the hazard occurring.)</i></p> <p><b>Revised Safety Criteria after Safety Requirements are met:</b> <i>(Residual Tolerability)</i></p>	<p><b>Increased traffic levels in the northern section of the MLLR west of Barton due to change to Class G, resulting in Airprox or MAC.</b></p> <p>Frequent (1)</p> <p>Major Incident (3)</p> <p><b>Unacceptable (3)</b></p> <ul style="list-style-type: none"> <li>Airmanship/threat and error management.</li> </ul> <p>Occasional (2)</p> <p><b>Unacceptable (6)</b></p> <p><b>ALARP Measure would result in a revised Safety Risk of Improbable (4) and a revised Safety Criteria of Acceptable (12):</b></p> <ul style="list-style-type: none"> <li>LARS service introduced for MLLR.</li> <li>Mandatory TMZ/RMZ.</li> <li>Mandatory Electronic Conspicuity (EC).</li> </ul>
<p><b>Hazard 1.11</b></p> <p><b>What is the Safety Risk?</b> <i>(The probability of the hazard occurring.)</i></p> <p><b>If the hazard did occur, what would be its Severity Classification?</b> <i>(The harmful effect that may result.)</i></p> <p><b>What would be the resultant Safety Criteria?</b> <i>(Safety Risk x Severity, i.e. Tolerability)</i></p>	<p><b>Increased speeds underneath Liverpool 27 arrivals (which can be at 1800ft) result in higher closure rates with reduced pilot reaction time resulting in airspace infringement and LOS, Airprox, or MAC.</b></p> <p>Occasional (2)</p> <p>Serious Incident (2)</p> <p><b>Unacceptable (4)</b></p>

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<p><b>Proposed Safety Requirements:</b> (Mitigations)</p>	<ul style="list-style-type: none"> <li>• Speed restriction rules promulgated via AIP entry.</li> <li>• Speed restriction added to charts.</li> <li>• Speed restriction rules promulgated by Skywise comms.</li> <li>• Stakeholder engagement such as LAIT.</li> <li>• TCAS onboard.</li> <li>• Commercial traffic under radar control service.</li> </ul>
<p><b>Revised Safety Risk after Safety Requirements applied:</b> (The revised probability of the hazard occurring.)</p> <p><b>Revised Safety Criteria after Safety Requirements are met:</b> (Residual Tolerability)</p>	<p>Remote (3)</p> <p><b>Unacceptable (6)</b></p> <p><b>ALARP Measure would result in a revised Safety Risk of Improbable (4) and a revised Safety Criteria of Review (8):</b></p> <ul style="list-style-type: none"> <li>• 140kts speed restriction introduced north of the Ship Canal to increase pilot reaction time.</li> <li>• Ensure 1000ft separation exists between Liverpool inbounds and MLLR traffic.</li> </ul>
<p><b>Hazard 1.12</b></p> <p><b>What is the Safety Risk?</b> (The probability of the hazard occurring.)</p> <p><b>If the hazard did occur, what would be its Severity Classification?</b> (The harmful effect that may result.)</p> <p><b>What would be the resultant Safety Criteria?</b> (Safety Risk x Severity, i.e. Tolerability)</p> <p><b>Proposed Safety Requirements:</b> (Mitigations)</p> <p><b>Revised Safety Risk after Safety Requirements applied:</b> (The revised probability of the hazard occurring.)</p> <p><b>Revised Safety Criteria after Safety Requirements are met:</b> (Residual Tolerability)</p>	<p><b>Increased noise levels at lower altitudes due to increased speed north of the Ship Canal, which result in more noise complaints.</b></p> <p>Frequent (1)</p> <p>No Immediate Effect (5)</p> <p><b>Review (5)</b></p> <ul style="list-style-type: none"> <li>• Airmanship / avoiding built up areas.</li> </ul> <p>Occasional (2)</p> <p><b>Acceptable (10)</b></p> <p><b>ALARP Measure would result in a revised Safety Risk of Remote (3) and a revised Safety Criteria of Acceptable (15):</b></p> <ul style="list-style-type: none"> <li>• 140kts speed restriction introduced north of the Ship Canal to increase pilot reaction time.</li> </ul>
<p><b>Hazard 1.13</b></p> <p><b>What is the Safety Risk?</b> (The probability of the hazard occurring.)</p> <p><b>If the hazard did occur, what would be its Severity Classification?</b> (The harmful effect that may result.)</p> <p><b>What would be the resultant Safety Criteria?</b></p>	<p><b>Negative environmental impact of higher speeds at lower level.</b></p> <p>Frequent (1)</p> <p>No Immediate Effect (5)</p> <p><b>Review (5)</b></p>



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<p><i>(Safety Risk x Severity, i.e. Tolerability)</i></p> <p><b>Proposed Safety Requirements:</b> <i>(Mitigations)</i></p> <p><b>Revised Safety Risk after Safety Requirements applied:</b> <i>(The revised probability of the hazard occurring.)</i></p> <p><b>Revised Safety Criteria after Safety Requirements are met:</b> <i>(Residual Tolerability)</i></p>	<ul style="list-style-type: none"> <li>Airmanship / avoiding built up areas.</li> </ul> <p>Occasional (2)</p> <p><b>Acceptable (10)</b></p> <p>ALARP Measure would result in a revised Safety Risk of Remote (3) and a revised Safety Criteria of <b>Acceptable (15):</b></p> <ul style="list-style-type: none"> <li>140kts speed restriction introduced north of the Ship Canal to increase pilot reaction time.</li> </ul>
<p><b>Hazard 1.14</b></p> <p><b>What is the Safety Risk?</b> <i>(The probability of the hazard occurring.)</i></p> <p><b>If the hazard did occur, what would be its Severity Classification?</b> <i>(The harmful effect that may result.)</i></p> <p><b>What would be the resultant Safety Criteria?</b> <i>(Safety Risk x Severity, i.e. Tolerability)</i></p> <p><b>Proposed Safety Requirements:</b> <i>(Mitigations)</i></p> <p><b>Revised Safety Risk after Safety Requirements applied:</b> <i>(The revised probability of the hazard occurring.)</i></p> <p><b>Revised Safety Criteria after Safety Requirements are met:</b> <i>(Residual Tolerability)</i></p>	<p><b>Workload increase for Liverpool ATCOs due to more GA requests for UK FIS, particularly in marginal weather conditions with higher speeds north of the Ship Canal.</b></p> <p>Frequent (1)</p> <p>Significant Incident (4)</p> <p><b>Unacceptable (4)</b></p> <ul style="list-style-type: none"> <li>Decline request for UK FIS due to controller workload and no LARS provided by Liverpool.</li> </ul> <p>Occasional (2)</p> <p><b>Review (8)</b></p> <p>ALARP Measure would result in a revised Safety Risk of Remote (3) and a revised Safety Criteria of <b>Acceptable (12):</b></p> <ul style="list-style-type: none"> <li>140kts speed restriction introduced north of the Ship Canal to increase pilot reaction time.</li> <li>Mandatory TMZ/RMZ.</li> <li>Mandatory Electronic Conspicuity (EC).</li> <li>Introduce listening watch squawks with local radar units.</li> </ul>
<p><b>Hazard 1.15</b></p> <p><b>Wat is the Safety Risk?</b> <i>(The probability of the hazard occurring.)</i></p> <p><b>If the hazard did occur, what would be its Severity Classification?</b> <i>(The harmful effect that may result.)</i></p> <p><b>What would be the resultant Safety Criteria?</b></p>	<p><b>Increased risk of bird strike north of the Ship Canal due to higher speeds at lower levels, over bodies of water/built up areas.</b></p> <p>Occasional (2)</p> <p>Major Incident (3)</p> <p><b>Unacceptable (6)</b></p>

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<p><i>(Safety Risk x Severity, i.e. Tolerability)</i></p> <p><b>Proposed Safety Requirements:</b> <i>(Mitigations)</i></p> <p><b>Revised Safety Risk after Safety Requirements applied:</b> <i>(The revised probability of the hazard occurring.)</i></p> <p><b>Revised Safety Criteria after Safety Requirements are met:</b> <i>(Residual Tolerability)</i></p>	<ul style="list-style-type: none"> <li>Aircraft would not be flying between 141-250kts in 1500m visibility.</li> </ul> <p>Occasional (2)</p> <p><b>Unacceptable (6)</b></p> <p>ALARP Measure would result in a revised Safety Risk of Remote (3) and a revised Safety Criteria of <b>Acceptable (12):</b></p> <ul style="list-style-type: none"> <li>140kts speed restriction introduced north of the Ship Canal to increase pilot reaction time.</li> </ul>
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**ATS HAZARD IDENTIFICATION - RISK ANALYSIS FORM**

<p><b>Option 2</b></p> <p><b>Hazard 2.1</b></p> <p><b>What is the Safety Risk?</b> <i>(The probability of the hazard occurring.)</i></p> <p><b>If the hazard did occur, what would be its Severity Classification?</b> <i>(The harmful effect that may result.)</i></p> <p><b>What would be the resultant Safety Criteria?</b> <i>(Safety Risk x Severity, i.e. Tolerability)</i></p> <p><b>Proposed Safety Requirements:</b> <i>(Mitigations)</i></p> <p><b>Revised Safety Risk after Safety Requirements applied:</b> <i>(The revised probability of the hazard occurring.)</i></p> <p><b>Revised Safety Criteria after Safety Requirements are met:</b> <i>(Residual Tolerability)</i></p>	<p><b>Conversion to Class G with defined Restricted Area (Speed) Entire Route: Unacceptable (6)</b></p> <p><b>Pilots unaware of speed restriction and assume normal Class G rules apply.</b></p> <p>Frequent (1)</p> <p>Major Incident (3)</p> <p><b>Unacceptable (2)</b></p> <ul style="list-style-type: none"> <li>• Airmanship/threat and error management.</li> <li>• Speed restriction rules promulgated via AIP entry.</li> <li>• Speed restriction added to charts.</li> <li>• Speed restriction rules promulgated by Skywise comms.</li> <li>• MOR filed if aircraft observed exceeding the speed restriction in MLLR.</li> <li>• If multiple MORs received by CAA, increase Skywise comms.</li> <li>• Stakeholder engagement such as LAIT.</li> <li>• <i>Observation: Despite extensive communication and promulgation of the current rule set, there are still many technical infringements.</i></li> </ul> <p>Remote (3)</p> <p><b>Review (3)</b></p>
<p><b>Hazard 2.2</b></p> <p><b>What is the Safety Risk?</b> <i>(The probability of the hazard occurring.)</i></p> <p><b>If the hazard did occur, what would be its Severity Classification?</b> <i>(The harmful effect that may result.)</i></p> <p><b>What would be the resultant Safety Criteria?</b> <i>(Safety Risk x Severity, i.e. Tolerability)</i></p>	<p><b>Difference in VFR visibility minima in Class D (5km) vs Class G (1500m) increases risk of MAC due to reduced pilot reaction times.</b></p> <p>According to SERA 5001:</p> <ul style="list-style-type: none"> <li>• Aircraft at or below 140kts can reduce visibility to 1500m in Class G. 10.4 seconds reaction time for a head on interaction versus current reaction time of 34.7 seconds (5km and 140kts).</li> </ul> <p><i>Note: Any change made needs to be as safe or safer than the current operation. A change to Class G without a visibility exemption/restriction would reduce safety.</i></p> <p>Frequent (1)</p> <p>Serious Incident (2)</p> <p><b>Unacceptable (2)</b></p>

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<p><b>Proposed Safety Requirements:</b> <i>(Mitigations)</i></p> <p><b>Revised Safety Risk after Safety Requirements applied:</b> <i>(The revised probability of the hazard occurring.)</i></p> <p><b>Revised Safety Criteria after Safety Requirements are met:</b> <i>(Residual Tolerability)</i></p>	<ul style="list-style-type: none"> <li>• Generally fewer VFR flights occur in reduced visibility.</li> <li>• Stakeholder engagement such as LAIT.</li> <li>• <i>Observation: Despite extensive communication and promulgation of the current rule set, there are still many technical infringements.</i></li> </ul> <p>Frequent (1)</p> <p><b>Unacceptable (2)</b></p> <p><b>ALARP Measure would result in a revised Safety Risk of Improbable (4) and a revised Safety Criteria of Review (8):</b></p> <ul style="list-style-type: none"> <li>• Class G visibility restriction/exemption for 5km.</li> <li>• Weight restriction introduced.</li> </ul> <p><b>Additional ALARP measures would result in a revised Safety Risk of Extremely Improbable (5) and a revised Safety Criteria of Acceptable (10):</b></p> <ul style="list-style-type: none"> <li>• Mandatory TMZ/RMZ.</li> <li>• Mandatory Electronic Conspicuity (EC).</li> <li>• LARS service introduced for MLLR.</li> </ul>
<p><b>Hazard 2.3</b></p> <p><b>What is the Safety Risk?</b> <i>(The probability of the hazard occurring.)</i></p> <p><b>If the hazard did occur, what would be its Severity Classification?</b> <i>(The harmful effect that may result.)</i></p> <p><b>What would be the resultant Safety Criteria?</b> <i>(Safety Risk x Severity, i.e. Tolerability)</i></p> <p><b>Proposed Safety Requirements:</b> <i>(Mitigations)</i></p> <p><b>Revised Safety Risk after Safety Requirements applied:</b> <i>(The revised probability of the hazard occurring.)</i></p> <p><b>Revised Safety Criteria after Safety Requirements are met:</b> <i>(Residual Tolerability)</i></p>	<p><b>Reduction in time for see and avoid within confines of the MLLR resulting in MAC.</b></p> <p>Frequent (1)</p> <p>Serious Incident (2)</p> <p><b>Unacceptable (2)</b></p> <ul style="list-style-type: none"> <li>• Airmanship/threat and error management.</li> <li>• Class G see and avoid principles could be promulgated via AIP enroute section.</li> </ul> <p>Remote (3)</p> <p><b>Unacceptable (6)</b></p> <p><b>ALARP Measure would result in a revised Safety Risk of Improbable (4) and a revised Safety Criteria of Review (8):</b></p> <ul style="list-style-type: none"> <li>• Class G visibility restriction/exemption for 5km.</li> </ul> <p><b>Additional ALARP measures would result in a revised Safety Risk of Extremely Improbable (5) and a revised Safety Criteria of Acceptable (10):</b></p> <ul style="list-style-type: none"> <li>• Mandatory TMZ/RMZ.</li> <li>• Mandatory Electronic Conspicuity (EC).</li> </ul>

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<p><b>Hazard 2.4</b></p> <p><b>What is the Safety Risk?</b> <i>(The probability of the hazard occurring.)</i></p> <p><b>If the hazard did occur, what would be its Severity Classification?</b> <i>(The harmful effect that may result.)</i></p> <p><b>What would be the resultant Safety Criteria?</b> <i>(Safety Risk x Severity, i.e. Tolerability)</i></p> <p><b>Proposed Safety Requirements:</b> <i>(Mitigations)</i></p> <p><b>Revised Safety Risk after Safety Requirements applied:</b> <i>(The revised probability of the hazard occurring.)</i></p> <p><b>Revised Safety Criteria after Safety Requirements are met:</b> <i>(Residual Tolerability)</i></p>	<p><b>Increased navigational difficulty with reduced Class G VFR visibility minima (1500m).</b></p> <p><i>Note: Any change made needs to be as safe or safer than the current operation. A change to Class G without a visibility exemption would reduce safety. Currently aircraft in 1500m visibility in the MLLR shall request and receive a radar control service from MAN.</i></p> <p>Frequent (1)</p> <p>Major Incident (3)</p> <p><b>Unacceptable (3)</b></p> <ul style="list-style-type: none"> <li>Airmanship/threat and error management.</li> <li>Use of moving maps for navigation.</li> </ul> <p>Occasional (2)</p> <p><b>Unacceptable (6)</b></p> <p><b>ALARP Measure would result in a revised Safety Risk of Remote (3) and a revised Safety Criteria of Review (9):</b></p> <ul style="list-style-type: none"> <li>Class G visibility restriction/exemption for 5km.</li> </ul> <p><b>Additional ALARP measures would result in a revised Safety Risk of Improbable (4) and a revised Safety Criteria of Acceptable (12):</b></p> <ul style="list-style-type: none"> <li>Mandatory TMZ/RMZ.</li> <li>Mandatory Electronic Conspicuity (EC).</li> <li>LARS service introduced for MLLR.</li> </ul>
<p><b>Hazard 2.5</b></p> <p><b>What is the Safety Risk?</b> <i>(The probability of the hazard occurring.)</i></p> <p><b>If the hazard did occur, what would be its Severity Classification?</b> <i>(The harmful effect that may result.)</i></p> <p><b>What would be the resultant Safety Criteria?</b> <i>(Safety Risk x Severity, i.e. Tolerability)</i></p> <p><b>Proposed Safety Requirements:</b> <i>(Mitigations)</i></p> <p><b>Revised Safety Risk after Safety Requirements applied:</b> <i>(The revised probability of the hazard occurring.)</i></p> <p><b>Revised Safety Criteria after Safety Requirements are met:</b> <i>(Residual Tolerability)</i></p>	<p><b>When an aircraft needs to land clear, the reduction in VFR visibility minima from Class D (5km) to Class G (1500m) impacts the pilot's ability to do so.</b></p> <p>Occasional (2)</p> <p>Serious Incident (2)</p> <p><b>Unacceptable (4)</b></p> <ul style="list-style-type: none"> <li>Airmanship/threat and error management.</li> <li>Use of moving maps for navigation.</li> </ul> <p>Occasional (2)</p> <p><b>Unacceptable (4)</b></p>

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<p><b>Hazard 2.6</b></p> <p><b>What is the Safety Risk?</b> <i>(The probability of the hazard occurring.)</i></p> <p><b>If the hazard did occur, what would be its Severity Classification?</b> <i>(The harmful effect that may result.)</i></p> <p><b>What would be the resultant Safety Criteria?</b> <i>(Safety Risk x Severity, i.e. Tolerability)</i></p> <p><b>Proposed Safety Requirements:</b> <i>(Mitigations)</i></p> <p><b>Revised Safety Risk after Safety Requirements applied:</b> <i>(The revised probability of the hazard occurring.)</i></p> <p><b>Revised Safety Criteria after Safety Requirements are met:</b> <i>(Residual Tolerability)</i></p>	<p><b>ALARP Measure would result in a revised Safety Risk of Improbable (4) and a revised Safety Criteria of Review (8):</b></p> <ul style="list-style-type: none"> <li>Class G visibility restriction/exemption for 5km.</li> </ul> <p><b>Increased traffic levels in the MLLR due to change to Class G, resulting in LOS, Airprox or MAC.</b></p> <p>Frequent (1)</p> <p>Significant Incident (4)</p> <p><b>Unacceptable (4)</b></p> <ul style="list-style-type: none"> <li>Airmanship/threat and error management.</li> <li>See and avoid.</li> <li>Keep a listening watch on designated frequency.</li> </ul> <p>Occasional (2)</p> <p><b>Review (8)</b></p> <p><b>ALARP Measure would result in a revised Safety Risk of Remote (3) and a revised Safety Criteria of Acceptable (12):</b></p> <ul style="list-style-type: none"> <li>Class G visibility restriction/exemption for 5km.</li> </ul> <p><b>Additional ALARP measures would result in a revised Safety Risk of Improbable (4) and a revised Safety Criteria of Acceptable (16):</b></p> <ul style="list-style-type: none"> <li>Mandatory TMZ/RMZ.</li> <li>Mandatory Electronic Conspicuity (EC).</li> <li>LARS service introduced for MLLR.</li> </ul>
<p><b>Hazard 2.7</b></p> <p><b>What is the Safety Risk?</b> <i>(The probability of the hazard occurring.)</i></p> <p><b>If the hazard did occur, what would be its Severity Classification?</b> <i>(The harmful effect that may result.)</i></p> <p><b>What would be the resultant Safety Criteria?</b> <i>(Safety Risk x Severity, i.e. Tolerability)</i></p> <p><b>Proposed Safety Requirements:</b> <i>(Mitigations)</i></p> <p><b>Revised Safety Risk after Safety Requirements applied:</b> <i>(The revised probability of the hazard occurring.)</i></p> <p><b>Revised Safety Criteria after Safety Requirements are met:</b> <i>(Residual Tolerability)</i></p>	<p><b>Workload increase for Liverpool ATCOs due to more GA requests for UK FIS, particularly in marginal weather conditions.</b></p> <p>Frequent (1)</p> <p>Significant Incident (4)</p> <p><b>Unacceptable (4)</b></p> <ul style="list-style-type: none"> <li>Potential for ATCO to decline request for UK FIS due to controller workload and no LARS provided by Liverpool.</li> <li>Zone transit refusals due to controller workload.</li> <li>Keep a listening watch on designated frequency.</li> <li>Introduce conspicuity squawks with local radar units.</li> </ul> <p>Occasional (2)</p> <p><b>Review (8)</b></p>

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	<p><b>ALARP Measure would result in a revised Safety Risk of Remote (3) and a revised Safety Criteria of <b>Acceptable (12)</b>:</b></p> <ul style="list-style-type: none"> <li>• Mandatory TMZ/RMZ.</li> <li>• Mandatory Electronic Conspicuity (EC).</li> <li>• LARS service introduced for MLLR.</li> </ul>
<p><b>Hazard 2.8</b></p> <p><b>What is the Safety Risk?</b> <i>(The probability of the hazard occurring.)</i></p> <p><b>If the hazard did occur, what would be its Severity Classification?</b> <i>(The harmful effect that may result.)</i></p> <p><b>What would be the resultant Safety Criteria?</b> <i>(Safety Risk x Severity, i.e. Tolerability)</i></p> <p><b>Proposed Safety Requirements:</b> <i>(Mitigations)</i></p> <p><b>Revised Safety Risk after Safety Requirements applied:</b> <i>(The revised probability of the hazard occurring.)</i></p> <p><b>Revised Safety Criteria after Safety Requirements are met:</b> <i>(Residual Tolerability)</i></p>	<p><b>Increased chance of Vortex/Wake Turbulence event within MLLR or with Liverpool commercial traffic, with no MLLR weight restriction.</b></p> <p>Occasional (2)</p> <p>Major Incident (3)</p> <p><b>Unacceptable (6)</b></p> <ul style="list-style-type: none"> <li>• Heavy or medium vortex category fixed-wing aircraft highly unlikely to be flying at 140kts.</li> <li>• Liverpool commercial traffic vectored with vortex/wake turbulence considered.</li> </ul> <p>Remote (3)</p> <p><b>Review (9)</b></p> <p><b>ALARP Measure would result in a revised Safety Risk of Improbable (4) and a revised Safety Criteria of <b>Acceptable (12)</b>:</b></p> <ul style="list-style-type: none"> <li>• Vortex category restriction within MLLR confines.</li> <li>• Ensure 1000ft separation exists between Liverpool inbounds and MLLR traffic.</li> <li>• Class G visibility restriction/exemption for 5km.</li> </ul> <p><b>Additional ALARP measures would result in a revised Safety Risk of Extremely Improbable (5) and a revised Safety Criteria of <b>Acceptable (15)</b>:</b></p> <ul style="list-style-type: none"> <li>• Mandatory TMZ/RMZ.</li> <li>• Mandatory Electronic Conspicuity (EC).</li> <li>• LARS service introduced for MLLR.</li> </ul>

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<p><b>Option 3</b></p> <p><b>Hazard 3.1</b></p> <p><b>What is the Safety Risk?</b> <i>(The probability of the hazard occurring.)</i></p> <p><b>If the hazard did occur, what would be its Severity Classification?</b> <i>(The harmful effect that may result.)</i></p> <p><b>What would be the resultant Safety Criteria?</b> <i>(Safety Risk x Severity, i.e. Tolerability)</i></p> <p><b>Proposed Safety Requirements:</b> <i>(Mitigations)</i></p> <p><b>Revised Safety Risk after Safety Requirements applied:</b> <i>(The revised probability of the hazard occurring.)</i></p> <p><b>Revised Safety Criteria after Safety Requirements are met:</b> <i>(Residual Tolerability)</i></p> <p><b>Hazard 3.2</b></p> <p><b>What is the Safety Risk?</b> <i>(The probability of the hazard occurring.)</i></p> <p><b>If the hazard did occur, what would be its Severity Classification?</b> <i>(The harmful effect that may result.)</i></p>	<p><b>Conversion to Class G with defined Restricted Area (Entire) with Wake Turbulence Category Restriction.</b></p> <p><b>Pilots unaware of weight restriction and assume normal Class G rules apply.</b></p> <p>Occasional (2)</p> <p>Major Incident (3)</p> <p><b>Unacceptable (6)</b></p> <ul style="list-style-type: none"> <li>• Airmanship/threat and error management.</li> <li>• Weight restriction rules promulgated via AIP entry.</li> <li>• Weight restriction added to charts.</li> <li>• Weight restriction rules promulgated by Skywise comms.</li> <li>• MOR filed if aircraft observed exceeding the weight restriction in MLLR.</li> <li>• If multiple MORs received by CAA, increase Skywise comms.</li> <li>• Stakeholder engagement such as LAIT.</li> <li>• <i>Observation: Despite extensive communication and promulgation of the current rule set, there are still many technical infringements.</i></li> </ul> <p>Remote (3)</p> <p><b>Review (9)</b></p> <p><b>Difference in VFR visibility minima in Class D (5km) vs Class G (1500m) increases risk of MAC due to reduced pilot reaction times.</b></p> <p>According to SERA 5001:</p> <ul style="list-style-type: none"> <li>• Aircraft at or below 140kts can reduce visibility to 1500m in Class G. 10.4 seconds reaction time for a head on interaction versus current reaction time of 34.7 seconds (5km and 140kts).</li> <li>• Aircraft between 141-250kts require 5km. 19.4 seconds reaction for a head on interaction versus current reaction time of 34.7 seconds (5km and 140kts).</li> </ul> <p><i>Note: Any change made needs to be as safe or safer than the current operation. A change to Class G without a visibility exemption/restriction would reduce safety.</i></p> <p>Frequent (1)</p> <p>Serious Incident (2)</p>
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<p><b>What would be the resultant Safety Criteria?</b> <i>(Safety Risk x Severity, i.e. Tolerability)</i></p> <p><b>Proposed Safety Requirements:</b> <i>(Mitigations)</i></p> <p><b>Revised Safety Risk after Safety Requirements applied:</b> <i>(The revised probability of the hazard occurring.)</i></p> <p><b>Revised Safety Criteria after Safety Requirements are met:</b> <i>(Residual Tolerability)</i></p>	<p><b>Unacceptable (2)</b></p> <ul style="list-style-type: none"> <li>• Generally fewer VFR flights occur in reduced visibility.</li> <li>• Stakeholder engagement such as LAIT.</li> <li>• <i>Observation: Despite extensive communication and promulgation of the current rule set, there are still many technical infringements.</i></li> </ul> <p>Frequent (1)</p> <p><b>Unacceptable (2)</b></p> <p><b>ALARP Measure would result in a revised Safety Risk of Improbable (4) and a revised Safety Criteria of Review (8):</b></p> <ul style="list-style-type: none"> <li>• Class G visibility restriction/exemption for 5km.</li> <li>• Speed restriction introduced to prevent light/medium fast aircraft transiting.</li> </ul> <p><b>Additional ALARP measures would result in a revised Safety Risk of Extremely Improbable (5) and a revised Safety Criteria of Acceptable (10):</b></p> <ul style="list-style-type: none"> <li>• Mandatory TMZ/RMZ.</li> <li>• Mandatory Electronic Conspicuity (EC).</li> <li>• LARS service introduced for MLLR.</li> </ul>
<p><b>Hazard 3.3</b></p> <p><b>What is the Safety Risk?</b> <i>(The probability of the hazard occurring.)</i></p> <p><b>If the hazard did occur, what would be its Severity Classification?</b> <i>(The harmful effect that may result.)</i></p> <p><b>What would be the resultant Safety Criteria?</b> <i>(Safety Risk x Severity, i.e. Tolerability)</i></p> <p><b>Proposed Safety Requirements:</b> <i>(Mitigations)</i></p> <p><b>Revised Safety Risk after Safety Requirements applied:</b> <i>(The revised probability of the hazard occurring.)</i></p> <p><b>Revised Safety Criteria after Safety Requirements are met:</b> <i>(Residual Tolerability)</i></p>	<p><b>Reduction in time for see and avoid within confines of the MLLR resulting in MAC.</b></p> <p>Frequent (1)</p> <p>Serious Incident (2)</p> <p><b>Unacceptable (2)</b></p> <ul style="list-style-type: none"> <li>• Airmanship/threat and error management.</li> <li>• Class G see and avoid principles could be promulgated via AIP enroute section.</li> </ul> <p>Remote (3)</p> <p><b>Unacceptable (6)</b></p> <p><b>ALARP Measure would result in a revised Safety Risk of Improbable (4) and a revised Safety Criteria of Review (8):</b></p> <ul style="list-style-type: none"> <li>• Class G visibility restriction/exemption for 5km.</li> </ul> <p><b>Additional ALARP measures would result in a revised Safety Risk of Extremely Improbable (5) and a revised Safety Criteria of Acceptable (10):</b></p> <ul style="list-style-type: none"> <li>• Mandatory TMZ/RMZ.</li> </ul>

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<p><b>Hazard 3.4</b></p> <p><b>What is the Safety Risk?</b> <i>(The probability of the hazard occurring.)</i></p> <p><b>If the hazard did occur, what would be its Severity Classification?</b> <i>(The harmful effect that may result.)</i></p> <p><b>What would be the resultant Safety Criteria?</b> <i>(Safety Risk x Severity, i.e. Tolerability)</i></p> <p><b>Proposed Safety Requirements:</b> <i>(Mitigations)</i></p> <p><b>Revised Safety Risk after Safety Requirements applied:</b> <i>(The revised probability of the hazard occurring.)</i></p> <p><b>Revised Safety Criteria after Safety Requirements are met:</b> <i>(Residual Tolerability)</i></p>	<ul style="list-style-type: none"> <li>• Mandatory Electronic Conspicuity (EC).</li> </ul> <p><b>Increased navigational difficulty with reduced Class G VFR visibility minima (1500m).</b></p> <p><i>Note: Any change made needs to be as safe or safer than the current operation. A change to Class G without a visibility exemption would reduce safety. Currently aircraft in 1500m visibility in the MLLR shall request and receive a radar control service from MAN.</i></p> <p>Frequent (1)</p> <p>Major Incident (3)</p> <p><b>Unacceptable (3)</b></p> <ul style="list-style-type: none"> <li>• Airmanship/threat and error management.</li> <li>• Use of moving maps for navigation.</li> </ul> <p>Occasional (2)</p> <p><b>Unacceptable (6)</b></p> <p><b>ALARP Measure would result in a revised Safety Risk of Remote (3) and a revised Safety Criteria of Review (9):</b></p> <ul style="list-style-type: none"> <li>• Class G visibility restriction/exemption for 5km.</li> <li>• Speed restriction introduced.</li> </ul> <p><b>Additional ALARP measures would result in a revised Safety Risk of Improbable (4) and a revised Safety Criteria of Acceptable (12):</b></p> <ul style="list-style-type: none"> <li>• Mandatory TMZ/RMZ.</li> <li>• Mandatory Electronic Conspicuity (EC).</li> <li>• LARS service introduced for MLLR.</li> </ul>
<p><b>Hazard 3.5</b></p> <p><b>What is the Safety Risk?</b> <i>(The probability of the hazard occurring.)</i></p> <p><b>If the hazard did occur, what would be its Severity Classification?</b> <i>(The harmful effect that may result.)</i></p> <p><b>What would be the resultant Safety Criteria?</b> <i>(Safety Risk x Severity, i.e. Tolerability)</i></p> <p><b>Proposed Safety Requirements:</b> <i>(Mitigations)</i></p> <p><b>Revised Safety Risk after Safety Requirements applied:</b></p>	<p><b>When an aircraft needs to land clear, the reduction in VFR visibility minima from Class D (5km) to Class G (1500m) impacts the pilot's ability to do so.</b></p> <p>Occasional (2)</p> <p>Serious Incident (2)</p> <p><b>Unacceptable (4)</b></p> <ul style="list-style-type: none"> <li>• Airmanship/threat and error management.</li> <li>• Use of moving maps for navigation.</li> </ul> <p>Occasional (2)</p>

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<p><i>(The revised probability of the hazard occurring.)</i></p> <p><b>Revised Safety Criteria after Safety Requirements are met:</b> <i>(Residual Tolerability)</i></p>	<p><b>Unacceptable (4)</b></p> <p>ALARP Measure would result in a revised Safety Risk of <b>Improbable (4)</b> and a revised Safety Criteria of <b>Review (8)</b>:</p> <ul style="list-style-type: none"> <li>Class G visibility restriction/exemption for 5km.</li> </ul>
<p><b>Hazard 3.6</b></p> <p><b>What is the Safety Risk?</b> <i>(The probability of the hazard occurring.)</i></p> <p><b>If the hazard did occur, what would be its Severity Classification?</b> <i>(The harmful effect that may result.)</i></p> <p><b>What would be the resultant Safety Criteria?</b> <i>(Safety Risk x Severity, i.e. Tolerability)</i></p> <p><b>Proposed Safety Requirements:</b> <i>(Mitigations)</i></p> <p><b>Revised Safety Risk after Safety Requirements applied:</b> <i>(The revised probability of the hazard occurring.)</i></p> <p><b>Revised Safety Criteria after Safety Requirements are met:</b> <i>(Residual Tolerability)</i></p>	<p><b>Increased traffic levels in the MLLR due to change to Class G, resulting in LOS, Airprox or MAC.</b></p> <p>Frequent (1)</p> <p>Significant Incident (4)</p> <p><b>Unacceptable (4)</b></p> <ul style="list-style-type: none"> <li>Airmanship/threat and error management.</li> <li>See and avoid.</li> <li>Keep a listening watch on designated frequency.</li> </ul> <p>Occasional (2)</p> <p><b>Review (8)</b></p> <p>ALARP Measure would result in a revised Safety Risk of <b>Remote (3)</b> and a revised Safety Criteria of <b>Acceptable (12)</b>:</p> <ul style="list-style-type: none"> <li>Class G visibility restriction/exemption for 5km.</li> </ul> <p><b>Additional ALARP measures would result in a revised Safety Risk of Improbable (4) and a revised Safety Criteria of Acceptable (16):</b></p> <ul style="list-style-type: none"> <li>Mandatory TMZ/RMZ.</li> <li>Mandatory Electronic Conspicuity (EC).</li> <li>LARS service introduced for MLLR.</li> </ul>
<p><b>Hazard 3.7</b></p> <p><b>What is the Safety Risk?</b> <i>(The probability of the hazard occurring.)</i></p> <p><b>If the hazard did occur, what would be its Severity Classification?</b> <i>(The harmful effect that may result.)</i></p> <p><b>What would be the resultant Safety Criteria?</b> <i>(Safety Risk x Severity, i.e. Tolerability)</i></p> <p><b>Proposed Safety Requirements:</b> <i>(Mitigations)</i></p>	<p><b>Workload increase for Liverpool ATCOs due to more GA requests for UK FIS, particularly in marginal weather conditions.</b></p> <p>Frequent (1)</p> <p>Significant Incident (4)</p> <p><b>Unacceptable (4)</b></p> <ul style="list-style-type: none"> <li>Potential for ATCO to decline request for UK FIS due to controller workload and no LARS provided by Liverpool.</li> <li>Zone transit refusals due to controller workload.</li> <li>Keep a listening watch on designated frequency.</li> <li>Introduce conspicuity squawks with local radar units.</li> </ul>

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<p><b>Revised Safety Risk after Safety Requirements applied:</b> <i>(The revised probability of the hazard occurring.)</i></p> <p><b>Revised Safety Criteria after Safety Requirements are met:</b> <i>(Residual Tolerability)</i></p>	<p>Occasional (2)</p> <p><b>Review (8)</b></p> <p><b>ALARP Measure would result in a revised Safety Risk of Remote (3) and a revised Safety Criteria of <b>Acceptable (12)</b>:</b></p> <ul style="list-style-type: none"> <li>• Mandatory TMZ/RMZ.</li> <li>• Mandatory Electronic Conspicuity (EC).</li> <li>• LARS service introduced for MLLR.</li> </ul>
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<p><b>Option 4</b></p> <p><b>Hazard 4.1</b></p> <p><b>What is the Safety Risk?</b> <i>(The probability of the hazard occurring.)</i></p> <p><b>If the hazard did occur, what would be its Severity Classification?</b> <i>(The harmful effect that may result.)</i></p> <p><b>What would be the resultant Safety Criteria?</b> <i>(Safety Risk x Severity, i.e. Tolerability)</i></p> <p><b>Proposed Safety Requirements:</b> <i>(Mitigations)</i></p> <p><b>Revised Safety Risk after Safety Requirements applied:</b> <i>(The revised probability of the hazard occurring.)</i></p> <p><b>Revised Safety Criteria after Safety Requirements are met:</b> <i>(Residual Tolerability)</i></p>	<p><b>Conversion to Class G would permit the use of any pressure setting.</b></p> <p><b>Unable to define the vertical boundary of MLLR (ceiling of Class G/base of Class D) without reference to one specific pressure setting.</b></p> <p>Note: Generally there is no more than 2 hPa difference between LPL and MAN QNHs (60ft), however, the Barnsley RPS can be up to 7 hPa lower resulting in up to 210ft difference.</p> <p>Frequent (1)</p> <p>Serious Incident (2)</p> <p><b>Unacceptable (2)</b></p> <ul style="list-style-type: none"> <li>• Controllers could give traffic information/avoiding action if transponding MLLR traffic is observed to be relevant.</li> <li>• Commercial operators equipped with TCAS.</li> </ul> <p>Frequent (1)</p> <p><b>Unacceptable (2)</b></p> <p><b>ALARP Measure would result in a revised Safety Risk of Improbable (4) and a revised Safety Criteria of Review (8):</b></p> <ul style="list-style-type: none"> <li>• Mandate the use of a single pressure setting within MLLR.</li> </ul> <p>Note: Use of Liverpool QNH would be preferred due to proximity of Liverpool commercial traffic being vectored directly above the MLLR at lower altitudes.</p>
<p><b>Hazard 4.2</b></p> <p><b>What is the Safety Risk?</b> <i>(The probability of the hazard occurring.)</i></p> <p><b>If the hazard did occur, what would be its Severity Classification?</b> <i>(The harmful effect that may result.)</i></p>	<p><b>Aircraft not flying on Liverpool's QNH could result in reduced vertical separation between VFR within MLLR and IFR commercial operations above.</b></p> <p>Note: Liverpool Rwy27 inbound instrument traffic operates over the top of the MLLR with a minimum of 500ft separation, so an additional 60ft (MAN QNH) would reduce that separation to 440ft, and an additional 210ft (Barnsley RPS) would reduce that separation to 290ft.</p> <p>Frequent (1)</p> <p>Serious Incident (2)</p> <p><b>Unacceptable (2)</b></p>

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<p><b>What would be the resultant Safety Criteria?</b> <i>(Safety Risk x Severity, i.e. Tolerability)</i></p> <p><b>Proposed Safety Requirements:</b> <i>(Mitigations)</i></p> <p><b>Revised Safety Risk after Safety Requirements applied:</b> <i>(The revised probability of the hazard occurring.)</i></p> <p><b>Revised Safety Criteria after Safety Requirements are met:</b> <i>(Residual Tolerability)</i></p>	<ul style="list-style-type: none"> <li>• Controllers could give traffic information/avoiding action if transponding MLLR traffic is observed to be relevant.</li> <li>• Commercial operators equipped with TCAS.</li> </ul> <p>Frequent (1)</p> <p><b>Unacceptable (2)</b></p> <p><b>ALARP Measure would result in a revised Safety Risk of Improbable (4) and a revised Safety Criteria of Review (8):</b></p> <ul style="list-style-type: none"> <li>• Mandate the use of a single pressure setting within MLLR.</li> </ul> <p>Note: Use of Liverpool QNH would be preferred due to proximity of Liverpool commercial traffic being vectored directly above the MLLR.</p> <p><b>Additional ALARP Measure would result in a revised Safety Risk of Extremely Improbable (5) and a revised Safety Criteria of Acceptable (10):</b></p> <ul style="list-style-type: none"> <li>• Mandatory TMZ/RMZ.</li> <li>• Mandatory Electronic Conspicuity (EC).</li> <li>• LARS service introduced for MLLR.</li> </ul>
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**ATS HAZARD IDENTIFICATION - RISK ANALYSIS FORM**

<p><b>Hazard No.5</b></p> <p><b>Hazard 5.1</b></p> <p><b>What is the Safety Risk?</b> <i>(The probability of the hazard occurring.)</i></p> <p><b>If the hazard did occur, what would be its Severity Classification?</b> <i>(The harmful effect that may result.)</i></p> <p><b>What would be the resultant Safety Criteria?</b> <i>(Safety Risk x Severity, i.e. Tolerability)</i></p> <p><b>Proposed Safety Requirements:</b> <i>(Mitigations)</i></p> <p><b>Revised Safety Risk after Safety Requirements applied:</b> <i>(The revised probability of the hazard occurring.)</i></p> <p><b>Revised Safety Criteria after Safety Requirements are met:</b> <i>(Residual Tolerability)</i></p>	<p><b>Raising the Upper Vertical Limit of MLLR by 200ft from 1300ft to 1500ft AMSL</b></p> <p>Significant reduction in vertical separation against Liverpool inbound instrument traffic to Rwy27 which will be at 2000ft or sometimes 1800ft on Liverpool QNH results in increased TCAS alerts, distraction events, Loss of separation, airspace infringements and MAC.</p> <p>Frequent (1)</p> <p>Serious Incident (2)</p> <p><b>Unacceptable (2)</b></p> <ul style="list-style-type: none"> <li>• Controllers could give traffic information/avoiding action if transponding MLLR traffic is observed to be relevant.</li> <li>• Approach controllers could retain inbound aircraft on radar frequency till clear of the corridor in the event that traffic to affect is observed (Increased workload for pilot and controller).</li> <li>• Commercial operators equipped with TCAS (not all operators fitted).</li> </ul> <p>Note: Currently, instrument approach charts for LPL show that aircraft need to be at 2000ft by 5.9D to meet 3deg descent profile. The current western edge of the MLLR is 7.3nm from 27 threshold.</p> <p>Frequent (1)</p> <p><b>Unacceptable (2)</b></p> <p><b>ALARP Measure would result in a revised Safety Risk of Improbable (4) and a revised Safety Criteria of Review (8):</b></p> <ul style="list-style-type: none"> <li>• Suspension of current LPL-MAN interface procedures enables LPL to utilise all of its delegated airspace, which includes Area F up to 2500ft north abeam the extended centreline for rwy 27.</li> <li>• Agreement could be made that Liverpool is permitted to utilise the airspace above the MLLR south of the extended centreline for rwy 27 up to 2500ft (including in Area E).</li> </ul> <p><b>Additional ALARP Measure would result in a revised Safety Risk of Extremely Improbable (5) and a revised Safety Criteria of Acceptable (10).</b></p> <ul style="list-style-type: none"> <li>• A change to LPL's 27 Final Approach Fix/UVERI would maintain the vertical separation above the MLLR and reduce the operational impact of LPL traffic being higher over the MLLR and then having to descend by 5.9D,</li> </ul>
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### ATS HAZARD IDENTIFICATION - RISK ANALYSIS FORM

	<p>however, this may require an ACP.</p> <p><i>Note: commercial aircraft conducting a visual approach into runway 27 may be at the base of Liverpool's delegated airspace in areas E/F and therefore with the increase in vertical limit to the MLLR, the space available between MLLR traffic and commercial inbound traffic is eroded. This would require enhanced monitoring from LJA Radar for all visual approaches to 27.</i></p>



**ATS HAZARD IDENTIFICATION - RISK ANALYSIS FORM**

<p><b>Option 6</b></p> <p><b>Hazard 6.1</b></p> <p><b>What is the Safety Risk?</b> <i>(The probability of the hazard occurring.)</i></p> <p><b>If the hazard did occur, what would be its Severity Classification?</b> <i>(The harmful effect that may result.)</i></p> <p><b>What would be the resultant Safety Criteria?</b> <i>(Safety Risk x Severity, i.e. Tolerability)</i></p> <p><b>Proposed Safety Requirements:</b> <i>(Mitigations)</i></p> <p><b>Revised Safety Risk after Safety Requirements applied:</b> <i>(The revised probability of the hazard occurring.)</i></p> <p><b>Revised Safety Criteria after Safety Requirements are met:</b> <i>(Residual Tolerability)</i></p>	<p><b>Extending the lateral boundaries to the West.</b></p> <p><b>Moving the entire western edge of MLLR closer to Liverpool would bring MLLR traffic and Liverpool IFR and VFR traffic into closer proximity.</b></p> <p>Frequent (1)</p> <p>Serious Incident (2)</p> <p><b>Unacceptable (2)</b></p> <ul style="list-style-type: none"> <li>• Controllers could give traffic information/avoiding action if transponding MLLR traffic is observed to be relevant.</li> <li>• Approach controllers could retain inbound aircraft on radar frequency till clear of the corridor in the event that traffic to affect is observed (Increased workload for pilot and controller).</li> <li>• Commercial operators equipped with TCAS (not all operators fitted).</li> </ul> <p>Frequent (1)</p> <p><b>Unacceptable (2)</b></p> <p>Note: no reduction in safety criteria. This option would be unacceptable to Liverpool ATC for the following reasons:</p> <ul style="list-style-type: none"> <li>• MLLR traffic would encroach and could be inside the final approach fix at 5.9D conflicting with inbound instrument traffic.</li> <li>• Extending the lateral boundary would result in Liverpool APS retaining inbound instrument traffic for longer in order to ensure safety against unknown traffic is maintained. This would result in increased workload for both the controller and pilot due to reduction in the time from transfer from radar to tower.</li> <li>• Visual approaches into runway 27 would be impacted due to increased risk of an airprox with unknown traffic in the MLLR (enhanced monitoring required).</li> <li>• Moving the entire western edge of MLLR closer to Liverpool would increase the risk of unstable approaches for runway 27.</li> </ul> <p>Additional: MAN/LPL Interface Procedures based on geographically defined position of the MLLR so any lateral movement in this would require a review and update of these procedures. The MLLR western boundary is the boundary between Manchester and Liverpool CTRs so would a change to the lateral limits require an ACP?</p>
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## ATS HAZARD IDENTIFICATION - RISK ANALYSIS FORM

<p><b>Hazard 6.2</b></p> <p><b>What is the Safety Risk?</b> <i>(The probability of the hazard occurring.)</i></p> <p><b>If the hazard did occur, what would be its Severity Classification?</b> <i>(The harmful effect that may result.)</i></p> <p><b>What would be the resultant Safety Criteria?</b> <i>(Safety Risk x Severity, i.e. Tolerability)</i></p> <p><b>Proposed Safety Requirements:</b> <i>(Mitigations)</i></p> <p><b>Revised Safety Risk after Safety Requirements applied:</b> <i>(The revised probability of the hazard occurring.)</i></p> <p><b>Revised Safety Criteria after Safety Requirements are met:</b> <i>(Residual Tolerability)</i></p>	<p><b>Creating a fan on south western corner of MLLR would reduce the available space for Liverpool VFR inbound and outbound traffic and create congestion around Tarporley Roundabout.</b></p> <p>Frequent (1)</p> <p>Major Incident (3)</p> <p><b>Unacceptable (3)</b></p> <ul style="list-style-type: none"> <li>VFR see and avoid principle.</li> <li>Traffic information passed by controllers.</li> <li>Controllers to instruct aircraft entering/exiting the CTR to do so to the west of Tarporley Roundabout similar to how instruction was provided when Oulton Park VRP was in use. (However this then increases congestion towards Vicars Cross Roundabout VRP and further reduces the space between entry and exit lanes).</li> <li>VFR traffic not given clearance to enter or exit to the south.</li> </ul> <p>Frequent (1)</p> <p><b>Unacceptable (3)</b></p> <p>ALARP Measure with undetermined revised safety criteria:</p> <ul style="list-style-type: none"> <li>Review of all entry/exit LJLA VRPs and lanes.</li> </ul>
<p><b>Hazard 6.3</b></p> <p><b>What is the Safety Risk?</b> <i>(The probability of the hazard occurring.)</i></p> <p><b>If the hazard did occur, what would be its Severity Classification?</b> <i>(The harmful effect that may result.)</i></p> <p><b>What would be the resultant Safety Criteria?</b> <i>(Safety Risk x Severity, i.e. Tolerability)</i></p> <p><b>Proposed Safety Requirements:</b> <i>(Mitigations)</i></p> <p><b>Revised Safety Risk after Safety Requirements applied:</b> <i>(The revised probability of the hazard occurring.)</i></p>	<p><b>Reducing the space available around the outside of the Hawarden RMA when Liverpool also have VFR traffic in the area.</b></p> <p>Frequent (1)</p> <p>Major Incident (3)</p> <p><b>Unacceptable (3)</b></p> <ul style="list-style-type: none"> <li>VFR see and avoid principle.</li> <li>Traffic information passed by controllers.</li> <li>RMA not given if traffic to affect (potentially cease HAW operations so not a practical solution).</li> <li>VFR traffic not given clearance to enter or exit to the south (potentially cease Liverpool VFR operations so not a practical solution).</li> </ul> <p>Occasional (2)</p>

### ATS HAZARD IDENTIFICATION - RISK ANALYSIS FORM

<b>Revised Safety Criteria after Safety Requirements are met:</b> <i>(Residual Tolerability)</i>	<p style="color: red; font-weight: bold;">Unacceptable (3)</p> <p>Note: When the Hawarden RMA is delegated by Liverpool APS, the available lateral limit for inbound VFR aircraft into the Liverpool CTR via Tarporley Roundabout is already constrained to approximately 1.84nm, in the event of an extension to the lateral boundary of the MLLR, Liverpool will be forced to suspend all VFR operations to the south.</p>
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<b>Option 7</b>	<p><b>Do nothing - extend the Class D Exemption.</b></p> <p>Refer to LILA RA 058-2023.</p> <p>Lowest revised safety criteria: <span style="background-color: green; color: white; padding: 2px;">Acceptable (12)</span></p>
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<b>PART 3 – APPROVAL</b> [by HATS, (D)ATSM, USMO, UTCO, Watch Sup, SM, COSM, ATE TSM or SATE when final Safety Criteria score is ‘Acceptable’]			
<b>Remarks/Actions:</b>  <b>IF EXTERNAL PARTIES ARE INVOLVED, NOTE HERE THE DATE THE COMPLETED RA WAS SENT TO THEM.</b>	This RA has been complied as part of a request from the CAA to Impact Assess proposed changes to the MLLR.		
<b>Retention Period:</b>	<b>5 Years</b>		
<b>Safety Performance Monitoring:</b>  <i>(Specify Review Period here if non-standard.)</i>			
<b>Approved: NO</b>	<b>Signature:</b>	<b>Name and Post:</b>	<b>Date:</b>

<b>PART 4 – ENDORSEMENT</b> [by HATS, (D)ATSM or ATE TSM when final Safety Criteria score is ‘Review’]			
<b>Endorsed: NO</b>	<b>Signature:</b> <div style="background-color: black; width: 100px; height: 40px; margin: 5px auto;"></div>	<b>Name and Post:</b> <div style="background-color: black; width: 100px; height: 15px; margin: 5px auto;"></div>	<b>Date:</b> <b>26 Oct 23</b>

<b>Please note:</b>
<p>‘Unacceptable’ Safety Criteria must not be endorsed – if the final Safety Criteria score is Unacceptable, the activity must not go ahead. The system must be reworked to achieve a final Safety Criteria score of Review or Acceptable.</p> <p>If any actions are arising from this Risk Analysis, please add the details to the unit Register of Non-Compliances and Action Tracker.</p>