NPA/24/54

Title of Proposal: 3000 Series

RA(s) or Manual Chapter(s): RA 1010 - Head of Establishment Aviation Responsibilities and Aviation Duty Holder / Accountable Manager (Military Flying) Establishment Responsibilities; RA 3536 – Domestic Helicopter Landing Sites; RA 3531 – Permanent Helicopter Landing Sites – Physical Characteristics; RA 3532 – Permanent Helicopter Landing Sites – Obstacle Environment; RA 3535 – Helicopter Landing Site - Lighting

Organizations and / or business sectors affected: StratCom, 2Gp, JAC, Navy FGen, DIO

RFC Serial No: MAA_RFC_2023_218; MAA_RFC_2023_220

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MAA Independent

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MAA LegAd (if required)

Post	Name	Rank	Signature
N/A	N/A	N/A	N/A

Cross-references to Other Documents or Relevant Sources

Other MRP Amendments: N/A

Service Inquiry Recommendations: N/A

AAIB Recommendations: N/A

Other Investigation Recommendations: N/A

Any Other Document: N/A

Feedback Notes for the Regulated Community

The Regulated Community are invited to offer feedback about the proposed amendment in the following areas:

- Air or Flight Safety impact
- Operational impact
- Errors or omissions
- Timescale for implementation
- Cost of implementation
- Amendment to internal processes/orders
- Resourcing the outcome of change
- (Contract amendments because of the change)

The format for feedback is available within a single Excel Template file on both internal and external MAA websites; it is important to use this format to ensure that your responses are considered and answered correctly.

Summary of Proposed Amendment

Objective: Within RA 1010, clarify the Regulatory obligations for Heads of Establishment (HoE) where a Domestic HLS is provided. Update and expand RA 3536 to provide clear and detailed direction on the requirements for providing a Domestic HLS, and the establishment of an HLS Custodian.

It is envisaged that these Regulatory amendments will reduce burden on the HoE where a Domestic HLS is provided, without causing a Safety deficit. Concurrently, with an uplift in the D&G provided in RA 3536, HoEs will have increased flexibility to use judgement in applying proportionate safeguards based on the facility they are providing and the complexity of activity to be supported.

Changes made:

1. RA 1010 has been amended to introduce ‘Tier 5’ catering specifically for Domestic HLSs, whilst reducing the corresponding Regulatory compliance burden, to ensure that it is proportionate to the activity being supported.

2. The use of ‘tactical or non-permanent HLS’ within the MOD estate for training, exercises or operational reasons, has been incorporated alongside TLZ arrangements, and divorced from the Domestic HLS construct. This is, again, to ensure proportionate regulatory oversight and to remove confusion between these different types of activity. RA 3536 now has a ‘Scope’ section to emphasise and reinforce this point.

3. RA 3536 has been completely re-drafted and re-organised. The principal changes are:

   a. Simplify Domestic HLS into two sub-groups, which are based on the type of facility being provided, rather than the previous reference to frequency of use.

b. Elements of Domestic HLS requirements that appeared throughout the RA3530 series have been incorporated into RA 3536, to make it a more accessible volume and reduce the need for multiple cross-referencing to other documents. Accordingly, RA 3531, RA 3532 and RA 3535 are presented with Domestic HLS elements withdrawn.

c. The requirement for a HLS Custodian has been introduced.

Impact Assessment: Low

Consultation Period Ends: 4 weeks from date of NPA

The consultation period for this proposed amendment ends on the stated date. Please send your feedback, using the Response Form, via email to DSA-MAA-MRPEnquiries@mod.gov.uk

MAA Approval

Post	Name	Rank	Signature
DSA-MAA-Reg-DepHd	Redacted	Redacted	Redacted - Original Signed

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RA 1010 - Head of Establishment Aviation Responsibilities and Aviation Duty Holder / Accountable Manager (Military Flying) Establishment Responsibilities

Rationale

The Head of Establishment (HoE[1]) is responsible for providing a Safe Operating Environment (SOE) for Air Systems in order to meet their Aviation Duty Holder-Facing / Accountable Manager (Military Flying) Facing (AA-Facing Organizations) Responsibilities[2]. Failure to provide an SOE could present Hazards that introduce new or increased Risk to Life (RtL) into an Aviation Duty Holder's (ADH's) / Accountable Manager's (Military Flying) (AM(MF)'s) operation, which is likely to affect their Air System Safety Case (ASSC)[3]. This RA defines the classification tiers an HoE will comply with to ensure that the correct regulatory framework is applied and that they meet their legal duty of care Responsibilities in supporting aviation activities. This RA also ensures that ADHs / AM(MF)s assess the suitability of all MOD and non-MOD establishments used by Air Systems for which they have a Responsibility for RtL.

Contents

Definitions

Definitions Relevant to this RA

1. ►◄

Regulation 1010(1)

Classification Tier of Establishment

1010(1) The HoE **shall** determine the classification tier of their establishment in accordance with (iaw) the aviation activity that is undertaken.

Acceptable Means of Compliance 1010(1)

Classification Tier of Establishment

Tier 1 establishment

2. Any MOD Aerodrome, or unlicensed non-MOD Aerodrome[4] where permanently based ADH / AM(MF) aviation activity is undertaken, or HM Aircraft Carrier, **should** be classified as a Tier 1 establishment.

[1] Refer to MAA02 – MAA Master Glossary. Note that the MAA02 definition of HoE requires all MOD establishments to have an HoE and, for the context of this ►Regulatory Article (RA),◄ where a Defence Contractor Flying Organization is also the operator of an unlicensed non-MOD Aerodrome then by definition an HoE will be in place. Additionally, the term HoE also includes Commanding Officers of aviation capable His Majesty's (HM) / MOD Ships.
[2] Refer to RA 1032 – Aviation Duty Holder-Facing Organizations and Accountable Manager (Military Flying)-Facing Organizations – Roles and Responsibilities.
[3] Refer to RA 1205 – Air System Safety Cases.
[4] In the context of this RA, unlicensed non-MOD aerodromes includes Heliports and Helicopter Landing Sites (HLS) and in addition, refer to RA 1010(1) paragraph ►10◄.

Acceptable Means of Compliance 1010(1)

Tier 2 establishment

3. Any MOD Aerodrome, except a Temporary Landing Zone (TLZ), used for casual ADH / AM(MF) Fixed-Wing (FW) aviation activity and / or where recreational flying[5] is the primary activity **should** be classified as a Tier 2 establishment.

Note:

If also used for casual ADH / AM(MF) Rotary Wing (RW) aviation activity, Tier 3 requirements **should** also be complied with.

Tier 3 establishment

4. Any MOD Aerodrome (including ►a permanent◄ HLS ►[6]◄) or aviation capable[7] HM / MOD Ship that is only used for casual ADH / AM(MF) RW aviation activity **should** be classified as a Tier 3 establishment.

Tier 4 establishment

5. Any MOD establishment at which aviation activity takes place, but where the purpose of the activity or receipt of aviation service is not directly related to landing or take-off[8] **should** be classified as a Tier 4 establishment. If the establishment can facilitate the landing of FW or RW Aircraft then ►the corresponding Tier requirements◄ **should** also be complied with.

►Tier 5 establishment

6. Any MOD Domestic HLS **should** be classified as a Tier 5 establishment[9].◄

General – All Tiers

7. When a TLZ is located at an establishment iaw RA 3550[10], ►or the establishment is supporting tactical and / or non-permanent HLS operations that do not constitute the provision of a Permanent or Domestic HLS,◄ the ADH / AM(MF) **should** co-ordinate the duty of care and SOE Responsibility in conjunction with the HoE[11] for the duration of the activity. The ADH / AM(MF) **should** also produce and record a formalized agreement for HoE approval.

8. Any MOD establishment or aviation capable HM / MOD Ship considering the use of a Remotely Piloted Air System (RPAS) as the only activity, **should** consult the Military Aviation Authority (MAA)►◄ to discuss the regulatory requirements with regards to the provision of an SOE.

9. This Regulation also applies to any MOD ►establishment◄ at which operations involve only civil registered Aircraft that are being used for MOD activity. Where this is applicable, the HoE **should** consult the MAA►◄ to confirm the appropriate classification tier.

10. For non-MOD ►establishments◄, this RA **should** only apply to those that are operated by, or are the direct concern of a Contractor Flying Approved Organization Scheme (CFAOS) organization (whether owned or otherwise), or where the AM(MF) has a direct / individual Responsibility (through contract or otherwise). ADH / AM(MF)s **should** contact the MAA for advice regarding the regulatory framework for any other unlicensed non-MOD ►establishments◄ where permanently based ADH / AM(MF) activity is undertaken.

11. The HoE **should** ensure that the classification tier for their establishment is promulgated to the relevant ADHs and / or AM(MF)s, Front Line Commands (FLC) and / or ►AA-Facing organizations.◄

[5] In the context of this RA, recreational flying is considered to be flight in privately-owned civil registered Aircraft, such as at flying clubs, etc, operated by civilian personnel or MOD personnel outwith their MOD duties.
[6] ►For HLS Definitions, refer to RA 3530 – Helicopter Landing Site – Reference Information.◄
[7] Aviation capable Ships are defined as those which can be categorized as Applicability Level A, B or C in Defence Standard 00-133.
[8] For example, Air / Sea / Land Weapon Ranges and Electronic Warfare Ranges.
[9] ►Refer to RA 3530 – Permanent Helicopter Landing Sites – Reference Information and RA 3536 – Domestic Helicopter Landing Sites.◄
[10] Refer to RA 3550 – Temporary Landing Zone.
[11] The HoE **should** retain legal accountability of the establishment; however, the ADH / AM(MF) **should** provide an aviation Suitably Qualified and Experienced Person (SQEP) to support.

Guidance Material 1010(1)

Classification Tier of Establishment

12. If required, the HoE can refer to Annex A, Figure 1 to assist in determining the appropriate classification tier of their establishment.

13. RA 1010(1-►6◄) does not apply to any ►establishment◄ that is licensed or certified by another recognized body (such as the UK Civil Aviation Authority (CAA), European Union Aviation Safety Agency (EASA), Federal Aviation Administration (FAA) etc).

14. ►Where an establishment is regularly used for tactical activity, as described in para 7, the requisite agreements between the HoE and ADH / AM(MF) can cover a specified period and do not have to be renewed every time activity takes place.◄

Regulation 1010(2)

Head of Establishment - Aviation Responsibilities for all Tiers

1010(2) The HoE **shall** provide an SOE to support aviation activity that is reliant on the aviation services provided by the establishment.

Acceptable Means of Compliance 1010(2)

Head of Establishment - Aviation Responsibilities for all Tiers

15. Prior to appointment, and iaw the classification tier of their establishment, the HoE **should** complete:

a. ►Tiers 1-2:◄ The Duty Holders Air Safety Course[12], or the Contractor Flying Air Safety Course[12], whichever is applicable ►◄.

b. ►Tiers 3-4:◄ The Aerodrome Operators Study Period (AOSP)[13,14]►◄.

16. The HoE **should** ensure:

a. They have an effective knowledge and understanding of the MAA Regulatory Publications (MRP) that prescribe relevant Safety standards, practices and the principles of Risk Management. In addition, the HoE **should** know how they are applied and understand the importance of maintaining effective relationships with all relevant stakeholders at their establishment.

b. An Air Safety Management System is established and maintained iaw RA 1200[15] ►(Tiers 1-4 only).◄

c. Assurance is conducted to provide evidence to the ADH / AM(MF) that an SOE is in place and being maintained, in support of the ADH / AM(MF) ASSCs[3].

d. Alternate safe operating practices are in place when / where aviation activity occurs at establishments that do not require an Aerodrome Operator (AO) or Aerodrome Supervisor (Recreational Flying) (AS(RF)).

17. Before approving civil RPAS activity at their establishment the HoE[1] **should** be content that the security and Safety Risks relating to the proposed activity have been assessed, that there are appropriate controls in place and that the RPAS operator has any necessary CAA Operational Authorization, Flyer Identification (ID) and Operator ID[16].

18. Prior to granting permission for civil registered, non-military Aircraft[17] to utilize their establishment, the HoE **should** assure themselves that the operators are compliant with the Air Navigation Order (ANO) or if operating overseas, the relevant national civil aviation Regulations.

19. The HoE **should** ensure any Modifications or work carried out within their establishment, that could affect the SOE, are conducted by an appropriate and

[12] Refer to RA 1440 – Air Safety Training.
[13] Or Royal Navy equivalent.
[14] Applicable only if arrived in post after June 2022 when AOSP was implemented but, this does not preclude an HoE that falls outside this bracket from attending.
[15] Refer to RA 1200 – Air Safety Management.
[16] Refer to 'The Drone and Model Aircraft Code' on the CAA website (https://register-drones.caa.co.uk/drone-code) for further details on Flier ID and Operator ID and CAP 722 – Unmanned Aircraft System Operations in UK Airspace – Policy and Guidance.
[17] Excluding Operations under RA 1166 – UK Civil-Registered Aircraft Utilized ►and Piloted◄ by the Ministry of Defence.

Acceptable Means of Compliance 1010(2)

Competent organization[18] and are completed iaw the relevant regulatory and policy documents.

20. The HoE **should** inform the ADH, AM(MF) and / or other Aircraft operators when a new Hazard or change is identified that might affect the provision of an SOE and where applicable, the associated ASSC[3].

Guidance Material 1010(2)

Head of Establishment - Aviation Responsibilities for all Tiers

21. The HoE may find useful information regarding civil flying through national governing bodies for light Aircraft, microlighting and gliding.

22. Detailed instructions for the use of military airfields, including any insurance requirements and charges to be raised against civil Aircraft operators, are contained in JSP 360[19].

23. ►The Responsibilities detailed at para 20 will often be achieved through direct engagement with the supported ADH / AM(MF). However, where such mechanisms do not exist or cannot reasonably be applied, the HoE will achieve the aim through the timely publication of accurate information in the appropriate Flight Information Publications, or in the shorter term through the use of a Notices to Aviation (NOTAM), Prior Permission Required (PPR) briefings or other appropriate means to notify visiting Aircraft.

24. For Tier 5 Domestic HLS, the HoE is not mandated to attend the Duty Holders Air Safety Course or Aerodrome Operators Study Period but may apply for either course if, based on the volume and / or complexity of RW activity to be accommodated within their Area of Responsibility (AoR), they judge it would enhance their ability to oversee the SOE. If doubt exists, the incumbent is encouraged to contact the MAA to discuss their requirements.◄

Regulation 1010(3)

Tier 1 and Tier 2 (where Recreational Flying is not the Primary Activity) Head of Establishment Responsibilities

1010(3) The HoE **shall** ensure an AO is appointed for all Aerodromes classified as Tier 1 and Tier 2 (where recreational flying[5] is not the primary activity) establishments.

Acceptable Means of Compliance 1010(3)

Tier 1 and Tier 2 (where Recreational Flying is not the Primary Activity) Head of Establishment Responsibilities

25. To ensure an SOE is provided the HoE **should** comply with the Regulations in Annex B[20] ►◄.

26. The HoE **should:**

a. Appoint an AO.

b. Provide the nominated AO with a Letter of Authority (LoA).

27. At MOD Aerodromes the AO **should** be a Crown Servant.

28. At unlicensed non-MOD Aerodromes[4] the AO **should** be an individual of appropriate status and standing, suitably empowered and competent to execute their AO Responsibilities[21].

29. The HoE **should** ensure that a Defence Aerodrome Manual (DAM) is developed and maintained by the AO[22].

[18] Refer to RA 1005(1): General Principles.
[19] JSP 360 – Use of Military Aerodromes by Civil Aircraft.
[20] Commanding Officers of aviation capable HM / MOD Ships **should** comply with BRd 766 where the MRP (1000 or 3000 series Regulation) is not relevant.
[21] Refer to RA 1026 – Aerodrome Operator and Aerodrome Supervisor (Recreational Flying) Roles and Responsibilities.
[22] Refer to RA 1026(2): Aerodrome Operator Responsibilities.

Guidance Material 1010(3)

Tier 1 and Tier 2 (where Recreational Flying is not the Primary Activity) Head of Establishment Responsibilities

30. The HoE may nominate an AO from outside their Chain of Command or Line Management, subject to the agreement of all parties concerned. In such circumstances, the HoE will ensure that the necessary authority and resources are made available to the AO.

31. The nomination of an AO at some Aerodromes will involve the overlap of HoE, ADH / AM(MF), ►AA-Facing organizations◄ and FLC AoR. In these circumstances the nomination and empowerment of the appropriate individual as AO will require co-ordination and agreement between some or all of these agents, as well as the individual's chain of command.

32. The list of AO Responsibilities[22] does not preclude the HoE from assigning the AO additional Responsibility that supports the safe operation of Air Systems.

33. Where doubt exists regarding the compliance requirements of the Regulations in Annex B, HoEs may seek advice from the MAA►◄.

Regulation 1010(4)

Tier 2 Recreational Flying Only Head of Establishment Responsibilities

1010(4) The HoE **shall** ensure an AS(RF) is appointed at Tier 2 establishments where recreational flying[5] is conducted as the primary activity.

Acceptable Means of Compliance 1010(4)

Tier 2 Recreational Flying Only Head of Establishment Responsibilities

34. To ensure an SOE is provided the HoE **should** comply with the Regulations in Annex B[20, 23] ►◄.

35. The HoE **should:**

a. Appoint an AS(RF).

b. Provide the nominated AS(RF) with a LoA.

36. The AS(RF) **should** be a Crown Servant

37. The HoE **should** ensure that an Aerodrome Safe Operating Environment Manual (ASOEM) is developed and maintained by the AS(RF)[24].

Guidance Material 1010(4)

Tier 2 Recreational Flying Only Head of Establishment Responsibilities

38. The list of AS(RF) Responsibilities[24] does not preclude HoE from assigning the AS(RF) additional Responsibility that supports the safe operation of Aircraft.

39. Where doubt exists regarding the compliance requirements of the Regulations in Annex B, HoEs may seek advice from the MAA►◄.

40. In lieu of appointing an AS(RF) to develop and maintain an ASOEM, the HoE may elect to appoint an AO to develop and maintain either an ASOEM or a DAM. The HoE may consult the MAA►◄ as to which document would be the most appropriate.

Regulation 1010(5)

Tier 3 and Tier 4 Head of Establishment Responsibilities

1010(5) The HoE **shall** ensure that provisions are in place to actively manage the SOE at Tier 3 and Tier 4 establishments.

[23] Where an Air Traffic Service (ATS) is provided, the ATS Regulations within Annex B ►◄ **should** also be complied with.
[24] Refer to RA 1026(8): Aerodrome Supervisor (Recreational Flying) Responsibilities.

Acceptable Means of Compliance 1010(5)

Tier 3 and Tier 4 Head of Establishment Responsibilities

41. To ensure an SOE is provided the HoE **should** comply with the Regulations in Annex B[20] ►◄.

Guidance Material 1010(5)

Tier 3 and Tier 4 Head of Establishment Responsibilities

42. There is no requirement to establish an AO[22] at a Tier 3 or Tier 4 establishment but the HoE is not prevented from doing so if it is considered appropriate.

43. To assist with managing the SOE at a Tier 3 or 4 establishment, the HoE may consider appointing a suitable individual to create and maintain an ASOEM[25].

44. Where doubt exists regarding the compliance requirements of the Regulations in Annex B, HoEs may seek advice from the MAA►◄.

Regulation 1010(6)

►Tier 5 Head of Establishment Responsibilities

1010(6) The HoE **shall** ensure that provisions are in place to actively manage the SOE at Tier 5 establishments.

Acceptable Means of Compliance 1010(6)

Tier 5 Head of Establishment Responsibilities

45. The HoE **should** appoint a SQEP as Domestic HLS Custodian, iaw RA 3536[26].

46. To ensure an SOE is provided the HoE **should** comply with the Regulations in Annex B.

Guidance Material 1010(6)

Tier 5 Head of Establishment Responsibilities

47. The HoE may appoint themselves as the Domestic HLS custodian, provided they meet the SQEP criteria in RA 3536[26].

48. To assist with managing the SOE at a Tier 5 establishment, the HoE may consider appointing a suitable individual to create and maintain an ASOEM[25].

49. Where doubt exists regarding the compliance requirements of the Regulations in Annex B, HoEs may seek advice from the MAA.◄

Regulation 1010(7)

Aviation Duty Holder / Accountable Manager (Military Flying) Safe Operating Environment Responsibilities

1010(7) ADHs / AM(MF)s **shall** assess the suitability of any establishment and Aerodrome from which UK Military Registered Air Systems will operate.

Acceptable Means of Compliance 1010(7)

Aviation Duty Holder / Accountable Manager (Military Flying) Safe Operating Environment Responsibilities

50. At a tiered establishment ADHs and AM(MF)s[27] **should** ensure via the HoE, or other relevant personnel or agencies, that an SOE is being provided[28, 29] and appropriate Assurance is taking place to support their ASSC[3].

51. For all other establishments and Aerodromes, ADHs and AM(MF)s[27] **should** consider, via their respective ASSC(s), whether an SOE is being provided prior to commencing operations.

[25] Refer to RA 1026(10): Management of an Aerodrome Safe Operating Environment Manual.
[26] ►Refer to RA 3536 – Domestic Helicopter Landing Sites.◄
[27] Refer to RA 3049 – Defence Contractor Flying Organization Responsibilities for UK Military Air System Operating Locations.
[28] Refer to RA 1020 – Aviation Duty Holder - Roles and Responsibilities.
[29] Refer to ►RA 1028(2)◄: Accountable Manager (Military Flying).

Guidance Material 1010(7)

Aviation Duty Holder / Accountable Manager (Military Flying) Safe Operating Environment Responsibilities

52. Where an establishment or Aerodrome is licenced / certified by another regulatory body (such as EASA), ADHs / AM(MF)s may consider such licencing / Certification as potential evidence towards their ASSC argument that an SOE is being provided.

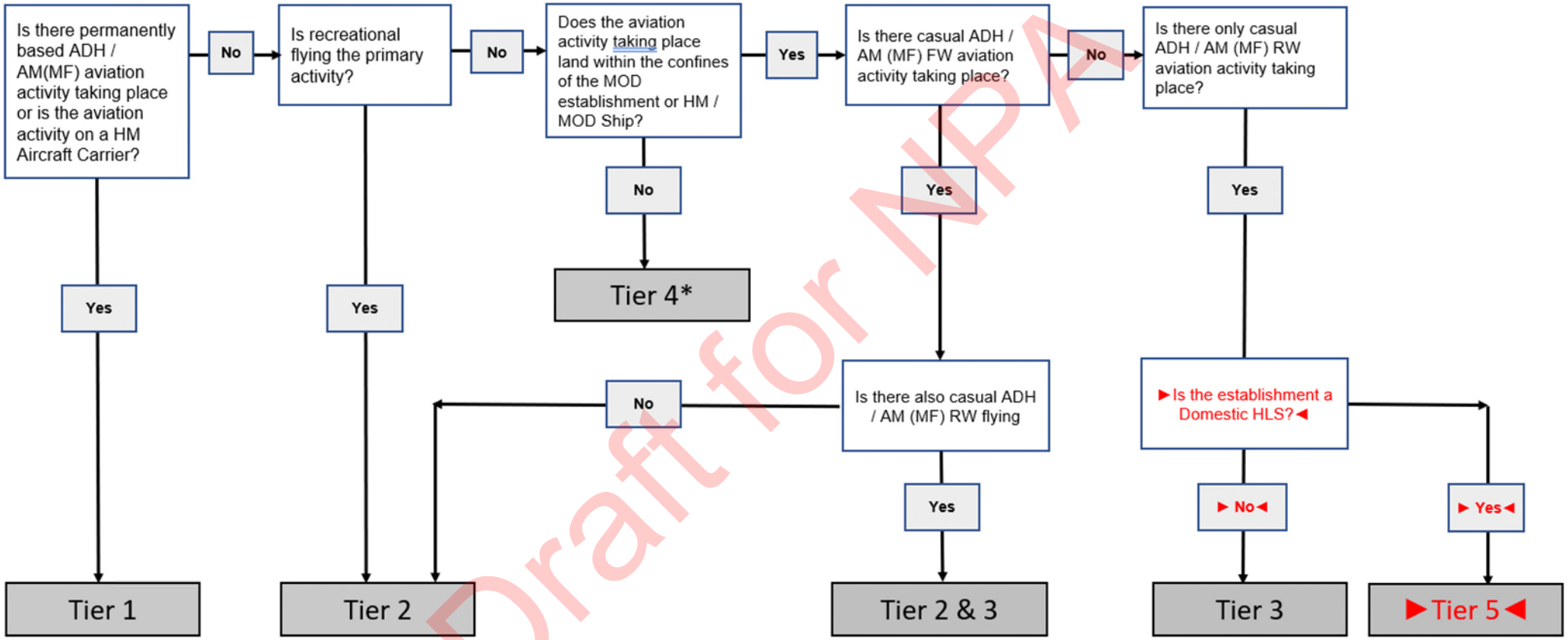
53. ADHs / AM(MF)s may consider the creation and maintenance of a DAM[30] or ASOEM[25] at establishments or Aerodromes where one does not otherwise exist (whichever is deemed most appropriate, in order to support the ASSC[3]).

[30] Refer to RA 1026(4): Management of a Defence Aerodrome Manual and Defence Aerodrome Assurance Framework.

Annex A

Classification Tier of Establishment

Figure 1 – Classification Tier of establishment Flow Chart (for illustrative purposes only – refer to RA 1010(1) for definitive applicability)



*Refer to RA 1010(1) Para 5 to confirm if other classification tiers are also applicable.

►Annex B has been re-formatted for clarity. Change marks are presented for amendments that have been made.◄

Annex B

Head of Establishment Regulatory Article References

Regulation Article (RA)	Tier 1	Tier 2	Tier 3	Tier 4	►Tier 5◄
RA 1026 – Aerodrome Operator and Aerodrome Supervisor (Recreational Flying) Roles and Responsibilities	X	X	X	X	
RA 1030 – Defence Aeronautical Information Management	X	X	X	X	►X◄
RA 1200 – Air Safety Management	X	X	X	X	
RA 1205(4): Responsibilities of Organizations supporting an Air System Safety Case	X	X	X	X	
RA 1240 – Chartering of Civilian Air Systems for Military Purposes	X	X	X	X	
RA 1400 – Flight Safety	X	X	X	X	
RA 1410 – Occurrence Reporting and Management	X	X	X	X	►X◄
RA 1430 – Aircraft Post Crash ►**and Incident**◄ Management and Significant Occurrence Management	X	X	X	X	
RA 1440 – Air Safety Training	X	X	X	X	
RA 1600 Series – Remotely Piloted Air Systems	X	X	X	X	
►RA 1800 – Aerodrome and Air Weapon Range Aviation Activity – Management of Environmental Impacts and Risks◄	►X◄	►X◄	►X◄	►X◄	
RA 2335 – Flying Displays, Display Flying, Role Demonstrations and Flypasts	X	X	X	X	
RA 3136 – Air Traffic Management Equipment Technical Safeguarding	X			X	
RA 3201 – Military Air Traffic Management	X			X	
RA 3203 – Military and MOD Contracted Civilian Controller Medical Requirements	X			X	
RA 3204 – Air Traffic Management Records	X			X	
RA 3207 – Controller Fatigue Management	X			X	
►RA 3208 – Use of Unassured Aircraft Surveillance Data by Controllers◄	►X◄	►X◄		►X◄	
RA 3221 – Enhanced Air Traffic Services Units	X				
RA 3222 – Autonomous Radar Units	X				
►RA 3228 – Separation Standards◄	►X◄			►X◄	
RA 3237 – Royal Low Level Corridors	X			X	
RA 3240 – Contingency Operations for Simultaneous Failure of Surveillance Radars and / or Air Traffic Management Communication Systems	X			X	
RA 3241 – Secondary Surveillance Radar Alone Operations	X			X	

Regulation Article (RA)	Tier 1	Tier 2	Tier 3	Tier 4	►Tier 5◄
RA 3261 – Aerodrome Service	X	X			
RA 3262 – Aerodrome Access	X	X			
RA 3263 – Aerodrome Classification	X	X	X	X	
RA 3264 – Aerodrome Inspections	X	X			
RA 3268 – Aircraft Arresting Systems	X	X			
RA 3270 – Aerodrome Wildlife Control	X	X			
RA 3274 – Low Visibility Procedures	X	X			
►RA 3277 – Wake Turbulence◄	►X◄	►X◄			
►RA 3278 – Snow and Ice Operations◄	►X◄	►X◄			
►RA 3279 – Aircraft Last Look Checks◄	►X◄	►X◄			
RA 3293 – Surveillance Radar Approach	X				
►RA 3302 – Altimeter Settings◄	►X◄	►X◄			
►RA 3311 – Aircraft Emergency and Crash Procedures◄	►X◄	►X◄	►X◄	►X◄	
RA 3500 – Aerodrome Design and Safeguarding	X	X	X		►X◄
RA 3510 – Permanent Fixed Wing Aerodrome - Reference Information	X	X			
RA 3511 – Permanent Fixed Wing Aerodrome - Physical Characteristics	X	X			
RA 3512 – Permanent Fixed Wing Aerodrome - Obstacle Environment	X	X			
RA 3513 – Permanent Fixed Wing Aerodrome - Indicators and Signalling Devices	X	X			
RA 3514 – Permanent Fixed Wing Aerodrome - Markings	X	X			
RA 3515 – Permanent Fixed Wing Aerodrome - Lighting	X	X			
RA 3516 – Permanent Fixed Wing Aerodrome - Signs	X	X	X		
RA 3517 – Permanent Fixed Wing Aerodrome - Markers	X	X			
RA 3518 – Permanent Fixed Wing Aerodrome - Visual Aids for Denoting Obstacles	X	X			
RA 3519 – Permanent Fixed Wing Aerodrome - Visual Aids for Denoting Restricted Use Areas	X	X			
RA 3520 – Permanent Fixed Wing Aerodrome - Aerodrome Electrical Systems	X	X			
RA 3521 – Permanent Fixed Wing Aerodrome - Facilities	X	X			
►RA 3522 – Permanent Fixed Wing Aerodrome - Vertical Landing Pads◄	►X◄				
RA 3530 – Helicopter Landing Sites - Reference Information	X		X		►X◄
RA 3531 – Helicopter Landing Sites - Physical Characteristics	X		X		
RA 3532 – Helicopter Landing Sites - Obstacle Environment	X		X		

Regulation Article (RA)	Tier 1	Tier 2	Tier 3	Tier 4	►Tier 5◄
RA 3533 – Helicopter Landing Sites - Indicators and Signalling Devices	X		X		
RA 3534 – Helicopter Landing Sites – Markings	X		X		
RA 3535 – Helicopter Landing Sites – Lighting	X		X		
RA 3536 – Domestic Helicopter Landing Sites ►◄	X		X		►X◄
RA 3590 – Maintenance and Safeguarding	X	X	X	X	

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►This RA has been substantially re-written; for clarity no change marks are presented – please read the RA in its entirety◄

RA 3536 - Domestic Helicopter Landing Sites

Rationale

For a Safe Operating Environment (SOE) to be available at a Domestic Helicopter Landing Site (HLS) it is vital that the facilities, services and procedures are correctly enabled, published and managed. The absence of these provisions, or a misunderstanding of Responsibilities, could lead to unsafe operations or delay the response to an Incident. The correct preparation and management of a Domestic HLS, in accordance with (iaw) this Regulatory Article (RA), will enable the provision of an SOE iaw the site classification.

Contents

Scope

The purpose of this RA is to provide a proportionate regulatory framework to ensure that Domestic HLS operations are conducted safely. A Domestic HLS is a facility, where there is no permanent Rotary Wing (RW) presence, which is designated only for the movement of Passengers, Aircrew or cargo and no other activities take place (eg Maintenance or training). It may be located in the UK or overseas and may contain one or more landing points.

For the avoidance of doubt, sites or facilities that support tactical and / or non-permanent HLS operations, that do not constitute the provision of a Domestic HLS, are outside the scope of this RA. Head of Establishment (HoE) responsibilities for such sites are contained in RA 1010(1)[1].

Regulation 3536(1)

Domestic Helicopter Landing Site – General Requirements

3536(1) HoE and Aviation Duty Holder-Facing Organizations and Accountable Manager (Military Flying)-Facing Organizations (AA-Facing Organizations) **shall** ensure that the following general requirements are achieved for all Domestic HLS.

Acceptable Means of Compliance 3536(1)

Domestic Helicopter Landing Site – General Requirements

1. A Suitably Qualified and Experienced Person (SQEP) HLS Custodian **should** be appointed to carry out the responsibilities within this RA.

2. Accurate details of the Domestic HLS **should** be submitted to Royal Air Force (RAF) No.1 Aeronautical Information Documents Unit (AIDU) for inclusion in the HLS Directory[2], including:

   a. Location, operator and contact details.

   b. Available facilities, services and procedures, including radio frequencies to be used**.**

   c. Hazards, restrictions, and any other pertinent information.

[1] Refer to RA 1010(1): Classification Tier of Establishment.
[2] Refer to RA 1030 – Defence Aeronautical Information Management.

Acceptable Means of Compliance 3536(1)

3. An Emergency Plan **should** be established detailing immediate actions in the event of an Aircraft Accident or serious Incident within the geographical boundary of the estate that the Domestic HLS is situated in.

4. An Incident Plan **should** be maintained to cope with the follow-on response to an Aircraft Accident or serious Incident, and to indicate within whose Post-Crash Management Area of Responsibility (AoR) the Domestic HLS falls, which unit will provide an Aircraft Post Crash and Incident Management (APCIM) response[3] and the coordinating arrangements necessary to achieve it.

5. All Domestic HLS **should** operate on a Prior Permission Required (PPR) basis with current contact details published. Aircraft movement co-ordination **should** be recorded and managed to ensure time deconfliction of landing spot occupation.

6. During use, vehicle or pedestrian movement **should not** be permitted in the vicinity of the landing / take-off point[4].

7. The Touchdown and Lift off (TLOF) surface **should** be maintained in a condition such as to prevent formation of harmful irregularities, harmful defects or Foreign Object Debris (FOD).

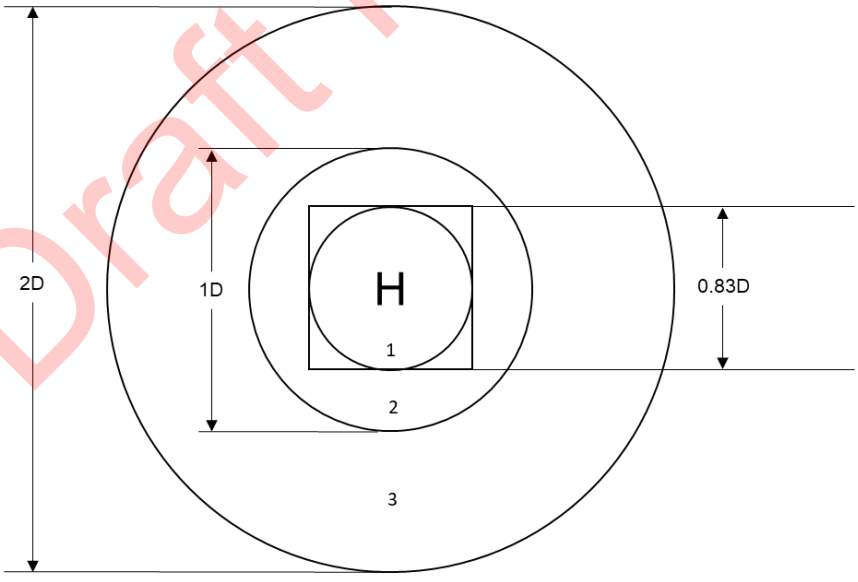
8. The TLOF surface **should** be periodically visually inspected to ensure that dangerous surface and other defects are identified in sufficient time to enable them to be rectified to prevent damage to Aircraft using it.

9. Where a Domestic HLS is located on an Aerodrome or Air Weapons Range, management of the Domestic HLS **should** be integrated into the Aerodrome's Air Safety Management System (ASMS) ensuring compliance with applicable Regulations iaw RA 1010[5] Annex B.

Dimensions

10. The size of a Domestic HLS **should** be determined according to the largest overall dimension of the Aircraft, (D), that will use it, and established iaw the minimum dimensions in Figure 1.

Figure 1 – Minimum Dimensions for Domestic HLS



[3] For further guidance, refer to RA 1430 – Aircraft Post Crash and Incident Management and Significant Occurrence Management, and the Manual of Aircraft Post Crash and Incident Management.
[4] The exception being if the vehicle and pedestrian movement is part of the operating requirement of the Aircraft eg Passenger / equipment loading.
[5] Refer to RA 1010 – Head of Establishment Aviation Responsibilities and Aviation Duty Holder / Accountable Manager (Military Flying) Establishment Responsibilities.

Acceptable Means of Compliance 3536(1)

Surface

11. The surface of the TLOF **should** be even and sufficiently firm to support the safe and stabilized use of the intended Aircraft.

12. Ideally the TLOF will be level, however if a slope is present, the angle and direction **should** be annotated in the HLS Directory.

13. Prior to use, the TLOF **should**, as far as is practicable, be cleared of FOD that could be blown up by the rotor blades.

14. TLOFs with sandy or dusty surfaces **should** be stabilised or covered by an approved material.

15. Snow and ice **should** be removed from the TLOF, when required.

Obstacles

16. Obstacles **should** be limited iaw Figure 1 as follows:

a. Circle 1: TLOF free of obstacles.

b. Circle 2: Cleared to ground level.

c. Circle 3: Free of obstacles over 25cm high.

17. Beyond this area, and including the approach and exits paths, any pertinent obstacles assessed during survey, **should** be published in the HLS Directory, and lit where the HLS is intended for night use.

Guidance Material 3536(1)

Domestic Helicopter Landing Site – General Requirements

18. The HoE may appoint themselves as HLS Custodian.

19. Whilst the HoE is ultimately responsible for ensuring that the Aeronautical Information submitted for publication in the HLS Directory is accurate, they may enlist the services of the Joint Helicopter Support Squadron (JHSS) to assist with establishing all the pertinent details and procedures for their facilities.

20. It is expected that the Emergency Plan and Incident Plan will be proportionate to the classification of HLS and the expected frequency of activity. Further detail to support the creation of these plans can be found in the MAA Manual of Post Crash and Incident Management, the MAA Manual of Air Safety, DSA02 DFSR – Defence Aerodrome Rescue and Fire Fighting (ARFF) Regulations and AP1269 Lflt 12-08[6].

21. An Emergency Plan will focus on immediate actions to preserve life and minimize damage in the event of an Aircraft emergency, including but not limited to: emergency contact numbers, rendezvous points, emergency services access, first aid provision[7], available water supplies or fire suppression facilities[7] and actions in the event of fire.

22. An Incident Plan will go beyond this to broader elements of post-crash management, preservation of evidence and securing the area. It is not expected that Domestic HLS units will hold their own, full, APCIM capability and that this will be provided under call-out arrangements within the wider AoR of another unit or organization. Further guidance is available in the MAA Manual of Post Crash and Incident Management.

23. Aircrew will follow the appropriate radio procedure as outlined in the HLS Directory. The HoE is only responsible for publishing the appropriate frequency to use, where one is available to be nominated. If none is available, there is no requirement to establish one especially for a Domestic HLS.

24. Larger dimensions than those illustrated at Figure 1 may be appropriate, depending on the task being supported.

25. Whilst the dimensions of the TLOF are based on ‘circle 1’, it may be established

[6] Refer to AP1269 – The RAF Manual of Medical Administration, Lflt 12-08 – Guidance on the Standards of Medical Cover for Military Aerodromes.

[7] This may be from civilian emergency services, Defence assets or locally provisioned first aid and fire-fighting appliances.

Guidance Material 3536(1)

as either a circle or a square / rectangle, provided the required dimensions are contained within it.

Regulation 3536(2)

Domestic Helicopter Landing Site – Classification and Specific Requirements

3536(2) HoEs **shall** ensure that any Domestic HLS within their AoR is correctly classified and meets the corresponding requirements.

Acceptable Means of Compliance 3536(2)

Domestic Helicopter Landing Site – Classification and Specific Requirements

26. A Domestic HLS **should** be classified iaw Table 1, and meet the corresponding requirements in Annex A. If several Domestic HLS exist within the same site, each one **should** be individually classified.

Table 1. Domestic HLS Classifications

Classification	Definition
Group 1: Non-fixed	A surveyed area that can be prepared as a TLOF to facilitate a safe place for the arrival and departure of Military RW Aircraft It will likely have other day-to-day functions. It is not intended for use by civil RW Aircraft.
Group 2: Fixed	A surveyed and permanently prepared TLOF to facilitate a safe place for the arrival and departure of Military RW Aircraft. It may be used to accept civil RW Aircraft.

Guidance Material 3536(2)

Domestic Helicopter Landing Site – Classification and Specific Requirements

27. The classification of the HLS will determine the extent of HoE involvement in generating an assured SOE:

a. Group 1 are typically, but not limited to, designated areas of car parks, parade squares or sports fields.

b. Group 2 are the most regulated and will provide the most standardised and assured facility.

28. In determining whether a Group 1 facility warrants uplift to a Group 2 facility, the HoE may consider the type and frequency of activity being supported, in conjunction with SQEP advice from JHSS and / or the relevant ADH chain.

29. Civil use in the context of this RA refers to civilian owned and operated Aircraft that are not involved in a military task. However, regardless of the classification, best effort will be made to accommodate the safe use of a Domestic HLS by emergency services for operational reasons (eg – Air Ambulance, Police helicopters).

30. Full detail on Hazard management can be found in the MAA Manual of Air Safety.

Regulation 3536(3)

Domestic Helicopter Landing Site Custodian – Responsibilities

3536(3) The Domestic HLS Custodian **shall** be responsible for the management of the HLS to support the safe operation of Aircraft.

Acceptable Means of Compliance 3536(3)

Domestic Helicopter Landing Site Custodian – Responsibilities

31. The Domestic HLS Custodian **should** as a minimum:

a. Ensure that the required SOE is being provided and maintained, through active management of their HLS iaw this RA.

b. Identify, record and accurately promulgate Hazards iaw this RA.

c. Establish suitable testing activity, such that they can remain assured that the Emergency and Incident plans are current and effective.

d. Ensure that all Air Safety Occurrences are reported, iaw RA 1410[8].

e. Provide Auditable Assurance to the HoE of continued compliance with all applicable RAs.

f. Identify and monitor any temporary decision, activity or change in circumstances that results in a Hazard or change to the published services / facilities provided.

g. Ensure the appropriate process is followed, iaw MAA03[9], where compliance cannot be achieved.

Guidance Material 3536(3)

Domestic Helicopter Landing Site Custodian – Responsibilities

32. HLS Custodians may consider the production, maintenance, and publication of an Aerodrome Safe Operating Environment Manual (ASOEM) as a live document to support and enhance the management and Assurance of the HLS.

33. Specific testing criteria and periodicity of the Emergency and Incident plans is not mandated, allowing the HLS Custodian to use their best judgement as to the most suitable and proportionate way to assure these contingencies.

34. The list of Domestic HLS Custodian responsibilities does not preclude the HoE from assigning the Domestic HLS Custodian additional responsibility that supports the safe operation of Aircraft.

35. There is no requirement for the Domestic HLS Custodian to be permanently based at the site in question. Day-to-day management of the HLS may be delegated, but the Domestic HLS Custodian retains full Responsibility.

Regulation 3536(4)

Domestic Helicopter Landing Site Custodian – Qualifications and Experience

3536(4) The Domestic HLS Custodian **shall** be SQEP.

Acceptable Means of Compliance 3536(4)

Domestic Helicopter Landing Site Custodian – Qualifications and Experience

36. The HoE **should** determine whether a candidate is SQEP for the intended duty.

37. A Domestic HLS Custodian **should**, as a minimum, have relevant experience and / or training within any of the following:

a. Air Operations at an Aerodrome, HLS or His Majesty's (HM) Aircraft Carrier.

b. A flying Squadron.

c. Civil Airfield management.

d. Specific training in HLS management.

e. Training in aviation Hazard management.

38. If none of the criteria above are met, or if the HoE otherwise judges that the

[8] Refer to RA 1410 – Occurrence Reporting and Management.
[9] Refer to MAA03 – Military Aviation Authority Regulatory Processes.

Acceptable Means of Compliance 3536(4)

candidate lacks adequate experience or training, the individual **should** attend the Aerodrome Operators Study Period (AOSP) prior to appointment.

39. A HLS Custodian **should**, as a minimum, be qualified as an Air Safety Information Management System (ASIMS) Reporter and Commentator.

Guidance Material 3536(4)

Domestic Helicopter Landing Site Custodian – Qualifications and Experience

40. ASIMS training is available online via individual ASIMS accounts.

Annex A

Domestic HLS Specific Requirements

Requirement	Rationale	Group 1: Non-Fixed	Group 2: Fixed
Surface	Enable operator awareness of the surface characteristic of the HLS.	Surface may be grass.	Surface to be concrete / asphalt / tarmac. The surface is to be routinely inspected and adequately maintained to ensure its continued suitability.
TLOF Markings[10]	Appropriate markings to identify the TLOF and its perimeter if this is not self-evident. Additional marking requirements to be established during survey.	Optional.	Required.
Wind Direction Indicator	Understanding the surface wind direction and strength is critical to facilitate safe operations. Where provided, Wind Direction Indicators are to be compliant with RA 3533[11].	Optional. If not provided, this is to be published.	Required.
Lighting	Appropriate lighting, such as a NATO 'T' or floodlighting, is required if the HLS is available for use at Night.	Required.	Required.
Marshalling	A Marshaller may be required to assist with underslung load operations, or for positioning. Where provided, the Marshaller is to be SQEP.	Optional.	Optional.

[10] Refer to RA 3534(4): Permanent Helicopter Landing Site - Touchdown and Lift Off Markings.
[11] Refer to RA 3533 – Helicopter Landing Site - Indicators and Signalling Devices.

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RA 3531 - Helicopter Landing Site - Physical Characteristics

Rationale

The physical characteristics of a Helicopter Landing Site (HLS) are defined to reduce the Risk associated with an Air System flying over it, and when taking-off or landing, including: when taxying, during an Incident or Accident scenario, to enable safe use by rescue and firefighting vehicles, when loading and unloading Passengers, crew and cargo, and when servicing.

Contents

Regulation 3531(1)

Permanent Helicopter Landing Site - Final Approach and Take Off area

3531(1) Heads of Establishments (HoEs) and Aviation Duty Holder-Facing Organizations (ADH-Facing Organizatizions) **shall** ensure that Final Approach and Take Off areas (FATO) are provided at an HLS.

Acceptable Means of Compliance 3531(1)

Permanent Helicopter Landing Site - Final Approach and Take Off area

1. **Location.** The FATO **should** be located to minimize the influence of the surrounding environment, including turbulence, which could have an adverse impact on helicopter operations. Where a FATO is located near a Runway or taxiway, and where simultaneous operations are planned, the separation distance between the edge of a Runway or taxiway and the edge of a FATO **should** be as prescribed in Table 1.

Table 1. FATO minimum separation distance

If Air System mass and / or helicopter mass are	Distance between FATO edge and Runway edge or taxiway edge
Up to but not including 3175 kg	60 m
3175 kg up to, but not including, 5760 kg	120 m
5760 kg up to, but not including, 100,000 kg	180 m
100,000 kg and over	250 m

2. A FATO **should** be located away from:

   a. Taxiway intersections or holding points where jet engine efflux is likely to cause high turbulence; and

   b. Areas where Air System vortex wake generation is likely to exist.

Acceptable Means of Compliance 3531(1)

3. **Dimension.** The dimensions of a FATO for Class 1 Helicopters **should** be:

a. As defined in the Helicopter Flight Manual; and

b. Of no smaller width than the largest overall dimension of the helicopter it is intended to serve.

4. The dimensions of a FATO for Class 2 or 3 Helicopters **should** be:

a. 1D[1] of the largest helicopter when the Maximum Take-Off Mass (MTOM) of helicopters the FATO is intended is more than 3175 kg;

b. 0.83D of the largest helicopter when the MTOM of helicopters the FATO is intended to serve is 3175 kg or less.

5. **Slope**. The slope **should** be designed to promote the most rapid drainage of water from the FATO.

6. The mean slope of the FATO, in any direction, **should not** exceed 3%.

7. No portion of a FATO **should** have a local slope exceeding:

a. 5% where the HLS is intended to be used by helicopters operated in performance Class 1; and

b. 7% where the HLS is intended to be used by helicopters operated in performance Class 2 or 3

8. **Surface**. The surface of the FATO **should**:

a. Be constructed without characteristics that would adversely affect the Safety of the helicopter operating from the FATO.

b. Be resistant to the effects of rotor downwash;

c. Be free of irregularities that would adversely affect the take-off or landing of helicopters;

d. Have bearing strength sufficient to accommodate a rejected take-off by helicopters operated in performance Class 1; and

e. Provide ground-effect.

9. The surface of a FATO surrounding a Touchdown and Lift Off area (TLOF) intended for use by helicopters operated in performance Classes 2 and 3 **should** be static load-bearing.

Guidance Material 3531(1)

Permanent Helicopter Landing Site - Final Approach and Take Off area

10. Local conditions, such as elevation and temperature, may need to be considered when determining the size of a FATO.

11. If turbulence mitigating design measures are warranted but not practical, operational limitations may need to be considered under certain wind conditions.

Civil Equivalence.

12. This Regulation is in line with ICAO Annex 14 Vol II para 3.1.

Regulation 3531(2)

Permanent Helicopter Landing Site - Clearway

3531(2) HoEs and ADH-Facing Organizations **shall** ensure that a Clearway is provided for Aerodromes intended for Performance Class 1 Helicopters.

[1] Where D is the largest overall dimension of the helicopter using the HLS.

Acceptable Means of Compliance 3531(2)

Permanent Helicopter Landing Site - Clearway

13. **Location**. The Clearway **should** be located beyond the end of the FATO.

14. **Dimension**. The width of a Clearway **should** be no less than that of the associated Safety Area[2].

15. **Slope**. The ground in a Clearway **should** remain below a plane having an upward slope of 3%, the lower limit of this plane being a horizontal line which is located on the periphery of the FATO.

Guidance Material 3531(2)

Permanent Helicopter Landing Site - Clearway

16. A clearway is not required for Performance Class 2 and 3 helicopters.

Civil Equivalence.

17. This Regulation is in line with ICAO Annex 14 Vol II para 3.1.

Regulation 3531(3)

Permanent Helicopter Landing Site - Touchdown and Lift Off area

3531(3) HoEs and ADH-Facing Organizations **shall** ensure that one TLOF is located within the FATO, or that one or more TLOFs are to be collocated with helicopter stands.

Acceptable Means of Compliance 3531(3)

Permanent Helicopter Landing Site - Touchdown and Lift Off area

18. **Location**. Where a TLOF is located within a FATO which can contain a circle of diameter more than 1D, the centre of the TLOF **should** be located not less than 0.5D from the edge of the FATO.

19. **Dimension**. The TLOF **should** be of sufficient size to contain a circle of diameter of at least 0.83D of the largest helicopter the area is intended to serve.

20. **Slope.** The TLOF surface **should** be designed to promote the most rapid drainage of water from the TLOF. The slope of the TLOF **should** be no greater than 2% in any direction

21. **Surface.** The surface of a TLOF **should** be constructed without characteristics that would adversely affect the Safety of the helicopter operating from the TLOF.

22. Where the TLOF is within the FATO, the TLOF **should** be dynamic load-bearing.

23. Where a TLOF is collocated with a helicopter stand, the TLOF **should** be static load-bearing and capable of withstanding the traffic of helicopters that the area is intended to serve.

Guidance Material 3531(3)

Permanent Helicopter Landing Site - Touchdown and Lift Off area

24. For Runway-type FATOs, additional TLOFs located in the FATO are acceptable.

Civil Equivalence.

25. This Regulation is in line with ICAO Annex 14 Vol II para 3.1.

Regulation 3531(4)

Permanent Helicopter Landing Site - Safety Area

3531(4) HoEs and ADH-Facing Organizations **shall** ensure that a FATO is surrounded by a Safety Area.

[2] See RA 3531(4).

Acceptable Means of Compliance 3531(4)

Permanent Helicopter Landing Site - Safety Area

26. **Dimension**. For Visual Meteorological Conditions operations, the Safety Area **should** extend outwards from the periphery of the FATO for a distance of at least 3 m or 0.2D, whichever is greater, of the largest helicopter the FATO is intended to serve and:

a. Each external side of the Safety Area **should** be at least 2D where the FATO is quadrilateral; or

b. The outer diameter of the Safety Area **should** be at least 2D where the FATO is circular.

27. For Instrument Meteorological Conditions operations, the Safety Area **should** extend at least:

a. 45 m either side of the FATO centre-line; and

b. 60 m beyond the FATO ends.

28. **Slope**. The surface of the Safety Area, when solid, **should** have an upward slope no greater than 4% outwards from the edge of the FATO.

29. **Surface**. Where applicable, the surface of the Safety Area **should** be treated to prevent flying debris caused by rotor downwash.

30. When solid, the surface of the Safety Area abutting the FATO **should** be continuous with the FATO and capable of supporting the design helicopter without structural damage.

Guidance Material 3531(4)

Permanent Helicopter Landing Site - Safety Area

31. The surface of the Safety Area need not be solid.

Civil Equivalence.

32. This Regulation is in line with ICAO Annex 14 Vol II para 3.1.

Regulation 3531(5)

Permanent Helicopter Landing Site - Ground Taxiway

3531(5) HoEs and ADH-Facing Organizations **shall** ensure that, where required, a helicopter Ground Taxiway is provided to cater for the largest helicopter intended for use at the HLS.

Acceptable Means of Compliance 3531(5)

Permanent Helicopter Landing Site - Ground Taxiway

33. **Location**. For simultaneous operations, helicopter Ground Taxiway **should not** overlap.

34. Minimum separation distances between helicopter Ground Taxiways and other taxiways, objects and helicopter stands **should** be as per Table 2.

Table 2. Separation Distances (expressed in multiples of maximum design helicopter overall dimension with rotors turning)

Facility	Helicopter Ground Taxiway [a]	Air Taxiway [a]	Object [b]	Helicopter Stand [cdefg]
Helicopter Ground Taxiway	2	3	1.25	1.75
Air Taxiway	3	3	1.5	2.5
Object	1.25	1.5	-	1.25 (1.5)
Helicopter Stand [cd]	1.75	2.5	1.25 (1.5)	1.5 (1.75)

Note:

[a] Centre-line to centre-line

[b] Centre-line to edge of object

Acceptable Means of Compliance 3531(5)

[c] Centre-line to centre

[d] Stands with through ground taxi access. Figures in () for through hover taxi access

[e] Simultaneous hover operations in/out of stands are equivalent to 2 x Air Taxiway operations

[f] Stands may require increased spacing to that shown to allow for manoeuvring of helicopters on the stands, either because there isn't through access or because there is a need to manoeuvre helicopters to park them headed into wind.

[g] Stands without through access, no part of the turning helicopter to overlap the adjacent stand clearance and helicopter to come to rest parked centrally pointing perpendicular to the line of the stands.

35. **Dimension**. The width of a helicopter Ground Taxiway **should** be no less than 1.5 times the largest Undercarriage Width (UCW) of the helicopters the helicopter Ground Taxiway is intended to serve.

36. Horizontal helicopter Ground Taxiway curves **should** be compatible with the design helicopter and with a centre-line radius of no less than 20 m.

37. Helicopter Ground Taxiway intersection edge fillet radii **should** be no less than 10 m.

38. A helicopter Ground Taxiway **should** extend symmetrically on each side of the centre-line for at least 0.75 times the largest overall width of the helicopters it is intended to serve.

39. **Longitudinal slope**. The longitudinal slope of a helicopter Ground Taxiway **should** be no greater than 3%, to allow for stabilized and safe use of the taxiway by a helicopter.

40. **Transverse slope**. The transverse slopes of a Ground Taxiway **should** be sufficient to prevent the accumulation of water on the surface of the taxiway but **should** be no greater than 2% to promote the most rapid drainage of water from the taxiway.

41. **Surface**. A helicopter Ground Taxiway **should** be static load-bearing and capable of withstanding the traffic of the helicopters the helicopter Ground Taxiway is intended to serve.

42. The surface of a helicopter Ground Taxiway **should** be resistant to the effect of rotor downwash.

43. Shoulders **should** extend symmetrically on each side of the Ground Taxiway and to a width 0.5 x maximum design helicopter overall dimension.

44. The longitudinal slope on a helicopter Ground Taxiway shoulder **should** be no greater than 3%.

45. The transverse slope on a helicopter Ground Taxiway shoulder **should** be no greater than 2%.

46. The shoulder of a helicopter Ground Taxiway **should** be resistant to the effect of rotor downwash.

Guidance Material 3531(5)

Permanent Helicopter Landing Site - Ground Taxiway

47. When a taxiway is intended for use by Air Systems and helicopters, the provisions for taxiways for Air Systems and helicopter Ground Taxiways are to be taken into consideration and the more stringent requirements are to be applied.

Civil Equivalence.

48. This Regulation is in line with ICAO Annex 14 Vol II para 3.1.

Regulation 3531(6)

Permanent Helicopter Landing Site - Air Taxiway

3531(6) HoEs and ADH-Facing Organizations **shall** ensure that, where required, a helicopter Air Taxiway is provided to cater for the largest helicopter intended for use at the HLS.

Acceptable Means of Compliance 3531(6)

Permanent Helicopter Landing Site - Air Taxiway

49. **Location**. Minimum separation distances between helicopter Air Taxiways and other taxiways, objects and helicopter stands **should** be as per Table 2.

50. **Dimension**. The width of a helicopter Air Taxiway **should** be at least two times the largest UCW of the helicopters that the helicopter Air Taxiway is intended to serve.

51. A helicopter Air Taxiway **should** extend symmetrically on each side of the centre-line for a distance at least equal to the largest overall width of the helicopters it is intended to serve.

52. **Slope**. The slopes of the surface of a helicopter Air Taxiway **should not** exceed the slope landing limitation of the helicopters the Air Taxiway is intended to serve.

53. The slopes of a helicopter Air Taxiway **should** be within design helicopter parameters and no more than 7% longitudinally and 10% transversely.

54. **Surface**. The surface of a helicopter Air Taxiway **should**:

a. Be rotor down-wash resistant;

b. Be suitable for emergency landing (static load bearing); and

c. Provide ground effect.

Guidance Material 3531(6)

Permanent Helicopter Landing Site - Air Taxiway

Civil Equivalence.

55. This Regulation is in line with ICAO Annex 14 Vol II para 3.1.

Regulation 3531(7)

Permanent Helicopter Landing Site - Air Transit Route - Design

3531(7) HoEs and ADH-Facing Organizations **shall** ensure that Air Transit Routes are selected that allow Autorotative / One Engine Inoperative landings whilst minimizing injury or damage to property.

Acceptable Means of Compliance 3531(7)

Permanent Helicopter Landing Site - Air Transit Route - Design

56. For day operations, the width of the Air Transit Route **should** be no less than 7 times the design helicopter radius.

57. For night operations, the width of the Air Transit Route **should** be no less than 10 times the design helicopter radius.

58. Centre-line direction changes of an Air Transit Route **should** be no more than 120°.

59. Centre-line turn radii of an Air Transit Route **should** be no more than 270 m.

Guidance Material 3531(7)

Permanent Helicopter Landing Site - Air Transit Route - Design

60. Nil.

Regulation 3531(8)

Permanent Helicopter Landing Site - Apron - Location

3531(8) HoEs and ADH-Facing Organizations **shall** ensure that HLS Aprons are located such that operations do not adversely impact other Aerodrome users.

Acceptable Means of Compliance 3531(8)

Permanent Helicopter Landing Site - Apron- Location

61. **Location**. Minimum separation distances between helicopter Aprons, helicopter taxiways, objects and helicopter stands **should** be as per Table 2.

62. **Dimension**. A helicopter stand intended to be used by helicopters turning in a hover **should** be of sufficient size to contain a circle of diameter of at least 1.2D of the largest helicopter the stand is intended to serve.

63. Where a helicopter stand is intended to be used for taxi-through and where the helicopter using the stand is not required to turn, the minimum width of the stand and associated protection area **should** be that of the taxi-route.

64. Where a helicopter stand is intended to be used for turning, the minimum dimension of the stand and protection area **should** be not less than 2D.

65. Where a helicopter stand is intended to be used for turning, it **should** be surrounded by a protection area which extends for a distance of 0.4D from the edge of the helicopter stand.

66. **Slope**. The transverse slopes of an Apron **should** be sufficient to prevent the accumulation of water on the surface of the Apron but **should** be no greater than 2%.

67. **Surface**. A helicopter stand and associated protection area intended to be used for air taxiing **should** provide ground effect.

68. The central zone of a helicopter stand **should** be capable of withstanding the traffic of helicopters it is intended to serve and **should** have a static load-bearing area:

a. Of diameter not less than 0.83D of the largest helicopter it is intended to serve; or

b. For a helicopter stand intended to be used for taxi-through, and where the helicopter using the stand is not required to turn, the same width as the helicopter Ground Taxiway.

Guidance Material 3531(8)

Permanent Helicopter Landing Site - Apron- Location

69. For a helicopter stand intended to be used for turning on the ground by wheeled helicopters, the dimension of the helicopter stand, including the dimension of the central zone, may need to be significantly increased.

Civil Equivalence.

70. This Regulation is in line with ICAO Annex 14 Vol II para 3.1.

Regulation 3531(9)

Domestic Helicopter Landing Sites - Dimension

3531(9) ►Withdrawn – Incorporated into RA 3536(1): Domestic Helicopter Landing Sites – General Requirements.◄

Acceptable Means of Compliance 3531(9)

Domestic Helicopter Landing Site - Dimension

71. ►Withdrawn – Incorporated into RA 3536(1): Domestic Helicopter Landing Sites – General Requirements.◄

Guidance Material 3531(9)

Domestic Helicopter Landing Site - Dimension

72. ►Withdrawn – Incorporated into RA 3536(1): Domestic Helicopter Landing Sites – General Requirementsy.◄

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RA 3532 - Helicopter Landing Site - Obstacle Environment

Rationale

The purpose of the Obstacle Limitation Surfaces (OLS) is to define the airspace around Helicopter Landing Sites (HLS) to be maintained free from obstacles so as to permit the intended operations at the HLS to be conducted safely.

Contents

Regulation 3532(1)

Permanent Helicopter Landing Sites - Obstacle Limitation Surfaces (General)

3532(1) Heads of Establishment (HoE) and Aviation Duty Holder-Facing Organizations (ADH-Facing Organizations **shall** ensure that the OLS are defined to limit the extent to which objects may project into the airspace.

Acceptable Means of Compliance 3532(1)

Permanent Helicopter Landing Sites - Obstacle Limitation Surfaces (General)

1. The Approach Surface **should**:

   a. Be an inclined plane or a combination of planes or, when a turn is involved, a complex surface sloping upwards from the end of the Safety Area and centred on a line passing through the centre of the Final Approach and Take Off area (FATO). In the case of an approach surface involving a turn, the surface **should** be a complex surface containing the horizontal normal to its centre-line and the slope of the centre-line **should** be the same as that for a straight approach surface (Figure 1);

   b. Contain no more than one curved portion. The sum of the radius of arc defining the centre-line of the approach surface and the length of the straight portion originating at the inner edge **should** be no less than 575m with a minimum radius of 270m (Figure 2);

   c. Have a slope measured in the vertical plane containing the centre-line of the FATO;

   d. Have limits comprising:

      (1) An inner edge horizontal and equal in length to the minimum specified width / diameter of the FATO plus the Safety Area, perpendicular to the centre-line of the approach surface and located at the outer edge of the Safety Area;

      (2) For a non-instrument or non-precision approach: two side edges originating at the ends of the inner edge diverging uniformly at a specified rate from the vertical plane containing the centre-line of the FATO;

      (3) For a precision approach:

Acceptable Means of Compliance 3532(1)

(a) Two side edges originating at the ends of the inner edge diverging uniformly at a specified rate from the vertical plane containing the centre-line of the FATO, to a specified height above the FATO,

(b) And then diverging uniformly at a specified rate to a specified final width and continuing thereafter at that width for the remaining length of the approach surface.

(4) An outer edge horizontal and perpendicular to the centre-line of the approach surface and at a specified height above the elevation of the FATO.

e. Have an elevation of the inner edge the same as the elevation of the FATO at the point on the inner edge that is intersected by the centre-line of the approach surface. For HLS intended to be used by helicopters operated in performance Class 1 and when approved by an appropriate authority, the origin of the inclined plane may be raised directly above the FATO.

Figure 1. Approach Surface

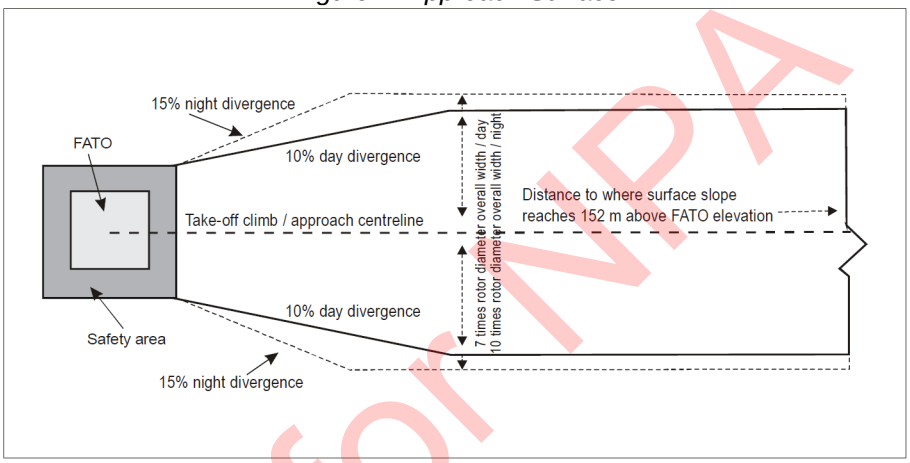
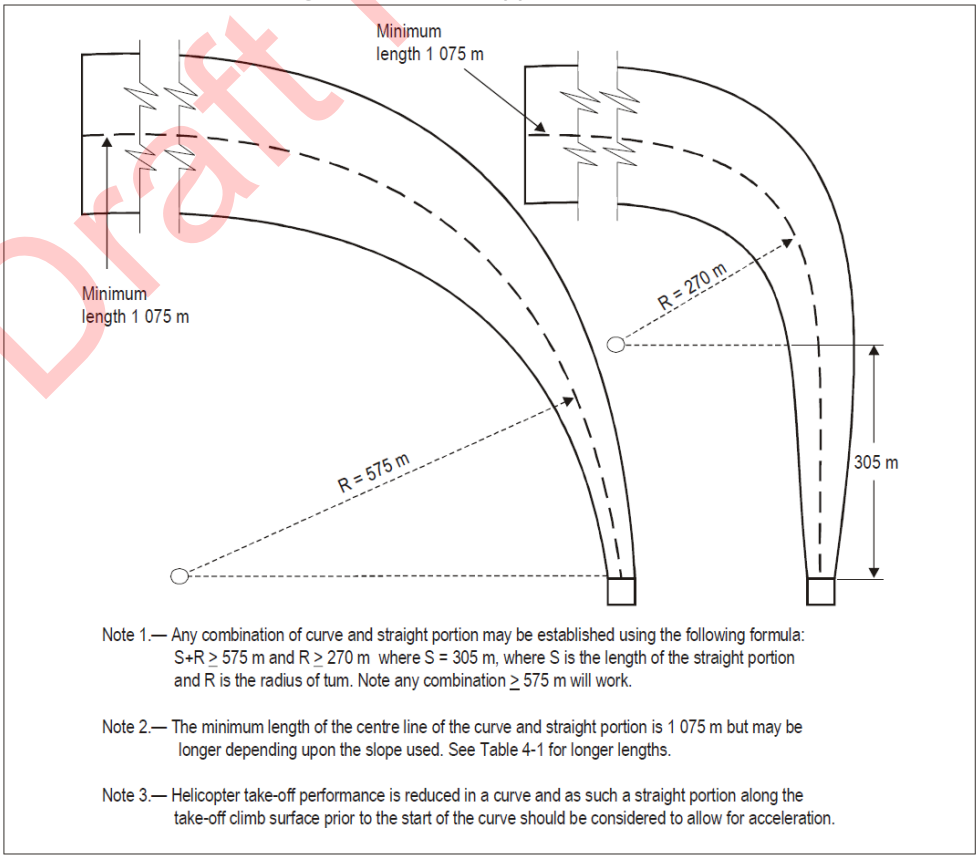


Figure 2. Curved Approach Surface



Acceptable Means of Compliance 3532(1)

2. The Transitional Surface **should**:

a. Be a complex surface along the side of the Safety Area and part of the side of the approach / take-off climb surface, that slopes upwards and outwards to a predetermined height of 45m (150ft.);

b. Have limits comprising:

(1) A lower edge beginning at a point on the side of the approach / take-off climb surface at a specified height above the lower edge extending down the side of the approach / take-off climb surface to the inner edge of the approach / take-off climb surface and from there along the length of the side of the Safety Area parallel to the centre-line of the FATO;

(2) An upper edge located at a specified height above the lower edge;

c. Have an elevation of a point on the lower edge that:

(1) Along the side of the approach / take-off climb surface is equal to the elevation of the approach / take-off climb surface at that point; and

(2) Along the Safety Area is equal to the elevation of the inner edge of the approach / take-off climb surface;

d. Be measured in a vertical plane at right angles to the centre-line of the FATO.

3. The Take-Off Climb Surface **should**:

a. Be an inclined plane, a combination of planes or, when a turn is involved, a complex surface sloping upwards from the end of the Safety Area and centred on a line passing through the centre of the FATO. In the case of a take-off climb surface involving a turn, the surface **should** be a complex surface containing the horizontal normal to its centre-line and the slope of the centre-line **should** be the same as that for a straight take-off climb surface (Figure 3);

b. Contain no more than one curved portion. The sum of the radius of arc defining the centre-line of the approach surface and the length of the straight portion originating at the inner edge **should** be no less than 575 m with a minimum radius of 270 m;

c. Have a slope measured in the vertical plane containing the centre-line of the surface;

d. Have limits comprising:

(1) An inner edge horizontal and equal in length to the minimum specified width / diameter of the FATO plus the Safety Area, perpendicular to the centre-line of the take-off climb surface and located at the outer edge of the Safety Area;

(2) Two side edges originating at the ends of the inner edge and diverging uniformly at a specified rate from the vertical plane containing the centre-line of the FATO; and

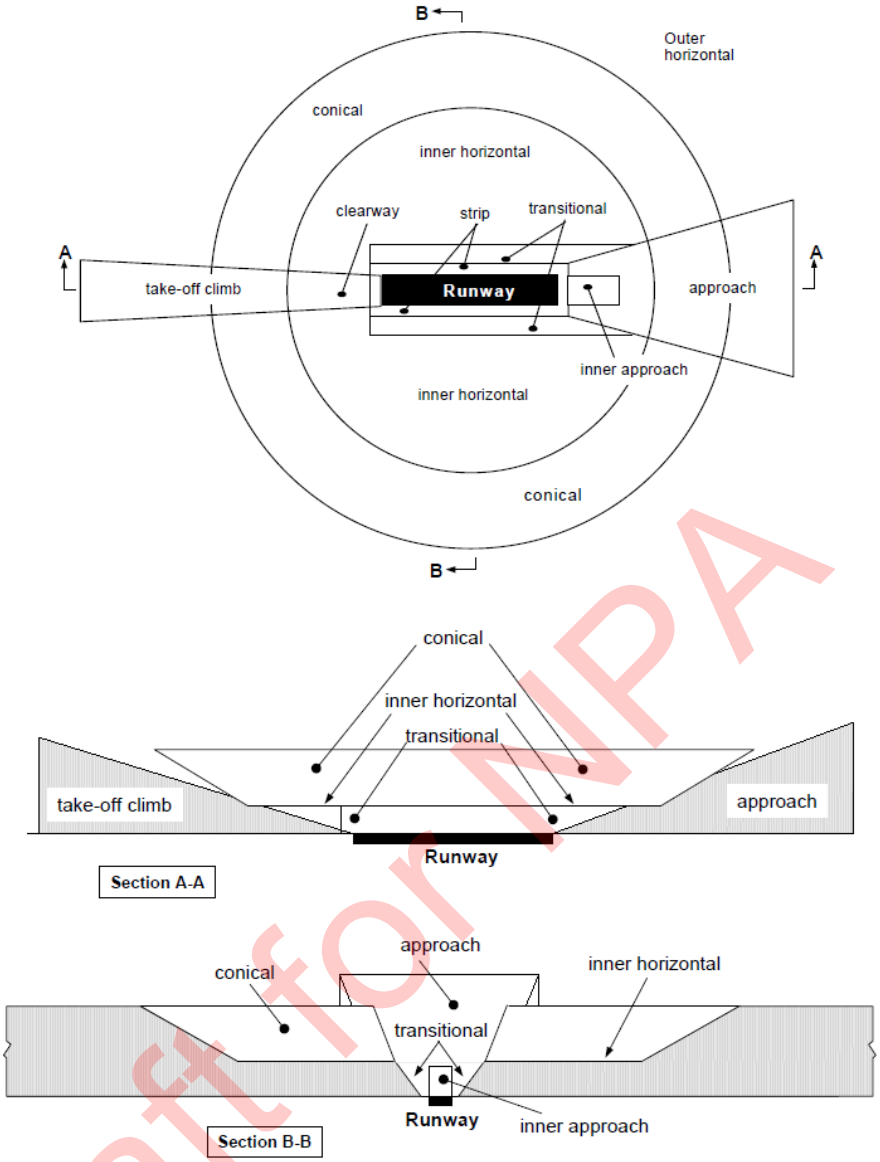
(3) An outer edge horizontal and perpendicular to the centre-line of the take-off climb surface and at a specified height of 152 m (500ft.) above the elevation of the FATO.

(4) An elevation of the inner edge equal to the elevation of the FATO at the point on the inner edge that is intersected by the centre-line of the take-off climb surface. For HLS intended to be used by helicopters operated in performance Class 1 and when approved by an appropriate authority, the origin of the inclined plane may be raised directly above the FATO;

e. Where a clearway is provided, have an elevation of the inner edge of the take-off climb surface located at the outer edge of the clearway at the highest point on the ground based on the centre-line of the clearway;

Acceptable Means of Compliance 3532(1)

Figure 3. Take off climb surface



4. Surface level HLS **should** have at least two approach and take-off surfaces to avoid downwind conditions, minimize crosswind conditions and permit for a balked landing.

5. Visual Approach Slope Indicator Obstacle Protection Surface **should**:

a. Be an inclined plane sloping upwards from the end of the Safety Area and centred on a line through the FATO centre (Figure 4);

b. Have an inner edge horizontal and equal in length to the minimum specified width of the FATO plus the Safety Area, perpendicular to the centre-line of the approach surface and located at the outer edge of the Safety Area;

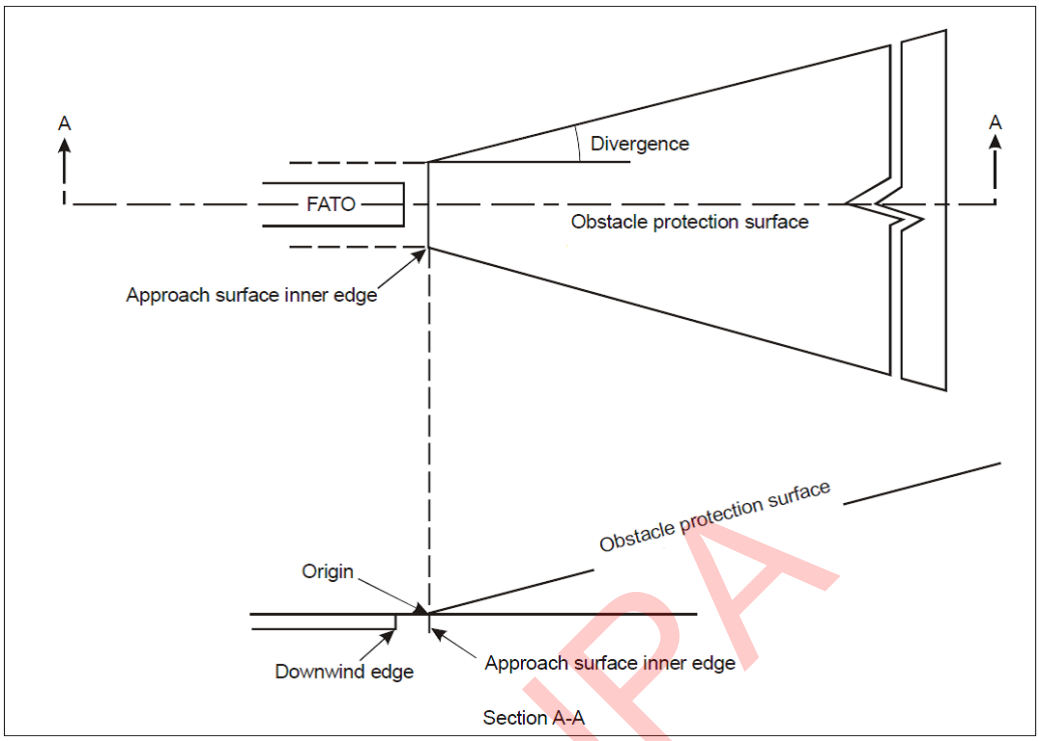
c. Have two side edges originating at the ends of the inner edge diverging uniformly at a specified rate from the vertical plane containing the centre-line of the FATO;

d. Have an outer edge horizontal and perpendicular to the centre-line of the approach surface and at a specified height above the elevation of the FATO; and

e. Have a slope measured in a vertical plane at right angles to the centre-line of the FATO.

Acceptable Means of Compliance 3532(1)

Figure 4 Visual Approach Slope Indicator Obstacle Protection Surface



6. Where no transitional surface is provided, a protected side slope **should** be provided rising at 45° from the edge of the Safety Area to a distance of 10 m, whose surface **should not** be penetrated by obstacles, except that when obstacles are located to one side of the FATO only, they may be permitted to penetrate the side slope surface.

7. No fixed object **should** be permitted above the plane of the FATO on a Safety Area, except for frangible objects, which, because of their function, ►need to◄ be located on the area. No mobile object **should** be permitted on a Safety Area during helicopter operations.

a. Objects whose function requires them to be located on the Safety Area **should not:**

(1) If located at a distance of less than 0.75D[1] from the centre of the FATO, penetrate a plane at a height of 5 cm above the plane of the FATO; and

(2) If located at a distance of 0.75D or more from the centre of the FATO, penetrate a plane originating at a height of 25 cm above the plane of the FATO and sloping upwards and outwards at a gradient of 5%.

Guidance Material 3532(1)

Permanent Helicopter Landing Sites - Obstacle Limitation Surfaces (General)

8. Helicopter take-off performance is reduced in a curve and as such a straight portion along the take-off climb surface prior to the start of the curve allows for acceleration.

9. For HLS intended to be used by helicopters operated in performance Class 2 and 3 it is good practice for the departure paths to be selected so as to permit safe forced landings or one-engine-inoperative landings such that, as a minimum requirement, injury to persons on the ground or water or damage to property are minimized. The most critical helicopter type for which the HLS is intended and the ambient conditions may be factors in determining the suitability of such areas.

[1] Where D is the largest overall dimension of the helicopter using the HLS.

Guidance Material 3532(1)

10. To support operations with only one approach and take-off climb surface, an aeronautical study may be undertaken by an appropriate authority considering as a minimum, the following factors:

a. The area / terrain over which the flight is being conducted;

b. The obstacle environment surrounding the HLS;

c. The performance and operating limitations of helicopters intending to use the HLS; and

d. The local meteorological conditions including the prevailing winds

Civil Equivalence.

11. This Regulation is in line with ICAO Annex 14 Vol II Chapter 4.

Regulation 3532(2)

Permanent Helicopter Landing Sites - Obstacle Limitation Surfaces for Non-Instrument Approach

3532(2) HoEs and ADH-Facing Organizations **shall** ensure that OLS are established for a FATO at HLS with non-instrument approach procedures.

Acceptable Means of Compliance 3532(2)

Permanent Helicopter Landing Sites - Obstacle Limitation Surfaces for Non-Instrument Approach

12. Obstacle limitation surfaces indicated in Table 1 **should** be established for a FATO at HLS with non-instrument approach procedures.

Table 1. Dimensions and slopes of obstacle limitation surfaces for all non-instrument FATOs

Surface and Dimensions	***Slope Design Categories***		
	A	B	C
Approach and Take-Off Climb Surface:			
Length of inner edge	Width of Safety Area	Width of Safety Area	Width of Safety Area
Location of inner edge	Safety Area boundary (Clearway boundary if provided)	Safety Area boundary	Safety Area boundary
Divergence: (1st and 2nd section)			
Day use only	10%	10%	10%
Night use	15%	15%	15%
First Section:			
Length	3386 m	245 m	1220 m
Slope	4.5% (1:22.2)	8% (1:12.5)	12.5% (1:8)
Outer Width	(b)	N/A	(b)

Acceptable Means of Compliance 3532(2)

Second Section:			
Length	N/A	830 m	N/A
Slope	N/A	16% (1:6.25)	N/A
Outer Width	N/A	(b)	N/A
Total length from inner edge (a)	3386 m	1075 m	1220 m
Transitional Surface: (FATOs with a PinS approach procedure with a Visual Segment Surface (VSS))			
Slope	50% (1:2)	50% (1:2)	50% (1:2)
Height	45 m	45 m	45 m

Guidance Material 3532(2)

Permanent Helicopter Landing Sites - Obstacle Limitation Surfaces for Non-Instrument Approach

Civil Equivalence.

13. This Regulation is in line with ICAO Annex 14 Vol II para 5.3.

Regulation 3532(3)

Permanent Helicopter Landing Sites - Obstacle Limitation Surfaces for Precision or Non-Precision Approach

3532(3) HoEs and ADH-Facing Organizations **shall** ensure that for an instrument FATO with a Precision or Non-Precision Approach the following OLS are established; Take-Off Climb Surface, Approach Surface, and Transitional Surface.

Acceptable Means of Compliance 3532(3)

Permanent Helicopter Landing Sites - Obstacle Limitation Surfaces for Precision or Non-Precision Approach

14. The slopes of the obstacle limitation surfaces **should** be less than, and their other dimensions **should** be greater than those specified in Table 2 for precision FATO and Table 3 for non-precision FATO.

Table 2. Dimensions and slopes of obstacle limitation surfaces: Instrument (Precision) FATO

	3º approach Height above FATO				***6º approach Height above FATO***			
Surface and dimensions	***90 m (300 ft)***	***60 m (200 ft)***	***45 m (150 ft)***	***30 m (100 ft)***	***90 m (300 ft)***	***60 m (200 ft)***	***45 m (150 ft)***	***30 m (100 ft)***
Approach Surface								
Length of inner edge	90 m							
Distance from end of FATO	60 m							

Acceptable Means of Compliance 3532(3)

Divergence each side to height above FATO	25%							
Distance to height above FATO	1745 m	1163 m	872 m	581 m	870 m	580 m	435 m	290 m
Width at height above FATO	962 m	671 m	526 m	380 m	521 m	380 m	435 m	290 m
Divergence to parallel section	15%							
Distance to parallel section	2793 m	3763 m	4246 m	4733 m	4250 m	4733 m	4975 m	5217 m
Width of parallel section	1 800 m							
Distance to outer edge	5462 m	5074 m	4882 m	4686 m	3380 m	3187 m	3090 m	2993 m
Width at outer edge	1 800 m							
Slope of first section	2.5% (1:40)				5% (1:20)			
Length of first section	3000 m				1500 m			
Slope of second section	3% (1:33.3)				6% (1:16.66)			
Length of second section	10000 m				8500 m			
Total length of surface	13000 m				10000 m			
Take-Off Climb Surface								
Length of inner edge	90 m							
Location of inner edge	Boundary of end of Clearway							
First section divergence	30%							
First section length	2850 m							
First section outer width	1800 m							
First section maximum slope	3.5%							
Second section divergence	Parallel							
Second section length	1510 m							
Second section outer width	1800 m							
Second section maximum slope	3.5%							
Third section divergence	Parallel							
Third section length	7640 m							
Third section outer width	1800 m							
Third section maximum slope	2%							
Transitional								
Slope	14.3%	14.3%	14.3%	14.3%	14.3%	14.3%	14.3%	14.3%
Height	45 m	45 m	45 m	45 m	45 m	45 m	45 m	45 m

Acceptable Means of Compliance 3532(3)

Table 3 Dimensions and slopes of obstacle limitation surfaces: Instrument (non-precision) FATO

Surfaces and Dimensions	
Approach Surface	
Width of inner edge Location of inner edge	Width of Safety Area Boundary
Frist Section	
Divergence	16%
Length	200 m
Outer width	890 m
Slope (maximum)	3.33%
Second Section	
Divergence	-
Length	-
Outer width	-
Third Section	
Divergence	-
Length	-
Outer width	-
Slope (maximum)	-
Transitional	
Slope	20%
Height	45 m
Take-Off Climb Surface	
Length of inner edge	90 m
Location of inner edge	Boundary of end of Clearway
First Section	
Divergence	30%
Length	2850 m
Outer width	1800 m
Maximum slope	3.5%
Second Section	
Divergence	Parallel
Length	1510 m
Outer width	1800 m

Acceptable Means of Compliance 3532(3)

Maximum slope	3.5%
Third Section	
Divergence	Parallel
Length	7640 m
Outer width	1800 m
Maximum slope	2%

Guidance Material 3532(3)

Permanent Helicopter Landing Sites - Obstacle Limitation Surfaces for Precision or Non-Precision Approach

Civil Equivalence.

15. This Regulation is in line with ICAO Annex 14 Vol II para 4.2.

Regulation 3532(4)

Permanent Helicopter Landing Sites - Obstacle Limitation Surfaces for Visual Approach Slope Indicator

3532(4) HoEs and ADH-Facing Organizations **shall** ensure that an OLS is established for FATOs where visual approach slope indicators are utilized.

Acceptable Means of Compliance 3532(4)

Permanent Helicopter Landing Sites - Obstacle Limitation Surfaces for Visual Approach Slope Indicator

16. The characteristics of the OLS, ie origin, divergence, length and slope, **should** correspond to those specified in Table 4.

Table 4. Dimensions and slopes of the obstacle protection surface

Surface and Dimensions	**FATO**	
Length of inner edge	Width of Safety Area	
Distance from end of FATO	3 m minimum	
Divergence	10%	
Total length	2500 m	
Slope	PAPI[2]	A^a – 0.57°
	HAPI[3]	A^b – 0.65°
	APAPI[4]	A^a – 0.9°

a. As indicated in ICAO Annex 14, Volume 1, Figure 5-20.
b. The angle of the upper boundary of the 'below slope' signal.

17. New objects or extensions of existing objects **should not** be permitted above the obstacle protection surface except when, in the opinion of the appropriate authority and subject to a Safety Assessment, the new object or extension would be shielded by an existing immovable object.

18. Existing objects above the obstacle protection surface **should** be removed except when, in the opinion of the appropriate authority and subject to a Safety

[2] Precision Approach Path Indicator.
[3] Helicopter Approach Path Indicator.
[4] Abbreviated Precision Approach Path Indicator.

Acceptable Means of Compliance 3532(4)

Assessment, the object is shielded by an existing immovable object, or after aeronautical study it is determined that the object would not adversely affect the Safety of operations of helicopters.

19. Where an aeronautical study indicates that an existing object extending above an obstacle protection surface could adversely affect the Safety of operations of helicopters, one or more of the following measures **should** be taken:

a. Suitably raise the approach slope of the system;

b. Reduce the azimuth spread of the system so that the object is outside the confines of the beam;

c. Displace the axis of the system and its associated obstacle protection surface by no more than 5°;

d. Suitably displace the FATO; or

e. Install a visual alignment guidance system specified in RA 3535[5].

Guidance Material 3532(4)

Permanent Helicopter Landing Sites - Obstacle Limitation Surfaces for Visual Approach Slope Indicator

Civil Equivalence.

20. This Regulation is in line with ICAO Annex 14 Vol II para 4.2.

Regulation 3532(5)

Domestic Helicopter Landing Sites - Obstacles

3532(5) ►Withdrawn – Incorporated into RA 3536(1): Domestic Helicopter Landing Sites – General Requirements.◄

Acceptable Means of Compliance 3532(5)

Domestic Helicopter Landing Sites - Obstacles

21. ►Withdrawn – Incorporated into RA 3536(1): Domestic Helicopter Landing Sites – General Requirements.◄

Guidance Material 3532(5)

Domestic Helicopter Landing Sites - Obstacles

22. ►Withdrawn – Incorporated into RA 3536(1): Domestic Helicopter Landing Sites – General Requirements.◄

Regulation 3532(6)

Domestic Helicopter Landing Sites - Approaches

3532(6) ►Withdrawn – Incorporated into RA 3536(1): Domestic Helicopter Landing Sites – General Requirements.◄

Acceptable Means of Compliance 3532(6)

Domestic Helicopter Landing Sites - Approaches

23. ►Withdrawn – Incorporated into RA 3536(1): Domestic Helicopter Landing Sites – General Requirements.◄

Guidance Material 3532(6)

Domestic Helicopter Landing Sites - Approaches

24. ►Withdrawn – Incorporated into RA 3536(1): Domestic Helicopter Landing Sites – General Requirements.◄

[5] RA 3535 – Helicopter Landing Sites - ►Lighting.◄

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RA 3535 - Helicopter Landing Site - Lighting

Rationale

In dusk or poor visibility conditions by day, lighting can be more effective than marking. Aeronautical Ground Lights (AGL) provide clear and consistent information and guidance to the operational community under all operating conditions.

Contents

Regulation 3535(1)

Permanent Helicopter Landing Site - Lighting

3535(1) Heads of Establishments (HoEs) and Aviation Duty Holder-Facing Organizations (ADH-Facing Organizations) **shall** ensure that lighting installations on a Permanent Helicopter Landing Site (HLS) provide unambiguous guidance and **shall not** present a Hazard to other users in the vicinity of the Aerodrome.

Acceptable Means of Compliance 3535(1)

Permanent Helicopter Landing Site - Lighting

1. Apron, taxiway and obstacle lighting, on an HLS, **should** be in accordance with (iaw) RA 3515[1].

Dangerous or Confusing Lights.

2. A non-AGL which, due to its intensity, configuration or colour, might prevent or cause confusion in the clear interpretation of AGL **should** be extinguished, screened or otherwise modified to eliminate such a possibility.

3. In the case of HLS located near navigable waters, consideration **should** be given to ensuring that AGL do not cause confusion to mariners.

Beacons.

4. A Permanent HLS acquisition beacon **should**:

   a. Be located on or adjacent to the Permanent HLS preferably at an elevated position and so that it does not dazzle a pilot at short range;

   b. Be located such that the beacon is not shielded by objects in significant directions and does not dazzle a pilot approaching to land;

   c. Flash a coloured sequence of lights as follows: double peak white flash and a single peak green and yellow;

   d. Have a flash rate of 10-15 sequences of flashes per minute and the time between each colour **should** be one third of the total sequence time;

[1] Refer to RA 3515 – Permanent Fixed Wing Aerodrome - Lighting.

Acceptable Means of Compliance 3535(1)

e. Be visible for 1.6 km, in Visual Meteorological Conditions (VMC) daylight, and 4.8 km, in VMC at night, both from an altitude of 915 m above ground level;

f. Be installed more than 1.6 km from any existing airport heliport beacon;

g. Be mounted a minimum of 15 m above the Permanent HLS surface and **should** be no closer than 122 m and no further than 1067 m from the Permanent HLS and **should not** be located between any control tower and the Permanent HLS; and

h. Have its main beam of light aimed a minimum of 5° above the horizontal and **should not** produce light below the horizontal in excess of 1000 cd.

Guidance Material 3535(1)

Permanent Helicopter Landing Site - Lighting

5. Light shields may be used to reduce the intensity below the horizontal to prevent dazzle to pilots.

6. An identification beacon may be installed at a Rotary Wing Permanent Base as well as an Acquisition Beacon, iaw RA 3515[1].

Civil Equivalence.

7. This Regulation is in line with International Civil Aviation Organization (ICAO) Annex 14 Vol II para 5.3.

Regulation 3535(2)

Permanent Helicopter Landing Site - Approach Lights

3535(2) HoEs and ADH-Facing Organizations **shall** ensure that an approach lighting system is provided at a Permanent HLS where there is a requirement to indicate a preferred approach direction. Additionally, a flight path alignment guidance lighting system(s) **shall** be provided at a HLS where there is a requirement to indicate available approach and / or departure path direction(s).

Acceptable Means of Compliance 3535(2)

Permanent Helicopter Landing Site - Approach Lights

Approach Lighting System.

8. An Approach Lighting System **should**:

a. Be in a straight line along the preferred direction of approach;

b. Consist of a row of three lights spaced uniformly at 30 m intervals and of a crossbar 18 m in length at a distance of 90 m from the perimeter of the Final Approach and Take Off (FATO) as shown in Figure 1;

c. Have the lights that form the crossbar situated as closely as practicable in a horizontal straight line at right angles to, and bisected by, the line of the centre-line lights and spaced at 4.5 m intervals;

d. Have additional lights spaced uniformly at 30 m intervals beyond the crossbar where there is the need to make the final approach course more conspicuous;

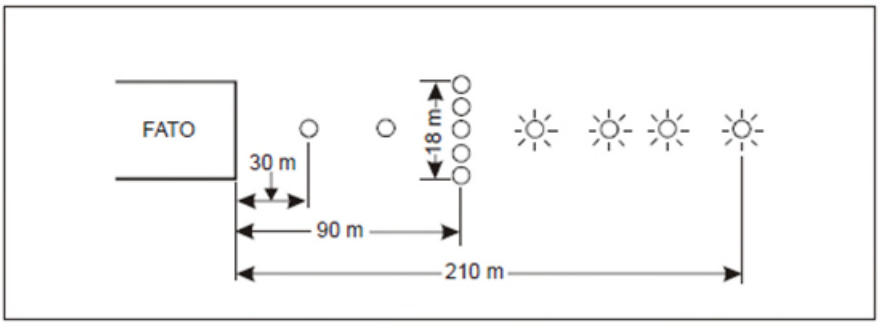
e. For both steady and sequenced flashing lights, be omnidirectional white lights;

f. If flashing lights are used, have a flash frequency of one per second with the flash sequence commencing from the outermost light and progressing towards the crossbar; and

g. Have a suitable brilliancy control incorporated to allow for adjustment of light intensity to meet the prevailing conditions.

Acceptable Means of Compliance 3535(2)

Figure 1. Approach Lighting System



Flight Path Alignment Guidance Lighting System.

9. A Flight Path Alignment Guidance System **should**:

a. Be in a straight line along the directions of approach and / or departure path on one or more of the Touchdown and Lift Off (TLOF), FATO, Safety Area or any suitable surface in the immediate vicinity of the FATO, TLOF or Safety Area;

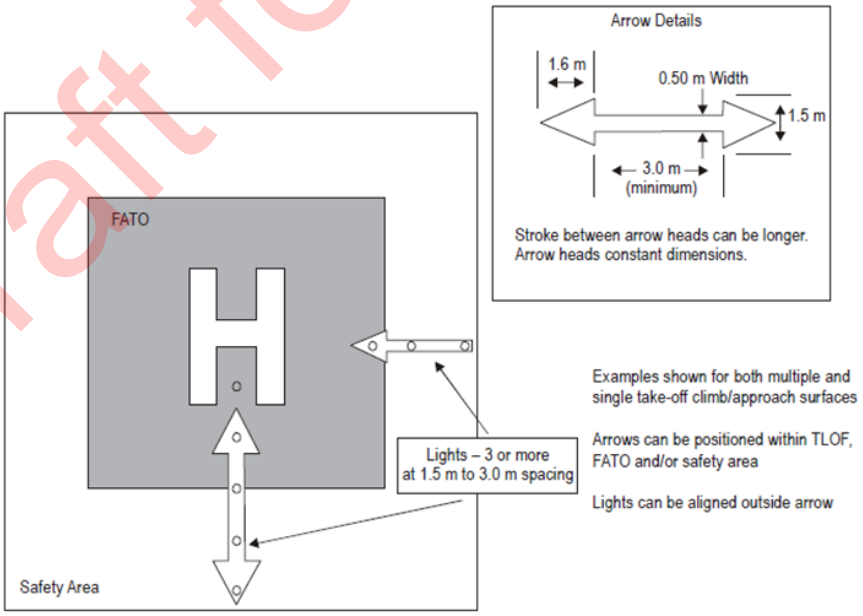
b. If combined with a flight path alignment guidance marking, as far as is practicable be located inside the “arrow” markings;

c. Consist of a row of three or more lights spaced uniformly a total minimum distance of 6 m as per Figure 2. Intervals between lights **should** be greater than 1.5 m but no more than 3 m;

d. Have steady omnidirectional inset white lights; and

e. Have a suitable brilliancy control incorporated to allow for adjustment of light intensity to meet the prevailing conditions.

Figure 2. Flight path alignment guidance markings and lights



Guidance Material 3535(2)

Permanent Helicopter Landing Site - Approach Lights

10. The lights beyond the crossbar may be steady or sequenced flashing, depending upon the environment. Sequenced flashing lights may be useful where identification of the approach lighting system is difficult due to surrounding lights.

11. The following intensity settings have been found suitable:

Guidance Material 3535(2)

a. Steady lights - 100%, 30% and 10%; and

b. Flashing lights - 100%, 10% and 3%.

12. When operationally justified a NATO 'T' may be provided iaw STANAG 2999[2] (the NATO 'T' can be used for trooping and underslung loads without further lights or approach aids, but normally, only a single Air System can use the NATO 'T' at any one time.) The light units need to show variable white light with a minimum two stages of brilliancy. They need to show in all angles of azimuth and elevation necessary to provide guidance to a pilot landing or lifting-off and with an intensity adequate for the conditions of visibility and ambient light in which use of the 'T' is intended.

13. AGL for Helicopter Night Landing Training.

a. Where helicopter night landing training is conducted at a Permanent HLS a six-light proportional T may be provided. The lights of the proportional T need to be omnidirectional, preferably white and useable from a distance of 4 nm.

b. When positioned on an aerodrome with a fixed wing Runway also in use, the proportional T needs to be sited to permit safe parallel approaches, to avoid obstructions and to minimize noise nuisance.

c. Procedures for the use of the proportional T need to be included in relevant aeronautical publications.

14. The flight path alignment guidance lighting can be combined with flight path alignment guidance markings described in RA 3534[3].

15. The number of lights and spacing between these lights may be adjusted to reflect the space available, however 5 lights is considered the optimum number. If more than one flight path alignment system is used to indicate available approach and / or departure path directions, the characteristics for each system are typically kept the same.

Civil Equivalence.

16. This Regulation is in line with ICAO Annex 14 Vol II para 5.3.

Regulation 3535(3)

Permanent Helicopter Landing Site - Approach Guidance Systems

3535(3) HoEs and ADH-Facing Organizations **shall** ensure that additional guidance systems are provided to serve the approach to a Permanent HLS where one or more of the following conditions exist, especially at night: obstacle clearance, noise abatement or traffic control procedures which require a specific approach direction to be flown, the environment of the HLS provides few visual surface cues, and if it is physically impracticable to install an approach lighting system.

Acceptable Means of Compliance 3535(3)

Permanent Helicopter Landing Site - Approach Guidance Systems

Visual Alignment Guidance System.

17. A Visual Alignment Guidance System (VAGS) **should**:

a. Be located such that a helicopter is guided along the prescribed track towards the FATO, ideally on the downwind edge of the FATO and aligned along the preferred approach direction;

b. Have light units that are frangible and mounted as low as possible;

c. Where the light sources are required to be discrete sources, have light sources located such that at the extremes of system coverage, the angle subtended between units as seen by the pilot is no less than 3 minutes of arc;

[2] Refer to STANAG 2999 – Use of Helicopters in Land Operations Doctrine.
[3] Refer to RA 3534 – Helicopter Landing Site - Markings.

Acceptable Means of Compliance 3535(3)

d. Have the angles subtended between light units of the system and other units of comparable or greater intensities no less than 3 minutes of arc;

e. Have a signal format that:

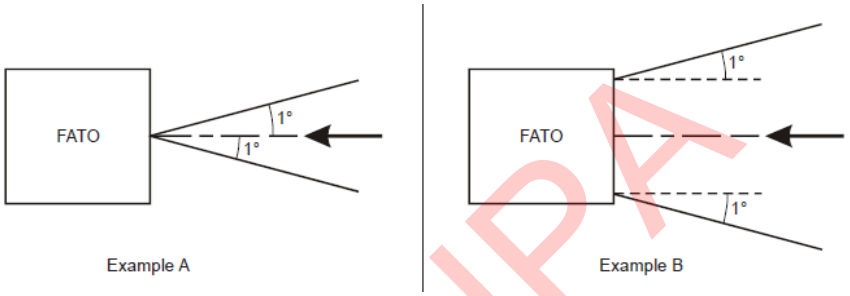
(1) Includes a minimum of three discrete signal sectors providing "offset to the right", "on track" and "offset to the left" signals;

(2) Ensures that there is no possibility of confusion between the system and any associated visual approach slope indicator or other visual aids; and

(3) Ensures that the system is unique and conspicuous in all operational environments.

f. Have the divergence of the "on track" sector as shown in Figure 3;

Figure 3. Divergence of the "on track" sector



g. Avoid the use of the same coding as any associated visual approach slope indicator;

h. Have no significant increase on pilot workload;

i. Have a usable coverage equal to or better than that of the visual approach slope indicator system with which it is associated;

j. Have a suitable intensity control to allow adjustment to meet the prevailing conditions and to avoid dazzling the pilot during approach and landing;

k. Be capable of adjustment in azimuth to within ±5 minutes of arc of the desired approach path;

l. Have the angle of its azimuth guidance system set such that, during an approach, the pilot of a helicopter at the boundary of the "on track" signal, clears all objects in the approach area by a safe margin;

m. Have the requirements of the obstacle protection surface specified in RA 3532[4] applied to the system;

n. Automatically switch of the system in the event of the failure of any component affecting the signal format; and

o. Be designed such that deposits of condensation, ice, dirt, etc, on optically transmitting or reflecting surfaces interfere to the least possible extent with the light signal and do not cause spurious or false signals to be generated

Visual Approach Slope Indicator.

18. The standard visual approach slope indicator systems for helicopter operations **should** consist of one of the following:

a. A Precision Approach Path Indicator (PAPI) system conforming to the specifications contained in RA 3515(8)[5], except the on-slope section **should** be increased to 45 minutes;

b. An Abbreviated Precision Approach Path Indicator (APAPI) system; or

[4] Refer to RA 3532 – Helicopter Landing Site - Obstacle Environment.
[5] Refer to RA 3515(8): Approach Lighting – Precision Approach Path Indicator.

Acceptable Means of Compliance 3535(3)

c. A Helicopter Approach Path Indicator (HAPI) system.

19. A visual approach slope indicator **should**:

a. Be located such that a helicopter is guided to the desired position within the FATO and to avoid dazzling the pilot during final approach and landing;

b. Be located adjacent to the nominal aiming point and aligned in azimuth with the preferred approach direction;

c. Have light units that are frangible and mounted as low as possible; and

d. Have the requirements of the obstacle protection surface specified in RA 3532[4] applied to the system.

Abbreviated Precision Approach Path Indicator.

20. An APAPI System **should** be installed where there is a requirement to fit a Visual Approach Slope Indicator and there is no existing PAPI or HAPI installation.

21. An APAPI **should**:

a. Consist of 2 PAPI light units positioned on the left side of the TLOF on the lateral centre-line of the TLOF at 90° to the approach direction;

b. Have the inner light unit positioned at 10 m from the TLOF left edge, and the outer unit at 6 m from the inner unit;

c. Be constructed and mounted as low as possible, with a tolerance of plus or minus 30 cm, within the centre of the helipad elevation;

d. Be light in weight and on frangible mounts;

e. Have a suitable brilliancy control incorporated to allow for adjustment of light intensity to meet the prevailing conditions.

f. Conform to the specifications contained in RA 3515(8) other than where amended by RA 3535 and except that the on-slope sector of the system **should** be increased to 45 minutes; and

g. Conform with the vertical colour sectors for a 6° approach slope, as follows:

(1) Above course (6.5° or more): WHITE / WHITE;

(2) On course (6°): RED / WHITE; and

(3) Below course (5.5° or less): RED / RED.

Helicopter Approach Path Indicator.

22. A HAPI System **should** be installed where there is a requirement to fit a Visual Approach Slope Indicator and there is no existing PAPI or APAPI installation.

23. A HAPI **should**:

a. Have a signal format:

(1) That includes four discrete signal sectors, providing an “above slope”, an “on slope”, a “slightly below” and a “below slope” signal;

(2) As shown in Figure 4;

(3) With a signal repetition rate of the flashing sector of the HAPI of at least 2 Hz, with an on-to-off ratio of the pulsing signals set at 1 to 1, and the modulation depth of at least 80%;

(4) With an angular size of the “on-slope” sector of 45 minutes; and

(5) With an angular size of the “slightly below” sector of 15 minutes.

b. Have light intensity distribution in red and green colours as described in RA 3535(6);

c. Have a colour transition of the HAPI in the vertical plane appear to an observer, at a distance of not less than 300 m, to occur within a vertical angle of not more than 3 minutes;

Acceptable Means of Compliance 3535(3)

d. Have a transmission factor of a red or green filter not less than 15% at the maximum intensity setting;

e. At full intensity, have a Y-coordinate of the red light not exceeding 0.320, and the green light within the boundaries specified RA 3535(6);

f. Have a suitable intensity control provided to allow adjustment to meet the prevailing conditions and to avoid dazzling the pilot during approach and landing;

g. Be capable of adjustment in elevation at any desired angle between 1° and 12° above the horizontal with an accuracy of ±5 minutes of arc;

h. Have the angle of elevation setting of HAPI such that during an approach, the pilot of a helicopter observing the upper boundary of the "below slope" signal will clear all objects in the approach area by a safe margin;

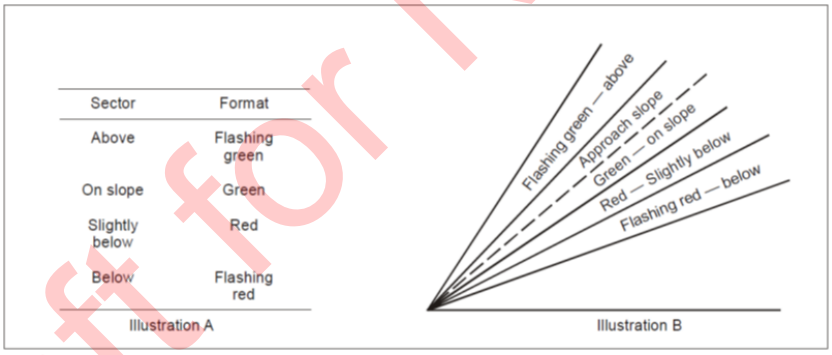
i. Have a light system designed that:

(1) In the event the vertical misalignment of a unit exceeds ±0.5° (±30 minutes), the system will switch off automatically; and

(2) If the flashing mechanism fails, no light will be emitted in the failed flashing sectors.

j. Be so designed that deposits of condensation, snow, ice, dirt, etc., on optically transmitting or reflecting surfaces interfere to the least possible extent with the light signals and **should not** affect the contrast between the red and white signals and the elevation of the transition sector.

Figure 4. Helicopter Approach Path Indicator



Guidance Material 3535(3)

Permanent Helicopter Landing Site - Approach Guidance Systems

24. An example of where obstacle criteria may drive the need for a VAGS is where an aeronautical study indicates that an existing object extending above an obstacle protection surface could adversely affect the safety of operations of helicopters and one of the following options is not practicable:

a. Raising the approach slope of the system;

b. Reducing the azimuth spread of the system so that the object is outside the confines of the beam;

c. Displacing the axis of the system and its associated obstacle protection surface by no more than 5°; and

d. Displacing the FATO.

25. The requirements of sub-paras c. and d. above can be met for lights on a line normal to the line of sight if the light units are separated by 1 m for every km of viewing range.

26. This RA applies to PAPI installation for HLS, APAPI and HAPI installations. The following specifications apply to PAPI, APAPI and HAPI:

a. An obstacle protection surface needs to be established when it is intended to provide a visual approach slope indicator system.

Guidance Material 3535(3)

b. New objects or extensions of existing objects need not be permitted above an obstacle protection surface except when, in the opinion of the appropriate authority, the new object or extension would be shielded by an existing immovable object. (Note: Circumstances in which the shielding principle may reasonably be applied are described in the Airport Services Manual, Part 6 (Doc 9137)).

27. Existing Objects:

a. Existing objects above an obstacle protection surface need to be removed except when, in the opinion of the appropriate authority, the object is shielded by an existing immovable object, or after aeronautical study it is determined that the object would not adversely affect the Safety of operations of helicopters.

b. Where an aeronautical study indicates that an existing object extending above an obstacle protection surface could adversely affect the Safety of operations of helicopters, one or more of the following measures need to be taken:

(1) Suitably raise the approach slope of the system;

(2) Reduce the azimuth spread of the system so that the object is outside the confines of the beam;

(3) Displace the axis of the system and its associated obstacle protection surface by no more than 5°;

(4) Suitably displace the FATO; and / or

(5) Install a visual alignment guidance system specified in RA 3535(3).

28. The lateral spacing between APAPI units may be increased to 9 m (±1 m) if greater range is required or later conversion to a full PAPI is anticipated. In the latter case, the inner APAPI unit needs to be located 15 m (±1 m) from the runway edge.

29. Care is required in the design of the units to minimize spurious signals between the signal sectors and at the azimuth coverage limits.

Civil Equivalence.

30. This Regulation is in line with ICAO Annex 14 Vol II para 5.3.

Regulation 3535(4)

Permanent Helicopter Landing Site - Helipad Lights

3535(4) HoEs and ADH-Facing Organizations **shall** ensure that, where a Permanent HLS is intended for use at night, lights are provided for the FATO, TLOF and Aiming point.

Acceptable Means of Compliance 3535(4)

Permanent Helicopter Landing Site - Helipad Lights

FATO Lights.

31. FATO lights **should**:

a. Be placed along the edge of the FATO;

b. Be uniformly spaced:

(1) For an area in the form of a square or rectangle, at intervals of not more than 50 m with a minimum of four lights on each side including a light at each corner; and

(2) For any other shaped area, including a circular area, at intervals of not more than 5 m with a minimum of ten lights.

c. Be fixed omnidirectional lights showing white. Where the intensity of the lights ►needs to◄ be varied, the lights **should** show variable white, with a minimum of 3 stages of brilliancy.

d. Have lighting characteristics iaw Figure 7; and

e. Be no higher than 25 cm and be inset when a light extending above the surface would endanger helicopter operations. Where a FATO is not meant for lift-off or touchdown, the lights **should not** exceed a height of 25 cm above ground or snow level.

Acceptable Means of Compliance 3535(4)

Aiming Point Lights.

32. Aiming Point Lights **should**:

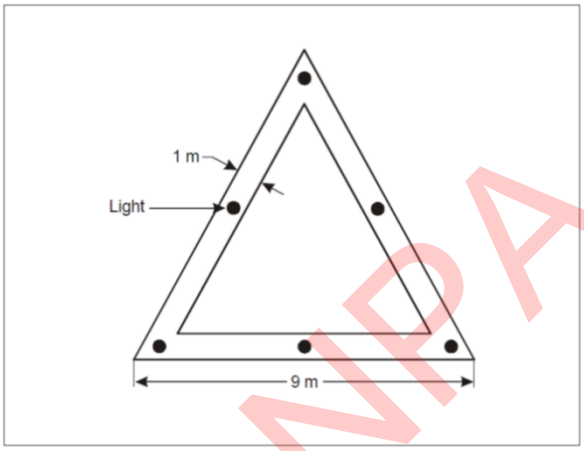
a. Be collocated with the aiming point marking;

b. Form a pattern of at least six omnidirectional white lights as shown in Figure 5;

c. Be inset when a light extending above the surface could endanger helicopter operations; and

d. Have lighting characteristics iaw RA 3535(6).

Figure 5. Aiming Point Marking with Lights



TLOF lights.

33. The TLOF lighting system **should** consist of one or more of the following:

a. Perimeter lights; or

b. Floodlighting; or

c. Arrays of segmented point source lighting (ASPSL) or luminescent panel (LP) lighting to identify the TLOF when perimeter lights and floodlighting are not practicable and FATO lights are available.

34. TLOF perimeter lights **should**:

a. Be placed along the edge of the area designated for use as the TLOF or within 1.5 m from the edge;

b. Where the TLOF is a circle:

(1) Be located on straight lines in a pattern which will provide information to pilots on drift displacement; and

(2) Where paragraph 33a is not practicable, be evenly spaced around the perimeter of the TLOF at the appropriate interval, except that over a sector of 45° the lights **should** be spaced at half spacing.

c. Be uniformly spaced at intervals of not more than 5 m with:

(1) A minimum of 5 lights per square or rectangular TLOF including a light at each corner; and

(2) A minimum of 14 lights for a circular TLOF.

d. Be fixed omnidirectional lights showing green; and

e. Be no greater than a height of 25 cm and inset when a light extending above the surface could endanger helicopter operations.

f. Be opposite each other when on opposite sides of the TLOF perimeter.

g. Have light distribution shown in Table 1.

Acceptable Means of Compliance 3535(4)

Table 1. Light Distribution of TLOF Lights (Azimuth +180° to -180°)

Elevation (E)	Intensity
$20^0 \leq E \leq 90°$	3 cd
$13^0 \leq E \leq 20°$	8 cd
$10^0 \leq E \leq 13°$	15 cd
$5^0 \leq E \leq 10°$	30 cd
$2^0 \leq E \leq 5°$	15 cd

35. TLOF floodlighting **should**:

a. Be located to avoid glare to pilots in flight or to personnel working on the area. The arrangement and aiming of floodlights **should** be such that shadows are kept to a minimum:

(1) Floodlights **should** have no upward component of light output; the entire light output being directed below the horizontal;

(2) Provision **should** be made for the adjustment of the elevation of the floodlight beam after installation. The adjustment **should** provide movement of the axis of the projected beam from 1° above the plane to 5° below the horizontal reference plane.

b. When located within the Safety Area of a HLS, be no greater in height than 25 cm;

c. Be marked and lit as obstacles;

d. Have a spectral distribution such that the surface and obstacle marking can be correctly identified; and

e. Have an average horizontal illuminance of at least 10 lux, with a uniformity ratio (average to minimum) of not more than 8:1 measured on the surface of the TLOF.

36. ASPSL and LP lighting **should** be iaw ICAO Annex 14, Volume II, 5.3.9.

Guidance Material 3535(4)

Permanent Helicopter Landing Site - Helipad Lights

37. A suitable brilliancy control, where provided, will allow for adjustment of light intensity to meet the prevailing conditions.

Civil Equivalence.

38. This Regulation is in line with ICAO Annex 14 Vol II para 5.3.

Regulation 3535(5)

Permanent Helicopter Landing Site - Air Transit Route Lights

3535(5) HoEs and ADH-Facing Organizations **shall** ensure that, where an Air Transit Route is intended to be used at night or during periods of low visibility, lighting is provided.

Acceptable Means of Compliance 3535(5)

Permanent Helicopter Landing Site - Air Transit Route Lights

39. Air Transit Route lights **should**:

a. Be installed between the first and last points of surface movement (Figure 6);

b. Consist of a line of alternate green and yellow lights installed along the centre-line of the air transit route, commencing with green and terminating with yellow;

c. Have spacing of the lights of 15 m on curves and 30 m on straight routes;

d. Where an air transit route terminates at an apron or other area not intended for own power operation, be terminated with a terminating bar consisting of three unidirectional red lights spaced at 4.5 m centred on and perpendicular to

Acceptable Means of Compliance 3535(5

the air transit route centre-line. The terminating bar **should** be placed at the beginning of the apron area;

e. Be fixed omnidirectional lights showing green, yellow or red as applicable;

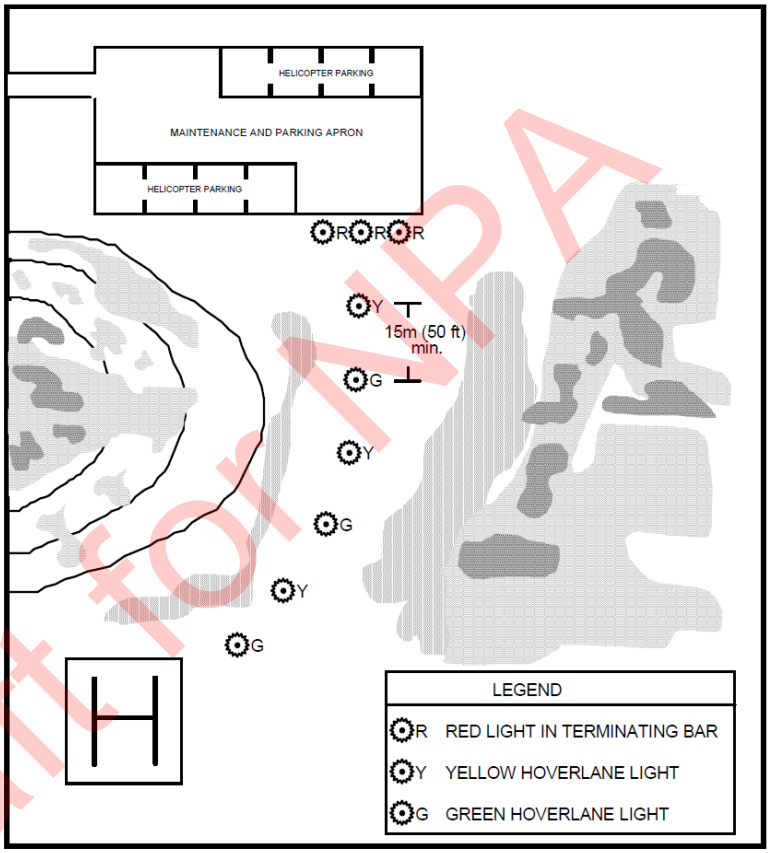
f. Have a suitable intensity control to allow adjustment to meet the prevailing conditions and to avoid dazzling the pilot;

g. Be mounted on frangible fittings located as near to the ground as possible;

h. Be no greater in height than 250 mm above ground level. Where elevated light fittings would endanger helicopter operations the air transit route lights **should** be inset; and

i. Have lighting characteristics iaw RA 3535(6).

Figure 6. Air Transit Route Lights



Guidance Material 3535(5)

Permanent Helicopter Landing Site - Air Transit Route Lights

40. Consideration may need to be given to selecting filter types or lamp sizes, which will provide the most consistent level of light output by the different coloured lights. The use of hoods that control the direction of light may be considered to avoid confusion with other HLS lights.

Regulation 3535(6)

Permanent Helicopter Landing Site - Aeronautical Ground Lights Characteristics

3535(6) HoEs and ADH-Facing Organizations **shall** ensure that all AGL fittings are of such construction, intensity and colour so that their presence does not endanger helicopters and is sufficient to provide adequate and appropriate guidance to aircrew.

Acceptable Means of Compliance 3535(6)

Permanent Helicopter Landing Site - Aeronautical Ground Lights Characteristics

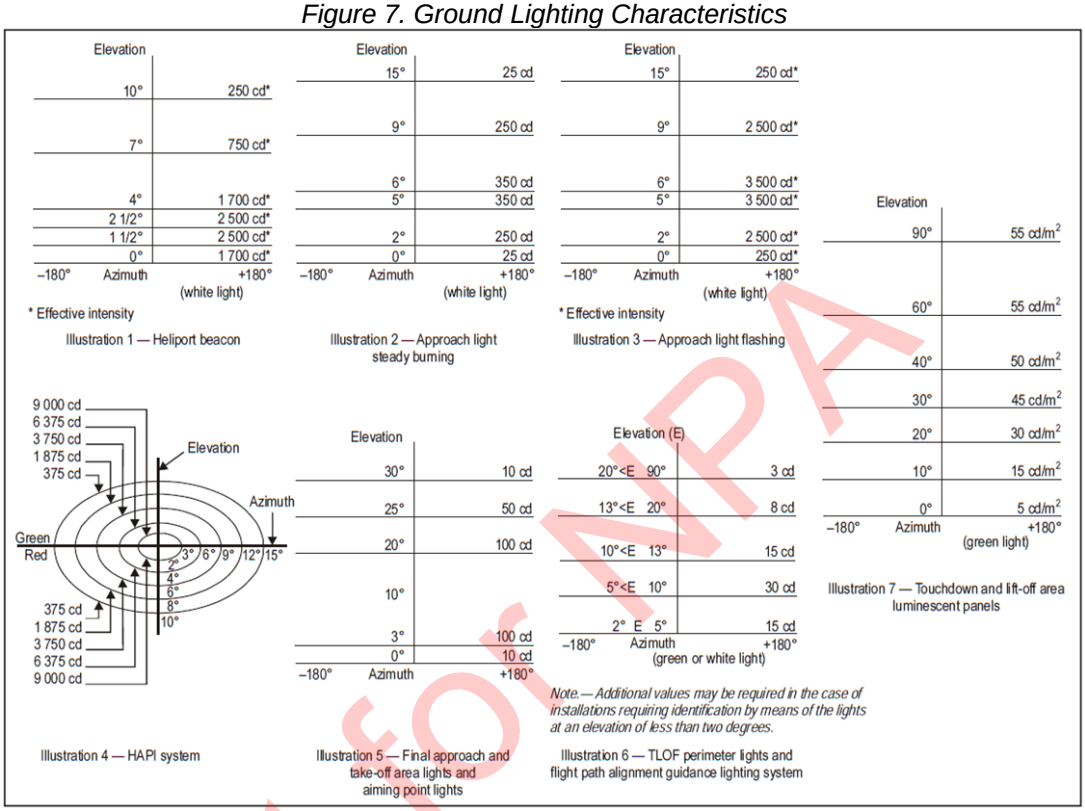
Construction.

41. AGL construction **should** be as per RA 3515(28)[6].

Intensity.

42. The intensity and distribution of AGL **should** be iaw Figure 7.

Figure 7. Ground Lighting Characteristics



Colour.

43. Colour requirements for all AGL **should** be as detailed in ICAO Annex 14, Vol I, Appendix 1.

Guidance Material 3535(6)

Permanent Helicopter Landing Site - Aeronautical Ground Lights Characteristics

44. Nil.

Regulation 3535(7)

Domestic Helicopter Landing Site - Lighting and Signalling

3535(7) ►Withdrawn – Incorporated into RA 3536(1): Domestic Helicopter Landing Sites – General Requirements.◄

Acceptable Means of Compliance 3535(7)

Domestic Helicopter Landing Site - Lighting and Signalling

45. ►Withdrawn – Incorporated into RA 3536(1): Domestic Helicopter Landing Sites – General Requirements.◄

Guidance Material 3535(7)

Domestic Helicopter Landing Site - Lighting and Signalling

46. ►Withdrawn – Incorporated into RA 3536(1): Domestic Helicopter Landing Sites – General Requirements.◄

[6] Refer to RA 3515(28): Aeronautical Ground Lights Characteristics – Construction.