

REVIEW ON REQUIREMENT OF INTERMEDIATE HOLDING POSITION LIGHTS DURING CAT I CONDITIONS

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SUMMARY

The paper presents analysis on requirement of intermediate holding position lights in different categories of lighting and circumstances.



2. REFERENCE TO SARPS (ICAO Annex 14 Vol 1):

INTERMEDIATE HOLDING POSITION LIGHTS

5.2.11.1 An intermediate holding position marking should be displayed along an intermediate holding position.

5.3.21.1 Except where a stop bar has been installed, intermediate holding position lights shall be provided at an intermediate holding position intended for use in runway visual range conditions less than a value of 350 m.

5.3.21.2 **Recommendation.**— *Intermediate holding position lights should be provided at an intermediate holding position where there is no need for stop-and-go signals as provided by a Stop Bar.*

Case 1:

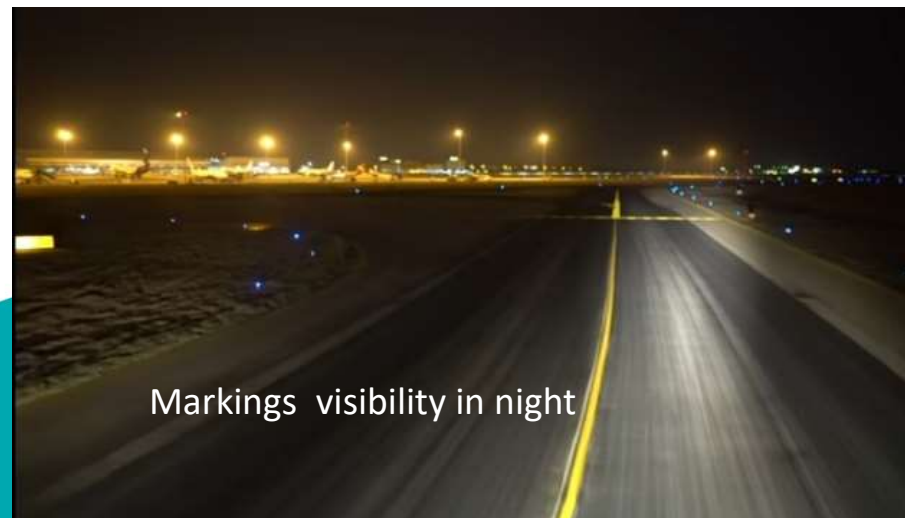
During CAT I When airport provided with Taxiway edge light and signs only.

- Pilot is completely dependent on the marking and signs for manoeuvring and situational awareness.
- The visual field is aligned majorly with the markings during landing and takeoffs*.
- Dark adaption switchovers are very low

Markings visibility in Day



Markings visibility in night



CASE 1: CONCERNS WITH MARKINGS

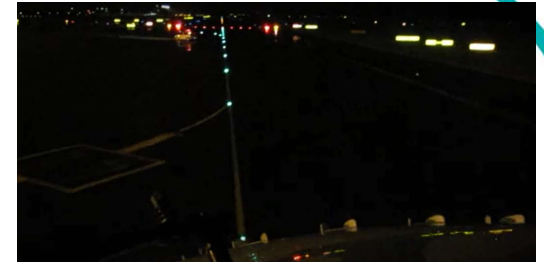
During CAT I When airport provided with Taxiway edge light and signs only.

- Fading issues
- Deposits and contaminants
- Rain/dampness effects the visibility of markings
- Flaking

Present enhancement methods for effectiveness of markings:

- Retroreflective markings
- Black backgrounds for increasing the conspicuity of the markings

Inference: Markings are always not completely reliable



Case 2:

During CAT I When airport provided with taxiway centre line lights and guidance sign boards as the guidance.



When Airports are provided with CAT II/III operations, the taxiway centreline lighting is mandatory and for these airports, it is quite common for them to operate the TCLs even in CAT I conditions. Some airports, operate the TCLs for additional conspicuity even in CAT I conditions.

CASE 2:

During CAT I When airport provided with taxiway centre line lights and guidance sign boards as the guidance.

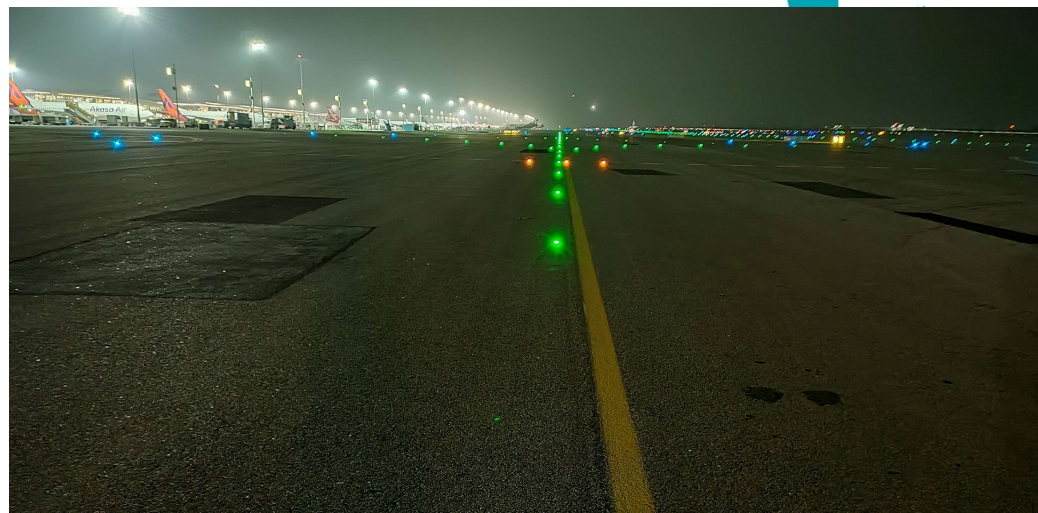


- Establishing the IHP marking is challenge, as the visual field is inclined towards the lights which are spaced longitudinally to achieve a linear effect.
- Identification of transverse IHP marking in the above scenario is tough
- Weather could further aggravate the issue.
- Identifying the light and the marking in same visual field.
- Changes in experienced or accustomed visual cues can cause illusory perception problems- ADM Part 4

“Important “historical” factors or the intensities or luminances to which the viewer has been previously exposed, the duration of that exposure and the length of time elapsed between the previous and present stimulus complex” is one of the major factors in assessing the AGL system requirements. (Airport marking and lighting systems: A survey of operational tests and human factors,1959-61)

PROPOSAL

- Airports operating under the CAT I conditions and having taxiway centre line lighting as guidance for taxiing, the IHP lights shall be provided
- It is recommended to have intermediate holding position lights for airports operating in CAT I conditions and having taxiway edge lighting as guidance for taxiing. However, the brilliancy shall meet the intensity requirements for RVR conditions greater than 350 mtrs.



Thankyou