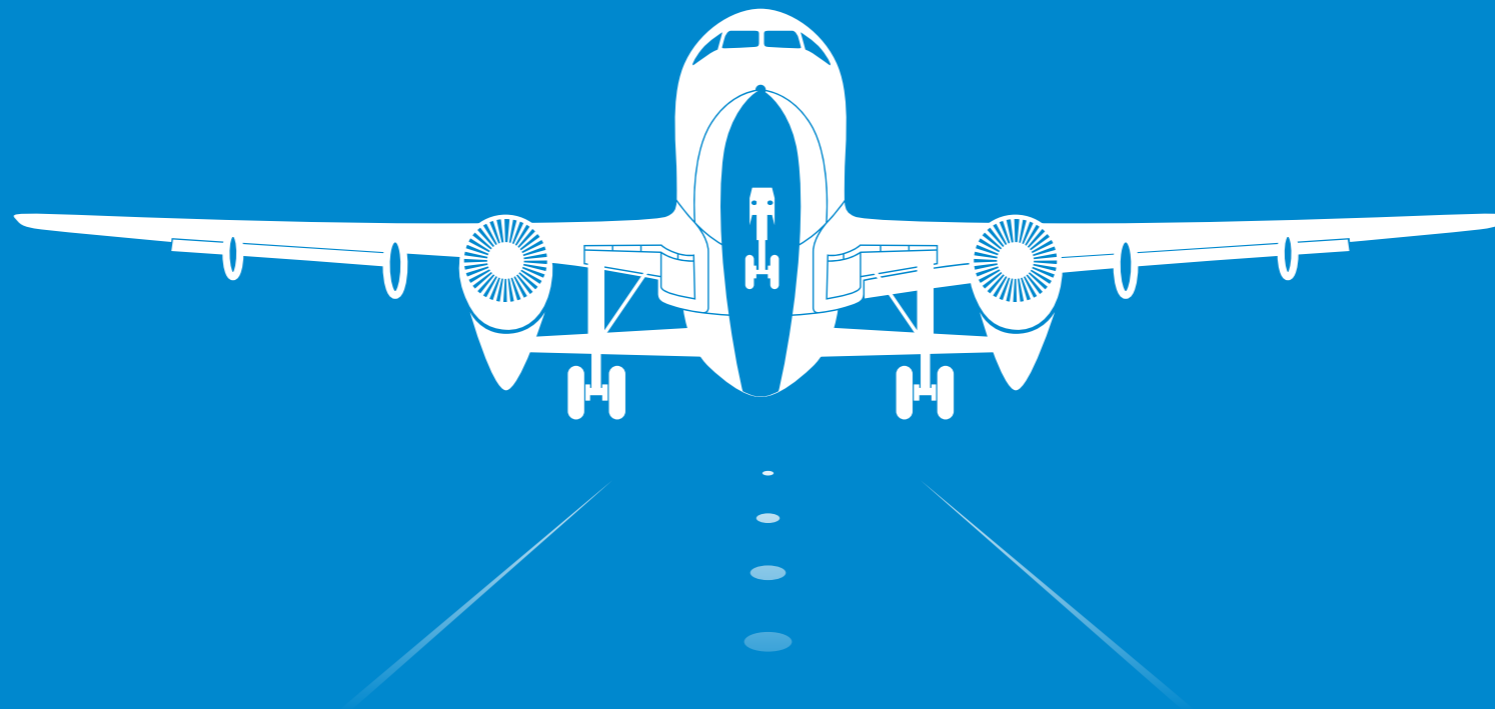


## Have you got any of these?

- CAT I and night operations/adverse weather conditions
- Runway used for take-off with RVR  $\geq$  400 m
- Runway not equipped with centre line lights
- Width between the runway edge lights greater than 50 m



Then consider installing  
**RUNWAY CENTRE LINE LIGHTS**  
at your aerodrome!

# Have there been any accidents/serious incidents?

Aircraft accident investigation reports have indicated that in some cases the visual cues available during the final stages of the approach were insufficient for the pilots to safely land the aircraft.

The investigations showed that:

- 'lack of runway centreline and touchdown zone lighting contributed to the first officer not being able to see the runway environment clearly enough for him to maintain the aircraft on the approach path and the runway centreline'<sup>3</sup>;
- 'there were no runway centreline lights installed, and that the snow cover on the runway surface was reported to be so thick that runway markings were not visible'<sup>4</sup>;
- 'runway 21L was not equipped with runway centreline or touchdown zone lighting, and was not grooved '<sup>5</sup>;
- 'the presence of runway centreline lighting would have increased the visual cues available to the flight crew, and assisted with the recognition of the developing sideslip and lateral deviation from the centreline'<sup>6</sup>;
- 'favouring cause: lack of the central line lighting and [...] the aerodrome operator of [...] airport will analyse the possibility of installing a lighting system that includes also the lighting of the runway axis'<sup>7</sup>;
- 'the crew encountered a number of difficulties in positioning themselves in relation to the threshold and runway centreline because of ground markings that were not very visible and the lack of suitable light signalling'<sup>8</sup>;
- 'the absence of runway centerline lighting could have contributed to increasing the crew's difficulties in positioning the airplane laterally and in relation to the far end of the runway'<sup>9</sup>;
- 'the runway not have centre line lighting that the runway edge lights are located almost three metres outside the runway's edge may also have contributed to the pilots not realising in time that they were close to the runway edge'<sup>10</sup>;
- 'it is recommended that [...] install touch down zone lighting and centerline lighting on runways [...] to enhance the safety of aircraft landing in inclement weather'<sup>11</sup>.

3 Transportation Safety Board of Canada (TSB), Aviation Investigation Report A97H0011;  
4 Accident Investigation Board (AIB) Finland, B9/1997L Report;  
5 Australian Transport Safety Bureau, Investigation Report 199904538;  
6 Australian Transport Safety Bureau, Investigation Report 200300418;  
7 Civil Aviation Safety Investigation and Analysis Center (CIAS), I 13-03/05.08.2013;  
8 Bureau d'Enquêtes et d'Analyses pour la sécurité de l'aviation civile, March 2014;  
9 Bureau d'Enquêtes et d'Analyses pour la sécurité de l'aviation civile, Report n-aa001224a;  
10 Swedish Accident Investigation Authority, Final Report RL 2014:01e;  
11 Jamaica Civil Aviation Authority (JCAA), Report Number JA-2009-09.



## Current provisions for runway centre line lights

The current EASA Certification Specifications foresee the installation of centre line lights only on precision approach category II or III runways or on a runway intended to be used for take-off with an operating minimum below an RVR of the order of 400 m.<sup>1</sup>

According to EASA Guidance Material runway centre line lights are advised to be installed on a precision approach runway category I and on a runway intended for take-off with an operating minimum of an RVR of the order of 400 m or higher or where the width between the runway edge lights is greater than 50 m.<sup>2</sup>

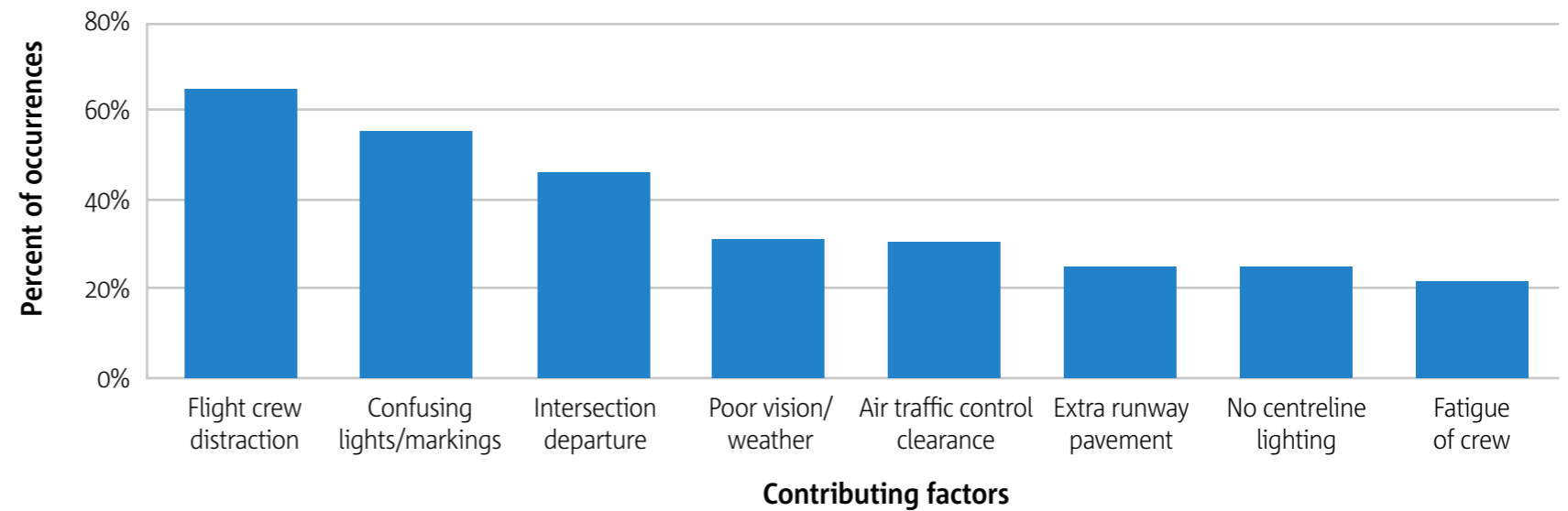
1 CS ADR-DSN.M.690 Runway centre line lights;  
2 GM1 ADR-DSN.M.690 Runway centre line lights;



In 2010, the Australian Transport Safety Bureau published a research report on the factors influencing misaligned take-offs at night.<sup>12</sup>The report identified the following eight factors common to misaligned take-offs, both in Australia and internationally:

In all occurrences, one or more of these factors were present and contributed to the event. Each of these factors may increase the risk of a misaligned take-off occurrence.

<sup>12</sup> Factors Influencing misaligned take-off occurrences at night, Aviation Research and Analysis Report AR-2009-033



## When to install the centre line lights?

The aerodrome operator should consider installing runway centre line lights when planning major construction works or re-surfacing of the runway.

## What are the safety benefits of installing runway centre line lights?

- Runway centre line lights together with markings are the primary visual cues used by pilots for visual and directional guidance during landing, roll-out and take-off.
- In addition, runway centre line lights allow pilots to estimate the distance from the end of the runway through the colour of the lights.
- The installation of runway centre line lights will enhance safety for an aircraft landing or taking-off in adverse weather conditions or during night.

Your safety is our mission

An Agency of the European Union

