HIL-Tech
L TD

2119 Devon Rd.
Oakville
Ontario L6J 5L9
Canada

Tel: [001] 905 820 6769
FAX: [001] 905 820 1061
Eml: hil-tech@yesic.com
Web: www.ledline.net

LEDline®; Linear LED Lighting, For Better Defining the Helipad Area

Linear markings improve helipad safety, so here are some pictures of linear LEDline® being used for helipads, which clearly demonstrate that linear markings are better at defining the helipad area.

Downtown Manhattan Helipad Outlined with Linear and Point Source Visual Aids

The Reasons Why Linear Lit Visual Aid Markings Are Better: Linear lit markings are far, far better at define the helipad area compared to point sources, because, nighttime viewers lose almost all depth perception. Therefore, looking at a pad at night from low angles, (like an approaching helicopter), they cannot see which of the point source lights are next to each other or which are in front of each other. This point was made at the presentation to the ICAO VAWG/9 Committee, this June 2012 in Montreal, on "The Evolution of Linear Visual Aids". In addition, as below, it was illustrated with identical pictures from the Downtown Manhattan Helipad. (The presentation can be downloaded from the HIL-Tech Ltd. web site www.ledline.net).

The enclosed (Page 2) identical pictures of the same helipad, initially shows the helipad with lit point source inset lights only and the following picture has the lit linear markings added. From a low angle perspective, from the top picture, it is very difficult to ascertain the area of the helipad **without the linear markings being lit**, Once the linear markings are lit, it is easy at see the helipad area. **Therefore, the lit linear markings clearly defined the area, even if the angle they are being viewed at is very low**.

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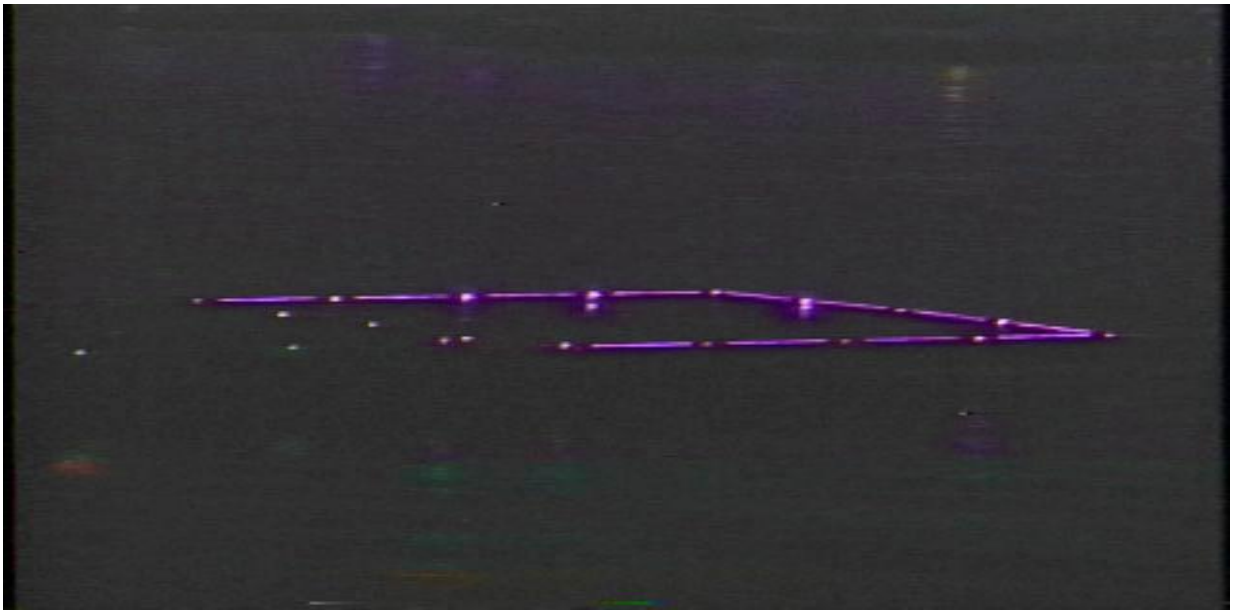
As discussed, here are the identical pictures of the Downtown Manhattan Helipad. **However, the immediate one below has only point source visual aids lit, as such it is very difficult to make out the helipad area.**

The identical picture below, of the Downtown Manhattan Helipad, is outlined with **both linear and point source visual aids. Note how the linear visual aids below are much better at defining the helipad area at night, even at these low angles.**



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As a Further illustration on why linear visual aids much better define the area from the Downtown Manhattan Heliport: The helicopter parking area of the Downtown Manhattan heliport is outlined with standard blue raised airfield taxiway point source edge lights, whilst the helipad area itself, has, as above, both inset point source lights and lit linear visual aids.

At night in low light, everyone's depth perception disappears. Therefore, when the contrast ratio on the first identical low angle picture below is turned down, simulating the lack of depth perception at night, although everyone can still see the blue point source lights, no one has any idea what they are marking, (which blue light is next to which, or which light is in front of the other).

However, even in this low light condition, within the same photograph, the lit linear markings here and in the other picture are both clearly visible and still clearly define the helipad area, no matter how low the contrast is, even if the angle they are being viewed at (typical for an approaching helicopter), is also very low.

To be able to determine the area being marked by the standard blue taxiway point source lights, one would have to be at a sufficient height in the helicopter, almost on top of the blue lights, for the pilot/s to be able to clearly see what they were defining. Therefore, from any low angle viewpoint, these and any other point source lights would not help an approaching pilot, as they would not give any idea of what area they were marking. As such, lit linear markings are much better define helipad areas.

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Note: The UKCAA has done extensive research on this point, which is why Annex 14 Vol. 2 was amended to reflect their research and to allow lit linear markings to be used for the aiming circle and centre "H" of helipads.

For those who have not seen linear helipad visual aids, one might want to also illustrate this issue by recalling the standard road yellow hazard flashing lights, which are used at construction sites at night worldwide. Everyone driving past construction sites at night has seen and experienced them and as long as they are in parallax, one behind the other, one can easily see the direction to go and it is easy to follow the flashing lights. However, should the road have to deviate, because of the construction, so that these flashing hazard lights are then put across the road preventing drivers from proceeding onwards so vehicles must turn either left or right, at night, drivers are immediately totally confused as to the direction to follow. This is because of the lack of depth perception at night, so one cannot tell which lights are behind or which are in front of which, so their guidance completely disappears.

This tends not happen with linear lit markings, as the linear lit markings easily guide vehicles along the road and when they must deviate from the route, the lit across road barrier is far more obvious, as the shape of the lit markings changes completely from those on the side of the road. The ones ahead preventing drivers from proceeding, are full frontal and fully linear, so their linearity shape is different and obvious so those that at the sides of the road. Therefore, there is no confusion as one can easily tell by their shape, which are the linear lights along the side of the road, and which are the ones across the road. Therefore, a lit linear lines clearly donate the path compared to point sources which do not.

These long shots are taken from Level 5 of the hospital building, some 150m distant from the helipad at an elevation of around 17.5m

Copyright Kevin Oliphant Airside Installations Ltd, ground Level LEDline® Golden Jubilee Hospital Glasgow.

Note: Even with very low angle LEDline® shots, one can still see the other side of the helipad.

The Golden Jubilee Hospital helipad site does not have a lit “H” for the helicopters to land on, however, should the hospital ever wish to add one in the future, it is easy and compared to

traditional inset lights, very cost effective to do so, since the lights are installed in only a 40mm (1.5”) groove in the pavement. I understand, from a pilot’s point of view, having something that you can see and land on makes sighting the ground in any weather, a lot easier, so they may well add this later on.

Here is a helipad with a lit aiming circle and lit “H” , illustrating how a lit “H” to land on might be beneficial to pilots, as it shows exactly where the ground is.

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Mr. Nick Hutchins, Director Sales and Marketing,
Tel: 001 (905) 849-6134 Alt.: 001 (905) 844-0793
Fax: 001 (905) 842-7418
e-mail: nhutchins@cogeco.ca web: www.ledline.net