

專利設計提升跑道燈維修效率

Patented Design Enhances Efficiency of Airfield Ground Lighting Maintenance



CCR測試平台以其獨一無異、創新和實用性取得設計專利。與圖中兩位發明者分享喜悅的包括時任機電署總工程師/機場及車輛工程彭耀雄先生（左二）、高級工程師/機場1梁耀康先生（左一）、機管局工程及維修總經理梁永基先生（右二）以及機管局電力工程維修經理吳邦謀先生（右一）。

The CCR testing platform is patented due to its novelty, creativity and practicality. Sharing the joy with inventors in the middle are Mr. Eric Pang Yiu-hung, the then Chief Engineer/Airport and Vehicle Engineering, EMSD (2nd from left), Mr. Leung Yiu-hong, Senior Engineer/Airport 1, EMSD (1st from left) and Mr. Ricky Leung, General Manager, Technical Services, AAHK (2nd from right) and Mr. James Ng, Manager, Electrical Services Maintenance, AAHK (1st from right).

隨着香港國際機場的航空交通量持續增長，能用於維修機場跑道燈的時間亦相應緊逼。為此，我們與香港機場管理局（機管局）共同設計及建造一套跑道燈固定電流調節器（CCR）測試平台，以解決維修時遇到的困難和挑戰，並提高營運效率。

由於我們的測試平台設計獨一無異，創新和實用性兼備，故在2013年年底成功取得設計專利，這對我們團隊的努力是個重大肯定。

為了克服維修跑道燈遇到的困難，我們的專利解決方案利用現有的部件，如燈泡、隔離變壓器、跑道燈電纜和簡單的結構用料，建造一個CCR移動測試平台，在進行維修時連接室內的CCR，以測試其功能。

現在，我們無須走到戶外，而且無論任何天氣，都可隨時在室內進行跑道燈亮度穩定測試，以及就基本故障檢測進行檢查，提升維修效率。這個測試



CCR測試平台由機管局和機電署共同設計及製造，可連接到室內的CCR以進行CCR故障分析和改善跑道燈的維修效率。

The CCR testing platform jointly designed and constructed by AAHK and EMSD can be connected to the indoor CCR to facilitate CCR fault analysis and improve maintenance efficiency of the AGL.

平台令我們於戶外進行跑道燈故障檢測的修正時，所需工時減少了22%，讓跑道能盡早騰出作其他用途。

機電工程署承諾為機場跑道燈提供優質的維修服務，為飛機導航與乘客安全作出貢獻。

Air traffic at the Hong Kong International Airport has become increasingly busy, leaving us with less and less maintenance window time for airfield ground lighting (AGL). Our initiative to jointly design a patented constant current regulator (CCR) testing platform with the Airport Authority Hong Kong (AAHK) has enabled us to meet the AGL maintenance challenges and improve operation efficiency.

The innovative design was successfully patented at the end of 2013, given its novelty, creativity and practicality. It is a big recognition of the team's effort.

To overcome the AGL maintenance difficulties, the patented solution uses existing spares such as light bulbs, isolation transformers, AGL power cables and simple framework materials to build a CCR mobile testing platform, which can be connected to the indoor CCR to test its functionalities during maintenance.

Now, instead of going outdoors, brightness stability test and basic lamp failure detection checking can be conducted anytime indoors under all weather conditions to enhance AGL maintenance efficiency. Although lamp failure detection calibration with lighting circuitries is still carried out outdoors, the testing platform has enabled us to cut total outdoor work time by 22% and release the runway earlier for other purposes.

EMSD is committed to providing excellent maintenance services for AGL which is critical to airplane navigation and thus passenger safety.



CCR測試平台的成功彰顯了機管局與機電署團隊卓越的合作精神。圖為發明者機電署助理電氣督察/飛行區設施3/3洗錦榮先生（左）和機管局飛行區機電工程維修助理經理李柱文先生（右）喜悅地展示設計專利證書。

The CCR testing platform demonstrates excellent team effort and spirit between AAHK and EMSD. Inventors Mr. Sin Kam-wing, Assistant Electrical Inspector/Airfield Facilities 3/3 of EMSD (left) and Mr. Nelson Li, Assistant Manager, Airfield E&M Maintenance of AAHK (right) happily show the patent certificate.