安裝在浮標風速計支柱上的齒輪箱加強了工作人員和航空交通的安全。
Installation of a gear box onto the anemometer mast of the water buoy has enhanced safety for maintenance staff and air traffic.

（安裝前）在風速計支柱安裝齒輪箱前，高空作業為維修工作帶來潛在危險。
(Before installation) Maintenance work before installing the gear box on the anemometer mast posed potential hazards of working at height.

（安裝後）改善風速計支柱設計後，維修工作更安全。
(After installation) Maintenance work after fixing the anemometer mast in the cage is much safer.

提升員工和飛機乘客安全
Safety for Staff and Air Passengers

現懸掛在香港天文台氣象浮標上的儀器，由於儀器位於浮標的頂部，對日常維修工作構成潛在高空作業的危險。我們主動提出的改善方案不單解決了員工的安全問題，更促進了航空安全和改善飛機乘客的體驗。

目前，在香港國際機場對開水域設有五個直徑三米的氣象浮標，浮標上的儀器能自動收集和測量風力、氣壓、溫度和濕度等天氣資訊，通過無線電波，每十秒將即時資訊傳送到位於航空交通管制塔內的天文台機場氣象所。這對預測機場周邊地區的風切變尤其重要，並有助確保航空安全，因為如發現有風切變在機場範圍內出現，飛行員便要立即採取行動，停留在其預定的飛行路徑。

然而，攀爬維修籠至浮標頂部進行維修工作，容易對高空作業的工作人員帶來人體下墮的潛在危險。我們得到天文台和客戶部門海事處的准許，主動重新審視風速計支柱的設計，安裝一組密封式金屬齒輪箱，這樣，豎立在浮標頂部的風向及風速監察裝置便可輕易降下，工作人員便不需攀爬維修籠進行維修工作。新的設計既提升了工作安全，又不影響浮標的堅固性和穩定性。

我們與天文台和海事處成功合作解決維修氣象浮標的安全問題。同時，維修工作可以更有效率地完成，提升天文台氣象裝置的可用性，能更及時地向飛機發出氣象資訊，從而提供風切變的預警，為旅客和公眾加強航空安全。我們的同事也贏得客戶的認同和對機電工程署的讚賞。

Our initiative to solve safety issues arising from maintenance work of the anemometer masts of the Hong Kong Observatory (HKO) weather buoys has contributed to better aviation safety and enhanced travel experiences.

Currently, there are five weather buoys deployed in waters off the Hong Kong International Airport. Each weather buoy comprises an automatic weather station mounted on a three-metre diameter buoy. The automatic weather station measures weather information such as wind, air pressure, temperature and humidity, and transmits the information by radio to the HKO Airport Meteorological Office located in the Airport Traffic Control Tower every ten seconds. The timely weather information gathered and transmitted by these buoys is particularly useful in estimating wind shear over the areas around the airport to ensure aviation safety, as significant wind shear requires immediate action by pilots to stay in their intended flight paths.

However, climbing over the maintenance cage of the weather buoy and up to the anemometer mast to carry out maintenance work for the wind sensor poses potential hazards of working at height for staff. With consent from HKO, the client department, and owner of the buoy, the Marine Department (MD), we took the initiative to re-design the anemometer mast by installing a gear box onto it so that the mast of anemometer erected on top of weather buoy could be lowered down and our staff were no longer required to climb up the cage for maintenance work. The new design has enhanced work safety without compromising the robustness and stability of the buoys.

Our collaboration with HKO and MD has successfully addressed the safety issue of weather buoy maintenance. At the same time, it ensures that the maintenance work be completed effectively and efficiently, thus raising the system availability of the installed instrument in issuing timely wind shear alerts to aircrafts in sea-breeze situations and enhancing aviation safety for air passengers and the public. Our colleagues have also earned recognition from the client who expressed appreciation to EMSD.