



[HOME](#) > [NEWS](#) > [ARTICLE DISPLAY](#)

## How the Air Force is making it easier for aircraft maintainers to see at night

By Donna Lindner, Air Force Research Laboratory / Published September 03, 2020



Side by side comparison of the two Light Emitting Diode fixture options. Per Master Sgt. Petersen both LED options were improvements over the legacy metal-halide fixtures. (U.S. Air Force photo/Master Sgt. Matthew Petersen)

[PRINT](#) | [E-MAIL](#)

**WRIGHT-PATTERSON AIR FORCE BASE, Ohio** – We all know that working in the dark with insufficient lighting makes the task that much more cumbersome. Good quality lighting is critical for maintainers when repairing an aircraft on the flightline.

The U.S. Air Force has an inventory of approximately 5,500 four-wheel diesel light carts that provide flightline and perimeter illumination. This lighting is a necessity for aircraft maintenance, troubleshooting and outside lighting to secure the outskirts of deployed/contingency locations.

Recently, a cross-enterprise team from the Air Force Materiel Command, Air Force Global Strike Command, and Concurrent Technologies Corporation successfully conducted testing at Minot Air Force Base on a flightline light cart retrofit kit that contains new Light Emitting Diode (LED) fixtures.

“This activity is in direct response to a request made by AFGSC Director of Logistics and Engineering during the U.S. Air Force Basing and Logistics Senior Leader Showcase at the Materials and Manufacturing Directorate in April 2019,” said Tom Layne, Air Force Research Laboratory Advanced Power Technology Office Project Engineer. “We wanted to move out rapidly with a great team – our biggest challenge was the schedule impact from COVID.

The LED fixtures are intended to replace legacy metal-halide lamps on flightline FL-1D light carts. LEDs offer many advantages to an agile and resilient flightline, such as immediate illumination, longer life, improved color rendering and lower operating temperatures.

Testing evaluated the retro-kit conversion instructions and solicited feedback from the maintainers who use the light carts. Project funding was made possible by the Assistant Secretary of the Air Force for Energy, Installations, and Environment.

“The installation and conversion of the new LED lights was quick and easy,” said Senior Airman Matthew Brown, Minot 5th Maintenance Squadron AGE Flight, who performed the conversion.

“The instructions provided to our team were very clear cut and easy to apply. The kits had everything we needed - the process was fast and smooth. Through our tests we found only a few things that could potentially be improved. The lights are very well designed and they performed at a very high level - a level I feel the Air Force needs moving forward. I am honored to have been a part of the team selected to do the conversion,” said Brown.

“These lights are amazing,” said Master Sgt. Alvarez, the project lead from Minot 5th Maintenance Squadron AGE Flight.

“Improved LED lighting makes B-52 maintenance safer, more efficient and more effective,” said Master Sgt. Matthew Petersen, B-52 Production Superintendent at Minot AFB. “Foreign object debris/damage prevention is extremely important for the TF-33 engine sustainment to 2050. In addition to improved lighting for maintenance, it is much easier to find metal shavings, rivet stems, foreign objects and tools with this improved lighting.”

“The Minot LED test results combined with previous results, prove that future light carts acquisition specify LED lights instead of metal halide lights, and make a strong argument for the LED retrofits,” said Jeff Hill, program office engineer.

According to Chief Master Sgt. Mark Haralson, Command Aviation Support Equipment Manager, the new fixtures are being evaluated as an enterprise-wide solution to maximize commonality and standardization on the flightline.

The next step includes completing the final report in support of the Air Force Life Cycle Management Center Configuration Control Board issuing fleetwide modification approval.

For more statistics about APTO efforts, contact [AFRL.RXSC.APTO@us.af.mil](mailto:AFRL.RXSC.APTO@us.af.mil), or 937-904-5046.

### About AFRL

The Air Force Research Laboratory (AFRL) is the primary scientific research and development center for the Air Force and Space Force. AFRL plays an integral role in leading the discovery, development, and integration of affordable warfighting technologies for our air, space, and cyberspace force. With a workforce of more than 11,000 across nine technology areas and 40 other operations across the globe, AFRL provides a diverse portfolio of science and technology ranging from fundamental to advanced research and technology development. For more information, visit [www.afresearchlab.com](http://www.afresearchlab.com).



- ◆ [AFRL](#) ◆ [Air Force Research Laboratory](#) ◆ [Minot AFB](#) ◆ [WPAFB](#) ◆ [Materials and Manufacturing Directorate](#) ◆ [flightline](#)
- ◆ [light cart](#) ◆ [LED](#) ◆ [light emitting diode](#) ◆ [Air Force Materiel Command](#) ◆ [Air Force Global Strike Command](#)
- ◆ [Concurrent Technologies Corporation](#) ◆ [Air Force Life Cycle Management Center Configuration Control Board](#)
- ◆ [Assistant Secretary of the Air Force for Energy](#) ◆ [installations](#) ◆ [and Environment](#) ◆ [B-52](#) ◆ [metal halide lamp](#)
- ◆ [Command Aviation Support Equipment](#) ◆ [minot air force base](#)
- ◆ [Assistant Secretary of the Air Force for Energy Installations and Environment](#)

### QUICK LINKS

- |                            |  |                                    |
|----------------------------|--|------------------------------------|
| <a href="#">Join</a>       | <a href="#">AF Sites</a>               | <a href="#">Suicide Prevention</a> |
| <a href="#">Site Map</a>   | <a href="#">Small Business Support</a> | <a href="#">SAPR</a>               |
| <a href="#">Contact Us</a> | <a href="#">Accessibility</a>          | <a href="#">USA.gov</a>            |
| <a href="#">RSS</a>        | <a href="#">EEO</a>                    | <a href="#">No FEAR Act</a>        |
| <a href="#">Questions</a>  | <a href="#">Link Disclaimer</a>        | <a href="#">FOIA</a>               |
| <a href="#">IG</a>         | <a href="#">Strategic APR</a>          |                                    |

### CONNECT



Official United States Air Force Website

Wright-Patterson Air Force Base  
5135 Pearson Road, Building 10  
Wright-Patterson AFB, OH 45433