



STIC Note



MH-65 Maintenance Kit

BACKGROUND/PROBLEM

An issue that MH-65 helicopter aviation mechanics were having was brought to the attention of the STIC team. When MH-65 deck plates are removed for maintenance, there are many fasteners that must be reinstalled in the same orientation in which they were removed. This is due to differing lengths of the fasteners. The length is critical because the equipment and structures are dependent on the lengths so as to not interfere with the equipment below. One particularly important area under the floor is the fuel tank.



Figure 1. Storage case for the MH-65 hardware kit.



Figure 2. Internal storage for the cards.

In the past, technicians previously fabricated crude cardboard placemats to hold the hardware as it was removed. The hardware was being inserted into these homemade cardboard cards but inevitably got mixed up or even went missing. It was determined that there must be a better way to keep track of the hardware and to ensure correct reassembly. A system or tool was needed that allowed the technician to securely place and store the hardware in an exact location every time a deck plate was removed.

METHODS

STIC team market research yielded the Bolt Byte System. The system consists of a series of cards that have the fastener pattern of each floor plate in the aircraft. As shown in figures 2 and 3, the floor plates are each depicted in the diagram on the cover of the storage box. Each floor plate is color-coded. The cards are also coded in the same color as the diagram.



Figure 3. Card.

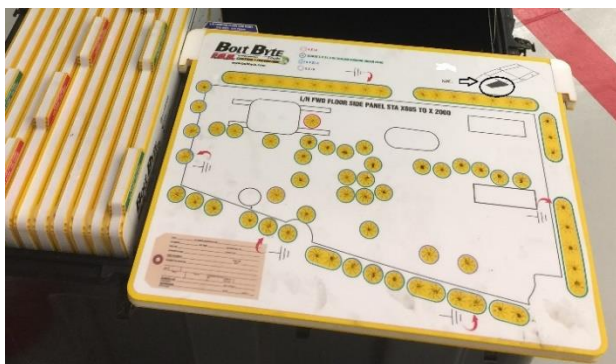


Figure 4. Example indicating designated panel (upper right corner-see arrow).

EVALUATION

ATC Mobile provided favorable feedback on use of their existing kit. Samples of the tool were sent to two Coast Guard units for their evaluation. One box was sent to Air Station Elizabeth City, NC and the other to Air Station Atlantic City, NJ.

Recently, Air Station Elizabeth City used one of the Bolt Byte kits during maintenance of a deck plate and the feedback from the mechanics was that the tool worked very well.

CONCLUSIONS

While the frequency of maintenance of deck plates is relatively low, the concept is the same as the current process of using cardboard. However, the holes that the fasteners are placed into are more robust in the Bolt Byte kit and they are oriented exactly as in the floor plates themselves. In addition, the color-coded diagrams help reduce risk and increase safety by making mix-ups even less likely. The Bolt Byte System has a one-time cost of \$4K and is recommended for use when conducting MH-65 deck plate maintenance.

FUTURE WORK

The STIC will corroborate the findings of this effort once the other Bolt Byte System at Air Station Atlantic City has been used; a decision will be made at that point as to the path forward.

The Science and Technology Innovation Center (STIC) is a DHS S&T and USCG collaboration.