

Technical Orders

What are they and Why do we need them?

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“Those who cannot remember the past are condemned to repeat it.”

— George Santayana

The term “Technical Order” might seem to be a simply defined phrase when used in conjunction with our work as employees of the U.S. Air Force. There are AFIs and regulations that govern our jobs everyday. But is it possible that, although the information is in our hands, we do not reference it as we should before taking life-altering actions. Do we use all of our knowledge correctly? Or, do we assume we know the correct procedures and move forward without consulting our governing documents?

“Equipment technical guidance can be considered a brief history of all the design and engineering considerations that culminated in a working machine. It can also be considered a history of all the mishaps experienced with the use of that specific piece of equipment and many other equipment types designed to perform a similar task,” stated MSgt Michael G. Neff, USAFE/SEG. “These ‘lessons’ are written down and passed on to preserve the capability of the machine. When we do not use technical guidance, we ignore these historical lessons and unnecessarily risk the danger of malfunction, equipment damage, injury and possibly death.”

By definition, Technical Orders are documentation of past measures used in any career field to inform future users of mishaps or procedural changes. It is an official “heads up” to employees in reference to their specific jobs. Each career field has made these documentations in order to govern the present day procedures based on

past incidents that teach us how to do things correctly or to help avoid future mishaps. In a dangerous career field, these Technical Orders can be the difference between living and dying. Therefore, it is imperative for all employees to be familiar with the Technical Orders which pertain to their positions.

“The importance of following technical data is the utmost importance in terms of our manpower, equipment and money crunching. Recently, one of our Team USAFE units experienced a very expensive mishap,” said MSgt Alan R. Law, USAFE/SEW. “A three man crew was tasked to perform a 30-day selective jettison check. As the Crew Chief and his two-man performed their functional test, the third man, being proactive but not following technical data, input carts into breeches that are to remain empty during the functional check. The carts functioned as designed and ejected the asset into the ground. The replacement cost for the training asset was \$57,000.”

In accordance with AFI 21-303, the purpose of Technical Orders in the Air Force is to *provide clear and concise instructions for safe and reliable operation, inspection and maintenance of centrally acquired and managed Air Force systems and commodities. The Air Force vision is to provide all Technical Order users*

with up-to-date, technically accurate, and user-friendly Technical Orders. Technical Orders contain instructions for the installation, operation, maintenance, inspection, enterprise network configuration, training, and support

AFI21-303

1.1.3 For information on TOs (points of contact, policy documents, latest policy initiatives, etc.), visit the TO System Information page at: <http://www.ide.wpafb.af.mil/toprac/to-syste.htm>.

*Editor's note: The term Technical Orders refer to any set of steps, procedures, processes or guidance used in any career field.

of weapon systems, weapon system components, support equipment, or other items procured by the Air Force.

Obviously, Technical Orders are intended to minimize risk by utilizing Operational Risk Management (ORM) techniques in the Air Force workplace. Technical Orders identify a hazard in the workplace, either with equipment or workplace procedures. Once the hazard is identified, an assessment of the mishap can be made and a resolution can be formed. Based on the assessment of the hazard, a person can make a logical, educated decision based on cause and effect. The person is then able to implement any controls in order to prevent the mishap from reoccurring in the workplace. By implementing guidance on uses and misuses, the person has enabled future employees to avoid the mishap from reoccurring. The only caveat is that the person assumes the future employees will reference the Technical Order and learn from previous mistakes. This is not always the situation.

For instance, a C-5 crew might reference the C-5 Technical Order manual if a situation arises that questions how an airplane system functions, as well as during any emergency procedure. If the emergency or situation is a known occurrence, then a Technical Order should exist that explains what is occurring, what the cause of the emergency is and what possible actions can reverse or resolve the situation. In daily operations, this Technical Order can make the difference between a mishap and landing safely.

Technical Orders are important assets that, as Air Force employees, we should access continuously and reference in all aspects of our work. We are not predisposed to repeat the past and documentation has been made in order to help us avoid making the same mistakes. We are not destined to repeat our mistakes, as long as we learn our lessons by utilizing our career field Technical Orders.

“Maintenance Resource Management (Tech Orders/Rules) sums it up best, ‘Most regulatory guidance in the USAF comes from long experience and results from other people’s mistakes. Rules are rarely written as guidelines or techniques, rather they convey compliance-based guidance for universal application. When it comes to compliance, there are two main issues: knowing the rules and following the rules’.”
The bottom line is: Always check the source document to be sure you have the most current and complete guidance.”

—SMSgt Carlos Davis, USAFE/SEF

Top Ten causes for maintenance-related mishaps

- #1—Failure to follow published Tech Data or local instructions**
- #2—Using an unauthorized procedure not referenced in Tech Data**
- #3—Supervisors accepting non-use of Tech Data or failure to follow maintenance requirements**
- #4—Failure to document maintenance in the AFTO Form 781 or engine work package**
- #5—Inattention to detail/complacency**
- #6—Incorrectly installed hardware on an aircraft/engine**
- #7—Performing an unauthorized modification to the aircraft**
- #8—Failure to conduct a tool inventory after completion of the task**
- #9—Personnel not trained or certified to perform the task**
- #10—Ground support equipment improperly positioned for the task**