



# Weapons *Trending*

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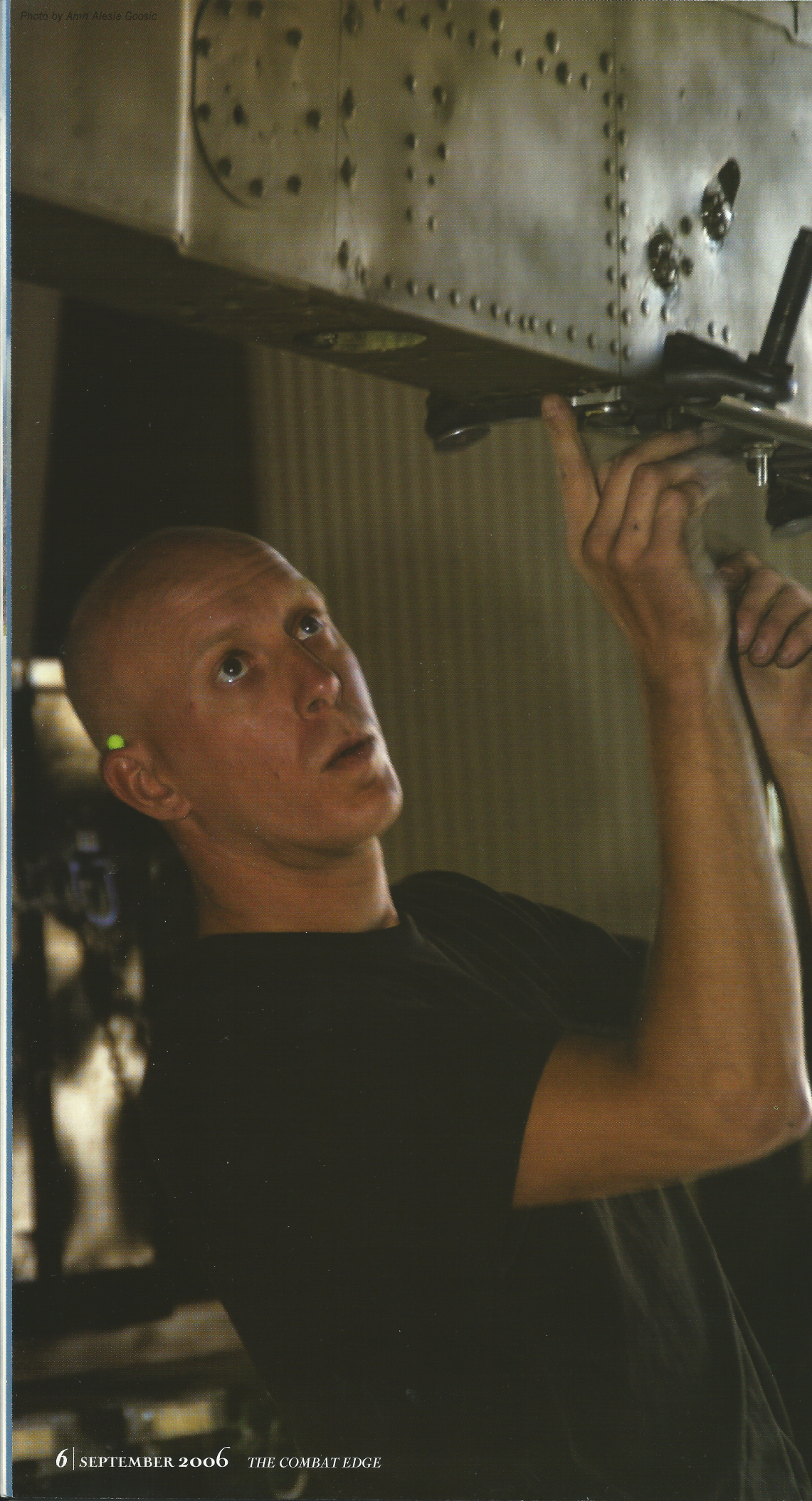




**T**his article is intended to focus on some trending issues in the weapons safety arena. Even though the focus is primarily on weapons safety, some of the ideas can be applied to flight and ground safety. The commonly used Webster's Dictionary (1984) defines a trend as a "*general indication of tendency, drift, or a direction of movement.*" The dilemma in weapons safety is that Weapons Safety Managers (WSMs) sometimes have a difficult time discovering new trends due to the lack of mishaps. Now, this is a dilemma that most people would like to experience, but with the lack

of mishaps, sometimes what occurs is a false sense of security. This false sense of security happens when a unit goes 4 or 5 years without a mishap. The mindset becomes, "How can we possibly improve upon our perfection?" Just because a unit does not have any reportable mishaps under the criteria presented in AFI 91-204, doesn't mean mishaps are not occurring, or nearly occurring. For instance, a Dull Sword that involves personnel is a form of a mishap. A vehicle accident in the missile or weapons storage areas is a mishap. None of these examples are reportable as "weapons mishaps," but they are mishaps nonetheless. There are many avenues in





which to gather traceable data, some of which are discussed near the end of this article.

Accuracy in the gathering and categorizing of measurable data is probably the most important aspect of new trending. Some of the more common errors seen in the originating data are that the data is not accurate or there are variables that have not been factored into the equation. One of the biggest mistakes I have witnessed in my 3 years as a WSM is the improper categorization of a mishap. There is specific guidance in AFI 91-204, including examples that clarify these categorizations (p. 9-13). This improper classification skews the data rather than having all like-industrial weapons events in Air Force Safety Automation System where they can be consolidated, accessed, and evaluated.

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Another big factor regarding accuracy is how long the data has been collected. Data collected over the span of years seems to be somewhat more accurate than data over the short-term. This can be important in regards to spikes that occur. A lot of times when short-term data is analyzed, a spike may appear to be a world-changing event, when in reality it is nothing more than a natural occurrence. The stock market is a good example of the various types of data collection. If an investor looks at the day-to-day results, they will probably invest differently than those who look at the 5-, 10- or 20-year data.

The final problem dealing with accuracy is the defining of the variables and to what level of attention does the trend require for resolution.





Photo by A1C Cecil McCloud

One or two time incidents of perception are not considered a trend, nor is a spike considered a trend.

In AFI 91-202 the first sentence of paragraph 5.5 states: *"full time safety staffs at all levels should develop locally oriented mishap analy-*

*sis programs to evaluate mishap statistics and identify trends (p. 25)."* Mishap statistics are the key. Be sure to have all the facts prior to releasing the data.

The solution for accurate trending is to keep it simple. The easiest way to do that is: keep your variables constant, and do not allow them to have any flexibility. A couple of examples might be to use clock times rather than terms: 1800 to 0600 rather than dusk or after dark. Another variable might be the use of days: Monday, Tuesday, Wednesday, etc. These variables do not adjust and do not require a mathematical formulation for accuracy.

Within 8 AF, the Weapons Safety community has gone 4 years without a reportable mishap. This is a good thing, but being part of the AMMO world for over 22 years, I know that accidents or near misses

happen daily. It is the nature of the business; moving large numbers of munitions and heavy equipment results in smashed fingers and stubbed toes. But the dilemma is in answering the question of: how do we measure these incidents in order to prevent the big one?

Statistical trending is a very important aspect in the safety business. What this article is intended to do is present different ways for a WSM to become creative in researching their trends. Looking at figures and getting a grasp on a possible trend that is accurate and acceptable, and I hope this article has enlightened the reader on some of the challenges involved with trending. As ACC has stated in their ACC Crosstell, June 2005, "effective trending and analysis is more than a scoreboard of occurrences; properly accomplished it is a strong mishap prevention tool." ✦



Photo by A1C Anthony Nelson, Jr.