# OPENING REMARKS

Major General Francis C. Gideon, Jr.

General Müller, thank you for joining us on this important occasion, and I look forward to working with you on future occasions involving ammunition and other issues. I invite you to visit us at the Air Force Safety Center during this visit or at some time in the future. I'm convinced that our services can benefit from such an exchange.

Thank you Colonel Wright. It's a real pleasure to have the opportunity to speak about explosives safety here at the DDESB Safety Seminar and to also talk about how the Air Force has prepared to move into the twenty-first century. Looking back to my early years as an Air Force fighter pilot, explosives safety was not always on the forefront of my mind; instead, I was more concerned with flying missions and delivering munitions on target. As long as the munitions were loaded properly and functioned as designed, all was right in my explosives related world. However, in my current capacity as the Air Force Chief of Safety, explosives safety has taken on a whole new meaning for me. I'm now concerned with safety in all aspects of the munitions we use -- from design to storage, transportation, and day-to-day handling of these assets in addition to the actual delivery on target. And of course in today's environment we must be equally involved in recovery and disposal of these assets in order to protect the environment and to insure that use of our land is protected for generations to come.

Today, explosives safety mishaps seldom make the news. Instead, the headlines are more frequently taken by mishaps involving other areas because their mishaps rates are higher. This doesn't mean that explosives safety is not getting our full attention. When explosives do make the headlines, it's normally due to a shocking terrorist event instead of an accident. The graphic pictures of the deadly destruction caused by explosive force in Oklahoma City, Saudi Arabia, Kenya, and Tanzania are images not easily forgotten. Granted, we may not have terrorists within our munitions storage or flightline areas, but we routinely handle large amounts of explosive materials in excess of those estimated to have created such carnage. It is no wonder that senior leadership is devoted now more than ever to preventing explosive mishaps, and in managing the potential catastrophic results of such events.

In addition to the increased explosives safety awareness, our mishap success can also be attributed to a couple of other key factors. First, there have been significant advancements in munitions technology over the years, which have resulted in safer munitions with less sensitive explosive fillers and enhanced safing devices. Also, emphasis on training and certification for personnel who handle munitions has increased and we find that our people are making fewer mistakes. But even with safer munitions

# Report Documentation Page

*Form Approved*
*OMB No. 0704-0188*



| 1. REPORT DATE | 2. REPORT TYPE | 3. DATES COVERED |
|---|---|---|
| **AUG 1998** | | **00-00-1998 to 00-00-1998** |

| 4. TITLE AND SUBTITLE | 5a. CONTRACT NUMBER |
|---|---|
| **Opening Remarks** | 5b. GRANT NUMBER |
| | 5c. PROGRAM ELEMENT NUMBER |
| 6. AUTHOR(S) | 5d. PROJECT NUMBER |
| | 5e. TASK NUMBER |
| | 5f. WORK UNIT NUMBER |
| 7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) **Headquarters Air Force Safety Center,9700 G Avenue SE ,Kirtland AFB,NM, 87117-567** | 8. PERFORMING ORGANIZATION REPORT NUMBER |
| 9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES) | 10. SPONSOR/MONITOR'S ACRONYM(S) |
| | 11. SPONSOR/MONITOR'S REPORT NUMBER(S) |

12. DISTRIBUTION/AVAILABILITY STATEMENT
**Approved for public release; distribution unlimited**

13. SUPPLEMENTARY NOTES
**See also ADM001002. Proceedings of the Twenty-Eighth DoD Explosives Safety Seminar Held in Orlando, FL on 18-20 August 1998.**

14. ABSTRACT

15. SUBJECT TERMS

| 16. SECURITY CLASSIFICATION OF: | | | 17. LIMITATION OF ABSTRACT | 18. NUMBER OF PAGES | 19a. NAME OF RESPONSIBLE PERSON |
|---|---|---|---|---|---|
| a. REPORT **unclassified** | b. ABSTRACT **unclassified** | c. THIS PAGE **unclassified** | **Same as Report (SAR)** | **4** | |

and better-trained personnel, accidents, though few, still occur. So how is the Air Force moving towards the twenty-first century to make our explosives safety record even better and our programs more effective?

In July 1996, the Chief of Staff directed a Red Ribbon Panel to take a hard look at how the Air Force manages its weapons safety programs from the AF level down to unit programs. To insure an impartial evaluation we solicited the aid of the AF Audit Agency and the AF Inspection Agency to take a top-down, no holds barred, review of how we were doing business. During this review, significant deficiencies and shortfalls in our weapons safety program were identified by various agencies within and outside of the Air Force. The observed shortfalls included personnel training deficiencies, a lack of understanding of weapons safety requirements at command levels, inadequate and poor explosives site plans, and excessive explosives variances, or Q-D waivers, as they are often called, throughout the Air Force. Upon completion of their investigation, the Red Ribbon Panel concluded that problems did exist in personnel training, manpower authorizations, explosives criteria, site planning, and an overall lack of investment strategy to correct waivers. In addition to identifying these root causes, the Panel also recommended solutions to correct weapons safety funding shortfalls throughout the Air Force.

So what have we done as a result of the Panel's findings? First, we have distributed a Windows-based computer program entitled "Introduction into Weapons Safety," which was made available from the Defense Ammunition Center at Savanna Army Depot, Illinois. The purpose of this program is to provide the groundwork or "foundation" for weapons safety managers prior to attending the Air Force formal safety training course at Lackland Air Force Base, Texas. It also helps fill in the training void when a weapons safety manager experiences a delay in attending the formal course. Though not designed to replace formal schoolhouse training, it's a great interim tool to ensure that our folks at least get a solid base from which to start the complex game of managing a weapons safety program.

Recently, the Air Force Safety Center joined efforts with the Army Tech Center for Explosives Safety and completed a new explosives safety video entitled, "Risky Business: Explosives Safety Management for Air Force Leaders." The primary focus of the effort was to create a video that went beyond meeting the explosives safety standards, but also addressed the increased risk associated with a reduction from prescribed standards. The video demonstrates "real life" situations routinely faced by Air Force leadership, and the consequences which can result from an explosives mishap, with key emphasis placed on the negative effects caused by deviating from prescribed standards. We intentionally designed this video to provide our leadership with a visual image of explosive blast and fragmentation effects. We hope to reinforce the need for operational risk management solutions to mitigate the hazards when we accept explosive quantity-distance risks.

Recently, Air Force leadership noted the lack of corrective investment strategies and planning for the vast majority of explosives quantity-distance waivers. The result

was that once waivers to Q-D standards were accepted they typically took on a permanent status without any consideration given to direct funding or future planning, which would eventually remedy these situations. Basically, they were simply accepted and then forgotten and our people year after year continued to be exposed to the increased risks associated with the waivers. Once we realized the magnitude of the problem, we insisted on the reevaluation of all waivers to verify their continued mission necessity and the development of corrective strategies for those still required. Our eventual goal is the reduction of all existing waivers by 10 percent annually. In addition, we further stressed that all future waivers must have VERY STRONG compelling justification in which acceptance is a LAST resort to avoid adverse mission impact. With the increased pressure to reduce the number of existing and new waivers, we have noticed that our leaders in the field are applying greater effort towards the exploration of solutions resulting in a marked reduction in the explosives quantity-distance waiver rate.

Along with our efforts to reduce exceptions, we are currently in the process of adding what we consider common sense to the waiver process by factoring in the associated risks along with the prescribed explosives separation criteria. This initiative came from a recent study done for the SECAF to review the large number of waivers and exemptions in Korea. In addition to identifying the paired relationship as an exception to the prescribed standards, we evaluate (1) the likelihood of a mishap at the explosive location; (2) the degree of exposure for personnel, facilities, and equipment involved; and (3) the severity of consequences resulting if a mishap were to occur. What we hope to correct is the philosophy that all exceptions carry the same risk based on quantity-distance criteria alone. In fact, some situations are actually quite benign in which the likelihood, exposure, and consequences are extremely low while other situations may present a severe risk for the same given amount of explosive force. This helps us to prioritize our efforts to resolve those waivers posing the greatest risk first, and enhances the manageability of our monitoring efforts for waivers worldwide. The acting SECAF has also agreed to reduce the Q-D waiver approval levels consistent with the level of risk involved. Finally, our new process reduces the subjectivity in assessing risk by defining and establishing parameters for each criterion -- likelihood, degree, and severity.

One of the findings of the Red Ribbon Panel was that historically, during weapon acquisition programs, the Air Force had not rigorously and consistently developed real data that reflects the actual hazard characteristics of our weapons, particularly in operational combat load configurations. Therefore, we needed to apply conservative default Q-D criteria that accommodated the uncertainty. We are now engaged in an effort to revisit questionable or missing hazard data for the existing inventory, and to require acquisition programs to generate the necessary data within the scope of acquisition programs for new weapons, before they are released to the field. This way we will be better able to safely and efficiently utilize our limited facilities and real estate for the best combat effectiveness. Furthermore, if the demands of contingency operations require consideration of Q-D waivers, commanders will have much improved hazard information upon which to make operational risk management decisions.

To offset the requirement to test detonate munitions or to better design detonation testing, the AFSC has initiated a new and exciting undertaking. This new initiative is first, an alternative approach to field testing. Second, it provides answers to very complex and multifaceted Q-D problems. And third, it provides mishap prevention scenarios. To accomplish these objectives, we at the Safety Center have committed resources to modeling and computer simulations for assessing Q-D criteria. An example of such effort is computer simulation of the impact-induced detonation of an AIM-120 warhead. This simulation provided our engineers accurate data to better design detonation testing resulting in the reduced expenditure of warheads. However, we currently have plans to take this technology beyond the testing of existing munitions and on into the acquisition process for early testing of newly developed munitions. It is our hope that once this capability reaches maturity in AFSC, we will be able to provide verifiable Q-D standards to situations that are otherwise prohibitively expensive or ecologically/environmentally unfeasible to test or to ensure the most efficient testing design when feasible.

Looking to the twenty-first century it is clear to Air Force senior leadership that future outcome of combat operations will rely even more on joint efforts than in the past. In that sense the combined efforts of the US DoD community and other nations, such as those assembled here, are paramount in ensuring we identify the hazards of our munitions and ordnance prior to entering combat. We must not stop at identifying these hazards but put forth concentrated efforts to eliminate them as well.

The Air Force has been very successful in working with the Army and Navy in producing excellent training aids for our people, and in significantly identifying and reducing the hazardous effects of some of our primary use ordnance items. We also are involved in joint efforts, through the DDESB, with other nations in similar efforts aimed at reducing hazards and improving combat operations today, but more importantly, in the next century where joint operations will definitely determine the order of battle.

I'm impressed with the aggressive agenda for this conference, the broad expertise of the people from across the globe gathered here, and am convinced that as we enter the twenty-first century, we are well on the way to solving many of our explosives safety concerns.

In conclusion, the Air Force continues to make many improvements with the overall weapons safety program. The severity of mishap experiences and quantity-distance waivers are continuing to decline, and an aggressive process is underway to shore-up our explosive site planning worldwide. We are excited about the advancements we have made over the past several years and with the help of you engineers and scientists out there providing the technical information we need, we are looking forward to keeping this progress moving well into the twenty-first century. Again, thank you for providing me this time to share the Air Force's latest successes and our plans for entering the next century.