

NOT FOR PUBLICATION UNTIL RELEASED BY THE
HOUSE ARMED SERVICES COMMITTEE
TACTICAL AIR AND LAND FORCES SUBCOMMITTEE

STATEMENT OF

BGEN MARTIN POST
ASSISTANT DEPUTY COMMANDANT FOR AVIATION

BEFORE THE

TACTICAL AIR AND LAND FORCES SUBCOMMITTEE

AND THE

READINESS SUBCOMMITTEE

OF THE

HOUSE ARMED SERVICES COMMITTEE

ON

ROTORCRAFT SAFETY

FEBRUARY 1, 2006

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Chairman Weldon, Chairmen Hefley, Congressman Abercrombie, Congressman Ortiz, distinguished members of the Subcommittees, thank you for this opportunity to appear before you to discuss rotorcraft aviation safety.

Since responding to 9/11 in Afghanistan four years ago, Marine Aviation has maintained an unprecedented performance in the Global War on Terror (GWOT) while sourcing normal operational deployment schedules. Over the past year alone, Marine helicopters have flown over 63,000 combat hours, expended over 200 precision-guided munitions, and conducted over 800 casualty evacuations. From the dusty zones of Al Anbar Province, to the rugged mountains of Afghanistan, to the devastated shores of Indonesia and our own Gulf Coast, our Marines continue to execute their missions with exceptional professionalism, resourcefulness, and commitment. Without a doubt, Marines today are shouldering the heaviest operational tempo since Vietnam with the same distinction as those who have served before.

Our Marines not only accomplished their missions world-wide, but they have also done it safely. This success is attributed in large measure to Congress's approval of the President's budget requests for Aircraft Survivability Equipment (ASE) upgrades over the past two years and the efforts of Marines to develop and adapt our tactics, techniques, and procedures (TTPs) to defeat emerging threats in the hands of a determined and resourceful enemy.

GWOT ASE UPGRADES

During OIF I (March-October 2003), Marine Aviation did not lose a single helicopter to hostile fire. As Marine Aviation prepared to deploy to Iraq in 2004, a review of U.S. Army experiences in 2003 dictated a renewed focus on Aircraft Survivability Equipment (ASE) to

counter infrared (IR) man-portable missiles (MANPADs) and small arms threats, as it was clear that our adversaries were using advanced anti-aircraft tactics and equipment.

Accordingly, Marine Aviation, OPNAV staffs, and Naval Air Systems Command (NAVAIR) coordinated the rapid funding of more than \$285 million in upgraded ASE for aircraft deploying in support of the GWOT since fiscal year 2004. I am pleased to report that, through the efforts of our Navy and Marine Corps aviation maintenance teams and hard-working contractors, every Marine helicopter in OIF today supports combat operations with an upgraded ASE suite. We have confirmed that upgraded ASE has already saved 14 aircraft and their assigned aircrews in theater.

All aircraft deployed to GWOT are equipped with the "V2" upgrade of the AAR-47 Missile and Laser Warning Set and the new ALE-47 Countermeasure Dispensing systems. AH-1W, UH-1N and KC-130 aircraft have received the more advanced APR-39AV2 radar detection system. All AH-1W aircraft have received advanced IR suppression kits to reduce IR signature. CH-53E aircraft are outfitted with interior ballistic armor and wield new ramp-mounted GAU-21 .50 caliber machine guns. Lastly, CH-46E aircraft are armed with ramp-fired M-240 7.62 caliber machine guns and are equipped with lightweight armor and lightweight armored cockpit seats.

Of the 650 helicopters in the Marine Corps inventory, 78 percent are currently modernized with upgraded ASE. Every aircraft is fully funded to receive these upgrades and we are projected to be complete by the first quarter of FY07.

TACTICS, TECHNIQUES, AND PROCEDURES

Upgraded ASE is only part of the picture. By evaluating lessons learned from sister services as well as our own experiences, Marine Aviation is constantly adapting its TTPs to counter the threat. These TTPs include flying at night to deny enemy acquisition, escorting assault support helicopters with armed attack helicopters, varying our altitudes, and adjusting routes and approaches throughout the Area of Operations.

While aircrew adapt their TTPs in theater as necessary to defeat the enemy, much of the focus of applying lessons learned is accomplished in training exercises prior to deployment. Every aviation unit slated to support OEF/OIF attends Desert Talon exercises sponsored by Marine Aviation Weapons and Tactics Squadron One (MAWTS-1). During this training exercise, squadrons train to OIF-specific mission requirements such as convoy operations, urban close air support, Forward Arming and Refueling Point operations, and desert landings, applying the latest lessons learned from the theater. Pre-deployment training and ability to adjust TTPs to counter the threat, together with upgraded ASE, are primarily responsible for the successes of Marine Aviation in GWOT and the minimal losses we have sustained in combat operations.

AIRCRAFT LOSSES

Of the 21 helicopters Marine Aviation has lost to date in support of GWOT, seven have been due to hostile fire. Four of these seven aircraft losses were the result of hostile surface fires (SAFIREs) (Enclosure 1). Many of the 14 non-hostile aircraft losses were attributed to operating in environments of reduced visibility (Enclosure 2). With respect to overall safety in Marine Aviation, our Class A mishap rate is currently trending downward. Over the last 12 months,

rotary wing aviation has sustained a mishap rate of 1.1 per 100,000 flight hours and our current rate for FY06 is zero. We attribute this positive trend to our aggressive Aviation Safety Program, Operational Risk Management training, and a Marine Corps-wide focus and commitment to safety.

Marine Aviation cannot allow our past accomplishments to formulate complacency or disregard for our existing or potential enemies. In this spirit, we are committed to developing and incorporating new designs and technologies in our legacy and transition aircraft to reduce susceptibility and increase survivability, thereby increasing overall safety. As the support of Congress has critical to support our past ASE upgrades, this is the next area where Marine Aviation needs assistance.

FUTURE ROTORCRAFT SURVIVABILITY

Rotorcraft science and technology (S&T) investment within the Department of Defense (DoD) is principally by the Army, DARPA, and NASA. We are already beginning to enjoy the benefits of improved survivability designs in the development of the MV-22, H-1 Upgrades Program, and the Heavy Lift Replacement (HLR).

The V-22 is the latest and best example of this design for survivability. The V-22 was conceived from the beginning to be a highly survivable aircraft. Its speed alone makes it much more difficult to acquire and engage. The Osprey has been the aircraft most tested in Live Fire Test and Evaluation. The results of those tests led to further refinement of the design.

We are exceptionally confident in the survivability of the V-22. The integrated IR/electronic warfare (EW) suite being tested on the USAF CV-22 variant also has potential USMC applications for increasing MV-22 survivability.

The H-1 Upgrades Program will also benefit from survivability designs, constructed with ballistically tolerant controls, blades, and gearboxes while employing IR suppression and a fully integrated EW suite. Due to \$17.2M appropriated in the FY06 Bridge Supplemental, we will begin installing turned exhaust kits on AH-1Ws in OIF this March; these kits will eventually be transferred to the AH-1Z.

Likewise, the HLR (now designated CH-53K) will improve upon our current CH-53E. This derivative design of the Super Stallion will benefit from all of the ballistic tolerance lessons we learned on the V-22. The simple application of Fly by Wire will reduce the vulnerable area from 19% of the aircraft to 2-3%, which is then easily protected with armor. Likewise, advances in IR countermeasures such as Defensive IR Countermeasures (DIRCM) will help mitigate the high heat signature of this heavy lift helicopter. The \$14.9M Congress appropriated for the DIRCM program in the FY05 Supplemental will help make employment of this technology a reality. Lastly, an environmental challenge that we are beginning to address is brownout and the other effects of reduced visibility encountered in the austere conditions in which we fight.

By increasing DoD S&T community focus and funding on developing the next generation rotorcraft survivability designs and equipment, we will continue improve upon our capabilities to counter emerging threats (i.e. advanced technology MANPADs) and operate in degraded visibility environments.

THE BOTTOM LINE

Due in large part to support from Congress's support of the President's Budget requests, Marine Aviation has been able to conduct combat operations by modernizing survivability equipment on our aircraft and by adapting our TTPs to incorporate lessons learned in GWOT

theaters of operation. We are committed to this successful strategy and continue to keep an eye on future development of survivability equipment. Marine Aviation appreciates your continued support in these S&T and development efforts as we endeavor to support GWOT and other operational commitments around the world.