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STATEMENT OF

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BEFORE THE

SUBCOMMITTEE ON LEGISLATION AND NATIONAL SECURITY

COMMITTEE ON GOVERNMENT OPERATIONS

HOUSE OF REPRESENTATIVES

ON

TACTICAL WARNING AND ATTACK ASSESSMENT SYSTEM

"UNCLASSIFIED TESTIMONY"

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Mr. Chairman and Members of the Subcommittee:

I am pleased to be here today to discuss the Tactical Warning/Attack Assessment (TW/AA) System. This system is intended to provide our leaders with timely, unambiguous warning in the event of a missile or atmospheric attack and to provide information concerning the size and intent of such an attack so that a determination can be made of the most appropriate response. TW/AA System performance is critical to our National Command Authorities (NCA) strategic decisionmaking, force survivability, and assurance of retaliation.

In 1981, the President decided on a comprehensive program for revitalizing our strategic nuclear deterrence. The highest priority was placed on improving the strategic command, control and communications (C³) systems, including developing survivable systems that would, under all circumstances, detect, identify, and report a nuclear attack. The Assistant Secretary of Defense for C³I has testified to the Congress that "the strategic C³ system must of itself be absolutely credible." The TW/AA System is a critical part of the Strategic C³ system. Billions of dollars are being spent on this system. Some problems will be corrected, but system deficiencies will remain.

Mr. Chairman, we will be reporting to you in a closed session the results of our preliminary assessment of the TW/AA system. In that assessment we raise concerns about the system's effectiveness, especially for certain situations. Our classified statement will track closely the specific questions you addressed in your letter to us. In responding to your questions we have examined a wide range of possible attack strategies as a basis for conducting our assessment of the TW/AA System. In our assessment of the current and modernized system we identify deficiencies associated with various subsystems that make up the TW/AA System but also, try to relate the composite effects of those deficiencies on the overall system and its ability to support the National authority decision mechanisms.

Although we will not be prepared today to provide specific recommendations regarding existing investment strategies we will draw your attention to areas where we believe DOD is making good progress, as well as areas where we are concerned about the soundness and pace of progress being made. For this statement I would like to elaborate to some extent, on some computer aspects of our assessment to give you a better flavor of our overall assessment and because I know it's an area you've indicated an interest in during earlier hearings.

I'm sure you recall that we testified before your committee on this system in May 19, 1981. When you hear the results of our preliminary assessment, you will note some similarity between the general state of affairs today and those reported four years ago. At that time, several false warnings had triggered this same system and our forces came uncomfortably close to premature reactions. After these incidents, legions of experts from within and outside DOD descended on NORAD and the TW/AA System to find causes and solutions. The problems were a malfunction of a 46 cent hardware chip and lax test procedures. But from that analysis of "what went wrong", which was the focus of your 1981 hearing, evolved management changes and eventually a fix to the 46 cent chip and test procedures and facility problem at a cost of over \$16 million. The most rigorous top down system analysis and evaluation, that was perhaps afforded any of our important systems in government, was conducted and plans for modernization were made that have driven the system architecture that has evolved to date.

I believe you may also recall that allegations were made at that time, before actual causes of failure to detect the false alarms were known, that unduly constraining policies and procedures attributable to the Brooks Act might have been contributing factors. I believe our report to you at the time clearly rebutted these allegations and at the same time identified and reiterated some serious deficiencies with the TW/AA computer system and

management. DOD, at that time, stated that it was taking steps to replace the systems; in 1982 they reported to the House Armed Services Committee that the computer systems would be replaced by 1987. This is a specific case in point, of the similarity I alluded to earlier between today's situation and 1981. In our current assessment, we have identified problems, such as the ADP problem cited, as well as others. But, once again DOD is forced into an interim non-competitive ADP acquisition while the primary command centers await for system replacements in the early 1990s. Again, many of these problems are acknowledged by DOD as are plans on the drawing boards, for their resolution.

Now, if I may, I'd like to bring you up to date on developments in the computer area. To set the stage you will recall that four primary command centers--NORAD Cheyenne Mountain Complex (NCOM), Strategic Air Command Headquarters, National Military Command Center, Alternate National Military Command Center --receive and process data from worldwide ballistic missile sensors. Only the NORAD Cheyenne Mountain complex receives data from all sensors, while the other centers receive data from some sensors and Cheyenne Mountain. The Cheyenne Mountain TW/AA system is comprised of three major computer segments collectively known as the 427M system. The other command centers process data using

different hardware and software on a system known as the Command Center Processing and Display System (CCPDS).

In addition to processing ballistic missile data, NCMC also processes air defense data sent from Regional Operational Control Centers (ROCCs). However, unlike ballistic data, the processing of this data is handled at ROCCs.

Problems Have Been Previously Reported

Numerous problems with the 427M system have been reported by your committee and GAO since the late 1970's. I would like to briefly mention the problems, and provide an update as to their status:

--NORAD was required to use in the TW/AA system the Worldwide Military Command and Control System (WWMCCS) computers; these computers were not designed to operate in the TW/AA System on-line, real-time environment and did not have the capability to adequately handle the NORAD workload. The Joint Chiefs of Staff in August 1981 issued instruction that stated "TW/AA system is relieved of any requirement to use WWMCCS standard ADP computers" However, this does not mean that the WWMCCS computers have been removed and in

fact they are still being used today. I will discuss more about the replacement computers later in my testimony.

--In the late 1970's there was the lack of uninterruptable power supply (UPS) at Cheyenne Mountain. Without UPS during a period when commercial power went out--and until the secondary source came on-line--usually 5 to 6 minutes--the system would be powerless. DOD accepted your committee's recommendation that funds be immediately provided for UPS and it was funded in FY 1983. This project is scheduled for completion in November 1985.

--The communications system segment, if it went down, could cause failure of the entire system. NORAD has corrected this problem by providing redundant systems to circumvent the entire 427M system. While the redundant systems do not have the same capability of the 427M system they have eliminated the problem of entire system outages from the failure of one segment.

--A number of system failures occurred in 1979 and 1980 which resulted in the reporting of false events. NORAD has addressed the deficiencies that caused these problems, however, false events have not stopped. This remains a problem today, but it is one that NORAD is continuing to work on.

--Your committee recommended in 1982 that the Secretary of Defense should submit quarterly reports to a number of key Congressional committees on the status of NORAD and WWMCCS modernization efforts . In 1982 testimony DOD felt that while they certainly wanted to remain responsive to the Congress, quarterly submissions were "a little much for us to do". We could find no evidence that such reports are being submitted to the Congress.

Current ADP Problems

Mr. Chairman while NORAD has addressed many of the problems associated with their ADP processing, a number of problems remain. I would like to briefly touch on these:

--NORAD computers and the three other command computers do not process data identically. This could result in situations where the assessments would differ between the two systems even though input information would be the same. The Air Force recognized this problem in 1980, and today about one-half of the differences remain to be resolved.

--Components of the 427M system are becoming increasingly obsolete creating maintenance problems. Obviously, as systems age these problems will get worse and they can

impact on the availability of the systems. This problem will remain until the new state-of-the-art computers are received.

--The 427M system lacks a separation of functions which makes it very difficult to make software changes. This problem will also remain until state-of-the-art equipment is installed.

--The Regional Operational Control Centers computers have a number of deficiencies that affect both wartime and peacetime capabilities. For example: computer capacity is inadequate to respond to a full conflict situation and seriously impedes some peacetime exercise problems; there is lack of operational display consoles which restrict the regions' ability to supervise and manage air defense forces, conduct region-wide exercises, simulate realistic exercises, and provide training control for interceptors; and the digital communication system lacks adequate redundancy and is considered a single failure point.

Attempt to Obtain Modern Technology

Problems with the NORAD computer systems have been raised by us and various congressional committees since the late 1970's. For example, we recommended in 1978, that these systems be replaced

with state-of-the-art systems and the Air Force indicated in 1979 that planning for replacement had been completed. In 1982 your committee specifically recommended that the Secretary of Defense take immediate steps to ensure that NORAD acquires the most modern computer technology available with the ability to perform NORAD mission requirements. In that same year DOD reported to the House Armed Services Committee that the TW/AA computer systems would be replaced by fiscal year 1987.

While improvement and upgrades to these systems have been made, our testimony today once again highlights the problems and concerns with literally the heart of our TW/AA system. We have been told by DOD that the state-of-the-art computer equipment will not be ready until 1992 at the earliest. Thus, we remain concerned that the solutions to the computer problem always seem to be a few years away. In our opinion, until state-of-the-art computers are installed and operating efficiently problems will continue.

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Mr. Chairman this concludes my prepared statement. We would be pleased to respond to any questions that you or members of the subcommittee may have.

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