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MEMORANDUM FOR DEPUTY SECRETARY OF DEFENSE

SUBJECT: Tactical Nuclear Warfare Systems

The enclosure was prepared by my staff and Dr. Wallace to provide background on the current situation and future trends in tactical nuclear weapons. It represents a positive approach to the related questions that the President asked on his recent visit. We shall be submitting for your approval the specific systems described in the last section on a case by case basis as they become timely.

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TSC

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## TACTICAL NUCLEAR WARFARE SYSTEMS

Our tactical nuclear warhead delivery systems are numerous and varied. These include tactical aircraft with bombs, medium range ballistic missiles (up to 4000 miles), short range missiles, artillery, and atomic demolition munitions. Although our tactical nuclear forces are already strong, there are several areas in which significant and attractive improvements can be made.

1. Target Acquisition and Damage Assessment should ultimately be in real time (versus hours now possible) with surveillance over extended areas. Improvements could include more survivable recce aircraft and long range recce drones, high resolution direct readout, real time satellite coverage.

(b)(1), Sec. 3.3(b) (5), Sec. 3.3(b) (8)

2. Command communications on the battlefield are presently less adequate than we desire. They could be made more survivable by increasing their mobility, and they should also be augmented. Existing high frequency communications used for backup are susceptible to disruption in a nuclear attack environment. Development of light weight mobile tropospheric scatter radios and satellite communications will enhance survivability in both the conventional and nuclear war environment.

3. Vulnerability of theater nuclear forces should be minimized to prevent the enemy from thinking he has a first strike capability that would cripple the U.S. theater nuclear deterrent. Dispersal of aircraft to alternate airbases

(b)(1), Sec. 3.3(b) (5), Sec. 3.3(b) (8)

airbase hardening (TAB VEE, SACEUR's current Program for Physical Protection of Airfields, involves about \$70 million, principally for aircraft shelters), nuclear weapon storage site dispersal, increased mobility of missile systems (as achieved in the LANCE program), and increasing our deployable forces from CONUS would all reduce the vulnerability of our forces.

4. Reaction times can be reduced to lessen vulnerability and to strike time-sensitive targets more effectively. Improvements are possible through reducing response times to configure aircraft for the nuclear strike role (b)(1), Sec. 3.3(b) (5), Sec. 3.3(b) (8) a faster firing capability for tactical missile systems (as in LANCE) and improved attack warning/command communica-

tions. There have been suggestions that we should decrease the number of strike aircraft that SACEUR maintains on (b)(1), Sec. 3.3(b) (2), Sec. 3.3(b) (5), Sec. (b)(1), (b) (3), 42 USC s. however such a decrease would work against a fast response.

5. Weapon delivery accuracy of aircraft and missile systems is now on the (b)(1), Sec. 3.3(b) (2), Sec. 3.3(b) (5). Large miss distances imply (b)(1), Sec. 3.3(b) (2), Sec. (b)(1), Sec. 3.3(b) (2). Use of guided weapons on aircraft for delivery accuracy on the (b)(1), Sec. 3.3(b) (2), (CONDOR, WALLEYE), avionics for increased free-fall weapon accuracy, and possibly terminal guidance for surface-to-surface weapons would provide the greater accuracy.

6. Collateral damage deters attacks, particularly in European satellites, on targets located within or adjacent to cities. (b)(1), Sec. 3.3(b) (2), Sec. 3.3 (b)(1), Sec. 3.3(b) (2), Sec. 3.3(b) (5), Sec. 3.3(b) (8) attacks on some of these targets with existing, (b)(1), Sec. 3.3(b) (2), Sec. 3.3(b) (5), S (b)(1), Sec. 3.3(b) (2), Sec. 3.3(b) (5), Sec. 3.3(b) (8) Better

(b) [Redacted]

7. Air strike successes and delivery aircraft survival would be significantly improved by a standoff missile for tactical aircraft. These missiles are needed for attacks on strongly defended targets, such as airfields and command centers. Since (b)(1), Sec. 3.3(b) (2), Sec. 3.3(b) (5), Sec. 3.3(b) (8) (b)(1), Sec. 3.3(b) (8) (such as CONDOR will give us) are appropriate.

8. Command control can be improved with further applications of mechanical devices such as PAL and PAPS on weapons, e.g., (b)(1), (b)(3), 42 USC § 2168 (a) (1) (C)

Denial of a seized weapon for [Redacted] greatly increase our chance to react and prevent its misuse. Additionally, doctrinal limitations based on geography, yield, delivery system, etc., could be imposed by higher authority to reduce the probability of escalating to strategic exchanges. Command control and weapons systems should be designed to provide clear and obvious separation between theater and strategic usage.

Our tactical nuclear capability is quantitatively adequate and qualitatively impressive, however we do have opportunities for making significant progress in this area. The current inventory of theater and fleet defensive nuclear weapons, including weapons for support of our allies as well as for U.S. forces, is given below:

- Nuclear Artillery (155mm and 8")
  - Atomic Demolition Munitions (51 lbs & 180 lbs)
  - Tactical Missiles (Honest John, Sergeant, Pershing, Mace, Crockett)
  - Tactical Aircraft Bombs
  - Air Defense (Air-to-Air & Surface-to-Air)
- Total

(b)(1),(b)  
 (3) 42 USC  
 § 2168 (a)  
 (1) (C)

Fleet ASW/AAW Nuclear Warheads

Total Theater  
& Fleet

Possible improvements mostly relate to the problems discussed above. Specifically, the following six tactical systems could enter our stockpile in the next few years:

1. LANCE: This surface-to-surface system is much more effective than the HONEST JOHN, LITTLE JOHN and SERGEANT that it is scheduled to replace. It has improved mobility (a tracked vehicle), accuracy (3 mils), range (5-140 km), and (b)(1),(b)(3) 42 USC § 2168 (a) (1) (C). The deployment schedule is controlled by the vehicle (IOC June 1972).
2. CONDOR: This air-to-surface missile would provide an entirely new capability for standoff delivery of (b)(1),(b)(3) 42 USC § 2168 (a) (1) (C) to penetrate defended areas. It would also allow accurate delivery by air of low yields with minimum collateral damage. The optical guidance limits CONDOR to fair weather use only; later developments may give it an all weather capability for radar discernible targets. The schedule is controlled by the vehicle (IOC June 1972). Several warhead options have been found feasible and a request is pending to initiate warhead development (Phase 3).
3. WALLEYE: Presently operational with a conventional warhead. Similar to CONDOR except it is an unpowered glide bomb with a limited standoff range that obliges delivery aircraft to penetrate defended areas. Also, it cannot carry higher yields appropriate to such priority tactical targets as airfields without endangering the delivery aircraft. It could be considered for de-

ployment in modest numbers in about a year using an existing warhead in order to give us an early capability for delivering small yields accurately, and in order to complicate Soviet planning by giving this major weapon system a nuclear warhead. A production decision is pending.

4. 155mm Artillery Projectile: Could correct deficiencies in existing nuclear warhead by adding range (presently 14 km, potentially about 30 km), (b)(1),(b)(3) 42 USC § 2168 (a) (1) (C) and a ballistic match to the standard high explosive round (for delivery accuracy).

5. Eight Inch Artillery Projectile: A new round could provide faster (one minute versus 1/2 to one hour now) (b)(1),(b)(3) 42 USC § 2168 (a) (1) (C) a ballistic match to a standard conventional round, achieve a greater range, and (b)(1) Sec. 3.3(b) (2) Sec. 3.3(b)

6. Atomic Demolition Munition: (b)(1) Sec. 3.3(b) could provide better command and control and more flexible operations such as (b)(1) Sec. 3.3(b) (2) Sec. (b)(1) Sec. 3.3(b) (2) Sec. 3.3(b) could lead to longer burial lifetimes. A new munition could also provide anti-tamper features, self-destruct, clean or suppressed radiation, and smaller size.

In addition, the following two systems now in the inventory should be considered for further production:

1. MK 61 Bomb: This bomb is an improvement over the MK 28, 43, and 57 bombs now in stockpile in that it is smaller, lighter, can be carried externally at high speed, and has a wide range (b)(1),(b)(3) 42 USC § 2168

2. SUBROC: Our continuing deployment of new attack submarines should be supported by further production of SUBROCs.

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