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Final Report

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OUTLINE OF AN ON-SITE INSPECTION REGIME FOR CONVENTIONAL ARMS CONTROL IN EUROPE

INTRODUCTION

The complexity of the negotiations on Conventional Forces in Europe (CFE) was emphasized recently by General John R. Galvin, SACEUR, when he stated, "The difficulties of comparing the relative strengths of strategic or intermediate-range nuclear arsenals pale in comparison with the problems of assessing the relative capabilities of opposing conventional forces." Throughout this process, intensive and rigorous verification measures must be developed and enforced to ensure an acceptable degree of reliability. The eventual agreement will require a complex verification monitoring process covering a vast geographical area. The long-term success of the agreement to a large extent will depend on the level of confidence achieved by the verification process and the effective deployment of technological means will be essential to that process.

THE MAY 1989 NATO SUMMIT

During the first session of the NATO Summit on 29 May 1989, President Bush proposed that NATO consider broad initiatives. Several of them have major importance for this paper: all land-based combat aircraft and helicopters should be included as TLIs;* all reduced equipment should be destroyed; ceiling on U.S. and Soviet ground and air forces stationed outside of national territory in the ATTU zone at approximately 275,000 each; and, acceleration of the timetable for reaching and implementing the agreement (reach in 6 months to a year and accomplish the reduction by 1992 or 1993).

NATO will table President Bush's (now NATO's) proposal with the NATO verification regime concept by early September 1989. The pace has quickened! This means, inter alia, that on-the-shelf commercially-available technology will be required to support any technological aspect of the verification regime in the short-term. The eventual CFE agreement undoubtedly will incorporate notification, announcement, and compliance (on-site inspection) provisions similar to those contained in the Document of the Stockholm Conference. Additionally, the INF Treaty provides a precedence with respect to the types of inspections and the timing, frequency, and manner in which they will be conducted. This will be a long-term agreement and today's definitions may well not stand the test of time/technological advances unless a forum for future discussions/adjustments is made available in the agreement. New verification technology eventually will be required to meet new challenges.

A ROLE FOR TECHNOLOGY?

It is now envisioned that a verification policy framework will be finalized within NATO by early September 1989. The crucial task for technology will be to determine whether or not it can play a meaningful role in the near-term.

Certain aspects of the INF Votkinsk portal experience regarding the use of technology must not be repeated. While technology seemed to offer great promise, some of the technological innovations designed for Votkinsk have

* The original Treaty Limited Items were tanks, artillery, and armored troop carriers.

never become operational and possibly never will. That has proved to have been a costly experience. What appears to be a good idea in the laboratory does not always work in a real-life situation!

ON-SITE INSPECTION (OSI)?

Ultimately, the answer to the question "Is OSI necessary?" depends on objectives, incentives to cheat, the efficacy of substitutes, and the adequacy of strategy and intelligence support. A synergy between NTM and OSI is prudent and is the logical path to follow.

The withdrawal of the "entire" Soviet 6th Guards Tank Division from Wittenburg, GDR, announced by General Secretary Brezhnev in December 1979, illustrates the importance of OSI. It is well documented that certain elements of the division were, in fact, not withdrawn but were utilized in the subsequent restructuring of remaining divisions within GSFG. Only OSI properly executed during the withdrawal and "restructuring" phases could have provided, in conjunction with that data available from NTM, a much earlier indication that a major restructuring of GSFG forces was, in fact, taking place.**. Combat power and combat capability represents a combination of trained manpower, modern weapons, and the organization of those two elements into a cohesive unit--one element alone is insufficient. OSI/NTM must focus on the forest but cannot ignore the trees!

A recent study determined that of 34 Soviet agreements analyzed, 7 of 8 with OSI, were free of substantial, detected violations whereas 14 of 26 without OSI involved substantial, detected violations. Also, for 15 Soviet agreements affecting war-fighting capabilities, only 5 of 14 without OSI were free of substantial, detected violations.

The study concluded that, first, OSI correlates with higher rates of compliance for agreements limiting location or transfer of arms. Second, the most violated treaties lack OSI (BW Convention, ABM Treaty, and Geneva Protocol--chemical and toxin weapons). Third, NTM combined with OSI may enhance prospects for compliance.

CFE VERIFICATION REGIME: A FRAMEWORK

Possible objectives of the verification process at the political level might be to provide evidence that can be used to confront/deter the Warsaw Pact, gain public support for NATO response options, and prevent the Warsaw Pact from persuading US/NATO publics of Alliance violations. At the military level, the verification process could provide early assessment of threat, enable NATO leaders to respond to "challenges," and retain good intelligence capabilities in a non-cooperative environment. Also, it would minimize the need for NATO non-compliance in a crisis and would minimize Warsaw Pact espionage opportunities. In any event, timely detection of violations is critical so that appropriate steps can be taken to protect US/Alliance defense security.

** General Secretary Gorbachev has stated that "restructuring of the remaining forces will take place." Soviet/Warsaw Pact options for mitigating the adverse impact of cutbacks on their forces can be in the form of doctrinal improvements, force structure enhancements, and technological upgrading of weapons and equipment.

An OSI regime for conventional arms control in Europe can best be understood in conjunction with the consideration of all possible verification options. This regime might include the following elements:

National Technical Means (NTM) clearly will play a major role to verify compliance with a CFE agreement and provisions for non-interference must be protected. NTM may well suffice for the initial counts of combat aircraft and helicopters. Data holdings for those TLIs (production to operational use) are much more accurate than for ground force TLIs. OSI of the residual force, by quota, should be a requirement. Cloud cover and other weather conditions are challenges to technology.

On-site "routine" inspections provide detailed, near real-time information of on-the-spot assessments of compliance. This is a costly effort in terms of resources and dollars and the use of sensors may help to hold those costs down. However, OSI is a very visible symbol of a verification regime and, in conjunction with CSBMs, plays an important role. Soviet camouflage techniques of permanent/prepared positions has a high priority for them and OSI is important as a viable counter-measure. In some respects, the other "systems" serve as adjuncts to OSI.

OSI to confirm baseline data is essential for certification of the data exchanged by both sides on TLIs. If all declared locations are not inspected, then at least the established quota system (if quotas are established) should hold all of them at risk for subsequent inspections during the elimination phase and during OSI of the residual force. The earlier 6th Guards Tank Division example lends impetus to this "requirement."

Inspection teams will be both national and multinational in composition. Primary emphasis should be on the national teams since inter alia, verification is a national responsibility. Permanent stationing of inspectors within the zone being inspected of either Alliance should not be required. Presence at destruction sites is in the best interests of the Alliance, and multinational teams would seem prudent in this case during all actual destructions of TLI.

OSI at undeclared locations (formerly referred to as "suspect-sites") by a quota system with no right of refusal or with right of refusal only if inspected countries agree to provide plausible reasons for the refusal (e.g., an ethnic crisis in an area of the U.S.S.R. which involves a military facility or production plant subject for inspection).

The lead article in the June 1989 issue of Parameters provides a good example of the importance of the right of OSI of undeclared locations in the CFE arena. During the April 1988 U.S. CDE OSI of a Soviet "activity" in the GDR, the senior Soviet liaison officer and the East German escort officer attempted to "blame" a possibly over-zealous commander for the possibility that more than 300 tanks were out of garrison in possible violation of the Document of the Stockholm Conference.

Advanced notification and monitoring rights at all elimination (destruction) sites and during the actual elimination phase.

Mobile Monitoring Teams (MMT) for extended periods of time (perhaps 10 days) to sample the environment, check out suspicious areas, and to monitor activity in other than declared areas. In some cases, these could be multinational, however, national teams would have more application. For

certain, escorts should be required to prevent teams from straying into restricted zones by accident. Here, safety of the team would be a major concern. MMT could conduct a variety of "types" of inspections--OSI of declared/undeclared locations, "monitor" exit/entry points (EEP), or merely "rove" through the areas between declared locations. The use of Unmanned Aerial Vehicles (UAV) in conjunction with MMT should be studied.

Overflights by fixed-wing aircraft to compliment OSI and NTM. Permits an early "second look" at an NTM sighting of possible major significance and provides for dissemination of NTM data not otherwise releasable, thus allowing all NATO members to participate fully in arms control verification and monitoring. Technologies to be considered include Synthetic Aperture Radar (SAR), Thermal Infrared Scanning (IR), Forward-Looking Infrared (FLIR), Communications Intelligence (COMINT), Signal Intelligence (SIGINT), Side-Looking Airborne Radar (SLAR), and Measurement and Signature Intelligence (MASINT) in addition to normal photography.

Monitoring of Entry/Exit Points (EEP) by "inspectors" during periods when TLIs transit. Only declared EEP are used. NTM monitor during periods of non-declared use of the EEPs.

Remote sensing and tagging for TLIs in permanent or monitored storage areas. A U.S. devised system of "tagging" Soviet mobile missiles for "practice inspections" has been proposed. Such a system, if spoof-proof, may be applicable to portions of a CFE treaty.

Monitoring of production/final assembly plants within the ATTU can be enhanced by OSI. These must be carefully negotiated, since we might well be chary of turning Soviet inspectors loose in some of our most prized and secret "high-tech industrial plants." Additionally, the problem of production facilities and "destruction sites" outside of the ATTU zone must be addressed.

Other aspects

- rapid force regeneration and breakout potential when considering zones outside of the ATTU area can be "deterred" by the "openness and transparency" measures of the CSBM process.

- a future CFE agreement is very different from the INF Treaty since it is multinational (23 NATO/Warsaw Pact nations). This unique fact raises questions of a "clearing house" for the collecting, processing, and analyzing of information and data transfer. To avoid costly duplication of effort, the International Military Staff (IMS) under NATO seems a logical arrangement for this "clearing house" approach. Also, the in-place OSIA is an ideal vehicle, albeit for a bi-lateral treaty, for assuring that the administrative headaches of the OSIA origin are not repeated.

Finally, there is a need to explore the possibility of joint ventures (U.S./NATO--Soviet/Warsaw Pact) in technological developments for such possibilities as common sensors for storage areas. This effort definitely would be in keeping with the confidence-building and "cooperative measures" stressed in today's multi-polar world.

OUTLINE OF AN ON-SITE INSPECTION REGIME FOR CONVENTIONAL ARMS CONTROL IN EUROPE

1. Background

The problems of negotiating a treaty on Conventional Forces in Europe (CFE) and an associated, intrusive on-site inspection (OSI) regime will be of much greater magnitude than those encountered with the INF Treaty, or even those anticipated with START.. A basic problem lies in the difficulty of assessing the relative capabilities of opposing conventional forces with dissimilar equipment and operational methods. Definitions are critical and thus far in the Vienna negotiations impasses have been frequent. Moreover, whereas nuclear treaty-limited equipment (TLE) number in the tens of thousands. Compounding the problem, the CFE negotiations involve twenty-three countries (as opposed to two for INF and START), each with its own language, government, military forces, and often its own agenda. Despite these impediments, any CFE treaty should be expected to include complex and rigorous verification procedures covering vast geographic areas. The long-term success of such an agreement will depend on the level of confidence achieved by its verification provisions and the effective deployment of OSI methods and technology. As mentioned in b, above, in the past, OSIs have correlated with higher rates of compliance in arms control agreements and there is every reason to believe that would be true in a CFE agreement.

At present, NATO's CFE negotiating position includes the following provisions: (i) the inclusion of main battle tanks, armored troop carriers, artillery pieces, troops, combat aircraft and helicopters as treaty-limited items (TLI); (ii) the destruction or rerolling of eliminated equipment; (iii) a ceiling on Soviet and US air and ground forces stationed outside of national territory in the Atlantic-to-the-Urals (ATTU) region at some 195,000 Soviet and 225,000 US troops; (iv) acceleration of the time table so as to reach an agreement during 1990 and accomplish the agreed reductions in the 1992-1994 time frame.

Assuming that these provisions are adopted in the final treaty, TLE would have to be monitored and verified several times for various purposes, including establishment of initial force levels, the withdrawal of TLE to designated holding or "corral" areas, and the destruction of prohibited or excess equipment. Thereafter, OSIs would be required to monitor residual forces. It also would be prudent to have some type of monitoring or accounting procedures in place for military production of permissible TLE. Complicating the process would be the establishment of zones within the ATTU region, each with its own subceilings on TLI. Though the zone system is intended to prevent treaty evasion through redeployment, and enhance stability by preventing the illegal concentration of forces, it creates its own verification problems; e.g., the effects of terrain, possible areas of concealment, and the need to monitor the movement of forces into and out of each zone.

It is assumed here that verification measures will be based in large on the precedents established by the INF Treaty, i.e., an initial exchange of data, followed by a relatively short Baseline period in which force level data is validated, close-out inspections for dismantled facilities, destruction inspections for eliminated TLE, scheduled and short-notice inspections (at some agreed quota per year), and monitoring, hopefully, either of manufacturing facilities or of entry/exit points (EEPs) into/out of the ATTU region. Some utility may be derived from past experience (since 1985) with the OSIs of the International Atomic Energy Agency (IAEA). Also, not to be forgotten are the broad conclusions and lessons learned from the Conference on Confidence- and Security-Building Measures and Disarmament in Europe (CDE) OSI concerning the Soviet approach, the outcome and purpose of inspections, the learning process, alliance aspects and how to handle ambiguities,

and some technical lessons. To be certain, detailed knowledge of the provisions of the Treaty and practice or mock inspections will continue to be important requirements leading to successful implementation of the Treaty. NATO's insistence on an accelerated time frame for implementation implies that any OSI regime would rely on off-the-shelf technology to meet any immediate technical monitoring requirements.

2. CFE On-Site Inspection: an Outline

I. Objectives (concern is with political and military significance)

A. Political

1. Obtain both Alliance agreement and US Senate ratification
2. Provide evidence that can be used to confront/deter Warsaw Pact (WP) violations
3. Gain public support for NATO response options
4. Prevent Soviet/WP accusations of US/NATO violations
5. Ensure that the parties responsible for implementation are adequately manned (e.g., proficient linguists, inspectors, escorts) and funded

B. Military

1. Provide early assessment of threat
2. Deter/detect cheating and provide timely notice of violations so action can be taken to protect US/Allied security
3. Enable NATO leadership to respond to "challenges"
4. Retain good intelligence capabilities in a non-cooperative environment
5. Minimize need for NATO non-compliance in crises
6. Minimize WP espionage opportunities

II. On-Site Inspection Elements

A. OSI is a complement to National Technical Means (NTM)

1. NTM is critical but alone is not sufficient
2. Provisions for non-interference with NTM must be protected
3. Weather conditions and priorities may detract from NTM application

B. Baseline Inspections

1. Exchange of technical information
 - a. Force counts
 - b. Force locations
2. Inspection of a percentage of declared sites
3. Confirmation of baseline data

C. "Routine" Inspections

1. Visible symbol of verification regime
2. Supplement confidence-building measures
3. Countermeasure to Soviet camouflage techniques at permanent/prepared positions
4. Inspection of a percentage of declared sites during rerolling/destruction phase
5. Inspection of a smaller percentage of declared sites for residual forces
6. National and multinational teams
 - a. Multinational teams for TLE destruction sites
 - b. Primary emphasis on national teams
 - c. Team size and composition to be determined (probably 6 to 10 members)

- d. Inspection quotas based on team days to be determined
- D. OSI at Non-Declared Sites and Locations
 - 1. Intended to prevent non-compliant activities
 - 2. Quota system with right of delay and ultimate refusal
 - 3. Plausible explanation required for refusal
- E. Advanced Notification and Monitoring Rights without quotas and no right of refusal apply at all rerolling/destruction sites during TLE elimination phase
- F. Aerial Inspection Regime (Possible Overflights by Fixed-Wing Aircraft)
 - 1. Complement to NTM (early "second look" at NTM sightings of possible major significance)
 - 2. Provides for dissemination of NTM data not otherwise releasable
 - 3. Allow "full participation" by NATO Allies
 - 4. Possible applicable technologies
 - a. Photography (fixed/oblique)
 - b. Synthetic Aperture Radar (ASAR I)
 - c. Side-Looking Airborne Radar (SLAR)
 - d. Thermal Infrared Scanning (IR)
 - e. Forward-Looking Infrared (FLIR)
 - 5. Helicopter flights best used in conjunction with ground OSI *ala* CDE
- G. Monitoring of EEPs
 - 1. Declared EEPs for the ATTU region
 - 2. Established transit periods for TLE
 - 3. NTM monitoring for non-declared use
 - 4. Out-of-area operations a concern
- H. Remote Sensing and Tagging
 - 1. "Possible" use of sensors and tagging for TLE in permanent monitored storage or low-strength units
 - 2. Technology transfer/proprietary concerns
 - 3. Monitoring rights for entries into ATTU region
 - 4. Accounting procedures (after-the-fact) for exits

III. Personnel Requirements

- A. Inspection Teams (US national teams)
 - 1. Numbers
 - a. Baseline period estimate 1,500-2,500 declared sites in ATTU region, of which US would inspect about 20% (300-500 sites) and other NATO countries about 30% (450-750 sites) with 120 days to complete inspections. Estimated time to complete each inspection: 5 days (includes prep time, travel, briefing and debriefing, rest, etc.). A few (30-50) OSI of non-declared sites and locations also to hold WP at risk. Total number of teams required for baseline: 40 (two sets of 20 teams each - 30 days on and 30 days off). All teams would be composed of a combination of permanent and TDY personnel.
 - b. Reduction (rerolling/destruction) and monitoring periods: estimate 1,000 remaining sites in ATTU. Total number of teams required for non-declared sites and locations: 20.
 - c. Portal Monitoring: TBD, however, probably will not be required
 - d. EEP Monitoring: TBD
 - 2. Team Composition: 6-10 personnel each
 - a. Team Leader: Colonel (Russian speaker definitely if inspecting a Soviet site)

- b. Deputy Team Leader: LTC (could also be a linguist)
- c. Linguists - minimum of 2 (at least 1 for stationed forces and 1 for host state)
- d. Technical Specialists: minimum of 4 (some could also be linguists or 1 could be deputy team leader)
- 3. Total Inspection Personnel (excluding supports):
 - a. Baseline Period: 240-400
 - b. Follow-on Periods: 120-200
- B. Escort Teams: 10-20 teams of 6-10 personnel each (including 2-4 linguists): 60-200 personnel. Should use many of the same personnel who conduct the inspections. As proven with CDE and INF implementation, this works best
- C. Total personnel requirements of 360-600. (This is an estimate and is based partially on experiences gained from CDE and INF inspections by personnel who would work on any contract awarded as a result of this proposal)

IV. Costs:

- A. Personnel: \$31,000.00 x 300 man years = \$9.3 million for the first full year after entry into force of the Treaty.
- B. Facilities.: TBD (Present OSIA facilities in the US and in Europe would have to be expanded)
- C. Equipment: TBD (Combination of INF/CDE personal equipment with some additions)
- D. Travel: TBD (INF procedures--expanded--should be the model)
- E. Administrative support: TBD (Again, INF should serve as the model)

NOTE: In the final analysis, as with the CDE and INF OSI, cooperation on the ground during the actual conduct of the inspection and well thought out decisions by the inspection team chief will remain the rock foundation of successful implementation of the CFE Treaty.

CDE and INF set useful precedents in the OSI verification fields and point the way to the arrangements needed for CFE, but we must keep in the back of our mind the balance between cost and effectiveness. The principle of OSI is fundamental and will be a main method of true verification for all three possible phases of the implementation process and the challenge OSI will be best employed to confirm that no non-declared forces or TLE are in existence, once the residual ceilings have been reached.