

inadvertent violation? In other words, is a lower standard sufficient to reinforce compliance with a treaty the participants believe to be in their mutual best interests, evident by their signing of the agreement.<sup>19</sup> Assume that the standard necessary to instill greater discipline among participants already committed to the treaty regime is lower than that discussed above, e.g., a 25 per cent chance of detection within five days [ $p(D) = .25$ ]. For the same coverage area, the sophistication/efficiency demands on the system are substantially lower —  $p(i)$  falls to 8 per cent from the original 75 per cent. Alternatively, assume system efficiency remains unchanged at 75 per cent. The lower deterrence standard is still satisfied even when the number of "looks" is reduced to only one sortie every five days. There is a danger that such infrequent observation may, in fact, weaken the incentive for strict compliance. To overcome this problem while continuing to meet the deterrence standard, the surveillance system can take 11 "looks" in each five-day interval, but analyze the data for only one randomly selected "look." Thus, lowering the standard for the verification system to the minimum needed to deter the inspectee rather than that needed to reassure the inspector allows for reductions in the operational demands placed on the verification system.

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## Notes

1. The proposal called for prenotification of out-of-garrison activity by one or more "division formations" within the area of reductions and the European U.S.S.R.; notice would be provided in an annual calendar, to be supplemented, if necessary, by additional detail no later than 30 days prior to the activity. An annual schedule of troop movements into the reductions area was also suggested (*The Arms Control Reporter 1986*, p. 401.A.7).
2. "Division formations" include headquarters, command and control, and operational units but excludes service support units (*Ibid.*).
3. The NGA includes Belgium, Czechoslovakia, the Federal Republic of Germany, the German Democratic Republic, Luxembourg, the Netherlands and Poland.
4. The WTO argued that this provision unduly favoured the West; NATO had larger garrison areas and, hence, did not need to leave its garrisons for exercises as often as the WTO. As well, Eastern negotiators objected to the inclusion of the western Soviet Union within the prenotification area (*The Arms Control Reporter, 1986*, p. 401.B.106, 401.B.115). Although the Soviet Union and its allies rejected this proposal when presented four years ago, their recent willingness to agree to stringent and intrusive arms control verification measures may bode well for its eventual acceptance. At the very least, the new negotiating climate demands a reexamination of the merits of this proposal.
5. *Chapter III: Measures of Information Exchange, Stabilization, Verification and Non-circumvention*, p. 5.
6. *Ibid.*, p. 8.
7. William Mendenhall and James E. Reinmuth, *Statistics for Management and Economics* (North Scituate, Massachusetts: Duxbury Press, 1978), pp. 145-59.
8. Oftentimes, the evidence from one "look" is not, in itself, conclusive, while the cumulative evidence from a series of "looks" at the same event over time is decisive. For simplicity, this model only considers "success" or "failure" as it relates to each independent "look."
9. Satellites in geosynchronous orbit could provide the wide-area coverage to maintain constant surveillance of the Atlantic to Urals region. However, the technology for "close-look," high-orbit reconnaissance using adaptive optics — a system of deformable mirrors, wavefront