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Open Skies:
Beyond "Vancouver to Vladivostok"

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Pragmatic steps toward ideal objectives



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INTRODUCTION

Open Skies is the most extensive confidence-building measure ever negotiated. It opens all of the territory of the North Atlantic Treaty Organization (NATO) and most of the territory of the former Warsaw Pact to unarmed, short-notice observation flights. This observation will provide information and reassurance regarding the military forces and activities of all the parties to the Open Skies Treaty.

The twenty-five countries that signed the Open Skies Treaty in Helsinki, March 24, 1992, extend from Vancouver to Vladivostok. The original signatories did not intend, however, that the benefits of Open Skies should be confined solely to the territory of NATO and the former Warsaw Pact. Rather, it was envisioned that the concept of openness, and the mechanisms created by the Open Skies Treaty, could be relevant to many more countries. The preamble of the treaty explicitly recognizes the contribution that the concept of Open Skies could make to security and stability in other regions.

Indeed, the signatories recognized that there were many areas of the world beyond the territory of the initial participants where an increase in openness and transparency could make a significant contribution to the reduction of misunderstandings and the building of stable relations. They foresaw that cooperative aerial observation measures might help mitigate certain long-standing regional conflicts. And they believed that aerial observation could greatly enhance the effectiveness of international peacekeeping, which is assuming an increasingly central role in the management of a wide variety of crisis situations.

The extension of the Open Skies concept to additional areas could occur in one of two forms: either (1) by the accession of additional participating states to the multilateral treaty or (2) by the adoption of the Open Skies idea as a basis for separate agreements on a more limited regional basis. For those states that may be interested in joining the existing multilateral treaty, the treaty sets forth detailed provisions for the accession of new states. For those that may prefer to adopt the idea on a more limited basis, there is the precedent of Hungary and Romania, which have agreed on a bilateral Open Skies pact, in addition to their participation in the multilateral treaty.

This paper looks at the potential for extending the Open Skies concept beyond the original twenty-five signatory states. It considers the roles that aerial observation might fill in the context of today's changed international and regional security situations, examines the implications of Open Skies aerial observation for the security of additional countries and regions, and explores the potential relationship between Open Skies observation and other efforts to deal with regional tensions and security problems.

Open Skies in the Post-Cold War World

The opportunities and requirements of today's world are radically different from those of 1955, when Dwight D. Eisenhower first introduced the Open Skies idea in Geneva. In the mid-1950s, the Cold War was at its height. A proposal to open the territory of the United States and the Soviet Union to cooperative aerial observation had major implications for the central security confrontation of the time. Open Skies in 1955 would have provided concrete information on the most significant military forces in the world. It would have been a unique contribution, in a world still without satellite reconnaissance. On the one hand, this would have enhanced mutual understanding. In Eisenhower's view Open Skies could have laid the basis for calculating possible reductions and limitations in the armed forces of both states, as well as in the forces of their respective allies. On the other hand, from the Soviet viewpoint, it would have undermined security by providing significant information on force structure and readiness.

President Eisenhower's proposal was of course rejected by Soviet Premier Nikita Khrushchev. Both the United States and the former Soviet Union developed unilateral reconnaissance satellite capabilities to obtain information on each other's armed forces. The information collected by satellites ultimately became an essential element of bipolar stability, in much the same way that Open Skies information could have done earlier, had it been available. Satellite-gathered information also became the basis for calculating and verifying arms control agreements, beginning with the Strategic Arms Limitation Talks agreement (SALT I) in 1972 and continuing through the Strategic Arms Reduction Treaty in 1992. However, the technology of reconnaissance satellites and the information they produced were tightly restricted by the two governments and not generally available to the international community.

Now, as the end of the century approaches, the international situation has been transformed. While the world has lost a major threat with the end of the Cold War, security for all states has also become a great deal more complex. There is no longer a simple bipolar confrontation. There is no single formula for structuring security questions. Rather, there is a multiplicity of competing formulas and ideas. States of all sizes are searching for new roles and new relationships. Many ethnic and regional rivalries that had been restrained during the Cold War have come violently to the surface. Many states, both large and small, that had become accustomed to Cold War security alignments, are now reassessing their international position.

In this changed context aerial observation can acquire a new and broader relevance. Where it once could have contributed to stability in the context of a global bipolar balance, aerial observation can now contribute to the security of a great many countries in a wide variety of situations, bilateral and multilateral. Aerial observation can empower states of all sizes and all degrees of technological development with the capability to acquire specific information on the military forces and activities of other states of

potential concern to them. With agreed systems of aerial observation, states can avoid the enormous hurdle posed by the financial costs and technological challenges of satellite reconnaissance systems--a hurdle that has effectively restricted observation capabilities to a very few states.

Such a dramatic widening of access to information is consistent with the more open and flexible international structure that is emerging after the end of the Cold War. In the new environment, security responsibilities and decisionmaking are becoming more diffused. The security role of international organizations, including the United Nations and regional bodies, is becoming increasingly important. In this context it is essential that as much relevant information as possible be directly available to all states so that they can make more accurate assessments of their security situation, their force requirements, and the possibilities for international action and arms control.

The Chicken-and-Egg Problem

Many countries face severe political and security conflicts in their immediate regions. These countries are uncertain whether Open Skies, or other arms control and confidence-building measures, should be developed in parallel with efforts to resolve such existing conflicts or attempted only after the resolution of these conflicts. The answers to these questions must obviously be developed in light of the conditions in each region. There are, however, some useful general observations.

When one considers the European experience, it is evident that arms control and confidence-building measures did not resolve the major Cold War confrontation. It is also evident that many measures have been achieved suddenly with the end of the Cold War. Some have argued that this proves that the measures themselves are irrelevant, and could only be achieved after they were no longer needed. That assessment is wrong on several counts.

The effort to achieve arms control and confidence-building measures in Europe did not wait for the end of the Cold War. It began at the height of that confrontation. The Limited Test Ban Treaty banning nuclear tests in the atmosphere dates from 1963, as does the original U.S.-Soviet hotline agreement. The SALT I agreement and the Anti-Ballistic Missile Treaty date from 1972. The initial Conference on Security and Cooperation in Europe (CSCE) agreement came in 1975. The arms control and confidence-building agreements achieved during the Cold War helped stabilize the confrontation in both a political and a military sense. Beyond that, they helped to shape the intellectual and political climate, facilitating positive change in international relations. By increasing openness and deflating the assumption of inevitable conflict, arms control and confidence-building measures played a very important role in making it possible for

reformers in the former Soviet Union to move Moscow away from sterile confrontation and towards new thinking.

The logic of the arms control and confidence-building process during the Cold War was a logic of block-building. Each individual piece was relatively small, but the eventual total was significant. Pieces were put into place when they were ripe, politically and technically. Countries did not wait for the resolution of the Cold War to begin constructing the edifice of arms control and confidence-building. Had they waited, they might have waited indefinitely.

With the passing of the Cold War, many states of varying sizes continue to see a need for arms control and confidence-building measures to bolster their security in a situation where the simple bipolar structure no longer exists. The altered security situation has led many states in central and eastern Europe to seek new security arrangements that will ensure openness and broad international awareness of security issues. This concern has been voiced by small states, such as Hungary, which took a leading role in the Open Skies negotiations and in other European security talks, in an effort to stabilize the post-Cold War situation. The same concern has also been expressed by such large states as Russia, which is anxious to avoid misunderstandings that could provoke destructive arms races among the successor states of the former Soviet Union.

The Purposes of Open Skies

The Open Skies Treaty is designed as a flexible instrument, that can be applied to a wide range of questions. It is not, for example, linked to the verification of any particular arms control agreement, although it might produce information that would be useful to the verification of several agreements. The possible uses of Open Skies are likely to expand with experience. At the outset, the following areas of application have been seen as most relevant.

Day-to-Day Confidence-Building

Parties can use Open Skies observations on a routine basis to assemble information on the size, composition, location, and activities of the military forces of other parties. Compiling such information is an essential first stage in understanding the security environment. By combining information gathered as an observing party with information that may be purchased from other parties that have conducted observation flights over a given country, a party should be able to construct an accurate picture of the basic military forces and activities of any other party in which it is interested. The quality of ground resolution provided by Open Skies sensors will enable parties to recognize major items of military equipment: tanks, artillery, and armored personnel carriers, for example. Recognition of such major equipment is a key element in making estimates on the size and deployment of military forces. By following the information on these forces over time, a

party can also make assessments of potentially important changes in deployments and activities.

The Defusing of Tensions and Misperceptions

Misunderstandings have often arisen when one state conducts a major military exercise or deployment of military forces that another state regards as threatening. Significant activities near border areas, for example, often raise concern. One way to avoid misperceptions and to defuse any possible tension would be for a state participating in the Open Skies Treaty to conduct an observation flight over the area of such a major exercise or deployment. The raw photos that this party would collect could then be made available to any other interested party to the Treaty.

Collecting this kind of information would be the best way to assess exactly what was taking place. All parties to the treaty have, by the simple act of joining the agreement, agreed in advance that they will accept such flights, without right of refusal. They have also agreed in advance that the raw information collected will be made available to all interested parties. This formal advance readiness to accept observation, whenever and wherever an observing party may request, is itself an important political statement--one that can help to defuse tensions by underscoring that a country is not attempting to hide its military activities.

Crisis Management

During the negotiations, parties recognized that aerial observation might be particularly useful in crisis situations, for example, in locating forces or tracking the movement of equipment. At the same time, the parties recognized that the demands of a crisis situation might be so intense that they would rapidly exceed the quotas provided under the normal Open Skies quota system, which was structured essentially to provide for routine observation of participating countries. One example of particular concern during the actual period of the negotiation was the crisis in the former Republic of Yugoslavia, where parties estimated that there could potentially be a requirement for observation flights on an almost continuous basis to monitor activity and provide an independent source of information to the international community.

Considering that tragic situation, and the prospect of future crises, the parties decided that it would be useful if concerned international or regional organizations, such as the United Nations or the CSCE could request extraordinary Open Skies observation flights, over and above the numbers that might be provided in the passive quotas of the states in the area of a crisis. Such extraordinary observation flights might serve, for example, to monitor the flow of arms into a particular area, to facilitate the coordination of international peacekeeping forces, to provide up-to-date, concrete information on the disposition of contending forces, and to ensure that all parties had a common basis of information regarding military movements. Furthermore, additional Open Skies flights in

a particular situation could be an important visible demonstration of international involvement in a crisis.

To meet this requirement, the treaty, therefore, recognizes that such requests may be made during a crisis by concerned international organizations and provides that they will be considered by the Open Skies Consultative Commission. The treaty specifies that information gathered as a result of such additional observation flights will be made available to all parties and to the organizations requesting the flights. Finally, the Treaty provides that parties may agree, on a bilateral basis, to additional flights over and above their respective quotas, a measure that would provide an additional means of gathering information in a crisis.

Arms Control Monitoring

As it is presently structured, Open Skies can provide information relevant to the monitoring of several existing arms control agreements. The future contribution of Open Skies to arms control monitoring will depend on the scope of national participation in the treaty, the technology employed in the sensors, and the range of arms control agreements. All three of these areas are likely to expand significantly.

With the present sensor capabilities, for example, Open Skies can contribute to monitoring agreements on the reduction and limitation of conventional forces. The participants in the Conventional Forces in Europe (CFE) Treaty, whose territory is within the present area of Open Skies, can draw on Open Skies imagery in locating tanks and other items of treaty-limited equipment. Because the range of Open Skies territorial coverage extends beyond the boundaries of the CFE agreement, moreover, CFE participants can use Open Skies imagery to check on the disposition of major items of treaty-limited equipment that were moved out of the reductions zone, to ensure that they do not pose a threat to the stability of the agreement.

Present Open Skies sensors would also be able to monitor demilitarized zones or military disengagement agreements. Aerial observation, using cameras and the unaided human eye, has been successfully employed with respect to the case of the disengagement agreements in the Sinai and the Golan. There, the task has been to check on the numbers and location of specified major items of military equipment, exactly the capability for which the Open Skies sensors are presently configured. It seems likely that disengagement agreements and demilitarized zones will be a significant feature of arms control in the future as well, as efforts are extended to mitigate regional conflicts and defuse tensions. If this occurs, the requirements for aerial monitoring of such agreements could increase rapidly.

In addition, Open Skies aerial observation may be able to contribute to the implementation of other types of arms control agreements. For example, aerial photography can rapidly survey wide areas and help locate facilities requiring detailed on-site ground

inspection. Moreover, aerial photography can support such on-site inspections by providing comprehensive site diagrams of military or industrial installations. Experience in monitoring nuclear and conventional agreements has shown that accurate site diagrams are a fundamental starting point for any effective on-site inspection activity. Detailed site diagrams derived from aerial photography can help in planning the inspection of a given facility, ensuring efficient and thorough coverage. On-site ground inspections of facilities under the new Chemical Weapons Convention (CWC), for instance, might be facilitated by this approach. Should on-site inspection provisions eventually be added to the Biological and Toxin Weapons Convention, site diagrams produced from aerial photography might be similarly useful.

In the future, participants may wish to include among the sensors on Open Skies aircraft equipment to collect air samples. Simple technology for this purpose already exists and has been used for decades to gather both particulate matter from the air and bottles of whole air. Laboratory analysis of both kinds of samples can be useful in supporting a variety of arms control agreements. For example, air-sampling equipment could collect evidence of chemical weapons development and production. Collection of such information could then serve as a stimulus to conduct an on-site ground inspection of a particular facility. In such a way, Open Skies might enhance the ability of the parties to monitor the new CWC.

It is possible that additional types of sensors may be added that would be relevant to particular arms control agreements of the future. Similarly, parties may decide to improve the quality of existing sensors so as to provide a greater degree of detail, another step with possible relevance to the monitoring of existing or future arms control agreements. For example, an agreement controlling specific models of military equipment could not be effectively monitored with existing levels of Open Skies sensors--which cannot under average circumstances distinguish between a U.S. M-1 and a Russian T-72. Greater capabilities, to distinguish between models of tanks, would require a sharper degree of ground resolution. If necessary, this improved capability could be decided upon by the participants, acting within the Open Skies Consultative Commission, on the basis of consensus.

Environmental Monitoring

The Open Skies Treaty looks ahead to the possibility that Open Skies observation flights may be used to monitor the state of the environment. Participants were particularly concerned about the serious environmental problems of the European area and believed that airborne monitoring held high promise for collecting relevant data on these problems. In this regard the participants had in mind everything from the dramatic nuclear accident at Chernobyl to the cumulative damage produced by acid rain. They were also interested in ensuring the most efficient utilization of observation aircraft and believed that environmental monitoring in addition to data collection on military forces and activities

would increase the effective utilization of Open Skies observation aircraft. All of these concerns would, of course, apply equally to any other region of the world and to potential new participants in the Open Skies Treaty.

No specific sensors have been included in the initial Open Skies sensor package for the express purpose of environmental monitoring. The parties have agreed, however, to pursue discussions in the Open Skies Consultative Commission, beginning in September 1992, on the requirements and possibilities for environmental monitoring sensors. The wide range of technical possibilities includes, for example, multispectral systems to monitor the state of vegetation and air-sampling systems to check on atmospheric pollution. If the participants agree that any additional sensors are warranted for the purpose of environmental monitoring, they may add these to the list of approved Open Skies sensors by a decision in the Open Skies Consultative Commission on the basis of consensus.

Extension of Open Skies: The Form of Agreement

As noted, the Open Skies Treaty looks forward to the potential extension of the Open Skies idea, either by additional parties acceding to the Helsinki treaty or by states developing their own regional or bilateral agreements based on similar principles. Both approaches have evident pros and cons, which will have to be evaluated in light of the particular circumstances of each region. Certain general considerations, however, will apply to the analysis in all regions.

On the one hand, an agreement restricted to a few participants or a single region would permit the most careful tailoring of technical and political requirements. It would, for example, enable participants to decide on a particular set of sensors without having to accept a consensus among a much larger group of states. A requirement for a unique set of sensors might arise in the context of a particular regional arms control or disengagement agreement that could not be verified without more stringent measures than those in the Helsinki Open Skies Treaty. Similarly, a more restricted agreement would permit participants to devise particular rules on the control or sharing of information, which might, for example, be tighter than the formula for broad sharing embodied in the Helsinki treaty. Again, such provisions might be desired in support of a particular regional security agreement.

Further, bilateral or limited regional agreements could offer greater flexibility in the allocation of quotas, as the interest of only a small number of countries would have to be taken into account. States whose security concerns were primarily limited to a single region or bilateral confrontation, where there was little or no interest from states outside the region, might thus favor a restricted agreement.

On the other hand, states whose political and security interests are not strictly limited to one region--and there are many-- could gain significant political and technical

advantages from participation in the existing Helsinki treaty. Participation would enable each added state to share information gathered by all other participants on any part of the territory covered. Participation by additional states in the Helsinki treaty would also mean that any of the other parties to the agreement could share information about any newly acceding states. This could be important in increasing international understanding of regional situations, few--if any--of which are totally separate from the concerns of the broader international community.

Moreover, the greater the membership in the Helsinki treaty, the easier it would be to apply the mechanisms and standards of the treaty to potential crisis management efforts under United Nations auspices. Such efforts must, of course, be tailored to particular situations, which cannot be predicted in advance. That task would be greatly facilitated to the degree that a broad range of parties, in all regions of the world, had already adopted a common approach to such measures.

Future Participation in Open Skies

Where does Open Skies go beyond the first twenty-five participants? The original signatories made several provisions in the treaty regarding additional participation, but the ultimate question of participation will depend on independent judgments in other capitals. The following is a brief review of some of the regions where the question of participation in such a system of aerial observation might be considered.

Additional Soviet Successor States

The question of participation is posed most immediately for those eight successor states of the former Soviet Union that did not sign the treaty in Helsinki on March 24, 1992. Although Belarus, Georgia, Russia, and Ukraine signed the treaty, as successor states to the USSR and therefore as initial participants in the negotiations, Armenia, Azerbaijan, Kazakhstan, Kirgistan, Moldova, Tajikistan, Turkmenistan, and Uzbekistan did not sign the treaty at that time. Since they are successor states of an initial participant in the negotiations, however, the treaty provides that they may sign the document and become participants at any time they choose.

All of the initial signatories agreed that it was important that these states join the Open Skies Treaty as soon as possible and that the territory covered under Open Skies not be in any way diminished by the dissolution of the Soviet Union. All of these states have become participants in the CSCE as successors to the former Soviet Union. Some are also participants in the CFE Treaty limiting conventional forces. All have security interests that relate to other participants in Open Skies. With the uncertainty that has developed regarding security relationships in central Asia, all of these states should share an interest in promoting contacts and openness as a basis for enhanced understanding and cooperation.

As a practical matter, decisions by many of these countries on participation in Open Skies are likely to be delayed by more pressing political and economic questions, including in several cases fundamental questions of governmental authority. There may also be serious logistical obstacles for some of these states, none of which has operated an independent air force. The disposition of armed forces of the former Soviet Union has not been finally worked out. Decisions will need to be taken, for example, on whether these states would operate their own Open Skies aircraft or whether they would prefer to collaborate with other parties in the operation of aircraft. Although these questions may take time to resolve, they do not represent an insurmountable obstacle to eventual participation. It remains, moreover, the firm belief of the original signatories that full participation by all of the successor states will be mutually beneficial.

Additional Participant in the CSCE

When the Open Skies Treaty was signed in Helsinki in March 1992, a political declaration issued by the foreign ministers of all the states participating in the CSCE expressed the desire that all of their states could participate in Open Skies as soon as possible. The treaty itself provides that all CSCE participating states may apply for accession as soon as Open Skies enters into force.

If all of the states participating in the CSCE joined Open Skies, membership in the treaty would rise from the initial twenty-five signatories to fifty-one (including also all of the successor states of the former Soviet Union, discussed above, which are also participants in the CSCE). Some of these states have long played important roles in international security and could be expected to participate actively in an Open Skies regime. For those states that are small and relatively inactive in the security field, the decision to accede to an aerial observation regime would be made largely on the basis of political solidarity. The full list of possible additional CSCE states includes in alphabetical order, Albania, Armenia, Austria, Azerbaijan, Bosnia-Herzegovina, Croatia, Cyprus, Estonia, Finland, Holy See, Ireland, Kazakhstan, Kirgistan, Latvia, Liechtenstein, Lithuania, Malta, Moldova, Monaco, San Marino, Slovenia, Sweden, Switzerland, Tajikistan, Turkmenistan, and Uzbekistan. Macedonia has applied for admission to the CSCE but has not been admitted at this writing. Yugoslavia (Serbia-Montenegro) has been suspended.

Although the negotiation was, as a formal matter, conducted between the members of NATO and the former Warsaw Pact, in practice several of the observer delegations from the neutral and non-aligned states made significant contributions to the substance of the agreement. They also played crucial roles in resolving some outstanding political difficulties blocking agreement. These contributions reflected the conviction on the part of many NNA states that the security of the CSCE area was indivisible and that their participation in the Open Skies regime was important both to their future security and to the future political structure of the region. Finland and Sweden went so far as to prepare to implement Open Skies bilaterally with Russia, to guarantee their effective participation

from the outset. The initial participants, in recognition of the Finnish and Swedish contributions and the importance of their security concerns, specifically reserved quota numbers for their use, even though they were not among the initial signatories.

There is a broad consensus that these applications from CSCE participating states should be accepted promptly so that NNA states can contribute to the objectives of openness as soon as possible. However, one problem arose during the negotiations that may affect the eventual accession of the European NNA states. Greece and Turkey differed over admitting the European NNA states in a bloc or on a case-by-case basis. Greece favored the former approach, to ensure admission of Cyprus. Turkey favored the latter approach, indicating it could not support accession by Cyprus, since it did not recognize the government in Nicosia. Both Greece and Turkey agreed that the successful conclusion of the Open Skies negotiations should not be prejudiced by their disagreement and, moreover, that there would be no difficulty in applying Open Skies aerial observation to their respective territories. They reserved, however, their respective positions on the question of the accession of Cyprus. As the date of entry-into-force approaches, it will be essential that creative political efforts are made both by the initial signatories and by the European NNA states to ensure that this dispute does not become a hindrance to the early and widest possible *de jure* participation in Open Skies by those remaining CSCE participants not among the original signatories. It is not in the long-term interest of either Greece or Turkey that participation in Open Skies be artificially circumscribed.

Japan

Tokyo has taken an increasing interest in political and security developments in Europe, demonstrated, for example, by the presence of a formal Japanese observer at the Helsinki meeting of the CSCE in Europe in the spring of 1992. Japan is immediately adjacent to the "Vancouver to Vladivostok" area. Indeed, when that slogan was first advanced, some concern was expressed that the phrase might convey the incorrect impression that the security interests of Japan were not being given sufficient attention by the initial signatories. Although this was certainly not the intention, the initial signatories and Japan may find it useful to eliminate any such misunderstanding by bringing Japan into the treaty. Geographically, such a step would complete a full circle of the globe under Open Skies. Politically, it would also mean that all members of the G-7 were in Open Skies.

A decision by Tokyo to accede to the Open Skies Treaty, however, would not be an easy one. Japanese participation in such a confidence-building measure would represent a significant new step in Tokyo's international policy. Although Japan has participated in a variety of arms control agreements, it has not joined in cooperative observation measures either on a regional or global basis. The Japanese role in international security, however, has been rapidly evolving during the past few years--the leading Japanese role in the United Nations peacekeeping effort in Cambodia being only one example of this

evolution. The difficulty of the debate leading to the Japanese decision to deploy forces to Cambodia, however, suggests that decisions on any additional steps, such as Open Skies, would probably be very slow in coming.

Given the close U.S.-Japan security relationship, Japan has not historically been greatly concerned with the collection of information on the military forces and activities of neighboring states. Although the degree of interest may change for Japan, the technical aspects of Open Skies would likely be of lesser importance than the broad political implications. Whether Japan would eventually decide to participate in a multilateral measure of observation such as Open Skies would likely depend primarily on judgments about the potential contribution that Japanese participation might make to the construction of international confidence-building and peacekeeping structures generally, as well as in Asia specifically.

A particular problem confronting Japanese participation remains the unresolved dispute with Russia over the northern territories. In the absence of a near-term resolution of that issue, any Japanese decision on participation in Open Skies would have to be made in a manner that protected Japan's position on the sovereignty over those islands. This would, however, be easy to accomplish. The treaty contains no statements or maps regarding the territory of the participating states and is thus itself without prejudice to the Japanese position. That position could, moreover, be reinforced by an appropriate statement protecting it. Statements of that sort were made, for example, by the United Kingdom at the time of the original initialing of the treaty.

The Korean Peninsula

For North Korea and South Korea, a system of agreed aerial observation could be an important complement to the current dialogue between Seoul and Pyongyang on all aspects of their relationship. On the one hand, the history of conflict on the peninsula, the high levels of military readiness, and the continuing levels of tension and mistrust make a strong case for increased openness and transparency. Mutual willingness to permit observation could firmly advance the necessary confidence-building process and have important political as well as security spin-offs. On the other hand, the same record of conflict and tension means that any measures of openness will receive very cautious scrutiny. Skeptics will, understandably, probe for every possible loophole, every possible opportunity for circumvention or misuse of the arrangements.

The Open Skies approach may be particularly well adapted to such a situation. Both North Korea and South Korea should appreciate the tight limitations on the ground resolution of Open Skies sensors, designed to ensure that only authorized information is acquired. Both should appreciate the detailed procedural requirements for all flights, including the provision that host country observers be present during observation flights.

Both should appreciate the requirement that all raw data collected on flights be shared fully between the observing and observed parties.

The concept of observation is hardly novel on the peninsula. The recent visit by the International Atomic Energy Agency to North Korean nuclear facilities represented a very important step in building openness and confidence--which could be built upon. Although the level of sensor technology permitted by the Open Skies Treaty might not necessarily offer significant new information on nuclear issues, it would provide a means of monitoring conventional air and ground forces, which continue to be a source of tension. Given the deployment of major conventional forces in close proximity to each other, such monitoring could greatly enhance stability on the peninsula.

North Korea and South Korea could establish an aerial observation regime on the peninsula in one of several ways. They could make it strictly bilateral--adapting the Open Skies agreement for their own use. This approach would presumably give them the greatest control in shaping a regime compatible with the state of development of their bilateral dialogue. Alternatively, they could adopt a regional framework, limiting participation to themselves and other countries most concerned with security in Northeast Asia, including China, Japan, Russia and the United States. This broader framework could still be tailored to the specific requirements of the dialogue on the peninsula. Finally, they could decide simply to accede to the existing Helsinki treaty, which already includes Russia and the United States and could include other parties interested in the situation in Northeast Asia.

China, India, and Pakistan

The strength and durability of any efforts to ensure international security in the post-Cold War world will be greatly affected by the international role of China, India, and Pakistan, as well as by their relations with each other. Their potential participation in arms control and confidence-building measures, such as Open Skies, would have global importance. The question of Open Skies might be addressed in various ways including bilateral and trilateral agreements, or accession to the existing Helsinki treaty.

Until recently, China has had relatively little involvement in international arms control arrangements. Moreover, in the past it opposed, as did the former Soviet Union, measures of openness such as those provided in Open Skies. Yet this pattern may be changing as Beijing reassesses the role it can play both regionally and globally following the end of the Cold War. One example of this reassessment is, of course, the Chinese decision to join the Non-Proliferation Treaty, which is both a substantive and symbolic step of major importance. For China, participation in aerial observation would be a major qualitative step in terms of its engagement in arms control and confidence-building. At the same time, it would not present any additional security risk, since Chinese facilities have been subjected to extensive satellite observation for decades.

India and Pakistan have a long history of bilateral confrontation and conflict, as well as complex relations with China. Both have a long-term interest in minimizing tensions and building cooperation. Continuing tensions over Kashmir have spurred Islamabad and New Delhi to develop confidence-building measures that might lessen the risk of war, including the establishment of a hot line between senior military officers, an agreement on the prenotification of exercises, an agreement to avoid flights near borders, and agreements to identify nuclear facilities and not attack them. India and Pakistan have also agreed bilaterally to become original participants in the Chemical Weapons Convention.

Given their experience with confidence-building measures, India and Pakistan would seem to be well placed to add a measure of observation such as Open Skies. Aerial observation would strongly support the existing measures and contribute directly to their mutual objectives. It would provide hard information on the deployment and activities of conventional forces, any of which are in fairly close proximity to each other. In the past decade significant military tensions have arisen between India and Pakistan specifically because of misunderstandings over military exercises and deployments on either side of the border. War scares have also arisen in association with the continuing dispute over Kashmir. Such situations could be to some degree defused by cooperative aerial observation, as provided for under Open Skies. The ground resolution provided by present Open Skies cameras would be appropriate, for example, for tracking deployments of armored forces, providing hard information and deflating rumors. The fact of cooperative observation would itself be a positive signal working against tension. At the same time, because the ground resolution of Open Skies cameras is only 30 centimeters, it would not be so intrusive as to expose technical secrets on either side.

China, India, and Pakistan would each have to consider whether it made more sense to accede to the existing Helsinki treaty, to develop one or more bilateral agreements, or to attempt a trilateral or wider regional approach. Given the breadth of the international concerns of these three states, it might be simplest to join the overall treaty. A limited regional agreement would not cover Russia or the other successor states of the former Soviet Union. Nor would it be likely to include the U.S. However, there could be some reluctance to engage in reciprocal aerial observation and information sharing with states in other regions.

Southeast Asia

The United Nations peacekeeping mission in Cambodia is both a key building block of peace in the region and a test case for the international community's ability to act constructively to resolve long-standing security problems. This effort, and the long-term stability of the broader region, might benefit from the development of a supporting network of confidence-building measures, including aerial observation. Such a development might have a primarily political objective, in signaling cooperative intentions and

a desire to avoid conflicts. But it could also have a real technical content, enabling regional participants or international forces or both to track and draw attention to significant military deployments.

A key question that would have to be addressed in any consideration of a significant confidence-building measure such as aerial observation in Southeast Asia would be the scope of participation. Some countries in the region have been enthusiastic supporters of confidence-building measures and arms control. Others have not yet seriously examined the concept of confidence-building.

Establishment of an Open Skies regime involving all or most of the countries of the Southeast Asian region would itself be an important step. The Association of South East Asian Nations, for example, might as a political measure institute a regime among its members, even though there are no security tensions among them. Adding Vietnam to such an arrangement would greatly facilitate confidence-building. An agreement covering Cambodia might help in monitoring the peacekeeping process. Extending coverage to Burma could prove useful in bringing that country back into the international community. Australia and New Zealand, enthusiastic supporters of arms control and confidence-building for many years, could make strong technical and political contributions to a regional aerial observation regime.

As an alternative to a specific regional regime, states in the area could decide to accede to the existing Helsinki Open Skies Treaty. Given the degree of international interest and concern in the region, this might be a prudent step. Alternately, states in the region may find it easier to structure an agreement that meets their mutual requirements without the participation of outside powers.

The Middle East and North Africa

The Gulf War, the Iran-Iraq War, and the several Arab-Israeli wars have made everyone extremely conscious of the tensions and dangers of the volatile Middle East and North African region. At the same time, the very intensity of the problems has generated unusual willingness to consider new approaches to peacekeeping in the area. Given this environment, measures of aerial observation such as Open Skies may go far toward promoting stability.

There is, already, considerable experience with aerial observation and arms control in the region. One example has been the use of aerial observation to underpin the disengagement agreements in the Sinai Peninsula and the Golan Heights, involving efforts by the parties themselves, by multinational forces, and by third parties. Another example has been the use of aerial observation in support of United Nations efforts to locate and destroy Iraqi weapons of mass destruction and facilities for their development and production. In the former case the agreements and the aerial observation that supported them were the result of negotiated agreements among the concerned parties. In the latter

case, of course, the arms control measures, and the aerial observation in support of them, were not based on cooperative agreement but were the result of United Nations Security Council decisions.

When one looks to the future, it is possible to envisage a variety of arms control and confidence-building agreements that might help support resolution of regional tensions. It is with this in mind that a multilateral discussion of arms control and confidence-building has been launched in parallel with the current Middle East peace talks. Although the course of those discussions cannot be predicted, they could result in agreements that would require aerial monitoring. It is also possible that monitoring will be provided, as it has been in the past through the combined efforts of the parties themselves, international forces, and third parties. In that context the concepts and procedures developed in the Open Skies Treaty could prove valuable.

There is no technical reason why cooperative observation such as Open Skies could not be implemented to support future agreements, despite the extraordinary tensions of the region. The Treaty provides that personnel of both the party being observed and the observed party conducting the observation must be on the aircraft during the observation flight; it provides for extensive inspection of the aircraft and for certification of the aircraft and its sensor equipment; and it provides that all raw information collected will be shared equally between the observing and observed parties and will be available to all other participants in the regime. All such measures are designed to ensure that the regime will be used only for its declared purposes and that parties will know exactly what is being done at every step.

Tensions in the Gulf remain high, reflecting the aftermath of the Gulf War and the Iran-Iraq War. Today the prospect for cooperative arms control and confidence-building measures may seem a distant mirage. Yet it is evident that all of the interested parties, in the region and outside, would benefit from the institution of measures designed to reduce the risk of conflict and promote openness. Without such measures the region will remain vulnerable to repeated, frequent explosions; it will continue to divert an excessive portion of its resources to armaments; and it will be unable to focus its very considerable energies on a constructive agenda.

If the past decade has had no other effect, it should have inculcated a strong sense of the risks of aggressive warfare and the value of respecting international frontiers. That could be a minimal starting point for measures designed to enhance military openness and stability--as indeed it was in Europe in the 1970s. In the European context the repeated Soviet efforts to destroy the freedom of Berlin had to be thwarted and, in the other direction, Germany had to acknowledge that the post World War II frontiers could not be changed except by peaceful means. Both points were achieved by the time of the first CSCE agreements, beginning the process of confidence-building and openness. It took a sustained effort to build the European structure, during a period of deep, seemingly

enduring division of the Continent. It will take similar sustained effort to build a structure in the Gulf. Measures of openness, though they may be slow in coming, as they were in Europe, could play a positive role.

The states of North Africa might consider participation in Open Skies aerial observation on the one hand, on the basis of their position on the southern littoral of the Mediterranean and their many close links to the European states already participating in Open Skies. On the other hand, their close ties to the states of the Middle East open the possibility of involvement in aerial observation as a result of discussions in that region. It should also be noted that existing tensions within North Africa itself might be mitigated by aerial observation, which would make possible the efficient monitoring of long borders in desert regions.

North Africa, however, has not participated in arms control or confidence-building measures, either regionally or more widely. Nor have the European states been anxious to invite North African participation in the development of European measures, such as the CSCE process. Specific tensions, notably with Libya, complicate any effort to address the issue. Moreover, continuing uncertainty about political developments in the region has caused most observers to be extremely cautious. Thus, substantial changes in assessments on both continents would be required if the North African states were to participate in the existing Open Skies regime. Over the long term, however, the logic of extending the Open Skies area to encompass the Mediterranean littoral seems likely to prevail, given the range of other contacts and interests between North Africa, Europe, and the Middle East.

Latin America

Latin America has not been a region of major international conflict. Conflicts that have occurred, such as those in El Salvador and Nicaragua, have involved large conventional forces with the kind of equipment and organization that lend themselves to easy aerial observation, of the sort made possible by Open Skies. The most pressing security problems in the region at present, however, are posed by internal guerrilla warfare and the interrelated challenge of narcotics traffickers, neither a likely object for international cooperative aerial observation.

If measures such as Open Skies were to be considered in Latin America, they would not be aimed at defusing an existing tension or monitoring threatening force deployments. The objective might simply be to signal peaceful intent, to engage the militaries of neighboring states in cooperative exchanges, and to ensure against future arms races. Some states might find this a reasonable objective. Argentina and Brazil, for example, having recently renounced their respective nuclear programs, could utilize cooperative aerial observation as a political symbol of their long-term peaceful intentions.

The states of Central America might find that institution of some form of cooperative aerial observation was a useful complement to the United Nations peacekeeping efforts--which have already made extensive use of helicopters--and thus a stabilizing force for the future. In either example the states involved might want to adapt the provisions of the Open Skies Treaty to the specific requirements of the region. Region-specific considerations might include, for instance, sharper ground resolution, since there would be less attention to tanks and other major items of military equipment; synthetic aperture radar with sharper quality, given the heavy vegetation of the region; and multispectral systems for the same reason.

The Content of Open Skies

The Open Skies Treaty provides for cooperative aerial observation of all of the territory of participating states. Its principal elements are the following.

Territorial Openness

By joining the treaty, parties agree that all of their territory is open to observation, without exception. No party may prohibit observation of any part of its territory for national security reasons. Thus, a proposed observation flight plan may be amended only for genuine reasons of flight safety, issues that the treaty narrowly and carefully defines.

Common Sensor Capabilities

All parties to the treaty are assured that they will have access to the same sensor capabilities as all other parties. This provision guarantees that there will be no disparities among states on the basis of different levels of technology. Further, the Open Skies Treaty establishes specific standards for the kind and quality of sensors that may be employed. These standards are intended to reassure both the party conducting the observation and the party being observed: For the observing party, the precise sensor standards are the guarantee that the information received will be good enough to answer certain basic security questions. For the observed party, the standards are a guarantee that the sensors will not be excessively intrusive.

The primary sensors used on Open Skies observation aircraft will be standard black-and-white aerial cameras. According to the treaty, these cameras are to produce imagery with a ground resolution of not better than 30 centimeters. This degree of ground resolution--which represents the ability to distinguish between two objects 30 centimeters apart--is approximately that required to recognize large items of military equipment, such as tanks. It will, for example, enable photo interpreters to distinguish between a tank and a truck. Although this degree of ground resolution does not produce photos equivalent to those obtained by the state-of-the-art of satellite photography, the quality of these photos

is much better than that of the satellite photos now commercially available on the international market.

All participants in the negotiations believed that the ability to recognize a tank was essential to an understanding of the scope and activity of military forces. Not only would this recognition help an observing party locate and estimate the size of major military forces--in garrison, on exercises, or on deployments--but would help that party to develop an understanding of patterns of deployments and to notice major changes in deployments. All of this information would enhance mutual understanding and help to minimize miscalculations, and would do so, the participants agreed, without threatening the security of the observed party. Information of this standard, for example, would neither permit the identification of particular tank models, nor enable the observing party to analyze the technical capabilities of a tank or other equipment.

The other sensors that may be used on an Open Skies observation aircraft are a synthetic aperture radar, which can operate in any weather condition, day or night; an infrared line scanning system, which can operate at night; and a video camera. The synthetic aperture radar will have a ground resolution of only 3 meters, which is not adequate to recognize individual items of military equipment. It could detect large ships and planes, or the presence of numerous items of ground equipment, but it would not be able to identify those objects. The infrared line scanning system will have a ground resolution of 50 centimeters--not quite as good as those of the optical camera but a degree that should nevertheless provide an ability to recognize major items of military equipment at night. The only specification on the video camera is that its resolution may not exceed the 30 centimeter standard established for optical cameras.

The agreement provides the flexibility to add new sensors, and to improve the capabilities of the original sensors, subject to agreement of the parties. For example, during the negotiation it was suggested that parties might want to consider adding air-sampling equipment, which could be used to monitor the environment or the production of chemical weapons. Other participants raised the potential desirability of improving the ground resolution of the optical cameras, radars, or infrared line scanners as experience developed with the regime. Any proposal for additions or improvements to the sensors on an observation aircraft would be considered by all the parties to the treaty, meeting in the Open Skies Consultative Commission. As in the case of the original sensors, any additional sensors that might be agreed upon would have to be equally available to all participating states.

The treaty allows the observing party to operate the sensors on the observation aircraft throughout the observation flight. There is no time limit on the operation of the sensors. There is no restriction on what can be observed. The only limitation on sensor operation is that cameras and infrared sensors, whose resolution is proportional to their altitude above ground, may not be operated closer to the ground than the altitude at which

they would achieve the permitted degree of resolution. This altitude above ground is determined during the certification process for each camera and infrared system. There is no such requirement for synthetic aperture radar, since the resolution of synthetic aperture radar is independent of the altitude of operation.

Annual Quotas

Open Skies observations are guaranteed and automatic. There is no right of refusal. There is no requirement that the party requesting a flight submit a rationale for the flight. There is no requirement linking flights to a list of authorized purposes. Instead, the number of annual flights that each participating country must agree to receive is specified in advance in the treaty.

The number of observation flights that each country agrees to accept annually over its territory is known as its passive quota. These numbers are roughly proportional to the size of the countries. Thus, for example, the United States has agreed to accept forty-two observation flights annually; Germany twelve; Russia and Belarus together, forty-two; Denmark six; and Hungary four. Participating countries must accept as many observation flight as specified in their passive quotas at the time that they are requested by other parties. This system of automatic quotas is designed to ensure that the principle of openness embedded in the treaty, and the confidence that derives from it, cannot be undermined during the implementation of the agreement.

The agreement also specifies those states over which each member of the treaty may conduct observation flights. This allocation is known as the "active quota" of each state. No state may conduct more observation flights over all states combined than it has agreed to receive from all states. Moreover, each state has the right, but not the obligation, to conduct the same number of flights over another state as that state conducts over it. The specific states over which each party would conduct flights were decided on the basis of negotiation and consensus. An effort was made to satisfy the particular concerns of neighboring states; however, given the great demand for overflights of some states, it was not possible to satisfy all requests. For example, for the first year of implementation Poland was allocated the right to conduct one flight over Germany, one over the Russia-Belarus group of parties, and one over Ukraine. Turkey was allocated the right to conduct two observation flights over the Russia-Belarus group of parties, one over Bulgaria, and two flights (one of which is shared with Italy) over Ukraine.

To allow for flexibility, the treaty provides that the allocation of active quotas will be reviewed annually by all participating states. It recognizes that the security interests of states may change over time and that states will want to utilize their observation flight rights over those states where they have the greatest interests. At the same time the treaty recognizes that the degree of interest in some states may be so high that it will not be possible to accommodate all desires for observation flights on an annual basis. Accordingly,