being assembled in preparation for implementation of the agreement, the [redacted] less responsive as timing needs grew more critical. And even aircraft which can execute some missions under a cloud deck would still not be responsive enough. In addition, since a complete photographic data base would take time to collect, different parts of the area would be covered at different times; thus the timeliness of the data would vary.

The Arab-Israeli ceasefire illustrated how the fact that an agreement was impending could be a spur to actions to change force posture. Part of the Egyptian motive for moving SAMs shortly before the ceasefire was apparently the expectation of a standstill agreement. The experience of the Arab-Israeli ceasefire would argue for inclusion of stablizing provisions in arms control agreements dealing with general-purposes forces. Another possibility would be to base the agreement on the number of forces in the area, rather than to freeze the action at a point in time; however, this approach raises the problems of how an initial "declaration" of forces can be established and verified.

As a case study in monitoring changes in tactical deployment the Arab-Israeli ceasefire not only underscored time sensitivity but also showed how [redacted] may change under the exigencies of a tactical situation. We saw a number of variations [redacted] in SAM deployment in Egypt. In the Canal area there were partially occupied sites, SA-2 sites with SA-3 equipment and some sites with odd numbers of launch positions. In

to consult with the PIs before NPIC's preliminary assessment cable went out, in order that the analysts could look at the material themselves and clear up any problems they might have on the spot. State analysts worked closely with the NPIC data in order to give their superiors a picture of developments in the zone and in order to prepare the lists of violations that were eventually submitted to the Egyptians (on 19 and 21 August, and on 3 September 1970).

Normal coordination procedures were of course maintained during the ceasefire period. CIA, DIA, and State coordinated all Central Intelligence Bulletins issued on the subject of the zone, and CIA and DIA wrote several coordinated memos. In addition, State turned to NPIC directly near the beginning of the ceasefire in order to find out whether the US could verify Israeli complaints of Egyptian violations. NPIC was also responsive to State Department requests on a number of occasions later in the period; for example, on September 14 NPIC held a special briefing for Secretary Rogers on the problems connected with photo interpretation and on September 21 NPIC gave Counsellor Pederson a rack-up of the status of each site in the zone as observed on each mission, whether satellite or U-2. NPIC also prepared detailed briefing boards as evidence of Egyptian violations; these were taken to the UN later in October by an NPIC team, who used them in briefing several foreign delegations. NPIC also supplied slides for Mr. Cline's briefing of the NATO allies in Brussels on October 21.

INR, CIA and DIA had no serious disagreements during the 90 day ceasefire period, nor any particular friction in their working arrangements.

photography. But more than anything else, the ceasefire pointed up the importance of timely coverage for any kind of crisis situation.

INR Robert Baraz (Chairman)

HOW INTELLIGENCE NEEDS ARE DEFINED

What does the Arab-Israeli ceasefire tell us about how intelligence needs are defined and expressed?

The ceasefire was probably typical of crisis situations in that intelligence needs could not have been fully stated in advance. Rather, intelligence requirements emerged in the course of events, and the experience of the ceasefire highlights the importance of a process of repeated iteration between policy and intelligence in the definition and expression of intelligence needs.

Existing Resources Used

The ceasefire and the intelligence requirements it generated could not have been foreseen a year or more ahead of time. One would not have built or programmed for it. In terms of long-range planning or budgeting, the resources needed -- in particular the U-2 system -- had to be available on a contingency basis.

From the General to the Particular

In the initial phases of planning for a peace initiative, the question of verification did not figure prominently. Indeed, even when use of the U-2 was first considered, it was more from the standpoint of providing Israel with confidence and an inducement to accept the proposal than from the point of view of enforcing the ceasefire provisions. It was only in the course of arguments with Cairo over what was and was not a violation that some of the requirements for detail emerged.

THE ARAB-ISRAELI CEASEFIRE OF 1970

In the Arab-Israeli ceasefire of 1970 the US sought to monitor an arms control agreement which was violated. Policymakers needed photographic evidence with which to prove that the agreement had been violated. Because the ceasefire went into effect before the diplomatic arrangements to position the U-2 and enable the ceasefire to be monitored were complete, and because the nature of the policymakers' needs only became clear after the event, the intelligence community could not provide positive proof of violations that occurred in the first few days of the ceasefire. Subsequently. it became possible to supply increasingly comprehensive answers to increasingly complicated questions.

I. BACKGROUND -- THE CEASEFIRE

In the summer of 1970 the United States faced a deteriorating situation in the Middle East. During the winter Israel had begun carrying out air raids deep into Egyptian territory to retaliate for Egyptian shelling across the Suez Canal. In January Nasser visited Moscow to appeal to the USSR for help, and the Soviet Union was supplying major new inputs to Egyptian air defense. By June the threat of a new war in the area was growing, and the prospect of another war was all the more dangerous because of the increased likelihood that Soviet personnel would be involved.

the addition of concrete to already existing field deployments. They argued that some of the missile sites were only dummies, ignoring the point that dummy sites were themselves significant military improvements. And they maintained that all of the missiles in the standstill zone had been there all the time; they claimed the missiles were brought in before the ceasefire but hidden from view.

late August it was possible to begin discerning the kinds of equipment at SAM sites and thus make judgments about their operational status. Early questions concerned whether or not the individual sites were occupied with SAM equipment; later, photo interpreters tried to determine whether the equipment was complete enough to make the site operational. The Egyptian claim that the missiles had all been introduced before the ceasefire could never be entirely disproven, but, as the number of operational sites mounted after the first week of September, it appeared increasingly unlikely that that amount of equipment could have been hidden in the ceasefire zone.

For Secretary Rogers the problem was two-fold. First, he wanted to be absolutely sure of his facts. US prestige should not be engaged, if the charges to made were not in fact true. Second, he needed the best possible evidence with which to back up any charges he might make at the UN General Assembly in October. At Ray Cline's suggestion the Secretary went downtown to the National Photographic Interpretation Center (NPIC) to see the actual film -- he had been looking at prints on briefing boards -- as the PI sees it at his station, and to talk

the Middle East. The COMIREX Staff wrote a memo evaluating satellite coverage of the Canal zone and exploring available alternatives to supplement satellite coverage; this memo formed the basis for the discussion of the problem on 28 July by senior CIA, State, and DIA officials. As the situation developed and the needs became clearer COMIREX drew up the formal requirements for frequency of photographic coverage of the zone; these were debated at a USIB meeting on 27 August and were followed from then on.

Unofficial working relationships between agencies were close and involved a number of different areas. As has already been mentioned, State Department officials undertook diplomatic negotiations in order to secure base and overflight rights for the U-2; State had determined that the monitoring of the zone would be conducted in a discretely overt, rather than clandestine, way. This method of handling the monitoring of the zone necessitated close working arrangements between State Department officials, diplomats, and the CIA personnel operating the U-2s Flights paths and flying times had to be cleared in advance this was at first arranged on a case-by-case basis, but CIA's Office of Special Activities -- in charge of the U-2s -- later drew up The diplomats arranged approval would be assumed unless notice to the contrary was given.

Resolution requirements

In general, the ceasefire problem required two distinct and, to some extent, mutually exclusive types of photography: large area, lower resolution photography designed for search, in order to identify new sites; and follow-up high resolution photography aimed at specific sites, in order to determine their operational readiness -- that is, whether the necessary components are all present, even though the site is not active at a given moment Both types were in fact obtained. Future crises will almost certainly demonstrate a need for the same two kinds of photography. To the extent that the two types are incompatible -- one requiring a camera system capable of extensive area search, and the other a system capable of pinpoint targetting other. Ideally, particularly in connection with indications/warning problems, the emphasis should probably be on precise targetting and fairly high resolution, with some capability for a limited amount of area search that would lend the system flexibility.

Forecasts

For the Future

Obviously, cogent reasons for compartmentalization of intelligence collection operations and for preserving the privacy of important diplomatic initiatives will remain. Nevertheless, it would seem useful to consider whether any steps could be taken to improve communication.

For instance, the NSCIC might wish to develop some guidelines for keeping the intelligence community informed of policy developments. The intelligence community might undertake a greater effort to brief users (including the analytical components of intelligence agencies) on collection possibilities and the capacity of different forms of collection to respond to questions.

the day. It was after all not just an argument over intelligence but over what the intelligence meant. We would still have had divided views on whether changes had occurred before or after the deadline.

US Role as Guarantor. In the past decade American thinking on disarmament has tended to move away from the notion of an internationalized control function toward use of national means of verification. The Arab-Israeli dispute highlights one implication of reliance on national means -- the US tends to be cast in the role of guarantor of the agreement. Much of the argument with the Israelis in the early days of the ceasefire was a matter of an Israeli demand that the US enforce the agreements.

IV. RISKS AND TRADEOFFS

In the foregoing discussion we have been addressing the problem of arms control from the standpoint of maximizing verifiability. We recognize, however, that verifiability will not be the only criterion -- it was not in the Arab-Israeli ceasefire -- for the desirability of an arms control agreement. Freedom of action for one's own forces and the limits of the negotiating situation may lead to policy choices which accept less than optimal verification provisions. Nevertheless the lessons of the Arab-Israeli ceasefire would still be useful in assuring that the risks involved in deoptimized verification arrangements are clearly understood.

INTERAGENCY COORDINATION

How effective was interagency coordination during the period of the ceasefire?

An exercise like the 1970 ceasefire, in which several agencies -- particularly State and CIA -- were heavily involved at several levels, lends itself to an examination of the extent and quality of the cooperation between them. Generally speaking, day-to-day relations were remarkably smooth.

When new situations calling for interagency coordination arise, there is in general a choice between creating some new organization -- which may have the virtue of being tailored specifically for the job at hand -- or of using existing machinery -- which may be quicker to get started. Broadly speaking, in the Arab-Israeli situation we had something of the best of both worlds. The existence of the USIB community meant that some functions could be performed quickly by already existing groups, and in other cases prior contacts on other functions provided a basis for quickly developing efficient ad hoc arrangements.

Most of the working relations grew up on an ad hoc basis. Probably the only existing interagency mechanism that was involved in the handling of the ceasefire was COMIREX, a USIB subcommittee chaired by It was COMIREX which responded to Mr. Helms' query on 27 July 1970 about possible methods of monitoring a ceasefire in

(It is, of course, debatable whether the Egyptians were determined to violate the agreement all along, or whether they merely reacted to circumstances as they occurred.) Many of those involved in the estimative process would probably have believed that if both sides bothered to sign the agreement at all, they probably intended to keep it, and that the USSR would support it. Even if such an estimate did not conclude that violations were likely, it could have made clearer what the risks in the situation were.

The point is, of course, moot since an estimate was never requested and might, in fact, not have been welcome. If there were a less formal vehicle or format which encouraged more frequent production of community papers on a variety of subjects, there would be more likelihood of forcing the exploration of possible pitfalls in situations like the 1970 ceasefire.

Regional Prioritization As a Management Tool

If it is true that intelligence will have to be able to respond to unforeseen events, this suggests a limitation to the use of country prioritization systems such as that presented Such descriptions of objectives and priorities by countries are a series of mini estimates some of which must surely turn out wrong. The Arab-Israeli ceasefire illustrates how certain resources -- in this case reconnaissance -- of world wide applicability could be brought to bear against a problem which could not have been anticipated years in advance. It thus suggests that there would be some interaction between the more flexible forms of intelligence collection and production and those resources which by their nature have to be dedicated

In addition, the ceasefire and its attendant intelligence problems could not have been foreseen months in advance. To the extent that provision must be made for such unforeseen contingencies, the crisis indicates some limit to the prioritization of intelligence objectives by region which is done, for example, in DCID 1/2.

3. How effective was interagency coordination?

Since much of the reporting was relatively informal with analysts preparing briefings and charts for their own principals there were naturally differences of detail. To the extent that these differences appear to have occasioned some confusion for consumers, that might have been avoided by preparation of additional community agreed assessments or summaries. Otherwise, cooperation among USIB agencies was generally outstanding, and there were no major differences among them.

4. How useful is foreign intelligence?

The ceasefire highlighted the problems which can arise in using intelligence provided by a foreign government. If increased use of foreign intelligence in the future may be desirable for budgetary reasons, a more systematic look at ways to guarantee its quality would appear to be desirable.

5. What were the implications of the ceasefire for arms control and disarmament?

The ceasefire brings out some of the complexities of using unilateral means of verification not shared by allies: the problems of disclosure of sources, confidence in another country's intelligence and arguments with allies.

The crisis also emphasized the importance of advance preparation to ensure the availability of baseline data in dealing with early violations of an arms control agreement.

6. What does the ceasefire imply for future photo reconnaissance systems?

In the ceasefire we exploited photography from a number of different cameras -- both aerial and spaceborne -- and almost every increment in resolution appears to add to the usefulness of the

For intelligence planning it would obviously be desirable to have as complete and as early a statement as possible of what the needs will be. But if it is true that at least some of the intelligence requirements developed and emerged over time, then it would follow that the expression of the policymakers' intelligence requirements would not be a one-shot affair but an iterative process.

Costs of Compartmentalization

The greatest impediments to such iteration are the side effects of various compartmentalization systems.

One incidental discovery of the crisis was that policy officers were not aware of satellite photo systems. In his day-to-day written or oral briefings the policy officer -- even if he has appropriate clearances -- does not get an appreciation of the collection problems involved in getting the information.

Intelligence collectors on the other hand may not be aware of policy developments. Most of the fine tuning of intelligence collection is done by the collectors themselves who are the first to perceive changes in the target of their activity. However, in the case of a change produced by American action, the collectors need guidance.

At the time when the ceasefire began, was not, however, apprised of the ceasefire in advance and did not rearrange

directly with the PIs about the problems of photo interpretation. He needed to get his own first hand impression of the areas of certainty and uncertainty in the photography and its interpretation.

With the Secretary's visit the effort to prepare presentational materials for possible use at the UN began in earnest. By mid-October, the US had accumulated a solid record of bedrock cases -- ones in which it could be shown in photography that sites had been built during the ceasefire where none had existed before. Secretary Rogers was prepared to show such photographs to Foreign Ministers Riad and Gromyko when he saw them at the UN in New York, though the occasion for such proof did not in the event arise. There were, however, private briefings for several delegations at New York, and on October 21 Ray Cline briefed the NATO allies in Brussels.

How The Intelligence Was Delivered

While estimative intelligence had played its role in setting the background for policy actions, once the violations were at issue the policy makers wanted the results of reconnaissance quickly, and the main flow of intelligence was in the form of briefings based mostly on marked maps.

No NIE or SNIE directly addressed the conditions which might prevail in the event of a ceasefire along the Suez Canal, but estimates over the period subsequent to the 1967 War had set out the political and military atmosphere in the area and had cited the stresses experienced by the Soviets as they moved to enhance their position in the area. Their credibility in attempting to strengthen the Egyptian military capability, particularly in air defense, had been placed

"C. Both sides will refrain from changing the military status quo within zones extending 50 kilometers to the east and the west of the cease-fire line. Neither side will introduce or construct any new military installations in these zones. Activities within the zones will be limited to the maintenance of existing installations at their present sites and positions and to the rotation and supply of forces presently within the zones.

"D. For purposes of verifying the observance of the ceasefire, each side will rely on its own national means, including reconnaissance aircraft, which will be free to operate without interference up to 10 kilometers from the ceasefire line on its own side of that line.

"E. Each side may avail itself as appropriate of all UN machinery in reporting alleged violations to each other of the ceasefire and of the military standstill.

"F. Both sides will abide by the Geneva Convention of 1949 relative to the treatment of prisoners of war and will accept the assistance of the ICRC (International Committee of the Red Cross) in carrying out their obligations under that convention."

Contest in the Standstill Zone

An important element in the understanding was the provision for a standstill in the Canal area. SAM deployment in that area had

in the future to think of ways of emphasizing which intelligence products are community-cleared and which are not -- perhaps even something so pedestrian as use of a specific color for cover sheets might help. Moreover, it would seem useful to develop greater use of community-coordinated summaries on important developments.

along with several types of aircraft capable of photographic monitoring, future crises will have to be examined not only in order to choose the specific reconnaissance method or methods that can best be employed, but with an eye to optimizing the mixture of search and point-target imagery.

In Sum

In the ceasefire we exploited photography from a number of different cameras -- aerial and spaceborne -- and virtually every increment in resolution appears to have added to the usefulness of the photography. But, more than anything else, the ceasefire pointed up the importance of timely coverage for any kind of crisis situation.

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THE ARAB-ISRAELI CEASEFIRE OF 1970

30 January 1973

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INTELLIGENCE FORECASTS

Failure to anticipate the kinds of violations which occurred raises two questions. Could events have been better forecast? Does intelligence have to plan for the unanticipated?

The most important contribution of estimative intelligence was the judgment that Israel continued to enjoy military superiority over the Arabs. Confidence in this assessment was a major factor in the determination that a peace initiative was feasible. Once the peace initiative was begun, no national estimates were requested.

No estimates were produced on the question of whether Egypt -- or Israel, for that matter -- would abide by a standstill agreement. The question was not addressed in CIA or INR memoranda on broader aspects of the crisis, and the DCI's WSAG briefing of September 8 on possible Israeli reactions was predicated on the then established fact of Egyptian violations. CIB reporting during the period focused on the situation in the zone rather than on the intentions of the parties.

It is difficult to say, in retrospect, whether a SNIE on the likelihood of Egyptian violations would have been valuable to the policymakers, but it might have pointed out some of the areas that caused a good deal of trouble later. Most Middle East analysts fully appreciated

Use of U-2 aircraft to monitor a ceasefire in the area had been the subject of some preliminary discussions earlier in the year, and it was possible to begin preparations for what was to be known as before final authorization for such flights had been given. In general, interagency coordination of the operation from the first flight on the last was remarkably smooth. The fact that the State Department was the primary consumer of military reconnaissance was, of course, unusual, and so too was State's concern with the details of photo interpretation. Moreover, the diplomatic support for day-to-day operations was particularly complex, and operators of the U-2 were cut in on diplomatic traffic normally closed to them, since it was necessary for them to be constantly aware of Israeli thinking. The intimate coordination between State and CIA on the day-to-day operations over such a long period of time was unprecedented.

III. USING THE INTELLIGENCE FOR ADVOCACY

In retrospect it is clear there were substantial Egyptian violations of the ceasefire, and in fact there were some Israeli violations too. The problem was that the intelligence was not able to provide the degrees of certainty that the policymakers felt they needed at the start of the ceasefire period.

In Sum -- The Egyptian Violations

Looking back from the perspective we had attained by the time

In designing an arms control agreement, it is possible to ask not only about detecting a violation but of what standards of proof will be required. It is not enough to ask whether a violation would be found, but whether it would be found in time to take action and whether sufficient confidence or proof would be available to justify such action. There would be consideration both of how much confidence policymakers would require before taking action and of the nature of evidence they might have available for advocacy.

In the Arab-Israeli ceasefire we saw an example of how standards of confidence in a monitoring judgment might run high for a relatively unimportant arms control agreement. We also had an illustration of the fact that photography of a quality which would be persuasive or even conclusive for a photo interpreter would not be dramatically clear for public presentation. If an agreement will require dramatic proof for public advocacy in case of violation, verification design may need to provide for such evidence, too.

The problem of proof of violation centered around four basic questions: "what happened?," "when did it occur?," "where did it happen?," and "to whom must the proof be addressed?"

The answer to the "what" question is heavily dependent on how the agreement obligation is defined, as discussed earlier, and how certain the intelligence information can be, when expressed in agreement terms. Unless the actual movement of forces into the area is detected, the question of when the violation occurred requires a comparison of the data base (or post-data base coverage) with more recent data. The timeliness of the data base is vital to this determination. Location

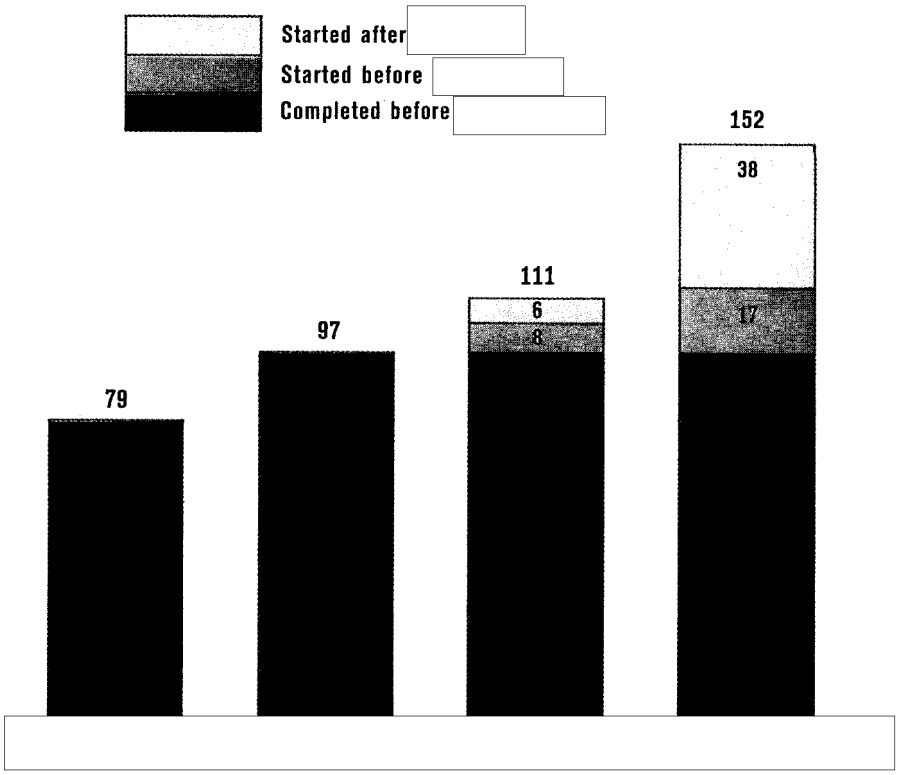
to a particular area. Indeed, it might not be too much to suggest that fine tuning of the amounts of regional efforts will depend upon having programmed adequate back-ups of more flexible resources.

I. BASELINE DATA

In the Arab-Israeli ceasefire we saw how critical timely acquisition of baseline data against which to measure violations could be; for lack of a baseline it was impossible to prove violations in the early days of the ceasefire, that there might have been a spillover of activity after the ceasefire went into effect. Almost any future arms control agreement will require baseline data as a yardstick against which violations can be determined, but there will be great differences in the time sensitivity of such data.

If we attempt to categorize possible arms control topics by the stability or dynamism of the subject matter, the Arab-Israeli ceasefore would belong toward one of the extremes of the spectrum. Much American thinking about arms control has been concerned with strategic weapons inventories -- a field in which substantial changes do not occur except over relatively long periods of time. Some aspects of general-purposes forces -- naval shipbuilding, for instance -- would also be subjects in which major posture changes would involve long lead times. In other general-purpose force problems changes can be much more rapid. Substantial changes in ground-force posture against

SAM Site Construction in Egyptian Standstill Zone



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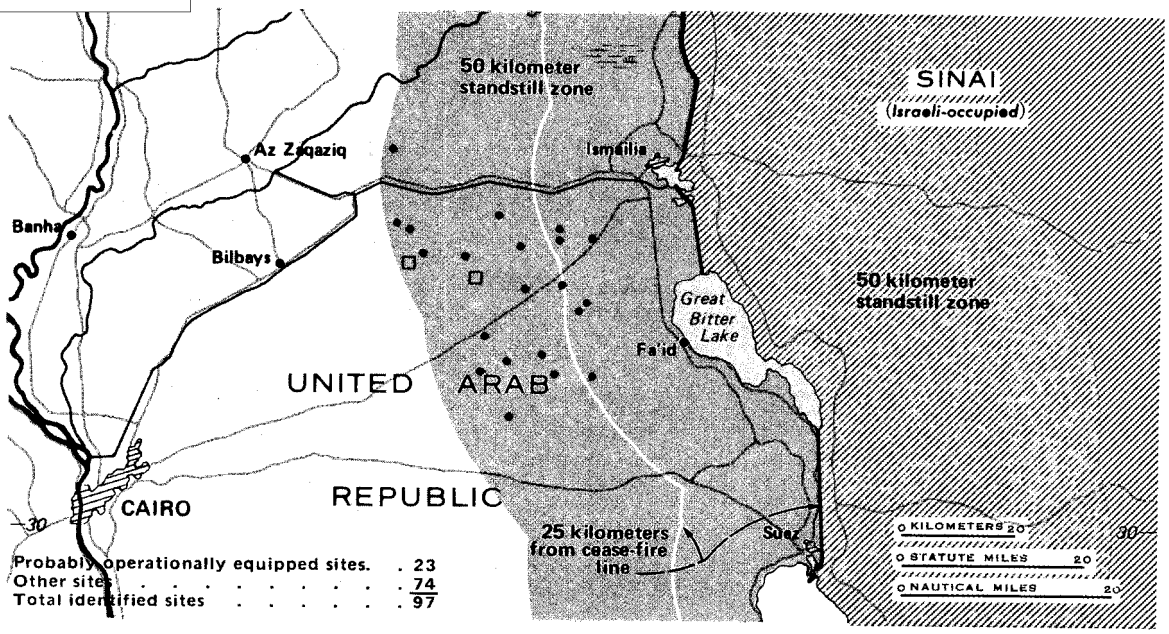
Operationally Equipped SAM Sites in the Egyptian Standstill Zone

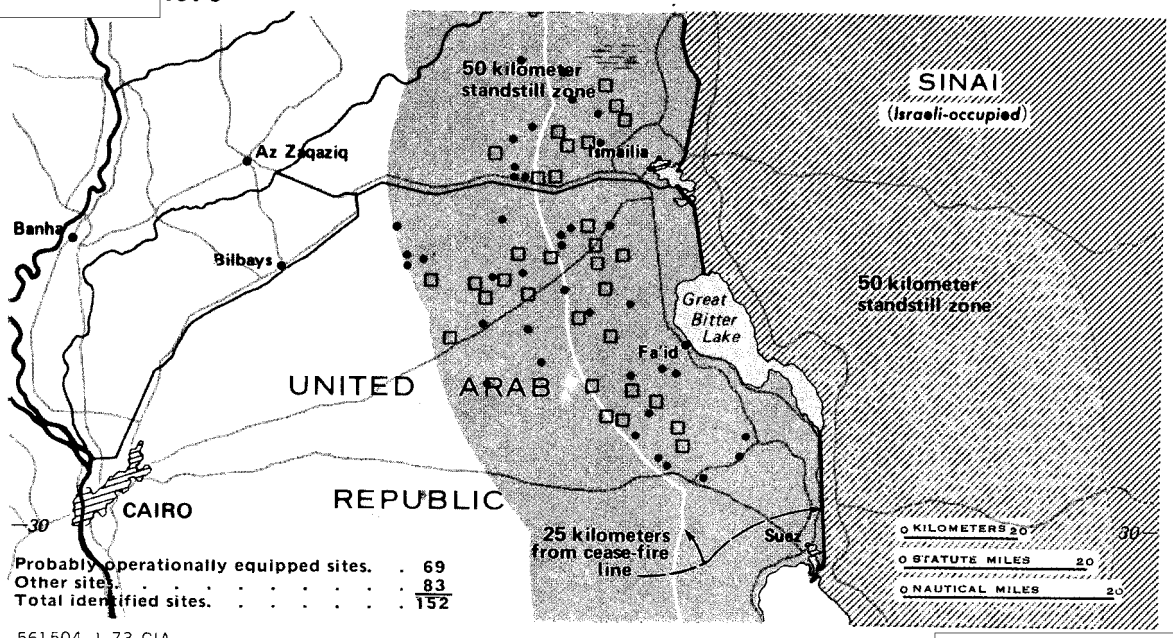
• SA-2 site □ SA-3 site

1970



Probably operationally equipped sites. . 23
Other sites 74
Total identified sites 97

1970



Probably operationally equipped sites. . 69
Other sites. 83
Total identified sites. 152

561504 1-73 CIA

Rigorous definition of obligations is not necessarily a matter of spelling out details -- in some cases a briefer statement may be more rigorous than a long one which creates loopholes. In part it may be a matter of the negotiating history which not only could clarify the nature of the obligations but indicate tolerance or intolerance of violations.

Application of Collection Resources

Planning for the verification effort should be done as early as possible.

Standards of Proof

In the Arab-Israeli ceasefire, immediate, major violations were not anticipated and the rigorousness of proof which the policymakers would later require was not foreseen. Policymakers had not distinguished between degrees or kinds of violations nor had they decided how each would be handled.

possible subsequent violations. A major question which the State Department put to the community was whether reconnaissance could be obtained without aerial overflights of Egypt, and if this could be done without recourse to the U-2. The meeting had before it a COMIREX paper laying out the capabilities of satellite photography, drones, the SR-71 and the U-2. From the standpoint of reconnaissance the SR-71 could have produced good coverage, but it would have required overflights of Egypt. Such overflights were unthinkable in the political context of the peace effort. It was quickly apparent that only the U-2 could provide repetitive coverage economically, but a U-2 operation would require use of an overseas base, which was

Satellite Photography

mission was already in orbit when the representatives of the community first met, and it provided photography taken on July permitted additional photography by that Mission on August It was the August photography which was to become the US baseline for later discussions. The

DEPARTMENT OF STATE

WASHINGTON

~~TOP SECRET~~

30 January 1973

MEMORANDUM FOR: NSCIC Working Group

SUBJECT: Arab-Israeli Ceasefire Study

Attached is our study of the Arab-Israeli ceasefire of 1970. Looking back at that 90-day period, two things stand out. One was the fact that for a relatively brief but critical period the US did not have a data base against which violations could be measured. The other was the flexibility with which the intelligence community was able to respond to an unusual requirement for reconnaissance.

The study raises a number of questions which the NSCIC Working Group may wish to discuss:

1. How are intelligence needs developed and communicated?

For planning purposes, it would, of course, be desirable to have, as early as possible and as fully as possible, a statement of what the intelligence needs will be. The crisis, however, underscores the point that, in dealing with actual problems, at least some of the intelligence needs are likely to be perceived only as events unfold, and that the process of developing and communicating them is likely to be an iterative one. Moreover, the process of iteration is impeded by unfamiliarity on the part of the policymakers with the sources available to the intelligence community and by intelligence's unawareness of policy developments.

2. How good were the intelligence forecasts?

During the ceasefire period the day-to-day business of intelligence was reconnaissance and reporting its results rather than estimative intelligence. The violations which occurred might have been a little better anticipated had there been a SNIE on the subject shortly before the ceasefire. Such a SNIE in the midst of a fast moving negotiation would not have been undertaken, however, except in circumstances in which SNIEs were routinely done on more subjects than at present, and possibly not even then. Perhaps some vehicle or format for less formal and more frequent preparation of community estimates would be desirable.

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Copy 11 of 30

its ability to portray a concrete situation in undeniable terms, given the appropriate level of resolution -- would have been sufficient to prove the case to the policymakers.*

The crisis thus exemplifies the increasing importance now being placed on the ability to examine a situation with photography. Existing

of the violation became a problem in the Arab-Israeli case when differences in the map bases used by US and Arab representatives allowed the latter to deny US claims of specific violations. Advance agreement on the geographic location criteria to be used in discussing alleged violations would have been desirable.

In general, proof of violations in some form is likely to be desired by the US policymakers, our allies, the general public, and (in the event of a confrontation) the adversary nation. Of these, the policymakers would need the most complete and clear presentation of evidence. In all other cases, the primary "proof" would tend to be the willingness of the US to make a positive assertion that a violation has occurred, backed up by a disclosure of a varying amount of corroborative material. The latter could range from a partial disclosure of results to transfer of the actual raw intelligence data, in the case of close allies, to the release of a single photograph to the public media. Disclosure policy, in the case of evidence derived from sensitive sources, would be a critical factor.

III. ALLIANCE RELATIONS

In the ceasefire case, we saw how a dispute with a country could arise over verification of an arms control agreement. Several issues which arose between the US illustrate potential problems in other arms control arrangements.

this connection, it is worth noting that although overhead photography can be extremely flexible as a collection source -- one can shift resources from one part of the world to another relatively quickly -- some experience becomes important when photo interpreters are called upon to address

Many of the considerations of timeliness and the importance of time for assembling a data base would also apply to agreements which included provisions for negotiated inspection arrangements. The inspection system should be in operation long enough to establish its own baselines before the agreement is implemented.

II. VERIFICATION CRITERIA

The Arab-Israeli case illustrated problems which can arise over definitions of what constitutes a violation and over standards of proof to be employed once a violation is found.

Defining the Obligations

The clarity with which obligations are stated can do much to assist verifiability. In the Arab-Israeli case the definition of "maintenance" left some room for argument over whether or not pouring concrete was permissible maintenance or forbidden improvement.

In one instance, however, at a 29 October 1972 SRG meeting, differing judgments were offered by CIA and DIA as to the feasibility of concealing SAM equipment in the ceasefire zone west of the Canal. The DCI briefing included the statement, "...the equivalent of 45 SAM battalions -- would have been difficult to conceal without any trace, and would have required elaborate preparations." DIA agreed that timing and extent of deployment of SAM systems strongly suggested that additional equipment was introduced into the zone subsequent to 7 August but believed an effective argument could be made that the 3,000 square miles of various terrain types, urban areas, warehouses, and hangars at both abandoned and active airfields -- all in the ceasefire zone -- provided adequate facilities for easy and concealed storage. DIA agreed, however, that the lack of advance warning given to the Egyptians made this possibility unlikely. The seeming disagreement, therefore, was not one of substance, but primarily one of emphasis, and CIA, DIA and INR developed agreed language on the point which was formally concurred in by Mr. Helms, General Bennett and Mr. Cline at an SRG meeting on November 13.

For the Future

The only weak point in interagency coordination appears to have been more a matter of presentation than of substance. There may be some confusion at higher levels of government over whether the DCI is, on any given occasion, speaking as head of CIA, as head of the intelligence community, or as special adviser to the President on intelligence matters - his role at an SRG meeting. It might be useful

initiative. There was always an element of risk in not pinning down the details of a ceasefire beforehand, but there was an even greater risk in having the peace initiative bog down in detailed negotiations over the exact terms of a ceasefire. Besides, it was generally assumed that if the UAR and Israel agreed to the initiative -- and the Soviet Union at least tacitly agreed -- there was little likelihood of substantial violation of the ceasefire, even though there would probably be minor accidents.

II. INTELLIGENCE FOR VERIFICATION

Intelligence agencies were aware, of course, of the peace initiative for some weeks prior to the event. In mid-July Ray Cline, Director of the State Department's Bureau of Intelligence and Research, discussed the problem of verification with Chairman of the Committee on Imagery Requirements and Exploitation (COMIREX), and sounded out Mr. Helms on the possibility of using the U-2. The State Department's first formal request to CIA for assistance in monitoring the ceasefire, however, was not made until July 27 when Ambassador U. Alexis Johnson telephoned Mr. Helms. On the following day CIA's Deputy Director General Cushman, General Bennett of DIA, and Ambassador Coerr of INR met to discuss the problem of verifying the ceasefire. The emphasis at that time was on verification as a means of increasing Israeli confidence and thus helping to persuade them to agree to the ceasefire. This meeting of senior intelligence officials did not address the question of establishing a data base from which to verify

In addition to close relations between State and CIA in operating the U-2 program, State was more than ordinarily cooperative in allowing U-2 operators access to their NODIS traffic. Early problems with the Israelis -- which had resulted in the scrambling of Israeli fighter planes during the course of one of the first missions -- made it clear that OSA could not afford the time-lags involved in handling NODIS cables in the normal fashion; OSA was therefore cut directly into the NODIS channel.

Close cooperation also took place at the next level of the monitoring operation -- reading out the film at NPIC. Early in the ceasefire period, CIA's Deputy Director for Intelligence, Dr. R. J. Smith, had ordered the departmental PI (photo interpreter) groups -- CIA's Imagery Analysis Service and DIA's DIAAP-9--to coordinate their interpretation with NPIC PIs regarding the status of SAM sites in the zone. Ordinarily, departmental PI groups receive duplicate copies of the film of a U-2 or satellite mission a day or so after NPIC PIs, who are solely responsible for the initial read-out of the photography. In this case, however, from mid-August on all groups were given the material at the same time. This procedure obviously entailed duplication of effort, but it was judged to be well worth while in terms of the greater certainty that could be attached to the joint assessments -- particularly given the sensitivity of the issues involved.

At the next level, analysts from both State and CIA -- but particularly from State -- worked in unusually close conjunction with the PIs reading out the film. Both agencies frequently sent personnel

IMPLICATIONS FOR PHOTO RECONNAISSANCE SYSTEMS

What are the implications for photo reconnaissance systems?

Like many other arms control problems, the 1970 ceasefire dealt with objects which could be observed in overhead photography, and it illustrated a situation in which photography was the only source sufficiently certain to satisfy the needs of the policymakers for proof -- as opposed to mere evidence. (The Israeli allegation, for example, could be considered a form of evidence, since Israeli's record in these matters was generally good.) However, the proof required had to come from US sources; Israelis were interested parties. In this particular crisis, the amount of evidence required to prove the case to the policymakers would have been great, and the criteria strict, since the policymakers were not prepared to accept the Israeli charges; they had assumed from the start if the Egyptians accepted a ceasefire, they would honor it. In consequence, such evidence as was available suggesting that movement had occurred in the standstill zone, could not be pinpointed) was dismissed as inconclusive. It seems clear in retrospect that had any clandestine reporting been available it, too, would have been deemed insufficient; human sources are always subject to error. Only US photography -- with

American action to prosecute the violations. The effect of the publicity was to highlight Israeli differences with the US, and probably to signal to Cairo and to Moscow American reluctance to prosecute the violations. The Egyptians had every reason to suppose that we were aware of their initial violations and were willing to wink at them; both they and the Israelis no doubt assumed that we had better information on the preceasefire status of the zone than we had. The Egyptians therefore may have been encouraged to go on with additional violations. the first large-scale violations in the zone began some time between 3 and 13 September. The Egyptians may have had such a plan in mind all along, or they may have feared the possibility of an Israeli attack. Be that as it may, it seems reasonable to suppose that once the initial charges were made by Israel and not followed up, Cairo would have felt it had more room for maneuver in violating the standstill.

Firmer Evidence, Harder Questions

In the ensuing weeks, a continuing flow of photography provided larger quantities of firm evidence of improved SAM defenses in the standstill zone. The problems of advocacy were complicated by Egyptian replies to our protests.

The Egyptians argued that they had not violated the ceasefire. In response to the first protest, the Egyptians took advantage of the fact that the coordinates were not exact to state that they visited the spots mentioned and that there was nothing there. Later they claimed that the construction which had been observed was merely

Determining a Violation. Ultimately, the determination that an agreement has been violated is a political judgment, and not just a matter of intelligence information. Friendly governments will -- just as the Israelis did -- want to make their own determinations of whether an agreement involving their security is being lived up to by the other side.

Future Systems

NATO's center region could be produced by mobilization and reinforcement in a matter of weeks. And in tactical situations, such as the Arab-Israeli ceasefire, significant changes could occur in days or even hours.

In arms control topics where changes can occur more rapidly, the interaction of policy and intelligence in formulating the agreement becomes increasingly important. This will be true not only from the standpoint of framing the provisions of the agreement to maximize verifiability but to assure that collection of baseline data and implementation of the agreement can be synchronized. The Arab-Israeli case highlighted the difficulty of monitoring an agreement in which changes could occur quickly, particularly one in which an ongoing activity was to be halted at a specified time and the situation frozen at that point. It posed the double-edged question -- how long does it take to collect baseline data after the deadline and what may be happening in the meantime? If baseline data were collected before the deadline another sort of ambiguity would be created, since situation changes could legally occur in the period between the baseline observations and the deadline.

Most often baseline data would be supplied by search photography. In the case of long-lead-time objects like silo construction some weeks' lag in the baseline data might be tolerable. But as one moves toward subjects of a more tactical nature -- agreements dealing with deployments which can shift relatively rapidly -- the timeliness of baseline data could become more sensitive -- ultimately down to the hour of the day. In the absence of some prohibition against changes while data was

in doubt by the demonstrated ability of the Israeli Air Force to strike with impunity throughout Egypt. It was apparent that the Soviets felt need to counter this Israeli capability.

The policymakers were cognizant of the situation in the area as presented in the national estimates, and confidence in the overall assessment of the Arab-Israeli military balance was an important factor in the judgment that a peace initiative would be feasible, but during the ceasefire period the policymakers depended almost entirely upon day-to-day, in fact, hourly, intelligence and depended less upon printed reports than upon informal, timely briefings. These briefings of the Secretary and Mr. Sisco consisted for the most part of marked maps based on photo interpretation reports following study of the latest photography, satellite or U-2.

IV. WINDING DOWN

In September and October it was increasingly clear that it would not be possible to obtain even token rectification of the ceasefire violations. As the 90 day period of the ceasefire was drawing to a On the other hand, the American flights were a stabilizing element in the situation and we still had requirements for intelligence in what remained a tense area. The last of the missions was flown on a few days after the ceasefire period ended. for some weeks longer against the contingency that further missions might be needed, and removed them on

in the standstill zone at the moment the ceasefire went into effect. Consequently, it was impossible to prove that newly discovered sites or equipment did not predate the ceasefire. Indeed, since movement into the zone was going on at full tilt on the eve of the ceasefire, even a data base a few hours off the exact moment that it went into effect would have been defective;

As it turned out, it was the photography of which had to serve as the benchmark from which violations would later be measured. It thus remained for the photography to provide evidence of 3 minor violations which the policymakers felt was firm enough to warrent a protest to Cairo which was sent on August 19.

Incidentally, once the US had its own baseline, it could begin it was determined that at least seven violations charged by the Israelis as having occurred during August were supported by US photography.

The Politics of Delay

By then, delay had exacted its own political costs. The Israelis had publicized their charges in the hope of forcing earlier

been bitterly contested for months. In March the Egyptians had begun SAM sites which the Israelis attacked again and again when even so much as

The Israelis repeatedly stressed the importance they attached to maintaining their freedom to conduct air operations on the Egyptian side of the Canal -- they were out to limit Egyptian freedom to fire across the Canal. And the Egyptians were equally persistent in their desire to extend their air defenses eastward and deprive the Israelis of the option of raids into the UAR. This persistence was demonstrated as the number of SAM sites in the area later to become the ceasefire zone was increased despite Israeli air strikes from 19 at the end of March 1970 to about 80 by the end of July. The intensity of the struggle can be seen in the extensive cratering left by Israeli bombing of the (see photo).

Timing of the Ceasefire

The time for the ceasefire's going into effect was moved up at the last moment in response to an Israeli plea. Ambassador Barbour in Tel Aviv had orginally been instructed to press for an effective date of 0600 Tel Aviv time on 8 August, since the Department feared that the Israelis would try to stall for time to knock out more of the surface-to-air missiles in place near the Canal. Defense Minister Moshe Dayan's reaction was quite the opposite, however; he argued that the suggested time would give the Egyptians and

IMPLICATIONS FOR ARMS CONTROL AND DISARMAMENT

What implications did the ceasefire have for possible future arms control or disarmament agreement?

On the face of things, it might have seemed a simple matter to verify an arms control agreement in the Suez Canal area. The standstill zone was a small area, only a fraction of the size of a Soviet ICBM complex. It was mostly desert where cloud cover was relatively rare, and where there would be little clutter to interfere with finding military forces. It turned out, however, to be more difficult than had been anticipated.

At the time the ceasefire went into effect, the Egyptians were in the midst of a redeployment effort. Anticipation of a ceasefire may have been a factor prompting the Egyptians to move SAMs into the standstill zone on the eve of it. As the negotiations reached their climax, Tel Aviv was pressing to move the date up in order to cut off the Egyptian activity while Cairo wanted to delay and allow itself more time. In proposing a compromise date, the US was undertaking to freeze a moving situation, and final arrangements for deployment of verification resources had not been completed.

A fresh American initiative toward peace appeared to offer a way to stem the tide, since there was no reason to believe that any of the parties concerned could expect to benefit from a renewal of fighting. In June Secretary Rogers initiated diplomatic correspondence calling for the UAR, Jordan, and Israel to work with Jarring on the implementation of UN Security Council Resolution 242 of November 1967, which called for observation of the ceasefire and Israeli withdrawal. Part of the US proposal was a call for the restoration of the ceasefire in the area as a step toward negotiating a settlement. The proposal was designed to offer the Arabs hope of recovery of occupied territories and to afford Israel the prospect that Jarring might be able to bring the parties together for direct talks on an eventual peace settlement.

Ceasefire Provisions

Once the parties had agreed in principle, the US refined the proposal for a standstill in the Canal area. The terms finally proposed by the US and accepted by the parties were that for a period of 90 days:

> "A. Israel and UAR will observe ceasefire effective at 2200 GMT Friday, August 7.
>
> "B. Both sides will stop all incursions and all firing, on the ground and in the air, across the ceasefire line.

Ground-based platforms like the U-2 or the SR-71 can frequently deliver excellent photography of a crisis area, and give a large measure of insurance in the absence satellite system. They are not without problems, however, as the 1970 experience shows. The political climate might make a clandestine monitoring operation unwise, for example; and even an overt operation requires considerable diplomatic negotiating before base and overflight rights can be arranged.

The 1970 Arab-Israeli ceasefire, along with a number of other crises, prompted the intelligence community to undertake an exhaustive study of the general problem of US needs with respect to crisis-response satellite imagery.

The 40 Committee approved the operation on the afternoon of August 7, Because the photographs were taken against the light, most of the results of the mission were all but unreadable. And, the Israelis who understood that the light was bad for pictures of the Egyptian side of the Canal assumed we were taking pictures of their side, and complained vehemently. A mission on was aborted as a result of the ensuing argument with the Israelis, with the result that the first mission to produce useful photographs was flown on

Meanwhile, the Israelis were pressing their case both privately with State and Defense and in public statements. Israeli arguments that the ceasefire was being violated were not unpersuasive. Israeli intelligence had earned a reputation for accuracy and sensitivity on tactical matters, and the US had movements begun before the ceasefire had continued on into the night. Policymakers were reluctant to jeopardize the ceasefire -- and with it the whole peace initiative -- without hard proof of the Israeli charges, and that the intelligence community could not supply.

The Baseline Problem

Most of our early arguments with the Israelis hinged on the fact that neither we nor they had an exact picture of dispositions

of the October 29 SRG meeting, it is clear that the ceasefire did not succeed in keeping the UAR from making substantial improvements in its air defense capabilities in the standstill zone. The number of SAM sites in the area went from 79 on 28 July to 152 on 15 October. As to the number operationally equipped, we did not have good information until late August when we began getting better quality photography. The number of sites we judged probably operational jumped from 20 or so in late August to around 70 in mid-October. (See tables).

But what was clear in retrospect was not proveable at the outset of the ceasefire.

Israeli Charges

The photography carried fresh evidence of Egyptian efforts to push their SAM defense forward into what was to become the standstill zone. During the days before the ceasefire the Egyptians began a new surge forward, and the Israelis responded with renewed efforts to bomb them out; Egypt's last minute effort almost certainly continued during the night the ceasefire took effect. Already deeply concerned for the future of the zone, the Israelis were quick to charge Egyptian violation of the standstill agreement, registering their first protests with the US on August 8 -- the day after the ceasefire began.

Confirm Or Deny

The immediate policy question was whether American intelligence could confirm or deny the Israeli charges. And the problem was that for the moment neither could be done.

Soviets the right to establish new sites before the morning of 8 August, and that they would move in everything they could Friday night (7 August). Even changing the deadline to Friday evening would not be good enough, Dayan believed; violations would not be discovered until Saturday morning, and then it would be too late. Dayan put forth two alternatives: a ceasefire effective at 1800 GMT 6 August, or, with an Egyptian promise that there would be no movement of SAM equipment toward the Canal "from now on", a ceasefire effective at 0400 GMT on 8 August.

Regarding the timing of the ceasefire, the US -- without fully realizing it -- was faced with what may well have been an impossible problem: trying to freeze a moving situation. The Egyptians were doing their best to complete the extension of their SAM network into the standstill zone in the face of Israeli strikes. They managed to delay the start of the ceasefire for 24 hours while they engaged in an all-out effort to complete moving SAMs into the Canal area -- an effort which very likely spilled over into the ceasefire period. From the point of view of those engaged in the negotiations, however, the vital consideration was to defuse a situation of enormous explosive potential. Details of timing and efforts to state all the provision in rigorous detail might have prevented an agreement altogether, and so were relegated to second place.

Standstill an Instrument

From the standpoint of the policymakers, the military ceasefire or standstill was only one part of a larger diplomatic