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FOREWORD

The measure of maturity in any profession is the literature of that profession. Any art or science depends upon its adherents to develop new techniques and to refine old ones to the improvement of that art or science. The literature of a discipline is the forum within which new ideas are examined and basic concepts are defined and debated. The *Studies in Intelligence* series provides such a medium for doctrinal expression in the profession of intelligence.

A few outstanding works have been written in the field of intelligence, but even these essays cannot supply all the solutions to the new problems which confront intelligence almost daily. For this reason, I have been pleased to note the *Studies in Intelligence* series as a dynamic means of refining our doctrines. It is all too true that the busy people in intelligence carry in their heads the methodology evolved from their experience in the field. Through the medium of this series, academic discussions of some of the presently ill-defined concepts used in intelligence cannot but improve our capabilities to turn out a better product.

Thus, the *Studies* are designed to bridge the gap between experience and inexperience, between theory and practice, and to provide for professional growth. To these ends, and on the occasion of the Tenth Anniversary of the Central Intelligence Agency, I commend the *Studies in Intelligence* to you and wish it all success in its mission.



ALLEN W. DULLES

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CONTENTS

	Page
The Intelligence Necessary to the Formulation of a Sound Strategy Lt. Gen. John A. Samford	1
Is Intelligence Over-Coordinated? ✓ Ray S. Cline	11
Coordination and Responsibility ✓ R. J. Smith	19
Industrial Planning in the US and the USSR Edward L. Allen	27
Comparative Survey of Soviet and US Access to Published Information Joseph Becker	35
Footnote to Cicero Dorothy J. Keatts	47
Technical Intelligence and Arms Inspection Charles W. Mathews	55
Intelligence Research — Some Suggested Approaches Bernard Drell	79
The Role of Interindustry Studies in Economic Intelligence Robert Loring Allen	97
Critiques of Some Recent Books on Intelligence <i>The Labyrinth — The Memoirs of Hitler's Secret Service Chief</i> , by Walter Schellenberg Clinton Gallagher	119
<i>Strategic Intelligence and National Decisions</i> , by Roger Hilsman John Whitman	136
<i>Strategic Intelligence Production; Basic Principles</i> , by Washington Platt Louis Marengo	143
We Spied Walter L. Pforzheimer	151

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THE INTELLIGENCE NECESSARY TO THE FORMULATION OF A SOUND STRATEGY

Lieutenant General John A. Samford

What follows is a consideration of the contribution that intelligence should make to the process of formulating a strategy. For this purpose a strategy is defined as a plan, made in advance of hostilities, for achieving the necessary and desired results of war. A sound strategy should give reasonable assurance of achieving both necessities and desires, but should most certainly be directed toward achievement of those things which are assessed as being necessary.

The proper relationship of intelligence to strategy as a whole and particularly to any one strategic plan is best understood if intelligence is considered to be an identifying and measuring activity even more than a gathering or collecting process.

It is the function of intelligence to identify and measure the necessities in a contemplated war and the opportunities which will arise in such a war. This requires a creative effort far beyond the effort of gathering information. It is likely that intelligence failures in the formulation of past strategy are more often traceable to unattempted measurement or to inaccurate measurement than to the lack of information, even though information oftentimes has been deplorably poor.

The problem of identifying and measuring necessities is related to enemy threats, threats both of preemptive action and resisting action. The problem of opportunities is related to overcoming or frustrating these threats and to producing further end results that are in accord with national purposes. Enemy threats can be measured in terms of enemy strengths and enemy purposes. Opportunities can be measured in terms of enemy strengths and friendly purposes. When enemy strengths and purposes combined have war consequences of intolerable or unacceptable magnitude, the overcoming or frustrating of them become necessities of war.

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The intelligence necessary to formulation of a sound strategy is that which identifies and measures all major threats from enemy strengths and purposes and identifies and measures all major opportunities open to friendly purposes.

There are four key words in this statement:

STRENGTHS

PURPOSES

THREATS

OPPORTUNITIES

They are arranged in order of probable intelligence consideration and in order of relative susceptibility to measurement. Strength must be combined with purpose to constitute a threat. Assessment of the strength — or lack of it — behind a threat is necessary to the judgment of opportunity.

Intelligence currently is required to identify and measure a greater variety of strengths than ever before in history. The number and variety of military strengths still is increasing. There are also economic strengths, industrial strengths, the strengths of cohesion within a nation and between it and its allies, the strengths of organization, of leadership, of racial characteristics, of nationalism, of religion, of political fanaticism, and many other types.

In addition, any strength, particularly any military or industrial strength, needs to be measured in terms of both its current and potential values. Many strategies have failed through ignoring or through not using proper measurements of the potential value of some strength — some strength which turned out to be a far more serious threat component than any strength in being.

Technology may not have completely changed the nature of war, but it has so expanded the nature and variety of strengths involved in war that those strengths considered critical in former days may no longer stand alone as such, but must be considered in their relative stature with many others.

CONFIDENTIAL

3

The orthodox treatment of the order of battle of armies, navies, and air forces covers only a part of the problem of assessing military strengths — and not even the major part that it is so often considered as being.

Such is the great variety of military strengths — including the firepower, mobility, and tenacity of modern armies; the submarine fleets that can cruise the oceans of the world without resupply; the weapons of mass destruction which can themselves be divided into many categories; the specialized strengths of air task forces and naval task forces — that considering them only in the current and existing sense presents a monumental problem. The problem becomes literally staggering when the difficulties of assessing current strengths are combined with the probabilities and possibilities of future military strengths that may have a bearing on any particular strategy. Notable examples of possible military strengths of the near future, which become probable if the forecast applies to a time period of any magnitude, are the strengths represented by nuclear weapons and long-range ballistic missiles.

Prior to any consideration of the variety of purposes that need to be measured it will be helpful to differentiate between what is ordinarily thought of as “war” and what is brought to mind by the word “warfare.” Among other things, such a differentiation relieves the mind of any paradoxical confusion as between a “war plan” and our national attitude against aggressive war.

Although the purposes of war are the main guide to the strategy of either side, the purposes of “warfare” are the ones of primary importance to an intelligence staff and to a strategy. These “warfare” purposes can be specific and various to combine with the great variety of strengths that are available. Depending upon the magnitude and types of strength and the seriousness of purpose involved, each combination can be of importance in the formulation of a proper strategy.

As an illustration, the basic war purpose of the Soviet Union undoubtedly is that of imposing Moscow-controlled communism on the world. This purpose is the key to Soviet strategy and should also exercise a positive influence on our own strat-

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egy. However, Soviet purposes of warfare are certainly more specific than this, and it is at some level of more detailed purpose that intelligence staffs must aim in order to identify and measure major Soviet threats.

Soviet purposes of warfare probably include: occupying and utilizing the resources of Western Europe; occupying and utilizing the resources of the Middle East; keeping the United Nations continually off balance in Asia and the Far East; successfully resisting any effort to weaken the strengths of the Soviet heartland; destroying the continental strengths of North America; and an over-all and modifying purpose of eliminating populations and peoples considered difficult to assimilate in a communist world order.

Such detailed, specific purposes of warfare, combined with Soviet strengths, create major threats of meaning to our strategy.

It is likely, however, that a substantially more detailed statement is required, or would be of advantage. The Soviet Union does not yet have the relative strengths necessary to bid surely for the broad war purpose of creating a communist-dominated world order, but the Soviet Union does have the strengths, both existing and potential, to bid separately and in varying combinations for many of the purposes of Soviet warfare. These are the threats that intelligence today must measure as part of its contribution to any strategy devised against the Soviet Union.

A major difficulty confronting intelligence in connection with any assessment of the problem of purpose comes from the limited utility of the ideas "offensive" and "defensive." Because many of the most aggressive acts of warfare are basically defensive in purpose, paradoxical confusion can result from the use of "offensive" and "defensive" to indicate purpose in any but the simplest situations. Even in the simple situations, from which the ideas of offense and defense arose, it has become customary to say "the best defense is a good offense," thus further illustrating the disservice which use of these terms involves.

CONFIDENTIAL

5

Determination of threat stems from appraisal of strength and purpose. Such identification may be sufficient in some circumstances, but there is a growing opinion that intelligence measurement of probable results of an activated threat is necessary as well as desirable. Such measurement approaches what can be termed "war gaming."

A successful measurement of this sort can have a great influence on strategy. The extent to which intelligence should contribute to this process may be disputable, but it appears certain that the intelligence necessary to a strategy will be better if an advanced war gaming process of some sort is kept closely in mind during all the processes of intelligence preparation. Perhaps it is sufficient to say that judgment of a threat cannot have its proper influence on strategy until the value of the threat is rounded out in terms of probable results if the threat is activated.

The idea encompassed in expression of an enemy "capability" certainly includes the element of accomplishment, and the threat of a capability is a measurement which has little meaning without the inclusion of the element.

Measuring the current threat posed by an enemy air force requires conclusions in many areas such as:

- a. The number, disposition, and types of aircraft and their performance characteristics.
- b. The weapons, logistics support, level and type of air training, and the control mechanisms.
- c. The warfare purposes which such an air force can reasonably pursue.

For each major purpose it also is necessary to assess:

- a. The enemy doctrine of employment.
- b. The tactics used for resisting or evading opposition.
- c. The quality of action to be expected in relationship to our contemplated action.
- d. The net value of probable accomplishment in terms of service to the enemy purpose.
- e. The probability of action being undertaken.

It is obvious that certain of these conclusions will be modified in any forecast of the future threat posed by the enemy air

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force. As some of the strength factors change, different ideas as to purpose are brought to mind, particularly if the expected changes in strength are in terms of performance, training, weapons, or doctrine.

If the purpose being assessed is that of resistance to our own air penetration, commonly termed the enemy's "air defense," the quality of his action and its net value to the enemy purpose become of vital importance. Measurements of these factors are too often made in terms such as good, poor, moderate, and so on. They need to be made in terms that have a greater meaning to the decision maker. If the quality of Soviet resistance can be appraised in terms of such things as the known quality of German resistance, matching new qualities of resisting forces with new qualities of the penetrator, perhaps a measurement can be provided that has meaning to both war planner and engineer.

The problems involved in estimating the threats from an enemy air force are illustrative of only one segment of the picture. A great variety of enemy strengths and purposes are involved, and efforts similar to those described for air forces must be undertaken in relation to many if not all combinations of them. To visualize this is to appreciate the full and tremendous scope of the work which must be done to identify and measure the "threats" which pose the necessities of war.

Opportunity is a function of enemy strength and friendly purpose. If a good job has been done in assessing enemy strengths and purposes in order to identify threats, much already has been done toward establishing opportunities. However, it would be mistaken to assume that enemy purposes and friendly purposes are identically opposed. Variations of purpose may be forced in accordance with the strength factor; frustration of certain enemy purposes may have to be waived if there is no adequate enemy vulnerability; or — a devious route to such frustration may be found if a direct one shows inadequate promise.

It is in the opportunity field that the greatest intelligence development is required, and this is true of the gathering or collection function, as well as the creative one. Development

CONFIDENTIAL

7

of opportunities requires a vast amount of detailed knowledge of which even the scope and kind is not well known. Experience in handling the modern strengths and purposes of warfare is as yet too slight for us to have more than a general idea of the information needed to establish sound opportunities for their use.

In this activity the process of an approach to war gaming again becomes a major factor, and it should again be emphasized that intelligence necessary to strategy will be better if an advanced war gaming activity is kept in mind during the intelligence production process.

The USAF targeting activity is an example of an intelligence effort directed toward analyzing opportunities for air action to further major purposes of warfare.

The target organizations undertake to nominate "purposes" of atomic warfare in terms consistent with the values of the US national strength involved.

These purpose values currently are listed as follows:

- a. To produce an initial paralysis of Soviet governmental controls.
- b. To prevent unacceptable launchings of Soviet atomic weapons against the US and its Allies.
- c. To prevent unacceptable massing and maneuver of Soviet ground forces acting to occupy areas in Western Europe, the Middle East, and the Far East.
- d. To prevent unacceptable employment of the Soviet sea forces.
- e. To neutralize or destroy the general threat of Soviet air action against Allied Air Forces in Western Europe, the Near East, and the Far East.
- f. To neutralize or destroy the ability of the Soviet Union to sustain large-scale military operations.
- g. To neutralize or destroy the ability of the Soviet Union to develop or produce weapons having a decisive or stalemating potential.
- h. To sufficiently neutralize or destroy the political, social, industrial, and economic strengths of the Soviet Union so that governmental changes or decisions satisfying to the US will

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occur or may be readily forced by additional available or contemplated pressures.

Certain of these purposes may be acceptable for many weapons or many strengths, but it is probable that there will be significant and important differences. The attractive simplicity of the Casablanca directive to fatally weaken the German capacity and will to wage war is now recognized as inadequate.

If from this example drawn from USAF targeting activities it is possible to visualize the great variety of possible friendly purposes that are involved — purposes for land and sea warfare as well as air warfare, and all the subordinate varieties of the three combined — it should be possible to appreciate the great scope of the effort involved in identifying opportunities. This is an area of intelligence service which has never been fully recognized and certainly has never been fully developed. In no other area of intelligence work is purpose so important as it is in this one. Unless purpose is clearly defined in terms that permit an exacting search for precise conditions, opportunities that have tragic instead of useful results may be suggested and adopted as a part of strategy.

The Japanese in 1941 implemented a strategy that is outstanding among all those which seem to have been based upon intelligence misjudgments. Perhaps no nation has ever embarked upon a course of military action so poorly aimed at achieving the necessary results in a war. The existing threats of deployed forces in being and the opportunities to overcome them seem the only intelligence assessments used, even if others were made. The threats which stemmed from US industrial strength and latent military strength seem not to have been measured. All the information necessary to the making of these measurements was available to the Japanese or readily attainable — but the measurements were not accurately made.

The Germans seem to have based their strategy upon measurements of better scope but without sufficient accuracy. They did not accurately measure the potential threat of US and British Air Forces, the true threat of the Soviet armies, and the full scope of opportunity to the German submarine.

CONFIDENTIAL

9

The strategy implemented by the Allies was largely a strategy that evolved, but judgments of importance and accuracy were made — some in advance, some along the way. An early judgment was made that the threats from German strength and purpose were more pressing in time than were the Japanese threats in the Pacific. The threat of latent German strengths appears to have been adequately assessed. The German submarine appears to have been measured in all its proper stature and the opportunity to invade and occupy Germany was given a timing that was consistent with success. The opportunities to put Japanese strength on a shelf of impotence through air and submarine attack were adequately assessed and the timing of the invasion and occupation of Japan was made coincident with greatest Japanese impotence.

It certainly can be said that Allied strategy succeeded in achieving at least the necessary results of war with Germany and Japan. Whether intelligence judgments as such were made toward this end is not as important as is recognition that intelligence judgments of this kind should have been made.

Intelligence necessary to an anti-Soviet strategy in today's world must appraise a greater variety of strengths, purposes, threats, and opportunities than ever before. United States strategy must rely upon the adequacy and accuracy of these judgments and cannot count upon Soviet errors of judgment to make up for Western failures. It should be expected, instead, that the enemy is not likely to make major errors in judgment and will be extraordinarily keen and alert to take advantage of any the West may make.

CONFIDENTIAL

CONFIDENTIAL

11

IS INTELLIGENCE OVER-COORDINATED?

Ray S. Cline

Being in favor of coordination in the US intelligence community has come to be like being against sin; everyone lines up on the right side of the question. In fact, coordination has become what Stephen Potter calls an "OK" word — one which defies precise definition but sounds good and brings prestige to the user. Now I do not want to deny that coordination is a good thing, but I would like to suggest that there can be too much of a good thing. I am afraid the intelligence community is suffering from over-coordination.

Part of the trouble is that few who are zealous for coordination stop to define what it is. In one sense — unfortunately not always understood — coordination is the main business of the Director of Central Intelligence. The public law creating CIA establishes as its purpose "coordinating the intelligence activities" of the departments and agencies of the US Government, including the intelligence components of State, Army, Navy, and Air.

I am sure that in the absence of any technical definition by Congress the public statute employed the word "coordinate" in its normal Webster's-dictionary meaning of "to regulate and combine in harmonious action." This kind of coordination is essential; I doubt that we have enough of it.

In the intelligence community, unfortunately, the "activity" that has been coordinated tirelessly has not been the operational conduct of business or the analytical procedures followed by the intelligence agencies, which the language of the law would imply to a layman, but purely their verbal product in the form of written reports and estimates. Regardless of how inharmoniously the intelligence agencies may engage in "action," they have all settled down to coordination in the sense of prolonged and detailed joint examination of the words issuing forth from the national intelligence machinery. The

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11-18

apparent objective is to insure that every agency approves of all the language formulations employed in intelligence estimates.

Because coordination is felt to be automatically a good thing, the long and difficult path to unanimity on wording is pursued without regard for the time wasted or ideas lost. The search for the happy cliché, acceptable to all, shopworn but durable, frequently ambiguous but always defensible, goes endlessly on. It is this particular "coordination" process that is in a fair way of becoming a millstone around the neck of the Washington intelligence community.

It is ironic that the word "coordination" came into the government lexicon as the harbinger of a liberalizing and energizing influence at work in a ponderous bureaucratic machine. "Coordination" was the term hit upon by the Army to describe a system of staff consultation devised shortly before World War II in order to escape from the hidebound staff "concurrence" system then saddling the War Department General Staff with an almost unworkable consultative procedure. Under this post-World War I system, any Assistant Chief of Staff of the War Department General Staff was obliged to get the "concurrence" of the other Assistant Chiefs of Staff on any action affecting their mutual interests, whether the interests of the other Assistant Chiefs of Staff were of major or minor importance.

The difficulty of getting a fully concurred memorandum through the War Department General Staff in the emergency years of the late 1930's was so great that the more energetic staff officers began to despair of ever being ready or able to fight World War II. It was in this atmosphere that the coordination system developed and the formal concurrence concept was discarded.

The new procedure presumed that the officer proposing action was — on behalf of his Staff Division — entirely responsible for presenting information and making recommendations. He was obliged to show his study and proposals to appropriate officers in other Staff Divisions with overlapping interests to insure that they had no reasonable grounds, deriving from

CONFIDENTIAL

13

other actions they were taking, for dissenting from the proposed action. The ultimate objective was "harmonious action" and prompt decision. Quibbling over phrases and details became unpopular under the pressure of the need for speed.

The result was that officers consulted in this informal fashion could initial a paper as having been "coordinated" with them without feeling that they were taking full responsibility for the phrasing of the study or the recommended course of action. Coordination merely proved that officers legitimately concerned had seen the paper and had interposed no objection that dissuaded the action officer from proceeding.

This War Department General Staff coordination system was so successful in World War II that it became a matter of doctrine. In the armed services it became a truism that a paper not carefully "coordinated" was not a good staff paper. There is much to be said for this point of view, and this kind of coordination is surely the responsibility legally placed on CIA in intelligence matters — that is, the obligation to consult and discover the views of other interested parties in order to insure "harmonious action." I wish it carried with it the original connotation of performing this essential consultative task with reasonable speed and without sacrifice of individual responsibility for describing the situation requiring action.

The intelligence community does not recommend action, of course, but it does describe situations which ought to be meaningful in terms of actions policymaking officials are considering. A good intelligence estimate is not an abstract exercise in cerebration but is a pointed analysis of a situation relating to national security. It ought to be as effectively presented and phrased as a good staff action paper — perhaps even better, because the subject matter is likely to be more abstract and the nuances and color in the author's choice of words is likely to be vital to a subtle understanding of the situation being described.

By some lower-level-of-consciousness reasoning, coordination in the intelligence business has in practice come to mean word-by-word concurrence of all the intelligence agencies.

CONFIDENTIAL

This practice has not only slowed down the production of intelligence estimates at the national security level but also has insured that when fully coordinated estimates do emerge into the daylight they usually reflect the carefully considered, carefully phrased views of nobody in particular. They are the drab and soulless products of a bureaucratic system which seems to have a life and a limping gait of its own.

These harsh remarks are not intended to suggest that our national intelligence estimating machinery is of no value. To the contrary, I would like to make clear at the outset that I think the initial organization of this machinery in 1951 — with which I am very proud to have helped — is one of the major advances in the history of the US intelligence business. It is obviously desirable for the government officials making national security decisions to have available in written form the best composite judgments of the interagency intelligence community on the main strategic situations affecting US security.

Even with the deficiencies I have suggested, the coordinated national estimates provide a sort of floor of common knowledge and common agreement under the policymaking process. At a minimum they serve the purpose of preventing wild ideas from carrying the day in the absence of effective confrontation with the agreed general view. In the old days it was perfectly possible for one agency to produce a little thinkpiece setting forth some preposterous theory about Soviet intentions and, through the agency staff channels, present it on the highest policy level without it occurring to anyone to question whether or not this represented the best intelligence views of equally well informed people in the intelligence community. I trust this does not happen now, or at least that there are a great many people who would stand up at some point during the policy consideration to say that such a proposal should be checked out against the national intelligence estimates. This is clearly a net gain of enormous worth.

What I am suggesting, however, is that we have won that net gain at the price of making our estimates much less timely, interesting, and useful than they could be. If we had not allowed ourselves to become so devoted to the concept of coordi-

CONFIDENTIAL

15

nation of the written word at all costs and at all lengths, I feel we could do a better job of presenting the best views available in the intelligence community rather than the lowest common denominator of agreed doctrine.

The first great defect of our coordination technique is merely the staleness that passage of time brings to a long-disputed thesis. In principle, of course, the national intelligence machinery can bring out an estimate in short order. I believe that there are in history the recorded cases of estimates written and agreed in two or three days. These were very short estimates produced under circumstances of extraordinary urgency. It is enough to say that what is usually called a "crash" estimate is usually produced in about two weeks' time. A good solid national intelligence estimate runs anywhere from six weeks to six months. Perhaps we can afford the luxury of writing estimates at this pace, but I very much doubt that the estimates so produced are as useful as they would be if they were produced much more rapidly. In the present system, unhappily, the estimates are bound to contain very few surprises and very little of immediate interest to our policymakers.

Much worse than this out-of-date quality, however, is the second great defect of the coordinated estimate — the flatness of ideas agreed by four or five contributing draftees. It is simply not true that the more people and the more views represented in the drafting of a paper, the better the paper is. Sometimes a brilliant paper slips relatively unmarred through drafting sessions in which a large number of people are involved. But too often papers which, although imperfectly phrased and controversially put, make a contribution to knowledge at the beginning of the coordination process emerge either so long afterward that all of the sparkle of the basic idea is lost or so much watered-down and flattened-out as to be virtually meaningless.

The reason for the delay, the watering-down, and the flattening-out is not hard to find. Any group of working-level government officers brought together to "coordinate" a paper are under an enormous obligation to their bureaucratic superiors to emasculate any sentence which suggests, or might sug-

CONFIDENTIAL

gest, the contrary of a view held in their particular part of the bureaucratic forest. This caution tends to bring on a process of horse-trading in which every interested party secures his privilege of excluding an objectionable phrase in return for permitting the exclusion of some sentence which is anathema to another representative, although it may not be at all objectionable to the rest of the group. Add up four or five or six of these representatives as parties to the proceedings — and crank in the normal personal vagaries in reacting to someone else's prose — and you speedily reduce a paper to its lowest common denominator of meaningfulness.

After all, we are all familiar with the phenomenon whereby most people feel that it is possible to express their own ideas only in their own words. This factor alone poses an almost impossible situation for anyone trying to draft a simple, clean-cut view of a complex intelligence problem.

I, too, happen to like my own prose better than the words used so clumsily by other people. Unfortunately, I have discovered that my colleagues also seem to prefer their own, even over mine. My way of solving this problem, and the problem of many drafters representing multiple interests, is to determine, on the basis of subject matter, whether a paper is mainly my paper or my colleague's paper. If it is my paper I strongly believe that the best way to get the main ideas across is for me to draft it in my own words, presenting it in the way that seems to me to be most effective.

At that point in drafting I like to consult all of my colleagues, whoever they may be and whatever agency they may work for, who know something about the subject. Inevitably I get a considerable amount of comment, both on the main ideas and on the words in which they are expressed. This I think is healthy, and in many cases I am persuaded either that I am wrong in what I was trying to say — in which case I want to change it by all means — or that I have not presented it very effectively — in which case I am anxious to rephrase it in the light of my failure to put it across. It may be that I think my colleagues are simply dense, but nevertheless I ought to adjust my verbal presentation of the problem to carry them along with

CONFIDENTIAL

17

me in understanding the subject and my view. All this consultation with the best minds of the community is desirable, even essential. It is what I consider to be coordination properly understood.

In other words, coordination is ideally a process of consultation with knowledgeable and interested members of the intelligence community for the purpose of getting new information, taking account of differing views, and insuring the most effective presentation of an intelligence analysis. I think it is true to say that in many cases a person drafting a paper on a broad and complex subject is obligated to accept the information supplied him and, in general, to adopt the interpretive views held by the most expert and responsible people, wherever they work. This sharing of knowledge is the whole reason for working as an intelligence community.

On the other hand, if there is any function for a central and coordinating group in the intelligence community, it is precisely in the sphere of subjecting to careful inquiry the views of all members in the community on situations cutting across specialized departmental interests, making a valid synthesis, and presenting the general truth of the matter in an effective manner, even though it may not fully please any single member of the group. If, when this purpose has been accomplished, a responsible member of the community still feels that the paper makes a major substantive error, as distinct from being badly expressed, then I think it would be most proper for the dissenting person to express himself as effectively as he can in language of his own choosing setting forth where he feels the basic paper has erred.

This last point — the right of major dissent — is an important one. I know from experience that in many complex intelligence problems the most effective way to discover the essential outlines of a tricky situation is to have an analyst present his case and then to listen to the views of any dissenting analyst. I submit that the net result of a strong view of this sort with a substantive dissent is much more helpful and meaningful to the person who actually needs to know something about the situation than is a compromise set of general

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cliches which do not indicate the difficulty and conflict of view inherent in the situation as seen through the evidence the intelligence community possesses.

The sum and substance of what I have been saying is that the US national security system would be better served if the intelligence community took a less vigorous view of the meaning of coordination and substituted more informal techniques of consultation. In this way the intelligence community could share knowledge and wisdom without delaying or weakening the product.

Such an arrangement would work like a consulting group of physicians, one a general practitioner and the others specialists. If the disease is complex and cuts across specialists' lines, the general practitioner (CIA in intelligence) should take responsibility for the diagnosis and treatment, consulting and using the skills of the specialists (State, Army, Navy, Air, et al.). In no case should the doctors confuse the diagnosis to disguise the fact that they could not agree among themselves nor, of course, should they let the patient die while they argue.

CONFIDENTIAL

SECRET

19

COORDINATION AND RESPONSIBILITY

R. J. Smith

In discussing the coordination of national intelligence it seems to me essential to recognize at the outset that coordination is certainly here to stay and probably will continue to be conducted pretty much along present lines. No amount of talk will either make it go away or alter its basic nature. This is so not because those people presently responsible for coordinating national intelligence are insensitive to visions of an ideal world where gentleman scholars would discuss world problems broadly and then retire to write individual appreciations. It is so primarily because national intelligence has become an integral part of the complex machinery for planning and policymaking of the US Government and has thereby acquired responsibilities not previously held by intelligence.

In the earlier and possibly more light-hearted years of CIA it was always a matter of some speculation as to who the users of national intelligence really were. We had a distribution list with names on it, but we had little evidence as to what happened once the estimates were delivered. We were in the position of shooting arrows into the air — some of them elegantly shaped and still bearing the tool marks of individual craftsmen — and having them land we knew not where. There was some fretting over this uncertainty, but it was balanced to a degree by an accompanying freedom in how we directed our effort. Coordination in those days varied in its difficulty and its intensiveness almost with the moods and states of health of the participants. On one occasion, a coordination meeting would become almost a pro forma operation. On another, it might be the scene of sharply personal bickering and bad feeling, illuminated with sparks of verbal wit and showered with forensic displays.

Over the past five years this has changed. The broadening development of the centralized planning and policymaking mechanism has brought sharp changes in all governmental

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MORI/HRP PAGES 19-26

activities involved with problems of national security. National intelligence has been affected along with the rest. At the same time, national intelligence has gained strikingly in prestige and authority, partly as a consequence of its new responsibilities in policy and planning but also as a result of growing maturity and technical improvement throughout the entire intelligence community.

We no longer are in any doubt as to what use is made of national estimates. In a majority of cases, the customer (the National Security Council, one of its major members such as the White House, or one of its subordinate components such as the Planning Board) has given us specifications for the task and has set a date for its completion. If our customer discovers new specifications to be included, alterations are made before the estimate is completed; if he discovers his need has greater or less urgency than originally thought, the timing is adjusted. In all those cases where the policy and planning mechanism has originated the request, we know from the outset that the finished estimate will become the basis for a review of US policy toward the area or problem under consideration. We know this will be true also of a substantial number of other estimates which have been initiated through other auspices, including our own.

It is not new for intelligence to serve as a basis for policy. To greater or less degree, this has always been so and has provided intelligence with its reason for being. What is new is that this relationship has been formalized and institutionalized in such fashion as to make the connection far more direct and effective than ever before. Recognition throughout the intelligence community of the immediacy of this connection has profoundly affected both the estimates themselves and their coordination.

The present day national estimate bears only an indistinct resemblance to one of its remote ancestors, the literary or scholarly essay. In the days of our youth the resemblance was more apparent than it is today, and it continues to be considerably more apparent in British national intelligence papers, known as "appreciations." (It may not be significant but it is

at least interesting that for us the word "appreciation" carries connotations of artistic endeavor and to the British the word "estimate" conveys a mechanical totting up, not unlike the estimate the plumber provides before beginning work.) It is inevitable and proper that some readers, bringing to bear primarily the standards for literary or scholarly essays, should criticize the national estimates for general lack of reader appeal. It is perhaps also inevitable but considerably less proper that they should simultaneously place the blame for this condition entirely on the process of coordination.

National estimates are not scholarly essays. They are primarily work papers for planners and policymakers. This does not mean that these papers need be unreadable, or that they cannot be more readable than they sometimes are, but it does mean that they must be the embodiment of precise writing. Anyone who has ever tried to write really precisely — so precisely that several different groups of planners can get exactly the same content from a statement of fact or a judgment — knows that in order to reach such precision one must boil off nearly all the esters of personal flavor and strive for a flat objectivity. Also, in this connection, one must bear in mind that the planners and policymakers in question are high level and have neither the time nor the necessity to master enormous quantities of detail. They need only that amount of detail necessary to support the handful of key estimative judgments to be made about the situation before them.

Having said this much, let us look more narrowly at the impact of coordination upon these national estimates. First of all, let there be no mistake about the necessity for coordination. Many criticisms of the present coordinated estimates represent an attempt, in one guise or another, to squirm away from this necessity. It may be true that one individual, or a small group of talented individuals, could on many occasions write estimates with sharper edges than coordinated estimates, but the difficulty is that such estimates would not meet the need of the White House and the National Security Council. What the highest levels of the national government most emphatically do not need is a batch of estimates on the same

subject by separate intelligence organizations, each paper out of key with the other in exposition, emphasis, and conclusion. This situation would merely pass responsibility for the ultimate intelligence judgment on to the policymakers. What they require instead is a single document which contains the collective judgment of the intelligence community, an estimate which delineates the areas of general intelligence agreement and identifies where necessary the points of major substantive dissent, an estimate to which all the chief intelligence officers of the national government will concur. Looked at from this perspective, the coordination process becomes the heart of the matter, not an unnecessary evil. Its characteristic defects and its burdens become problems to be worked with and to be eased, not avoided. In fact, looked at from this angle, one can even recognize that the coordination process has benefits and merits in its own right.

Knowing as they do that the finished national estimate will become the basis for a policy which will vitally affect the mission and responsibilities of their department, the representatives of the various intelligence agencies take the coordinating sessions seriously. As their departments' spokesmen, they have a deep and responsible interest in seeing that the final estimate does not ignore information available to their department or does not arrive at judgments contrary to the views of their departmental intelligence specialists and chiefs. At the same time, they must avoid damaging the prestige and integrity of their department by pushing departmental views in defiance of contrary evidence or by failing to inform their department of the extent to which its view stands in isolation from the rest of the community.

The CIA responsibility in this process is different in kind but equally great. In the first place, the draft discussed by the coordination meeting is a CIA draft based on written contributions from the several departmental agencies. These contributions, frequently longer individually than the finished estimate, are rich in detail and analysis and provide a broad base for the estimate. The CIA drafters synthesize these departmental papers into a single estimate, making such aug-

mentations or changes in analysis or emphasis as they think the objective situation requires. When this draft, well-tested within CIA, is placed before the coordination meeting, it has its own inner cohesion and strength. Like all well-constructed and ramified pieces of writing, its built-in inertia makes it hard to move very far. It responds gently to nudges but resists hard shoves. Moreover, it has the support and protection of the CIA representatives, including the chairman, who, though ready to accept suggested improvements and useful additions or corrections, are quick to challenge estimative changes unsupported by sound evidence or objective reasoning. The national estimate which emerges from this intensive coordination has been thoroughly stretched and tested but most times has not been altered fundamentally. On those occasions when deep-reaching changes have been made, the CIA representatives have become convinced that these changes would produce stronger, sounder estimates.

A common complaint about coordinated intelligence — or coordinated anything for that matter — is that it merely represents the lowest common denominator of opinion. In the light of the discussion above, the only accurate rebuttal to this charge as it applies to national estimates is that it is not true. It is true that some degree of compromise is nearly always involved in the effort to reach full agreement. Short of going to war, no method other than compromise would appear to be available for reaching written agreement on really complicated matters. This is all the more true in the realms of judgment and future projection where national estimates must necessarily operate. Intelligent and responsible compromise is an essential tool in the coordination process, but, by definition, intelligence compromise does not include adding buckets of water to sound judgments merely to obtain agreed positions. The avenue which enables us to avoid this undesirable result is the dissent.

Keeping in mind that the primary mission of national intelligence is to provide the White House and the NSC with *agreed* estimates, it ought to be apparent that a national estimate laden with dissents would not fit the requirement. By the

same token, however, an estimate which glossed over, or compromised out of existence, legitimate and fundamental divergences would not meet the requirement. One does not want to confront the President or the Secretary of Defense at every turn with unresolved differences which force him to make his own choice. At the same time, one does not want to paper over substantial divergences and let him believe no differences of view exist.

One must realize, however, that dissents are not easily contrived. First, the actual substantive difference must be isolated and the dissenter convinced that his is the dissenting and not the majority view. Then he must accustom himself to the notion of standing naked and alone in a footnote with his peers arrayed against him in the main text. Each of these stages is invariably accompanied by surges of new conviction on the part of the dissenter that his position is the right one, after all, and that one more try will convert the rest of the group. In short, the trickiest and most vexing problems in coordination revolve around the point at which the quest for agreement should be abandoned and a clearly defined dissent should be prepared. But to say it is hard is not to say it cannot be done. To prevent enforced coordination, statements of dissent are employed now as often as the skill of the CIA coordinators can bring them about. Growing maturity among the intelligence community will probably make this an easier result to obtain as time goes on.

Another common complaint about coordination is that it takes so much time the estimates are no longer fresh when they are produced. In actual fact, this criticism has less validity than almost any other. No one involved in producing national estimates would deny it takes time. Papers involving special research problems or new techniques have taken as long as ten months. Routine estimates commonly take six to eight weeks. On the other hand, the IAC machinery has produced a coordinated national estimate in five hours and has on several occasions produced them in 36, 48, or 72 hours. At first glance, in a world where the daily newspaper is regularly scooped by television, six to eight weeks, let alone ten months,

seems an unconscionable amount of time. Even five or forty-eight hours seems long. Viewed from the perspective of operational or current intelligence, it probably is a long time. Viewed from the perspective of planning national strategy, it is not. A number of our estimates project forward five years because it is necessary for some kinds of policy planning to look five years ahead. Nearly all the estimates project at least a year ahead. Against this time span, the time taken to produce them does not seem long. To put it another way, an estimate which could not withstand the passing of a mere eight weeks could scarcely serve as the basis for planning a year or five years ahead.

But whatever view one has about the right length of time to spend producing a coordinated national estimate, the remarkable fact is that the coordination itself — the time spent in meetings resolving differences in views and obtaining an agreed text — takes only a small fraction of the total time spent. A study of twenty-four planned and routine national estimates, the longest taking 285 days to produce and the shortest 62 days, discloses that the average time actually required for coordination meetings was under ten percent. The remainder was spent in the preparation of terms of reference, research, the preparation of agency contributions, and the writing and reviewing of the draft within CIA. Even this low percentage figure does not tell the full story because it includes estimates on such matters as Soviet gross capabilities, where weeks of meetings were held to work over the complicated evidence underlying detailed strength figures and capabilities estimates. A more representative figure for coordination meetings would be between one and three days, most commonly two.

Is one led inevitably by this discussion to the conclusion that the necessary art of coordinating national estimates is in a perfect state? The answer is certainly no. As in all good-sized meetings, both within government and without, progress in coordination sessions is frequently slow and uncertain. Too frequently, those who know the least talk the most. Even worse, on some occasions one of the participants may be virtually devoid of substantive grasp. Sometimes, persons with a

fair understanding of the substance under discussion come so rigidly instructed regarding a certain point that discussion of it is futile. Almost always, there is a tendency among the participants to commit that fundamental but all-too-human semantic error, that of identifying the word inexorably with the thought: Thought A can only be expressed by Word A.

What is the remedy for this state of affairs? What can be done, particularly when much of the difficulty is inherent in the method? Can we overcome the fundamental inefficiency of the committee meeting, that peculiarly American contribution to the arts of governing? Well, certainly not, but we can exploit fully our growing technique in running meetings, extracting from them their maximum value as the creators of new perspectives and holding to a minimum their nonproductive aspects. Can we elevate semantic understanding and sophistication to such a level as to remove this most frequent barrier to agreement? Again, no, at least not all at once, but we can recognize this shortcoming in ourselves and thus contribute to greater flexibility in achieving a solution.

In short, the path to improvement of the coordination process lies not through the imposition of ideal solutions but through gradual, slow advance by small adjustments here and there. We can obtain better quality of representation at the coordination meetings. There is, in fact, perceptible progress in this respect over the past several years. The advantages of sending representatives with substantive understanding and empowering them with a fair degree of latitude in negotiation are already apparent to most of the IAC agencies. We can achieve a higher degree of group responsibility and freedom from partisan attitudes as maturity increases. Moreover, we can adopt various innovations in procedure as they seem desirable. We could, just for example, ask the IAC agencies to send representatives to participate with us in the drafting sessions on certain occasions in order to speed the process and facilitate agreement. But whatever we do, we cannot — as I hope I have made clear — do away with the coordination process. It is the heart of national intelligence. To make it tick strongly and surely is our problem.

INDUSTRIAL PLANNING IN THE US AND THE USSR

Edward L. Allen

The past 18 months has been a period of unprecedented free discussion within the borders of the Soviet Union, of organizational and managerial techniques. We have already witnessed a sweeping reorganization of industry. But there are a number of other basic economic problems nagging Soviet leaders. For example, given the objective of rapid growth, what price structure would act as the best stimulant? What tools of analysis are really needed to decide among investment alternatives or to develop an optimum procedure for equipment replacement?

This brief article is "methodological" only in the sense that it calls attention, once again, to the necessity of studying developments in many countries to provide a background and a framework of reference for getting at the meaning of trends in any one nation. It is broadly focused on industrial planning in the US and in the USSR. Whatever communication barriers are brought into being by iron curtains, they rarely affect the transfer of ideas on economic organization between national managerial elites.

Widespread borrowing of American production techniques by the USSR has been a well-publicized feature of that nation's industrial development since the institution of the first Five Year Plan. In the last years of Stalin's life the notion was temporarily advanced that Soviet excellence made a study of capitalist accomplishment unnecessary and even unpatriotic. This policy, which was part of a broader campaign against "kowtowing to the West," was quickly ridiculed after 1953 and replaced by an insistence on constant attention to the technical achievements of capitalism. That there has been a counterpart borrowing of certain Soviet methods by US industry is not so well known.

Although an absolute causal relationship may be difficult to prove, some key components of Soviet planning are being widely adopted by industrial corporations in the US. The most striking adoption has been the five year plan, which is now a routine practice in virtually all large corporations as well as in many smaller firms. Further, long-range planning, a blueprint for the next 10 to 15 years, is becoming common in American industry. The preparation of detailed 15-year pro forma profit and loss statements as well as balance sheets is frequently reported. Increased use of this tool is being widely advocated by management consultants. For example, Bruce Payne recently stated, "Long-range planning is the one really new technique left to management that can give a company a major competitive advantage."¹

Long-range planning in a predominantly free enterprise economy has been made much more possible by a growing realization that techniques are freely at hand to dampen the traditionally wide swings of the business cycle. Given such knowledge, plus the government decision to use counter-cyclical measures as necessary, which was embodied in the Employment Act of 1946 and reaffirmed by subsequent administrations, a much more solid base for future planning now exists, compared with the years prior to World War II.

What general guidelines are available to the planner in a free enterprise system? Unlike his Soviet counterpart, he does not start with a given politically imposed decision from a body similar to the Presidium of the Central Committee of the Communist Party, defining the basic goals of future economic development. Certainly he is not told that the company objective is to overtake and surpass company X in the shortest possible period of time.

However, the American industrial planner's general frame of reference is the same as that of his Soviet counterpart — the entire economy — even though the former's efforts are devoted to furthering the future of a single firm. This is true for two

¹ Bruce Payne, "Steps in Long-Range Planning," *Harvard Business Review*, March-April 1957, p. 95.

reasons: first, company planning must begin with projections of the future economic growth of the country (or countries) which constitute the potential market; and second, because there are few long-run institutional limitations on the types of products a single firm can manufacture.

The general facts of life in a dynamic free enterprise society are best mirrored in national income data. Projections of estimated gross national product and of its components, such as purchases by consumers, government expenditures, and the investment of private business, set the broad limits of market possibilities, whether the firm is concerned with the manufacture of consumer products or with capital goods. These sub-aggregates of gross national product become the first analytical tool of future planning, as the sales of many industries are closely related to them. The post-World War II years have been marked by the setting up of company planning teams including economists skilled in the use and limitations of such data, financial executives, engineers, and legal advisers.

The second reason given for long-range planning in an economy-wide frame of reference — product selection — deserves some elaboration. Broadly speaking, any company is free to choose what it will make in the future, within the limitations of its financial capabilities. There are numerous examples of firms whose product line today was virtually nonexistent ten years ago. These firms, by careful analysis of consumption and investment trends and projections, have successfully anticipated what the market would demand. Such planning methods are in sharp contrast to Soviet practices, for they affirm the sovereignty of the consumer, the fact that his decisions, freely arrived at, are reflected back in the structuring of American industry. It inevitably is the consumer who decides how much to save as well as the pattern of his expenditures.

To summarize, in the USSR, an industrial goal has been set as a result of a political decision, an arbitrary division between consumption and investment, and a set of rigid priorities, traditionally giving primacy to heavy industry. The Soviet planner then works out the necessary number of simultaneous

equations to shape the economy to the will of the leadership. In the US, the industrial goal of a firm has been set by weighing such factors as sales and profit potentials for individual products against the background of key marketing variables, including projections of sub-sectors of national income, population, rate of family formation, and so on.²

Once the industrial plan goals have been set in the USSR, they are usually given extensive publicity, except for the military-end-product sector and for certain related industries, such as nonferrous metals. This is not the case in the US. In a competitive economy, future plans are shrouded in secrecy. The reason for this attitude is of course the competitive nature of our industry — long-range plans of a leading manufacturer would be most valuable to rival firms.

Although future planning is a relatively new technique in American industry, there is an extensive body of literature dealing with the "how to do it" phase.³ In comparing Soviet and American planning literature, one finds a number of striking similarities. For example, the need for annual plan revisions, the necessity of "proportional development," and the importance of maintaining the tempo of growth are common to both. In the techniques of plan execution, there are other parallelisms. In the use of cost accounting to control the operations of subsidiary enterprises, the American term is "responsibility accounting," whereas the Soviet term is "economic accountability" (Khozraschet).

However, in the Soviet Union, the primary success of "Socialist competition" is measured in units of physical production. Whereas the Soviets devote a great deal of attention to reducing production costs, when faced with a choice the planners require plant managers to meet the physical production quotas at the expense of all other goals. Furthermore,

² For an exposition of many factors considered in such an analysis, see Gilbert Buick and Sanford Parker, "The Changing American Market," *Fortune*, August 1953.

³ See, for example, "Industry Plans for the Future," *Conference Board Business Record*, August 1952.

as was true in the US during World War II, when the Soviet leaders assign a very high production priority to a product, they will pay almost any price to insure its availability. It is questionable that this is entirely Marxian, for while Marx did advocate "the management of things" (presumably the reason for severely controlled allocations of labor and material inputs), he also stressed the need for reducing costs, particularly the labor-time cost component. The system of extremely elaborate plan controls, centrally allocating all important inputs, is a leading technique in the Soviet economy which is completely lacking in the US except in wartime. The Kremlin leaders apparently have decided that a socialized economy, striving to maximize the rate of growth along predetermined lines, cannot achieve this objective without centralized allocation of resources.

Rational planning in support of agreed upon objectives is difficult in the USSR because there is no way in Soviet economic theory to measure total cost. Estimates of cost of production (sebestoimost') include physical production costs plus an inadequate allowance for depreciation but not the alternative cost of investment capital. For example, a decision is made to increase steel capacity by 5,000,000 tons. Should this be done in one plant or ten, should a relatively capital-intensive production method be used, or a simpler but more labor-intensive method? Marx having rejected the concept of a "payment for capital," interest computations on capital investment are not permitted, and there is really no fully objective way a Soviet planner can make such decisions. There is no Soviet substitute tool analogous to the Western rate of interest (cost of capital) to compare with projected profit (return on investment) to aid in a decision between alternative methods of implementing plans. That capital investment decisions in the USSR are made in primitive ways, by American standards, is clearly shown in Pervukhin's 1954 admonition to the planners to include the cost of the necessary expansion of coal mines in computing total costs of generating thermal electric power as compared with total costs of hydroelectric power.

The lack of a method of measuring total costs leads Soviet planners to employ a subterfuge, introducing capital charges by the back door through a technique called, "the coefficient of relative effectiveness." However, this technique was uncovered and denounced by 1950 and no substitute has been found.

On the technological level, project engineers probably still make use of the "coefficient of effectiveness" concept in deciding on size and process techniques. Such coefficients however are not standardized, nor are they quite "pure" ideologically, and seldom if ever have the decisive influence which capital costs have in a free enterprise economy. The most recent Soviet literature complains that planners lean toward automation as a key yardstick in the decision-making process, which often results in no production savings per unit of output compared with far simpler (less capital intensive) methods of production. Indeed, there are cases where costs have actually increased after elaborate automatic production lines have been set up.

In a free enterprise economy, a choice between alternative methods of achieving an industrial goal is relatively simple. The answer is found by comparing the various returns on investment implicit in the alternative programs of plan implementation. The measure of return on investment (abbreviated as r.o.i.) is also the major management tool for gauging the success of decentralized operating divisions of a company. Indeed, sound advice to US industrial princes who aspire to be kings is, "keep your eye on the roi."

In a free market, return on investment, or profit rate, is ultimately determined by the interplay of supply and demand forces. In the Soviet Union, prices and profit rates are fixed by the state; in no industry are above-cost returns tied to the total investment or fixed assets of the industry, nor is there any close connection between profit and the relative scarcity (or demand) for goods. Soviet policy keeps profits for the most efficient sector of industry (producer goods), relatively low, while those for the least efficient sector (consumer goods), are relatively high. The combination of high profit rates on consumer products, plus the policy of loading these items with

the bulk of the turnover tax (another profit to the state), means that consumer prices are intended to perform a rationing or allocation function.

Moving from investment planning comparisons to a comparison of plans for organizational structure, one finds considerable similarity between large US corporations and the structuring of Soviet industrial ministries. One commentator on American industry has stated:

"It would not be very much of an exaggeration to say that the very large divisions of General Motors are run much like units of a planned economy. They resemble remarkably, in their interior organization, the Russian "trusts" Equally striking is the parallel between the approach of the management . . . to the problems of industrial organization."⁴

More recently the USSR has put into effect a plan for the massive decentralization of industrial control, following a principle which has been generally acknowledged to be sound by US industry for twenty years. The motives involved in operational decentralization — the development of local initiative, flexibility, bringing authority to make decisions as close to the point of action as possible, and so on. The reasons given in Khrushchev's "Theses" for his program of organizational change are almost identical with those set forth by Ralph Cordiner, President of General Electric, in a 1956 speech entitled, "Decentralization: A Managerial Philosophy."⁵ Decentralization in American industry is almost universally a functional division, rather than a geographic division, as in the USSR. Based on American experience, decentralization will work only if (1) real authority for operational decisions is delegated, (2) confidence exists that associates in decentralized operations will have the ability to make correct decisions most of the time, and (3) responsibility commensurate with authority is accepted and acted upon at all levels. Our experience with So-

⁴ Peter F. Drucker, *Concept of the Corporation*, New York, 1946, p. 123.

⁵ Ralph J. Cordiner, *New Frontiers for Professional Managers*, New York, 1956, pp. 40-79.

viet decentralization is too meager to estimate whether or not a workable division of labor has been made — whether the bulk of operational (as opposed to broad policy) authority has in fact been passed to the 105 regional Councils of National Economy. Indeed, we presently do not possess enough detail to know how much of the plan is based on “Marxist-Leninist principles” and how much bears an unacknowledged “made in America” label.

It is true that local Councils of National Economy emerged in Russia during the period of War Communism, 1917–1921. It is also true, however, that they quickly developed into anti-regime centers, opposed to the centralized direction of the state, and that it took many years to bring them under control. They finally disappeared in 1932. As reconstituted in 1957, it seems only logical to believe that the Councils’ functions are something different than an exact Leninist blueprint resurrected from the past, and that they have, in part, a foreign origin.

However, rigid adherence to traditional Marxist economic theory is not essential in a socialist state. Yugoslavia has shown this to be true. In that country, capital funds (from state investment allocations) are now bid for competitively by individual enterprises and groups. Material resources are not allocated centrally, and market relationships exist for both producer and consumer goods. Demand determines prices as well as do costs of production. The implementation of centrally planned goals in Yugoslavia is brought about mainly by relying on credit and fiscal policies and by channeling investment toward the desired sectors through the guidance of investment flows of the state bank.

Recent articles in Soviet economic journals have carried discussions suggesting substantial modifications of traditional theory on prices. Advocates of change have come almost, but not quite, to the point of suggesting the use of the Western mechanism of the market in setting prices. In the present atmosphere of intellectual ferment, changes in the Soviet economy and organization are rapid and sweeping. Will the next major shift be toward the Yugoslav model?

COMPARATIVE SURVEY OF SOVIET AND US ACCESS TO PUBLISHED INFORMATION

Joseph Becker

In intelligence we are not often able to catch the Soviets red-handed planning a bit of deception behind the scene. This occurred, however, early in 1957, when the Library of Congress discovered, attached to a book which it had requested from the Tashkent Institute of Railway Engineers, a copy of an internal USSR Government memorandum signed by the Deputy Chief of Foreign Relations, Ministry of Railways, to the Chief of the Tashkent Institute granting the latter permission to send the book in question to the Library of Congress, but suggesting that he request, in return, a publication which the Institute needed. It further instructed the Tashkent Institute to inform the Administration of Foreign Relations of the Ministry of Railways concerning future requests received from American libraries as well as the kinds of technical literature exchanged.¹

Insignificant as this bureaucratic oversight was in the total scheme of things, it did tend to highlight the fact that the Soviets have a controlled program for requesting publication exchanges with the US and also revealed their interest in acquiring and using US publications.

Any US publication available to the American public is also obtainable by the Soviets with little effort. During the last 10 years various committees within the US Government have tried to introduce controls over unclassified information likely to be of strategic value to the USSR, but as yet no practical system has been developed which effectively denies US published material to the Soviets while making the same data available to US

¹ CIA, CR-B-3,800,071, *Interest of the Ministry of Railways of the USSR in the Exchange of Technical Literature on a Controlled Basis*, 15 April 1957. (Confidential)

researchers and scholars, and to our allies. On the other hand, Soviet publishing and distribution is maintained under centralized control in Moscow.² The Soviets classify, or otherwise limit to administrative channels, much information which the Free World normally releases in the public domain. This has naturally given rise to pressures in the US to impose equivalent controls; but, thus far, no solution has been offered which does not also carry with it the stigma of censorship. The idea of introducing a concerted program forbidding publication of all but prescribed information in the US has been patently rejected as being in conflict with traditional American concepts of free exchange of information.

Whereas in the US publishing is decentralized within the commercial book trade, Soviet publications are printed and distributed under direction from Moscow. Current Soviet publications are listed in the *Knizhnaya Letopis'*. The *Letopis'* itself was denied the US from 1949 to 1954, and only recently were we able to secure a set for these years by means of an exchange between the Library of Congress and the Lenin State Library. Priced publications listed in the *Letopis'* can be obtained by US purchasers, but there are other items which are footnoted as not available for export. Roughly half of the current scientific and technical papers which relate to military defense or new technological processes are classified by law and therefore do not even appear in the *Letopis'*. Western students of Soviet affairs have long believed that such security requirements may indeed have hampered the quality and progress of scientific research within the Soviet Union. The fact that over-classification can be a deterrent to useful dissemination of information has, in the past year, become apparent in the pronouncements of various Soviet leaders who have called upon both scientific and technical administrators for a more rational approach to security procedures within the USSR. Bulganin emphasized this in his report to the 20th Party Congress when he advocated that the Soviets ". . . reduce secrecy

² CIA, OO-M-3,053,549, *System of Book Supply to Soviet Libraries*, Moscow, 7 March 1957. (Unclassified)

measures to allow a freer exchange of scientific information and opinion.”³

In addition to security considerations, many Soviet unclassified scientific and technical journals are published in a limited number of copies and these rarely leave the USSR — sometimes not even Moscow — simply because of the shortage of paper and printing facilities. A copy of a Russian report sent abroad may mean that some Soviet researcher will go without a copy.

In spite of the inherent limitations of the Soviet publishing system, there has been a noticeable effort to disseminate their best publications abroad in the interest of gaining international prestige. Another reason for the increase in material available for export is simply that the Soviets are generating more publications. Good evidence of this exists in the scientific and technical fields: during 1950 the Soviets produced 1,408 scientific serial titles, whereas by 1955 the figure had risen to 2,026.⁴

Intelligence analysts use Soviet publications actively in their daily work. Restrictive as Soviet publishing has been, its products have always been a source of reasonably accurate and current information about the Soviet Bloc. The value to intelligence which derives from exploitation of Soviet literature runs extremely high. It is estimated that roughly 75 to 90 percent of our total economic, scientific, and geographic knowledge of the Soviet Bloc is based on analysis of open source material. Knowing what the Soviets tell their citizens, technicians, and administrators greatly assists intelligence officers in measuring the main stresses, strains, and vulnerabilities of the Soviet system. In general, US open source publications provide the Soviets with certain types of military intelligence and other valuable scientific and technical information, while Soviet publications provide the US with a reliable index to the over-all development of the Soviet system and a multiplicity of facts about its current status.

³ “Report to the 20th Congress of the CPSU,” *Joint Press Reading Service*, Section B, No. 54, 23 February 1956, pp. 33-34. (Unclassified)

⁴ *Boʻshaya Sovetskaya Entsiklopediya*, vol. 16, 1952, p. 251. *Pechat' SSSR, 1954. Pechat' SSSR, 1955.* (Unclassified)

Steps have therefore been taken within the intelligence community to make the flow of publications from the Soviet Bloc more productive. Less emphasis has been placed on US denials and more effort expended on better acquisition of Soviet publications in order to increase net advantage to the US. Exchange procedures, controlled within the US Government, have produced needed Soviet publications in return for US publications requested by the Soviets. Under NSCID 16,⁵ CIA, in collaboration with other agencies, has been instrumental in adopting further measures, as follows:

- a. Arranging direct and third country procurement of Soviet publications considered to be of intelligence value.
 - b. Advising other federal agencies of what to ask for in exchange when they receive a Soviet request.
 - c. Working with other federal agencies in identifying subject areas of interest to the Soviets wherein statements of research results might possibly receive some kind of US pre-publication control.
 - d. Assisting other federal agencies in keeping the flow of Soviet publications to the US as free and open as possible.
- and, e. Through the Inter-Departmental Committee on Internal Security and, later, via the Office of Strategic Information in the Department of Commerce, supporting an inter-Agency agreement to establish an Exchange Clearing House at the Library of Congress for coordinating US-Soviet exchanges, with particular emphasis on intelligence and defense needs. This Clearing House is functioning today.

CIA employs three main sources to obtain Soviet publications: (1) the State Department's publications procurement

⁵ NSC. NSCID No. 16, *Foreign Language Publications*, 7 March 1953. (Confidential)

officers in Moscow, Berlin, and Paris, (2) the domestic and foreign commercial book trade, and, (3) exchange arrangements made via the Exchange Clearing House at the Library of Congress. The "take" has risen sharply during the past few years. In 1953, for example, the Library of Congress reported receipt of 8,250 Soviet items; by 1956, this figure had reached 19,000. Similarly, Library of Congress exchange relations with Soviet libraries and research institutions expanded from 3 to 133 contacts during the past 4 years.

Under CIA sponsorship, the Library of Congress systematically catalogs and publishes a *Monthly List of Russian Accessions*, in English, which indexes all Soviet books and periodicals printed in the Russian language which are received by some 125 cooperating US libraries. This publication is unclassified and therefore is of use not only to the intelligence community but also to researchers in the academic world.

Two other unclassified bibliographic tools are deserving of special mention, namely:

1. *The Current Digest of the Soviet Press*, a weekly publication of the Joint Committee on Slavic Studies containing translations of selected articles appearing in Soviet newspapers. It issues a quarterly subject index to these translations and to English language periodical articles published in the USSR. Although highly selective, the *Current Digest* is one of the more useful bibliographic tools because it is the only English language guide to the Soviet press which is adequately indexed.
2. *The Cyrillic Union Subject Catalog*, a card index to the Cyrillic language book holdings of the Library of Congress and cooperating libraries throughout the US. Citations are given in English and in transliterated form. The *Catalog* contains about 200,000 author-and-title cards and some 327,000 subject cards. CIA Library has the only duplicate collection of subject cards available outside the Library of Congress.

SECRET

A complete summary of the major US Government and commercial indexing and abstracting services can be found in CIA's *Selected Reference Aids to Cyrillic Alphabet Materials*.⁶

Exploitation of Soviet publications to meet classified intelligence requirements is performed by CIA's Foreign Documents Division in the Office of Operations which last year examined 15,179 Soviet newspapers, periodicals, and books for intelligence based on requirements submitted by various agencies. The Air Force is also engaged in a large-scale exploitation program. To serve its technical and intelligence needs, it maintains units in Washington and at the Air Technical Intelligence Center in Dayton, Ohio, which examine and translate Soviet publications for a wide range of Air Force interests. The products of both the CIA and Air Force exploitation efforts are disseminated to analysts of the IAC agencies.

Policy with respect to the procurement and use of Soviet publications for intelligence purposes is formulated by the Advisory Committee on Foreign Language Publications. This Committee was established to assist the Director of Central Intelligence in carrying out the provisions of NSCID 16. It is composed of representatives of the IAC and insures coordination of exploitation, reference, and publication procurement activities within the intelligence community.

There is a corresponding effort on the part of the Soviets to acquire and exploit foreign literature; this has been especially true for scientific and technical materials. One Soviet purchasing agency alone — The Four Continent Book Corporation, in New York City — purchased over \$100,000 worth of US scientific and technical publications in 1954. The All-Union Institute of Scientific and Technical Information of the Academy of Sciences, USSR, regularly screens and abstracts over 10,000 foreign scientific and technical titles of journals, 80 percent of which derive from US and UK sources.⁷ The Insti-

⁶ CIA. CIA/CD-3, *Selected Reference Aids to Cyrillic Alphabet Materials*, October 1952. (Secret)

⁷ CIA. CIA/SI 101-57, *Soviet Mechanization of Information Processes*, 15 April 1957. (For official use only)

SECRET

tute issues 13 abstract periodicals and 30 "express-information" bulletins based on this literature to some 10,000 Soviet individuals and scientific and industrial bodies. Great emphasis is given to prompt dissemination of foreign technical data. For example, a 9 February 1956 "express-information" bulletin included a Russian language article, illustrated with 2 photographs, on computer mechanisms in the radar-warning system SAGE — based on material which had appeared in the US publication *Aviation Week* of 30 January 1956.

The Soviets' intense interest in the exploitation of foreign technical literature seems to be a matter of policy. Bulganin, in a speech made at the Plenary Session of the Communist Party Central Committee, 4 July 1955, said,⁸

. . . . Great harm is being done to the cause of technical progress in our country by the fact that many heads of ministries and departments, workers in scientific establishments and planning and designing bureaus and executives of enterprises underestimate the achievements of science and technology abroad. The task of learning and utilizing all that is best and most advanced in the sphere of technology in other countries has been neglected in the last few years. As a result, some research institutes and design organizations have spent a considerable amount of time and money in research on and the creation of what has already been published in the foreign press and is already in use.

Some of our personnel have formed wholly erroneous views on the study of foreign experience. These people believe that the study of foreign experience is of no use to them. Actually, such people only reveal their ignorance by arrogant phrases.

Such views and wrong attitudes regarding problems of studying the achievements of science and technology in other countries must be denounced. Every-

⁸ "Report on Industrial Development," *Current Digest of the Soviet Press*, vol. 7, No. 28, 24 August 1955, pp. 3-20, 24. (Unclassified)

SECRET

thing new being created by world science and technology must be constantly studied. Scientific technical information should be improved; relations with the research establishments and progressive scientists of foreign countries should be expanded; the purchase of foreign technical literature and its publication in the USSR should be increased; the work of technical information services in ministries and at enterprises should be improved; and the exchange of advanced experience should be well organized.

From the viewpoint of military planning, the background data contained in US open sources probably supplies the Soviets with as much information as they require for strategic purposes. Given the freedom of the US press and the synthesized form in which its information appears, the Soviets not only receive sound indications of the present scope, size, and rate of progress of major US military programs but they can also re-create with reasonable accuracy US estimates of Soviet capabilities.

A continuing analysis, for example, of open source trade publications and scientific periodicals alone could provide the Soviets with fairly accurate information on the status of the US guided missile program. This is borne out by the fact that the Soviets have published unclassified articles on the program which are detailed as to type, characteristics, and names and locations of manufacturers.⁹ Soviet open sources have also contained location and construction details of such strategic projects as the St. Lawrence Seaway, atomic reactor and electric power installations, rail and highway tunnels, and other critical aspects of US power and transportation systems. Just one report, such as the *Organization of the Federal Government for Scientific Activities* published by the National Science Foundation, can give the Soviets a complete, authoritative account of the scope and emphasis of the US Government's scientific research and development programs.

⁹ *Voprosy Raketnoy Tekhniki. Sbornik Perevodov i Obzorov Inostrannoy Periodicheskoy Literatury*, Moscow. (Unclassified)

SECRET

Scientific intelligence specialists believe that information released through US publications on such subjects as transistors, scatter propagation of radio broadcasting by cloud reflection, and wave guides for long distance transmission all resulted in triggering Soviet interest and research. Since the results of comparable scientific development work are not disseminated outside the USSR, there is, of course, no chance for the US to obtain reciprocal advantages. Also, there seems to be good evidence that the USSR is relying on US technical journals as a means of reducing Soviet expenditures in research and development and shortening the time requirement to introduce new products. A simple and inexpensive way of increasing rubber production by 20 percent was adopted in the USSR shortly after it was described in US published material. Other patented developments are obtainable by the Soviets through the US Patent Office for payment of a small fee.

There are several historic cases where the US probably gave away more information of a specific detailed nature than was necessary or advisable. Notable among these were:

- a) The MIT Radiation Laboratory series — 26 volumes, published in the period 1947–1950, which gave the world most of the results of US wartime research and development on radar.
- b) The Smythe report of 1946 — which contains sufficient detail to enable an expert to avoid blind alleys of expensive atomic research. There is positive evidence that the Soviets used information from this report in setting up their own atomic research program.

Benefits accruing to the Soviets from aerial photographs, maps, geodetic studies, and gravimetric data are particularly great and are significant in that most of this information is openly available to them whereas the Soviet published material in these fields is ordinarily denied to us. Except for some voluntary tightening up within the US Government (for example, certain astronomic and gravimetric data developed in defense programs), little can or has been done to control this situation because it is recognized that in most instances indirect procure-

ment through a third party can be accomplished by the Soviets with very little trouble. When one considers how much time, effort, and money the US spends to locate fragmentary geodetic data about the USSR, it is frustrating to think that they can so readily obtain in the US, for example, any number of large-scale maps and charts from which to position principal US targets for Soviet missile weapons systems.

Our government has found information in Soviet open sources to be of considerable value. In fact, many agencies maintain full-time staffs to examine Soviet literature, and extensive translation facilities have been set up throughout the government for this purpose. To a lesser extent industry is also interested in Soviet publications, and many firms hire Russian language specialists to screen the literature in search of useful technological data.

The production of economic intelligence on the USSR is largely dependent upon published open source Russian material. The statistical handbook entitled *The National Economy of the USSR, 1956*, and a later supplement, have been invaluable in assessing the Soviet economy. In addition to the statistical compilations issued by the Soviets, various technical journals in the fields of industry, agriculture, and finance, as well as those dealing with theoretical aspects of the Soviet economy, are in daily use by our economic analysts.

Potential gains in the review of Soviet published material may be even more significant. For example, Soviet theoretical mathematics leads the world and is freely published; this knowledge of new mathematical functions is important to the long-range advancement of US science. One Soviet paper in which mathematics was applied to an electronics problem, and which was available in this country, could have saved considerable US experimental research time and effort had the paper been discovered and exploited promptly. Soviet open sources have also indicated the areas in which the USSR is ahead of us, such as the development of ceramic cutting tools and of electro-spark and ultrasonic equipment.

Occasionally a Soviet publication can be of direct aid to intelligence work. A prime example of how intelligence can

benefit from an openly available publication is the use to which the Biographic Register, Office of Central Reference, put the 1951 Moscow telephone directory. The Register transliterated, codified, consolidated, and punched the contents of the directory into IBM machine cards. The information was then organized into three separate lists: by name, by address, and by telephone number. Since in many instances Russians engaged in key research projects work and live together for security reasons, this rearrangement gave CIA some very valuable leads in its intelligence operations and substantive scientific intelligence research. Later, the Leningrad telephone directory was treated in the same way.

US gain lies, therefore, in making the most of what is contained in Soviet published material. Through effective exploitation, intelligence can develop a reliable yardstick with which to measure the "state of the art" in various fields of Soviet endeavor as well as to evaluate significant military and operational data whenever they appear. Consequently, a great deal depends on the comprehensiveness of US acquisition programs and on the thoroughness of exploitation and translation activities.

There is an underlying difference between the publishing systems of the two countries. A far greater quantity of information appears publicly in the US than is the case in the USSR. This condition exists because the Soviets have considered it "normal" to classify much scientific, technical, and other developmental information as if it were military in nature. Recently, however, there have been signs that these stringent security practices may be relaxed. Both the volume and the quality of USSR publications available for export have increased steadily over the past five years and this trend is likely to continue. Short of some form of censorship or pre-publication control, there is little the US can do to prevent the Soviets from acquiring those US publications which receive public dissemination. The ways and means by which the US can increase its yield of information from Soviet publications are to continue to acquire as much as possible, to promote a greater influx of published Soviet material, to improve and expand

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46

SECRET

translation and exploitation services, to strive for net advantage to the US in all exchanges, and to capitalize on any opportunities to obtain those Soviet publications not normally available for export.

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FOOTNOTE TO CICERO

Dorothy J. Keatts

One of the best known spy stories of our time is that of Operation Cicero, a textbook exercise in tradecraft set in neutral Ankara during World War II. It is, perhaps, of little importance that the exercise remained rather academic — that the information pilfered in the best traditions of the cloak-and-dagger business was never fully used by the Nazis; that the British, warned of the Ciceronian activity, took no effective action to stop it; and that Cicero himself was never brought to book. As a matter of fact, the academic nature of the exercise makes Operation Cicero a nice, neat package to handle, uncomplicated by consequences and relatively free of loose ends.

Cicero was the code name given by the Germans to the valet of the British Ambassador to Turkey. Cicero gained access to secret documents in the British Embassy in Ankara, photographed them, and sold the negatives to the Germans for large sums, paid in English pound notes. Apparently the Germans, suspecting the motives of Cicero's activity, delayed action on the information he provided. Before they were convinced of the authenticity of the documents, Cicero's operation was blown — happily for the literature of espionage, by a woman.

The case was first packaged and presented to the public by L. C. Moyzisch, Nazi military attaché at the German Embassy in Ankara in 1943–44 and purchasing agent in the Cicero transactions. Moyzisch's book, *Operation Cicero*, was a competent and factual piece of work. The movie version of the affair, called "Five Fingers," was designed for the market, of course, and bore the embellishments apparently necessary to successful merchandising. The Studio One television version appeared to be a batch of clips from the movie, with new faces and voices dubbed in. The general accuracy of the Moyzisch treatment was confirmed by Franz von Papen, German Ambassador in Ankara at the time of the Cicero operation, and by Allen Dulles,

who reviewed the book for the American press. Both Herr von Papen and Mr. Dulles, however, intimated that other chapters on the affair might be written.

What those chapters may be, we do not know; and this essay is in no sense intended to suggest what either Herr von Papen or Mr. Dulles may have had in mind. This is simply a footnote to Cicero — a footnote on the woman in the case. The source is the American who was assigned the job of getting the woman out of Turkey before the Nazi agents could accomplish their mission of bringing her back to the German Embassy, dead or alive.

In his book, Moyzisch ascribes the collapse of the Cicero operation to the treason of his neurotic secretary, Elisabet. Elisabet, Moyzisch declares, sold out to the British and frightened Cicero into seclusion. In essence, Moyzisch probably is right, but his details need some revising and some supplementing.

Elisabet's real name was Nele Kapp. Her father, a prominent and respected German diplomat, was Consul General in Sofia during the war. It was largely as a favor to her father that Nele was allowed to go to Ankara to work. Nele's father detested the Nazi regime — silently, of course — and so did Nele. She had been brought up in English-speaking countries and had gone to school in Calcutta and in Cleveland, Ohio. During the early part of the war, she became a nurse in Stuttgart and later got into the German diplomatic service and was sent to her father's post in Sofia. Nele was very unhappy in Sofia and it was not long before she was transferred to Ankara as a code clerk. Here her unhappiness increased and her neuroticism developed — in fact, she was far more neurotic than Moyzisch indicates.

Apparently Nele wanted very much to get away from it all and decided to swap Nazi trade secrets for freedom. One of her first contacts was made in the office of a German Jewish dentist — the same one, incidentally, who was being patronized by some of her Nazi associates. She had a toothache, went to the dentist, and told him that she would like to be put in touch with an American. The dentist arranged for her to

meet an American Foreign Service officer, also a victim of toothache. Nele told the American that her sympathies were entirely on the anti-Nazi side, that her father was an anti-Nazi, and that she wanted to give information to the Americans in return for a promise from them to get her out of Turkey — to America.

The Foreign Service officer transmitted her offer to the Ambassador, Mr. Steinhardt, who said "The Americans will promise nothing, but we will be glad to receive the information. If she cares to take it on that basis, that's fine." After all, Nele was German and was working for the Nazis. At that point Ambassador Steinhardt turned the whole thing over to the American Military Attaché, and Nele began to keep her part of the one-sided bargain.

Nele made a fairly full report of the Moyzisch activities — lists of Nazi spies who were working throughout the Middle East and other items which Moyzisch had thought important enough to cable to Berlin. Among these bits of information was the fact that on certain days of the month, usually on a Friday, Moyzisch got extremely excited, and the code room was locked. Nele reported that the man who called himself Cicero would phone, and everybody was shooed out of the place. All she knew about it was that it was very important and that it had to do with the British.

The American Military Attaché reported this bit of intelligence to Ambassador Steinhardt, who said that the British should be told. The British were told that there was a German agent called Cicero who was transmitting to the German Embassy something of great importance, that about every two weeks the Germans in the Embassy became very excited in transmitting this information by code to Berlin. The British, so far as we know, did not act on this advice. Had the Germans been putting to use the intelligence received from Cicero, the British would have had reason to suspect a leak. Actually, the Germans never did use the information.

This footnote really begins where Moyzisch's book ends — with the disappearance of Nele. She came to her American contact one day and said that the Nazis had found out about

her and, in typical fashion, instead of confronting her with it they had offered her a vacation — two tickets to Budapest on the German plane which was to leave in two days from Istanbul. She was to go to Istanbul, get on this plane, visit her sick mother in Budapest, all at Nazi expense.

Nele said to the American, "I've got to get out. You've got to get me out!", and (with the Embassy's concurrence) he agreed to do it. It was a sticky business. Turkey was a neutral country, and if she were detected in the presence of Americans there would be trouble. It was decided that she should be sent to Cairo, where the American authorities would decide what should be done with her. But how could she be got to Cairo? All the roads, the stations, and the airports were carefully watched by Nazi agents, whose orders were that Nele should be caught dead or alive.

A plan was contrived, and Nele's disappearing act began. She was housed for a week with two American girls — secretaries from the US Embassy. This cover device led to such things as Nele being hidden under the beds when the girls' boyfriends came and to having her appearance changed. Her hair was very blonde — ash blonde — and the girls dyed it black. The girl who did most of the dye job got her hands so covered with dye that she couldn't go to work next day. Her boss came out to see the poor sick girl, bearing roses and condolences, both of which she had to accept with her hands under the covers. She finally got the dye off with gasoline.

The next step in the plan was this. The Taurus Express trains, both northbound and southbound, came into the station in Ankara at exactly the same moment and remained together in the station for about five minutes. The northbound train went to Istanbul but stopped soon at Ayash, a few miles out of Ankara. At this stop, one caught the train if he'd missed it in Ankara; it was possible to miss the train in Ankara and get to Ayash by automobile before the train did. The southbound Taurus went to Syria and to Baghdad and Iraq. One of the members of the escape party (our source) went alone to the station. Under pretense of going on an outing, some Americans from the Embassy went noisily to the girls' apart-

SECRET

51

ment, got the American girls, Nele, her luggage, and drove the disguised Nele to Ayash. The accomplice in the station at Ankara climbed into the rear car of the southbound train, moved forward a few cars, and then jumped out into the northbound train just as it was pulling out. His hope was that his followers (and he expected to be followed) would be searching the southbound train for him as the northbound Taurus left the station.

He leaped unwittingly into an empty car, in which the conductor was locking both front and rear doors. The doors had to be opened, as he had to get out of the train at Ayash, grab the girl and her suitcase, and get her in the train, all in a few minutes. The only person who could open them was the conductor. Our source told the conductor that he was in a terrible predicament. He explained that he was an American citizen and showed his passport. He said that he had just been married and his bride and her friends had missed the train. He explained that it was our custom after marriage to be conducted separately to the train — a silly American habit. The conductor, obviously looking for a tip, cooperated wholeheartedly. He promised to open both doors and to watch at one end while our source watched at the other for his bride. This worked beautifully. Our man jumped off, grabbed Nele, hopped back on the train, the conductor locked the doors again, and the train went off northward.

Elisabet was clutching some tablets in her hand the whole time of the escape — she called them sleeping tablets. Our friend gave her a loaded gun which she carried at all times. He also took along for the trip a bottle of whisky which she looked as if she needed — he was quite sure he did — and after they got on the train he gave her a fairly thick slug of it — straight Scotch. They lay down in the two berths — she took the upper berth and he the lower and, after just a few minutes, she said, "I'm going to be sick." He said, "Well, go to the bathroom and be sick." She replied, "All right, but you'll have to get outside. I'll knock on the door when you can come in again." So he very politely went outside, smiled at the conductor, waited for a knock, and went in again. This

SECRET

happened several times before they got off the train at about six in the morning and, as they were leaving the train, the conductor came up to the "bridegroom" and said, "Don't worry too much; they're often like that the first night."

But — Nele was not to go to Istanbul, where she certainly would have been seen. That Taurus Express carries a few cars which are taken off in the middle of the night to proceed to Balikesir, which was near a British camp. (Although Turkey was neutral almost until the end of the war, air bases by the score were built under Royal Air Force supervision for use in the event they became necessary. By now to some extent the British were partners in the operation.) The "newlyweds" got off the train in Balikesir, were met by a British officer, driven to the RAF installation, put up for the night, then driven in a British truck to Izmir. Here another difficulty was encountered. When the British representative took one look at Nele he said, "That girl is a German. I'll have nothing to do with her. The only good Germans are dead Germans."

This impasse was saved by an OSS man who had a caique (a small boat much used in these waters) coming in from Greece that night. Nele was taken in the caique to Cyprus and thence to Cairo.

In Cairo, Nele was interned in a prisoner-of-war camp, which made her very angry. She felt that she had been and could continue to be of service to the US Intelligence service. She wrote a letter to her American friend (who had helped her escape from Turkey) — which was intercepted, so that her friend was questioned by the Army authorities for consorting with the enemy. Despite this mess, Nele was sent to America, where she lived in Elizabeth, New Jersey, until the end of the war. Then she got a job as a restaurant hostess in Chicago, and is now living in California where she is married, — with one or more children. Our source last heard from her from California. He feels that she probably has never written anything of her story — that, from the tone of her letters, she probably would prefer to forget the whole thing.

What happened to Cicero? He didn't disappear entirely. He actually, at one time, went to the German Embassy — the

postwar Free German Embassy — and claimed that he should be given real money to replace such counterfeit money as the Nazis had given him. At times he had small jobs for Turkish intelligence and, when last heard of, was a poor man, living in Ankara.

TECHNICAL INTELLIGENCE AND ARMS INSPECTION

Charles W. Mathews

Although a few of the disarmament proposals offered before World War II considered problems of mutual inspection, it was only after the advent of the nuclear weapons that control and inspection became dominant elements in disarmament plans. In fact, it is because of the failures of past disarmament negotiations that the emphasis on the development of inspection plans has increased.

In July 1955, President Eisenhower said:

The lessons of history teach us that disarmament agreements without adequate reciprocal inspection increase the dangers of war and do not brighten the prospects of peace. Thus, it is my view that the priority attention of our combined study of disarmament should be upon the subject of inspection and reporting.¹

In the same speech the President suggested that successful inspection and reporting "would do much to develop the mutual confidence which will open wide the avenues of progress for all our people."

Subsequent proposals on disarmament have contained many inspection and reporting proposals, and it appears at this time that if any concrete disarmament steps are to be taken, inspection and reporting systems will be effected at least as early as the commencement of disarmament actions.

That arms inspections should be used for the collection of intelligence should not be surprising. The inspections themselves are overt collection of the information required to determine the degree to which the suspect nation is fulfilling its obligations for disarming or to allow the inspecting nations to determine whether or not the suspect nation is prepared to

¹ *White House Press Release*, 21 July 1955.

launch a military attack. Although the inspection systems will certainly be developed to prevent foreign nations from acquiring national secrets outside the inspection plan, certainly all participating nations will seize upon this opportunity to supplement their intelligence collection efforts. In December 1955, Khrushchev publicly recognized that the Soviets are aware of the opportunities for intelligence operations inherent in inspection plans when he attacked the US "open skies" plan as a means used for the purpose of finding out more about the forces of another country.²

This article is limited to discussion of the more important opportunities that arms inspection will provide for the collection of technical intelligence; it does not discuss the requirement for such intelligence. Only a few of the major elements of technical intelligence are considered. Consideration of the ability of arms inspection teams to gather intelligence about naval and ground weapons systems would undoubtedly lead to the same broad conclusions, so discussion of those aspects is omitted for the sake of brevity.

Under any plan of international arms inspection that may be developed, there are certain to be restrictions which will make the operation cumbersome and difficult. In any process of disarmament, each participating nation seeks to keep its own strength and to diminish that of the other nations as much as possible. It has already been evidenced that the major states concerned in the present effort also are seeking their own maximum advantage. This is as it should be, but when the conference table is approached in mutual distrust, as in this case, it is reasonable to expect that stringent limitations will be placed upon inspection personnel, equipment, and methods.

First, it is virtually axiomatic that inspection personnel will be subjected to continuous surveillance. On the basis of past activities of Soviet Bloc representatives in the US, this country would be reluctant to allow the inspection team to do their work in the US without keeping them under constant surveil-

² "No Open Sky," *The New York Times*, 1 January 1956.

lance. Fears that Bloc representatives might participate in subversive activities or might sabotage key installations are deep seated in many American minds. A similar distrust of Americans exists in the minds of the Soviet leaders. Therefore, any treaty agreed upon will almost certainly provide for placing the inspectors under continual surveillance.

Although an inspection agreement would probably have clauses to the effect that movement of personnel will not be impeded or delayed, past experience with Soviet Bloc controls on inspection teams in Korea and on diplomatic officials throughout the Bloc have educated us to the methods the Communists employ to encumber the travel of foreigners. Delays, which are sometimes critical in the determination of the military posture of the nation, are likely to be all too frequent.

Aerial reconnaissance is commonly thought of as encompassing only visual and photographic observations of the ground below, but unrestricted aerial reconnaissance would allow the use of a number of other means of intelligence collection. Inspection planes may carry electronic equipment such as is now installed in the reconnaissance aircraft which the Navy and the Air Force are operating in areas bordering the Soviet Bloc. Furthermore, the reconnaissance aircraft can be equipped with air-sampling and meteorological equipment.

Unquestionably neither the USSR nor the US will be willing to give the inspection teams complete access to military or industrial facilities. It is certain that principal government offices and military headquarters will be declared "off limits" to the inspectors. Research laboratories will probably fall in the same category. Production facilities of all types probably will be subjected to inspection; however, the patent rights and special production techniques of manufactures will be protected. This may mean that on occasion inspections will be limited to long-term surveillance of inputs and outputs, which would be effective for determination of some types of production but of little value for determination of others.

When, on 21 July 1955, President Eisenhower submitted proposals for arms inspection to the heads of governments in Geneva, he signaled a major change in American policy. In

reality he said that an age of approximate equality of US and Soviet air-atomic striking forces is upon us. Therefore, measures must now be taken to prevent either side from mounting massive surprise attacks. In a speech to Foreign Air Attachés in Philadelphia, Donald A. Quarles said:

Mutual respect for each others strength was in the background of the "summit" conference at Geneva. The President's plan to exchange military blueprints and facilities for mutual surveillance is addressed to the fundamentals of the situation: namely, that for the air atomic might to be an effective deterrent against aggression, and therefore against war, it must be coupled with mutual surveillance against surprise attack.³

Aerial reconnaissance was proposed by the President as a simple first step to this end. The US was put on notice that to fail to have adequate strategic warning, that is, intelligence, of a pending attack is tantamount to disaster.

On first thought, one would be likely to say that nuclear weapons should be the primary target of an arms inspection operation. There is no question that surveillance of the weapons stockpiles by itself would make it impossible for the Soviet Union to launch a catastrophic blow against the US without prior warning. No other weapon has been demonstrated to have, or appears in theory to have, sufficient lethality so that the USSR would consider it a good enough risk to flaunt before the nuclear retaliatory force of the US.

Would arms inspection enable the US to count and survey the Soviet nuclear stockpile?

A few years ago knowledge of production of the uranium mines in the Soviet Bloc was considered necessary in order to establish some measure of the Soviet atomic threat. Now we have more and better information about Soviet atomic energy plants. In spite of an increase of knowledge about the Soviet atomic energy program, however, there remains a critical need for more information. The best efforts of the technical intelli-

³ Donald A. Quarles, Speech to Foreign Air Attachés, Philadelphia, Pennsylvania, 2 September 1955.

gence community have developed only a rough estimate of the quantity of fissionable material that the Soviet Union has. The allocation of the material to the production of various types of weapons or to the nuclear reactor program is not accurately established. There is not enough information available to permit a *direct* estimate of the weapons stockpile.

The first question about control of nuclear weapons through an inspection plan is concerned with the ability of the inspectors to determine and control the weapons stockpile. It is probably not possible to inventory atomic weapons in being. In a recent article in the *Bulletin of the Atomic Scientists*, Eugene Rabinowitch wrote:

Technical feasibility of atomic disarmament depends now on a reliable *inventory* of existing stocks of fissionable materials. Considering the extremely small bulk of these materials, and the absence of penetrating radiations emanating from them, which could reveal their presence to properly equipped outside inspectors, the only possibility of inventorying them is for the agents of the UN control body to be led to the stockpiles by national officials who know where they are located. Neither the West nor the USSR can be expected to base their own atomic disarmament on the faith that the other side has not concealed a substantial part of its stockpile.⁴

If knowledge of Soviet production of raw ores is no longer of critical importance, and if it is considered not feasible to count and control the Soviet stockpile, then what principal questions regarding nuclear weapons might be answered through arms inspection operations? Other pressing intelligence questions which should be considered are:

- a. What are the types and characteristics of the Soviet nuclear weapons?
- b. Where are the nuclear materials prepared and where are the weapons assembled?
- c. Where are the nuclear weapons storage sites?

⁴ Eugene Rabinowitch, "Living with H-Bombs," *Bulletin of the Atomic Scientists*, vol. XI, No. 1, January 1955.

d. What is the system for deploying the weapons to the military forces?

e. What employment of nuclear energy is being developed other than for weapons?

What are the types and characteristics of the Soviet nuclear weapons?

We should not depend upon arms inspection to give us directly more than a smattering of information on the types and characteristics of Soviet nuclear weapons. If, unlikely as it may seem, the US and the USSR were to agree to put their atomic weapons on display for each other to examine, the technical intelligence analysts, rushing to confirm their evaluation of the weapons, would certainly gain new and significant information on the capabilities and limitations of the weapons they have the privilege to examine. However, there is no way known to assure that all of the types and models the Soviet Union has produced will be displayed. On the basis of debris collected from experimental bursts, the technical experts might suspect that weapons are being withheld; but how can they counter claims that no weapons using that type of construction or reaction are stockpiled?

If a complete ground inspection operation is developed, the inspectors of the nuclear materials industry would know the types and quantities of materials produced. The inspectors of nuclear weapons plants would probably not have the opportunity to observe those parts of the operation which would reveal technological advantage. Their inspection undoubtedly would be limited to a check on inputs and outputs. Knowledge of raw materials and the observable characteristics of the finished weapons would enable the technical analyst to develop firm ideas about the characteristics of the weapons produced. Certainly such information would be considerably better than our present knowledge.

Aerial inspection of nuclear materials and weapons plants would probably not be able to collect any information that the ground observers would not be able to obtain under conditions just described. If ground observers were not allowed into or near these facilities, aerial reconnaissance units might be able

SECRET

61

to use such techniques as air sampling to obtain some confirming or new information about the activities in the plants. Either aerial or ground photographs of the nuclear energy industry and associated power facilities would be of great value in improving our knowledge of nuclear material production. Pictures of industrial reactors would also be valuable.

If the Soviets were to detonate atomic weapons while arms inspection agreements are in force, considerable information on the weapons types and characteristics could be gathered by immediate aerial reconnaissance of the test site. Samples of the debris taken near the point of burst and photographs of the test site would reveal a great deal about the effectiveness of weapons and the purpose of the tests. Photographs would also furnish better information than we now have on the types of weapons, methods of delivery, and release techniques.

Where are the nuclear materials prepared and where are the weapons assembled?

Presently available information is believed insufficient to furnish a good answer to the question of where nuclear weapons are prepared and assembled. Aerial photography would be highly desirable for the purpose of confirming information believed to be true and furnishing more accurate details about locations and plant configurations. Ground inspection teams could be similarly used, but they would be less capable in the particular tasks mentioned.

Where are the nuclear weapons storage sites?

Inspection systems — aerial or ground — are unlikely to indicate where nuclear weapons are stored. Suspect areas may be put under heavy aerial reconnaissance. Ground observers may be able, with luck, to trace materials from manufacturing locations through transportation centers to storage sites. Inspection certainly will increase the chances of finding storage sites, but a great deal of initiative and good fortune would have to be tapped. Of course, it is impossible to know whether or not all weapons storage sites have been found.

What is the system for deploying the weapons to the military forces?

SECRET

The ground inspectors stationed at principal military airfields and possibly near major air defense (missile) installations would have the only opportunity to discover elements of the system for deploying nuclear weapons to the military forces. The answer to this question could not be obtained through straightforward inspection procedures. Observation of military procedures and battle exercises might clue the alert observer to elements of the weapons distribution system, to the proximity of the weapons to the delivery vehicles, and to the length of time required to put them into use.

What employment of nuclear energy is being developed other than for weapons?

Inspection can be of considerable help in determining the status of Soviet atomic reactor developments for military purposes. The Soviet Union has already given considerable publicity to its nuclear reactor program for nonmilitary purposes. Several foreigners have visited reactors near Moscow and are able to furnish considerable information about them. In the atmosphere of reduced international tension that would probably accompany arms inspection agreements, it is reasonable to believe that the Soviets would release information which would give us some measure of the status of the nuclear-reactor capability of their nuclear-reactor power plants. Aerial inspection would determine the location and size of nuclear reactors.

Judging from the facilities required for the US programs to develop atomic-powered aircraft and submarines, such developments cannot be completed in ordinary laboratories and industrial facilities. To test aircraft shielding, four 324-foot steel towers were constructed at Oak Ridge.⁵ The Atomic Energy Commission investigated 100 possible sites for development of the nuclear submarine's power plant before it settled on 439,000 acres in the Valley of Lost Rivers, Idaho.⁶ Four giant

⁵ "Major Activities of the US Atomic Energy Program, I: The Reactor Program," *Bulletin of the Atomic Scientists*, vol. X, No. 9, November 1954.

⁶ Ronald Schiller, "Submarine in the Desert," *Colliers*, 5 February 1954.

buildings with walls 10 feet thick were scattered in the area. The nearest town, Arco, is 20 miles distant — out of range of radiation gases. Special heat-removing devices, which would be easily identified from the air, were installed.

Facilities such as those described would be easy to find through aerial reconnaissance. Low-level reconnaissance with aircraft equipped for detecting radioactive material might be used to identify suspect activities of this type. Ground observers could make subsequent investigations.

The hulls of the atomic submarines are radically different in shape from those of other submarines. Although detection of new-type submarine construction would not prove that the Soviets were developing atomic submarines, it would certainly arouse suspicion.

Global warfare in the near future will be fought primarily with manned aircraft, and it is of great importance that we know the forces that oppose us. What are the range capabilities of enemy bombers? What are the Soviet capabilities to spoof, jam, or saturate US air defense facilities? What are the range and altitude capabilities of Soviet radars and how are they deployed? What proportion of the interceptor forces are equipped with airborne intercept radar? These are but a few of the questions about offensive and defensive air capabilities to which intelligence has not been able to provide satisfactory answers.

Aerial reconnaissance can obviously give us a complete picture of the Soviet airfield complex. Upon the completion of the initial aerial survey we would have compiled the information necessary to prepare the following information about airfields:

- a. Coordinates of all airfields.
- b. Radar landmarks, either direct or offset, for bombing fixes.
- c. Details on runway construction, fuel storage, and maintenance and repair facilities from which the capabilities of the fields to support bomber or fighter operations can be estimated accurately. Such information would enable US strike forces to choose weapons which would match the vulnerability of the targets.

Information about airfields on the northern borders of the Eurasian landmass is particularly important, since it is from these fields that intercontinental attacks are most likely to be launched. It is known that the Soviet Union has placed great emphasis on developing airfields along the Arctic Ocean from the Kola peninsula to the Chukotsky and Kamchatka peninsulas. The exact locations of many of these fields are not known. The same is true of many other areas. An article⁷ on Soviet airfields says:

However, the blank areas shown on the map, such as the east side of the Caspian Sea, the southwest corner of the area near Rumania, and the area along the Baltic Sea do not necessarily indicate an absence of airfield development.

We have inadequate information on the location of many Soviet targets to meet the needs of manned bombers, let alone the requirements of long-range missiles. To strike targets with ballistic missile systems the geodetic latitude and longitude of the launching sites and the targets are required. Since 1940, development of a common European-Russian geodetic datum has progressed to the point where:

There should be reference points within less than 20 miles of about 70 percent of a typical [Soviet] target system, for another 15 percent the reference points will be 40 or 50 miles away or be in the Japanese datum, the remaining 15 percent are far from known grid systems.⁸

Aerial photography could be used to furnish such information. If a photograph or photomosaic includes a target between two triangulation check points which are 100 miles apart, the target can be located to 50 feet. If the check points are close together and the target is 50 miles away, the error

⁷ Director of Intelligence, USAF, "Soviets Develop Airfields in Central-European USSR" (Secret), *Air Intelligence Digest*, September 1955, p. 27.

⁸ A. Wylly, *Strategic Reconnaissance by Means of Missiles*, The RAND Corporation, Study RM-800, 7 April 1952, p. 20.

will be less than 500 feet.⁹ It is evident that aerial photography of the USSR will enable the US to develop the geodetic coordinates of potential targets entirely suitable for atomic-missile operations.

About the capacities of the fields, levels of operations on them, or Soviet methods of using the fields to stage attacks there is insufficient information available to enable US planners to predict the size of a Soviet intercontinental attack. Aerial reconnaissance will be of great value in fulfilling these intelligence requirements. Regular photographic and visual reconnaissance of the Arctic region will be difficult to accomplish because of cloud coverage.

Concerning the future, intelligence requirements for evidence of the qualitative aspects of enemy capability will take precedence over those for quantitative ones. The replacement of conventional high explosive weapons has reduced the number of delivery vehicles required to accomplish a fixed amount of damage against the enemy. In intelligence collection, quantity must take the backseat to determination of operational characteristics of the new aircraft. If the West and the Bloc come to blows in the near future, the decisive advantage will in all probability rest with the side which has qualitative superiority in its offensive-defensive air system.

Present intelligence operations are unable to penetrate Soviet security sufficiently to furnish that information on Soviet aircraft development and testing required for Department of Defense research and development.

Prior to practice for the 1954 May Day show in Moscow, not enough was known about the Bison bomber to estimate any of its flight characteristics. An Air Ministry (RAF) Secret Intelligence Summary reads:

A large unidentified aircraft was sighted at Ramskoye airfield in July 1953. The distance from it was so great that the wings could not be identified Nothing more was heard about this aircraft until

⁹ Ibid., p. 20.

April 1954 whilst participating in the May Day fly past rehearsals.¹⁰

A year later the Director of Intelligence, USAF, wrote:

. . . on the strength of the recent sighting [April and May, 1955] and after a close check with US industry, the USAF is forced to conclude that much earlier flights have been made and that the production program was already well advanced last year. Thus the Soviet heavy jet bomber program is roughly two years in advance of previous US estimates.¹¹

It wasn't until the Soviet Union had deliberately flown the Bison where Western observers could take photographs that technical intelligence experts of the United Kingdom and the US were able to calculate the characteristics of the aircraft. Although some information has subsequently been obtained to substantiate the estimates of characteristics, such significant factors as maximum range, altitude, and speed capabilities still have not been verified.

It is unpleasantly true that the situation described in the preceding paragraph has to a large extent been duplicated with regard to all of the newer Soviet aircraft.

Aerial reconnaissance will be a particularly valuable means with which to get earlier knowledge of aircraft development than is presently available. An aerial inspection plan would increase manifold the chances that we will identify new aircraft while they are still in the testing stages. With modern techniques, the skilled interpreter can calculate from photographs the over-all dimensions, the weight, and the flight characteristics of an aircraft.

Ground observers, who would be stationed at major military air bases, may not have the opportunity to observe aircraft research, development, or testing. If the ground observers are fortunate enough to observe aircraft in flight, they could fur-

¹⁰ *Air Ministry Secret Intelligence Summary*, Assistant Chief of the Air Staff (Intelligence), Air Ministry, September 1954, p. 9.

¹¹ Director of Intelligence, USAF, "Fly-By Highlights," *Air Intelligence Digest* (Secret), June 1955, p. 4.

SECRET

67

nish information which would be used to improve estimates made on the basis of aerial photography. Ground observers might be able to gather information on aircraft at earlier stages in the development, for they may see planes under construction which, being under cover, are not visible from the air. Although it is improbable that the inspection team will get significant information on research, it is likely that it will have access to all aircraft factories and would see new aircraft in early stages of production.

Although the US has been aware for several years of Soviet missile batteries being completed on the perimeter of Moscow and although numerous sites have been observed, there is still very little information available about the missiles employed in the batteries. Most of the known information tends to indicate that an improved Wasserfall-type missile, about 30 feet long and 4 feet in diameter, is employed. In 1955 the *Air Intelligence Digest* reported:

Fifteen [missile] complexes now appear to be operational, but it is possible that this figure could be as high as 25 It is estimated the Soviets would require a stock of about 6,000 missiles. This suggests a present production rate of 3,000 to 4,000 per year It is possible that the assembly of these missiles is taking place at Kimki.¹²

Later information has verified that there are more batteries than estimated.

This example suggests that it is perfectly clear that the Soviet Union is developing a large guided missile capability. The US, however, has been unable to establish either the quantity of missiles being produced or the types of missiles being developed in the Soviet Union. The current standard formula for determination is to add a cup of analysis to a pinch of intelligence, leavening the whole by comparison with the US missile program.

Can arms inspection provide the answer?

¹² Director of Intelligence, USAF, "Missiles Around Moscow" (Secret), *Air Intelligence Digest*, October 1955, p. 28.

SECRET

A single high-altitude photograph of Moscow and its environment would enable us to spot the missile defense pattern of the city. To date, our knowledge indicates that there are two concentric circles of emplacements of radii 25 and 45 miles with batteries spaced at 8-mile intervals around the circles. If this is so, the Moscow defense has approximately 50 emplacements. Aerial photography would establish the exact location of each element of the Moscow missile defense.

The type of missiles used would probably be determined in short order, either by ground observation or by low-altitude photography of missiles being moved into the batteries. A single good photograph would provide enough information to enable technical analysts to make approximations of the characteristics of the missile.

Aerial or ground photography should be able to provide valuable information on the electronic equipment used in the control of the net. It is probable that electronic noise emanating from the control gear can be recorded and analyzed to provide characteristics of the control system.

To this point, only the missile defense of Moscow has been discussed. Aerial reconnaissance of other Soviet cities would reveal the status of their missile defenses. Identification of missile emplacements similar to those in the Moscow area at unanticipated locations may even reveal hitherto unknown critical industrial or military facilities.

The status of development of Soviet long-range missiles, particularly the intercontinental ballistic missile (ICBM), is a matter of grave concern to the US. Unfortunately, little is known about the Soviet program. Estimates of the earliest date when the Soviet Union may have an operational ICBM vary too widely to be used effectively in determining US policy.

A combination of aerial and ground inspection can do much to furnish required information on the Soviet missile development. The intelligence specialists have firm ideas about the location of missile research, development, and testing. The inspection units would be able to tackle the missile problem immediately. Aerial missions can be mounted to survey Soviet

testing sites, such as that near Kapustin Yar, on a schedule sufficiently frequent that it may be possible to observe missile-test preparations. Although ground observers may be prevented from entering test areas, they can take positions where, with the aid of scientific instruments, it would be possible to collect valuable data on the missiles being tested.

Because of the size of ground-based missiles, ground observers would not have a great deal of difficulty observing the movement of missiles from factories to test sites. The associated equipment required for a missile battery is so extensive that it would be extremely difficult to prevent observation of movement of missile units.

The problem of obtaining photographs of the missiles themselves is a difficult one. The natural habitat of ground-based missiles may be in underground storage. The missiles themselves probably will be assembled under cover just before launching. Therefore, they would be exposed to aerial reconnaissance for a relatively short period of time. The best opportunities for photographs are likely to come at the test sites. When missiles are assigned to operational units, it is quite possible that they will not be directly exposed to aerial observation before actual firing preparation. Infrared photography may help in locating underground bases.

When intermediate and long-range missiles begin to become operational, high priority will be placed upon obtaining fixes on the launching sites. Opinion about the ease with which such sites can be located is divided. Leo Szilard writes: "[Intercontinental ballistic] missiles, once they have been manufactured and placed in position, can be easily hidden" ¹³ Although he speaks only of the missile itself, his article seems to imply that he thinks the launching pad is easy to hide. Another noted writer, William F. Frye, writes:

Obviously, the ICBM — or at the very least its launching platforms — would have to be outlawed. If such platforms existed at the time the treaty took

¹³ Leo Szilard, "Disarmament and the Problem of Peace," *Bulletin of Atomic Scientists*, vol. XI, No. 8, October 1955.

effect, they would have to be destroyed; whether or not this has been done could be verified by aerial photography with something approaching certainty. At least, no large group of platforms, such as would be necessary for a massive attack, could be concealed. Thereafter, aerial photographs would expose any move to build new platforms. . . . There would, of course, have to be provision for follow-up inspection on the ground in case something suspicious were discovered on the photographic plates¹⁴

It is probable that Frye is closer to the truth than Szilard.

Electronic intercept operations may be very valuable in collecting indications of possible attack by noting widespread electronic checkouts of missile electronics systems.

In summary, arms inspection by aerial and ground inspection should be able:

- a. To determine the types of missiles being manufactured in the Soviet Union.
- b. To furnish information from which reasonably accurate estimates of the characteristics of Soviet missiles can be made.
- c. To locate the launching platforms for the missiles.

In a recent Air War College thesis on aerial reconnaissance, Colonel Richard R. Stewart wrote:

It is predicted that the reconnaissance pay-off possible on the Soviet defense force would be considerably less than on their attack capability. Some of the factors that would tend to make this reconnaissance less remunerative are (1) the importance of the human element and (2) the greater reliance on "black box" type equipment.¹⁵

Although little information about the human element can be obtained through arms inspection plans, it is possible to im-

¹⁴ William F. Frye, "Possession and Use of Nuclear Weapons," *Bulletin of the Atomic Scientists*, vol. XI, No. 10, December 1955.

¹⁵ Stewart, Colonel Richard R., "The Value of Intelligence Data Obtainable by Air Reconnaissance" (Secret), Air War College Thesis, No. 1036, May 1955, p. 40.

prove our knowledge of Soviet utilization of "black boxes." Fortunately it is not vital to know the exact content of the "black boxes." The Beacon Hill Report on Air Force intelligence and reconnaissance says that "an elaborate and precise analysis of each radar signal is not needed and, in fact, not desirable. We want *many* independent pieces of information, each of *limited* content."¹⁶ The report would have intelligence effort concentrated on the specifics, rather than attempt to gather everything.

Every active radar within range of the reconnaissance vehicle should generate automatically a record of:

(1) The detection of a pulsed signal and the position of the reconnaissance vehicle at the time of detection.

(2) The approximate frequency of the signal (within 10 or 20 percent), for identification of the class of equipment involved.

(3) Approximate true bearing of transmitter. . . .¹⁷

Other things, such as pulse repetition rate and scanning cycle, can be easily obtained. In keeping with the concept of concentrating on the essential items, however, it would be best to neglect the latter in normal reconnaissance activities.

It is obvious that a reconnaissance unit can not accomplish electronic intercept unless the electronic units of the enemy are active. Ferret flights have found that the Soviet early warning (EW) and ground control intercept (GCI) radars have continued to operate against the ferret aircraft as long as the aircraft remained in range, enabling the ferret mission to calibrate the radar completely. If arms inspection agreements are implemented, it is reasonable to expect the USSR to use its radar net to monitor the inspection aircraft. Although there is no assurance that the inspection units will be able to identify all radar installations in the air defense net,

¹⁶ Beacon Hill Report, *Problems of Air Force Intelligence and Reconnaissance* (Secret), Project Lincoln, Massachusetts Institute of Technology, 15 June 1952, p. 44.

¹⁷ Beacon Hill Report, p. 50.

there are checks which can be applied. The US, through its present ELINT operations, has located and identified many early warning and ground control intercept stations in the western and southern USSR, the European Satellite nations, and along the Pacific coast of the USSR and China. Using these previously identified stations as a check would enable the analysts to determine the probability that the Soviets are deliberately silencing some of their radars when inspection aircraft are in the air. Such activity on the part of the Soviets would materially diminish their opportunity for gaining proficiency on the equipment.

Good closeup photographs of the various types of the Soviet radar and communications equipment would be even more valuable in determining the technical characteristics of the equipment.

Aerial photography will reveal many of the installations whether or not the equipment is in use. Even active radar reconnaissance can be used to pinpoint the location of enemy electronics equipment. The Beacon Hill Report considers the ultimate limit of radar resolution:

Low-level reconnaissance of the strip 10 miles wide (5-miles range) should be possible under all conditions except moderate to heavy rain. . . . With an appropriately short pulse, which presents no serious (technical) problem, this would enable a 10-mile-wide map to be recorded in 20-foot by 20-foot elements. A 10-mile square would contain as much detail as a 70 mm film resolving 20 miles per millimeter.¹⁸

When ELINT methods are used in conjunction with photography or with radar mapping as described, there should be no major problem in determining the location and significant characteristics of Soviet air defense radar.

Although it is probable that our ability in ELINT is as good as, or better than, that in other fields of technical intelligence, there continues to be difficulty in obtaining information on new radar equipment being developed and installed in the So-

¹⁸ Beacon Hill Report, p. 135.

viet Bloc. Only recently, one of the first indications that the Soviet Union was re-equipping some of its air defense system with new radar was observation of a great increase of TOKEN radar on the China coast, indicating that the Soviets may have developed something better for their own use. Electronic reconnaissance from ground stations near known Soviet electronics research and development activities and with airborne equipment can easily furnish the US with information about Soviet radar equipment under development.

The opportunities that arms inspection provide for study of Soviet aircraft, missiles, and related bases and facilities have been discussed earlier in this article. The only major element of the air defense system not considered so far is the most difficult — the command and communications system of air defense. Even here the inspection teams can be of assistance — both from the air and from the ground.

Radio communications activities of the enemy units is the most important electromagnetic source of information needed to put together a picture of the immediate strength, deployment, and inventories of the opposing military force. This is true even if we exclude message content.¹⁹

Radio-wave interception, in general, is a way of guarding against technological surprise. We need only recall the antisubmarine campaign of 1942 and 1943, in which we were able to contain the threat solely because the German submarine force was unaware that microwaves were being used against it.²⁰

Photographs of the three groups of equipment in the MOON system of aerial navigation would enable the technical analysts to develop much more accurate estimates of the Soviet capability to navigate over Western Europe, North Africa, and the Middle East.

Arms inspection plans may never become realities, but while they are being considered it is important that attention be

¹⁹ Beacon Hill Report, p. 43.

²⁰ Beacon Hill Report, p. 44.

SECRET

given to the indirect results of such plans as well as to the immediate relation of the plans to disarmament and to the machinery which would be required to implement such inspection systems.

It is popularly believed that the military departments have little knowledge about the Soviet forces, but the true gravity of the situation is only apparent to those who are charged with the development of US forces to counter the Soviet power. Colonel William A. Adams, USAF, reported in 1948 that "It is impossible for us at Strategic Air Command, or at any other level, to plan a comprehensive air campaign without a photographic exploitation of the territory to the east of the Ural Mountains."²¹

In his presentation to the 1955 Reconnaissance Symposium, Lt. Gen. Frank F. Everest, USAF, insisted "We cannot meet our responsibilities, cannot accomplish our tasks in defense of our national security without critical information. Much of this can be obtained only through aerial reconnaissance."²²

With such a pressing need for information which can be obtained, at least in part, under the arms inspection plans, it is highly desirable that those who are negotiating be aware of the intelligence implications of these proposals. If such plans become reality, then the US should be prepared to make the most of the opportunity for intelligence collection that is so presented.

Aerial and ground inspection systems present an excellent opportunity for gathering technical intelligence. The exchange of "military blueprints" would be of material assistance in determining the intent of the enemy and the location of his forces but would not provide the type of information required to determine the characteristics and capabilities of weapons and weapons systems. Although exchange of "blueprints" may provide accurate target information, aerial reconnaissance would be required for verification.

²¹ US Air Force, Strategic Air Command, *Reconnaissance Symposium* (Secret), November 1948.

²² US Air Force, Air University, *Reconnaissance Symposium* (Secret), April 1955.

SECRET

The proposal for military budget reduction and inspection would be of no value for technical purposes, for it would not reveal scientific or technical developments nor the state of military research and development.

Aerial inspection, making use of all types of reconnaissance equipment, would provide vital information on:

- a. Target locations sufficiently accurate for guided missiles, either ballistic or winged, and manned bombers.
- b. Major developments in manufacture of nuclear material, aircraft, and possibly missiles.
- c. Guided missile development and deployment.
- d. Characteristics of aircraft, at least as they begin to become operational.
- e. Air defense radar in particular, and all types of radar in general.

Aerial photography would not always be able to provide the precise photography necessary for technical intelligence purposes. In April 1955 the Day Reconnaissance Seminar Group reported that there is a requirement for a photographic system "for recording highly specific information on relatively few areas to provide detailed information on the development of enemy scientific warfare equipment and techniques." The equipment should "record low contrast objects 1 foot on a side on the ground, these objects to be measured with an accuracy within 5 percent . . . over 90 percent of the total format area."²³

Ground observers will have the opportunity to meet this requirement, at least in part. If a closeup photograph of a radar installation or a missile battery at a known location is desired, the observer will be able to visit and photograph the facility under the proposed plan for freedom of movement of observer teams. The eyes and camera of the ground observer will be his primary means of intelligence collection. However, he can perform operations which the aerial reconnaissance teams would find difficult or impossible. He can observe a fixed location for long periods. He can collect air, stream, or vegetation

²³ US Air Force, Air University, *Reconnaissance Symposium* (Secret), April 1955.

samples from the vicinity of laboratories or factories suspected of being engaged in nuclear, chemical, or biological weapons development or manufacture.

Now consider what the arms inspection operations under consideration would *not* reveal. The number and deployment of nuclear weapons could not be determined. It is unlikely that the Soviet system of "bombing-up" would be revealed, and consequently it would be impossible to determine the time required to get an attack force airborne. Bombing and navigation capabilities of the Soviet Long Range Air Force are likely to remain largely unknown. Although much information about the military equipment used in the air defense system would be forthcoming, the inspection would not enable us to determine the control system or the speed and efficiency of the air defense communications. Many guided missile launching sites may be determined, and an estimate of the quantity and types of missiles produced may become known to the West. However, it is improbable that the characteristics and the quality of Soviet missiles will be determined.

All of these factors are elements required to assess the present Soviet military capabilities. But what about our ability to determine the scientific and military research and development of the Soviet Union? Can the arms inspection methods under study be expected to furnish the ten- to fifteen-year look into the future that is required for the development of our own military equipment? It is apparent that arms inspection will not satisfy this requirement. Although the very act of a carrying out of arms inspection will reveal some aspect of Soviet research and development, little hope should exist that a thorough understanding of the future of Soviet air-atomic capability can be developed. The US must continue to develop its various intelligence efforts against the Soviet Bloc. Furthermore, if arms inspections are established, the US must make use of the opportunities that the operations will provide to develop close liaison between Soviet and Western scientific and technical personnel. Only by developing every opportunity can the US hope to become sufficiently informed on Soviet technical development.

In conclusion, there is a great quantity of intelligence of a military and technical nature, not presently available, which the US could obtain in the event that an arms inspection plan, using aerial and/or ground inspection teams, were to be implemented. To wait for such developments, however, is foolhardy. In the face of the fact of supersonic aircraft and long-range missiles carrying thermonuclear weapons, the intelligence community must redouble its effort to develop new techniques for collecting technical intelligence, whether or not arms inspection proposals become international agreements.

INTELLIGENCE RESEARCH SOME SUGGESTED APPROACHES

Bernard Drell

Research may be divided into two general activities, to collect information or extend knowledge, and to answer particular questions. Intelligence research properly consists of the latter kind. Because the problems of the intelligence community are many, research activity must be focused not only on intelligence problems but also must be directed at targets of highest priority, in order to make the most efficient use of the community's limited manpower and money.

Intelligence questions may range from such narrowly defined topics as how many man-hours it takes to produce a Soviet tank to broad inquiries about the industrial capacity of a satellite nation. Intelligence research may be undertaken for immediate, or current, use; the depth of an obscure harbor, for example, must be ascertained before an invasion, or a study of the economy of a country is called for because it will serve as a guide for answering more specific questions that may arise on short notice.

Even in such broad projects, however, the object of the intelligence research is not encyclopedic information; it must be limited to information that answers questions of intelligence interest. It is essential, therefore, both in planning and conducting intelligence research, that its urgency and its purpose be constantly borne in mind. From these imperatives will stem the interest, incentive, accuracy, and imagination required for creative work in intelligence.

Although intelligence research has much in common with other purposeful research, there is no single, simple technique which will solve all research problems. It may be said with equal truth that no one method is appropriate to all kinds of intelligence research. Techniques and methods must be adapted to the problem, its scope, its urgency, and to the nature of the evidence. It should not be forgotten that the

researcher, himself, is a variable quantity. No two analysts are likely to use the same methods in solving a given problem. Within limits, therefore, research methods must be gauged to the training, background, and interest — the personality — of the intelligence analyst.

Although the intelligence research process is varied, it may be suggested that it has much in common with other research in the social sciences. Any intelligence research project may be broken down into basic operations, according to their role in the project as a whole. These operations may be termed (1) *Project planning*, (2) *Collection of data*, (3) *Analysis of data* (a general term, here), and (4) *Presentation: Writing the report*. Although these operations are not performed entirely in sequence, usually they take place in the order named, allowing, of course, for considerable overlap and a human tendency to back and fill.

These are arbitrary divisions. There is nothing natural or inherent about them, nor for that matter, about dividing the whole process into four parts. Other names might do as well, and undoubtedly more than four skills are used in any given project. The four stages chosen here are merely suggested as convenient divisions for discussion.

Because an intelligence project seeks to find an answer to an intelligence question, it is of prime importance to secure an early understanding of the problem to be investigated.

If the problem is a question from the National Security Council, it probably will be clearly stated in the Terms of Reference put out by the Office of National Estimates. Another kind of problem will have to be formulated internally in terms of projects initiated at or below the divisional levels. In either instance the object is to overcome ignorance in a matter of intelligence importance. To plan the project, then, it is essential to know just what it is that must be learned about the subject in the time available. When the question is understood, it becomes possible to define the scope of the project in terms of a) what is relevant and irrelevant, b) what is known and what must be investigated, and c) the number of man-hours to be allotted to the work.

In order to achieve full understanding of the question at this stage, it is also essential that the analyst think the problem through, going beyond a mere statement of the question. Although such an analysis may appear premature, it is imperative that the problem be mulled over thoroughly for disclosure of its implications and ramifications and that these be formulated in the shape of a preliminary outline of what is desired to be known about the subject.

At first thought, it may seem impossible to outline a project until the research has been completed and the threshold of the writing stage has been reached. When a project is conducted in this manner, however, it tends to veer away from purposeful, sharply focused research to fuzzy shotgun collection characterized by uneven coverage and inefficient allocation of time.

Nevertheless, outlining a project when it is still in its planning stage and before any research has been undertaken on the subject admittedly raises difficulties.

This initial outline presents not all that is known about the subject, but rather all that we wish to know. The analyst can infer, from the mission of his component, the kind of information that will be sought.

This is not to suggest that initial ignorance of a subject is an advantage, but merely that it is not as great a handicap as appears at first glance. An analyst with a technical knowledge of automotive construction, of aircraft factories, or tank factories in the US, in a sense already partially knows what to look for when undertaking a study of the Soviet ability to satisfy requirements for these items.

Naturally the analyst will want to brief himself on what is known about these industries in the USSR. Where, in a new research project, a scholar would turn to a short, general account for a quick survey of the kind that might be found in an encyclopedia, textbook, or technical monograph, so an intelligence analyst has recourse to similar summaries in the intelligence field, such as the appropriate chapter of the National Intelligence Survey, one of the National Intelligence Estimates, or completed intelligence reports on the subject. Occasion-

ally, however, the analyst finds no background reports available, so he must begin his research without the benefit of organized information.

From his background experience, his scanning of general reports on related subjects, and his initial analysis of the problem, the analyst should be able not only to prepare a preliminary outline of questions about the subject, but also to begin to think about the precise kind of data to look for as well as ways of processing the information in order to find answers to the problem.

Having made preliminary plans for a project, the analyst is justifiably eager to begin accumulating data. This impatience is understandable, but it is also an urge that should be restrained until a survey can be made of the amount and kind of information available. In a well-organized research project, the analyst first makes an inventory of accessible information and sets this up in the form of a bibliography or list through which he can then work systematically. The completeness of the inventory depends in turn on whether the project is a basic study or whether it is merely a quick answer to a simple question. If the study is to be exhaustive, then the search for material should be systematic and intensive.

Unlike the academic research worker, the intelligence analyst may draw on a world-wide collection organization. In a sense, he has at his command all the collection resources of the US government as well as of certain other nations. He can also draw upon information possessed by private organizations and independent specialists. Much of the discussion of this article has reference to the CIA facilities, which are available to analysts throughout the intelligence community.

Because the data collected by CIA are great in quantity and growing rapidly, machine methods have been devised to help get information from the mass of data in the CIA Library (a part of the Office of Central Reference — OCR). IBM machines are used to sort the punched cards upon which most documents are coded and books are catalogued.

The Dewey decimal system is embodied in a book entitled *Intelligence Subject Code*, a volume with which all intelligence

analysts are vitally concerned and with which all should be familiar. This book is used in the reference services of CIA, the Air Force, the Signal Corps, and other components of the government. In order to request documents from the Library, the analyst first selects the appropriate numbers from the *Intelligence Subject Code* and requests a tape run on these numbers. The Machine Division of OCR will mechanically sort out the cards that fall within the requested number limits, place the selected cards in an intellofax machine, and send the resultant tape run to the analyst, via the Library. From the tape run the analyst selects those items that pertain specifically to his problem and orders the documents from the Library.

This process seems deceptively simple because it is a mechanistic description; what has been left out is the analyst's ingenuity in selecting the numbers from the code and his ability to identify a likely looking document on the basis of the title alone. In the use of the code, he can rely on expert help from a librarian; but in calling for the documents proper he must either rely on his own perception or order all documents of any possible use.

This, then, is the first step in preparing a bibliography of the information in CIA bearing on the project. This sort of information will often be mostly classified, as opposed to open literature. In some instances, however, it will be found that more valuable information is to be found in the open or unclassified sources than in the classified ones. After checking the CIA Library card run for such open sources, the analyst should then visit the various appropriate departmental libraries and the Library of Congress. A complete list of all the libraries in the area of the District of Columbia, with a description of what they contain, who can use them, where they are, and whether or not they are members of the inter-library loan system — entitled *Library and Reference Facilities in the Area of the District of Columbia*, is available in the CIA Library.

Although the library facilities in the Washington area are extensive, on certain subjects the best specialized libraries are elsewhere in the country. The locations of such special col-

lections can be found by checking the index of the useful list entitled *Special Library Resources* (New York, 4 vols. 1941-47) published by the Special Libraries Association.

This initial effort to locate materials may or may not turn up much pertinent information. In any event, the scanning of card catalogues is only part of the search for sources. On the whole, one will find in these card catalogues references only to books and pamphlets and not to articles in periodicals. The card catalogues generally will be strongest in information about domestic affairs, and the analyst will have only an incidental interest in the US data. It is necessary, therefore, to secure better coverage on pertinent foreign printed sources than exists in library card catalogues. For this the analyst should consult the *Readers Guide to Periodical Literature*.

Those delving into subjects in the areas of economics or politics should check the issues of the *Public Affairs Information Service*. For technical and engineering references, the place to look is in the *Engineering Index*, the *Industrial Arts Index*, or other appropriate guides to books and articles. These guides appear currently and are bound annually. By a patient and ingenious search through such works the analyst can be reasonably certain of learning what unclassified information on his subject published in the US is available.

The *New York Times Index* is an excellent example of a newspaper research source, and other standard sources include the *International Political Science Abstracts* and the *International Bibliography of Economics*. These are just a few of the research aids available in a standard library. The CIA Library includes the *Intelligence Publications Index* (Secret, NoForN), *Selected Reference Aids to Cyrillic Alphabet Materials* CIA/CD (sic) 1952 (Secret), the *Monthly List of Russian Accessions*, and the *East European Accessions List*.

In addition to the CIA Library, OCR includes the Biographic Register (BR), which contains information on foreign scientists, industrialists, and social scientists; the Graphics Register (GR), which maintains files of photographs of intelligence significance and will provide assistance in the use of photographs for intelligence purposes; the Industrial Register (IR),

CONFIDENTIAL

85

which contains information on foreign industries, industrial resources, individual plants, companies, and related research and commercial activities, plus information on ports, power plants, pipe lines, inland waterways, communications, and storage and other facilities; and the Machine Division (MD), which supports the operations of the other divisions.

As a result of this inventory of available materials, the analyst — although he will have collected very little substantive information — will have a valuable checklist of where to go for what. This inventory should also reveal which parts of the project outline can be thoroughly answered and which parts represent gaps in immediately available (that is, in the Washington area) information. At this point he can begin to initiate new requirements and request any needed translations of foreign language material.

Now the analyst can start digging into the information itself, recording it, and placing it in his planned file, where it can be retrieved easily. A part of this recording and filing procedure should be a consideration of the significance of each piece of information and an assignment of a priority to each, so that as the parts are used, the most important information will be retrieved first. (The same consideration should be applied in considering which references to consult first.) Such priority assignment should be a standard practice in intelligence research and analysis, as most projects are scheduled against deadlines.

In building a file of information for a project, it is usually best to work from the general to the specific, to read first the previous reports on the subject as a whole and then to work on into more detailed aspects of the subject, in as logical a sequence as possible. Thus the analyst should seek first to master the history, technology, organization, output, and other pertinent characteristics of an activity, industry, or science from comprehensive, over-all, evaluated intelligence reports before attempting to cope with the mass of unevaluated intelligence reports that will be encountered.

Unfortunately, the intelligence process — which requires specialization and compartmentation and which balances

CONFIDENTIAL

security and efficiency — is not conducive to accuracy. At each step in the process of transmitting information, in translating it from one language to another, and in editing it, errors are likely to creep in and distort the original meaning. For this reason, accuracy is best served when the original document can be incorporated directly into the working file. This also saves the time of the analyst. Of course, this policy must be balanced with the need for filing information by units. Suppose, for example, that the analyst received from FDD a special hundred-page report on the nomenclature of his subject, breaking it down systematically and providing detail on each aspect of it. For the analyst to reduce all of this detailed information to cards for inclusion in a card file would be not only a dubious allocation of scarce time, but also a violation of the principle of accuracy. Even if his files, as set up, provide for incorporation of data, topic by topic, it would be a good idea to preface such a section with a category into which material such as this translation — which cuts across more specific entries — could be placed.

This example, however, is exceptional. More often the analyst may note in a source, a single paragraph dealing with a unified subject. When the item is very short and stated clearly, and when it could not be misconstrued even out of context, it may be appropriate to make a handwritten or typewritten note for the file. Even here it is preferable to quote rather than to paraphrase.

If the item is slightly longer and still deals with one subject, however, accuracy and efficiency both can be achieved by obtaining a copy of the document for clipping. When clipped, the information can then be marked for reference and incorporated in the file without anxiety over whether or not accuracy has been sacrificed in the process.

Clearly there are times when a long document must be paraphrased and condensed into brief notes. The analyst must then make the conversion from the extended statement to a brief, usable account without distortion of meaning or loss of essential information.

It should not be forgotten that the comprehension and reliability of the analyst are not constant qualities. Skilled as he is in a general area, his competence at the beginning of a new project is less than it will be in the later stages of that same project. Early in a project, therefore, he should be careful both to extract from the material all of the pertinent data and to protect himself from unconscious errors in recording data.

A note file is adequate when a balance is achieved between collecting too little and collecting too much. Lest this be construed to mean, "if it is adequate, it is adequate," note that "too little" or "too much" are relative terms and acquire meaning only when applied to the project or measured against the amount of information necessary to answer the intelligence question.

The analyst who makes too few notes will be prone to conclude erroneously, later in the project, that gaps of information exist which preclude a satisfactory completion of the report. And the one who makes too many notes will have difficulty meeting his deadline, will have to condense his material further by making notes on his notes, or may find himself so overwhelmed by information that he loses sight of his mission and writes a disorganized report.

It is equally embarrassing to make notes that later prove to be incomplete because some essential point of fact, such as quantity, place, date, evaluation, or classification, has been omitted. Each note should be scanned for this type of completeness. The time to do this is when making the note, not when the document has passed on for further routing or when an extensive file has been returned to its cabinet.

It should be emphasized that notes should be documented when they are made. Although it may seem onerous, the documenting of notes is an essential step in the intelligence research process. An undocumented note may contain an almost priceless gem of intelligence information. Unless, however, the note can be related to its source, it is useless to the analyst, and of no value in a report. If a note is completely documented, the analyst can assign the proper importance to it based on its source, date, evaluation, and other facts. Such

a note thus contains more meaning than one that is only partially referenced. It permits comparison of information with that contained on other notes and facilitates decisions as to whether to use the information, where to use it, and what weight to assign to it. Finally, it makes possible the use and citation of the information in a report without having to go back to the actual document.

With these principles and methods well in hand, the analyst proceeds with the gathering and filing of his data. He will find that from time to time it is desirable, in the midst of a research project, to pause long enough to survey the status of things. This operation may take the form of skimming through the files to determine the areas in which coverage is complete and those in which information has been coming in slowly. (It will be facilitated if notes are filed when made, or shortly thereafter.)

The prompt filing of material and the periodic review of the files makes one aware, also, of the organization into which the material is falling. This review encourages continuous critical assessment of the organization (and hence of the outline) and makes possible a more logical and finished report structure than would result if notes were filed serially and not organized until the writing stage.

The review should consider both the detailed level, as just indicated, and the project as a whole. Incoming information should be tested against the criterion — given an appropriate methodology — of its utility in answering the intelligence question upon which the project is focused.

Too often the organization of a paper is deferred until after material has been collected and when the pressure to begin writing has mounted to a considerable degree. Countless papers have been organized as they were written. To do this reduces not only the quality of the writing, but also the clarity of the answer to the problem. To avoid this, projects should be thoroughly planned and tentatively outlined during the planning stage and, *as it comes in*, data should be incorporated into a working file. In a well executed project data is not collected at random; it is sought because the analyst has in his

mind at least the glimmering of an idea that this data can be worked over in such a way that it will contribute to the solution of the problem.

It is the manipulation and marshaling of the data that constitutes the methodology of the paper. No one method can be recommended as being suitable for all situations; a method must be adapted to the question and to the available information. In terms of these factors, the method appropriate to any particular project may range from a simple, direct approach to a complicated statistical manipulation. A few possible approaches are suggested.

In terms of efficiency of operation, the natural place to look for the answer to an intelligence question is in the open literature of a country — official census reports, the results of other national surveys, the reports of trade and technical associations, the reports of nationalized institutes and industries, and the various professional journals published. In recent years the Soviet Bloc has resumed the publication of detailed statistical handbooks and yearbooks. In many areas, these publications greatly ease the collection problem of the analyst. They do not, however, include military information, such as tank, aircraft, or artillery production. Analysis has shown that official statistics from the Soviet Bloc are not to be dismissed lightly as Communist propaganda. On the other hand, they should not be accepted uncritically without being checked for internal consistency, consistency with other official data previously released, and agreement with related sources, open and covert.

Care must also be exercised in arriving at a precise understanding of definitions upon which official statistics are based. What, for example, do the data on East German figures on crude steel production include? Close examination and comparison with plant production have revealed that the published figure of crude steel output fails to include a considerable quantity of steel for casting produced from scrap in large machine building plants. Likewise, students of Soviet Bloc national income have pointed out that economic aggregates, such as national income and gross national product, are de-

fined differently in Communist countries than in the Free World and hence must not be compared with official data from the Free World without appropriate adjustments. Thus uncritical and uninformed use of official data is subject to hazards.

Suppose, for example, that the analyst wants to know the answer to a question which is a classified matter in the target country — the production of a military end item, for example. By surpassingly clever use of bibliographic techniques, an analyst may be able to determine precisely what he wants to know. If the USSR is the target country and the information is not overtly published, getting the answer may require a fairly high level of covert penetration. To corroborate the facts, the covert effort would have to be duplicated by a second and independent substantiating report — another operational project.

Where national statistics, either overt or covert, are difficult to come by, attention must often be shifted to the other end of the scale, and directed at the collection of production figures for an institute, product, or region. Finding this type of information requires a painstaking search through technical publications, press, and radio accounts, as well as careful evaluation of covert reports. Even then it is unlikely that the entire picture will be exposed; information may be available on some aspects and not on others. For this reason it is usually necessary to combine over-all approaches with calculations based on less direct indicators of activity.

When total effort in a field is known and the target consists of a segment of that total, then the unknown segment can be computed simply by subtracting production of known items from the total. Again, this method is often applicable in conjunction with other techniques.

When progress in a field has been established on a firm base for a series of years, it is then in order to project, or extrapolate, that trend to ascertain future developments. The reliability of this projection will depend in part on the accuracy of the knowledge of the field and upon whatever variables may come into play in the future.

CONFIDENTIAL

91

If the analyst knows generally the technology of the field within which the project falls, he may be able to make valuable estimates of requirements, schedules, and capabilities. Thus with a sample of Soviet penicillin on hand for laboratory assay, with a knowledge of the growth curves of the strain of penicillin used by the USSR and of the composition of the culture medium, a well-grounded analyst may be able to give a good estimate of Soviet penicillin production.

In economic intelligence numerous correlations exist between inputs and outputs. To a considerable extent coefficients for these correlations are still being established. Where they are known they can be of great help in solving intelligence problems. They may consist of such diverse relationships as kilowatt hours of energy consumed per ton of output, floor space in square feet per employee, or number of motors of subassemblies of a given type per unit of product.

At times a knowledge of one nation's technology helps the analyst to understand the operation and requirements of another's. It is important, of course, that corrections be made for variations in efficiency, when that is possible. At other times such variations may be negligible and will not affect the reliability of the over-all estimate. Because the USSR and the US employ different methods of coal mining, it would not be appropriate to estimate Soviet needs for coal cutters on the basis of US data. Once Soviet production of coal cutters has been estimated, however, the input data for US coal cutters can supply a basis from which calculations can be made, with various adjustments for inputs into equivalent Soviet coal cutters. When reasoning by analogy, as in this output calculation, the starting base can be national estimates, industry-wide figures, plant data, or information on particular models. Such data can be secured from War Production Board files, Munitions Board data, industry consultants, and various intelligence sources.

Whichever method is used, there is great opportunity for an imaginative approach to the problem. The methods discussed are examples of the many research approaches. In any project

CONFIDENTIAL

many combinations of method are in order. Indeed, it is highly desirable to check any given method by another and independent procedure.

An intelligence report should be thought of as the answer to an intelligence problem. In this sense it should raise the question, present the answer, indicate the gaps as a guide to collection, explain the method used in achieving the answer, and document the discussion so that any reader may conduct an independent check of the results.

Although some sections (such as organizational or installation summaries) are best written as the research on that portion of the total problem is completed so that the information will be fresh in the mind of the writer, it may be argued that it is preferable on the whole to defer the bulk of the writing until most of the material has been collected and digested. The analyst gains in comprehension of the subject as he collects and organizes his material. He is therefore more likely to do a better job if he defers writing until he finds that the incoming material is beginning to be repetitious and unrewarding. By writing during the latter part of the period he also has the advantage of having organized and reorganized his files and of having gone over them several times.

If the files are well organized they will correspond fairly closely to the revised project outline. When the files are well organized it should also be possible for the analyst to place at his finger tips most of the information he needs to write any given section of his report. Although he will also need to have recourse to certain general information, it will not be necessary for him to attempt to assimilate during the writing stage numerous undigested reports covering a number of different subjects. If he has used the unit note system and has organized his material well, his files will be in logical sequence and he can arrange his individual notes on any particular part of the subject in the order in which that information is to appear in the text of his paper.

When reports include quantitative information, such as requirements, production, and input figures, it is good policy to work up all tables and graphs before writing the text, rather

than during the writing. If the tables are prepared in advance and if each table is carefully documented at that time, the writer will have the advantage of greater perspective; he will be able to simplify his text by references to the tables, and in addition he can greatly reduce the amount of long and repetitive documentation, again by referring to the tables. From every point of view it is wise to prepare the tables and graphs in advance of writing the text.

The writer should make clear to the reader the nature of the problem to which the report is addressed, and he should indicate what is included and what is excluded. The analyst must define terms the first time that each is used, then use the terms consistently. He should not introduce technical synonyms without indicating with what they are synonymous. Table headings should be consistent with one another and with the text.

It is important to anticipate, insofar as is possible, the character of the group to which the paper is addressed. Readers may be various kinds of specialists. At the same time that a report must prove instructive to fellow specialists it must also be understandable by persons whose interests are more general.

Because it is the practice of most members of the intelligence community to place citations in an appendix at the end of a report, footnotes are reserved for parenthetical and explanatory remarks that could interrupt the flow of thought of the body of the text.

The purpose of documentation is utility rather than an exhibition of scholarship. A good working rule to follow is that citations must permit the reader to make an independent check of factual statements. Therefore, each separate fact that is not a matter of common knowledge presented should ordinarily be buttressed by a documentary citation. Books should be cited by author, title, date, and page (publisher optional, a matter for the production staff of the analyst's component). Articles in periodicals should show in addition the name of the journal. Intelligence documents should be identified by the symbols assigned by the issuing office, which

will therefore bear meaning throughout the intelligence community, rather than merely by the accession number of the component library. In general, documentation should disclose to the reader the same types of information as suggested in the section on data gathering and should include date of source, date of information, classification, and evaluation; these should be presented in the form required by the production (editorial or publications) staff.

In addition to the standard list of references in each report, it is sometimes useful to provide the reader with a critical bibliography. In this section each of the major sources used in answering the intelligence question should be evaluated in a few words.

The method used in the body of the text to solve the intelligence problem should be made explicit enough so that the reader may follow the logic as he proceeds through the paper. If this is done in the text, then the appendix section on methodology may consist of a brief resume of the methods employed.

It is vitally important to attach to the report the analyst's assessment of the gaps in intelligence. These gaps will serve as a basis for levying additional requirements. The gaps also will indicate to field recipients of the report where collection effort should be concentrated.

Whereas it is important that the research analyst develop a high degree of interest in his project, in order both to motivate himself and to be able to prepare a good report, it is equally important that he maintain an attitude of detachment. Although the information contained in the report may contribute to the making of policy, it is neither the analyst's responsibility nor his mission to make policy.

It is equally important to retain a sense of objectivity toward the problem. The analyst should explore the various hypotheses he develops in the course of his work. He should follow the evidence where it leads him. If necessary he must make choices, evaluations, and judgments about which data are factual and which are false. He must not become enamored of

any theory or position to the extent of losing his sense of judgment. He should regard himself as a scientist who has worked with a problem, considered the evidence, drawn a conclusion, and presented both the evidence and the conclusion.

Then he should circulate his report for revision and criticism by his fellow analysts. He is not expected to be infallible, and his answer can be no more than the best possible at that time.

TO AN ELUSIVE MUSE

by

[REDACTED]

Had we but world enough and time,
To meditate would be no crime.
We could write essays, to endure,
For an Intelligence Literature.

But at my back I always hear
The roar of deadlines drawing near.
And yonder all before us lie
Targets of great priority.

So let us assemble all our zest,
And all our thoughts — at least the best.
The contribution, however small,
Is better than no thoughts at all.

* With appropriate apologies to Andrew Marvell.

25X1

THE ROLE OF INTERINDUSTRY STUDIES IN ECONOMIC INTELLIGENCE

Robert Loring Allen

Interindustry economics, or, as it has sometimes been called, input-output analysis, is an organizational framework and tool of analysis for studying an economic system quantitatively, rigorously, and systematically. The techniques permit analysis of an economy as a whole and of individual products and industries simultaneously. Interindustry research must necessarily be regarded as long-run cumulative research. The requirements for data are large. In many cases intelligence sources cannot provide much of the information needed. Only a slow and painstaking process of continuous research can fill the gaps. In the short run, interindustry studies contribute mainly a system or framework in which many types of quantitative economic information can be related to one another. In the long run, as the data improve and accumulate, it will be possible to undertake the solution of complicated problems, as, for example, to estimate the economic consequences of given sets of wartime demands on an economy.

The beginning of analysis with interindustry techniques is a detailed description of the economic system for an annual period. The goods and services produced in the economy are aggregated into sectors. The description indicates the transactions (purchases and sales) among these sectors. Any given sector is described both in terms of its purchases from each of the other sectors — the input, or cost, structure — and its sales to each of the other sectors — the use, or consumption, pattern. For the whole economy, all the transactions which took place in the given year are shown in a double-entry accounting tabulation organized so that along the rows the use patterns of the sectors are arrayed and in the columns the input structures of the sectors are listed. The interindustry tabulation is the basic information with which analysis is performed.

MORI/HRP PAGES 97-117

CONFIDENTIAL

Analysis can be conducted either by regarding the economy as a closed circular system in which the output of all sectors is consumed by other sectors or by distinguishing between two types of sectors in order to determine the impact of changes in one group of sectors on the other sectors and on total output. The open interindustry system has been the most useful both because the assumptions it is necessary to make more nearly approach the facts than is the case with the closed system and because open interindustry system analysis offers the possibility of examining a wide range of problems concerning changes in demand and technical structure.

The open interindustry system distinguishes between interindustry sectors and final demand sectors. The interindustry sectors are engaged primarily in buying from other sectors and selling to other sectors. The food-processing, chemicals, and transportation sectors are examples. These sectors buy raw materials, electric power, fuel, and other inputs and in turn sell their output to many other industries and to households. The final demand sectors consume the output of other sectors but do not produce a processed output which is sold to any other sector. Sectors usually considered to be final demand sectors are household consumption, foreign trade, government (including military) expenditures, and capital formation.

The amount of research effort, the quality and quantity of data, the objective of research, and the technological and decision-making processes of the sectors condition the decision to place a sector in final demand. For the interindustry sectors, rigorous analysis assumes fixed technical interrelationships between inputs and outputs. The fact that such assumptions are not made for final demand sectors, in which constancy of technical interrelationships is seldom characteristic, implies that an open interindustry system is most suitable for analytical purposes.

The breakdown of transactions within the economy and the nature of the interrelationships may be of varying degrees of complexity. The three major transactions categories are (1) current account, (2) capital account, and (3) interregional transactions. Technical interrelationships are frequently as-

CONFIDENTIAL

CONFIDENTIAL

99

sumed to be constant. If data are available, however, linear, discontinuous, or curvilinear functions can be used.

Any given transaction between one sector and another may be divided into its components and tabulated along with the total. A purchase designed to meet the current operating needs of the buyer is usually the largest proportion of the total purchase by a sector. In much of interindustry analysis this transaction is the only one taken into account as a part of the interindustry system. Another segment of a purchase by a sector is that which is on capital account — purchases designed to add to capacity or to increase inventory. When analysis is performed using the relatively simple current transaction interindustry system, capital transactions for all sectors are aggregated into separate capital formation and inventory sectors, which are usually placed in final demand. When capital transactions are identified for each purchaser from each seller, then a double interindustry system results. The double system is called the dynamic interindustry system.

Another breakdown of transactions is to specify the region originating and the region receiving for every purchase and sale. Such an interregional interindustry system amounts to splitting the national interindustry tabulations into regional components and indicating not only the interindustry transactions but also the interspatial transactions.

The more complicated the interindustry systems become, the more rigorous become the assumptions which it is necessary to make to perform analysis. In the simple current transactions system it is usually assumed only that the relationships between inputs and outputs for all interindustry sectors are known technical functions. With a dynamic system it is assumed, in addition, that the relationships between capital inputs and outputs at capacity are known technical functions. An interregional system involves the assumption that there is a known technical relationship between inputs and outputs region by region.

The technical interrelationships are usually assumed to be fixed and constant. It is not analytically or computationally necessary that technical coefficients be constant. The func-

CONFIDENTIAL

tions may be linear, discontinuous, or curvilinear. The use of such functions, however, implies that data exist to support the described relationship. It is seldom that such data are available. Most analysis, therefore, has been driven back upon the constant coefficient assumption.

Despite the possibility of undertaking quite intricate analysis with dynamic and interregional systems and notwithstanding the analytical feasibility of flexible assumptions about technical interrelationships, the work which has been done in interindustry analysis has in fact been largely confined to the more simple current transactions system, in which the final demand sectors correspond roughly to gross national product, which includes household consumption, government expenditures, and capital formation.

The type of analysis which can be performed with an open interindustry system is called the analysis of parametric change. Parameter is a mathematical term denoting in this case a set of values derived from a hypothetical situation. It is the purpose of analysis with an open interindustry system to trace through the economy the consequences corresponding to a given set of values. The parameters in interindustry analysis are (1) sales to final demand and (2) interrelationships among interindustry sectors embodied in the description of the structure of the economy. Changes in these elements have economic impact far beyond the immediate change.

The interdependence of modern economies, as depicted in interindustry tabulations, is such that any change in the structure or in final demand initiates a complicated round of indirect effects. Interindustry technique is oriented toward determining quantitatively the magnitude of indirect effects on the output of all sectors.

An increase of \$1 million in final demand for aluminum products, for instance, results in an increased demand for all inputs feeding into that sector. Aside from labor and taxes, which are charges against final demand, these inputs are bauxite, alumina, electric power, chemicals, metals, and transportation. Since demand for aluminum is up, the supply sectors must expand operations and hence demand more in-

puts from their suppliers, and so on. These reciprocal and indirect effects are frequently small after the first round, but the cumulation of the second, third, and fourth rounds, and so on, amounts to a significant proportion of the total indirect effects. From an initial increase in final demand of \$1 million worth of aluminum products there results an industrial expansion of \$2.5 million, or indirect effects of \$1.5 million. The total expansion is divided as follows:

The Impact of \$1 Million Worth of Aluminum Product
Deliveries to Final Demand

	In Thousands of Dollars
Steel Works and Rolling Mills	10
Primary Metals	16
Copper Rolling and Drawing	20
Nonferrous Metal Rolling	22
Primary Copper	25
Metal Mining	27
Coal and Coke	30
Wholesale Trade	37
Railroads	39
Primary Lead and Zinc	43
Petroleum Products and Crude Petroleum	47
Electric Light and Power	64
Industrial Chemicals	111
Secondary Nonferrous Metals	252
Primary Aluminum	479
Aluminum Rolling and Drawing	1,097
Other	181

Like changes in final demand, changes in technical relationships start a round of indirect effects, resulting in a different level of output for all sectors. A comparison of sector output under the two situations indicates what effect the structural change has had.

It also is possible to interpose side conditions and determine the consequences of the economy's operations under these conditions. Assume that the outputs of all sectors have been computed under given conditions. Then it may be postulated that a given sector's output is a specific amount. With the new schedule of outputs, the same as before except for the one sec-

tor, a new final demand may be determined. In addition, different magnitudes and mixes for final demand may be postulated, all consistent with a specific output for the given sector but with other sector outputs free to change.

Within the framework of analysis of parametric change (and side conditions), it is possible to deal not only with the structure on current account but also on capital account and to take into consideration other more complicated phenomena. To do so multiplies the data requirements, requires new assumptions, and introduces time explicitly into the analysis. While more complex in data, analysis, and interpretation, the results are in finer detail and are more precise and reveal aspects not discernible in simpler analysis.

Underlying all the analysis, indeed all analysis, is a logical system. In interindustry analysis the logical system can be framed in mathematical terms. The mechanism of analysis follows this mathematical structure closely. The precise form of analytical process is not uniform, and there is no "grand solution" which solves all problems. It is true that when the assumptions are decided upon, when all the data are in, and when no changes are foreseen, the data can be manipulated mathematically and the solution to the system (or systems) of equations implied by the interindustry structure can be obtained. This is a particularly costly procedure, and it freezes the data, classification system, and assumptions, so that even a small change involves a repetition of the expensive solution. The usual process makes possible more flexibility in data changes (including estimates of temporal and scale changes in structure) and in the application of limiting assumptions, and it allows for detailed examination of specific groups of sectors without much attention to other sectors. The process is called iteration, but the procedure cannot be spelled out in detail, since it changes from problem to problem. In general, iteration involves tracing a given impact through the economy by hand rather than mechanically, starting with the initial change in a sector's output, determining its impact on the sector's suppliers, then the impact on the sectors supplying

these suppliers and the sectors supplying the second-round suppliers until the indirect effects are negligible.

It must be remembered that the technique is not in itself a predictive device. The predictive element enters through the parametric changes or side conditions which are imposed on the economy. The analysis performs the function of taking these predictions and converting them into predictions of a different type. It is a vehicle for completing conditional statements of the form: "If X, then Y." The "X" is a prediction about a change in final demand, a structural change, on a side condition. "Then" is the analytical framework by which it is possible to derive conclusion "Y," which is also a prediction. "Y" is a schedule of sector outputs, to be compared with previous outputs determined before "X" was specified. The technique simply carries the prediction along and reveals implications that are not clearly obvious. Since the analysis embodies information about the economy, it influences the derived prediction "Y." In any event, however, if "X" is an inaccurate forecast, then "Y" will inevitably be wrong.

Grist for the interindustry analysis mill is information as to (1) the magnitude of transactions (purchases or sales) among the sectors of the economy and (2) the technical interrelationships (input coefficients) among the sectors of the economy. Transactions data can be viewed as coming from two sets of books. One set of books records all of the purchases of each sector from each of the other sectors. The other set of books indicates all of the sales of each sector to each other sector. The two sets duplicate each other. A complete record of sales is also a complete record of purchases. The technical data, showing intersector relationships, consist of scattered information derived from engineering analysis. In practice, however, sectors of the economy do not keep books, data are scarce, and the information needed for interindustry analysis is limited and difficult to obtain.

Generally, there are three sources which form the empirical basis for interindustry analysis: (1) statistical records, (2) engineering and technical data, and (3) information derived from samples.

Statistical record information is the most important. In the US and many other countries, such data are based ultimately upon records kept by individual firms. The data are compiled and made available through census and survey reports (*Census of Manufactures, Mineral Yearbook*, and others in the US), publications of trade and industrial associations, and directly from the production and accounting statements of the firm.

Engineering and technical data are available in many published engineering analyses to be found in textbooks, manuals, and specialized periodicals. It is possible in many cases to undertake research investigations making use of engineering methods to develop information on industrial interrelationships.

Techniques of sampling make it possible, by interviews and questionnaires, to obtain information about the whole from limited data about its parts. Samples of recorded information, where the whole body of data is large, have also proved useful.

The three principal empirical sources provide the underlying data required to piece together a complete quantitative description of the structure of the economy. The sources of data are not independent, and none by itself is adequate. They combine to form the description of economic structure on which subsequent analysis is based.

The data required for interindustry studies are more detailed than the data needed for most economic analysis. The minute detail of data for interindustry purposes gives rise to a greater chance for error. Much economic analysis makes use of more highly aggregated data, in which small errors are canceled out, whereas in interindustry analysis every error is fully reflected in the results. In other economic analysis, greater reliability also can be achieved because more attention can be given to each part of aggregated data.

The data used in interindustry work have not been notably accurate. Census information, sampling, and some engineering coefficients have gone into the construction of existing interindustry tabulations. Despite the fact that a great

amount of data has been accumulated and that competent analysts have been working with the data over a period of years, there is still much to be desired. Weaknesses in data and lack of data have been the major stumbling blocks to successful analysis.

One of the most important analytical uses of interindustry studies is as a study of the implications of changes in external demands on the economy. These changes are based ultimately on peace or war strategy and tactics, technological innovations, weapons systems and defense measures, and decisions of investors and consumers. These considerations must be reduced to quantitative economic terms which are consistent with the description of economic and industrial structure. The data involved in hypothetical changes are no less important than the data on economic structure, although the former are frequently neglected. Estimates and, often, guesses substitute for a careful derivation of the economic quantities implied in a change in strategy. If the data specifying the change are not accurate, the conclusions will be amiss.

The uses of interindustry analysis have already been implied in the types of analysis which can be undertaken. The great single analytical use is the determination of indirect effects of a change in final demand, sector output, or the structure of the economy, or in some combination of these. A knowledge of these facts is useful not only in itself but also as an aid in the analysis of the operation of the economy.

Several broad classes of uses may be enumerated: (1) national security, (2) national welfare, (3) technological innovation, (4) market and sales research, and (5) economic intelligence. In all of the uses, variations and combinations of types of analysis can be used.

In addition to the analytical uses mentioned above, interindustry studies provide a valuable consistency check and confirmation for estimates derived from national accounts (such as industrial production indexes and gross national product) and are a starting point for analysis along other lines or of separate sectors. These auxiliary analytical uses are in some cases as valuable as the analysis of parametric change. For

instance, analysis of the relationship between the construction industry and other industries in the US has revealed serious errors in data on construction activity.

The organizational system implied in interindustry analysis is one of its most significant contributions. The use of a detailed coded classification system in which each sector is rigorously defined makes it possible to organize the data, documentation, and methods of estimation in an orderly manner and provides a means both for continual accretion to data and for checking their consistency on a continuing basis.

The limitations of any technique of analysis result from (1) failure of assumptions to approximate actual conditions, (2) inadequate or improper formulation of the hypothesis, (3) weakness in and lack of data, (4) errors in inference, and (5) inaccurate and inadequate interpretation of the results.

Economic analysis has advanced to the point where logical flaws in inference are rare. The basic formulation of the hypothesis in interindustry analysis is sound. Granting its assumptions, interindustry analysis has been demonstrated to be logically accurate. Even so, however, it can be misused, and care must be exercised to see that the formulation is correct and the inferences are carefully drawn.

The other limitations, those arising from assumptions, data, and interpretation, impose a heavy obligation on those undertaking the analysis. The limitations are such that no precise statement can be made as to the magnitude of error introduced by any of them separately or by the three combined. Generalization as to direction and magnitude of error cannot be made. If a datum is wrong, it is reflected in the results. If an assumption is inaccurate, the conclusions will be biased. If an interpretation is not appropriate, the purpose of the analysis is defeated. Precisely the same conditions obtain for any other form of analysis. If there is a difference between interindustry and any other kind of analysis in this respect, it results from the facts (1) that the assumptions are more specific and comprehensive, (2) that more detailed data are involved, and (3) that interpretation is more complex. Each of these may allow error to intrude.

CONFIDENTIAL

107

Two particular considerations are especially troublesome. One is the frequent assumption that the input per unit output is fixed for all ranges of output. The other is the possibility that the errors in data are so large that they are as large as, or larger than, the indirect effects which are the major reason for undertaking the analysis in the first place. These limitations cannot be dismissed and must be constantly kept in mind. Extreme care must be maintained to see that the limiting assumptions, especially those involving fixed coefficients, are handled so that conclusions are not impaired. The process of iteration mitigates in some degree the fixed coefficient assumptions, since by means of this process the coefficients may be changed to reflect temporal, scalar, and structural changes. Even so, analysis necessarily proceeds on the basis of assumed technological rigidities which are frequently at odds with actual events, and the limitation must always be considered. Data weaknesses are often so great that one has no confidence that a particular indirect effect may be twice as much or only half that resulting from analysis. The errors may be greater than the indirect effects. The hazard is increased by the fact that it is not possible to determine where weaknesses in data have vitiated the results. The data are intermingled to such an extent that it is almost impossible to untangle them and find where a poor datum has influenced the results adversely. Nothing can substitute for data. Where data are weak or are lacking, the results of any analysis based upon them are correspondingly weakened. There are no "tricks" to get around this limitation. Only data improvement through arduous and assiduous research can raise the level of analysis.

It is still too early to offer a definitive evaluation of inter-industry techniques. No one questions that interindustry analysis has some capabilities not possessed by other forms of analysis; that it is a flexible and powerful tool of economic analysis, and that, used judiciously, it is a valuable analytic framework for many quantitative economic problems. So far, however, interindustry analysis cannot be said to have been tested and proved as an accurate predictive device in the comprehensive detail which it implies.

CONFIDENTIAL

In a literal sense, interindustry analysis cannot be "tested." It can be compared, and its consistency can be checked internally. Prediction resulting from analysis can be compared with realized results, but this operation tests the techniques only in part, since the real predictive element is apart — that is, independent of the analytical technique.

The basis for judgment of analytical results is the correspondence of the data with the facts and the correspondence of the assumptions with the operational procedures. When these conditions hold, analytical results can be counted upon as reliable. "Good" and "bad" are misnomers when applied to internally consistent theoretical frameworks. Such frameworks may be useful or not useful for purposes of solving particular research problems. A tentative favorable evaluation can be given interindustry analysis.

Economic intelligence data having a bearing on the operations of the economy of foreign powers are of three general kinds: direct intelligence, derived intelligence, and analogous data.

Direct economic intelligence data are relatively scarce. Two kinds of direct intelligence are available. The first consists of official statements, and the second is classified information obtained from observation, documents, and other sources. Both of these kinds of data are spotty and inadequate. In addition, the data are of uneven quality and reliability.

Derived intelligence is that information which can be inferred from what is known directly. The basis of the derivation may be the complementarity of industrial products, technology, or many other situations in which an unknown quantity may be deduced from known quantities.

Analogous information is that body of data known and available for some country other than the foreign power under study which can be used to fill gaps in direct and derived intelligence. Information concerning the US economy, because of its abundance and ease of acquisition, has become the standard analogy.

Any research effort, including interindustry research, must necessarily make use of all three kinds of data and data from

CONFIDENTIAL

109

all sources. The combination cannot be known in advance. Ideally, direct intelligence should be the empirical backbone of any research, with derived intelligence providing the primary support data. Analogous information, if used at all, should be used sparingly and only to fill gaps which must necessarily be filled.

In interindustry research, because of the detail required, the weighting of various kinds of data is often quite the opposite of the ideal. In order to complete a systematic study of the economic structure of the USSR, it is necessary to borrow extensively from US information on technological interrelationships. Direct intelligence and derived intelligence are important in establishing the control totals and for some of the estimates of inputs and allocations.

At the very best the data used in interindustry research are of questionable reliability. In some cases it is possible to assign error limits for individual figures, such as the production of a single product. But when this estimate is aggregated with other such figures having differing reliability and with some data on US industry, it becomes difficult to assess the reliability of the final figure.

Weaknesses in data and lack of data are the most serious problems in interindustry analysis of foreign powers. Accurate data are mixed with the less accurate, and the final tabulation, because of aggregation and forcing to fit the control totals, has a mixed quality without any way to identify the more from the less reliable.

Since the technique is oriented to revealing indirect effects, the data weaknesses may result in a situation in which the error limits are as much as, or greater than, the indicated effect. In this case the actual indirect effect may be half or twice as much as that indicated. There is no way out of the dilemma. The deleterious effects of inadequate data can be mitigated in some measure. The only satisfactory remedy is to raise the level of confidence in the data by continuous research.

Interindustry research serves several important uses in economic intelligence. Not the least among these uses is the

CONFIDENTIAL

CONFIDENTIAL

direct use of the data in industry and product description. The cost structure and use pattern of an individual product are an integral part of interindustry analysis, and they are also of considerable intelligence value in and of themselves. Alone or in combination with other data, interindustry tabulations can form the frame of reference for analysis of products, product groups, and large sectors of the economy.

Nearly all sector and product studies have as a part of their research effort the estimate of output, of some critical inputs, of major end uses of the item, and of possible substitutes. These data are substantially the same as those needed in interindustry analysis. Hence a double purpose is served in working up these data: direct use in sector studies and use as a part of interindustry studies.

The most significant area of analysis is that of determining the implications of changes in the economy which affect the sector outputs. A parameter is an element in the economy which is fixed for any postulated situation but which may change as the postulated situation changes. The parameters are (a) allocation of sector outputs to final demand, (b) the input-output coefficient for particular sectors, and, in special cases, (c) the output of specific sectors. These three elements are fixed for any given time period under a given set of conditions. Analysis proceeds on the basis of postulating changes in any one of them and working out the implication of these postulated changes.

There are innumerable examples of changes in final demand. From the point of view of economic intelligence, the most important examples are analyses of mobilization and war demands to determine the capability of a foreign power to support the demands of such action. Interindustry techniques are particularly valuable for such an evaluation, since this type of analysis is explicitly designed to bring out the indirect requirements of a military program and economic mobilization for war. For instance, a direct requirement for aluminum products by the military services might be easily within the economy's capabilities. But in order to attain the higher level of demand, 150 percent more aluminum products are required

CONFIDENTIAL

CONFIDENTIAL

111

and other vital sectors have a heavy expansion burden placed upon them. Levy of a complete schedule of mobilization and war requirements resulting from the expansion of supporting sectors of the economy may make the difference between the ability of the economy to meet the new demands or the necessity of cutting back important sectors.

The analysis of mobilization and war demands inserts a new element of uncertainty. The data on direct requirements, which become a part of final demand, and data on cutbacks and shifts in consumption and investment are hypothetical. But these data must reflect accurately the postulated conditions, or the analysis becomes a simple exercise in logic. The demands of the war machine must be quantified and tabulated in terms of the sectors of the economy analyzed. This involves a conversion from specific end products, such as tanks and aircraft, into steel and aluminum products. The consumption sector must be analyzed to determine the extent of cutbacks which it can endure. The composition of the investment sector will shift, and it may be reduced. The demands of these sectors must be quantified. When all of the relevant data are assembled, they may be analyzed with interindustry techniques.

The implication of the new final demands may be traced through by the iteration process, singly and/or collectively. As a result of the new demands, new direct plus new indirect requirements must be met sector by sector. These new required outputs must then be matched with independent intelligence estimates of maximum output and capacity of each sector. These estimates inject another element of error which can vitiate the results of the analysis.

A single estimate for mobilization and war demands is not sufficient. Several sets of hypothetical final demands can be analyzed and their implications traced. Each set is presumed to represent different circumstances. In this way an array of estimates of capabilities can be made.

The elements of strength in interindustry analysis of mobilization and war programs lie in its ability to determine indirect requirements for each sector of the economy, thus showing the

CONFIDENTIAL

CONFIDENTIAL

total impact of demand. The weakness of interindustry analysis lies primarily in its requirements for data. The data which form the basic structure of the economy may well be subject to considerable error. Military, investment, and consumer demand cannot be determined accurately in many cases. In the verification procedure, independent estimates of capacity may be in error. Errors introduced by the data may be so great as to undo the benefits to be derived from the calculation of indirect effects. No precise assessment of reliability is possible; only a gradual improvement of the data can be counted upon to improve reliability and reduce uncertainty.

Within the framework of interindustry analysis it is possible, given the data, to become much more sophisticated than is indicated above. For instance, a flow interindustry system can be coupled to a consumption-investment-military final demand. Using this basic framework, the new final demand allocations can be fed in by quarters and direct and indirect requirements can be calculated by quarters. Proper accounting can be made for lead times by this process. Furthermore, by expanding the simple flow system into a flow and capital-capacity system it is possible to bring the capital requirements explicitly into consideration. Interregional transactions can also be considered. Both require additional data and additional assumptions. At the present time, refinement of the flow (or current transaction) interindustry system for intelligence purposes is not practicable.

A second area of analysis is the problem of interdiction. The foreign trade transactions of the economy are generally considered a part of final demand. Elimination of imports and exports in whole or in part constitutes interdiction; but, since they are in final demand, the implications for the rest of the economy may be traced out as indicated above. Another use, perhaps more important for the intelligence community, is that of determining the effects of air damage on the economy. An air strike would reduce capacity and hence output in many sectors. By fixing the output of those sectors which have been damaged at a specific level and treating the other sector outputs as fixed at the same level as before the air strike,

CONFIDENTIAL

CONFIDENTIAL

113

the deliveries to final demand can be determined. This set of deliveries to final demand can then be matched with a set of deliveries to final demand required under postulated conditions. Several final demands can be determined. The output of sectors not damaged in the strike would readjust to the new conditions. The interdiction problem gives rise to innumerable solutions, and no single solution has any more merit than another, since there are many possible ways to adjust to a reduction in output for one or more sectors.

Because of the lack of a unique solution, the interpretation of results of an analysis of interdiction is especially difficult. The limitations of data are another serious obstacle to this type of analysis. Even so, the interdependence of the economy makes it important that interdiction problems be analyzed by techniques in which this characteristic is explicit. For instance, suppose damage to the aluminum products sector reduced output by 50 percent. If the interindustrial requirements are 50 percent or more, there will be no deliveries to final demand unless sector outputs are reshuffled so that aluminum-demanding interindustry sectors reduce their output and hence their consumption of aluminum products. Only with a general interdependence schema is it possible to determine the full impact of interdiction.

The third area of analysis is the consideration of structural change. Although this problem is conceptually separate, it is in fact usually coupled with changes in final demand and interdiction. The basic descriptive data — the input per unit output for all sectors — are usually assumed to be fixed for analytical purposes. The coefficients are presumed to reflect technological necessity, and it is on this assumption that most analysis, including that discussed above, is based. Using the iterative process, however, it is not necessary to adhere slavishly to this assumption. The coefficients may be changed to reflect the changed conditions.

The analysis of structural change, whether as a problem in itself or as a part of the analysis of war or mobilization or interdiction, implies that there are data concerning such structural changes. In reality this is seldom the case, for most

CONFIDENTIAL

CONFIDENTIAL

of the structural changes are hypothetical with an empirical base limited to analogous information about the US economic structure. Despite this, structural change, however it arises, is of sufficient magnitude that it must be taken into account.

The three types of analysis collectively would represent the ideal analysis of capabilities. For instance, in a hypothetical war situation the economy must bear the demands of mobilization and combat and at the same time sustain foreign trade interdiction, substantial air damage, and loss (or gain) of territory. While adjusting to these severe conditions, the economy would undergo a series of structural changes. Realistic postulates for all three circumstances and a reliable structure of the economy would make possible more detailed estimates of capabilities than heretofore possible.

A number of ancillary analytical purposes can also be served by interindustry studies. Analysis by means of national aggregates also suffers from weak and insufficient data, and interindustry studies offer an independent method of building up these national aggregates. The relationship between particular production estimates and aggregates has been incompletely explored, and interindustry analysis offers some hope for the integration of indicators with aggregative analysis.

Interindustry analysis, expressed in a numeraire, is an opportunity for a systematic study of prices and the relationship of prices to real costs. Such cost analysis is valuable not only in that it points to the drain of a given sector on the allocation of materials to alternative uses but also as a weighting system for the construction of index numbers for the economy as a whole and for various components.

No precise outline can be made of all the ancillary analytical uses of interindustry studies. Many such uses are confirmatory in nature, and they tend to buttress analysis of different kinds by providing both a confirmation of results and data from a new source. Other analytical uses, such as examination of prices and costs, break new ground. It is quite possible that the ancillary analytical uses will prove, at least in the

CONFIDENTIAL

CONFIDENTIAL

115

short run, much more valuable than the direct analytical application for which interindustry studies are specifically designed.

While the ultimate aim of interindustry studies is analysis, there are within the process many benefits to be derived by looking at the economy as a double entry accounting system and organizing the data in such a manner that economic interdependence is revealed.

One of the most significant of these organizational uses is its educational value. In a research effort organized largely along functional lines it is all too easy to concentrate upon particular products and industries to the relative neglect of the over-all economy. The interindustry approach, by putting the economy and all its components into perspective, enables one to grasp details simultaneously with the over-all situation. At a glance the complicated industrial interrelationships are revealed, while at the same time the over-all functioning of the economy can be comprehended.

Since interindustry analysis depends upon a cross referencing of costs and shipments of each sector and its components, the approach naturally leads to a filing system in which all of the information about the economy can be conveniently and logically placed. The interindustry tabulation itself is, in fact, a filing system. Behind the tabulation lies a more complicated set of files which encompasses all relevant data, such as prices, production (in heterogeneous units), technical interrelationships, cost and shipment data, and other such information.

The interindustry file is not static; it is a constantly growing, changing compilation of data. It is arranged in such a manner that there are continual accretions to the base fund of knowledge of the structure of the economy. New data can be added so that they have an immediate impact on the final tabulation; better data replace the old, and more or less comprehensive information fits into the filing system in such a way that the improvement in results is immediate. This implies that no interindustry tabulation is final. For a specific purpose, a tabulation can be drawn out of the files, assembled,

CONFIDENTIAL

reconciled, and used. At another time, for another purpose, another tabulation can be developed in the same manner. Thus the interindustry file, a continuing and gradually improving body of data, stands ready on short notice to support a capabilities estimate with the latest data available.

The filing system implied in the interindustry approach makes possible another important organizational use. This is in the testing of the reliability of data and checking their consistency. When the data have been assembled, it is possible to evaluate their reliability by comparing them with other data. Every sale of a product is also a cost to some sector, and every input is a part of a sector's output. Hence the data can be checked and cross-checked. Data which are inconsistent can be weeded out, and the general level of reliability can be raised. New information can be compared with existing data, and the relative merits of each can be assessed.

Finally, the interindustry approach provides a guide to further research not only along interindustry lines but also in other methods. Gaps in the data can be spotted readily, and steps can be taken to remedy them. If price information for a particular group of products, or production data for some sector, or any other information is needed, the technique, backed by its organizational system, makes it possible to detect the missing elements. It may become clear, because of weakness of data, that some types of analysis cannot be undertaken but that other kinds of analysis can be profitably expanded or that other techniques should be exploited.

These applications of interindustry studies — direct use of data, analysis, and improved organization — must be regarded as a whole and none slighted. They complement one another. The tendency might be to get on with the analytical uses and neglect the other uses. This would be dangerous. The technique is one which improves with age; the analytical stage, particularly the analysis of parametric change, may well be several years in the future. This is not only because the pilot stages of research are expensive and inefficient but also because data exploitation and preparation, both for the interindustry and final demand sectors, are difficult and time-consum-

ing activities. To ignore the direct use of data by all researchers and to neglect other analytical uses and the benefits to be derived from improved organization would be to fail to use the framework of interindustry techniques to its fullest extent.

CRITIQUES OF SOME RECENT BOOKS ON INTELLIGENCE

THE LABYRINTH — THE MEMOIRS OF HITLER'S SECRET SERVICE CHIEF. By *Walter Schellenberg*. (New York: Harper. 1956. Pp. 423.)

A nimble, detached, and cynical mind aided Schellenberg in avoiding entanglement in the mysticism and ritualistic clap-trap with which Himmler and Heydrich had indoctrinated the leadership cadres of their SS Elite Guards, without — on the other hand — implicating him in conspiracies against the regime. By no means a blind adherent of the Fuehrer, his boast to have on occasion registered dissent from some of Hitler's more outlandish "intelligence" schemes, can be believed. Among the blind, Schellenberg was one-eyed. His special calling as chief of the regime's foreign intelligence service sharpened his critical faculties, enabling him to gain a more timely and accurate grasp of the obstacles in the way of Germany's quest for world leadership.

Schellenberg was an avowed protege of Himmler's and of Heydrich's. The former held a protecting hand over Schellenberg until the bitter end, a circumstance aiding Schellenberg's phenomenal luck in surviving the vagaries of the Third Reich. It may be said that he paid a debt of gratitude to Himmler by painting him in *The Labyrinth* as a weak rather than a vicious man. It is difficult to visualize in Schellenberg's characterization of Himmler the protagonist and executor of a carefully planned program of mass extermination on a scale the modern world had not heretofore witnessed.

The Labyrinth throws into relief one salient aspect of Schellenberg's personality: his exceptional dexterity in the manipulation of power factions within the leadership of the Nazi Party without ever becoming too closely identified with any one of them. As a handy introduction into the techniques for survival, *The Labyrinth* can be recommended.

Only toward the end, when there was little more to lose, did Schellenberg decide to take calculated risks. The *Bernadotte* episode, though abortive, was handled by Schellenberg with some of the daring and imagination that stemmed from despair.

While his rank and position doubtlessly afforded Schellenberg a vantage point from which to observe Germany's inexorable drift toward defeat, he was frequently found wanting in the intellectual equipment needed to project events, which he correctly observed, into a framework of global developments. The outline of peace terms which he presented to Himmler at Zhitomir reflects a surprising degree of naivete in gauging the temper of the world powers ranged against Germany — their willingness to accept Germany's ascendancy in the European concert as a permanent arrangement he took blithely for granted.

On the other hand, some of Schellenberg's more visceral responses turned out to be sound, for example those reflected in his assessment of Britain's determination to fight to the end. He clearly perceived the folly of Hitler's policies in the occupied parts of the Soviet Union and vainly raised his voice in protest.

Not having read the complete manuscript of Schellenberg's memoirs, it is difficult for me to pass judgment on whether or not certain notable omissions should in fairness be blamed on Schellenberg rather than on its publisher. The translation from the German is mediocre, and regret must be voiced that the final editing job, which would have benefited from annotations, was not entrusted to a man of the calibre of Trevor-Roper. In the circumstances, the reader in search of true enlightenment about the inner workings of the German Secret Service, should be cautioned to beware, because *The Labyrinth* is replete with factual inaccuracies and naturally suffers from its author's bias. What it conveys at best is an episodic study of human behavior under conditions of strain inflicted by a struggle for supremacy within an oligarchy untrammelled by human laws of ethical standards and dedicated to the methods of genocide and terror to maintain its sway.

Contrasted with most of the Nazi biographies, as well as those written by leading men of the Third Reich who claimed to have belonged to the opposition, it lacks the whining self-righteousness, the posture of injured innocence, and frantic endeavor to blame the next guy, the shameless alacrity in throwing overboard the ballast of long-standing friendships, the perfunctory expressions of horror at the crimes committed by the Nazi regime, which make the perusal of most of them such a repugnant chore. In my talks with Schellenberg, which took place in 1945 in the Military Intelligence (MI) Interrogation Center at Oberursel, I found him to be personable, adaptable, and yet not devoid of a certain dignity in facing up to the prospects of being called to account for some of the activities in which he had been engaged. He did not go out of his way to pin responsibility on his former associates, nor did he pretend that his efforts to bring about a negotiated peace were motivated by considerations other than a clear realization that Germany's game was up.

Schellenberg makes passing reference to his interrogation by the British service. As a matter of fact, he had been subjected to an exceedingly painstaking debriefing, backed up by a formidable body of detailed data at the disposal of the so-called Counter Intelligence War Room, a joint British-American enterprise, representing probably the most competently operated repository of counterespionage data the world had ever seen. The British report on Schellenberg was up to the customarily high professional standards of their services, especially in the field of intelligence reportage. Even today a reading of the Schellenberg report can be considered a rewarding professional experience, although most of the incidents it relates are devoid of contemporary significance. In a way it represented a milestone in the field of counterespionage, inasmuch as never before in modern history had an opportunity offered to perform an autopsy on the remains of the intelligence services of a defeated world power.

Twelve years have dimmed my recollection of some of the details of the Schellenberg interrogation report. I do recall that the British interrogator poked fun at Schellenberg's rather

SECRET

romantic concepts of the British Secret Service and at the inaccuracies of some of the factual data with which he tried to back up his views. However, I am somewhat inclined to doubt British candor on that score. After all, the Venlo incident must still have rankled with them; the interrogation report on Schellenberg in the version made available to us was singularly uncommunicative concerning that incident. In talking to him about the aftermath of the Venlo incident, I found him reluctant to go into any detail. Since my brief did not call for coverage along those lines, I abstained from exerting pressure. (At the time I drew the possibly erroneous inference that the British had requested him to restrain himself in passing out information concerning the results of the Stevens-Best debriefing.) I am, incidentally, prepared to believe his protestations that the abduction of Stevens and Best was contrary to his own ideas regarding long range exploitation of the link to the British service, and that he acquiesced in participating in the kidnapping only with great reluctance.

In the chapter on *The Reichswehr and the Red Army* little is being added to the already known. The analysis given in John W. Wheeler-Bennett's *Nemesis of Power* has a much more authentic ring. My own opinion, conjectural at best, is that the purge of the Soviet command had been in the cards for some time, that the deception practiced by the Germans was recognized by Stalin as such, but that it came in very handy to garb the purge of Tukhachevsky and his associates with a cloak of legality. The rifling of the German General Staff's archives is unlikely to have yielded more than official data pertaining to the various transactions which, with the full knowledge of the Kremlin, enabled the Reichswehr to avail itself of the logistic support of the Red Army in secretly rebuilding its cadres.

In the chapter on *Active Espionage*, Schellenberg rehashes the Sosnovsky espionage case without adding anything new. (For reasons best known to the publishers, the names of the principals are not spelled out in full.) After the end of the war Sosnovsky returned to West Berlin, and it is fair to assume

SECRET

that he resumed his erstwhile activities, this time in the employ of the Polish Communist services.

The investigation of the *Beer Cellar Explosion* fails to provide an answer to the pivotal question: who actually engineered it? It has never been satisfactorily explained why the Nazis forewent the opportunity of putting the alleged perpetrator, a man named Elser, on show trial. In fact Elser was never brought to trial but put away in the Dachau concentration camp where he suffered death just before Germany's surrender. The actual criminal investigation was conducted under the aegis of Amt V, the Criminal Police Division of the RSHA. I talked after the war to Kriminalrat Hans Lobbes, who had been in charge of the investigation and who claimed that Elser's guilt had been proven beyond peradventure: he too was unable to shed light on the identity of the actual instigators.

The chapter on *A Japanese-Polish Conspiracy* does scant justice to the scope and success of the collaboration between the Japanese Intelligence Service and elements of the Polish resistance. Onadera, the senior representative of Japanese intelligence in Europe, is referred to as "The Japanese Ambassador in Stockholm," although the position occupied by him was that of Military Attaché. (The report of his interrogation should be considered required reading for anyone interested in the Japanese *modus operandi*.)

Schellenberg makes passing reference to Colonel Ronge, the chief of the Austrian Secret Service, in the days of the Austrian Empire known as the Kaiserlich — Koenigliche Evidenzbuero. At the time Schellenberg met him Ronge was a historical relic, having been the head of the Austrian counterespionage service since before World War I. His name at that time became associated with the uncovering of one of the Okhrana's most brilliant and successful espionage operations, the recruitment of Col. Alfred Redl, a high-ranking Austrian staff officer, as a Russian espionage agent. Ronge broke this case — too late, however, to prevent the Russians from getting their hands on Austria's war plans. Many Austrian, Czechoslovak, and Polish intelligence officers counted themselves among Ronge's most prized pupils, and the enlistment of his services by the Germans is

bound to have yielded a wealth of significant personality information. Among ranking Austrian intelligence officers who switched sides at the time of the Anschluss was Colonel (later General) Lahousen de Vivremont, who promptly joined the Abwehr (military intelligence). It was he who had the foresight to keep a copy of Canaris' diary, produced it before the Nuremberg Tribunal, and rendered testimony which implicated Field Marshall Keitel and General Jodl in the perpetration of war crimes.

Schellenberg devotes one paragraph to *Operation Northpole*, which contains nothing new. Northpole undoubtedly ranks among the best counterespionage operations undertaken by the German services and it brought in its wake one of the most serious setbacks suffered by the Allied side in the silent war.

Schellenberg's account of *Aktion Bernhard*, the RSHA's counterfeit enterprise, sheds significant light on his accuracy as a reporter of facts and the extent of his truthfulness in relating facts that might conceivably implicate him in the very practices for which he castigates Kaltenbrunner, Mueller, and Meisinger. The true story underlying "Aktion Bernhard" has been told in a carefully documented article in the July 1957 issue of *Harper's Magazine*, entitled "The World's Greatest Counterfeiters," by Murray Teigh Bloom. The reader is invited to study that article and in its light assess Schellenberg's veracity in stating that "the most skilled engravers in Germany were drafted (sic), sworn to secrecy, and set to work in three shifts." No doubt Schellenberg knew better.

How much did Schellenberg's organization effectively accomplish in its operations targeted against the USSR? In going down the list of Amt VI's major exploits, the reader will be arrested by the claim that through one of its centers direct connection had been established with two of Marshall Rokosovsky's General Staff officers. I have seen no mention of this alleged penetration in any other pertinent debriefing. I doubt its authenticity. I venture the guess that this alleged operation, if it in effect existed except in the imagination of a fabricator, was controlled on the other end.

Operation Zeppelin, the massive drop of parachute agents behind Soviet lines, constituted the main effort of Amt VI directed against the territories of the USSR still under Kremlin control, particularly the Caucasus. After the German surrender, the British service undertook what looked to me like a carefully planned roundup of VI C (USSR and Far East division) key personnel headed by SS Sturmbannfuhrer Hengelhaupt, which made it rather difficult for us in the field to form a first-hand assessment of the efficacy of "Zeppelin" in terms of its intelligence productivity. (Needless to stress, I am not suggesting that this information was purposely being withheld from us.) Conceptually, the operation depended on the success of illegal entry into territory in which the organs of the NKVD reigned supreme: it is fair to assume that the Soviets countered "Zeppelin" with an equally massive defense taking full advantage of the enormous manpower reserves of their internal security service. Schellenberg in his description of "Zeppelin" concedes that the NKVD succeeded in inflicting sizeable losses and in undermining it from within, aided and abetted by the treatment the Germans were meting out to Russian minorities. The defection of Colonel Rodionov, if true, would testify to the high quality of the NKVD's countermeasures. More likely than not Rodionov was a Russian Intelligence Service (RIS) infiltrator rather than a disaffected collaborator of the Germans, as Schellenberg wants his readers to believe.

The next operation mentioned by Schellenberg, the *very important center* taken over from the Abwehr, is in fact one of the legendary operations of World War II. Its principals were a White Russian General named Turkul, a White Russian intelligence operator named Ira Longin with a long record of intelligence work under the aegis of a heavily penetrated White Russian emigre organization in Yugoslavia, and a Jew named Kauder, alias Klatt. The operation had been masterminded by the chief of Abwehrstelle Sofia, Colonel Wagner, alias Dehlius. It eventually moved to Vienna and thence to Salzburg just one step ahead of the advancing Soviet armies. During the war the Allies had effectively monitored and de-

SECRET

coded the traffic of two transmitters (Max and Moritz) under Klatt's control. It had never been possible, however, to monitor the traffic allegedly being transmitted from the USSR by Klatt's well-placed sources, and consequently the Allied services entertained serious doubt as to the authenticity of the material, although its outstanding quality appeared to argue against outright fabrication. After the war, the British service, operating on the hypothesis that Ira Longin, and presumably Klatt also, were in fact high-level Soviet agents, made a determined attempt to break the case but failed to extract confessions from Ira Longin or his associates. This notwithstanding the fact that the British have never been shaken in their conviction that the intercepted material was in fact Soviet deception and that, toward the end of the war, the RIS used the Klatt channel to launch items of major strategic deception. The British cited the operation as a classical example of RIS deception and as an illustration of Soviet willingness to sacrifice whole divisions for the purpose of establishing the validity of a controlled channel. The German General Staff and especially its chief, Generaloberst Guderian, placed unreserved trust in the reliability of the material produced by the Klatt combine; Guderian in person, at a conference specifically called to decide the fate of Klatt and his associates, stated in emphatic terms that the General Staff would not want to be held accountable for the consequences should it be decided to liquidate the net.

In the chapter on *Operations of the Secret Service*, Schellenberg claims that Germany was exceptionally successful in "her wireless defense organization," boasting that "at one time we had at least sixty-four 'turned-round' stations transmitting to Moscow for us." I consider it next to impossible to arrive at a reliable estimate of the relative successes of Germany's W/T defense system without an equally dependable estimate of the total strength of active Soviet W/T transmitters operating from soil under German control. Also, the unknown factor of the incidence of Soviet triples among the 64 doubles, renders a purely statistical approach as a gauge of German successes quite meaningless. Suffice it to say that

SECRET

127

the German services were able to develop a cadre of experts in the field of countering Soviet W/T operations, who were able to attain a number of outstanding successes. Amt IV, (Gestapo) rather than Schellenberg's organization, scored heavily in this field. Source material on this subject is contained in the debriefing of Kopkow, who was in charge of the responsible branch in Amt IV. One of the best Amt IV operatives in the field was an Austrian named Sanitz, whom the Soviets abducted from a Vienna hospital only to return him to freedom a few years later.

The Case of Richard Sorge, as related by Schellenberg, merely proves that Schellenberg has since joined the ranks of those who suspected all along that Sorge was a Soviet spy. Schellenberg refers to him as an associate of "the IVth Division of the MVD" although it is pretty well agreed by now that he was an agent of the Soviet Military Intelligence Service (RV).

In the chapter captioned *At War with Russia*, Schellenberg commends Fremde Heere Ost, a department of the Oberkommando des Heeres (Army High Command) serving as repository and evaluation center for all military intelligence obtained on the Soviet Union, which was headed by General Gehlen, as "doing excellent work in the correlation and objective evaluation of information." This accolade appears of more than historical interest in the light of subsequent developments, since historically speaking, Fremde Heere Ost formed the nucleus of the Bundesnachrichtendienst (Federal Intelligence Service), with General Gehlen as its first head.

Of some interest is Schellenberg's description of his relations with SS Sturmbannfuhrer Meisinger, one of the stalwarts of Amt IV, who at the time of Germany's surrender served as Police Attaché with the German Embassy in Tokyo, a cover designation designed to conceal the identity of his parent organization, the Gestapo. Like SS Gruppenfuhrer Heinrich Mueller, the chief of Amt IV, Meisinger had come up through the ranks of the old Bayrische Staatspolizei. I can bear out Schellenberg's rather graphic description of the man, having seen him in Oberursel. He was eventually turned over to the Poles, who strung him up. In this context it may

SECRET

be well to comment on the fact that the worst elements in the RSHA were for the most part Bavarians and Austrians. The backbone of Amt IV consisted of Bavarians of the stripe of Mueller and Meisinger. Kaltenbrunner, the last head of the RSHA, was an Austrian from Linz. Prussians of the calibre of Diehls, Gisevius, and Kriminalrat Heller in the end wielded little influence.

I found the discussion of Mueller particularly interesting because it dwells on the existence of left-wing tendencies among the SS leadership. In this context Schellenberg purports to quote remarks made by the chief of Amt IV which Schellenberg construed as suggesting a decided change in Mueller's outlook toward possibility of a separate peace with Russia. I am unable to place my hands on the source material, but it has been seriously contended that the RIS, through the device of the Rote Kapelle (Red Orchestra) was able to disaffect a significant segment of the Gestapo.

The French end of the doubling operation, involving the Grand Chef Trepper himself, had been placed in the care of a Kriminalrat Pannwitz, a representative of Amt IV B, the counterespionage branch of the Gestapo. From all accounts he and his associates handled the operation with great skill and imagination — according to some with too much of the latter because, so the allegation runs, the build-up material passed to the Moscow Center in the end provided the Soviets with a pretty accurate reading of German capabilities and intentions in France. The school of thought which in effect suspected a Soviet triple operation found sustenance in the disappearance of Pannwitz and his rumored apprehension by the Soviets. (Pannwitz has in the meanwhile returned from Soviet imprisonment, and a competent interrogation will no doubt serve to shed light upon some of the hidden recesses of the Red Orchestra compromise.) Mueller himself, who spent the last days of the Battle of Berlin in Hitler's bunker in the Reich's Chancellery, likewise disappeared from sight, participating in the sortie of Bormann's group. Schellenberg's belief that Mueller joined the Communists merely repeats the essence of a spate of completely unsubstantiated rumors to that

effect. The Allies made several vain attempts at enlisting Soviet help in locating Mueller's whereabouts if he was still alive. The only official reaction came from the Soviet Military Attaché in London who, obviously in order to stave off further Allied importuning, queried them with a straight face as to the correct spelling of Mueller's first name. That effectively ended the Allied search.

The chapter on the *Assassination of Heydrich* was obviously written without the benefit of hindsight. As it turned out, Himmler, who "had made up his mind that the whole affair was staged by the British Secret Service, and that the three assassins had been dropped by parachute near Prague for this special purpose" was on the right track. Schellenberg, who suspected Himmler and Bormann, was wrong. No mention is made of the frightful revenge wreaked by Heydrich's successor, Reichs Protektor Hermann Frank, on the village of Lydice.

The personal relationship between Schellenberg and Admiral Canaris was a curiously ambivalent one. It would have been interesting to hear Canaris' side of the story. There can be few doubts that Canaris felt personally attracted to a young SS officer, not cast in the common mold of an SS thug and quite obviously treating the older and more experienced man with considerable deference. Had Canaris been alive to tell his story, he would undoubtedly have dwelled on the many patent advantages to be derived from staying close to a ranking official of Hitler's secret service, a man known to be in the confidence of both Heydrich and Himmler. Schellenberg, on the other hand, is bound to have derived considerable professional benefit from his talks with Canaris and aid in sorting out his own untested ideas on the future complexion of a unified German intelligence system. In his biography, Schellenberg stays just short of admitting that it was he himself who engineered Canaris' downfall. His description of the events leading up to the Admiral's arrest and his own role in the actual detention are a masterpiece of double entendre. Without ever frontally attacking the former chief of Germany's military intelligence service, Schellenberg manages to convey

SECRET

to the reader the impression that Canaris was in fact an unprincipled toady (tears at Heydrich's funeral "After all, he was a great man. I have lost a friend in him"), a traitor to Germany, and a tottering old fool (the tearful embraces in Fuerstenwald). Schellenberg's surmise that Himmler was instrumental in staving off Canaris' execution is unsupported by any other facts available to me. Some light has in the meanwhile been shed on the circumstances surrounding Canaris' execution in the trial against SS Standartenfuehrer Huppenkoten, the last head of Amt IV B, who implemented the order. Kaltenbrunner, the chief of the RSHA, whom I questioned on this matter in May 1945, disavowed all direct responsibility in the execution, but referred to the contents of the famous diary kept by the Admiral as irrefutable evidence of his treasonous activities. There can be no doubt that Canaris was privy to the plot of the 20th of July, without lending it much active support, and that the activities of General Oster had deeply implicated him. Since the end of the war an attempt has been made to vindicate Canaris, casting him in the role of the actual mainspring of the German resistance. This, in my estimation, is a patently incorrect assessment of a man who, in spite of many decent impulses and an exceptionally clear perception of Germany's ultimate doom at a time when Hitler's power seemed to have reached its zenith, failed to measure up to the exigencies of true greatness.

In passing, Schellenberg offers a fairly accurate appraisal of prevailing conditions in the Abwehr, pointing to Canaris' penchant for "over-inflating his organization, indiscriminately enrolling serious workers and dubious riffraff," feebly attempting reforms and then allowing them to peter out. He fails to mention that in those very respects his own organization, the foreign intelligence branch of the RSHA, Amt VI, could hardly be set up as a shining example, and that the subsequent merger of the two organizations brought no tangible improvements.

There was no love lost between Schellenberg and Dr. Ernst Kaltenbrunner, the new chief of the RSHA who in 1943 was appointed by Hitler personally to step into the position made

SECRET

vacant by Heydrich's untimely death. Schellenberg confines himself to discussing the professional rivalries between himself and his nominal superior in essentially personal terms, making no bones of the fact that he would have liked to bring about a secession of Amt VI from the main body of the RSHA. Kaltenbrunner clearly perceived that Schellenberg posed a serious threat to his position and was not about to allow the foreign intelligence service to be wrested from his control. Schellenberg merely hints at this by complaining that Kaltenbrunner "sought to surround himself entirely with Austrians," actually a carefully conceived strategem which confronted Schellenberg in his own organization with a sizeable bloc of "Austrian" officials whose first loyalty belonged to Kaltenbrunner himself. They consisted for the most part of members of the old Austrian Nazi underground who, like Kaltenbrunner, came out of hiding at the time of the Anschluss. Their intellectual leader was the redoubtable Dr. Wilhelm Hoettl who has publicized in a book entitled "The Secret Front" what might be referred to as the Austrian contribution to the German intelligence effort. The division of Amt VI which dealt with operations in Southeastern Europe bore the designation VI E. Under the powerful aegis of Kaltenbrunner it soon became one of the most favored elements of the RSHA, being used by him also as Hauskapelle, a German euphemism for an espionage apparatus within an intelligence organization. In listing the professional exploits of his organization, Schellenberg makes no mention whatsoever of VI E which, for example, played an important part in the overthrow of the Horthy regime in Hungary, replacing it with the Arrow Cross movement and its leader Szalazy. Schellenberg may be forgiven for not mentioning a staybehind operation in the Balkans, organized by VI E personnel, which never came to fruition, because of the supervening collapse of Germany. Among the more prominent RSHA officials representing the Austrian clique could be found Skorzeny, who headed a special department concerned with action-type operations, and the notorious Eichmann, in command of a special task force gathering up Jews in occupied countries and channeling them into extermi-

nation camps. Through Dr. Hoettl, Kaltenbrunner made a belated attempt at establishing his own channel to the Allies by means of contacting the office of Allen Dulles, representative of the Office of Strategic Services in Bern. Kaltenbrunner, from the moment of his capture by American troops in May 1945 until his demise at the end of a rope, insisted that his classification as war criminal was the result of a terrible misunderstanding; while it was true that in his capacity as chief of the RSHA he was also in charge of Amt IV, the executive arm of Germany's genocidal program, in actual fact the chain of command had completely bypassed him, with Mueller directly taking his orders from Himmler. During several sessions I had with him shortly after his capture he plead with considerable eloquence that his overriding concern had been intelligence, more specifically the conduct of operations in Southeastern Europe. This story he repeated so persistently that in the end he may have come to believe it himself. Schellenberg's account certainly fails to support it.

The merger of Amt VI and the Military Intelligence Service, the Abwehr, came about in the fall of 1943. The affair was solemnized at a meeting in Salzburg over which Kaltenbrunner presided. During an interim period the basic structure of the Abwehr had been left intact, affiliating it as a quasi self-contained operating branch named Mil Amt to the main body of the RSHA and placing it in the charge of a career General Staff Officer, Colonel Hansen, who — it soon appeared — was not equal to the task. Hansen was arrested after the 20 July attempt, and — as Canaris correctly surmised — a wealth of incriminating material was found in his files. The arrest was likewise carried out by Schellenberg, a fact which he fails to mention. Hansen was found guilty of treason and hanged. In the summer of 1944 the amalgamation of the Abwehr was completed, and its various tasks were divided between Amt VI and Amt IV B. Schellenberg's account is incorrect in stating that the following took place: "From the middle of 1944 I took over Canaris' Military Intelligence Department, incorporating its various tasks in departments IV and VI of the Counterespionage organization." In actual

SECRET

133

fact the counterespionage branch of the Abwehr, which bore the designation of III F, was integrated with the counterespionage service of the RSHA, Amt IV B, and was thus *not* placed under Schellenberg. After the surrender of Germany, this fact became a source of unpleasantness to the old III F crowd, who found themselves lumped together with the detested Gestapo and exposed to its odium.

Out of the blue, the name Dr. Langbehn is thrown into the debate. First, Dr. Kersten inquires whether Schellenberg had frequent conversations with him, and subsequently Himmler begs Schellenberg "to improve his relationship with Langbehn as well." In the chapter on *Peace Feelers*, the reader is told that Dr. Langbehn had been negotiating with Allied representatives in Switzerland and that he had done so (or was alleged to have done so) with Schellenberg's blessing. In the chapter on *The Downfall of Admiral Canaris* Schellenberg complains that Mueller and Kaltenbrunner had tried in 1943 to denounce Schellenberg as a British agent in connection with the Langbehn affair. To the uninitiated reader the story as it stands is meaningless. Actually the Langbehn incident deserves less cursory treatment. The relationship between Langbehn and Himmler in fact represented Himmler's first sub rosa contact with the German resistance movement which in 1944 led to the abortive July attempt. Himmler eventually withdrew his support from Langbehn and permitted him to be executed. It has been alleged that the growth of the anti-Nazi resistance movement and the surprisingly ramified strength it displayed during the critical days of July 1944 cannot conceivably have escaped the vigilance of the Gestapo. At least — so the argument runs — both Mueller and Himmler must have been cognizant of its scope and of the nature of its plans. Some such thought may have crossed Hitler's mind when he entrusted the investigation of the 20 July plot to Kaltenbrunner rather than to Himmler. It would have been interesting to learn the full story, if we can assume that Schellenberg was in possession of all the facts. There are in Schellenberg's book some oblique references to the fact that Himmler was loath to have Schellenberg concern himself with Canaris' oppositional

SECRET

activities and Schellenberg confessed himself to being somewhat puzzled by Himmler's solicitude for the Admiral's fate. Quite conceivably there may have been a side to Himmler's extra-curricular plans and activities completely unknown to Schellenberg.

Schellenberg's persistent attempts to win over his protector, Himmler, to an active exploration of possibilities to negotiate peace with the Allies, culminating in a talk with Himmler in Zhitomir which Schellenberg describes, naturally colored his quest for intelligence. Operation "Cicero" and the intelligence it yielded, in the sight of Schellenberg, served their principal purpose by demonstrating the turn of the tide to Germany's detriment. Schellenberg makes no mention in this context that, in order to derive maximum benefit from the total of the German intelligence product, he co-opted into Amt VI Dr. Giselher Wirsing, a historian of vast experience, whom he commissioned to prepare intelligence summaries. These summaries, put out at irregular intervals, were known as *Egmont Berichte*. They were given the highest classification with a distribution confined to six officials of the Third Reich, among them Hitler, Kaltenbrunner, Himmler, and Ribbentrop. Their underlying purpose, as clearly understood by Wirsing, was to buttress the Schellenberg thesis of the necessity of a negotiated peace. In reconstructing some of the reports as originally submitted by him (no originals have been located), it was clearly revealed that the "Cicero" material formed the backbone of the *Egmont Berichte*.

A few comments regarding Schellenberg's personal record may be in order. He came up through the ranks of the old Gestapo. Beyond reasonable doubt, he acquired first-hand knowledge of the methods applied by that organization in extorting confessions. Those methods were quite prevalent and by no means spontaneous. As a matter of fact, the orderly German mind had in fact conceived a bureaucratic term for the practice of torture which can be found in numerous official documents: "*verschaeerfte Vernehmung*." I am inclined to give credence to Schellenberg's aversion to such practices, and the incident described as evidence of this may have occurred.

SECRET

135

However, the fact that his record is a relatively unblemished one should be attributed to luck rather than to predisposition. Had Schellenberg been ordered by Himmler to take over the command of an SS Einsatzkommando, I strongly doubt that he would have staked his career and possibly his life on a refusal. (The Chief of Amt V, Kriminalrat Nebe, a professional criminologist with no Nazi background, was assigned to the command of an Einsatzkommando and is alleged to have superintended large-scale liquidation of Russian civilians behind the German frontlines. Schellenberg presumably would have done the same, if ordered.) Schellenberg's role in bringing about the release and exchange of Jews in German captivity is not in contradiction to this analysis of his character. His errands of mercy were part and parcel of a cold-blooded deal in which the imprisoned Jews were mere pawns. He must have had a clear appreciation of the fact that any further large-scale atrocities would merely lead to an intensification of Allied punitive measures and that by means of serving as an "honest broker" in putting across those transactions, he stood a good chance of extricating himself from a share in the collective responsibility which his associates, especially his great protector Himmler, had incurred. I have a clear recollection of discussing with Schellenberg the odious role played by Himmler in the perpetration of what may go down as world history's most colossal crime, without evoking more than an expression of polite doubt whether or not those crimes were politically sound. The reader is bound to carry away the same impression after reading the chapter on *Operation Zeppelin*.

Summing up my impressions of *The Labyrinth*, I fail to discern in its narrative any significant contributions to our understanding of the principles of intelligence tradecraft, let alone their application. Amt VI never developed a coherent and practicable system of intelligence planning. The merger with the more experienced Abwehr came too late to redound to the benefit of Amt VI. Especially in the leadership bracket, the absence of experienced personnel was calamitous. Also, the leading men of Amt VI, and this particularly applies in the case of Schellenberg, were forced to spend an unconscionable

SECRET

amount of time in protecting their rear. Special missions, such as the grotesque plan to abduct the Duke of Windsor, monopolized time and effort which could more usefully have been deployed against truly important targets. The fact that Amt VI was unable to shed its close kinship with Amt IV, the dreaded Gestapo, militated against its effectiveness in enlisting the support of elements in disaccord with the excesses of the Nazi system and limited the circle of its operatives to party zealots and SS fanatics whose radius of understanding of world affairs was circumscribed by Nazi doctrine. Germany's collapse brought about the complete obliteration of what has aptly been described as the "SS-Staat" and of its coercive organs. Its practices and concepts have not been bequeathed upon the intelligence service of the Federal Republic. A fitting epitaph for the organization and the men who operated it would thus be: "*Spurlos versenkt.*"

CLINTON GALLAGHER

STRATEGIC INTELLIGENCE AND NATIONAL DECISIONS.

By Roger Hilsman. (Glencoe, Illinois: Free Press. 1956. Pp. 183.)

Strategic Intelligence and National Decisions has many shortcomings. It suffers (inevitably, under circumstances of secrecy) from an overbalance of theory as against practice; it confuses departmental with central intelligence; it shows little awareness of the special problems of Sino-Soviet Bloc intelligence which dominate the business. Its radical proposals for a total reorganization of the effort are debatable. Nor is it an easy book to read. But it has the great virtue of reviving and placing in the center of the stage the fundamental question of the relation of intelligence to policy. Or, put more simply, what are we here for?

Hilsman's argument starts with a declaration that the only justification for intelligence is the assistance which it gives to the making of policy. The core of his analysis lies in the

eighth chapter, which deals with the relationship in foreign policy between knowledge and action. He breaks down the decision-making process into its parts — examination of US values; recognition of a problem involving these values; selecting an objective; appraising alternative means of pursuing it; calculating the subsidiary effects upon other goals; making the choice itself; and, finally, modifying the decision in response to the reactions which accumulate as the decision is implemented.

The aim of intelligence is to make this process as rational as possible. Thus, according to Hilsman, the only knowledge worth acquiring is knowledge which informs action, which can be used to judge how probable developments will affect US values, to weigh alternative means, and to appraise the subsidiary effects of pursuing a given objective. In the ideal case, the requirements for knowledge spring directly from the demands of action at each stage. "Knowledge and action should interact, should condition and control each other at every point Knowledge for these purposes must be adapted to the uses of action, shaped to the task of best utilizing the means for action that are at hand It should be recipient as well as provider — cast in the framework which action presents, nurtured by the information uncovered as action is carried out, and tested in the laboratory that action provides. Action in turn should not only be planned by knowledge, but guided by it at every step — in the pause, perhaps, between question and reply in some vital negotiation."

Although this theory seems so sound as to appear unexceptionable, a little reflection will convince most intelligence officers that the present organization of intelligence is constructed on quite different, even contrary, assumptions. The basic concept, as Hilsman discovered in a series of interviews with intelligence producers and consumers, concerns facts. Facts are held to be the only true and dependable things in an otherwise tricky and deceptive world. Not only are they hard to find, but Hilsman's informants all felt that the commitment of policy people to the line of thought embodied in existing policy tends to blind them to any disturbing fact which conflicts with that line. Thus a special type of person, with a nose for facts and

uncommitted to policy, is needed to search them out and put them together, and this type of person requires, in turn, a special organization called an intelligence unit.

In his interviews and his reading of intelligence doctrine, Hilsman uncovered a widely shared set of beliefs about the function of intelligence. Intelligence was held by his sources to be completely separate from the policy-making function, and therefore it was proper that intelligence and policy making should be assigned to different organizations and separated geographically. Fearful of bias in the assembling of information and respectful of the truth contained in the facts themselves, the holders of this doctrine also insisted that with only a minimum of guidance the research intelligence function should be performed before, rather than during or after, the formulation of policy or the taking of action. Thus the two should also be separated in time and in outlook.

It is easy to see how such a set of beliefs could arise, and Hilsman gives some of the reasons in an historical chapter which is useful and interesting reading for any practitioner. The first great impetus for organizing a postwar intelligence organization was the attack on Pearl Harbor, which became a notorious example of the costs of failing to assemble and put together information. The conduct of war required great masses of facts about areas with which Americans had been little concerned before, and the possibility of another war suggested that next time we should be forearmed with these facts. Policy people were naturally suspicious of the ambitions of intelligence, and collecting and assembling facts seemed to offer a satisfactory compromise. The policy people felt that this was a harmless activity which might even on occasion do them some good, and the infinite world of facts offered virgin land for the devotees of intelligence.

The immense faith in facts which underlies prevailing doctrine and structure is nowhere illustrated more clearly than in the analogy of the jigsaw puzzle — probably the most harmful concept ever applied to intelligence. Whereas everyone is conscious of its limitations, it remains the standard thumbnail guide to the intelligence process; no one has offered a better

SECRET

139

analogy, and intelligence organization in fact follows it with remarkable faithfulness. First there are the collectors, to whom every fact is a piece in some jigsaw puzzle; and because there are so many facts, the hapless collector has to assume that all are of equal value, and he gathers them indiscriminately. Then there are the processors and storers, who need a large staff simply to determine what puzzle each piece belongs to. Then the analysts, so swamped with facts that they must be divided up into specialists in edge pieces, sky pieces, cloud pieces, and faces. Atop them all, then, are the "big picture" men, who integrate the sub-puzzles, joining the fence to the house, the tree to the sky, until the puzzle is complete. The implication is obvious that, if everybody does his job, life will turn out to be fully consistent, entirely knowable, and perfectly rectangular.

It is hard to argue against the need for facts, against the claim that you can never have too many facts. But there is reason to believe that intelligence already has far too many facts in the numerical sense, although obviously some extremely important ones are always missing. But large numbers of facts, precisely because they require so many people to handle them, take their toll in over-specialization, in loss of the ability to make judgments, in increasingly attenuated communication, in remoteness from policy problems.

The last point, that of the distance between intelligence and policy, is Hilsman's most penetrating concern. And, indeed, who of the veterans in intelligence has not had the disconcerting experience of being asked by a six-month neophyte whether he knows of any cases where intelligence has actually been related to policy. To most analysts, any such relation is rarely discernible. In some cases, this destroys incentive; most of those who remain in intelligence overcome their frustrations (Hilsman found many indications of frustration on this point in his interviews with intelligence officials) by turning scholar. They simply get interested in their subject for its own sake, derive their satisfaction from knowledge itself, and work mainly for the sake of convincing their colleagues. On this level, research and internal debate are the main driving forces, and

SECRET

the question of justifying all this activity as a government program, which can be done only through reference to policy, recedes into oblivion.

Of course, this may be a wrong view. It may be that, in personal contacts, the Director and his chief assistants regularly transmit to the appropriate persons the distilled product of the Agency in a form and on a schedule useful to policy formulation and execution. But this is not evident to the rank-and-file analyst, and his morale suffers for it because he finds it hard, as does Hilsman, to see any policy-related function being performed in the stream of current intelligence reporting, the esoteric research papers, and the grand estimates.

These defects were illustrated several times in the recent case of the Polish loan. First, as soon as the early hints appeared of Gomulka's desire for an American loan, any outsider familiar with the size and competence of CIA's staff in this field would automatically have assumed that a study was immediately initiated to determine the probable effects of various types and sizes of loans on the Polish economy, not to speak of the effects on Polish internal and external politics. No such reaction occurred, however, because everyone was busy with something else and no one was sufficiently attuned to policy either to order such a project from above or undertake it on his own from below. Later, when a Soviet-Satellite estimate was being drafted, mention was made of the probable effects of such a loan, but only in the most general way, and some participants were rather disquieted by touching so closely on a policy matter. Finally there came a request from the State Department for an analysis of probable effects of the loan actually under consideration by the US Government. Here, it would seem, intelligence was actually to be used in making a decision. But alas, in reading the resulting memorandum, the State official, coming across the statement that grain in the proposed amount would not permit the cessation of compulsory deliveries from the Polish peasants, took his pencil and crossed out the word "not." When remonstrated with, he answered that, just that morning, the US had quintupled the amount of grain to be loaned. Perhaps the intelligence memo was needed to explain

SECRET

141

to someone why the loan had been made; perhaps it was an attempt to spread responsibility for a dangerous policy. At any rate, the request for an intelligence analysis certainly had nothing to do with the policy choice, which had already been made.

Readers should be forewarned that Hilsman's book is heavy going. But it would be unfortunate if, merely on this account, intelligence professionals were to ignore this thoroughgoing treatment of the theory of intelligence. It is interesting particularly because of its provocative and persuasive conclusion that much, in fact most, of today's intelligence production is wasted effort.

JOHN WHITMAN

SECRET

STRATEGIC INTELLIGENCE PRODUCTION; BASIC PRINCIPLES. By *Washington Platt*. (New York: F. A. Praeger. 1957. Pp. 302.)

Brigadier General Washington Platt has been an intelligence officer for some ten years, and he clearly loves his work. It would be pleasant to record, therefore, that General Platt's book, *Strategic Intelligence Production; Basic Principles* makes a really significant contribution to the literature of intelligence. However, although much of the book is rewarding and thought provoking, it is as a whole disappointing when viewed both against the gaps in the present literature and against the objectives which the author apparently sets out for himself.

The word "apparently" in the last sentence is used deliberately, for the objective of the book is not entirely clear. The preface contains the statement that the book is intended "as one step toward the development of first principles in the field of Strategic Intelligence Production." The first chapter makes a similar statement, adding that the primary purpose of the book is to present concepts pertaining to strategic intelligence production. One might expect, therefore, that the book would devote considerable attention to the theory and philosophy of strategic intelligence, to the broad first principles which make it what it is and which distinguish it from other kinds of intelligence and from other fields of learning. Aside from scattered statements, however, often in the nature of *obiter dicta*, one looks in vain for a discussion along these lines.

Consider, for example, the term "strategic intelligence." Strategic intelligence is defined formally in a single paragraph, and its components are listed in another. Although the term is used frequently thereafter and although methods and techniques for strategic intelligence production are given, very little else is said about its nature. What is strategic about strategic intelligence? How does strategic intelligence differ from combat intelligence and from other forms of intelligence, if any? What is the relationship between strategic intelligence and

policy? What is strategic intelligence supposed to provide for the formulation of policy, and where does one end and the other begin? Any systematic discussion of these and other important first principles is conspicuously absent.

To be fair to the author, it may not have been his purpose to consider these broader aspects. The stated aim of the book is to develop the principles of strategic intelligence *production* (as opposed to strategic intelligence, period), and the emphasis is put explicitly on the working level. Hence, when the author speaks of principles, he may be thinking of bread-and-butter principles designed to provide the reader with a "how to" book or (perhaps unfairly) a sort of intelligence do-it-yourself kit. To make a crude analogy, the author may not have intended to talk about transportation but merely about how to assemble an automobile. In any case, the result has been to divorce the working principles of strategic intelligence production from the broader theoretical and philosophical principles to which they relate. In doing so, the author has omitted the kind of material which probably most needs development in the literature and has rendered the principles which he gives us less meaningful and helpful than they otherwise would have been.

General Platt's book is essentially a presentation of certain basic principles of strategic intelligence production and of methods of the social sciences and the assistance they can give the intelligence officer, to probability and certainty, and to forecasting. The author also gives us discussions of the differences between information and intelligence, of the scientific method and its application to strategic intelligence production, and of intelligence production as an act of creative thinking. The last chapter covers the characteristics of the intelligence profession.

The book presents nine principles of intelligence production said to be similar in their field to Clausewitz's principles of war: namely, purpose, definitions, exploitation of sources, significance, cause and effect, spirit of the people, trends, degrees of certainty, and conclusions. One can scarcely quarrel with the relevance and importance of these principles to the production of strategic intelligence. Agreeing with these princi-

ples, however, is much like agreeing, Coolidge-like, that sin is bad and motherhood admirable. Although each of the principles is elaborated elsewhere in the book, one is left with the feeling that he has been given a skeleton without very much flesh on it. The reason, I think, is fairly clear: here as elsewhere the book concentrates on working principles and methods to the virtual exclusion of broader theoretical considerations. As a result, we are given many fine hats, but no hat rack on which to hang them. The fact that the author may not have intended to give us a hat rack makes the hats no easier to handle.

It is interesting that the author compares his nine principles not only with Clausewitz's principles of war but also with the Ten Commandments. It may be remarked that during New Testament times the Pharisees, among others, were criticized, not because they disobeyed the Ten Commandments, but because they obeyed them rigidly, literally, and pridefully, and without spirit, compassion, or understanding. The user of General Platt's nine principles faces a similar risk, for although adherence to these principles is a necessary condition to the production of good strategic intelligence, it is not a sufficient condition.

The author states that the book is "purposely discursive" because such discursiveness is necessary in a field with "so little unity of background, or systematic development of general principles." However much this may be true, the book is not well organized or put together and frequently does not develop its themes systematically or comprehensively. Moreover, the presentation is often not as clear or as convincing as it should be and is sometimes downright irritating or dangerously incomplete. The book discusses at some length whether or not there is a group or a national character and, if so, whether or not information can be gained about it. It gives a yes answer to both of these questions. A closely related question — how foreign are foreigners? — is not given a yes or no answer, but it is clear that the author believes there is some "foreignness" in foreigners. I wish that the author had gone one step further (and incidentally, in so doing, better pulled his discussion to-

gether) by warning the intelligence officer that he is fatally and irrevocably lost if he does not put himself in the context of thought and/or action of the people or events which he is studying. Elsewhere the author attempts to quantify the depreciation of the "inherent value" of various kinds of intelligence with time by stating, for example, that strategic intelligence depreciates 10 percent per month in wartime, so that at the end of 6 months it has lost half its value and at the end of 9 months nearly three-fourths. These rates of depreciation are presented out of hand, and despite a qualifying footnote, not as orders of magnitude, but as more or less fixed and immutable laws. It is difficult to decide whether to be horrified, or amused. As a final example, the author discusses the normal curve of frequency distribution and suggests that a bimodal curve makes it practically certain that the group studied was in fact two groups of diverse origin. The reader is left with the impression that the normal curve is the most common kind of curve encountered in the social sciences and that deviations from it merely reflect the mixture of two universes or inadequate sampling. Actually the analyst in many of the social sciences will only rarely encounter a normal curve, not because he has mixed universes or developed bad samples, but simply because the universe with which he deals does not group itself in the manner described by the so-called normal curve.

On the positive side, many of the principles and methods developed in the book are decidedly well worth stating and ought to be part of the mental makeup and box of tools of every producer of strategic intelligence. None of these principles is strikingly new, but each is at least useful and often more than that, and together they constitute a helpful collection of tools and techniques. For example, the author discusses two important differences between the usual kind of creative scholarship and the kind required for the production of strategic intelligence. The importance of these differences — usefulness and timeliness — can scarcely be overemphasized, not only to those newly entering intelligence work, but also to its current practitioners. The author makes a

quite useful distinction between information and intelligence, which is discussed at some length. Another chapter attempts, although not entirely successfully, to develop the relationship between the social sciences and strategic intelligence. This portion of the book points up the similarity between the subject matter and methods of the social sciences and intelligence and suggests that a thorough grounding in one or more of the social sciences is a most useful background for the strategic intelligence officer. The book also contains in one chapter, entitled "Probability and Certainty," and in another, entitled "Forecasting," a number of specific tools of analysis which can be of considerable use to the intelligence analyst.

The author first touches upon another important issue almost casually. Early in the book he states that "In part I . . . we recognize intelligence as one of the social sciences." Far from explicitly providing and justifying this recognition, however, Part I does not even consider this question. The last chapter of the book discusses at some length the characteristics of the intelligence profession compared with other professions. Here the author states that "perhaps it would be more correct to say that as at present practiced *intelligence has the makings of a profession*, rather than it is a profession" (emphasis in the original). A discussion then follows in which the author states that intelligence now lacks most of the characteristics of a learned profession, the key elements of which he lists and discusses. In short, the author asserts that intelligence is at once a social science and not a profession.

Although the author asserts early in the book that intelligence is one of the social sciences, he seems to write subsequently as though it were not. Intelligence is conspicuously missing from his list of the social sciences. The author invariably refers to *the* social sciences and never to the *other* social sciences, even when, if intelligence is a separate social science, the context calls for the latter expression. Finally, the author discusses what he believes to be a desirable undergraduate curriculum as preparation for an intelligence career and pleads for professional schools of intelligence at the graduate level. It is notable that his list of undergraduate fields includes only

courses provided by the conventional social sciences such as modern history, geography, and economics. His graduate school, which is to provide advanced studies "specifically in [the intelligence] profession," is to teach "the underlying philosophy and improved [sic] methodology of intelligence," and "to do systematic research into intelligence production methods or to explore the *basic principles* of this great field of human activity" (emphasis in the original). Nowhere, however, is a particular course or field of study laid out, nor does the author describe exactly *what* is to be taught.

In the first issue of *Studies in Intelligence*, Sherman Kent wrote a lucid and stimulating article on the need for intelligence literature.¹ Dr. Kent argued that "intelligence has become, in our own recent memory, an exacting, highly skilled profession and an honorable one Intelligence today is not merely a profession, but like most professions it has taken on the aspects of a discipline: it has developed a recognized methodology; it has developed a vocabulary; it has developed a body of theory and doctrine; it has elaborate and refined techniques. It now has a large professional following. What it lacks is a literature." Kent says, then, that intelligence is definitely a learned profession and close to being a discipline. General Platt, in contrast, concedes to intelligence that higher order of development to a discipline but does not believe it yet to be a profession.

Dr. Kent's article has stimulated considerable discussion of whether intelligence in fact has the attributes of a separate discipline and, if so, what these attributes are. General Platt's belief that intelligence falls short of being a learned profession should stimulate even more. The issues are much too complex to be considered here, even if the reviewer felt competent to do so. The reviewer believes, however, more or less intuitively, that intelligence is without question a separate profession, and a learned profession at that, because in Kent's terms it requires native intelligence, rigorous training, and both general compe-

¹ "The Need for an Intelligence Literature," *Studies in Intelligence*, September 1955, pp. 1-11.

tence and intensive specialization. With respect to whether or not intelligence is a separate discipline, it may be noted that the recognized disciplines, in addition to possessing a body of theory and a methodology and vocabulary, also deal with a particular subject matter which is more or less distinct from the subject matter of the other disciplines. Strategic intelligence, however, deals with a variety of events and circumstances encompassing almost every form of human activity, which are also the concern of the conventional natural and social sciences. Most of us believe, however, intuitively at least, that intelligence is more than the parroting of any one of these disciplines and more than their simple sum. Must we not then discover what this "more" is, and, just as important, record it for all to see, before we can know who we are and where we belong?

To some, all this may seem a mere jousting with windmills or a playing with words, particularly since the job to be done seems so clear and the time it allows for speculation so discouragingly small. Surely, however, this is not the case. Issues such as these must be faced as part and parcel of that looking at ourselves which marks our growing up. Until we face them, make up our minds about them, and write down our thoughts and our conclusions, we cannot really know about ourselves. General Platt has attempted to do this, although only partially successfully, and he is to be commended for trying.

LOUIS MARENGO

WE SPIED . . .

Walter L. Pforzheimer

In looking over the books recently published in the field of intelligence, we spied a few which we thought looked interesting enough to call to the attention of the readers of these Studies in Intelligence. We will not make any attempt in this column to give you a definitive review of these books; rather, we would like periodically to call your attention to books published in the preceding months which might make valuable reading or at least pleasant browsing.

On the subject of intelligence production, the only book published here so far this year is *Strategic Intelligence Production* by Brigadier General Washington Platt, which is the subject of a longer article in this issue. General Platt served as a Corps G-2 during World War II in Europe and worked in CIA for several years. This book represents Platt's individual views on intelligence production, a subject on which very few books have been written.

Three books concerning World War II have been very well reviewed in the press and are well worth reading. The first of these is *The Labyrinth* by Walter Schellenberg (British title, *The Schellenberg Memoirs*). These memoirs of the former Chief of the Foreign Intelligence Section of the Sicherheitsdienst, who became the head of the combined SS and Wehrmacht Military Intelligence Service, are discussed in separate articles elsewhere in this issue. A broader study of the SS has been written by Gerald Reitlinger and is entitled, *The SS: Alibi of a Nation, 1922-1945*. It too has been well reviewed and includes material on some aspects of the German intelligence system. The third book recently published of general interest on World War II is Peter Fleming's *Operation Sea Lion* (British title, *Invasion 1940*). This is a very readable account of the German preparations and the British countermeasures for the proposed German invasion of Great Britain in 1940. The book

includes a chapter on British intelligence about the Germans and a chapter on German intelligence about the British, which make good reading.

Closer to home, one should note, *The OSS and I* by William J. Morgan, who formerly served as a psychologist in OSS and CIA. The British version of this book, entitled *Spies and Saboteurs*, is somewhat shorter than the American text and does not include the chapters on Morgan's adventures in France during the war.

Ian Colvin, who already has written two very readable books in the intelligence field, has turned out another entertaining work entitled *Flight 777*. This is an account of the purported intelligence activities of the great British actor, Leslie Howard, and of the events leading up to his death in an aircraft shot down by the Germans over the Bay of Biscay in 1943. A highly readable, recently published work is Ronald Seth's *Secret Servants*, a history of Japanese espionage from 1870 to Pearl Harbor. Seth has written several books on intelligence and resistance in which he played a small role in World War II. In addition to *Secret Servants*, he has also published this year a book entitled *How Spies Work*, a sort of primer of the spy business. Seth is now turning out books so rapidly that they do not represent very deep scholarship, but rather a broad brush approach. Nevertheless, they make rapid and interesting reading. Also worthy of passing note are Jacques Bergier's *Secret Weapons*, *Secret Agents* which concerns itself largely with the efforts to steal the secrets of the German rocket installation at Peenemünde, and Gordon Young's *Cat with Two Faces*, the story of a double agent in France.

In the field of escape and evasion, one should note *The One That Got Away* by Burt and Leason, the story of a German pilot who was shot down and developed an amazing proclivity to escape; and Terence Robertson's *The Ship with Two Captains*, which is the story of the submarine which landed General Mark Clark on the shores of North Africa prior to the invasion and then participated in the escape of General Giraud from France.

On the scholarly side, a rather useful book entitled *The Soviet Secret Police*, edited by Simon Wolin and Robert Slusser, has recently been published for the Research Program on the USSR. This book deals with the evolution of the Soviet Secret Police from the establishment of the Cheka in 1917 to the post-Stalin era, and also contains some chapters on the secret police and their methods by former Soviet citizens. The first of a series of books on Communism in American life has also appeared this year with favorable reviews. It is *The Roots of American Communism* by Theodore Draper and goes back to study the radical movement in America in the 19th century before coming up to more current times.

On a more specialized subject, attention is called to *Battle for the Mind* by William Sargant, which studies in part Pavlov's techniques as applied to religious and political conversion.

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