

NAVAL WAR COLLEGE REVIEW

VOL. XIII NO. 10

JUNE, 1961

CONTENTS

STRATEGIC WAR GAMING	1
<i>Dr. Erwin Baumgarten</i>	
THE INFLUENCE AND SIGNIFICANCE OF INDIA.	24
<i>Professor Edward Younger</i>	
RECOMMENDED READING.	52



SPECIAL ATTENTION TO THE READER

The material contained herein is for the professional education of officers of the naval service. The frank remarks and personal opinions are presented with the understanding that they will not be quoted. Under no circumstances will this material be released to individuals or organizations other than active members of the officer corps of the armed services. It shall not be republished or quoted publicly, as a whole or in part, without specific clearance in each instance with both the author and the Naval War College.

Naval War College Review was established in 1948 by the Chief of Naval Personnel in order that officers of the service might receive some of the educational benefits of the resident students at the Naval War College. Distribution is in accordance with BUPERS Instruction 1552.5A of 23 July 1958. It must be kept in the possession of the subscriber, or other commissioned officer and should be destroyed by burning when no longer required.

The thoughts and opinions expressed in this publication are those of the author, and are not necessarily those of the Navy Department or of the Naval War College.

MEMORANDUM

In accordance with BuPers Instructions 1552.5A, distribution of the Naval War College Review is limited to the following:

1. Individual active duty officers of the Regular Navy, Marine Corps and Coast Guard, of the rank of Lieutenant Commander (Major) and above.
2. Individual officers of the Navy and Marine Corps Ready and Standby Reserves, and of the active Coast Guard Reserve, of the rank of Lieutenant Commander (Major) and above.
3. Joint and service war colleges whose primary mission is the education of the above categories of officers and their Army and Air Force equivalents.
4. Active duty officers of the Army, Navy and Air Force who are current or were former staff members or resident students at the Naval War College.
5. Officers enrolled in Naval War College correspondence courses during the period of their enrollment.
6. Special addressees for which the President of the Naval War College may individually determine that distribution is in furtherance of the mission of the College.

Except in the cases of Officers enrolled in correspondence courses, subscriptions will not be entered or renewed automatically. If you desire to continue your subscription for Volume XIV, please complete the form on the reverse side of this page and forward it promptly to the Head of the Correspondence Course Department, U. S. Naval War College, Newport, Rhode Island. Only one copy of the Naval War College Review will be sent to each addressee.

Date:

Head, Correspondence Courses Department
U. S. Naval War College
Newport, Rhode Island

It is requested that Volume XIV of the Naval War College Review be mailed to me at the address below. I am eligible pursuant to category number of the memorandum on the reverse of this application.

- This is a: New subscription;
- Renewal subscription, with no change in address or rank;
- Renewal subscription, with change in address or rank.

.....
(Name, rank, and service designator)

(PRINT)

.....
(Mailing address)

(PRINT)

.....
(Signature)

**NAVAL WAR COLLEGE
REVIEW**

**Issued Monthly
U. S. Naval War College
Newport, R. I.**

STRATEGIC WAR GAMING

A lecture delivered
at the Naval War College
16 February 1961

by

Dr. Erwin Baumgarten

War games take many different forms, ranging from the ancient game of chess to elaborate computer simulations. Some are parlor games played for entertainment or as intellectual exercises. Others are meant for the serious study of a wide spectrum of political, military or economic conflicts. The popularity of serious gaming is increasing rapidly, both in the military and elsewhere. I should like to mention some indicators of this trend:

A flag officer was designated as Assistant for War Gaming in CNO two or three years ago. His office (Op-06C) is in the Plans Department. This officer is responsible for the Navy's extensive war gaming program.

Several universities are experimenting with political and diplomatic games as educational devices.

Gaming is being explored as a technique for executive training in industry. *Fortune* magazine carried a long article on business games in March 1958.

Incidentally, the whole group of serious gaming activities is often called "operational gaming" rather than war gaming, since gaming techniques have been generalized to non-military problems. This term is meant to emphasize the scope of modern gaming

activities. Traditional war games of strictly military problems are, of course, included. The game you are going to play next is a true operational game. Political and military elements are of roughly equal importance. The spirit of the game can be expressed by Clausewitz's famous dictum that "War is the continuation of politics by other means."

It has also become fashionable to give a distinctive name to each particular type of game. Unfortunately we do not have a convenient one for our local version of a strategic war game. Your nominations are invited. In the meantime, I am going to call it the Naval War College Game when I refer to it this morning.

You have read the study directive and heard Commander Johnson's orientation a few minutes ago. There is little point to describe the forthcoming game or go over the war gaming background in the directive. It seems more useful under the circumstances to indicate some of the key problem areas in strategic gaming in general and relate these problems to your specific game. In this manner, I hope to give you a new perspective of the field of Strategic War Gaming as a whole.

Here are the topics that I am going to cover. By way of general background, I am going to start with an outline of the elements of operational gaming and go on to a description of a modern strategic game called SWAP. SWAP has quite a different flavor from any of the games now played at the Naval War College. It will serve to broaden your acquaintance with different game types. I will then spend a few minutes to discuss the implications of value problems in strategic gaming. The last topic is a personal appraisal of the role of gaming as a strategic planning tool.

A. Elements of Operational Gaming

To begin: Operational Gaming is concerned with the study of human conflict. It is perhaps best defined as paper or computer simulation of conflicts with live participants in decision-making roles. Simulations with actual physical equipment, such as fleet exercises, are normally not considered to be gaming activities.

Operational games are customarily classified under two headings, education and analysis.

Educational games are primarily exercises in decision-making. Participation in well-designed games also strengthens the players' understanding of the problems of the corresponding real world conflict.

Analytical games are planning tools, to evolve concepts, compare alternative courses of action and test plans. They are sometimes called predictive games. I personally do not like this name since it suggests clairvoyance.

Our Naval War College Game was constructed primarily for the educational function. But it also has certain aspects of an analytical game since it subjects your National Strategy Papers and JSCP's to a partial test.

Most of the political and military conflicts, which interest us here, are very complex. At first sight they seem to defy rational analysis altogether. To come to grips with the underlying problems we have to use a common scientific dodge, construct a more manageable model and study it in place of the real world situations. This is true regardless of the purpose of our study.

Before we can construct a model we have to identify the essential features of actual conflicts. Here is the list:

There are at least two opponents or players.

The players have opposing interests.

Neither controls the situation by himself. Both players have to recognize that the effectiveness of their moves depends at least in part upon the reactions of the opponent.

The outcome of military and political conflicts is never predictable with confidence. The uncertainty is only partly due to statistical or chance variation. Even more troublesome are the ever-present real uncertainties.

You may recall that I discussed the distinction between real and statistical uncertainties when I spoke about the application of statistics to certain military problems last August.

Because of the chance factor, probability and statistics are needed to analyze most conflict situations. But probability and statistics by themselves are not enough since they do not really help in out-guessing the other fellow.

The interplay of action and reaction is the most characteristic feature of conflicts. It distinguishes decision problems involving human antagonists from all others in which we are only opposed by the impersonal forces of nature.

Operational Gaming is essentially an empirical approach to the study of consequences of possible enemy actions. Its mathematical counterpart is the Theory of Games. Gaming as such is, of course, much older than Game Theory. But modern gaming practices are strongly influenced by the mathematical theory, the theory invented by the late John von Neumann, a very versatile scientist who worked on atomic weapon development and later served as AEC commissioner.

Von Neumann began his study of conflicts by analyzing a stripped version of two-handed poker—not strip poker, though. His model studies gave von Neumann new insight into the basic nature of conflict and led him to the formulation of criteria for rational action in the face of intelligent opposition. A few game theoretical solutions to relatively straightforward tactical problems have by now become an integral part of standard Navy doctrine. Von Neumann himself had a hand in planning Operation STARVATION, the eminently successful mining campaign against Japan.

You may wonder at this point how a poker game could have any conceivable worth as a model of military or political conflicts. Actually, model building is more an art than a science. The proof of the pudding lies in the eating. Very simple models have often turned out to be the most useful. If you think about it for a moment you will see that a poker game has all of the essentials of conflict that I listed a moment ago.

I do not want to leave an impression, though, that practical decisions can now be made simply by the application of the proper mathematical formula. Most military and political problems are far too complex for explicit analysis. But Game Theory can often provide a framework for qualitative rather than quantitative study of conflicts. This alone is worthwhile. It helps to visualize the consequences of possible enemy actions and may clarify key issues. But the theory is no substitute for experience and good professional judgment.

If you want to look into Game Theory, I suggest that you read *The Compleat Strategyst*, by John Davis Williams. It is very nicely written. The cartoons are quite amusing. Another book that you may find interesting is Schelling's *Strategy of Conflict*. It attempts to analyze deterrent concepts in a game theoretical setting. Schelling's approach makes good sense to me. Neither of the books includes any mathematics.

Game Theory and Operational Gaming are not the only instances where study of parlor games led to practical applications. The same was true of classical probability theory whose economic value to insurance underwriting was recognized only after a couple of hundred years.

The accident of birth explains the frivolous names: Game Theory and Operational Gaming. It also accounts for some of the terminology common to both fields. I am going to mention some of the terms you are likely to meet in reading about gaming activities. To repeat: Game Theory is a rationale of conflicts. Operational Gaming is a paper simulation. Opponents are players. A player may represent an individual combatant unit, a fleet or a whole nation, depending upon the context. The only requirement is a common goal or objective. The rules of engagement are the game. In gaming the rules are often called "The Model." A single contest is a play of the game. The outcome determines the pay-off. The terminology also has military overtones. The players' courses of action are strategies, or occasionally tactics. Specific implementing actions during a play of a game are moves. The broad strategic framework or setting is commonly called the scenario.

Figure 1 shows schematically how conflict situations are simplified for Operational Gaming. Mandatory elements are two sides with opposing interests and an umpire. There are also more complicated multisided games, which I will mention later.

Each side may actually be a team, whose members are more or less independent but have a common goal. The players are free to act within the framework set by the rules of the game.

The umpire is interposed between the two sides to control the flow of information and take the part of nature. As such he simulates the "fog of war" that

"Gaming Schematic"

B L U E

P U R P L E

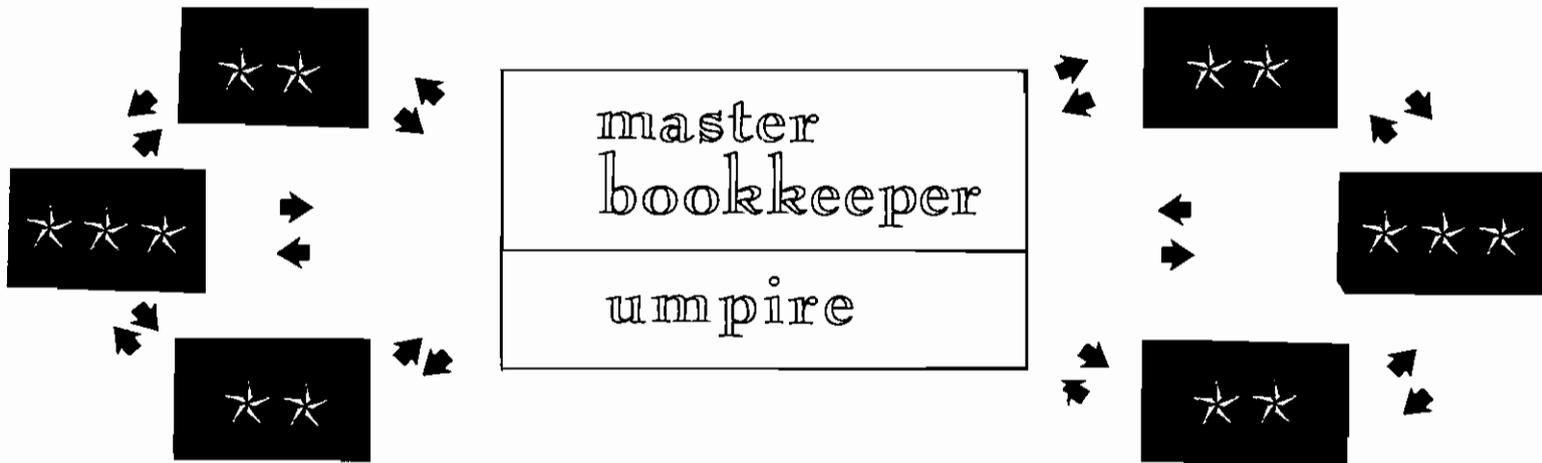


FIG. 1

keeps the players in partial ignorance of each other's moves. He also decides the outcome of engagements. The umpire usually has some kind of bookkeeping system to keep a true picture of the whole situation in front of him.

There are two basic types of games; "Rigid" and "Free." Rigid games are played in accordance with a complete set of rules for all contingencies. The umpire's role is primarily that of a go-between. All decisions are made by rolling the dice, or some other chance device. Realism has to be built into a rigid game beforehand. The rules have to reproduce the essential features of the prototype faithfully. Their construction demands professional judgment of the highest order.

The rules of free games are usually quite sketchy. Players are expected to conduct themselves in accordance with their previous experience in the real world. Umpires are given wide discretion. They may render their decisions solely on the basis of their professional judgment, without recourse to formal rules or chance devices. The success of a free game is largely determined by the qualifications and perception of the umpire.

Both types of games have advantages and disadvantages. It is perhaps a little harder to avoid bias in free games. Rigid games require much more effort, both in preparation and during actual play. It is, therefore, not surprising that fashions change. Rigid games were in vogue first. Free games were more in favor during the first half of this century. Rigid games came back recently. This was partly due to the advent of computers, which made rigid games more manageable. The increasing influence of analytical techniques in military matters may also have been a factor.

The mechanical aids for bookkeeping and umpiring take many different forms, depending upon the purpose

at hand. Here are some examples: Chart Maneuver, Game Floor, and Electronic Computer. But elaborate instrumentation is really not necessary. The simple game of "Battleship" has most of the necessary elements to qualify as a perfectly good operational game. Montgomery of Alamein often explored his moves on the back of an envelope, with his intelligence officer in the role of Rommel.

B. A Strategic War Game (SWAP)

This seems to be a good place for an example of a modern operational game. The one I am going to outline is called the Strategic Air War Planning Game—SWAP. It is a member of a family of RAND games for exploration of a number of different research and planning problems.

SWAP is concerned with the efficient allocation of a given budget for nuclear striking power in general war. It fits the simple "Gaming Schematic" of Figure 1. The conflict is strictly two-sided between the BLUE and PURPLE Defense Establishments. There are no provisions for interactions with third parties, either with other countries or with other national institutions.

SWAP is related to the JSOP very roughly in the same manner as your game is to the JSCP. But the analogy is not too good. This is no disadvantage from our point of view this morning. Comparing SWAP to the War College Game illustrates the need to tailor the structure and rules of games to the problems under study. SWAP's concern over economic constraints serves as a reminder that budget problems are strategic in nature. This factor is occasionally overlooked.

The broad strategic setting of SWAP conforms to the current view of "Protracted East-West Conflict" as a struggle without foreseeable end. Both players have to program capabilities for an all-out nuclear

exchange at an unknown time. The necessity to plan for adequate D-day readiness on a continuing basis is one of the most valuable features of SWAP. Admiral Burke has said repeatedly that trade-offs between early and late capabilities are among his hardest decisions.

SWAP has three phases, which I will now describe: Procurement, operational, and critique.

The procurement phase covers a five-year period. Initial conditions constrain both sides: Forces in being, firm programs, and fixed budgets. But players have money left over after they meet their already existing commitments. They allocate their disposable budgets for items on their shopping lists: Additional striking power, more defense, including tactical warning, research and development effort, or more intense intelligence activities. They do so year by year in five annual moves. Before each move the umpire furnishes last year's own R&D results and new intelligence about the opposition. R&D successes and the amount of intelligence are functions of the budget allocations in the respective categories. I will come to the intelligence and R&D models in a moment.

The operational phase is designed to test the aptness of the budget decisions. It consists of two flashbacks to different points in the time span of the procurement phase. Each flashback is a map exercise of an all-out exchange, played once along conventional lines.

The two D-days are chosen at random after completion of the sequence of the five budget moves. This procedure tends to keep the need for constant readiness without gaps before the players. But it is not entirely satisfactory. Knowing that the game ends after five years may tempt the players to cut out long lead-time procurement and R&D expenditures in the later budget moves.

The critique after the operational phase fortunately discourages this kind of unwarranted shortsightedness. It is an integral part of SWAP, as it is in most RAND games. Informal critiques can be most profitable. The free exchange of ideas often brings out the reasons for particular outcomes and gives a feeling for the sensitivity of results. Certain general principles may become apparent after playing a game only a few times. RAND has expressed considerable confidence in the validity of lessons learned from their Project SIERRA, a series of map exercises of limited wars.

This approach is logically similar to the one used by the 19th century strategists, who derived "principles of war" from a study of history. War games are, in effect, treated as if they were synthetic history.

By the way, you will have an opportunity to form your own opinions about the value of critiques. There will be a wash-up after your game.

SWAP is a completely rigid game with an exhaustive set of rules and little or no umpire discretion. RAND designed some clever gadgetry to keep the game playable without resort to computers.

The procurement phase is played on a "menu board." The menu board is similar to a chessboard. Each square represents a way of spending money, say more Polaris submarines, air-to-surface missiles for B-52's or satellite reconnaissance. Players get their budgets in the form of a stock of chips. Allocations are worked out by distributing the chips on the menu boards. The procedure is self-checking. There is no way to run up a deficit.

To simplify the operational phase a hexagonal grid is superimposed over the map. All combat actions take place at the centers of hexagons. Playing on a

grid is an old war gaming trick. But the hexagonal grid is better than the more common checkerboard pattern. Movements are less artificial; the circular ranges of active defenses are represented more readily.

The operational rules for SWAP differ from those of other map exercises only in detail.

The simulation of basic uncertainties during procurement is more interesting. A lottery model determines success of research, development and intelligence activities. A unit money allocation buys one ticket. Each ticket is a claim to a fixed probability of success. Buying several chances increases the probability. But no amount of money guarantees success.

To illustrate: Suppose a \$100,000,000 program is given a 50% chance of achieving some operational capability by 1965. Nearly \$400,000,000 would then be needed to raise the probability to 90%.

The intelligence model has a further refinement. It provides for two basically different types of error. The system may fail to produce the desired information. It may also come up with misinformation. In other words, the "Where there is smoke" principle is built in. The source of trouble may be a smoke generator, not a fire.

The unit probabilities for intelligence success and the two types of error have to add up to one. This means that increasing effort increases good and bad dope in proportion. Doing this is still advantageous, though. The greater over-all volume helps in evaluation and screening.

All in all, the SWAP uncertainty models are quite reasonable in principle. But assignment of success and failure probabilities is highly subjective.

This factor seriously limits the analytical utility of SWAP. In its present form, it may perhaps serve as a screening device for preliminary exploration of novel strategic concepts or rough comparison of radically different budget allocations. But I certainly would not want to trust it any further as a planning tool.

The arbitrary elements in the uncertainty models detract far less from the educational potential of SWAP. The structure of the game is quite realistic. It correctly reflects the qualitative relationships under study and poses the right kinds of alternatives to the players. Thus, SWAP can provide meaningful practice in decision-making. This is the key requirement for a good educational game. Whether the quantitative relationships, including the probability inputs, faithfully portray the real world is much less important by comparison. After all, we are placed into many different environments during our lifetimes and are constantly forced to make crucial choices. This is bound to happen, whether we like it or not.

The question of the validity of inputs arises in all operational gaming. It becomes particularly vexing in games with a future setting in an era of rapid technological change. Our own capabilities are at best poorly defined. They are always bold projections from insufficient data and become little better than guesses when the time span of the extrapolation is long. Estimates of enemy capabilities tend to be even worse. His unit performances are merely mirror images of ours.

Where does all this leave us with regard to the probability inputs stipulated in your game directive? I am sure that I am not telling you any secrets, if I admit that the Naval War College does not own a crystal ball. Everybody shares your misgivings. None the less, I suggest that you do not fight the problem and accept the probability models for what they are

worth. The inputs were prepared quite carefully. They should be good enough for the primary purpose at hand—to make the game a useful exercise in decision-making.

C. Value Problems in Strategic Gaming

The question of the fidelity of models is by no means the only difficulty in strategic gaming. The choice of objectives can be even more troublesome. To state the problem in gaming language: It is often not at all obvious how to value gains and losses and assign the players pay-offs.

It is true that objectives can usually be taken pretty well for granted at the tactical level. In general, we will not go far wrong if we regard battles as two-sided, zero-sum conflicts, in which losses of one side are gains to the other. A zero-sum relationship greatly simplifies the choice of proper objectives.

The situation becomes much more complicated at higher levels of action. Let us briefly consider an overseas transport campaign that one might well play on the NEWS as a theater level strategic game. At first sight losses of cargo ships and submarines suggest themselves as pay-offs and were in fact widely accepted for this purpose early in World War II. But it became apparent as the war progressed that we had to look further than the outcome of engagements at sea.

The function of the transport operation was the delivery of cargo at the destination. Saving ships and sinking submarines were just means to this end. The allies soon found that they could cut their losses substantially by sailing ships in convoys and routing them evasively. However, doing this materially increased ship cycle times and adversely affected delivery rates. This meant that the U-boats could

score a success without ship sinkings if they could force traffic into convoys and onto circuitous routes. Conversely, the allies could gain a real advantage by improving port efficiencies. Shortening ship turn-around times could increase delivery rates just as well as sinking U-boats.

You see that choosing a satisfactory pay-off for an overseas transport game is a complicated matter. Total cargo delivery during the campaign seems to be pretty good, despite some shortcomings. With this pay-off, ship sinkings and U-boat kills are still important. But they are not the whole story.

I should now like to mention an even more dramatic indication of the subtlety of strategic criteria taken from the field of air warfare. The wartime strategic bombing campaigns were generally directed against industrial and transportation targets in order to hamper arms production. At the same time, there was a widespread feeling that careful target selection was really not necessary and that generalized urban damage would be quite sufficient to disrupt the enemy's war effort. However, the postwar bombing survey uncovered some rather convincing contradictory evidence.

Three heavy air raids in quick succession devastated Hamburg in the spring of 1945. A fire storm obliterated a large area of tenements and subsidiary service facilities in the center of town. It appeared at first sight that Hamburg could be written off as a war production center, even though the major industrial plants on the outskirts had suffered surprisingly little damage.

But this was not so. Hamburg's productivity before the raids had been limited by labor shortages. As in all city bombing in World War II, except Hiroshima and Nagasaki, property destruction in Hamburg was out of all proportion to population casualties.

The raids freed additional labor for war work and paradoxically increased arms production. In a sense, the overkill due to the fire storm helped the German war effort so that the attack defeated its own purpose.

I think that the brief discussion of the overseas transport and strategic bombing problems illustrates the difficulty of formulating appropriate pay-offs for strategic games even at the strictly military theater level. Consensus about objectives becomes progressively rarer as we move to higher decision levels. The current debate about the choice of deterrent weapon systems is a case in point. Divergencies of opinion about values and objectives are at the roots of the controversy.

Going back to SWAP for a moment. In this type of game basic military postures are crucial. Players have to know whether they are aiming primarily for "first strike" or "retaliatory" capabilities before they can intelligently allocate their resources and write operational plans. You recall that the players in SWAP act in the roles of their respective Defense Departments. Decisions about basic posture do not properly belong at this level. They have to be made by the SWAP control group before the game and treated as inputs by the players.

To have free choice of basic military postures, the scope of the game has to be expanded into the political domain. Highest national decision levels have to be simulated. Here, value judgments become central strategic issues. This factor makes policy determinations exceedingly difficult.

A useful political game has to reflect the realities of the existing international system (Figure 2). Independent actions of many nation players have to be considered. The conflict between the two main protagonists stands out above all others. The main

POLITICAL GAMING

MULTISIDED WITH ALLIANCES

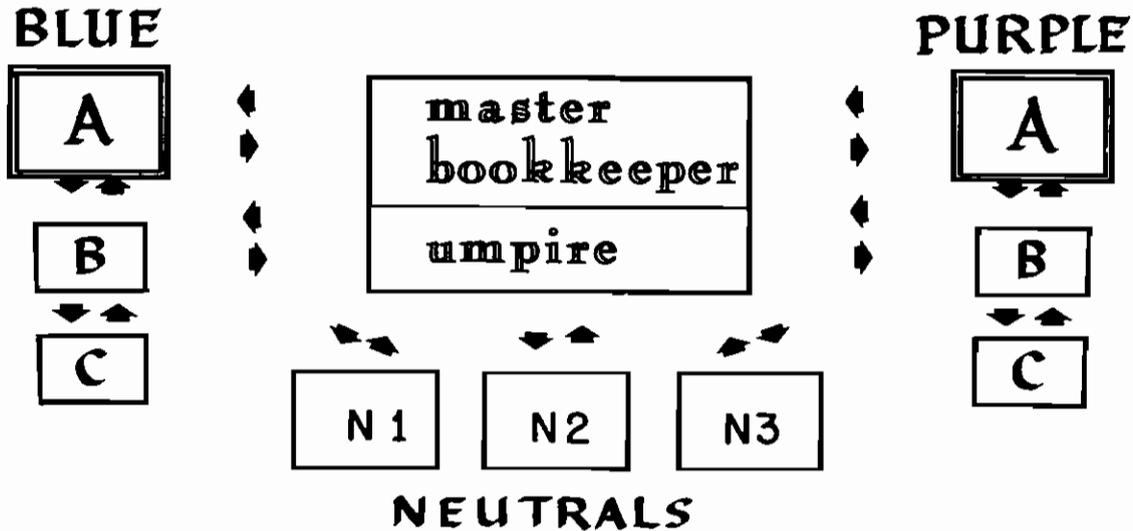


FIG. 2

protagonists are leaders of alliances of sovereign powers. A number of neutrals are also in the game. The nation players themselves are, in effect, very tight coalitions of domestic interests. The main protagonists are strongly antagonistic. However, it is important to recognize that they also share certain vital interests. Nor can parochial domestic interests be neglected altogether.

A simple two-sided, zero-sum model is clearly inadequate for gaming at the political level. To go to the other extreme and represent all of the interlocking interests by independent players would be very clumsy, to say the least. Construction of a political game of the rigid type looks hopeless. In this regard, conflicts of interest within alliances and common interests between the main protagonists pose unresolved problems. So far it is not at all clear how to simplify the complex international system for study by gaming techniques. But, of course, political gaming is still in its infancy. The political games I have heard about are limited to diplomatic interactions between a moderate number of nation players. One successful game was conducted in a United Nations forum. These games are essentially negotiating exercises.

The Naval War College Game is in some respects more ambitious. As far as I know it is the only attempt to date that allows a full range of political and military actions in the same game. Simplifying compromises had to be made to make this practical. There are just two opposing nation players, each represented by a supreme political authority and the top two echelons of military command. But the game is only superficially two-sided. The control group will simulate necessary actions of the remainder of the international system to provide a realistic environment for the exercise in decision-making on the part of the active players. There are no formal rules for political umpiring, for obvious reasons. Umpiring of

military actions will also rely heavily upon the personal judgment of control group personnel. But here they have the help of the formal umpire rules listed in the directives. I am sure that you realize that the control group is faced by a formidable task. Be patient if they seem to favor the other fellow. Your turn will probably come next.

D. Gaming as a Strategic Planning Tool

The last topic is the applicability of gaming as a strategic planning tool.

The first recorded use of strategic gaming goes back more than 100 years. The Prussian Army started to game campaigns against Austria in 1848, foreshadowing the "Seven Weeks War" of 1866. Gaming techniques were employed extensively as final tests of war plans by the General Staffs of Western Europe throughout the second half of the 19th century. High-level planning of this era was preoccupied with the military exploitation of the then-new rail nets. Strategic gaming therefore concentrated upon mobilization and logistics, rather than upon combat problems. On the whole, these gaming activities appear to have been well worth the effort.

War games occupied a prominent place in the curriculum of the Naval War College almost from its inception. The early games had important analytical elements in addition to their primary educational function. They apparently had a direct impact upon U.S. Naval policy. The games of 1895 indicated the strategic value of a Cape Cod Canal. Those of 1903 contributed to the formulation of the principle of concentration of the battle fleet.

The Axis powers in World War II made extensive use of gaming both in the early planning stages and for final testing after plans had been written. Axis experience generally seems to support the utility of gaming technique as planning tools.

Map exercises of the amphibious attack on Britain disclosed basic operational difficulties. The results may have contributed to Hitler's decision to abandon Operation SEA LION.

The tests of Plan BARBAROSSA indicated that German resources at hand were barely sufficient for successful invasion of Russia under the most favorable circumstances.

Turning now to the eastern end of the Axis, basic Japanese war plans were evolved in a series of political games in 1940. Specific campaign plans were subjected to test by gaming later on.

The political games were elaborate affairs, conducted in the so-called "Total War Research Institute." The major world powers were simulated. NIPPON was represented by a coalition. Army, Navy, Cabinet and key economic activities were portrayed as quasi-sovereign agencies.

The Tokyo games suffered from unmistakable bias in favor of the home team. Some of the participants recognized a decided lack of realism in the planning. The bias reflected itself in arbitrary decisions. Game directors repeatedly upset umpire rulings that did not agree with their preconceived notions. The test of MIDWAY plans illustrates this tendency. Admiral Ugaki nullified a ruling which placed two Japanese carriers out of action. As you know, history soon endorsed the original assessment, which Ugaki had overruled as "unrealistic."

Let me now list some of the strengths of gaming as a strategic planning tool.

Solution of complex strategic problems usually demands the application of a variety of skills. It then becomes a group effort. The gaming environment helps to give each type of expert a hearing and forces

all participants into recognition of each other's difficulties. The game setting may be a better way to bring a number of different backgrounds together than either the committee approach or the conventional study team.

By gaming, problems may be investigated in broad context. This is important when interactions are poorly understood and critical factors cannot be isolated. Conventional methods of analysis then become difficult if not impossible. Often-repeated war games may produce new insight under these circumstances. The Navy War Gaming Program hopes to do just this through its computer gaming activities at APL/JHU and elsewhere.

Gaming subjects the planner's ideas to the rigorous test of intelligent opposition. Relying upon the authors of a plan to find its flaws amounts to controlled schizophrenia. To make someone else the devil's advocate is really much better. Providing a competitive environment for testing of plans is perhaps the greatest virtue of gaming.

Gaming also has decided weaknesses. Good games are expensive. Preparation is time-consuming. Players have to be well-qualified for their assigned roles. Games conducted by inexperienced players may have large educational pay-off. But the significance of results is always suspect.

In using gaming to approximate enemy reaction, we must never lose sight of the fact that the part of the opposition is taken by our own people. Americans just do not think like Russians! Let us also remember that a game is merely a simulation. A person may act quite differently under the pressures of real responsibilities.

The validity of gaming is critically dependent upon umpire objectivity. Biased games are worthless.

The Japanese experience is a case in point. Merely accepting the roll of the dice during the game is only the first step. Proper construction of rules beforehand is just as essential.

I will not attempt to give an appraisal of educational gaming. Your own experience as participants this year will give you a much better feeling for the educational value of war gaming than I could give you this morning.

E. Summary

I will now recapitulate the main points of the lecture:

Strategic gaming is a paper simulation of human conflicts at the international level. It tries to come to grips with a very basic difficulty—the problem of enemy reaction.

Gaming activities have two broad functions—education and analysis. Educational games should be regarded primarily as exercises in decision-making in conflict situations. They also add to the players' appreciation of the complexities of underlying problems. Analytical games are planning tools. They are often excellent to test plans and uncover flaws. Gaming can help in evolving new strategic concepts and may add to an understanding of the rules of complex engagements. Both types of games can get us into trouble if the models are faulty, inputs are biased or otherwise seriously in error, or if the value judgment implicit in the strategic objectives are inappropriate for the real problem. These difficulties are inherent in all problems involving the interplay of action and reaction. They have to be faced regardless of the method of solution. In balance, gaming is an excellent technique for the study of conflicts.

BIOGRAPHIC SKETCH

Dr. Erwin Baumgarten

Present Position: Chair of Physical Sciences, Naval War College.

Schools:

- 1940 - California Institute of Technology, B.S. degree.
- 1941 - University of California (L.A.), M.A. degree.
- 1943 - Duke University, Ph.D. degree.

Career Highlights:

- 1943-44 - Research engineer, Am. Gas Assn.
- 1944-46 - Research engineer, The Best Foods, Inc.
- 1946-52 - Research chemist, Am. Cyanamid Co.
- 1952-date - Operations Evaluation Group, OpNav. assignments follow:
 - 1953-54 - Assignments to CARDIV's 14 and 18.
 - 1954-55 - Staff, COMANTISUBLANT.
 - 1955-56 - Scientific Analyst, Submarine Branch, OpNav. (Op. 311)
 - 1956 - Project NOBSKA.
 - 1956-58 - Assistant to Director, NAVWAG (Op. 93R).
 - 1958-59 - Staff, COMFIRSTFLT.
 - 1959-61 - Staff, Naval War College.

THE INFLUENCE AND SIGNIFICANCE OF INDIA

A lecture delivered
at the Naval War College
3 November 1960

by

Professor Edward Younger

Gentlemen: In this lecture I expect to ramble around somewhat. At the end I may have to stop abruptly in order to let you out on time. So, to make certain that I get my conclusions in, I'll give them to you in the beginning. I am here to tell you about the significance and influence of India in the world today—to explain why she is important.

India is important today because she is a stabilizing influence in a chaotic world. She is important because of her great size (half as large as the United States) and population (a seventh of the world's people). She is important because of the tendency among the newly emerging nations today to follow her example. She is important because, unlike most of the other emerging nations, she has reached a stage in which she possesses all the elements of economic growth except sufficient capital.

India has a stable, democratic government with a battery of imaginative and capable political leaders. She has a reasonably honest and a reasonably efficient civil service system. Indians believe their government is more corrupt than it really is. Some petty, institutionalized corruption does exist, and occasionally scandal at the top rocks the country. Still relative honesty prevails. The civil service is red-tape-ridden and somewhat rigid, but still it operates with reasonable effectiveness.

In government, in industry, and in agriculture, India has competent organizers, managers, and technicians. She has a rapidly growing commercial and industrial tradition rooted firmly in both Indian and British experience. Many of her leaders have a high degree of financial and industrial sophistication, and can plan and execute successfully. In addition to all these she has a vast potential home market, one of the greatest labor supplies in the world, and she possesses the will and determination to modernize. And with continuing capital she can look forward with confidence to the coming of industrial take-off.

India is important too, as we can see here on the map, because of her strategic geographical position. I don't intend to elaborate in detail on this obvious factor. But let me remind you that between Ankara and Peking, India has the largest, most efficient, most experienced, and most deployable military force. The Indian Army has the tradition of more than a century of organization, discipline, and battle training. Since this army is determined to defend the Himalayan wall against Red Chinese aggression, it is automatically guarding one half of the uncommitted people. Communist control of India would seal off the Arabian Sea, the Indian Ocean, and the Bay of Bengal, and release millions of Fifth Columnists into Africa and Asia. Should India swing behind the Red Curtain, then freedom would be untenable in Southeast Asia, the Middle East, and East Africa.

India, moreover, possesses an almost compelling strategic political position among both the committed and uncommitted nations. She is the leading neutralist nation. She has attuned her strategic political position with the drift of world politics and has created for herself an important position of power among the nations of the world, especially among the neutralist nations. Her influence and prestige are great in Southeast Asia where her culture was liberally planted centuries ago. Even in modernized Japan

she is watched intently. Her influence and prestige are also great in the Middle East; Nehru most probably taught Nasser his first lessons in neutralism.

India, moreover, has great influence among the emerging nations of Africa, and she has some influence in Latin America. She is a powerful force in the British Commonwealth. In this important association of nations, she is the most influential Asian country. As we daily observe, she is a vital force in the United Nations and can influence votes there whenever she desires. More important, she is a stabilizing influence in the United Nations and opposes the sinister efforts to destroy it.

India's important strategic geographic and political position therefore makes her the lynch pin for free society in East Asia, Southeast Asia, South Asia, the Middle East, and East Africa. Remove the pin, let her fall under communist control, and Lenin's road to Western Europe through Peking and Calcutta would be completed. Japan's open society would close up again, and America's isolation from her friends would be assured.

India is significant in the world today because of all these factors but, above all, she is significant because of the great social and economic *Experiment* she is conducting. It is unfortunate that this *Experiment* is considered a race with Red China to see which can industrialize first. If time in the race is the exclusive determinant, then Red China with her lawless, ruthless, violent, godless methods is most likely to win. But India is emphatically not running a race with Red China. India and Red China are not running even in the same direction nor toward the same goal. Red China is seeking to impose a totalitarian system, first over her own people, and next over the world. Lusty for power, she is bartering human liberty for imperialistic and economic ends.

India, on the contrary, is a crucial laboratory where democratic institutions, deeply rooted in human values and operated by free men, give great promise of success. If she does succeed, she proves that in underdeveloped Asia, an economic revolution can be effected without doing violence to the kind of civilization we are determined to preserve in a world shaken by revolution. And in addition, I wish to say now that India's pace toward industrialization is strikingly fast. Later on I shall develop this fact more fully. But here let me hasten to add that her success in achieving her economic and social aspirations and in avoiding communist control, will depend in large measure upon the determination of her leaders and people to resist the threats both from across the borders and from subversion at home, and remain free.

Now let us glance at some of India's problems. There are many—the education problem, the problem of industry, the agricultural problem, the population problem, the language problem, and the problem of government and leadership, to mention what I consider the main ones. Few countries have so many colossal problems to solve; yet India approaches them with considerable confidence and calm.

The problem of education, I believe, deserves more attention than it usually gets either at home or abroad. Let me introduce you briefly to some of the problems of India's system of higher education, which despite mushrooming growth, is not producing an adequate number of technicians. On the other hand, it is producing an unemployable educated class which helps to foment today's student riots and could lead tomorrow's communist revolution.

I can illustrate the problems of higher education more concretely by drawing from some of my personal experiences. Three years ago I had the great opportunity and pleasure of teaching American history and government at one of India's oldest universities as

Fulbright Professor. From time to time, also, I gave lectures throughout India, mostly on American foreign policy. My wife and 10-year-old daughter accompanied me, and on these lecture tours we traveled some 15,000 miles inside India.

For most of the academic session of 1957-1958, I was a full participating member of the History and Politics Departments of Allahabad University. This University is located in the city of Allahabad which sprawls out over a large U-shaped area formed by the confluence of the Ganges and Jumna rivers. It is a very interesting spot. Allahabad is an ancient Hindu city, one of the oldest in India. It is a large country town of about 400,000. It has little industry, but is filled with educational institutions and printing presses. It has at least 35 colleges if those of the intermediate (junior college) level are counted.

One of the most famous of these institutions is the Allahabad Agricultural Institute founded by the indefatigable American Presbyterian missionary, Sam Higginbottom. One of the leading schools of its kind in India, it is in part financed by American private and foundation funds. It not only trains future Indian leaders in agriculture, but also young men and women from East Africa and Southeast Asia.

Allahabad is a famous religious center also. Most of the world's great religions are represented there. The name Allahabad, harking back to Muslim rule, means the City of God. The spot where the two rivers converge is one of the great holy places in India. Here Hindus crowd in by the tens of thousands every January to bathe and be purified. In some years these religious festivals attract pilgrims in excess of a million. Although a majority of the people are Hindus, there are numerous Muslims and Christians (both Protestant and Catholic), and some Sikhs, Jains, Buddhists, Parsees, and Jews. The great Buddha himself was born, reared, and first began to propagate

his faith in the adjacent state of Bihar not far east from Allahabad. My Presbyterian daughter attended a school run by German Catholic nuns and was taught by sari-wearing Indian women of varying faiths. Among the student body of some 600 little Indian girls, nearly all the great religions were also represented. To live there was in some measure to participate in an experiment in the co-existence of the world's major religions. But it was also a society in ferment, throwing off old traditions, testing new political wings, trying desperately to rise economically.

We lived in a large, joint-family house near the edge of the campus. At the University I gave lectures on American history and government to four large groups (about 70 students each) of M.A. candidates in history and political science. At each of my opening lectures I invited my students to an "At Home," (meaning in India a Tea Party) each Wednesday afternoon. The very first Wednesday afternoon an attractive, sparkling group of students showed up. The next afternoon others arrived, and before we fully realized it we were having "At Home" almost every afternoon—not merely Wednesday. Sometimes faculty members and townsmen joined us, and often they invited us to their homes, tea parties, and wedding feasts. At all times and everywhere we found the Indians curious, gentle, kind, and deeply hospitable. We felt at home among them. At our "At Home," the chief topic of conversation was politics—international politics about America, India, and Russia. The students were gregarious, utterly uninhibited, and owing to the elaborate screening process in India's educational system, they were usually highly intelligent. From them we gained an appreciation of their problems and what we hope are deeper insights into their way of life. The exchange was not a one-way street. We learned as much, if not more, from the Indians than we imparted to them.

Allahabad is the fourth oldest university in India. Over the years it has built up a reputation for

a distinguished faculty, fine scholarship, effective teaching, and for producing a great many of the young men who could pass the competitive examinations and get into the Indian Civil Service. Some twenty years ago it had an enrollment of, say, about 800 students who came from urban middle class, literate, educated families. Now following independence, enrollment has jumped from 800 to 8000. With independence the British vacated high positions in government and business. In the scramble for qualified Indians to fill these posts, the universities were among the first places to be raided. Many of the more mature and experienced professors were lured away, leaving as replacements often the young inexperienced teachers, often graduates of Allahabad University, and sometimes lacking in prestige and confidence.

And while these sudden developments were taking place, the composition of the student body was also changing. Whereas most of the 800 students belonged to educated families from the towns, now they began to stream in from the villages, from families without education and often without adequate funds. Having broken away from the ties and restraints of family and village, these new students were massed into a strange university environment without adequate housing, food, classrooms, books, supervision, and leadership. The result has been some decline of academic excellence and the increase of student restlessness, rowdiness, and rioting.

To make matters worse, great numbers are unable to get employment upon graduation. So, they decide to work for an M.A. rather than return home. Having procured the first M.A., they still may not be able to find a job; so they remain for a second M.A. It is possible to find students with two or three M.A.'s, each in a different subject, and still jobless. Idle, frustrated, and restless, such students are obviously susceptible to communist propaganda and promises; and they help to create confusion and explosive situations

which discredit the present moderate, liberal leadership and invite communist agitation, infiltration, and violence. Although many factors are involved in the student rioting, still student unemployment (or potential unemployment) upon graduation is a constant factor underlying such disorders. Since these students are the future leaders of India, the problem has long-range implications. If these newly educated groups cannot find employment under the present liberal, democratic system, sooner or later they are likely to accept extreme, totalitarian methods, that is, communism.

During the nineteenth century Britain gradually introduced Western liberal education in India. As schools and colleges sprang up, Asian and Western thought began to encounter each other in depth as nowhere else in Asia. Because of a wise, liberal, moderate response from the Indians, there developed a fruitful synthesis which makes for common ground and understanding. On the other hand, the British pattern of education was loaded heavily on the side of the arts and classics, on a liberal arts education. Although independence has brought a tremendous expansion, additional trained minds are needed. But sheer size is not the whole problem. Quality must improve as quantity grows, and the content or emphasis needs to be changed at once. India needs more practical training at the elementary level, more science taught in the secondary schools, and a wholly new emphasis on science and technology in the universities. By shifting the emphasis in the universities from liberal arts to science and technology, student unemployment at graduation will be relieved while the nation at the same time is meeting the enormous demand for trained technicians.

In the meantime, higher education will profit from greater firmness from the faculty and other university authorities. Both students and faculties can well afford to be patient, to bide their time while

assisting to bring about these great transformations. The glue of Indian society is still strong. It is easy to convince students with deep pride in being the recipients of an ancient, great civilization to be positive citizens, not agitators and drones, of a self-reliant nation engaged in a monumental process of modernization. They ought to be reminded again and again that for every student who does not find a job at once, four or five others are finding steady jobs which provide security and promise of promotion. And the temporarily underemployed university graduates can take comfort in the fact that the crucial industrial sector is making genuine headway despite many knotty problems.

As in the case of higher education, the British launched the process of industrialization. As early as 1914, India had one of the most extensive railroad systems in the world. Still the British did not modernize agriculture and in no other economic area completed the process of modernization to the point of self-sustaining growth. There was considerable economic stagnation during the decades immediately preceding the Second World War. Independence brought only ambition for dynamic growth; 80 per cent of the people still relied on a static, overcrowded, agrarian economy. Consequently the new Indian leadership struck out with a singleness of purpose to reorder their economy, to bring it fully into the twentieth century, and to achieve the dynamism of sustained growth. The vehicle was to be a series of Plans, conceived and executed by a Planning Commission in New Delhi, and designed to provide a continuous process of economic growth under broad government stimulus and guidance. Industry would be given a "Big Push" and agriculture modernized.

Like the United States, India possesses a vast internal market and abundant raw materials. Her potential market is rising to 500 million people. She has one of the largest iron ore reserves in the world,

ready materials for nuclear power, and adequate resources in coal, manganese, bauxite, and hydroelectric power. Naturally her Plans concentrate on heavy industry and capital goods—on steel, transport, power, trained manpower, and food. Heavy industry and food are the core of the Plans.

The First Plan was begun in 1951, the Second is now complete, and the Third underway. Although expansion has not been equal to the "Great Leaps" claimed by the Chinese Reds, it still compares favorably with the most rapid expansion achieved anywhere else in the Free World. Real progress has been made in the newer industries of iron and steel, transport, chemicals and machinery; older industries such as textiles and coal have grown more slowly. In the eight years following 1951 the general index of industrial production rose over 50 per cent; the process is gathering momentum and is expected to reach much higher by the end of 1961. Iron and steel production have grown by 63 per cent, chemicals by 44 per cent, and machinery by 324 per cent.

Still more encouraging are the vigorous trends toward diversification, the heady growth of small-scale industry, and the rise of entrepreneurs willing to plan and risk. The Indian economy is no longer one of a few isolated industrial lines. Now it is producing final products—sulfa drugs, diesel trucks, machinery and machine tools, and most of the components of sugar mills and fertilizer factories, to mention some of the leading ones. Vigorous government stimulus to investment, as in the past in the United States, is providing an effective spur to private investment as well. Indians with entrepreneurial gifts, long recognized in East Africa, the West Indies, and the Pacific, are rising to the fore in the Indian economy. The upward spiral of the public sector is pulling up the private sector and *vice versa*. As a consequence private enterprise in the last decade has expanded and diversified more rapidly

than ever before. The prejudice against private, and even foreign, capital has somewhat but not fully abated, the appreciation of the complementary character of private enterprise is now openly expressed, and the nationalization process has been slowed down.

Public enterprises have matured to the extent that greater attention should be given at once to their reorganization and to the details of administration. They have now reached the stage where they can become the unproductive creatures of too much supervision from the Center, of rigid bureaucratic rules and controls. They should not be permitted to drift along on a course aimed at merely breaking even. Instead they should be so reorganized and administered as to produce solid earnings for investment in their own expansion, as well as in other areas of the Indian economy. This will require considerable autonomy on the part of each public company and the vigorous application of the most efficient business methods.

The enormous potential labor force is also developing rapidly. Although the raw recruit from the village finds industrial life strange and hard and is guilty of large-scale absenteeism, still the rising Indian laborer is thoroughly capable of becoming skilled, efficient, and dependable. Both Indian and foreign firms have found the Indian worker as intelligent and adaptable as in the older developed countries. He can acquire skills quickly; and since India's potential labor supply is so large, she has in the years ahead a sharp competitive edge in the production of goods for the world market.

On the other hand, except for isolated cases, Indian labor unions have not done much to build up a skillful, stable, self-reliant labor force. Unions are divided into squabbling, rival factions. In some cases, workers hold the balance of political power. As to be expected, the communists preach class war,

press for wage increases and inflation, and in general create as much confusion as possible, while overtly extolling Russia and covertly praising Red China. In the absence of adequate funds and able labor leaders, the responsibility for industrial peace and labor's progress falls upon the vision and wisdom of the rising managerial class in both the public and private sectors. As in the United States, the Indian Government pursues a pragmatic, fluctuating line toward labor, relaxing here and tightening up there as the occasion demands.

The encouraging advance in industry has not been supported by comparable advances in agriculture, the most deeply traditional, most stubbornly entrenched of all India's activities. Eighty per cent of the population depend upon agriculture for survival. Peasants farm tiny plots under a hierarchical caste system and live mostly in mud huts bunched into some 500,000 straggling villages dotting the Indian landscape. In these villages poverty, illiteracy, superstition, and caste barriers present imposing obstacles to modernization. While the population continues to soar, agrarian depression prevails; each stimulates the other.

One way to break this vicious economic circle is to combine the tiny plots into large working units, organize the peasants into work gangs, control all supplies and materials, put the whole operation in the hands of an efficient farm manager, and ruthlessly drive the farmers and their families to high percentage performance. The Russians and the Red Chinese have done this. The human cost has been millions of lives; and economically, although the immediate results seem spectacular, the long-term results are by no means proven. Food production still lags in Russia and China.

The Indian leaders have deliberately rejected this communist technique. Instead they are in general approaching the course pursued in Japan where

agricultural productivity has far exceeded that in all other Asian countries, and where agriculture is based on small peasant proprietors, utilizing the most modern farming methods and supported by elaborate cooperative services.

In India the most pressing immediate objective has been, of course, to grow more food. But if village life as a whole could not be improved, could the villagers be expected to support forever the more deliberate, democratic, humane way? So, the long-range objective has been to provide a fuller, richer life for the rural millions.

The chief vehicle of rural change is the Community Development Program, under which the villages have been organized into blocks of about a hundred. Over each block is a Project Officer who has to assist him, such specialized activities as agricultural, educational, and veterinary services. At the bottom of the administrative chain is the village-level worker who provides inspiration, advice, and assistance directly to the farmer. Behind each project is the central idea that rural attitudes must undergo universal change before agricultural progress can be made to endure. A change here and there will not assure momentum; the advance has to be on a broad front, each innovation carrying along another. With Government backing and prestige, Community Development workers gently push and hopefully direct the reluctant villager. First goals include better seed, more fertilizer, all-weather roads, village schools, health clinics, rural credits, tubewells, and plots for demonstration.

The burst of enthusiasm which launched the Community Development projects ten years ago has given way to considerable pessimism and communist-inspired derision. Agriculture has not been able to attract its fair share of the best brains and leaders. Small increases in foodgrains and continuing rural underemployment have convinced some that persuasion will

never dispel village backwardness and inertia. Still many of the projects under favorable conditions and in areas with a progressive bent and a business tradition are succeeding beyond expectation. Time, experimentation, continued adaptation, and more competent leaders in the agricultural sector are required.

The Indian Government is now moving toward promoting greater co-operative credit, processing, and marketing which will permit both large and small farmers to achieve greater economies and production by working together. Although the Community Development Program has been disappointing, it has by no means been abandoned.

Other government efforts to achieve at once significant increases in food production have also been disappointing. In the first ten years of the Plans, foodgrains have increased from only 52 to 75 million tons—not enough to go round and stave off starvation, let alone produce a surplus for the market. The present rate of advance holds no assurance that the target of 110 million tons can be hit by 1966 as planned. Unpredictable rainfall, inadequate irrigation and storage, instable markets, and intense speculation, have been formidable obstacles to the production of food for the market. Yet there is room for limited optimism. The Indian Government soon expects to have enough storage space for a large decentralized grain reserve; the farmers' demand for fertilizer is steadily increasing; and massive irrigation projects are in the offing.

And, finally, most timely and imaginatively the United States has agreed to release to India over the next four years, 600 million bushels of wheat and 22 million bags of rice. Here is a reserve which, when properly stored and distributed, can go a long way to stabilizing the Indian food market and to paving the way for the various other means designed to increase food production.

There is evidence of greater energy and purpose in contemporary farm plans, and in the Third Plan more funds have been allotted to agriculture and greater priority given to fertilizers, irrigation, and improved agricultural implements. The Indian leadership seems determined to come to grips with this most vulnerable sector of the Indian economy.

A product largely of poverty-ridden, illiterate village life is India's bursting population. As I have already suggested, the relative peace imposed by colonial control and the health measures introduced from the West were accompanied in India by only partial modernization. Health improvement and increasing longevity thus preceded a real economic breakthrough, and economic advancement failed to keep pace with the population spiral. The resulting vicious circle has been almost disastrous. Decade after decade the population increased, land values rose, the peasant was squeezed off the land, and mass poverty became all-pervasive. A half century ago the population was less than 350 million; today it is estimated to be 430 million, but the count next spring may show it to be much higher. The dizzy increase is wiping out much, but not all, of the economic gains made under the Plans.

Although this dilemma is staggering in magnitude, we can misunderstand it and seriously misjudge it. Nothing is to be gained and much to be lost when we carelessly wound Indian sensibilities by blaming them for incontinence and family irresponsibility.

Communist agitators keep drumming into Indian ears the theme that mass poverty is not a product of overpopulation, but of capitalistic imperialism, exploitation, and faulty distribution. But the Indian leaders know better, and they are trying to solve their population problem realistically. Their Third Plan calls for an eightfold increase in expenditures on birth control clinics and counseling. Although the

Hindu religion does not bar family planning, yet Indian leaders realize that government policy and even birth control facilities will be effective in a democratic society only when the people want smaller families. As shown in Japan, underdeveloped communities are willing to rear fewer children once they are modernized and achieve literacy and some security. A low birth rate is often the consequence of economic growth.

The population problem is not insoluble, but its solution requires continued economic growth, education, birth control facilities, and the desire of parents for smaller families. The Indian Government today seems determined to approach the problem from all these angles.

As I indicated at the beginning, India's greatest lack is capital. Although it is difficult to get poverty-stricken men to save for investment purposes, still the Indians have in recent years been contributing to a primary accumulation. During the Second Plan, all categories of private investment were higher than expected. Villagers often saved ten per cent of their incomes though some may have spent the margin on costly weddings and funerals instead of productive investment such as fertilizers and tube-wells. In 1951, five per cent of the national income was saved for investment. At the end of the first two Plans, the rate rose to 11 per cent. By 1970 it is expected to reach 17 per cent, the level estimated to be required for steady growth. Meanwhile in what amounts to an internal austerity program, the Indians are taxing themselves to the bone. Their direct taxation is the highest in the world, and the poor man contributes through excise and sales taxes, and compulsory savings and insurance.

Through all these efforts, India's national income has increased 42 per cent since the beginning of the First Plan in 1951. This takes care of the

annual increase in population, allows a small amount for consumption, and a little for savings. It adds up to an economy that is moving ahead slowly, but lacks the momentum essential for a take-off. All along, meantime, the Indian currency has remained stable, the Indian rupee holding up as well as the West German mark and slightly better than the U.S. dollar.

Time and again in recent years, the shortage of crucial foreign exchange has proven the main obstacle to private investment, not a lack of savings as often assumed. Only with foreign economic assistance has India been able to meet this problem. And in reality, India's whole Experiment depends in large measure on foreign aid. With it, properly planned and used, India can confidently expect industrial take-off in time; without it, the experiment within a democratic framework is likely to fail. Up to this point, Free World assistance has far outstripped that of the Communist bloc.

The United States leads all other nations in the amount of aid given India. Yet it is doubtful that this fact is fully recognized and appreciated in India. Russian aid, though meager in comparison, has received much more attention. Russian aid has been directed toward strategic public industries such as steel and thermal power plants. American aid has not been promoting national industrial growth so obviously and in such a way as to appeal most effectively to the climate of opinion in India. Much of it has been going to agriculture and private American or private Indian firms, or to Indo-American combinations. In India, the private sector is controlled in the main by the Marwaris, a small, wealthy, closely knit social group. Since this group is believed to hold a near monopoly of economic power and since business is held in low esteem in India, the Marwaris are always vulnerable to political attack. Although many of them are in reality enlightened industrial statesmen, in the popular mind the group as a whole are "robber barons," the natural scapegoats for social grievances.

The Russians capitalize on the popular mood and appeal to the masses. The most persistent theme in communist propaganda is that Americans in their aid program have ulterior and insidious imperialistic designs. They boast that Russia was the first to build a publicly owned steel plant and thus break the boycott of the West against aid for the public sector. This steel mill, the Bhilai plant, is the showpiece of Russian aid, and has been propagandized to symbolize India's aspiration for national progress equally shared by all.

Economic assistance ought to involve a two-way street. Not only does the donor have the right to expect solid economic achievement from the recipient, but also good will and appreciation—not suspicion and distrust. America's aid to the private sector is sound investment in economic terms. But the economic test should not be decisive. American aid to the public sector, which is now receiving even increased emphasis in the Third Plan, would also be sound economic investment, and in addition it would appeal to the mass aspirations in India.

Overweighted aid to the private sector is regarded by many as political intervention on the side of a privileged class or social group. American reluctance to aid heavy industry in the public sector has not only kept the United States from receiving the popular good will the American program deserves, but it has also permitted the communists to gain the mass political capital which rightfully belongs to the United States.

The Free World, as a whole, should undoubtedly give high priority to a comprehensive program of economic assistance for India, shared co-operatively by all Free World governments. Yet it should not be a never-ending affair. Nor should Indians ever forget that responsibility for their success or failure rests on them, not the donors.

Although the Free World has been generous in recent years, its efforts have had the character of provisional thinking and emergency measures. It has not committed itself to seeing that the Indian Experiment succeeds. The Free World has seen that the Indian economy is half-launched, but the trouble is that an economy like a plane cannot take off when only half launched.

A more critical problem perhaps than food and foreign exchange lies in the disruptive tendencies of intense linguistic and regional pressures. India's problem of union is more complicated than was that of the United States which was largely responsible for the American Civil War. Like Europe, India is a continent of diverse language groups. Over the millennia of Indian history, she has possessed religious and cultural unity, but never for very long political unity. Even today, in some ways India is a group of individual countries, each with its own distinct language and culture. More than 800 languages or dialects are spoken; at least a dozen are major and distinct languages. Since independence, the number of states has been reduced until now there are 14, each conforming closely to linguistic boundaries. Regional patriotism rivals all-India loyalty in these diverse regions with their proud history and literary heritage. To many individuals, cultural and linguistic matters are more important than the survival of the Indian nation.

In North India, some 155 millions can speak Hindi, a Sanskritized version of Hindustani; and consequently Hindi was designated in the Indian Constitution to become the official language after 1965. To expect other proud language regions to commence the widespread use of Hindi so soon was perhaps a delusion. In any event, while Hindi has been catching on but slowly, English, presently the only effective national language, has declined precipitously, and the regional languages have gained rapidly. Many Indians,

of course, are still learning English, but the number taking it and the quality of instruction have declined, as more schools, colleges, and state governments with each passing year adopt the popular language of the region or state. Without English, there is growing up a generation of regional and state élites whose interests are so vested in a language region that they are becoming unable to talk meaningfully with each other on the national stage. As English declines, even the national Civil Service is threatened with the parochialism of these regional élites. Regional hardening, moreover, is promoted by the caste system which holds both high and low castes in horizontal regional caste units. A Brahmin from Madras, for example, is reluctant to marry a Brahmin from Assam.

These deeply rooted centrifugal forces of language, region, and caste are, of course, egged on and manipulated by the Indian communists who have deliberately adopted the strategy of sponsoring regional grievances and regional patriotism. Under these divisive stresses the survival of India as a single national state will depend, of course, on the strength and viability of her system of government to resist such forces. Fortunately it is demonstrating real staying power.

India today is a sovereign, democratic republic and a union of states. Her government is based on a written constitution embodying American and British features. The structure is federal but the spirit unitary. The Center (central government) is patterned after the British cabinet system, with a president, prime minister, cabinet, and parliament of an upper and lower house. There is a strong judiciary anchored firmly in long, British tradition and safeguarded by the Center. A supreme court of seven members guards the Constitution. There is a comprehensive bill of fundamental human rights as in the United States Constitution. State governments are also

parliamentary in character with a chief minister and a legislature. There are only limited state rights, and residual powers go to the Center. The Center appoints the state governor and can empower him to seize the state government in case of chaos and extreme failure on the part of the local officials. Universal adult suffrage prevails, and more people (a hundred million) vote in Indian national elections than anywhere else in the world, past or present.

India today is a voluntary society from the Center down to the village council (panchayat). The two mainstreams are the liberal constitutionalism of Europe, Britain, and America, and the religious, social, and ethical values stemming from Indian history and religion and from the inspiration of Mahatma Gandhi. Over the years the Western and Indian traditions have fused, and today they support each other in their fundamental attitudes toward the ultimate purposes of society. In my talks with Indians, I found great deference to the rule of law, strong belief in the rights and dignity of the individual, and in the immortality of the soul, the wish to see government operate as the servant of the people and not the master, and dedication to nonviolence, tolerance, and compromise as the only desirable means of politics.

Magna Carta has become a natural part of the Indian heritage. For more than a century young Indian students have been learning that they are the children of a single, great Indian community with inalienable rights; and while accepting Western ideals, government structure, and science, they have not abandoned the deep religious and ethical insights of Indian society. The resilience and wisdom of her own leaders and traditions have helped her to avoid the extreme forms of totalitarianism which bid for acceptance—violent, godless communism on the one hand and fanatical, communal conservatism on the other. More than a century of political practice in a

democratic environment has given Indians a framework of modern politics.

The Congress Party is the engine of government. For more than a half century it was the movement of nationalist protest and pressure. A school for practical politics, it also produced the generation of "tall men"—Gandhi, Patel, Nehru, and others—who led India to independence and who have governed her since. Even in the struggle for independence, Indian politics followed the course of give and take rather than trying to force mass conformity. Although the Congress Party has been the only party in power since independence, it is not monolithic in terms of competing ideas. Vital political discussions take place among its several factions. Vigorous exchange of views go on at its annual conventions, at meetings of the All-India Congress Committee, and within the élite leadership group of the Working Committee of the Congress Party. Nehru and his colleagues, moreover, are fond of public discussion and have established a pattern of thinking out loud. Hence, the inner politics of the Congress Party stimulate discussion until a consensus is reached. In elections the people eventually in a kind of referendum vote upon the consensus. In this way the functions of multiparty politics are performed.

In many ways the Congress Party resembles the great political parties of the United States. It is a loose, voluntary, federation of different regional, economic, and social interests flexible enough to include Rajasthan industrialists, Gandhian hand spinners, Kanpur factory workers, Hindus and Muslims, Brahmins and Untouchables, Bengalis and Malayalis.

The Party's *élan* is generated from the consensus that the main task of the new state is to modernize the economy. The main cement of the Party, the independence struggle, is now being eroded by the discontent inherent in long tenure. The Congress Party is

losing popularity rapidly, and its hold on the country grows weaker year by year.

Unfortunately no strong opposition party has yet developed. On the left is the communist and several minor socialist parties; on the right, a few extreme groups advocating in the main regional autonomy or Hindu theocracy. Of these minor parties, the Communist Party has shown the greatest promise of becoming the successor. When I left India three years ago, the communist threat seemed imminent. They had won control of the state of Kerala and had strong blocs of strength in Calcutta and Bombay, and in the states of East Bengal, Orissa, Andhra, and Madras. Subsequently, however, communist misrule in Kerala and the outrages of Red China in Tibet and along the Indian border have halted the communist gains, and the Central Government has seized control of Kerala.

The communists consider this a mere temporary setback and, of course, are biding their time. They are a dangerous element in India which has aggravated the patient Nehru government from the beginning. Although claiming to be the party for union, they are in reality the champions of disunion. Although they have tried hard, they have never been able to identify themselves convincingly with Indian nationalism, a near monopoly of the Congress Party. And they are not today a cohesive national movement. Their real danger lies in their clever manipulation of the discontents resulting from extreme poverty and regional linguistic nationalism. Invariably they have been able to increase their following most rapidly in those areas where these two divisive elements are most prevalent.

As the wise and indefatigable Nehru and the other "tall men" of his generation grow older, the question of what follows when they are gone takes on greater significance. We are by no means certain that a rising group of young leaders will emerge to face up to the staggering internal stresses, stave off communist subversion, and hold the Congress Party together.

Yet despite declining popularity, the Congress Party has dominant control throughout the country, holds in its fold a majority of India's powerful leaders, and retains an organizational apparatus which blankets the whole country and seeps all the way down to the village level. It has mastered the technique of financing large-scale political campaigning, and in the absence of a more substantial All-India opposition, is likely to maintain its control for several more years. And to assume that vigorous, young leadership will not arise to assert itself when the proper time comes is too pessimistic to suit me. It denies the natural and proven ability of democratic society to achieve continuity of leadership; and in suggesting that young leaders cannot face up to great problems, it defies the lessons of history in the United States and elsewhere.

The Indian leadership today towers far above that of the other emerging nations. It commands the confidence and broad support of the people because they have been given a sense of individual participation in a new society devoted to the main task of national growth. India's institutions are viable, I believe. Her political leaders have been trained in the school of experience. They have been tried, as in the case of Kerala, and proven. Highly centralized, with a loyal and competent Civil Service and military organization, the Government ought to be able to cope even with the most desperate acts of disunion. In the years ahead there will be many crises no doubt, and we must temper our hope for India's stability with the prospect that her democracy will undergo great change, perhaps veering toward greater centralization and even stronger leadership from the Center. While the forms of democracy may change radically, the signs indicate that India will strive hard to retain her independence, maintain freedom, and keep alive the spirit of democracy. We should neither naively expect the best nor resign ourselves to the worst. The most certain thing about the future is that the Indians themselves

will largely determine their own destiny. Still the West, with its great wealth and technical advance, holds one of the keys to India's economic stability—to the success of her great Experiment—a co-ordinated program of economic and technical assistance so planned and executed as to assure industrial take-off.

Today the modern world offers two main patterns of economic development and political control. One is our own involving the experimental, informal mixture of market forces and government direction, resting heavily on decentralized decision-making and private initiative. It is liberal and humane in nature. It relies on persuasion and reason, and allows freedom of choice and personal liberty. It has been dedicated to the principle of equality and the erection of a society in which the material good things can be enjoyed by all.

The people of the emerging countries like India have been taught by the West to expect these things. But having achieved independence, they find that they cannot share fully the benefits of Western technology. The West has whetted their appetites and brought them up to the edge of modernization. But now they may slip back, or, using Western means, fail, and then turn to the other, the communist pattern of economic development and political control.

This pattern is the total state plan imposed from above by a new privileged class with total power. It is dogmatic, anti-religious, opportunistic, and aims at the control of the world. Ruthlessly and violently imposing savage discipline, it relies upon forced labor, forced saving, mass human destruction, and the techniques of wartime planning and mobilization to achieve its goals. The system has yet to demonstrate that it can provide an abundant life for the masses. But, although the human and spiritual costs are enormous, it has been successful in building up and maintaining military strength, centralizing

scientific achievement, expanding heavy industry, and controlling all information. Its gigantic propaganda machine makes its achievements appear more spectacular than they really are. Nevertheless, its methods to achieve modernization in stagnant economies have become glittering products for export to underdeveloped countries.

There is no escaping the fact that these two types of society are engaged in competition encompassing the world. In Asia the spotlight is focused on India and China. The success of the Indian Experiment will help to expose the absurdly fallacious communist dogma that the Western mixed-economy system is inherently imperialistic in nature, that it cannot deviate from the pattern mapped out by Marx and Lenin more than a half century ago, and that it is in imminent danger of collapse. The Indians are definitely not participating in a race with Red China to see which one can industrialize first. They are engaged in an experiment to ascertain whether rising national output and expanding economic opportunity can be achieved through democratic institutions, which, though as time runs along are certain to change in many respects from our pattern of democracy, can still maintain independence and guarantee individual liberty.

The Indians are deciding whether the synthesis of Western liberal ideals and technology and Indian metaphysical and ethical values can produce a full life in Asia and still survive. They are deciding whether the free, open, mixed society in Asia has any future at all. And this, let me conclude, is the significance of India today.

BIOGRAPHIC SKETCH

Professor Edward Younger

Present Position: Ernest J. King Chair of Maritime History, Naval War College; on leave from position of Professor of American History, University of Virginia.

Schools:

Arkansas State Teachers' College, B.A. degree, 1932.

Oklahoma State University, M.A. degree, 1938.

George Washington University, Ph.D. degree, 1942.

Career Highlights:

1928-37 Teacher, Principal, Superintendent in Public Schools of Arkansas and Oklahoma.

1937-38 Teaching Fellow, Oklahoma State University.

1938-42 Teaching Fellow, George Washington University.

1942-45 Lieutenant and Lieutenant Commander, U.S.N.R. On active duty in Naval Aviation during the Second World War.

1945-46 Lieutenant Commander and Instructor in History, U.S. Naval Academy.

1946-61 Assistant, Associate, and Professor of American History; also Graduate History Adviser and Foreign Student Adviser, University of Virginia.

1957-58 Fulbright Professor of American History and Politics, Allahabad University, India.

1961 (Summer) Lecturer, All-India, on American history and foreign policy under auspices of American Leaders and Specialists Program, American Embassy, New Delhi, and Nepal.

Honorary, Professional, and Civic Societies:

Phi Alpha Theta, Raven, American Historical Association, Mississippi Valley Historical Association, Southern Historical Association, Virginia Historical Society, Rotary, Kiwanis.

Publications: A Selected List

John A. Kasson: *Politics and Diplomacy from Lincoln to McKinley*. Torch Press, 450 p. 1955. (Phi Beta Kappa Prize, University of Virginia.)

Inside the Confederate Government: Diary of R.G.H. Kean. Oxford University Press, 244 p. 1957. (Book of the Month Selection, Civil War Book Club.)

"The Unknown Compromise of 1877," *Virginia Quarterly*, XXVII, Summer 1951. (A review article on C. Vann Woodward's *Reunion and Reaction: The Compromise of 1877 and the End of Reconstruction*, 1951.)

"Woodrow Wilson: The Making of a Leader," *Virginia Magazine of History and Biography*, LXIV, October 1956. (A Wilson Centennial lecture.)

"Indians and Americans: On a Better Understanding," *Allahabad University Magazine*, India, XXXV, January-March 1958. (A lecture given before both Indian and American audiences.)

"American Attitudes Toward Foreign Policy in the Nineteenth Century," *United States in World Affairs*, Madras, India, 1958. (The first in a series of lectures given before South Indian audiences.)

"The Dynamics of Neutralism," *Naval War College Review*, XIII, No. 7, March, 1961. (A lecture delivered at the Naval War College.)

RECOMMENDED READING

The evaluation of books listed below include those recommended to resident students of the Naval War College. Officers in the fleet and elsewhere may find them of interest.

The inclusion of a book or article in this list does not necessarily constitute an endorsement by the Naval War College of the facts, opinions or concepts contained therein. They are indicated only on the basis of interesting, timely, and possibly useful reading matter.

Many of these publications may be found in ship and station libraries. Certain of the books on the list which are not available from these sources may be available from one of the Navy's Auxiliary Library Service Collections. These collections of books are obtainable on loan. Requests from individual officers to borrow books from an Auxiliary Library Service Collection should be addressed to the nearest of the following special loan collections:

*Chief of Naval Personnel,
(G14)
Department of the Navy
Washington 25, D.C.*

*Commanding Officer,
U.S. Naval Station,
(Attn: Station Library)
San Diego 38, California*

*Commandant FOURTEENTH
Naval District (Code 141)
Navy No. 128
Fleet Post Office
San Francisco, California*

*Commander Naval Forces,
Marianas
Nimitz Hill Library, Box 17
Fleet Post Office
San Francisco, California*

*U.S. Naval Station Library
Attn: Auxiliary Service Collection
Building C-8
U.S. Naval Base
Norfolk 11, Virginia*

BOOKS

Sokol, Anthony E. *Sea Power in the Nuclear Age*. Washington: Public Affairs Press, 1961. 268 p.

In the author's words, "This book has a triple purpose: first, to determine the nature and meaning of sea power; second, to indicate the impact of the nuclear age upon it; and third, to show how sea power can help the United States cope with present world problems." The first and second are accomplished to an admirable degree, while the third suffers somewhat from the author's civilian status and a lack of intimate familiarity with current military planning and hardware.

McInnis, Edgar, et al. *The Shaping of Postwar Germany*. New York: Praeger. 1960. 195 p.

This book details the progress of Germany since World War II, outlines the present status of that divided country (including the peculiar position of Berlin) and makes a few forecasts of possible future actions, discussing the significance of Germany from the points of view of both the Soviet Union and the West, and particularly noting the factors operating in Germany and the world as a whole which act to increase Germany's independent ability to influence her own future, as well as that of Europe and the two contending power centers.

Ansel, Walter. *Hitler Confronts England*. Durham, N.C.: Duke University Press, 1960. 348 p.

Admiral Ansel presents an excellent analytic treatise on the much-discussed "Operation Sea Lion." In this analysis of the preparations and planning for "Operation Sea Lion," he skillfully dissects and lays bare the many faults of and contradictions within the highly vaunted German General Staff, and reveals the

interservice animosities. The most valuable parts of the book to a military or naval officer are his objective analyses of "Operation Sea Lion" as an amphibious undertaking, and the decision-making processes involved.

Gottlieb, Manuel. *The German Peace Settlement and the Berlin Crisis*. New York: Paine-Whitman, 1960. 275 p.

This book offers a close-up view at the only extended example of East-West efforts at condominium. Devoid of chronology, it is sometimes difficult reading; but on the whole it is an excellent insight into the basic issues involved in the evolution of the current Berlin and German problem.

Barnett, Correlli. *The Desert Generals*. London: William Kimber, 1960. 320 p.

This is an intimate account of the British commanders (O'Connor, Cunningham, Ritchie, Auchinleck and Montgomery) who fought off Rommel's Afrika Korps with one hand and Prime Minister Churchill's intervention with the other. The facts of the political versus military goals are as interesting as the bitter lessons which the Germans taught the British about modern tank warfare.

Carter, Gwendolen M. *Independence for Africa*. New York, Praeger, 1960. 172 p.

In the words of the author, Gwendolen M. Carter, "This book is written for her students and for others who wish a brief introduction to an area of increasing importance to the Western World." Just published, the book provides a good background for better understanding of the events now unfolding in Africa. Kenya, Tanganyika, Zanzibar, Rhodesia, South Africa, the Belgian Congo, the French Congo, Angola, the Ivory Coast, Guinea, Ghana and Nigeria are covered

in separate chapters. Such areas as Egypt, Morocco and Algeria are not considered. The author states in the preface that the book is a series of personal impressions. In spite of this, it provides the general reader with background information necessary to better understanding of current events and does so in a readable and interesting fashion.