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THE EFFECT OF SCIENCE AND TECHNOLOGY  
ON THE FOREIGN POLICY  
OF THE UNITED STATES



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Prepared by J. Ben Lieberman.

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FOREWORD

This pamphlet was prepared by J. Ben Lieberman, White Plains, New York, as a so-called "think piece," and he has granted the International Cooperation Administration permission to reproduce and distribute the pamphlet overseas.

The Effect of Science and Technology on  
THE FOREIGN POLICY OF THE UNITED STATES

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a working paper by J. Ben Lieberman

How do, or how should, science and technology affect  
American foreign policy?

If we are talking at the level of giving up isolationism and absolute sovereignty, and if we recognize that science and technology were basically responsible for those changes in our historic position, then the answer must be:

Science and technology DICTATE any realistic foreign policy.

What this means, and why, is examined briefly in what follows--in terms of a set of realities which sound like platitudes and which therefore are usually glossed over without registering their stark portent.

June 1959

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## I. THE PROBLEM AND ITS LESSONS

We are generally aware of the implications of science and technology to our international position--but we are seldom specifically aware, which is to say consciously enough to shape a foreign policy to meet these implications head-on.

What follows, therefore, is hardly new, in one sense. The particular implications as set forth are by no means new discoveries, and they are in fact the basis for much of our existing foreign policy. But when they are put together to provide a perspective, they seem to add a new dimension to the problem and its lessons. Without discounting present efforts and insights, therefore, it will prove worthwhile to examine the implications of science and technology in context:

### 1. International problems and turmoil are signs of a world-wide revolution which is going on in the minds of men, for human goals.

The words to emphasize are world-wide, minds, and human goals, because it is necessary to see that one great vision has reached and sparked mankind everywhere, and that one simple principle impels the whole revolution: an aspiration that we must, can and will improve our lot.

The human mind operates from a value system to a purpose or vision of life, and events and things have meaning only as they are somehow seen to be tying in with the mind's broad purpose. At the present point in human development, that broad purpose is everywhere formed into a national goal. And everywhere the national goal is the same: freedom and thus dignity or personal status, peace, health, security, comfort -- in about that order. In its simplest form, this becomes (a) a free country, which automatically is taken to elevate its people to equality with other free people; (b) an internal system which lets -- generally, helps -- its people improve their material conditions.

And, because it is such a wonderful dream or hope or aspiration, and because their lives are short, and because they do not realize how intricate is the growth of a free society, they are in a hurry. Often, too, hard facts such as populations expanding into starvation, spur them. They see a clear goal; they aspire toward it, and they want to get on with the job.

Naturally, they judge everything by how it serves or harms their goal. In most instances, they believe in both their own wisdom and their own values, and their acceptance or rejection of ideas may seem capricious or irrational to one who does not understand this. Furthermore, they are most suspicious of being mishandled. In the underdeveloped areas, especially, where they are undertaking change most often because it means the end of colonialism and slavery, they are quicker to protect themselves

from threats of this kind (something they do understand) than from the dangers of communism, economic difficulties, etc., which they do not understand. Unless power is prepared to move in and maintain itself by force--as the communists do-- it cannot order these people around.

One further important point. This is the people fired up, aflame, not merely the leaders. This is beyond governments to stop, or even necessarily to control. Existing structures, or new organizations which may rise to guide the movement, are incidental to the main force of humanity as a whole, alive and pushing -- committed to change.

#### The lesson for U.S. foreign policy:

We must not only recognize this force, but recognize that we in the United States are part of it. We are, in fact, the leaders of this revolution, and the other people are joining us. These people often know it better than we do; but because we don't seem to know it, they talk about Jefferson and Lincoln and Wilson, and think we have forsaken our own ideals. We must wake ourselves to a conscious awareness; we must show that we know these people can achieve their goals, and should, and that every feeling in us is glad at the prospect. The vision, the national goal, which is implicit in our actions and taken for granted must be made explicit and articulate: our foreign policy must be conducted in a way which demonstrates our convictions and our principles.

Specifically, we must stop being guided by day-to-day improvisations to meet diplomatic necessities, to achieve minor expediencies, and to capitalize on small advantages. For two reasons: First, that approach can never achieve the bold, dramatic action which a demonstration requires. Second, the needs of humanity are not to be measured and met by steps going half of the half of the remaining theoretical distance-- which is a painful way to try to jump a cliff. We must first know why we jump and where, and then we must jump whole cliffs.

#### 2. This revolution of aspiration was set in motion and is being sustained by science and technology.

Technology is not the revolution itself, or its purposes -- but it is the form of the revolution, and science is its leverage. The human vision came because science showed the possibility, and the vision needs technology to make itself come true.

Historically, it has been the questioning of old assumptions by Western science -- and the West's technical skills and the improved life which comes as a result -- that has begun just now to really stir the world, and especially the underdeveloped areas. Medical technology has meant better health and lower death rates, and populations have expanded in a burst; agricultural and industrial technology have brought more food and material comforts, and especially mechanical ease; military and political technology have shown how power can be won, and thus freedom;

communication technology has shrunk the world and spread the message everywhere, together with tangible evidences of the possibilities of that freedom, human dignity and a better standard of living.

The taste has made people everywhere aspire to the same; communication has made the dreams real. People can see it, touch it, feel it; they go home to tell about it, to try it; the word spreads by radio, by the rising literacy. For science and technology produce hard facts that are powerful and good, and cannot be concealed forever or brushed away by local vested beliefs and interests. So, the population swells -- and creates problems which only spur the aspirations. And the hopes and ambitions rise. The cries for independence and material improvement are real; these people's values are committed to technology, as their tangible hope.

Nor is it just the underdeveloped areas. The industrialized nations, knowing the fruits of technology, push perhaps even harder for more.

In a practical sense, in effect, the goal of the revolution can be defined as "full technology" -- when the knowledge and wisdom of mankind have brought the blessings of technology to all persons everywhere, if not in equal amounts, then at least in substantial common denominators.

#### The lesson for U.S. foreign policy:

We must use science and technology consciously, as part of our foreign policy. By no coincidence, the U.S. has an abundance of technology far beyond any other country; in other words, we have available in decisive quantity and quality, the very stuff of the revolution. Whether we have enough science is a moot point; but as will be developed later, new knowledge is not needed for the immediate problem. Diffusion of existing technology is the principal need.

It is part of the irony of the present world climate, as also will be explained below, that our great technology is being discounted while Russian technology is overvalued. We must find ways not only to increase our technology and keep leadership, but to make the fact of our technological success obvious to the world -- as evidence of our strength, as support for our position, and as the direct means of serving the world revolution of aspiration and our role in it.

#### 3. The world revolution will succeed, or the whole world will suffer the consequence.

Now that they are awake, the peoples of the world are not going to give up willingly. They will keep trying to achieve freedom, equality and the good life -- full technology. If they are helped, they will achieve it sooner. If they are harassed and hampered, they will force the issue -- and either achieve success despite the blocks or else create a world catastrophe that will cripple the whole world, if not doom it.

The lesson for U.S. foreign policy:

We have much to gain by helping these peoples, but only trouble for ourselves if we hamper them or even hold back our help. What we must consider is where we will be 25 or 50 or 100 years from now, when the world revolution is largely achieved. (If the alternative occurs -- force and chaos -- we won't be alive to have a foreign policy, probably.) Will we be isolated from the main stream of history and activity, because we stood aside or resisted; will these peoples be active enemies, cutting us off and waiting for us to shrivel? Or will we be an integral part, by being in the center of the building operation now? A hundred years is not a long time in the history of man -- and we will surely be judged by our wisdom for the long-range, more than the expediencies of the moment. We must live in the here and now, of course; what we need to do, and can do, is to find the particular expediencies which also lead in the right long-term direction. Too often now, we do not consider the long-range implications as part of the evaluation of a proposed action -- and sooner or later, we suffer.

4. The course of the world's change is unpredictable, but it is susceptible to channeling, for good or bad.

We are going to have a very different, perhaps unrecognizable world, as a result of the technological revolution. The changes that are in motion are not simply of degree; they really are revolutionary. They will involve different concepts of space, of work, perhaps of time, perhaps of values, certainly of power structures, of ways of doing business, of trade patterns, of economic systems, of military alliances, of international organization.

But when imponderable forces are let loose, there is no way of knowing confidently or accurately which way they will go. The chances are, however, that if these forces are consciously and carefully directed they will move in one direction rather than another. It also is probable that if a certain direction is pointed early, while a course can be more easily changed, it will continue in that course against pressures of change later. How the peoples of the world will develop their thinking, their institutions, their loves and their hatreds -- and their actions -- may be beyond predicting, but support and influence on the scene, and as early and firmly as possible, can help achieve a positive direction.

Anyone who wants to develop his own interests should move in quickly and in strength, therefore. It means business opportunities at the very least; it means a chance to change things to one's own way; a small effort now will pay real dividends later. And if one doesn't take advantage of the opportunity to do his cause some good, someone else will move into the vacuum to push all the harder in another direction.

The lesson for U.S. foreign policy:

The above can be misinterpreted; "to one's own way" can mean

very selfish purposes. But it can also mean a simple conviction that it is to one's own interest to help other people achieve a better way of life. And we must face up to the fact that we serve no good cause by refusing to push for what we believe good and right; we only leave it to others who have no such compunctions but who very likely do have selfish interests indeed. Obviously, we will be wise to work decently, thoughtfully, positively; we are not to push our weight around. But abdicating does no good. We did not create the change, and we cannot end it; if it does not grow with us, and we with it, it will go against us. We ourselves are changing, too, with a tide or against it, and if we do not work to keep ourselves in the mainstream, we can be in danger.

So, if we cannot predict a course of change, we must watch, to be ready; even more, we can work to make the change turn the way we want. A conscious effort to make the world go the way we think it should go must be part of our foreign policy or we do not have a foreign policy -- we have only drift. Our leadership, in other words, must be as strong as we can make it.

And the yardstick is not how much can we "afford" to put into the effort -- because whatever we put in is so basic an investment that we cannot afford to forego it. The only yardstick is the amount that the traffic will bear, meaning the amount that can successfully be absorbed (and it is almost certain that more than we will bring ourselves to spend can be absorbed, because determination and imagination have no limits if only they can be applied).

One further point should seem obvious, once it is stated: both despite and because of the unpredictability of the dynamics now set loose, we must have as much advance information as possible; we must be able to see trends and possibilities, so we can act wisely and well. We need, therefore, to build research and development activities into every action we take, as a matter of basic policy -- because each action is both the laboratory and the circumstance of the next decision to be made.

5. Technology is drastically changing the way the world is organized and the way in which national goals are furthered.

Three different consequences of technology are combining to make invalid the present power structure of the world -- not only the balance-of-power mechanism but even the largely untried concert of great powers. These three factors are:

- a. A complex interdependent society is at the mercy of any of its parts, which means that even the small powers have close to total power.

Technology leads to specialization of efforts -- a division of labor, within one country or among different countries; and that leads in turn to interdependence. But the more complicated a machine becomes, the more likely it is that some part will break down or come

loose; and even one little gear slipped somewhere stops the whole machine. The "machine" of society -- its system of parts dependent upon one another as customer and seller, supplier and producer, service and control, mutual efforts for doing the big jobs -- becomes more complicated and the odds of a breakdown increase geometrically as technology increases.

This can be accidental (inherent) or intentional, and the temptation to intentional breakdown is aggravated by the fact that in a world of uneven complexity, a less-developed country can jeopardize a highly-industrialized country or even a continent without too much danger to itself. The Suez Canal closing is a case in point: we were able to prevent serious harm to Europe by prompt action, but even if Europe had suffered, the Egyptians could have gone on pretty much unchanged, because their society did not depend very much on the technology which Suez then represented. All this means that the dangers of breakdown are all the greater, because opportunists can start adventures without worrying too much about the immediate consequences to themselves.

b. Technology has eliminated force -- major war -- as an overt policy of gaining or maintaining control.

War is now too dangerous to everybody to have it a deliberate possibility. This means ways will be found, probably at some loss of national sovereignty, to insure disarmament. It means that the great powers will lose much of their unique greatness against the small powers; indeed, by numbers and strategic position, the small powers may become potent indeed -- and the vulnerability of large, industrialized powers to breakdowns from these small places, will provide real leverage. Mid-East oil is an example, along with Suez. The inability to resort to war (even though it was tried abortively at Suez) is what makes this kind of action possible.

c. Technology is making possible new kinds of "warfare" by which one side may force its will.

Whole new technologies such as climate control represent dangers to the world along with benefits; if it should happen that one country -- by an accident of geography or scientific discovery -- should be able to control the rainfall of much of the world, what a blackmail tool it would have! Even more immediate, perhaps, are such space-fiction possibilities as a satellite platform focusing sun's rays into incendiary points in enemy territory to burn cities, crops or forests. Or, a platform beaming signals to jam telecommunications (specifically, commercial airline signals). The technological possibilities, in other words, are enormous.

If the world's economic structure is ever more delicately balanced by technological interdependence, cannot a disciplined country deliberately wreck the structure to throw the rest of the world into disruption?

If political power rests on an interdependence of all the parts, cannot subversion at critical points and at critical times create chaos?

The lessons for U.S. foreign policy:

It seems incontrovertible that no country, no national goals, can survive alone and confront all the new possibilities -- except by conquering the whole world -- if that is possible, and if power can be maintained -- to control the total machinery in a way that it could not break down (which is to say, by forcing continued activity.)

There is reason to believe that Russia may be trying this course. We do not believe it is possible; and obviously, we do not want to conquer all, in any case.

It is obvious also that the balance-of-power mechanism is losing its meaning, because there is no guarantee that some of the smaller nations cannot disrupt the major powers' maneuvering -- and this will be increasingly true as more nations get nuclear fission; as the complexity of the world continues its exponential curve upward. Even if Russia were willing to go in concert with the other great powers, to enforce a joint will against the smaller powers, the major powers really cannot enforce their will against a recalcitrant minority.

We must learn to rely instead, therefore, on what might be called a pluralistic organization of the world. In this pluralistic system, every nation (perhaps even dissident segments of nations) must have recognition and enough advantage to their national goals to work for the international welfare, rather than to disrupt it; when even the smallest nation can potentially jeopardize all, ways must be found to work with all, and respect all. Instead of a majority imposing its will on a minority (however determined) we must rely on a consensus -- the active consent of all, on a minimum basis at least, to insure that all units will do their part and thus keep the whole thing from breaking down. And we must create enough inducements to all -- real benefits -- to keep the predisposition favorable to constructive rather than destructive activities.

Obviously, there can be negative sanctions as well as positive inducements; but sanctions can be imposed only when they are very clearly in the interest of the whole, not just the majority (as Korea showed). Our major effort, therefore, must be to accommodate ourselves to a pluralistic approach: our compromising with allies must extend to compromising with the whole world -- including the neutrals, certainly, and even the enemy camp to the point at least where it will prefer not to risk incendiary acts. World politics is a crazy-quilt of historical and geographical accidents, of long-term misunderstandings and short-term impatiences -- but underneath it is a core of self-interest based on the vision of national goals. Pressures arise everywhere, therefore, and the solution is found by a more or less direct response to the pressures as exerted.

This sounds like appeasement, and it will be hard to get our people to understand and blackmailers and potential aggressors not to mis-understand. Nevertheless, a careful distinction must be found and maintained. The principle of pluralism, that a minimum agreement among all is necessary, must be lived up to--simply because any one segment which remains dissatisfied can wreck the whole.

A machinery must be developed, therefore, for striking the balance and providing the compromises. In the U.S. (which is already a pluralistic system in operation) we have two fairly equal political parties, and the whole range of interests within each; elections and governmental bodies really represent only the formal communication process and the safety valve, but they are thereby most important. But the world society does not have these institutions. Can the U.N. be changed to serve the function? Our foreign policy must help develop the machinery, one way or another.

A role in a pluralism, it may bear repeating, does not involve abdicating our own leadership; on the contrary, pluralism requires strong leadership by positive and broad-scale forces to counterbalance the pressures of specific and divisive elements.

6. The technological advances themselves create problems which can build up into real dangers for the world -- and especially for the U.S.

Unless ways are found to deal boldly and thoroughly with these problems, wherever they threaten around the world, a converging and interrelated group of problems will some day (within a decade or two?) cause real trouble for the United States:

a. The world's population explosion will make living space a matter of dog-eat-dog.

b. It will do the same with food.

c. In combination with technology, it will do the same with natural resources -- fuel, minerals, etc.

d. Technology -- especially nuclear technology -- increasingly contaminates air, water and soil, until actions by some may imperil all.

e. The crowding of peoples, the tensions of being on guard to insure that a fast-moving world does not move against oneself, will aggravate prejudices, passions, etc.

f. Mere size and complexity may fall into chaos by sheer human inability to handle the problems, especially as increasing specialization separates interests and understanding and splinters the whole.

G. Danger of a communication breakdown will increasingly threaten everyone.

This last point needs explaining, and in fact it epitomizes the whole problem.

It must be assumed (or there is no rational basis for planning a foreign policy except brute force, and the sooner the better) that the peoples of the world will cooperate to solve their problems if only they can come to see how urgent the problems are, and how everyone's cooperation must be given -- for the simple security and general best interest of each. The key problem, therefore, becomes one of communication, to make everyone concerned see this, to give them all the facts by which to decide, by which to develop a program, by which to put it into effect and carry it forward. ("Develop a program" can mean invent a technology, create a political institution, etc.)

Once these separate problems begin converging and getting serious, a breakdown in communication at any point can create fatal chaos for the whole -- this being an inherent danger in a complex interdependent (technological) society, as has already been noted.

And in any breakdown, the United States will suffer most, because ours is the most delicate society, the most interdependent. Unless we are organized for it, for instance, a sudden curtailment in foreign trade could put us into a depression of a magnitude to jeopardize our very institutions. (A depression is a breakdown in communication, after all; the tangibles of production are still there, but the intangibles do not come to bear to keep them operating.)

#### The lesson for U.S. foreign policy:

Quite aside from developing technology and political devices to cope with the problems, the United States must -- in concert with the rest of the world, because this is a world problem -- develop a true science of communication on a crash basis. That done, it must provide the tangibles and personnel as may be needed to carry out any program the science indicates as necessary.

What this might be cannot be spelled out, obviously; we do not now have the science. But some suggestions are possible. For instance, the United Nations itself is seen as a communication agency; perhaps it is the neutral source to develop a communication network, to achieve statistics and other data far faster and more complete and more subtle and more dependable (i.e., free from governmental tinge) than is now achieved -- to provide the basis for discussion, and specifically to provide the urgent signals for an impending breakdown, as well as a channel for sending out the messages to cope with the trouble in a way which has the confidence of all concerned. Seen this way, the U.N. has a somewhat different function, and it needs a great deal of reinforcing in certain segments.

Specifically, technology has a great deal to contribute by bringing to bear information retrieval systems, by simplifying and making less expensive the available communication devices, by creating new information networks around the world. The present new research efforts in this area need considerable increase in momentum and resources.

Specifically, also, perhaps an international information and communication agency is needed -- with all the difficulties and dangers involved in creating and operating it.

At the very least, there must be a breakthrough in the social sciences, and specifically in communication theory, to provide a confident development of techniques. Present understandings are obviously inadequate to the need. (It is possible to suggest, in fact, that the whole approach to an understanding of man is backwards since Darwinian science made man an animal; if man could be seen as a unique new entity, operating by purposes more than by determinist animal law, we might have a different starting point for building our human science and our communication theory.)

And, finally, priority action must be taken to improve communication within each country. There is no point and some danger in supplying technology beyond the ability of a country's communication complex to handle it (a "communication complex" being the total physical and human resources by which ideas, actions and tangibles are moved). On the other hand, if the communication complex can be built up to the new level first, as part of the technological advance, there is at least reasonable assurance of efficient use of energy and money. There is, unfortunately, little attention given to the communication problem in this sense, and no index has been developed which can provide a guide for technological effort. Such an index, however, is possible to achieve if the United States foreign aid policy makers intend to use it.

Just as importantly, perhaps, a country's communication complex must be as efficient as possible against the dangerous day when a crisis requires full communication -- and in this matter, the more highly developed, the more difficult the communication problem. There is reason to doubt that our own communication complex in the United States is adequate to handle any major crisis more complicated, subtle or subject to opinion than a sudden bombing attack.

7. At our own level of technology, the U.S. has become a have-not nation.

The fact is becoming increasingly clear that we are dependent upon other parts of the world for markets, for many strategic metals, and perhaps soon for fuel. We will thus be so specialized and interdependent that we will be at the mercy of everyone else.

The lesson for U.S. foreign policy:

The hard reality of our technological dependence is simply an early and tangible indication of our basic problem of foreign relations. It underlines, therefore, the perhaps more abstract reasons being given for a foreign policy which (a) provides enough military and economic strength to keep our lines of supply and our world markets open for the foreseeable future, and which (b) leads to a basic pluralistic system to insure that however changed the organization of countries may become, we still will have an orderly society in which our interests will be served in common with the other peoples of the world.

8. In the struggle to restructure the world's power system and insure simple survival as the revolution increases, communism takes much better advantage of technology than the U.S.

The three factors that technology alters in the world power structure -- namely, the great-small power relationship, the "impossibility" of major war, and the new kinds of large-scale damage -- combine to give a cold and calculating nation a tremendous advantage if its national goals are dynamic and ruthless enough. In our time the threatening nation is the Soviet Union; it may some day be China, or some other nation or bloc of nations.

Technology provides substantial strategic advantage for blackmail, for causing trouble, and for seizing power far beyond the cost or risk involved and the resources to support it. The Russian example is instructive.

The Soviet program is a peculiar amalgam of (a) the Russians' own national goal, (b) a defective economic and political system which is peculiarly well suited to bull through short-range goals but which, even so, works as well as it does only because of the great motivation of that national goal; (c) a conscious shrewdness which capitalizes on that great national goal and hides behind a historic accident (Marxist internationalism) to make other peoples think it is a world goal, and (d) a first-priority emphasis on technology (especially including communication) to develop power and to use that achievement as evidence of the basic validity of its position.

To keep momentum for this ball of inconsistencies, Russia cannot play a realistic role as part of the world pluralism. It cannot simply be another nation among nations, with a normal give and take. It must be the domineering reality, the whole -- it must conquer the rest, and superimpose another system on the pluralism.

To achieve its goal -- taking over, no matter what the cost in human terms -- the Russian strategy is simple: (a) use a smoke-screen of

"world" goals to convey a positive approach, but (b) use negative force -- under constant pressure -- to hamper, harm, destroy effective leadership, get things to break down, create uncertainty and fear, distrust and paralysis -- chaos. Then, with the only disciplined cadre left (a hard core of fanatics who combine illusionment in the "world" aspect of Russian nationalism with their own rancors, hopes and opportunisms) they take over, and win control because the cadre must depend upon Moscow.

To recognize this as ridiculously contrary to the positive course of human history -- as a counter-revolution, really -- is not to say that it cannot win, if unopposed, because it is based on two facts of life in a technological age:

The first fact is that in difficult and frustrating times, inexperienced and even experienced peoples may be triggered into rash actions that can destroy in moments what may have taken years to grow. The more technological the society in structure or substance, the more this is true.

Second, technology is such a magic hope that it has tremendous power for exploitation.

Russia uses science and technology almost exclusively to advance its military stance, rather than improve the lot of its people -- yet it manages to convey the idea to (presumably) its own people and certainly to many other peoples around the world that it is the only hope for a political system which will allow technology to be used to improve the standard of living.

The secret of this very peculiar paradox lies in the communist ability to identify its "idealism" with the national and personal aspirations of the underdeveloped areas. This is the positive attitude which comes first; and once it is accepted, all other later actions can be rationalized as ends justifying means. This is particularly true when a negative force attacks it, frontally; the original impression is merely reinforced. So, we play Russia's game by fighting it. When we brandish military might, necessary as it is, that merely reinforces the Russian position all the more. And even when we provide technical and economic assistance, it can easily be made to appear insincere, and simply a device in the cold war.

We need, therefore, to prove that we are the positive force, and that Russia is the negative one -- as is certainly the case. We have a wealth of science and technology, buttressed by ideals and a demonstration of our belief in freedom and equal dignity (independence for the Philippines, statehood for Hawaii). We can change the original impression the world has of Russia by restoring to validity an even earlier and perhaps deeper impression the world has of America as the hope of freedom and the good life. But we must use our ideas and our technology in a positive way to do this. Then, Russian attacks on freedom and constructive

effort can be seen for the negative force they are -- as in Hungary, and as the Chinese showed in Tibet -- and the world can join ranks to resist a cancerous growth.

The lesson for U.S. foreign policy:

Even though it may be a handy way to get international legislation through Congress, making all U.S. actions appear to be motivated solely or even primarily as anti-communist measures serves to cast the U.S. in the negative role, and reinforces the "positive" stance of communism. The U.S. must find a way to emphasize that it is really working toward positive goals of human betterment and peace everywhere; even in cold war terms, this will then unmask the communist pretensions and the whole world will be better able to understand and resist the communists' negative force.

Note that this is not to say that communism is not to be resisted. It is only to suggest that the resistance should be seen in its larger context.

For internal politics and in truth -- instead of the anti-communist argument -- it may be practical to show how any American activity overseas in the form of economic and technical assistance directly strengthens our world markets, our free-enterprise economy: our technicians and advisers on the scene, the use of American pilot machinery, laboratory equipment, textbooks, even commercial audio-visual materials, samples, and the political, commercial and social institutions we help them start-- all these build a bridge to the people of the world; and as the world's economies grow, the result is better customers for us. (The most highly developed countries, it is well-known, are our best customers.)

The communists will call this economic imperialism, but since they are trying to do the same thing, they are too vulnerable to be effective, if only we first turn the tide of opinion toward us as the positive force. And, in any event, competition for trade is fair game and generally viewed unemotionally around the world. That is to say, once a country realizes it must buy outside its borders, it will trade where it finds advantage, and it does not object to whatever salesmanship the potential seller wants to employ.

9. To put all that has gone before into a positive, organized statement: The technological revolution makes the simple conclusion inescapable that we must work in a positive way to help the other peoples of the world.

We cannot be merely negative, and survive; and we gain from being positive and helping to the limit. We are, of course, doing a great deal now -- much more, probably, than we credit ourselves. And we have a general, if uneven, understanding of why we are doing some of the things

we are doing around the world. But we need to make this a clear and very conscious statement. The people of the United States should be brought to see it as a fact of our own personal lives and futures, so we will pull together. The peoples of the rest of the world should see it clearly, too, so they will understand us and our motives. Such a statement might go essentially as follows:

"1. We are doing this for peace; we believe that peace will come more quickly and surely to the world if all countries are strong and independent; if everyone is productive and efficient; if all persons have reasonable access to justice and to the good life; if we are all good customers of each other; if there is world understanding and easy access; if there are common goals instead of divisive ones.

"2. We are doing this for our own benefit, not as a matter of favor or charity to another people. We will profit by doing business with them, we will gain security by their strength and stability as interdependence increases, we will improve ourselves by getting ideas from them. In other words, we are investing in our own future in this way -- and they do us a favor to let us, instead of some rival country, help them."

This is simply American business doctrine, basically. We consider it a favor to be given a contact with a business prospect. And we know that serving him serves our own interests.

But even more, we strengthen our own value system as we understand fully our place in the world revolution. Life has renewed purpose for us; there is the rekindling of the sense of high adventure that made America and made it great; we taste again the bold pioneering drive that brought us past the thresholds of new worlds, into an ever better now; and we lift our confidence that we can make the future better still.

This will cost more taxes; it will take more patience and quite a bit of humility and willingness to listen to other people. It may even mean putting our own fate--in major matters--into the hands of the world community.

But -- either we take that high road, or we fall by the wayside and surely die.

## II. THE STEPS TO TAKE

Although the goals are unmistakably human, the key to the whole proposition is technology (and science, on which future technology is based). Technology has a very clear message:

When the machine is slave, man need not be. This way lies freedom, dignity, health and comfort for all men, and we can consciously use our great technology to bring these things about.

Technology requires institutions and organizations by which to operate. People decide purposes for machines, create them, run them, use the product. We must therefore sharpen our purposes and values, develop the institutions of an interdependent and pluralistic society, start building the institutions for the new kind of world which is coming with full technology, accelerate the revolution of aspiration -- and specifically diffuse our technological knowledge and give it enough economic support to bring about full technology as soon as possible.

This is by no means an entire foreign policy, of course. But it is, again, the key and the leverage to the broader total policy. The specific steps by which we can help the peoples of the world through science and technology are these:

1. Give them a real vision of what is possible through technology.

What they now feel they need is not necessarily what they really need. Sometimes they do not even realize they have a problem. They need broader understanding, greater insight, personal experience in what is happening and what is possible. They get this by coming to the United States to see and learn; by American films and lecturers, by books and magazines, by all the communication devices we can bring to bear to wake them up, to inspire and inform them. Our own communication technology can achieve wonders if it is only awakened itself to the need, and is given the chance. And then our communication technology can help the countries develop their own communication technologies to spread the word -- through education and the mass media.

2. Give them our technological know-how.

They need to know what technology is, and what there is that can be used. There are practical disagreements beyond that, as to what level of technology the underdeveloped areas can absorb. Some say it must be step-by-step, others say a leapfrog to the atomic age is possible. Actually, both levels are needed, for the most complex technology mixes matter-of-factly with the most rudimentary. It is not often that new technology must be developed; diffusion of available know-how is usually all that is required.

How? Unfortunately not by any magic gimmick but by hard and imaginative use of all our communication resources: by our textbooks and manuals in quantity; by special manuals, textbooks and handbooks developed for specific localities and problems; by our own technologists going overseas to help; by their people coming to our country to learn; by educational and training systems being set up; by local people learning to help spread the knowledge and techniques; and by helping to get them the communication facilities (radio transmitters, printing plants, etc.) needed to achieve the diffusion.

"Technology" as used here is meant in the broadest possible sense, to include our experience in social, economic and political organization and technique, as well as agriculture, industry, medicine and the other more usual kinds of technology. These people must be helped to learn the specifics of science and technology, so that they may begin to develop their own indigenous variations. But, perhaps even more, they need to be taught all this in a general context. They must really understand the purposes and implications, the possibilities and alternatives, so that they can achieve that synthesis with their own conditions and beliefs in a profitable and fruitful way. What we must develop perhaps most of all is the "technology of leadership."

### 3. Help them organize to use the know-how.

Wanting to do something, and knowing how to do it, are not enough. Action takes institutions -- that is, organizations, facilities, common understandings. Existing institutions can be adapted, once someone sees how to do it. New institutions can be formed, for a particular purpose and for general purposes. Again, educational activities are needed. And, specifically, "technical institutes" or local centers for technologists to assemble the know-how, to adapt it, to plan how to use it, and to take to the field to start its use. And, although the idea may be anathema to some of us, planning boards are often needed to decide priorities, to channel materials and energy, and to lead the way.

Here again, "organize to use the know-how" must be taken in its broadest sense to include the intangibles which a technological society must have to operate -- such things as punctuality, easy communication and willingness to share ideas, equality before the law, a depersonalization of activity, and, above all, the safety consideration, the good working conditions, and the human relations procedures which make the technological society not the monstrous machine it could be but the human thing it really is.

### 4. Give them pump-priming resources.

Perhaps the people can lift themselves by the bootstraps, "as we did." But when we were doing it, technology had not already put us behind in a race with population needs. And in any event, our help will vastly speed the process, to our own advantage. The people need money and help in developing the means of technological diffusion -- and they

need economic assistance in the form of stabilizing and venture money to let the new technology take hold.

5. Start them along the line to self-dependence.

Everything that is done should have built into it a contribution toward the long-range goal of making the people so knowledgeable and strong that they will be able to move up on their own -- with only the normal interchange of ideas and information which a world civilization provides. Immediate needs cannot be ignored for the sake of the goal, but by conscious effort, almost every immediate activity can include a long-range benefit.

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The problem is primarily one of communication. This word is bandied about and splintered into a variety of meanings, but here it is used in its broadest sense of developing understanding, achieving motivation, delivering information, and creating institutions for action and growth. Since the know-how exists, what is needed is the process to bring it to bear

Much of what has been listed above is already being done, of course, as was noted at the outset. What is needed primarily is to do much more, and to do it in full consciousness and consistency. This is our present failure, that we in this country do not really know what our own people are doing overseas; we do not work together enough; we do not appreciate enough the opportunities and the results to give the work our full support.

Specifically, ICA must be recognized consciously as a communication agency in its technical assistance operations, at least. The People-to-People programs must be spurred; private enterprise generally must be given every encouragement and help (such as guarantees, insurance, methods of converting currencies) to increase international operations; travel to and from the U.S. should be facilitated; communication media helped by forthright action to make international transmission of news and information easy and cheap; agencies of international education must be further developed and assisted. These are obviously only some of the highlights; a full study of the possibilities would be well warranted.

For the diffusion of technology rides on communication. And the peace and well-being of America ride on the achievement of full technology in the world.