LESSONS FROM EUROPEAN WORLD WAR II EXPERIENCE IN INDUSTRIAL REHABILITATION

12 May 1954

1745

~~GHT~~

CONTENTS

Page

INTRODUCTION--Lieutenant Colonel William R. Norman, USAF, Member of the Faculty, ICAF..... 1

SPEAKER--Mr. Leo Cherne, Executive Director, Research Institute of America..... 1

GENERAL DISCUSSION..... 14

NOTICE: This is a copy of material presented to the resident students at the Industrial College of the Armed Forces. It is furnished for official use only in connection with studies now being performed by the user. It is not for general publication. It may not be released to other persons, quoted or extracted for publication or otherwise copied or distributed without specific permission from the author and the Commandant, ICAF, in each case.

Publication No. L54-132

INDUSTRIAL COLLEGE OF THE ARMED FORCES

Washington, D. C.

Mr. Leo Cherne, Executive Director of the Research Institute of America, was born, 8 September 1912. He is a graduate of New York University and the New York Law School; he served on the faculty of the Georgetown University School of Foreign Service; lectured at the Army Industrial College since 1939; and was a faculty member of the New School for Social Research from 1945 to 1952. He was awarded an honorary LL.D. from Parsons College, June 1951. Mr. Cherne participated in drafting the Army and Navy industrial mobilization plans for the last war, and worked closely with virtually every military and defense agency during that period. At the joint request of General Douglas MacArthur and the War Department, he went to Tokyo in April 1946 to prepare a program for the revision of the Japanese tax and fiscal structure. He is also well known to national radio and television audiences. He has covered every national political convention, starting in 1940, and frequently serves on panels. As chairman of the International Rescue Committee (IRC), Mr. Cherne made several trips to Berlin in 1953 at the invitation of the late Mayor Ernst Reuter to review the problems of the escapees coming across the Iron Curtain. With other members of the Board of Directors of IRC, he is presently completing plans for several major projects to aid those who seek freedom from Soviet tyranny. His writings include: "Adjusting your Business to War," 1939; "M-Day and What it Means to You," 1940; "Your Business Goes to War," 1943; and "The Rest of Your Life," 1945. His articles have appeared in "The Saturday Evening Post," "Colliers," "Look," "The Saturday Review," and "The Atlantic Monthly."

LESSONS FROM EUROPEAN WORLD WAR II EXPERIENCE IN INDUSTRIAL REHABILITATION

12 May 1954

COLONEL NORMAN: Admiral Hague, General Hovey, visitors, and student body: Our speaker this morning really needs no introduction to this audience. His qualifications in the field of economic mobilization, his knowledge of the subject, and his outstanding ability to convey his thinking are a vivid recollection with all of us who heard him earlier in the year.

It is not usual for the college to ask a speaker to appear here twice during any one term. But in your case, Mr. Cherne, your appearance here this morning might be said to be a command performance, by acclamation of all of us who heard you last fall. We are very happy to welcome you back this morning to discuss a very important problem with us.

Mr. Leo Cherne.

MR. CHERNE: Admiral Hague and gentlemen: In studying the subject assigned for this morning, I came to realize that an attempt to assess the lessons learned from European experience during World War II in terms of industrial rehabilitation and to apply those lessons to the problem on which you are now working may take more skill than I command for several reasons.

First of all, if the assumptions which are stated in your problem directive are accurate, then there are indeed very few lessons gained from any aspect of World War II which are highly relevant. They have only limited bearing in terms of the emergency American industry will face in the event of an atomic attack made simultaneously upon the conditions and with the power indicated by the problem before you.

World War II itself in no sense constituted a cohesive experience. World War II represented a progressive development of knowledge, and a progressive development of destructive power and the capacity to deliver it. Bear in mind that in the six years of European war there was a tenfold increase in the destructive power of the aerial bomb. In addition there were fundamental improvements in the ability of the United States and Great Britain to deliver a bomb of considerable weight or extensive destructive capacity to its target.

The heaviest bomb delivered by the RAF in 1940 was one ton. The heaviest bomb it delivered at the close of the war was 10 tons. Yet, in that very same year, we had our first actual military experience with the use of an atomic bomb, at both Hiroshima and Nagasaki, of a 20,000-ton equivalence.

Now, without considering hydrogen bombs, even this magnitude of power has been amplified. Your problem operates on an assumption of an atomic bomb of 50,000-ton destructive power. With the hydrogen bomb, the bomb of 1940 has been multiplied more than one million times in terms of industrial destructive power.

I shall try to confine myself in the assessment of the lessons of World War II to the assumptions which confront you and within whose framework you must, of necessity, function. In all honesty, at the conclusion of my remarks I intend to question some of these assumptions. Nevertheless, I believe your work should be conducted, as it is, within the framework of the hypotheses which are now before you. A set of hypotheses is indispensable. Any one set, in my judgment, is just about as good as any other; and the one before you is just as likely to presuppose striking power larger than may be used as it is to suggest less striking power than we may confront.

Here are some of the World War II experiences which have relevance, oddly enough because the problems they represent no longer exist. In atomic warfare there are no overriding barriers to severe or even paralyzing industrial damage, as there were throughout World War II.

The three most serious handicaps which afflicted the Allies and substantially inhibited their effectiveness during the first three years of aerial bombing of Germany and were diminished somewhat in the final phase of World War II, were: first, the inability to aim delivery of the bomb accurately; second, the inability to accomplish desirable night delivery; and, third, the difficulty of precision bombing from great heights and through clouds.

In response to these three difficulties, a decision was made to concentrate increasingly upon area bombing rather than upon precise targets. Area bombing was adopted, first, because targets were hard to locate, particularly at night; second, because they were difficult to destroy with precision; and, third, and most relevant in terms of

the experience which now confronts us, because it was ultimately determined that area bombing was the most desirable method of aerial attack, even if you could have destroyed a given industrial target with precision and accuracy for this reason.

During the war it became increasingly evident that the effect of bombing, in terms of economic paralysis, was limited; but the dire effect upon morale was almost wholly unlimited. The strategic bombing survey conducted at the end of the war bore out this unexpected conclusion.

We did not realize until the war's end that our aerial attacks upon Germany in terms of economic paralysis were as ineffective as they then proved to be. We believed time and again that we had critically injured industrial plants, strategic materials, and vital links in the industrial apparatus needed to produce arms and to sustain the military as well as the civilian function. Only after the end of the war did we learn that the industries upon which we concentrated the heaviest precision attacks were, curiously enough, those industries which were most able to continue at war's end. For example, in the case of bearings, Germany capitulated with a larger supply of bearings than it had at the start of the war, and much more than it would have required for the continuation of the war.

We learned, too, for the first time, something of the vital role played by morale in bringing an industrial nation to its knees. We learned that the immobilization of the will to fight may be more important than the destruction of economic power and the sheer physical capacity to fight. The economic capacity to fight is only as effective as the manpower and energy that a nation can muster to achieve the manifold and complicated tasks of even the most automatic aspects of industrial mobilization. The thousand-bomber raids on Essen and Cologne were therefore the turning point in our strategy of destruction. They were the real beginning of the campaign to break the German will rather than to break the German economic might.

In emphasizing this aspect of World War II experience, let me not entirely dismiss the industrial and economic impact. There were six main targets involved in the Allied aerial attack upon Germany: the submarine construction yards; the aircraft industry; transportation; the oil industry; other industrial targets, including plants manufacturing synthetic rubber, bearings, and motor transportation equipment. The

last objective, at that time not most highly regarded, worded in the agreement reached in 1943 in Casablanca in the joint plan of Allied operation--"undermining the morale of the German people to the point where their capacity for armed resistance is vitally weakened."

An interesting sidelight is that German loss of essential production due to direct damage was less important than the sacrifice in output caused by unplanned-for and hasty plant dispersal, and the other defensive measures taken as a result of the intensification of the air war. It may well be that in this one experience lies the most essential lesson for our own advance preparation against the contingency of a third world war.

With Germany's advantages of advance industrial mobilization planning, detailed knowledge of the economy, substantial willingness to impose necessary regulation and government power for full utilization of economic facilities, it is significant that its greatest injury was sustained where advance anticipation was either nonexistent or inadequate, and in which preparation was made too late and only in rapid response to damage.

The meaning of this one aspect to us will emerge from a few facts. You may already know them, but I believe they bear continuous repetition until we reverse the dangerous and irresponsible course upon which we are now engaged and actually do more than talk about the problems we would face in another war.

"The London Economist," on 10 April 1954, soon after the first public news of the hydrogen bomb, stated:

> "'Providence,' according to an old saying, 'looks after children, drunks and the United States of America.' The past two weeks have made many people wonder whether the third of these words, having exploited the ultimate mysteries of physical matter, may not have placed itself outside the protective pale."

This is not just rhetoric, because "The London Economist" continues to point out--in both language and date, incidentally, which I have found in no publication available to the American public--the following:

"Civil defence has been one of the victims of the economy drive. Whereas the original plans drawn up by the previous Administration called for an expenditure of 600 million dollars this year on shelter construction and the dispersal of industry, in President Eisenhower's latest request to Congress the amount has been reduced to 75 million, while the dispersal programme has virtually been abandoned.

"New York City's civil defence director said that, with this latest news from Washington, evacuation had become the only solution: 'The shelter idea is out.' But he added that it would take three days to clear the city's inhabitants on foot, and seven and a half days to clear the 1,800,000 vehicles in the metropolitan area, while the longest warning that could be expected would be two hours.

"As Senator Duff, an Eisenhower Republican, said last Saturday: 'American supremacy is due to concentration of our industries. Our national strength can well become our national weakness.' At the very best the meaning of total war is that whenever an enemy aircraft shows up in the radarscopes over the Canadian wilds, the whole population of New York, Chicago, Boston and San Francisco must take to the country, for it will be impossible to tell for which city the aircraft is headed."

The conclusion reached by "The London Economist" may not be sound. The problem which it raises is, in my judgment, inescapable; and the analysis of the reasons for the existence of that problem is equally unavoidable.

I believe these things are true: I believe that we are not effectively diminishing our concentration of industry. I believe we are not taking the necessary steps to assure the continuation of industry in the event of war, the steps needed prior to the emergency. We are not really preparing for an atomic strike upon one city, let alone the 20 cities which are seriously injured in your problem directive. I believe, based on the experience during World War II, as well as everything we have learned since, that it will be impossible to plan for war or take adequate action after the war begins.

How many times will we have to learn the lessons of survival in a world in which war remains a probability? How many times must

Bernard Baruch make the same speech, which no one in authority listens to, in which the simplest lessons in industrial mobilization are contained, and just as simply avoided by the agencies which must contemplate this action--how many times this must be the case, I don't know.

But this I believe to be true, if the assumptions which are contained in your problem are true: The problem before you will not permit the same mistakes to be made that have been made previously. We cannot fail to prepare for atomic attack and hope to survive. We cannot make the same errors without fundamentally weakening American capacity to retaliate. We cannot be caught unprepared for atomic attack upon our major cities and expect that the American will to fight immediately after the first strike will not have been seriously injured.

Let us examine the first, perhaps the most important, at least the most definable aspect of the problem--the concentration of industry. In the Research Institute's pre-Korean study of the 19 major target areas in the United States, we found that half of America's industrial capacity was jammed into these 19 areas. Today we are told that they account for over 60 percent of America's industrial production.

In terms of the official policy, one study showed that of 2,669 certificates of necessity, in which the Government gave the advantage of a form of subsidy for construction desirable to the military effort, 67 percent were approved for new facilities in cities of over 100,000 population. This group, incidentally, included 925, one-third of the total group, for new and expanded plants in and about the hypercritical 19 areas of which I spoke. This means that not only has a further unplanned concentration of industry been permitted, but there has apparently been Government subsidy encouraging that expansion within the already highly concentrated areas.

In Michigan, for example, 70 percent of the new money which is being spent on plants is being spent in Detroit. Seventy-two percent of our total steel capacity is concentrated in four states. Our aircraft production is in five large areas. Seventy-five percent of the machine tool industry is located in the vulnerable areas.

Let us return to the experience of World War II so that we may determine whether any of it has validity for this aspect of the problem. The fundamental lesson learned in the experiences of Germany is that

destruction of the will to fight is the primary hazard we face. In the light of the concentration of America's industrial activity in the key areas with which you are concerned, in the light of the casualties of an average of 30 percent of the total population of these key areas in an initial attack, what is your honest assessment of the effect on the will to resist, let alone the capacity to resist?

If you want to see the experiences of World War II in reasonable perspective, compare these casualty figures. In Germany one percent of the nonagricultural, industrial manpower was eliminated by death or injury by the end of the war. Your problem assumes the destruction of 30 percent within the first 24 hours. The will to fight within Germany was brought to an absolute end with a casualty total of one percent of the urban segments of the civilian population; this, incidentally, is less than one percent of the total population. What are our preparations for the continuation of the will to fight after casualties 30 times that amount occur within one day?

The second vital lesson is that inadequate protection for civilian and industrial population against aerial attack will prove--as it did in Germany, Japan, and England--more disastrous than the destruction of machinery. Not all key industry must be vitally injured to bring an industrial nation to paralysis. Individual plants can be rehabilitated, but the civilian population of a community involved in unprotected attack cannot be replaced.

This indicates the magnitude of the problem we face in this direction alone. The sheer physical effect of the strikes on Germany teaches another vital lesson. By war's end only one percent of Germany's nonagricultural workers were lost by reason of injury. But 20 percent of the nonagricultural workers were rendered useless to the war effort, not for reason of injury, not for reason of death, but because they were needed to clear debris, to rebuild, to replace, and to man the civilian antiaircraft facilities.

In other words in Germany the ratio was 20 uninjured men needed to restore the capacity to resist, for each individual directly injured. If the assumption in your problem directive is accurate, that an average of 30 percent of urban manpower will be killed or seriously injured in a single atomic attack upon 20 major American cities, then it is highly probable that the total balance will be needed to carry out even the most moderate tasks of restoration before we can even hope to resume production.

Under the present plans for industrial protection and civilian defense, your assumption of 30 percent destruction of urban life will, on the basis of any experience or knowledge now available, make each of the centers so affected totally inoperative.

If this is so, what is the purpose for the examination of the problem? The purpose, I think, is very clear. It is to learn the lessons, not only from the European experience available to us, but from the estimates which we are ourselves constructing, so that we may take any steps necessary to reduce the hazards, diminish the destruction, increase the capacity to rebound, and make possible the capacity to retaliate.

From the lessons we have learned, in which direction must we therefore move? First of all, the ability of the German war industry to rebound from even the heaviest mass attack indicates the inescapable necessity for a total American inventory of capital equipment, available factory space, and available manpower. (I will not go into this more deeply because I covered this area in some detail in my December lecture.)

In the light of our present knowledge of the economy, it will be physically impossible to achieve that degree of reconstruction, rehabilitation, and resumption of production which would otherwise be available to us if we knew certain essential aspects of our industrial capacity.

We must learn initially to get along without the replacement of parts, machines, and equipment. We must, as I indicated in December, begin to pioneer new skills which we normally least need, but which we may nevertheless find we have--the capacity to repair on the spot, the capacity to use minimum equipment, the capacity to function without the replacement of machines or parts, the capacity to reassemble with what is left. We must nourish the ability, through an exhaustive knowledge of the machinery and its components, to then combine the nonusable or inadequately usable remaining pieces into equipment which will function.

The ability to rebound and to continue requires not only the inventory of machinery but the inventory of skills as well. An injury which afflicts one out of three is an injury which will cut deep into the entire fund of executive skills and skilled manpower. This manpower must be replaced and replaced within a matter of hours. It cannot be replaced by extemporaneous action. It will never function adequately if it is the

result of an on-the-spot response without previous contemplation of an atomic attack such as may confront us.

One of our fundamental needs is a program of skill training, based upon a national skill inventory, based in turn upon tables of potential manpower replacement within each essential industrial plant. Only when the resources within the plant are exhausted, can additional manpower be sought within the community. And in only the rarest emergencies, can it be sought outside the community in the circumstances we are contemplating.

The will to resist is not destroyed solely by casualties. It is destroyed by the widespread assumption that the political, as well as the economic, society can no longer continue. There may be no more devastating effect upon a particular community than the apparent inability of the essential plants to regroup and resume functioning. What is involved is not only the effect upon the essential production itself, but much more important, if the German experience is a valid indicator, the effect upon the morale of the entire community.

Fundamental injury to the following industrial resources would have drastic consequences to the ability of the United States to continue and retaliate: We face here the necessity to assure ourselves that there are duplicate facilities, maximum dispersal, and maximum plans for the recovery of injured industrial facilities.

1. Oil fields, oil-producing, and refining areas. --They are more vital to us than they were to Germany. We are more industrial. A possible world war III may require petroleum products, real and synthetic, to a greater degree than even the very heavy requirements of World War II.

2. Major railroad transportation and freight car assembly points. --Germany proved extraordinarily vulnerable because of the high degree of concentration of its marshaling yards. Look at the United States and determine whether we are more or less concentrated in our freight assembly areas than was even the highly concentrated Germany.

3. The aircraft industry. --There, in my judgment, is one of the "sitting ducks" of America.

4. Essential and highly concentrated industry components, such as bearings and synthetic rubber.

5. Manufacture of other modes of transportation, particularly motor transportation.

We can learn here from an interesting experience in Germany. Having delivered deadly blows to the railroad centers of Germany, we discovered that Germany developed rapidly the capacity to rebound, through the use of motor transportation. That meant we had to deliver lethal blows to centers of manufacture, as well as to those of assembly of motor transportation.

In the United States we are dependent, to a degree unequaled in any country or group of countries in the world, upon the manufacture of motor transportation and the use of and concentration of motor transportation for the vital functioning of even the most essential industries. What happens to motor transportation if our oil centers are seriously injured; if Detroit is destroyed; if our main highways are damaged?

The intensification of every effort to disperse essential industries is the first step needed to minimize this hazard. But I believe that requirement by itself to be inadequate. In my judgment we must reverse a course we have recently traveled. We have been reducing the number of suppliers of essential equipment needed in modern warfare.

We face the increased necessity for wholly duplicate facilities at the very moment at which we have taken steps, motivated by an understandable search for economy, which make us increasingly dependent upon single sources of supply. I believe, if the assumptions before you are correct, that the maximum civilian defense protection, even with its substantially increased effort at dispersal, will still find us inadequately prepared for the requirements of world war III unless we set up beforehand wholly duplicate facilities in each essential area of industrial and military production. And here the lesson is one that we have learned, not from Germany during World War II, but from the Soviet Union subsequent to World War II.

Earlier I said I would question some of the assumptions. I have no way of knowing their validity. But I believe certain questions are pertinent.

First, the hypotheses: I think one of the unhappiest of those that we confront now is that we have pioneered the way to our own greatest difficulty. I cannot but believe that the hydrogen bomb, if not the

A-bomb itself, is the severest handicap which the United States confronts in facing the possibility of world war III.

I believe that the more time that passes, the greater will be this handicap. I believe that the greater the Soviet Union's capacity to produce and stockpile these nuclear weapons, the greater will be our inequality in capacity to resist, regroup, reconstruct, and retaliate. The dreadful fact is, as Senator Duff has stated, that our previous strength has now become our critical weakness.

We, who have pioneered nuclear weapons, are particularly vulnerable to them. The Soviet Union, which started out with an infinitely smaller degree of concentration, is today by an irony of history, the only nation on the face of the earth approaching wholly duplicate and triplicate sources of supply.

Stalingrad may prove to be the most fortunate thing that ever happened to the Soviet Union, because with the collapse of Stalingrad the Soviet Union, unlike the United States, learned a vital lesson for world war III. It learned that an industrial nation with a will to victory cannot rely upon either concentrated areas of supply or single and even duplicate sources of supply. The Soviet Union confronts us as a threat and a danger with far less vulnerability to the weapons we have pioneered and a capacity to rebound infinitely greater than ours.

It is this fact which, more than any other, makes me hesitate to question the assumptions. Under other circumstances, I would raise the fundamental question: Will a nuclear bomb, delivered against urban centers, be used at all? If it were not for the disparity in vulnerability, my only guess would be that the nuclear weapons would not be used--not because of any treaty outlawing them, not because of any understanding, not because of humane motivation on the part of the Soviet Union, but because in reality the weapons involved are weapons of total disaster for both parties to the conflict.

But if my assumptions of the disparity in our capacity to rebound are correct, and if the present American effort and genuine action designed to increase our capacity to rebound are not substantially increased, then I believe it is possible that the Soviet Union may well contemplate use of the nuclear weapons. The Soviet Union might act on the most devastating assumption of all--that it has the ability to destroy the United States or reduce it to paralysis before we can inflict

a similar injury on the Soviet Union. This means that victory for it would be obtainable, even though at dreadfully high cost.

Another assumption which is implicit in your problem raises this question: Is the continuation of effective war effort at all possible in the face of substantial atomic or hydrogen attack?

I believe it is. This is not a question I would raise with the community at large. But I do believe that question must be raised within the groups which are concerned with planning and preparation for such a possibility.

Is there a possibility of major functioning if the 20 cities hypothetically included in the directive are in fact destroyed? Are there real substitutes which can operate after the complete destruction of Washington, New York, Pittsburgh, and Detroit?

To focus the answers which you are going to have to find as solutions to the problem, it may be halpful to think in terms of the total destruction of these four cities. I have not selected the four most vital cities. I have selected these cities because they are each vital to effective functioning.

By "total" destruction I mean an injury sufficiently extensive to reduce to a bare minimum the possibility of resumption of a city's activities for a substantial length of time.

What are the functions and importance of these cities? Washington, with all the instruments of sovereign power; New York, with all the instruments of financial and commercial power; Pittsburgh, with all the symbols, as well as the actual instruments, that are at the heart of heavy industry; Detroit, with a substantial portion of the manufacture of motor transportation, in which we have now concentrated a high proportion of the military output as well.

Is there an adequate plan for the substitution of Government itself? Or even the necessary legislative provision for the transferral of sovereign power? Can a democracy in an emergency convert itself overnight to a police state? What is the process by which a constitutional democracy bypasses all the usual constitutional obligations in order that sovereign power may function within hours after the attack?

This is no academic question. This would be the literal consequence of the destruction of Washington today. There is no apparatus, there are no legislative provisions, and I seriously doubt that there is an adequate plan which could be presented to Congress, assuming it would consider any such plan, to permit the transferral or continuation on an emergency or police basis of the minimal and essential elements of sovereign power.

I repeat, Germany did not fall because its industry was destroyed. It fell because its capacity to continue as a nation was destroyed. And the capacity to continue as a nation depends on the existence of government, on the existence of hope, on the existence of a substantial possibility of life surviving.

With casualties of 30 percent in one raid, we face a very real problem in keeping alive the will of the remaining two-thirds of the population to continue, particularly if anarchy and chaos exist in the first 48 or 72 hours after the disaster. On the basis of any present plan, it is an understatement to suggest that in any of the cities on your list, in which more than 20 percent of the population may be casualties, there will be anything other than anarchy or chaos given the present state of our preparations.

During my lecture just before the Christmas holiday, I apologized for striking a particularly grim note at that season of the year. I can't tell you how happy I am that I have made these remarks at a time when no religious sections of our community are enjoying the observance of any holiday, in which either life or decency is the essential element. And yet your very preoccupation with this problem is, in my judgment, an act of the utmost religious dedication, and blindness to it the most intensely immoral act of our time.

The very nature of the problem and the framework in which it must be contemplated and solved seems, I know, totally unrealistic. This is a sheer guess, but my guess is that not more than one of every five of you genuinely and emotionally accept the possibility of the actual occurrence we are talking about and seeking to prepare against.

Emotionally, this may well be a particularly challenging and perhaps even exciting game of chess which is nevertheless unrealized and unabsorbed by the full fabric of your personality. Perhaps this is not true within this group. But I do know this: Outside this college, whether

within or outside the Government, I know of few possibilities which have been rejected quite as completely as the problem of actual atomic attack upon the continent of America.

As I said at each of the previous lectures in recent years, every action that we are taking in our own defense, limited in scope, as they are, by our total unwillingness to contemplate the real facts of life, must be a comfort to the Soviet Union. Preparation for defense without emotionally accepting the real possibility of war is one of the most puerile, intellectual exercises that civilized men can participate in.

Even if we really believe that the weapons we construct will be used, even if we really believe the phrase we use when we meet the Soviet Union at the council table and say that what we suggest involves a "calculated risk," how then, can you convince the Soviets that we are prepared to take the risk, or even seriously contemplate the existence of the risk, in the light of our almost total unpreparedness for the consequences of war?

I know this is the way a representative society works. I know that free men never move on time. I know that we are impelled only by disaster. I know we always respond late and then with extraordinary energy. Incidentally, the Soviet Union doesn't understand, or emotionally comprehend those facts of freedom any more than we emotionally comprehend the facts of war.

As a civilian and citizen of this country, preoccupied for some 15 years with the problems of protection against war, and preparation for the realities of war, I have never felt more grateful nor could I ever have expressed greater satisfaction than I do at this moment for your preoccupation with the most tragic, unpalatable, and devastating question of our time--but the most essential one. I hope my remarks have in some small measure contributed, not to enlargement of your knowledge, but to your increased feeling of contribution in pursuing the problem with which you are now working.

COLONEL NORMAN: Mr. Cherne is now ready for your questions.

QUESTION: I don't like to compare what you said with what other speakers have said, but I am bothered by this situation: An earlier speaker said that 80 percent of new industrial construction is outside the target areas. Will you comment on that?

MR. CHERNE: I have no way of reconciling the two figures. I can only guess as to why there is a discrepancy between them.

Those of us who do not have available the precise identification of the target areas, or the precise location within the particular cities of the new plants, are confined to this approach: To take the population centers with over 100,000 people, then to take the certificates of necessity and see that factory X has a postoffice address which is within that city, and assume therefore that there has been an addition to the concentration within that city.

Now, it may well be that factory X may be located on the outskirts, which for tactical or even valid reasons, may be regarded as not quite within the target area. But, in the light of our present knowledge of the effectiveness of the weapons we are discussing, I think the validity of the distinctions in the determination of these areas is now highly academic. I think that we have, for all practical purposes, a degree of concentration even more extensive than I have indicated.

QUESTION: Mr. Cherne, I would like to make a comment on what you said before asking the question that I have.

I believe that most of these certificates of necessity were for improvements to plants, such as the addition of more modern machinery or something like that. I think the 80 percent that was mentioned referred to new, valid construction.

My question is directed to your point about the relative vulnerability of the Soviet Union and the United States. I feel that it has long been a general assumption that we are more vulnerable. But I have made quite a few studies in this area, on the basis of studies of urban areas, gainfully employed people, and population distribution; and I came out with the conclusion that the two are relatively equal in vulnerability. We have 103 cities with over 100,000; the Soviet Union has 106. The relative population distribution of other than agricultural workers is relatively the same. I would like to have you discuss your reasons for stating that we are more vulnerable.

MR. CHERNE: My reasons are several; and they are based, again, on inadequate information about the key facilities required to maintain a war effort.

In the first place, our information shows that in the Soviet Union the cities containing the key facilities have an average lower population than our major centers. Second, it shows that the key facilities are duplicate or triplicate in terms of actual wartime functioning within the Soviet Union to a far higher extent than duplicate facilities exist in the United States. Third, in New York I have been able to question many people who have come out of the Soviet Union. I have been chairman of the International Rescue Committee for the last two years, and member of the board of the IRC for eight years prior to that time. A certain amount of the information I have is not statistical but personal.

Much of it is from men who have occupied important industrial and technological roles in, but later left, the Soviet Union. I have been impressed that the Soviet Union, to a far greater extent than the United States, anticipates the possibility of world war III and has actively taken steps to make sure that there is a higher degree of both dispersal and duplicate facilities than in the United States.

There are additional factors, about which I am uncertain. I am very deeply concerned about one aspect of American society which is profoundly different from Soviet society. That is the high concentration of ownership of automobiles in the United States. The automobile, in my judgment, may well prove to be our paralyzing product. In the major industrial centers, as well as in the major commercial and urban centers, the problem of the automobile on the streets or in the roadways may prove to be the greatest barrier to even the most elementary steps required for evacuation, for return, for repair, and for resumption of production.

The Soviet Union, as you know, faces no such problem. The citizens will leave on foot, if they can leave; and they will return on foot. The roadways, highways, and sources of access will be clear, to the extent that the debris itself allows.

I am perhaps affected by the situation in New York State in terms of its civil defense. New York City will be in a state of anarchy for a substantial length of time following an attack. I think that the automobile will actually be a major hazard which confronts us in our effort to restore functioning.

These are several unrelated factors which lead me to my conclusions. I would weigh most heavily the profound difference between the

United States and the Soviet Union as our number one lesson. The Soviet Union, emotionally as well as intellectually, contemplates the possibility of war; the United States does not. The Soviet Union has had experience with the destruction of its own territory; the United States has not. The Soviet Union has had vital experience with the loss of its major center of industrial production by bombing; we have not.

As a result of this combination of these three differences, I would be surprised indeed if any set of facts could persuade me that the Soviet Union is not at this moment infinitely less vulnerable to atomic attack than we are.

QUESTION: We are all in agreement, I would say, on your statement on vulnerability and our extreme dependence on the oil, transportation, and aircraft industries. But I don't recall your mentioning anything about our extreme dependence on electric power and our vulnerability that arises from that dependence. Would you care to comment on that?

MR. CHERNE: I did not mention that because I thought it would be stepping beyond the bounds of the topic which was given me to discuss. That involved the lessons learned from the World War II European experience; and the European experience did not involve any substantial injury to or loss of electric power. Nor was there, as a matter of fact, any great effort on our part to paralyze Germany, nor Germany to paralyze England, by attack upon sources of electric power. I have no doubt whatsoever that one of the appropriate areas of attack in the event of a future war, entirely apart from our experience during World War II, will be upon the sources of our electric power.

Incidentally, Japan, rather than Europe, may provide some parallel, Japan being the most electrified industrial country on the face of the earth. It is extremely interesting that in our bombing of Japan, our effects upon Japanese electric power appeared to be minimal.

QUESTION: Mr. Cherne, in order to do the things which we must do, assuming that we have the time in which to do them, and realizing that it is going to be difficult to induce people that they must do them, if you were given a couple of years to do the job, how would you go about trying to convince those who must be convinced that, even though this costs money, the money must be spent in order to do them?

MR. CHERNE: I think your question embodies a whole set of questions. One of the officers during recess chided me by suggesting that my remarks reminded him of the preacher on Sunday morning who addressed, to a parish composed almost entirely of elderly women, a sermon on the evils of drink and high living. He did not add, incidentally, that the prospect might have been more enticing to that audience than the disadvantages stressed by the pastor.

I recognize that in saying what I did this morning, you comprise the very group that needs to hear these things least. How, then, do we reach those who need to hear them most?

First of all, we are extremely fortunate that at this moment in world history we have as President of the United States a man who is accepted almost universally by the American people as a symbol of intelligent defense; and almost universally as a modest, honest, executive who is unlikely to ask of the American community more than is required. These are great assets. They are assets if the President can be persuaded to convey to the American people the facts of war.

There is a great hunger within the United States for knowledge. There would be great response to a unified effort by the Administration--not one speaker, but a unified effort--to convey, to spell out, and elaborate progressively the horrible, but unavoidable possibilities involved in world war III.

That kind of leadership would then permit those of you who here represent the various agencies of the executive branch, and those of you who function within the Armed Forces, to begin a genuine enlargement of the very plans with which you are concerned and the first real implementation of those plans. There would then be possible a presentation to Congress of a series of minimal proposals, which are, in my judgment, indispensable to any program other than our merely talking about these dreadful possibilities.

This in turn would have to be implemented on the first level by the most ambitious possible civil defense program. A civil defense program throughout the United States is of interest to me at this point not only for the lives it might save, but even more for the emotional impact that the presentation of an active civil defense program would have upon the communities themselves. It is at that point that you begin to make the first real impression upon American industry, so that it will take the necessary action for its own intelligent protection.

A free society is one which responds in only one of two ways. It responds to the inescapable lesson of disaster, as we did on Pearl Harbor, as we did momentarily after the Korean invasion began. Or it responds to leadership. The latter is much more difficult and much less used during our history to accomplish national purposes.

In my judgment, we face a contingency in which we cannot rely upon disaster. At other times in our history that has not been true. But now the extent of the disaster itself may offer no chance of our learning the lesson from it. That means that we must fall back, in our kind of society, upon the complex requirements of leadership.

There is leadership represented in this room. It is represented in the traveling teams which are sent out by the Industrial College. But it cannot be detached from, nor have any significant impact in the absence of, leadership on the executive level. After that, this challenge must be accepted with responsibility on the congressional level. I don't know any other answer.

COLONEL NORMAN: I think that is a very good note on which to stop.

Mr. Cherne, thank you very much for a very convincing and stimulating discussion.

(2 Dec 1954--750)S/en