

ECONOMIC CONSEQUENCES OF ATOMIC ATTACK

5 May 1954

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INDUSTRIAL COLLEGE OF THE ARMED FORCES

Washington, D. C.

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## ECONOMIC CONSEQUENCES OF ATOMIC ATTACK

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**DR. HUNTER:** Admiral Hague, General Greeley, gentlemen: From the very beginning of this course last August it has been emphasized that economic mobilization is a far more comprehensive, a far more complex, process than what used to be called industrial mobilization. Throughout the course the fact has been stressed that the economic system is far more than production--production in its physical sense.

The economy comprises, we have learned, not only mines and mills, fields and factories, transportation and communication facilities, and other physical plants; it comprises also a vast and elaborate set of economic institutions, a complex and delicately coordinated network of institutional relationships--commercial and financial, as well as industrial.

We know that the harmonious functioning of these institutions and these relationships is indispensable for the efficient conduct of economic mobilization. It is peculiarly fitting, it seems to me, that we have Professor Cavers as our leadoff speaker in this summation unit of the course. He was the first, to my knowledge, to explore some of the less obvious implications of atomic war for economic mobilization. In an article, with which some of you may be familiar, published in "The Annals" about six months ago, Professor Cavers called attention to the vital implications of atomic war for the elaborate institutional mechanism which is at the heart of our economy. A lecture by him, therefore, is a natural for us.

Now, for those familiar, as most of us are, with the breadth of approach which has long been a distinguishing feature of the Harvard Law School, it is not surprising that a member of its faculty, a lawyer rather than an economist, should be the first to explore this significant aspect of atomic war. For this reason we are especially pleased to have Professor Cavers with us here this morning. Professor Cavers.

**PROFESSOR CAVERS:** Dr. Hunter, Admiral Hague, General Greeley, gentlemen: There are few things that I like to do less than read a lecture. I am doing it, however, for reasons that seem quite appropriate in this company. They are logistical. I have a great many thoughts to report and a limited time in which to report them; and it seemed to me that I would be rather more likely to get them to you if I were able to put my notions on paper and inflict them on you in that form.

I think perhaps I might add a word to what Dr. Hunter said by way of explanation of a law professor's involving himself in this subject. I have, I think, an additional justification. For about four years I was working on the legal problems of price control with OPA, and after a time it was pretty hard to tell the economists from the lawyers and the lawyers from the economists. Also it seems to me that lawyers are charged by society with doing for society a good deal of worrying in advance of its troubles, and I have been rather distressed at the failure of my brethren in private practice to do as much worrying about this particular problem as I think they should have been doing, because it seems to me that in addition to the actions which I am going to talk about this morning, there are a good many things which could be done by private arrangements--the kind that lawyers and businessmen could set up--which would help to cushion to some degree the impact of an atomic attack.

The subject on which I am to talk today is one of the utmost gravity, and to me one of its gravest features is the fact that it is I whom you have invited to initiate the study of this problem. I say that, not from undue modesty, but because I know how little study I have been able to devote to this exceedingly complex subject. Yet, as Dr. Hunter said, I appear to be the only person who has published anything on the problem. Whatever Government work has been done--and I have seen very little--clearly the problem has been ignored by the public and its leaders to a disturbing degree. The problem cries aloud for advance planning with a broad base of public participation. A public which has faced up to the economic realities of atomic attack would be far better able to cope with the crisis should it ever occur.

The assumptions as to the attack which sets your problem have been stated. Although they form the rules of the game and I realize that they have purposely been simplified to facilitate study, I should like to register some doubts as to their validity.

In the first place, they manifest what I have come to call the "one-bomb fixation." Note that each of the 20 communities which are assumed to have been bombed has been hit by one bomb only. Almost invariably this assumption is made in public discussions of atomic defense problems. Maybe it results from our having used only one bomb at Hiroshima and Nagasaki. However, I think it highly improbable that, for example, either Chicago or New York would be treated to a single bomb unless an H-bomb were used and, of course, its potency would be much greater than that assumed.

My own guess is that certain communities would be selected for a more thorough devastation than is indicated in our assumptions and that fewer cities would be the object of the initial attack. Incidentally, our assumptions are not entirely clear whether all 20 attacks are made at the same time. If so, apparently there would be no followups. If we are confined to a total of 20, I think a more realistic assumption would be that the seaboard cities and Chicago would be hit first and that the others would be attacked at intervals over the next two or three weeks.

A night attack would be less destructive than a daytime attack. I have felt that if we are to assume a surprise attack, we should face the risk that it would be launched in the daytime from the sea and directed against our seaboard financial and commercial centers. In this event, no doubt, guided missiles from submarines or disguised freighters would have to be used.

A daytime attack would cause much more serious losses of executive personnel. Thanks to the trend to the suburbs, a high proportion of the executives in the cities listed would have escaped death or serious injury in the night attacks that are assumed.

The assumptions do not indicate the season of the year in which the attack is assumed to be made. Obviously, much greater disruption and suffering would be caused by a winter attack than by a spring or summer attack. Since, however, the Russian winter is grimmer than our own, perhaps we can assume that the attack would be made in the early spring, with the attackers gambling that the war would be over or at least that the atomic destruction would have run its course before winter.

No assumption is given as to overseas action. My guess is that the atomic attacks abroad would be directed chiefly against our air bases. I wonder if the Russians might not spare the Continental cities but decapitate Britain by H-bombing London. The consequences of large-scale attacks on American cities and the retaliatory American attacks on Russian cities might persuade the Continental countries that neutralism was the best policy. The Russians might also hope that Britain, after the loss of London, would follow suit.

### Our Basic Purpose

I take it that what we are primarily concerned with is how to fight a successful war while sustaining an atomic attack. This, I am convinced, is essentially a problem of the unbombed areas. How are they to keep

functioning to provide a sufficiently firm civilian base for continuing military operations? We have to make sure that, if the war is to be abruptly terminated by a general social and economic collapse, it is the other side that collapses.

In planning to prevent such a collapse on our side, I think that in some respects we have a more difficult job than does the Soviet Government. We have a much more intricate economic and social organization than do the Soviets. The fact that we are not a regimented, monolithic economy enables us to produce in tremendous volume when conditions are basically normal, as they were during World Wars I and II. When normal conditions are broken, however, we have to substitute a new pattern of direction for the working of the price, contract, and credit system. That system ordinarily keeps our economy humming through billions of daily decisions by millions of people.

Because the danger that this system may collapse is a real one, effective planning to prevent it seems to me one of the best ways to deter attack. The chance that an unprepared, overly optimistic economy could not stand up under the shock of destruction on the scale we are assuming might sometime present an attractive gamble to rulers willing to pay a large price in their fellow citizens' lives to win world dominion. Recognition that we were braced to stand heavy losses ourselves would dampen any such optimism.

If our basic purpose is to keep our economy in fighting trim, we must avoid excessive concentration on the bombed areas. This focus may be appropriate for the Federal Civil Defense Administration, but I submit that the functioning of the unbombed areas is the more vital problem.

For this reason, I am going to pass briefly over grim and difficult questions posed by the bombed areas: How are the refugees to be housed and fed? How are the vast numbers of injured to be cared for? How is order to be maintained? These questions are important from the standpoint of winning the war chiefly for two purposes: (1) to maintain morale in the cities which are threatened with attack but have not yet sustained it and (2) to make effective use of the facilities which are still in working condition in the areas surrounding the area of large-scale destruction. Incidentally, the one-bomb assumption has made this latter purpose more important than the assumption which I personally would have thought more realistic, namely, the more thorough devastation of fewer cities.

Another matter which I am planning to deal with briefly is one with which you have a peculiarly direct concern--the question of maintaining

military production. Perhaps a third world war would have to be fought largely out of inventory and, maybe, by the time the inventory was exhausted productive facilities would be very few. In any event I shall deal only briefly with the military supply problem because I feel that, from the planning standpoint, it is rather more manageable than the problem of maintaining the functioning of the economy generally. Yet the latter objective must be achieved if military production is to be maintained. However, there are a few points that doubtless have already entered into your planning which I shall note here simply to fill in an important part of the general economic picture.

First, I assume that at least the most important procurement contracts will deal with two alternatives: (1) that the contractor will sustain war damage crippling or destroying his ability to carry out the contract or (2) that other contractors producing the same materiel have been thus damaged. I believe useful arrangements can be made for the Government's shifting an order in whole or in part from the damaged contractor to the undamaged contractors and also for concurrent switching of subcontracts and suppliers' contracts. This should not be left to postattack negotiation.

Second, since most producers for Government accounts are also engaged in civilian business, and since the drastic curtailment of this may undermine their financial stability, arrangements should be incorporated in procurement contracts for Government guarantees of the contractors' credit insofar as they need credit to continue Government operations after an attack. Obviously, arrangements of that sort would have to involve the backing of parts of the Government other than the military establishment. It would require arrangements of the sort we saw during World War II in financing some of the procurement and supply activities--probably with Federal Reserve being the basic institution.

Third, the Government should have its option to transfer equipment, unfinished goods, and supplies from damaged contractors to undamaged contractors. Similarly, contractors should agree to accept, within limits of their physical plant and regardless of specified categories of civilian business, the productive equipment and supplies they would need to carry out orders which damaged contractors could not fulfill.

Arrangements of this sort might have to be left in general terms for some industries, but for others specific sets of alternatives could be spelled out and cooperative plans drawn up in advance. If this should present antitrust problems, then legislation is called for to obviate them.

Incidentally, I do not mean to suggest that, absent prior contract provisions, the Government would lack power to require transfers of the sort I have suggested. The aim is to facilitate the making of transfers under pressure.

Fourth, some plants might be damaged in locations where the renewal of attack did not seem likely. Provisions should be made for the rapid restoration of such plants on Government credit where that would be needed and with priorities for construction labor and materials. My guess is that construction of this sort would be rather limited in volume, that most of the work in bombed areas would be directed to the opening up of transportation routes through them and the provision of shelters in the vicinity for the homeless and injured.

### Shifts in Population Movements

A puzzling problem that must be reckoned with in planning to maintain the warmaking potential of the unbombed areas is how their populations would behave. A critical question, for example, would be the behavior of the populations of large unbombed cities which appeared to be good target areas. Take, for example, Buffalo and the Niagara Frontier. As a native Buffalonian, I rather resent the failure to include this area in the list of target cities. Certainly the people of Buffalo would be entitled to expect that if they were not chosen in the first wave of attacks, they soon would be. And the terrific losses sustained by the attacked cities would lead most Buffalonians to get moving.

Where would they go? It happens that there are no medium-sized cities near Buffalo and Niagara Falls; only small cities like Lockport, Batavia, Jamestown, Dunkirk, and St. Catherines, Ontario. Probably the outskirts of the threatened cities would be swarming with refugees from their centers--again something that would be less likely if our assumptions had taken the form that I have suggested. All the towns and villages in the countryside for 50 miles around would be crowded with refugees from Buffalo, intermingling in some areas with refugees from Rochester.

Obviously this type of evacuation would create feeding and shelter difficulties of great proportions, but, as we must keep in mind, it would also greatly affect the way the economy could operate. Shortly after the initial attack had been sustained, I think we would find that the Nation could be divided into four types of communities in terms of population shifts. For convenience I shall identify them as classes A, B, C, and D.

The class A communities would be comprised of the cities actually attacked and the communities forming their metropolitan areas. They would be badly disorganized by the physical damage sustained and the need of caring for the homeless and injured. The destruction of utilities would present an especially serious problem there. Probably large-scale evacuation of even the surrounding areas should be encouraged, except for the working forces needed to maintain war plants capable of operation.

Class B would comprise the cities which I have exemplified by Buffalo and the Niagara Frontier, cities whose inhabitants would assume that they might be next on the attackers' schedule. Here the physical plant would be largely intact, but a high proportion of the inhabitants would have fled to safer quarters. A major problem would be to reconstitute working forces.

Class C communities would be those which had been close enough to the class A and B communities to sustain a flood of refugees.

Class D communities would be those which were sufficiently remote from the communities in the first three classes not to be flooded by refugees and not to be likely target areas. Many communities would, I think, shift from class B to class D after the initial shock had worn away. The people of, say, Durham, North Carolina, and Amarillo, Texas, would come then to view their prospects more optimistically. However, some class D communities would certainly become class C communities as refugees from class A and B cities spread themselves over more territory.

#### The Phases of the Postattack Problem

Let us take my assumption that there would be a simultaneous assault on a large number of cities followed by a continuation of strikes at intervals on smaller numbers of communities, reaching some less open to attack than those first chosen. If so, I think we can divide the economic consequences of the attacks into three phases: (1) the period of initial shock, (2) the period of sustained war, and (3) the postwar period. Limitations of both time and imagination will lead me to emphasize the first two periods in this talk. However, we should try to plan the handling of those two periods so as to prevent economic collapse in the postwar period.

In approaching the problems of the first two periods, we should not be captive to the ideas that dominated our economic planning in World War II. This comment may seem both obvious and unnecessary. However, I

understand that serious thought has been given to resort to World War II plans with relatively minor modifications in the expectation that the world war III experience would differ only in degree from experience in World War II. I think this is a dangerously wrong belief. In World War II, not only was the transition to a wartime economy gradual, but we maintained substantially the pattern of our peacetime economy throughout the war. We chiefly changed the nature of our hard-goods output. Moreover, productive activity within the bounds of the country was not affected by enemy action, and the Government itself did not have to cope with a bombing of Washington and other centers of governmental control. Let us look at the economic impact of atomic attack in greater detail.

### The Period of Initial Shock

How long this period would last is a matter that would depend on the tempo of the enemy strikes. Assuming that most of them came at the start and that their sequence thereafter was less frequent, I should think the initial traumatic reaction might last two or three weeks.

Consider first in that period the demand for goods. Some economists appear to assume that the attacks would touch off a wave of frantic buying by consumers with immediate inflationary effects. My own view is that the consumers' demands would be sharply differentiated. Absent rationing, the demand for food, particularly canned food, in the class A, B, and C communities, would be great. In the class A cities, exhaustion of existing supplies would appear imminent and hoarding would be natural. In the class B cities, people would be preparing for flight and stocking up their cars in consequence. The class C communities would be hard put to feed the newcomers.

In the class A cities I doubt there would be much demand other than for food. Major stores, moreover, would have been destroyed. In the class B cities, special goods such as camping equipment would be in sudden demand, but the supply would be soon wiped out. In general, people would not want to be encumbered by more goods than they already had. Furthermore, they would be short of cash needed to sustain heavy buying. People who lacked cars would try to get them but might find stocks depleted by requisitioning. I should hope all cars in stock in danger areas would be requisitioned by the civil-defense authorities. I wonder if provision has yet been made for this.

In the class C cities and towns the influx of refugees would result in a high demand for practical clothing and for certain house furnishings

and utensils. Incidentally, electric appliances would be a drug on the market, but old-fashioned cook stoves would be priceless. In the class D cities some scare buying would no doubt occur.

All that I have been discussing so far relates to consumer purchases at retail. What would the distributors be doing? Many stores in class B cities probably could not open for want of personnel. Those which did open would probably sell chiefly on a cash basis and extend credit only to favored customers. Except for the food stores, probably there would be little dealing with wholesale distributors and, where stores maintained office forces sufficient for the purpose, a wave of cancellations would go out to suppliers. In the class C areas, in contrast, desperate efforts would be made to reach new sources of supply, and some shifting of stocks from B to C areas might occur.

What would be the situation in the manufacturing industries, other than those manufacturing for war orders? I hope the operation of the latter would be governed by arrangements of the sort I suggested in rough terms earlier.

In many class A and B cities, manufacturing would stop because of the disruption of employment and transportation. Labor and supplies would be lacking. In class A areas, power and communication would also be acute problems. Even in the class D areas, some industries would close down because their markets were so obviously disrupted. Markets would be gone in the class A cities and badly damaged in the class B cities. For most luxury goods or expensive heavy items, no prospect of a market sufficient to sustain operations would appear anywhere on the national horizon.

Money and credit. -- Looking simply at demand, therefore, we can see inflationary pressures developing only in certain commodity areas of the economy and accompanying them would be the drastic deflation of many others. However, to round out the picture, it is necessary to speculate as to the state of money and credit.

I should suppose that everywhere on the heels of an attack there would be great runs on the banks, provided the banks were open at all. These runs would be due in part to lack of confidence in the banking system, but perhaps still more to the desire for money to finance flight.

This situation is obviously one that could be prevented from becoming serious by precautionary measures. I believe that the undestroyed banks

should be kept open, special obligations to stay on the job having been undertaken by their personnel. Withdrawals should be limited to a previously determined and announced maximum, say \$100 per depositor once a week. Greater withdrawals should be allowed for specified business purposes, such as the purchase of supplies and payrolls. Perhaps special, partial guarantees should be extended to all deposits after the crisis began.

Immediately after the initial attack, a nationwide moratorium should be declared on all debts except bank deposits to the extent suggested above and perhaps accrued claims for wages and salaries. Also, perhaps the privilege of paying a part of the latter in scrip, say, up to 50 percent, might be allowed.

Needless to say, the securities markets which had survived physical destruction should be closed and also the commodities markets. This would not prevent individual transactions from being privately negotiated.

Rationing. -- Obviously, during the initial period there would be need for rationing in class A, B, and C communities. The rationing system that was slowly and painfully evolved in World War II would not serve in this emergency. A crude type of control could be exercised by sellers or by police. Better forms of emergency controls could doubtless be devised in advance.

In class C communities, purchasing by refugees might be limited to purchase orders issued by whatever body could be set up to administer the local supply. No doubt a price freeze would be proclaimed, but enforcement would have to depend on the sellers' conscience and public opinion toward gouging.

#### The Period of Sustained War

As the tempo of the attack slowed down and the initial fright wore away, I should expect to see a good many of the inhabitants of the B communities returning from the C cities and towns to their own homes. A factor in the return would be the miserable conditions prevailing in the C communities. Also, economic pressure would lead breadwinners to return even though they might leave their families and particularly their children behind. It would be at this stage that prior plans and institutional arrangements might be critical in getting the Nation back on its feet and into a fighting mood.

At this juncture the most important goal might be the restoration of employment, including employments in nonwar industry. To build up the

volume of employment, however, a set of mechanisms would have to be provided to get employers back into action. The damage to our credit system would have been terrific as a consequence of the damage from the attacks and, even more, of the disruption of the markets for goods.

By this time some of the shifts in military production mentioned earlier would begin to take hold. As a result new employment opportunities would be opening up for at least some of the employees of those industries and stores that could not reopen. For those civilian industries and distributors able to anticipate a continuing demand for their goods, the question of credit would be critical.

The Nation could not suddenly turn from a credit to a cash basis without a tremendous increase in working capital. On the other hand, the credit ratings of a great many businesses would be distorted beyond recognition. In fact, but for the moratorium, a great many industries would clearly be insolvent. In these circumstances a Government instrumentality would be needed with the function of providing Government credit to induce suppliers to sell to manufacturers and distributors whose businesses were thought to be needed in the war economy. Doubtless this instrumentality could best be provided by the commercial banks, administering a streamlined form of Government guaranty to specified categories of purchasers on credit. To minimize the need for credit investigation in circumstances of great uncertainty and confusion, the claims of the guarantor could be accorded priority over other creditors just as receivership creditors are given priority over claims antedating the receivership. Obviously, however, no such system should have to be improvised after an atomic attack had begun.

The banking system. -- One of the most pressing problems after the period of initial shock would be to salvage the banking systems in the bombed areas, especially since these include most of the principal banking centers of the country. This problem seems to have been studied chiefly in terms of record keeping. That is a necessary part of a precautionary plan, but, given reasonably adequate banking records, where should accounts be administered and to what extent should they be honored? These are highly technical problems for which I lack adequate knowledge. It has occurred to me, however, that the accounts of all banks in exposed metropolitan communities might be allocated in advance among the smaller banks of less exposed areas and each depositor told the bank to which he should turn in event of attack.

The Government might guarantee every account up to the proportion of cash and governments held by each bombed bank and perhaps one-third of the balance not thus covered. However, the precaution against large-scale withdrawals from banks everywhere would have to be continued for a time, except, perhaps, in the case of deposits by banks outside the bombed areas with banks in the bombed areas. They might be allowed to "withdraw" up to the proportion covered by the Government guaranty.

Needless to say, standby mechanisms should be designed to facilitate bank clearings in the postattack period.

Corporate affairs. -- The assumptions that one bomb would be dropped per city in its business district at night obviates the heavy loss among executives to be anticipated in the case of a daylight attack. On the other hand, enough corporations would lose their top officials and major shareholders to create legal problems in the management and ownership of corporations for which we are not now prepared. This is a problem that, with some Government stimulus, the members of my profession ought to be able to solve. The risk of daylight attack makes it important.

For many smaller business concerns some custodial arrangement would be needed, and I am not sure that the courts could assume the heavy burden of supervising receiverships. A special instrumentality is indicated. Some techniques for dissociating subsidiaries promptly from parents where one or the other corporation was damaged might also be desirable.

Long-term contracts. -- The sudden change of expectations worked by atomic attack would knock the economic underpinning out from under many long-term contracts and leases. In many instances, force majeure clauses would provide escape hatches for the embarrassed party. However, it might often be better for the economy to forbid the complete dissolution of long-term contracts. Perhaps we might give our courts power to adjust the terms of a contract to the new situation and require its performance as thus adjusted, an authority given to courts in Germany and England during World War II. In many situations a thoughtful assessment of the hazards of atomic attack might lead to a mutual agreement in advance of the contingency that would be better than recourse to crowded courts after the event.

Landlords would be suffering from famines in some communities and feasts in others. In the crowded areas, rent control would have to be accompanied with power to billet refugees. Obviously, the administrative authority for such actions and the standards to govern its exercise ought

to be worked out in advance. The taking of an inventory of potential accommodations would do a great deal to bring home to the American public the nature of the hazard they are confronting. This is a task that the real-estate people of a community could best carry out.

Insurance. -- The life-insurance companies would be up against a combination of heavy losses with severe damage to portfolios and a sharp falling off in premium income. Even though the losses might be so distributed as to permit most companies to survive, yet the state of their portfolios would make it important to relieve them of the obligation to pay all claims. One way would be to require the payment of claims up to 1,000 dollars in full and some fraction of all claims up to 5,000, leaving the rest for postwar adjustment. Another would be to relieve the insurance companies of all direct liability and substitute Government payments in the place of insurance policies. The Government might then be subrogated to beneficiaries' claims against the companies for postwar settlement.

The facilities of our courts would be strained in making the determinations necessary in settling many insurance claims. Perhaps an informal procedure administered by a master could be set up, but the whole problem of judicial jurisdiction and procedures requires examination in greater detail than I can devote to it now.

#### Government Compensation

There will be three categories of claimants for direct Government payments. First, the injured, many of whom will have to be taken care of in the vicinity of class A cities by Government medical agencies. Others can better be distributed to less-burdened communities and paid money allowances to cover medical care and, in case of need, subsistence as well.

A second category of claimants for relief will be those who have been deprived of breadwinners by death or injury. At first they will have to be given relief in kind, but they should be shifted over to a cash allowance and moved as soon as feasible into class D areas.

The third category would comprise the unemployed whose number would be substantial in all areas, and vast in some. For a time at least unemployment compensation would provide a mode of taking care of such persons, but, where mass migration had taken place, the inability to

approve claims on the basis of local records would preclude recovery of compensation in regular course. Perhaps the only administratively feasible alternative would be a relief allowance, adjusted only to size of family. If this were materially lower than unemployment compensation, it might result in greater readiness to stay near the place of past employment.

Property damage would not be compensated by ordinary insurance since war risks are excluded. Should the Government substitute its own war-risk insurance system? This could be done as it was during the last war but on a vastly larger scale. It has been suggested that premiums might be graduated according to the degree of risk in the hope of providing incentive for dispersal. Personally, I doubt that the premium could be high enough to provide that incentive. More pressure, however, might be exerted by reducing the percentage of coverage in exposed areas.

An alternative way of handling the matter was proposed in the War Disaster Bill of 1951, the only Government plan I have seen proposed to meet this problem. The Bill looked to the provision of a global sum of 20 billion dollars to be apportioned among the persons sustaining loss, no insurance premiums being required. This plan would, however, require a preattack valuation.

A nation in the throes of an atomic war could not afford to have the properties destroyed by attack restored during the hostilities unless they were clearly needed for the war economy. Financing for this could be provided on another basis, and hence I see little occasion for the payment of compensation for property damage until after peace had come. An insurance system would help in making definite the amount of the recovery after the war, a factor that might aid in sustaining credit. On the other hand, the cumulation of claims after the war might be so large as to prevent the Government from honoring its obligations without defaulting on more pressing but uninsured needs. The alternative of the War Disaster Bill strikes me as perhaps the wiser approach, but the problem needs more study.

#### Transportation and Utilities

Obviously the transportation problem would be a major one. The injuries sustained to lines and rolling stock by some railroads would be very serious. Others would escape virtually unscathed. In the areas of potential damage, a taking over by the Government would be hard to

escape and in such areas the commandeering of trucks and even private-passenger autos might be essential. Plans for the administration of such operation could not be worked out in detail in advance of the event, but, as in so many instances, the selection of personnel and the granting of essential authority would make the response to the challenge much prompter and more effective.

One practical difficulty would be to provide gasoline to keep automobiles rolling. Since many of the normal ports of entry would not be usable, probably some pipeline facilities should be converted to gasoline instead of fuel oil or gas.

Electric utilities would have to be administered as closely coordinated systems in order that needs previously supplied by the large urban generators in the bombed cities could be replaced by current from undamaged stations. This would put such strain on the latter as to require a drastic degree of rationing in some areas. Portable atomically powered generators would be highly useful to meet these exigencies.

### The Postwar Period

It is hard to see how an atomic war could last a long time. Possibly the means for conducting atomic war would be exhausted on both sides before the will to fight had ended. Probably the capacity to fight would have been reduced by then to a point where no large-scale demands would be made of either economy.

Undoubtedly, war of the sort postulated would leave the United States in an economically crippled condition, but the experience of Germany, Japan, and Russia testifies to the recuperative powers of a war-damaged economy. The better the economic and social structure that had been held together during the conflict, the sounder and more rapid the process of restoration. However, I think it is fruitless to hope that a substantial inflation could be avoided, particularly if the Government sought to equalize the damage sustained by citizens living in the bombed areas with that experienced by those who had only economic problems to cope with. The payment of compensation and the reconstruction of public services and facilities could not be met out of taxes and would certainly lead to printing-press money. Perhaps the worst danger in such a period would be the risk of the triumph of a demagogue. Again, the better ordered the society during the conflict, the less the hazard of this sort.

With so much to be gained by advance planning and at relatively little cost, I find it hard to understand the Government's long delay in tackling this job and, in particular, in calling on the public for its help. Once the problem was seen by the public as the problem of the entire Nation and not merely of the areas exposed to bombing, as a business problem for every businessman and not simply as a problem of first aid and fire fighting, I believe that the public lethargy to which your assignment sheet rightly refers would come to an end. And, for the reason I noted earlier, this should do much to reduce the risk of atomic attack and war.

Thank you.

DR. HUNTER: Gentlemen--the first question, please.

QUESTION: Professor, you mentioned that it was difficult for you to understand why the Government had delayed in advance planning, since so much could be gained at so little cost. I think probably 75 percent of us are more than in accord with that. But it seems to me that the biggest peacetime problem is politics. There is always the stumbling block of local politics. Do you have any solution or any ideas as to how to overcome that--perhaps by an effective planning program?

PROFESSOR CAVERS: It is my feeling, which of course has to be based on speculation, that, if you can interest the kind of citizen who ought to be interested in this type of problem, in the economic aspects of adjustments--the bankers, manufacturers, people in the utilities and transportation, and their lawyers and economists--you will get a degree of responsible and political opinion directed to the real problems in which each of these groups is expert. I think that out of such studies would emerge a set of recommendations of the sort that would be essentially nonpartisan, since they would not involve large initial appropriations, and most of the funds that would be involved would be called upon only after the attack. It does not seem to me that this should be nearly as political as the sort of defense program we have been considering, where large appropriations are necessary and where large organizations of citizens are necessary. I feel that a study of this type by groups properly manned would bypass the political aspects. That makes me feel it is one way of overcoming the lethargy.

QUESTION: Professor, I wonder if you have not overlooked the psychological aspect. In your analysis it seems to me, and rightly so, that your direct plans are not what we learned from the experience of the British--that we expect evacuation of cities which have not been hit, if we are properly prepared.

PROFESSOR CAVERS: As you point out, we have not been through this. I am not ready to suppose that the British experience and the German experience are truly relevant, the difference being the suddenness of this attack and the extent of the losses sustained in any particular city. My guess would be that if you had a marked slowing down of the tempo of the attack, the initial impulse to move out from threatened cities would be followed by a return, as I suggested, perhaps a selective return.

I think also in this connection that the present public discussion of evacuation as a mode of escape would tend to build up the impulse to move out. That, I think, is one of the prices of that particular campaign, that evacuation is now established as a recommended course of action. And, as our study assumptions have indicated, it was not successful in the 20 cities hit, presumably because it was not carried out sufficiently in advance. So I think the Buffalonians and others would start moving.

QUESTION: I didn't notice you mention anything on law or rule or a civilianized form of martial rule which might be necessary to apply under these circumstances. Have you any comments on that?

PROFESSOR CAVERS: I ducked that with a sentence that said that in the bombed areas, those under great stress, one of the big problems would be maintaining order. The reason I ducked it was that it seemed to me that it opened up a whole new set of problems of a kind rather different from those which I am discussing. I am delighted to learn that plans of this kind are being made, or will be made in the near future, by persons who are better informed than I am on these problems. However, I did not know that fact when I passed over that problem.

I think that if you had great disorders, looting and the like, it might prove to be contagious--it might extend to the B cities as well as the A cities. Naturally, that would be very much worse than the kind of situation I have been assuming.

QUESTION: During the sustained war period--will you expand on your point as to no property restoration except for defense during that period?

PROFESSOR CAVERS: I think it a fair assumption that where we really need to get war plants back we shall find ways to get them. Where we feel there will be a fairly good prospect of their not being attacked, where enough damage has been done in the center so that the periphery would not make a good target, where we have power available for the plants--those plants ought to be set up. But here we are in a crippled

economy. What energies can we mobilize for construction? Construction involves heavy industries. It makes heavy demands on transportation and ought probably to be reserved for the needs of the war. Along with those needs, we have to keep in mind the needs of transportation itself. These will make very heavy inroads on construction, labor, power supply, and the like.

One of the things I don't believe I stressed enough is the inflationary danger, in a time when production is cut back sharply, of putting a lot of money in people's hands. If you gave the home owners in the bombed areas funds by way of Government insurance on their homes during a period when production was cut back sharply, and they had this money to spend some way or another, there would be a very real risk that the way that money would be used would be in bidding up prices.

QUESTION: But you would under that concept include as a defense measure the minimum restoration of housing in a defense area?

PROFESSOR CAVERS: I would certainly think it would be important. How it would best be done would, I suppose, have to be decided in terms of specific situations. Where a very large expenditure of material would be required for relatively small amounts of shelter, I think you would have to rule that out and take on barracks and dormitories and other ways of getting the maximum amount of housing out of the minimum material or area.

QUESTION: I would like to pursue the first question further. In all of our studies here we have concluded that most of the preattack planning is dependent upon some sort of standby legislation or additional Executive powers, and we have seen tests in the recent past of trying to get these additional Executive powers. To what extent has proposed standby legislation been tested? What is the possibility, in your opinion, of getting such standby legislation in effect, from which we could implement post-attack procedures?

PROFESSOR CAVERS: I am convinced that prospects of standby legislation in this area are considerably brighter than perhaps you are assuming, if you can get the people interested in the problem who have a great deal at stake in working out adequate solutions.

Take the setup in the courts. It is something which lawyers, could do a lot to work out. Very little, in terms of vested interests, would be

involved in it. Nobody, however, has begun to really think about it. The Government has not asked the bar associations to come up with plans for the reconstituting of bombed courts in unbombed areas, or for the change in the statute of limitations, or for the many other arrangements that would be needed here and, incidentally have been worked out by other countries for war crises. If you get the lawyers working on these problems, it is quite possible that their clients would begin to be informed about the need for this and that standby law.

I gave a talk to some alumni of Harvard Law School last summer on this subject. One of them was telling me recently--one who has had considerable experience in the Air Force--that he had had a part of that talk mimeographed and circulated to the 55 lawyers in his office in a midwestern city, and that they had begun to think about problems affecting the various clients of that large firm, and that the clients in turn had begun to get interested in them. It seems to me one might build up that kind of concerned opinion and get people working on the problems who can get the support of financial and industrial groups in the community behind legislation which it does not have now. Now it is merely the dream of somebody who has the thankless task of being Civil Defense Administrator, someone without real backing in the community.

QUESTION: I should like to start with a comment, if you will excuse me, please. Most everyone whom we have heard discuss this subject ends up with the statement that the Government ought to do something. I am heartened by your leadership, which would bring private industry, the bar associations, and the other associations into the problem by starting something themselves rather than wait for the Government to ask them to do it. You mentioned the war-risk insurance. At what time are you going to start the payment of premiums?

PROFESSOR CAVERS: First, may I comment on your comment? I am convinced that there is a great deal of good to be done in this area by way of protection which would not depend on the Government. I have known that in certain fields, banking and insurance, quite a bit has been done, but I am afraid too much of it has been done on the single-company basis. I saw a very elaborate plan worked out by a large insurance company which seemed to be a fine plan, provided the rest of the community was getting along all right and only this company had to sustain losses. It also provided for the company's taking over, pursuant to a rental agreement, a very large institution near the big city in which it was situated. The idea was to move its offices after the bombing into this large institution and conduct its business there as well as possible. They had not

considered what the refugees would think in that area when they went by the insurance offices looking for shelter.

I think this problem needs careful study which the Government can stimulate. I don't think the Government itself always has to do it--I think it would be better if it didn't.

I have given to the Industrial College Library a reprint of a talk I made before the Association of the Bar of the City of New York a year or so ago, in which I emphasized to a greater degree than I have done here some of the things it seemed to me lawyers might be doing, unaided by legislation in some of the cases.

Now, to answer your question.--I suppose if you are going to have war-risk insurance on a premium basis, the sooner you get the premiums rolling in, the closer approximation to actuarial soundness there would be in the company--the Government corporation. I think your question and my limited answer suggest it is a risk that is not insurable by any ordinary system and the premium system would not amount to much.

QUESTION: In line with the discussion we have been having, Professor, if President Eisenhower or Dr. Flemming of the Office of Defense Mobilization (ODM) called you in and you accepted such an assignment how would you go about doing some specific things in the Government to get the lawyers and the Government agencies to take the approach you suggest? What would you do if you had the responsibility for starting the ball rolling?

PROFESSOR CAVERS: The Cavers Plan? I think the first thing I would do would be to try to get a small group of young lawyers and economists during the summer months--I think ODM might be able to afford their services--and throw them the various effusions of Professor Cavers and say, "Look how utterly inadequate this thinking is. Spend the next three months getting the problems identified on which lawyer groups can work." I think, at the end of that three months, my description of the attack situations would seem so utterly crude and primitive it could be safely forgotten.

Then I think we could be starting to organize lawyer groups in say a dozen target area cities. They would be the ones to do the job. Then we would have them undertake studies of just what the problems, as identified, would call for by way of appropriate legislation or private action in

their cities. And I would think that each of those committees would in turn have to set up subcommittees, for example, a subcommittee of insurance lawyers; another of banking and finance company lawyers, and so on.

QUESTION: In the event you get a group of people to take limited problems, how are you going to present to the lawyer groups the psychology of the country? You have to make the country receptive to the groups you want to do the work. I don't see how you are going to be able to do that.

PROFESSOR CAVERS: I think we are getting cooperation abroad on that. I think the degree of receptivity is higher now than it was a couple of years ago. I think the statement of Chairman Strauss not long ago about the potential of our own weapons was very effective. I think one of the things the individual lawyer has not seen is that there is any real need in Washington for this kind of work. I think his normal proclivities to try to see problems ahead and try to work out solutions for his clients would tend to make him receptive to the kind of thing I have been talking about. Another objective is to get the lawyers working in the nontarget areas. They don't have the oppressive feeling that they are writing on water and that all they are doing will be wiped out.

QUESTION: One of the basic principles of our Constitution, as I understand it, is the separation of the powers of the Federal and the State Governments. A great deal of the legislation about contracts, and a great many of the actions to control what goes on in a specific bombed city, would appear to fall within the province of the State Government rather than of Federal legislation. How far can the Federal Government go under the Constitution in setting up a legislative control for the operations you have discussed?

PROFESSOR CAVERS: One thing there would be no doubt in anyone's mind about would be the propriety of advocating a type of model State legislation which might be enacted in the contract fields. In the procedural fields, it would be necessary to adapt it to the existing state machinery. That would be the line that I think ought to be worked out initially. If it became evident that State legislators were hard to move in certain areas of law, then I think we would have to consider whether, in the type of total atomic war we are thinking about, there would not be an appropriate exercise of Federal power to supersede State jurisdiction in areas normally reserved to the States, simply in order to be able to conduct an effective war. This would have to be standby legislation, and it might be used

only in those States where there wasn't appropriate State legislation. State lines, incidentally, would be one of the first casualties of an atomic attack. For many purposes I think you would have to have the courts of one State sitting in other States. There are a great many things that the atomic bomb has done to require the adjustment of familiar thought patterns, and there are plenty of laws that would require adjustment, too. I think we could do it within the Constitution if the need arose.

QUESTION: Has any thought been given to setting up machinery to unravel the confusion that would result from the loss of deeds, mortgages, savings accounts, and all the other things--such things as trust funds, and so forth?

PROFESSOR CAVERS: There has been quite a bit of work by some of the metropolitan banks and insurance companies to get records on microfilm. Some of that is being done on a daily basis. Some of the big law offices put records on microfilm. Sometimes I think our defense against atomic attack would be much further along if microfilm had not been invented and developed. It seems to me it serves as an escape valve. People get the records on microfilm and send it up to New Hampshire, and then they seem to think the situation is in hand. How they will get anyone to read them is a problem that is not followed up.

It seems to me that, as far as these real estate records, mortgages, and the like are concerned, their significance would be much less in the war period than in the postwar period. Still it would be helpful in terms of disentangling postwar troubles to have microfilm records of such things. But their significance in the war period would be less important than their significance in the postwar period. Take the bank records for example. Certainly some banks have gone a long way in making daily microfilms and stashing them away. One of our problems is: How do you read vast quantities of them? Anyone working on that microfilm often will recognize that problem.

DR. HUNTER: Professor Cavers, I see the time has run out on us. I thank you on behalf of the Commandant and all of us here for an extremely stimulating lecture. I think you have done much to add a new dimension to the final problem we are working on now. Thank you very much.

(28 May 1954--750)S/gw