

F.A.S. PUBLIC INTEREST REPORT

Formerly the FAS Newsletter

SPECIAL ISSUE:
A GRIM OIL FUTURE

Vol. 33 No. 4

April, 1980

THINKING VARIOUS OIL UNTHINKABLES

For years, it has been a widely ignored cliché that security involved more than just defense against military attack. But the most devout believer in these non-military threats to security never envisioned, we would suspect, the fantastic extent to which America can now be hurt by non-military thrusts alone via the exposed vein of our oil addiction.

The West has only begun to recognize the extent of its precarious dependence on Middle Eastern oil. And it has not yet fully appreciated the many different perils to which this dependence gives rise. It is therefore useful to reflect upon some widely varying scenarios relating to our vulnerability — not only to galvanize our effort to free ourselves from the dependence — but also as a method to suggest differ-

ent courses for ameliorating or avoiding the various perils.

Certain basic approaches to the various dilemmas underlie them all.

1. The degree of U.S. dependence has got to be reduced as rapidly as possible by saving oil through weatherization and by some kind of inhibition of automobile and light truck use — by rationing or taxation of gasoline. We have a heavy responsibility since half of all the capacity for energy saving in the entire industrialized West lies in the U.S.

2. But since this dependence cannot be eliminated for years even in the case of the U.S. — much less in the case of Western Europe and Japan — some kind

Continued on page 2

TRUNCATING HUBBERT'S OIL BUBBLE

The Economist once reported that there had been more than a dozen times after World War II when oil shortage had been proclaimed only to be followed by oil glut. The profession for which the magazine is named is, indeed, trained to believe that the higher prices associated with fears of oil shortage will bring onto the market energy supplies, if not oil supply in particular, that will equate supply and demand if not over-react with a glut.

And this view is still held by some analysts in the case of oil, e.g., International Oil Policy, Arnold Safer, (Lexington Books, 1979) who considers projection of future oil shortages like a "receding horizon" with higher oil prices likely to lead to "an abundance of oil in the years ahead". They see world proven reserves 50 billion barrels higher in 1979 than in 1974 when the oil embargo began, and estimates of world oil availability at 1.5 trillion barrels (sixty-five years of current consumption) with 36 years of current consumption in proven reserves. With world economic activity likely to remain sluggish for some time, they see no great increase in demand expected. With the right policies, they think OPEC might be broken as a cartel.

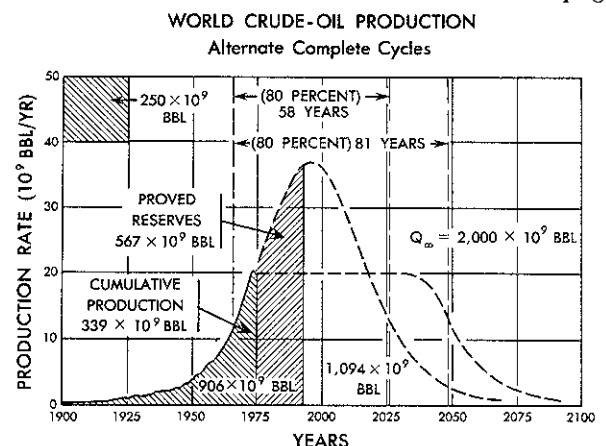
A brilliant analysis of "Oil Politics in the 1980s" by Oystein Noreng (McGraw Hill, 1978) champions the alternative "neo-Malthusian" view that neither demand nor supply are much responsive to price and that the physical and technical possibilities for increasing energy output are limited.

As this newsletter is written, this critical issue is being tested in the short run. Can the OPEC nations cut production sufficiently to maintain prices in the face of the weakening market for oil induced by the recession caused,

in large part, by higher oil prices? Kuwait is planning to cut production by .5 million barrels a day — it has always been ready to keep larger amounts of oil in the ground since its population is small and well-off. But now Libya is cutting oil production 17% (.35 million barrels a day) and Algeria and Nigeria — normally considered most dependent of OPEC nations on high oil production — are planning to trim production somewhat, at least in token amounts. Industry analysts were predicting that, whether or not the Saudis dropped from 9.5 to 8.5 million barrels a day, that OPEC could cut enough to keep prices up.

According to the CIA, (see pg 6), Noreng is right and the peaking is going to occur much earlier than suggested by M. King Hubbert's U-shaped curve — in 1985 rather than in the late 1990s for a combination of reasons encom-

Continued on page 5



Compliments M. King Hubbert

Continued from page 1

of stabilization of relations between oil-producing and oil-consuming states is necessary. The West needs assurances of supply at a reasonable cost while the oil-producing states need a number of things which the West could provide: a) payment in uninflated assets — a basket of goods might be the measure of indebtedness — and long-term bonds could be one means; b) help in the diversification and development of their economies, and the training of their citizens and, c) not least, respect for their national and individual dignity and an offer of a special relations with oil-producing countries that deal fairly. Negotiations toward this end must be begun soon. The negotiating position of the West can only weaken as its dependence on oil imports is seen ever more clearly as unavoidable.

However, the industrialized west, which is to say the OECD countries, have one important asset which they should drive home to the OPEC countries in general, and the Arab oil-producing states in particular. It is this. OPEC may have enormous power to ruin the current oil-based economies of the industrialized countries, but it does not have comparable power to make its own economies self-sufficient for the longer run. When the oil runs out, as it will in due course, most OPEC states will find themselves far from any ability to maintain their economies in the style to which they are becoming accustomed. It takes more than several decades to turn deserts into self-sustaining industries. Oil producing states may therefore find themselves, before too many decades pass, back in a position of dependence upon the industrialized West. And just as many OPEC nations have anti-Western animosities, stemming from Western exploitation, so also will the industrialized countries of the next century remember, for many generations, how the oil producing countries used, or misused, their temporary advantage. Put one way, what kind of respect, or animus, will the citizen of OECD of the early and late 21st century feel toward OPEC members in general, and "Arabs" in particular. And what kind of cooperation with Arab states will these attitudes permit?

In sum, the West needs a smooth energy transition and the oil producers are, necessarily, selling their environmental heritage and birthright. They need and want, or should want, very long term advantages and considerations. And how they and we handle this "transitional" issue will have — whether or not we agree — long run consequences for both sides. Perhaps it is only in this historic context that an enlightened agreement can be struck.

As for the problems and suggestions below, not all of us agree with each one. But we do agree that this kind of creative effort to distinguish dangers, and shape solutions, reflects exactly the kind of thinking that should be underway on a national basis. □

—Reviewed and approved by the FAS Council

Oil Production in the 1970s looks like this:*

Year	(Non-communist)	(Communist)	(Total)
1970	37.9	7.9	45.8
1971	39.9	8.4	48.4
1972	41.9	8.8	50.8
1973	45.9	9.8	55.8
1974	45.3	10.9	56.3
1975	41.5	11.9	53.4
1976	45.3	12.6	57.9
1977	46.9	13.1	60.0
1978	47.1	13.6	60.7

* Million barrels per day

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REFLECTIONS UPON SOME FATEFUL SCENARIOS

DEMANDS BEYOND PRICE: Thus far, OPEC has agreed only on price, and minimum prices at that. It has not agreed on production limits or on political demands. But in future, it might.

Major Illustrative Possibilities are:

- 1) Arab members of OPEC demand that the Israelis cease to place Jewish settlements on the West Bank and/or cede the West Bank to the Palestinians.
- 2) OPEC as a whole joins with other Third World Members to link supply availability with New Economic Order demands such as: heightened foreign aid; slowdown in debt repayment; stepped up technology transfer; lowering of tariff barriers, etc.
- 3) A pro-Soviet Saudi government arises that makes various political demands consistent with such Soviet goals as fragmenting NATO, opposing U.S.-China cooperation, precluding U.S.-Israeli arms shipments.
- 4) Arab countries demand nuclear weapon technology in return for assurances of supply. This is believed to have already been asked of Italy, India, and Brazil by such states as Iraq and Libya.

The first possibility highlights the importance of settling the Arab-Israeli dispute before it reaches such a point — which it could otherwise be expected to do. In the context of such threats, Israelis might come to want formalization of the implicit U.S. security guarantees to Israel; these might become a logical element in the bargaining with these Israeli officials who argue that security, rather than expansionist motives, are behind Israeli unwillingness to permit any significant Palestinian autonomy on the West Bank. In any case, if the issue is not settled by the next time such use of the “oil weapon” arises, there will be far greater oil disruption than in the 1973-74 embargo. The oil producing states have greater control over where their oil goes, down stream, and greater financial resources to withstand a prolonged loss of oil revenues than before. Of special importance is not finding ourselves with the Hobson’s choice of giving in to demands that amount to political blackmail or accepting dire consequences. The consumer nations must develop a code of not giving in to blackmail — or where will it end?

PRESSURE NOT TO FILL RESERVE

One current concern of this kind is the quiet pressure from Saudi Arabia not to fill our petroleum reserve. This has got to be (if also quietly) resisted. The petroleum reserve might be filled from wells and reserves owned by the Federal Government so that oil was not directly taken from the market.

The second “New Economic Order” possibility is not without redeeming value, so long as it represented a long-term agreement that gave many states a vested interest in the continuation of the bargain struck. Of course, one cannot overestimate the difference between encompassing other states in a long run deal on the one hand, and, on the other, simply widening the number of states with an interest in ratcheting upward various kinds of prices for oil. In any case, the suggestion here is to examine the

extent to which, and the ways in which, a widening of the negotiations beyond oil producing and OECD-consuming states might have desirable features. One important thing to remember is that the third world non-oil producing states have an interest in keeping oil prices down also since, on the whole, they are consuming states.

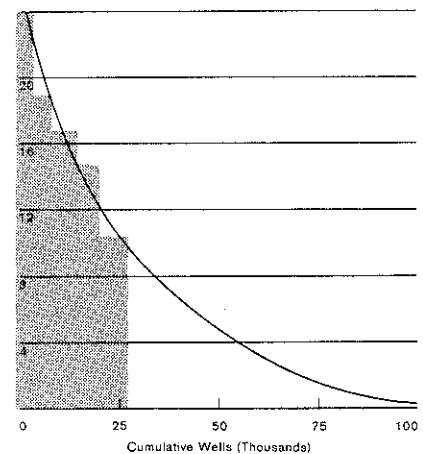
The third possibility of an alliance between the oil weapon and Soviet goals is, of course, the most troublesome. Three central obstacles to such an alliance are the spirit of nationalistic independence in the Arab states, the Moslem antipathy to Communist atheism, and the fear of Soviet aggression. Western policy should, presumably, encourage Arab nationalism and, through consultation, remind Arab leaders of the needless harm to Arab interests that would result from having their policies caught up in Cold War disputes with all their potential for generating gratuitous Western hostility, added risks of being involved in a World War, and the loss of any capability of playing each side off against the other.

The fourth possibility of proliferation assistance requires vigilance on the part of the world community against acquiescence, vigilance that includes counterbalancing threats of reprisals. Conceivably, the Soviet Union could be drawn into the effort to stop trades of oil for bombs.

A key to limiting the demands of oil-producers is having some alternative energy supply at a fixed price to which one could turn if demands become exorbitant. Unfortunately, thus far, increases in oil prices have produced increases in coal prices, partly through energy price leadership and partly through the inflation oil price rises induce. (Thus synthetic fuels, which in many ways are best thought of as manufactured products, have historically partaken of the energy-induced inflation which stimulates price rises in other manufactured products.) Intensive research is required to determine whether heavy oils, available in great supply, or an electric car, might not turn the tables on OPEC.

In the meantime, we must consider what we would do if oil-related demands just continued to skyrocket.

Discovery Rate per
Exploratory Well Drilled¹
Discovery Rate (Million Barrels/Well)



1. Non-Communist world excluding the United States and Canada.

One thought is to diversify the exporters of oil by assisting non-oil producing states to become oil producing. This limits non-price demands principally since new oil producing states can be expected to follow OPEC in price, but not necessarily to emulate the particular political demands of any subset of it. At the moment, we leave oil exploration to our oil companies who have limited resources, and who undoubtedly consider in their priorities the likelihood that a state helped would maintain a satisfactory relationship with the company, avoiding nationalization and so on. The U.S. interest in having more states develop their oil resources goes much further. Perhaps there is assistance that international bank or U.N. agencies could provide in oil location and development that it would be in our national interest to stimulate. Of special interest is the way we treat the Soviet Union. How hard should we work to help it produce oil?

LET SOVIETS USE THEIR OWN OIL UP

On balance, if we really fear Soviet movement into the Gulf and cannot handle it militarily, we should lessen their interest in expanding in search of oil by helping them develop their own. Also, looking to the longer run, why follow a policy that, in effect, encourages the Russians to bank *their* oil in the ground? Eventually, their technology will reach the point at which the oil can be withdrawn; they will be the wealthier for having waited. Why not help them do it now?

NEUTRALIZING OIL: Middle Eastern oil, especially, is likely to be caught up in a wide variety of conflicts to which oil is not central. Methods must be developed of insulating oil from those conflicts. Consider some possible scenarios:

1. Conflicts between Arab states: Iraqi-Iranian, Saudi-Iraqi, Egyptian-Libyan, Iraqi-Kuwaiti, and so on.

In such cases, it would be useful to develop the rule that oil resources are to be immune from attack. The Arab society already has the rule that one does not poison (water) wells no matter the conflict. An analogous rule protecting oil installations would seem in order. In most of these potential conflicts, both sides have oil fields, and each is therefore vulnerable to counterattack if such attacks begin.

Consumers of the oil have a special interest, obviously, in limiting conflict between oil-producing states from spilling over into the oil fields. The tradition might be developed if Arab states welcomed it, of sending delegations from the relevant (non-superpower) consuming nations to station themselves in the oil fields as a symbolic, if not an armed, element in their neutralization.

2. An oil-producing nation such as Saudi Arabia, in the process of putting down an insurrection, desires help in securing its oil fields while its forces cope with insurgents. Whom to invite?

This represents one of the few cases in which American forces might logically play a role — invited in to fulfill a limited task. But it also indicates a class of cases which might more usefully be dealt with by forces from nations toward which less animosity is directed by the region's citizens.

This leads to the possibility of a military force comprised of national contingents from oil-consuming countries, whose assignment was the security of oil fields in general and the Persian Gulf in particular.

Not only the wells, but the pipelines, and such strategic points as the Straits of Hormuz, have to be considered key vulnerabilities. Armed forces, such as those of an international force mentioned above, would have to have mine clearing capabilities to protect the Straits of Hormuz and modern devices with which to maintain surveillance over desert areas against intruders. Perhaps the Gulf powers could agree on nations which they found acceptable, and sufficiently effective, to help discourage the intervention in the Gulf by others and even to neutralize it militarily.

3. Sub-governmental groups seek to use the threat of sabotage of oil pipelines to blackmail consumer countries.

In addition to efforts to secure the pipelines, as above, there is the question of the psychological dimension in discouraging attacks upon oil. Oil being as precious as it is to the well-being of persons all over the world, should it not be considered a terrorist act, akin to holding persons hostage physically, to threaten to waste oil. Perhaps the conventions that now exist, legally and morally, against harboring terrorists should, by common consent of one kind or another, be applied to *oil*-terrorists. Thus states ought not harbor such terrorists, should cooperate in apprehending them, should extradite them and so on. Thus terrorists would be ostracized and given no sanctuary.

BANKING THE OIL IN THE GROUND: There have always been economic reasons for selling only as much oil as the need for revenues would indicate (rather than selling more and investing the proceeds abroad). But there seems to be arising, within certain OPEC states, disenchantment with rapid development that is diminishing their perceived requirement for revenues. Iran is such a case, perhaps, already. Or, assume:

The Saudi government is overthrown by a religious sect eschewing not only rapid, but even, moderate rates of development. It cuts back on development projects, military spending, and even welfare programs. Meanwhile, the Saudis become price hawks rather than doves, and propose to restrict their production — which they then could easily afford to do — to guarantee high prices.

At present the Saudis have to use far more of their resources than they anticipated due to diseconomies of scale in seeking rapid development, inflation for building materials that far exceeds the usual worldwide inflation rate, and, of course, a wide range of projects. Some observers considered their ability to cut back from the 9-10 million barrel a day range considerably more painful than might have been anticipated, at least at 1978 oil prices [See *Oil Prices and the Future of OPEC* by Theodore H. Moran, Resources for the Future, 1978].

But what if they change their mind about development. After witnessing the events in Iran, it is possible that the existing Saudi government or other governments, might, like the Norwegians, become nervous about the rising

social impact of rapid development, and might want to curtail it in the interests of domestic stability.

Thus what Henry Kissinger once referred to as a policy of "strangulation" against which the West might be forced to react militarily, could occur, without special animosity toward the West, simply out of interest in limiting further revenues.

Part of the solution here might be to protect the excess oil revenues against inflation so as to make it worth the while of the producing states to secure the extra revenue (viz. the long-term bonds referred to earlier). However, this might work against our interests in giving the oil-producing states an interest in keeping Western inflation down by *not* having their investments inflation proof! Some approach which takes into account both considerations is probably optimal.

Perhaps part of the solution, especially for groups motivated by religion, is to focus more attention on the effects of these oil cutbacks on the world in general, rather than just on the much maligned West. The oil is, in some sense, a heritage of mankind, and badly needed for world development. Can Arab groups — particularly those following religious objectives — be insensible to the suffering that one "banking" policy rather than another might cause worldwide? Today, we see Arab psychology in reaction to a real sense of being aggrieved. How will they react in a position of strength and trusteeship toward that element of world well being associated with oil? It could be much more like the Saudis are acting than the Iranians. The Third World has got to be brought into the spotlight here, and its suffering, as a result of oil price rises, and shortages, has got to be given more attention.

MISMANAGEMENT OF OIL WELLS THROUGH EXCESSES OF NATIONALISM: Here we have the case in which Western technicians are expelled, ignored, or scared off as a result of a rising anti-Western climate in which oil-producing states want to do everything themselves but turn out to be unable to do so efficiently. Thus a substantial part of the Iranian short-fall in production is believed to arise from the inability of unassisted Iranian workers to use gas-injection methods to stimulate oil flow.

This possibility raises the question of stepping up the training of Middle East nationals in oil production technologies. Presumably, we are more interested in the efficient extraction of the resource than in seeking a residual and waning dependence of oil-producing states on Western technicians — a dependence that would not, in any event, withstand the nationalist pressures at issue. □

HUBBERT'S BUBBLE—*from page 1*

passing resource availability and political willingness to produce. The result may be something much closer to the dotted horizontal line Hubbert drew on that same graph in which recession induced by oil unavailability keeps world oil from facing a really sharp decline until 2035 rather than 1995. (A similar truncation took place, he says, when the Texas Railroad Commission took charge of oil production in Texas and stopped its exponential growth, held its production flat, and prolonged the horizontal

period until only a few years ago when the sharp decline began).

But this period of decades of a tight situation for oil consumers is going to keep them in hostage to every twist and turn in the fortunes of the oil producing nations. The situation is going to be highly analogous to that of food deficit countries who must rely upon wheat exports from a handful of nations highly concentrated much as is OPEC. (The U.S. is the Saudi Arabia of wheat and Canada, Australia, and Argentina are the main other wheat producers.) When some kind of weather problem (or new agricultural policy) strikes in one of these wheat producing countries, particularly in the United States, food prices may rise all over the world. Similarly, the industrialized world, and the non-oil producing Less Developed Countries, are going to have to worry constantly, about the "climate" in the OPEC countries. It seems evident that what will result will be, at best, a series of shocks.

A second reason for expecting shocks goes beyond observing that something is bound to go wrong in tight situations. There is also the fact that, unfortunately, much higher prices than are now being charged would probably provide OPEC with higher profits. The price elasticity, short-term, of oil is about .1 and longer term about .3. Theoretically, elasticities have to be 1.0 to provide a situation in which producers cannot gain income by cutting back on production.

The Saudi government fears for the health of its investments in the West eroded by an inflation it might cause. But the effective return of Saudi investments in the West is believed by some to be so low already, and the prospects of inflation now appear to be so great, that the Saudis themselves, much less the other Arab nations, may come to despair at the merit of storing wealth in Western securities.

In short, the dynamic of a situation like this could lead OPEC nations to have less and less of a felt direct interest in the health of the industrialized world. They may not be able to contain their short-term direct interest in raising the price dramatically and repeatedly notwithstanding their long run interests in world economic health. And each of those shocks is likely to keep the inflation rate in the OECD countries jumping.

As Noreng points out, the present system of oil production and prices is really based on the relationship between Saudi Arabia, the dominant producer, and the United States, the dominant consumer. Everything depends upon these two nations preserving a sensible relationship and, perhaps, moving toward a long-term agreement between OECD and OPEC.

But we have to move fast. The greater dependence on oil of the Europeans, has already led them to much softer positions with regard to the Arabs. Last week, Austria became the first Western European state to recognize the PLO, and Israeli officials pointed to its oil weakness as a cause. One can imagine, in conjunction with the kinds of pressures noted on page 3 and 4, real strains inside NATO which could break it up, if this differential attitude toward capitulation to Arab country demands persisted. □

CIA SEES OIL CURTAILMENT NEAR

Perhaps the best summary, and call to alarm, on the availability of oil is the CIA report of August, 1979 "The World Oil Market in the Years Ahead" (ER 79-10327U), sold by GPO for \$4.00. It reached these conclusions:

CIA expects world oil production to begin to decline "in the mid-1980s" and energy demand in the OECD countries will exceed available supply if its economic growth stays at 2% or higher. North Sea oil production would peak in the 1982-1983 period. U.S. production would continue to decline. Any increase in production in less developed countries (LDCs) outside OPEC — especially Mexico and Egypt — would be offset by a rise in consumption in non-OPEC LDCs. Soviet production would peak and lead to a decline in the net exports of oil from Communist countries. And, above all, oil production would not expand in OPEC countries either around the Gulf or outside it.

CIA notes that weak demand, arising from high oil prices or world recession, could temporarily stabilize the oil market for the next two years or so, even causing real oil prices to level off or even decline, but that this would just create a temporary illusion of ample oil supplies.

In particular, the CIA expects:

- a) U.S. oil production to decline one million barrels a day in the next several years;
- b) The United Kingdom to follow Norway in restricting oil output from North Sea fields to prolong its period of self-sufficiency;
- c) Mexican production to slow down after it reaches a mid-1980s level sufficient to satisfy domestic needs and supply foreign exchange sufficient for growth;
- d) Soviet output may peak in 1979 or 1980 and then decline sharply.

On the Soviet Union, CIA says:

[Output] has already peaked in all the major producing regions except Western Siberia, and growth is slowing even there. The Samotlor Field, which accounts for 25 percent of national output and more than half of western Siberia's production, is already being over-produced, causing Soviet technicians to openly discuss the possibility of declines in that area after 1980. The problem as they see it is that (a) the 17 large fields in western Siberia responsible for all of the growth in output over the past 15 years will be at peak production levels or in decline by 1980, and (b) no comparable new fields have been found — only small fields with low productivities."

- e) OPEC oil production would peak in 1978 with 3.5 mm-4.0 million barrels a day of shut-in capacity.

It also warns that keeping U.S. supplies of natural gas stable beyond 1982 will require even larger imports or substantial addition of new gas reserves to prevent drops in domestic output.

On discovery rates CIA notes that 33 supergiant oil fields contain half of all the recoverable oil ever found but, since 1970, only two possible such supergiant fields and only a few smaller giant fields have been found. Total discoveries of reserves in the 1970s have been lower than in any decade since the 1920s. CIA sees world reserves (oil discovered but not yet produced) as being currently at 30 years at 1979 production rates down from a 40 year supply in 1970. □

DECLASSIFICATION OF THE INERTIAL CONFINEMENT FUSION (ICF) PROGRAM

Ray E. Kidder
Associate Division Leader,
Lawrence Livermore Laboratory

Dr. Ray E. Kidder is highly qualified to argue his case below for the declassification of principles in the Inertial Fusion Program. He has contributed, for many years, to the theory of thermonuclear weapons, has originated and led the Lawrence Livermore Laboratory program for laser fusion from 1962-72, and has worked on classification policy for laser fusion at its inception. Dr. Kidder provided the most effective affidavits in support of The Progressive in the recent H-bomb case. A number of relevant government officials declined an opportunity to argue in rebuttal to his position.

Twenty-two years ago the Magnetic Confinement Fusion Program was declassified by President Eisenhower at the time of the International Atoms for Peace Conference. I believe that the time has come for the Inertial Confinement Fusion Program to be similarly declassified.

From its inception in the early sixties, the objective of the ICF program has been to produce thermonuclear microexplosions in the laboratory by igniting and burning sub-milligram amounts of highly compressed deuterium-tritium (DT). The compression and ignition is to be accomplished by focussing intense laser or charged particle beams on a small thumbnail-sized target containing the thermonuclear fuel. Once this goal is achieved, these microexplosions are intended to be utilized to:

- a. Study the physics of high temperature hydrodynamic phenomena.
- b. Simulate nuclear weapons effects.
- c. Breed fissile fuels and/or produce electric power.

The basis for the classification of the ICF Program is that some of the concepts employed in ICF target design are also used in the design of nuclear weapons. If these concepts were indeed secret, it could reasonably be argued that ICF targets employing these concepts should be classified. However, these concepts can be considered to be secret no longer.

Dr. Jack Rosengren, a prominent government nuclear weapons expert, has testified in an affidavit filed in the United States vs The Progressive that

"The Morland article describes in a relatively detailed manner the basic design concepts and certain specific design features of U.S. thermonuclear weapons."

The Morland article referred to was published in its entirety in the November 1979 issue of The Progressive magazine, and further expanded upon in the December issue. As a result of these publications and several others that preceded them, I believe that the justification for classifying the ICF Program no longer exists.

With the understanding that ICF targets do not involve fission, actinides, high explosives (HE), or thermonuclear yields greater than one ton HE-equivalent, there is no difficulty or ambiguity in distinguishing an ICF target from a



Ray E. Kidder

nuclear weapon. It is therefore possible to maintain the necessary classification of nuclear weapons, while at the same time declassifying ICF. Classification can be decided on the basis of context, the nuclear weapons context being readily distinguishable from the ICF context.

With regard to computer programs, it is proposed that the physics and difference equations, input, output and data of ICF codes be unclassified. The flow charts, source programs, and compiled programs (tapes, cards, etc.) need not be unclassified, especially those generated at the weapons laboratories.

The design and results of experiments utilizing micro-explosions to simulate the effects of nuclear weapons (item (b) above) would continue to be classified. Information concerning the physics of high temperature hydrodynamic phenomena (item (a) above) that is needed for the design of ICF targets would be unclassified, as would the target designs themselves.

With regard to the question of proliferation, it should be recognized that information concerning fusion micro-explosions, which involve neither fission nor high explosives, has little to do with the design of *fission* bombs, the *sine qua non* of nuclear weapons proliferation.

I therefore believe that nothing of substance is lost by declassifying the ICF Program. What is gained?

It was pointed out in the 1970 Final Report of the Defense Science Board Task Force on Secrecy (Frederick Seitz, chairman) that:

“The negative aspect of classified information in dollar costs, barriers between the U.S. and other nations and information flow within the U.S. is not adequately considered in making security classification determinations. We may gain far more by a reasonable policy of openness because we are an open society.”

This general conclusion is especially applicable to the ICF Program which is international in scope, being actively pursued by Canada, England, France, Germany, Italy, Israel, Japan, China, and the USSR. A policy of openness would not only permit cooperation between nations, but would permit full participation in the ICF Program by the Nation's universities, an involvement that could be expected to substantially accelerate progress toward the ultimate goal of energy production. Such was the experience with the Magnetic Confinement Fusion Program, which flourished after its declassification in 1958. □

Continued from page 8

SALT III seems to be under way and promising.

Those dubious about reopening the SALT talks now would argue that the Treaty will really have unraveled by the time it could be taken up after the election in 1981. The Soviet Union would have only until the end of 1981 to dismantle the 250 missiles, and the duration of the treaty — to December 31, 1985 — would be substantially shortened. On the other hand, if the Treaty is brought up, there is no assurance, in any event, that one Senator or another may not move to avoid a vote on ratification by calling for a reopening of SALT discussions.

Thus, while there was a good case to be made for calling for the talks to reopen, the question of whether the Administration ought to be pressed to reopen the talks appeared to fall into that tactical abyss in which unity of view by the arms control community could not be assured. With this in mind, and awaiting further events, FAS has shelved, for the moment, issuing such a call. Members are invited to express their view.

In the meantime, members should recognize that there is a good deal of room for honest disagreement on SALT tactics depending upon one's perception of objective reality.

One prominent example of this problem involves MX. Not long ago, a number of famous arms control specialists signed a letter arguing that SALT needed to be passed because, among other things, it would be easier to defeat MX after its passage than without it. This was disputed at the time, and the disputants seem to have been borne out. MX becomes increasingly vulnerable as the Soviets buildup is projected beyond the limits in the SALT treaty. Without SALT this basic fact is substantially, if not decisively, undermining Congressional support for MX which now appears to be losing ground.

Ironically, the arguments for SALT's protective impact on MX were nothing less than phoney anyway and this was widely, if quietly, admitted by professionals. The SALT II treaty would expire in 1986 before MX could even be built — much less last out its useful life. And the treaty, always vulnerable to abrogation, could not be depended upon to protect MX by limiting Soviet warheads, even if it were a very long-term treaty indeed.

Still another example of the importance of judging reality in deciding SALT policy arose at a symposium of AAAS in San Francisco in January. One speaker denounced President Carter for “selling out” on SALT by not bringing the treaty to the Senate notwithstanding the Afghanistan invasion. But it was obvious to *all* political observers that such an action would simply have led to certain defeat of the treaty.

All in all, SALT policy today requires political judgments which means that a certain fragmentation of the arms control community is inevitable. The main reason for keeping this in mind, perhaps, is the equally inevitable tendency among some arms controllers to conclude that differences over policy represent differences over goals that must be exorcised. Freud had a characterization of such brouhahas. He called it the “narcissism of small differences”. □

SHOULD SALT III TALKS BEGIN?

In early March, FAS officials discussed calling upon the Administration to reopen U.S.-Soviet SALT discussions with a view to: a) avoiding any waste of time by beginning to discuss SALT III issues which may, in any case, take a good deal of time; and b) making it possible to discuss ways and means of holding to the SALT II limits while the SALT II treaty hangs in abeyance.

Some Administration officials, both present and former, were concerned that such a reopening of SALT might give centrist Senators an option to urge avoidance of any SALT II ratification vote at all. It was argued that any ongoing SALT III talks could be pointed to as a reason for waiting to see what comes out of them. However, another former official thought such a call for reopening the talks would usefully press the Administration to assure that it was going to bring up the treaty.

In fact, the Administration is naturally undecided at the moment whether and when to bring up the SALT II treaty. In the absence of any important change in the President's prestige, and in the Soviet policy in Afghanistan, passage of the treaty would seem most unlikely. From this point of view, starting up the SALT talks would be preferable to not doing so even if it did tend to foreclose on, in any case, a risky Senate vote on SALT II. After all, a defeat of the SALT II treaty would set back the SALT process a good deal more than postponement coupled to efforts to reopen the SALT talks.

WOULD SOVIETS AGREE?

On the other hand, it was argued against such a call for talks that the Soviets were unlikely to agree until the treaty was ratified. (Other arms control talks are, however, at least formally underway such as the Test Ban Talks, MBFR talks, and so on.) Others suggested, however, that

the Soviet Union "ought" to be more interested in maintenance of the SALT II treaty provisions, coupled with a reopening of SALT III talks, than it would be in having the Administration gamble on Senate ratification, with attendant risks of defeat and a certainty of stirring up a great deal of anti-Soviet comment. Perhaps one should be asking the Soviet Union whether it would, or would not, hold to the agreement in the absence of ratification.

On the political level, the Soviet Union could use the SALT III talks to blunt the edge of the U.S. and Western hostility toward its actions in Afghanistan and, for that reason, might well agree. Soviet statements have, after all, been reaffirming its interest in detente to which SALT has always been the "spearpoint" in Soviet rhetoric. And from the Administration's point of view, such a blurring of hostility is consistent with its "two-track" approach in which SALT was to be, in principle at least, on a level insulated from lesser political disagreements, even invasions of neutral countries.

In this connection, it was generally assumed that the Soviet Union would not begin the actual dismantlement of 250 missiles, called for under the Treaty, until it was formally ratified. On the other hand, the other provisions of the treaty probably could be maintained without much difficulty. And as the Joint Chiefs had testified, the Treaty called for only "nominal" changes from the U.S. program — hence a maintenance of SALT's other broad principles and restraints seemed certainly in our interests.

Furthermore, from the point of view of eventual ratification, it is plausible to argue that something "new" needs to be added to the SALT II agreement to secure reasonable hopes of its ratification and such a foreshadowing of SALT III progress might come out of the SALT III talks. Certainly, it is harder to vote against SALT II if

Continued on page 7

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