

APPROVED FOR RELEASE: 2007/02/08: CIA-RDP82-00850R000200030008-8

5

68

1 OF 1

FOR OFFICIAL USE ONLY

JPRS L/8798

5 December 1979

# West Europe Report

(FOUO 68/79)



FOREIGN BROADCAST INFORMATION SERVICE

FOR OFFICIAL USE ONLY

NOTE

JPRS publications contain information primarily from foreign newspapers, periodicals and books, but also from news agency transmissions and broadcasts. Materials from foreign-language sources are translated; those from English-language sources are transcribed or reprinted, with the original phrasing and other characteristics retained.

Headlines, editorial reports, and material enclosed in brackets [] are supplied by JPRS. Processing indicators such as [Text] or [Excerpt] in the first line of each item, or following the last line of a brief, indicate how the original information was processed. Where no processing indicator is given, the information was summarized or extracted.

Unfamiliar names rendered phonetically or transliterated are enclosed in parentheses. Words or names preceded by a question mark and enclosed in parentheses were not clear in the original but have been supplied as appropriate in context. Other unattributed parenthetical notes within the body of an item originate with the source. Times within items are as given by source.

The contents of this publication in no way represent the policies, views or attitudes of the U.S. Government.

For further information on report content call (703) 351-2811 or 351-2501 (Greece, Cyprus, Turkey).

COPYRIGHT LAWS AND REGULATIONS GOVERNING OWNERSHIP OF MATERIALS REPRODUCED HEREIN REQUIRE THAT DISSEMINATION OF THIS PUBLICATION BE RESTRICTED FOR OFFICIAL USE ONLY.

FOR OFFICIAL USE ONLY

JPRS L/8798

5 December 1979

## WEST EUROPE REPORT

(FOUO 68/79)

CONTENTS	PAGE
THEATER NUCLEAR FORCES	
FEDERAL REPUBLIC OF GERMANY	
FRG Role in U.S., Soviet Relations, SALT Negotiations (Raymond Aron; L'EXPRESS, 27-Oct-2 Nov 79) .....	1
FRANCE	
Politico-Military Role of Nuclear Force Viewed (Alfred Grosser; L'EXPANSION, 21 Sep 79) .....	4
Brezhnev Proposals Aimed at NATO'S December TNF Decisions (Georges Buis; LE NOUVEL OBSERVATEUR, 15 Oct 79)....	7
UNITED KINGDOM	
'THE TIMES': NATO Must Continue Plugging Defense Gaps (Editorial; THE TIMES, 26 Nov 79) .....	11
COUNTRY SECTION	
FRANCE	
Role of Leftwing CERES Faction in PS-PCF Relations (Thierry Pfister; LE NOUVEL OBSERVATEUR, 15 Oct 79).	13
Realignment of Eurocommunist Parties Toward Moscow (Editorial, Jean-Francois Revel; L'EXPRESS, 15-21 Sep 79) .....	17
Antisubmarine Warfare Weapons, Tactics Against Nuclear Subs (Rene Besnault; STRATEGIQUE, Mar 79) .....	20

- a -

[III - WE - 150 FOUO]

FOR OFFICIAL USE ONLY

FOR OFFICIAL USE ONLY

CONTENTS (Continued)	Page
Function of DTCN Outlined, Explained (Jean Touffait; ARMEES D'AUJOURD'HUI, Oct 79)..	59
Minister of Industry Giraud Interviewed (Andre Giraud Interview; L'EXPANSION, 21 Sep 79)	62
Duties, Activities of Technical Research Centers Noted (Paul Talboutier; ARMEES D'AUJOURD'HUI, Oct 79).	65
ITALY	
Considerations for Renewal of the Mezzogiorno Law (Romano Prodi; CORRIERE DELLA SERA, 15 Oct 79)..	70
TURKEY	
Business Groups Seek Bank Ownership (THE MIDDLE EAST, Nov 79) .....	73

- b -

FOR OFFICIAL USE ONLY

FOR OFFICIAL USE ONLY

THEATER NUCLEAR FORCES

FEDERAL REPUBLIC OF GERMANY

FRG ROLE IN U.S., SOVIET RELATIONS, SALT NEGOTIATIONS

Paris L'EXPRESS in French 27 Oct-2 Nov 79 p 124

[Article by Raymond Aron: "German Unity"]

[Text] German unity is once again on the agenda. On the front page of OBSERVER, a journalist reveals to us, according to Yugoslav sources, that Leonid Brezhnev will propose a progressive unification of Germany to the FRG in return for neutrality. In POLITIQUE ETRANGERE, Michel Jobert analyzes Bonn's policy and scolds the French commentators, "comfortably installed in their journals and their conformism," who consider it incongruous to bring up the subject of reunification.

There is nothing incongruous about bringing up the subject of reunification. In any case, it is necessary to analyze the diplomacy of Helmut Schmidt which is different in terms of its inspiration from that of Konrad Adenauer although it does retain the two major elements, that is, the American alliance and the European Community.

In 1969, 10 years ago, Chancellor Brandt took the decisive step in going into negotiations with the Soviet Union and the other countries of the East leading to treaties with Moscow, Warsaw, Prague and Pankow. Instead of basically rejecting the situation such as it really was, the government in Bonn recognized the borders and renounced the idea of altering them by force. It reserved for itself the possibility of a peaceful revision, particularly regarding the reunification of Germany.

The Western Allies would have been rather ill advised to criticize the Chancellor's moves because the Chancellor was following the example and the advice of General de Gaulle. Willy Brandt and his aides had the feeling that, for the first time since 1945, Germany was again becoming an autonomous actor. In Washington, as Kissinger tells us in his memoirs, the first reaction to the Chancellor's initiatives was not at all enthusiastic. After thinking about it, the Americans did not oppose Brandt's action and officially approved it, even in practice.

Before and right after the treaty with Bonn, the GDR leaders had come out with the slogan of "Aberrenzung" [drawing the line], a word difficult to translate

FOR OFFICIAL USE ONLY

FOR OFFICIAL USE ONLY

although it means something like strengthening the border. This slogan had no effect on events. Millions of Germans in the FRG, traveling as tourists or otherwise, each year cross the dividing line between the two republics of German nationality; every night, most of the "socialists" in the GDR watch television from the "capitalist" system. The two populations know each other better and have stopped moving further away from each other--on the contrary.

Helmut Schmidt now believes that maintaining good relations with Moscow is in the national interest. Having become the most resolute advocate of detente, he is conducting his campaign for the ratification of SALT II; he deplores the sudden rise of anti-Sovietism in Washington; thanks to detente, he says, he is securing each year the return of thousands of Germans to the FRG from the USSR or Poland.

A fraction of the SPD [German socialist party], the Chancellor's own party, is going even further. Bahr, the architect of Bonn's Eastern policy, H. Wehner, the head of the socialist fraction in the Bundestag [Lower House] are only too happy to visit the capitals of the socialist countries and, in return, outline the somewhat longer-term prospect of a vast socialist community in which the two Germanies would gradually be united.

Neither the administration, nor the opposition subscribe to the Bahr-Wehner doctrine. But the opposition itself is no longer fighting against the policy that led to the treaties with Berlin and Warsaw. It also considers "Ostorientierung," that is, the orientation toward East, as one of the components of German diplomacy.

Relations between Bonn and Washington have been deteriorating. Like the other NATO countries (with the exception of Portugal), the FRG in 1973 refused to let American transport aircraft, which were carrying weapons and ammunition to Israel, use its airports. The German-Brazilian Accord on the nuclear industry has triggered acrimonious exchanges between Bonn and Washington.

But, having noted this, we must not exaggerate the significance of this tension. The FRG is conducting a Gaullist-style policy. It benefits from American guarantee and at the same time tries very hard to promote its own interests. It was not Helmut Schmidt who rejected the idea for stationing neutron bombs; it was President Carter himself. He approved the stationing of medium-range missiles on the soil of the FRG, on the only condition that at least one other member of the Atlantic Alliance do the same.

In 1952, prior to the rearmament and entry of the FRG into the Atlantic Alliance, the Soviet Union, in a rather equivocal manner, by the way, proposed a unified Germany that would pledge itself to be neutral. But those proposals were not exactly aimed at unity: A confederation in which each of the two states would retain its institutions? Withdrawal of American troops and Soviet troops? Even today it seems inconceivable to me that Moscow is envisaging the "de-Sovietization" of the GDR.

FOR OFFICIAL USE ONLY

According to OBSERVER, the Soviets supposedly would offer the evacuation of the GDR and Hungary, pulling out Soviet troops from there, in return for FRG neutrality with the promise of reunification within 20 years. Assuming that such a plan would be conceived in Moscow, it would involve the return of the American troops to the United States, the shift of Soviet troops toward Czechoslovakia and Poland: Several thousand kilometers against just a few hundred. Certainly an unequal trade.

The Soviet Union is forced neither by the Chinese menace, nor by the Chinese-Japanese economic agreements, nor by the economic power of the FRG to plunge into a diplomatic adventure, in other words, to bring up the entire issue of the European status quo all over again. The presence of Soviet divisions in the center of Europe assures it not only of security but also of a means for exerting pressure. The Soviet divisions in the GDR, the most modern ones, create a permanent peril for Western Europe—a Damoclean sword which must not fall but which reminds the Europeans of their vulnerability.

I do not wish to suggest that the Soviets are not preparing for big diplomatic maneuvers. They are hoping to paralyze the effort of the Westerners who want to reduce their military inferiority in Europe. The Americans and the Germans are starting the dialogue and are asking Brezhnev for the precise meaning of what he has to say. Does this mean reducing the number of SS-20 missiles deployed or withdrawing the old missiles, the SS-4 missiles, for example? The dialogue, which in itself is inevitable, does not lend itself to criticism, except under one condition: That the Westerners do not renounce the rearmament measures which they are contemplating. If, under the pretext of starting negotiations, the Westerners renounce their undertakings, they will go to the negotiating table without any bargaining chips. The Soviets would, in exchange for medium-range missiles planned by the Westerners, not have conceded a fraction of their current force but a fraction of the supplementary force which they have the intention of deploying.

At the end of those negotiations, the Westerners would be in the same situation of inferiority which they have the firm intention of correcting now.

COPYRIGHT: 1979 s.a. Groupe Express

5058  
CSO: 3100



FOR OFFICIAL USE ONLY

THEATER NUCLEAR FORCES

FRANCE

POLITICO-MILITARY ROLE OF NUCLEAR FORCE VIEWED

Paris L'EXPANSION in French 21 Sep 79 pp 133, 135

[Article by Alfred Grosser: "France, the Bomb, and Europe"]

[Text] The current debate in this country over Germany's possible participation in the French nuclear force is strange indeed! Everybody engaged in it seems to be bent on deliberately ignoring some important hard facts.

The first such fact is that the Federal Republic of Germany has neither the desire nor the right to be part of this force. This lack of desire was demonstrated once again during the transatlantic dialog on the neutron bomb. Consulted by the U. S. president about production and deployment of this bomb, Chancellor Schmidt commented guardedly about its production and categorically refused to commit himself on its deployment because he felt his country had no business participating, even in an advisory capacity, in a decision relative to production of this kind of weapon. Germany has no right because on 28 November 1969 it signed the Nuclear Nonproliferation Treaty which imposes severe restrictions on its sovereignty, or to be more exact, Germany imposes such restrictions on itself.

Who, therefore, on the French side would want to urge the FRG to denounce that treaty? Especially since the French nuclear force was actually developed not only to hold a possible enemy in check but also to gain political weight vis-a-vis our allies, particularly vis-a-vis the Germans! They have no atomic weapons and they have Hitler in their past; this offsets our industrial inferiority!

French cabinet ministers and politicians also mention from time to time the obligations and limitations imposed on the Federal Republic of Germany by the Paris Agreements of 23 October 1954, agreements that still constitute our neighbor's international charter. But why is no mention ever made of one particular article of those agreements, the one that binds us the most? In fact, the Paris Agreements renewed, revised, and completed the Brussels Treaty by making provisions for Germany and Italy to accede to that treaty. Article 4 of the Brussels Treaty of 1948 automatically commits France as follows: "If any of the High Contracting Powers

FOR OFFICIAL USE ONLY

FOR OFFICIAL USE ONLY

should be the object of an armed attack in Europe, the other High Contracting Powers will afford the party so attacked all the military and other aid and assistance in their power."

It's just as simple as that. In other words, any assumption that we would defend on France proper, while the Soviet Army was advancing in Germany would imply a violation of our treaty obligations. The North Atlantic Treaty allows a nation a choice of action. The Paris Agreements do not. And even if we leave aside our contractual obligations, who really believes France can stand aloof from a conflict taking place in Germany? Communists and (pro-Chirac) Gaullists became indignant when the minister of defense, a Gaullist, said that "participation in the defense of Europe is one of the essential missions of the French Armed Forces, a mission directly linked to the security of our territory." Yes, but what, in fact, had Chirac said in 1975 when as prime minister he officially turned Pluton missiles over to those units responsible for their employment if and when required? "Realizing that its fate is linked to the fate of Europe, France intends to play a role commensurate with its capabilities in the defense of the continent to which it belongs. To do this, we cannot be content to 'sanctuarize' our own territory. We must look beyond our borders. In this respect, because our weapons are French and also genuinely European on our territory, they contribute to the defense of Europe by their very existence, a contribution whose scope our allies--and we ourselves--have not yet exactly measured."

Commonsense words that were little noted at the time and have continued to be unnoticed ever since then, because the French approach to the Germans up to now has been to tell them, in substance: "Do not trust in the Americans: in case of danger, they will not defend you. Trust in us. Having said that, we shall not defend you. But when the Russians are in your cities, we shall no doubt destroy them there!"

At the present time, the Germans do, in fact, have less confidence in the American commitment. Such a level-headed daily as the SÜDDEUTSCHE ZEITUNG described this situation as "a minimum of confidence and a maximum of fear." But to counterbalance the USSR's superpower, there is no alternative solution to the American "umbrella." At very best, we can hope for a united Europe whose political force could use the military resources of all its members, including the British and French atomic force. To compel the United States to raise the ante. To convince the USSR that European determination can influence the United States, in other words, to give the American deterrent greater credibility. As a matter of fact, for the moment American credibility is declining without ours being on the rise. For despite our submarines, who believes our president is really prepared to risk the country's total destruction in retaliation for our having launched destructive rockets against a few Soviet cities? De Gaulle was more credible because it could be assumed he would act irrationally!

5

FOR OFFICIAL USE ONLY

FOR OFFICIAL USE ONLY

There is no need for integration or an impracticable Franco-German nuclear force. There is need, however, for us to state quite clearly that we are well and truly members of a bloc, that this bloc includes Western Europe and the United States, and that it is precisely for that reason that our atomic force has a politico-military role to play.

COPYRIGHT: S.A. Groupe Expansion

8041  
CSO: 3100

6  
FOR OFFICIAL USE ONLY

FOR OFFICIAL USE ONLY

THEATER NUCLEAR FORCES

FRANCE

BREZHNEV PROPOSALS AIMED AT NATO'S DECEMBER TNF DECISIONS

Paris LE NOUVEL OBSERVATEUR in French 15 Oct 79 pp 65-66

[Article by retired General Georges Buis: "Leonid Brezhnev's Skillful Anger"]

[Text] How happy would both Soviet and American strategists be if Western Europe were to be swallowed one nice morning by the combined waters of the North Sea, the Atlantic, and the Mediterranean! How much more easy it would then become to divide terror and, therefore, security! What a major obstacle would disappear in the pursuit for and success of the various SALT, strategic armament limitation talks which have become a sort of permanent detente council of the two superpowers!

Initiated in 1969, the purpose of the SALT was to enable both powers to control armaments considered "strategic"--i.e., armaments which enable either one of them to hit the other from his own country or from a submarine. The initial phase of the discussions resulted in the signing of SALT I in Moscow, in 1972. The second and longer round, lasting six years and including some 300 meetings, has been more difficult because of the speed of technological progress. It was completed last June, in Vienna, with an exchange of signatures between Jimmy Carter and Leonid Brezhnev. However, the SALT II treaty must be ratified by the American senate which is dragging its feet. Meanwhile Moscow is becoming impatient.

This is because the Soviets want SALT. Far from having the unlimited facilities ascribed to them all too generously, and suffering a severe lag in the precision aiming area, in the field of the limitation of strategic armaments it appears quite clearly that it is they, above all, who are the requesters. This explains their irritation at the sight of the problem of European security--brutally postponed this year by the Europeans and the Americans--coming to complicate and delay their nice agreement with the United States. This also explains Leonid Brezhnev's great anger. On the subject of the plan for the deployment in Europe of a new "intermediary"<sup>1</sup> missile, denounced, on 1 October in Moscow, "those who would like to turn

1. IRBM: Intermediate Range Ballistic Missile

7  
FOR OFFICIAL USE ONLY

FOR OFFICIAL USE ONLY

Western Europe into a launching pad for American weapons directed against the USSR."

To understand the nature of those threats formulated on 1 October against the Europeans, repeated in Berlin on the 6th, and taken up this time against the Americans, in a TASS communique, dated 9 October, we should consider the current state of the balance of forces in Europe. For the past two years the Soviets have been deploying in their zone a new weapon not considered "strategic," for it cannot reach the United States: The SS 20, an intermediate range missile (4,500 kilometers), whose precision is estimated in terms of tens of meters, and which could carry one to three nuclear warheads, and whose launching pad is mobile and, therefore, cannot be located before firing. This weapon can cover all of Europe and the Mediterranean. It has turned this area into a "gray zone," which means that, in the case of an attack, it would not have the guarantee of automatic retaliation by the American striking force. Therefore, the USSR could launch its SS 20 over Europe without the theoretical risk of a retaliatory strike against Soviet territory; since NATO would have no retaliation facilities.

This situation has not been ignored by the NATO Europeans who, three years ago, began to shriek loudly, justifiably believing that they were in the way of converting from the stage of "conventional hostages" to that of "nuclear hostages." However, regardless of the shouting, the Americans were not in a hurry to abolish this "gray zone" by establishing a balance of facilities. The reason for which they were so reluctant to change the existing balance was the fact that the SALT II talks were underway and that the Soviets were already becoming terribly touchy on the problem of "advance base forces (nuclear)," already installed: French and British, and European bases of American nuclear submarines and commerce. Why would the two superpowers compromise the results of laborious efforts, carried out for six years, for the sake of Europe, labors whose first and absolute result, as the Europeans must realize, is, first of all, to establish between the two of them acceptable modus vivendi?

#### The Umbrella Goes Away

Yet, in the summer of 1979 the Americans woke up and, all of a sudden, became very noisy on the subject of an intermediate weapon to be deployed in Europe: the Pershing 2, with a 1,800 kilometer range, which would become operational between 1983 and 1985. At the beginning of August, in Brussels, Zbigniew Brzezinski stated that the United States had the obligation to provide NATO with this weapon or with any other weapon capable of performing the same mission.

Paradoxically, this announcement came at a time when a doubt as to the advantages of such an American gift had developed in the minds of many Europeans. On the one hand, it appears that the detected Soviet SS 20 are almost virtually deployed toward China. . . . On the other, the presence

## FOR OFFICIAL USE ONLY

in Europe of an intermediate American weapon would provide an additional step in the eventual defensive escalation and would thus contribute to remove, rather than bring closer to Europe, the real "American umbrella." Yet, it seems clear that the American government, by suggesting the "Pershing 2," aimed, above all, to appease the scruples of senators who were concerned about "abandoning Europe," and to encourage them to ratify SALT II without further delay.

## Non Negotiable Superiority

At that time Brzezinski's declaration did not trigger any official Soviet reaction. However, neither Europeans nor Americans profited from this: The explosion occurred in October. After his hard 1 October warning, on the 6th in Berlin, on the occasion of the 30th anniversary of the GDR, Brezhnev stated that the deployment of American intermediate missiles in Europe "would brutally change the strategic situation on the continent," and would force the Soviets to "strengthen their own security." Turning to the West Germans, he warned them that "it would be difficult to imagine the consequences to them of the deployment of such weapons on their soil."

On 9 October PRAVDA attacked the Americans directly: The deployment of Pershing 2 missiles in Western Europe would "turn the continent into a dangerous powder keg;" "The efforts launched by the leading circles of the United States to impose upon Western Europe a new round of armaments in terms of nuclear missiles risks to throw back the detente process." The word detente led to the SALT refrain: PRAVDA condemned "the efforts undertaken by the American senate to undermine the ratification of the SALT agreements," as well as "the irresponsible manner with which influential circles in the United States treat detente."

The purpose of these threats is double. On the one hand, they aim at impressing the NATO countries whose representatives are to meet mid-December to decide whether or not to accept, or whether or not to demand, the deployment of intermediate American missiles on their soil: The severe Soviet statements must hover over the conference. However, the Soviets also intend, through the liveliness of their reaction, to remind the American senators of the very special nature of "adversary-partnership" relations which link Moscow with Washington, and urge them to ratify the SALT agreements as rapidly as possible, and, if possible, before the December NATO meeting. Behind this insistence one can even see a clear appeal, to the extent to which the SALT II agreements include the pledge to immediately begin SALT III, in the course of which the problem so far avoided of "advance forces" would be taken up. Brezhnev told the senators, "Therefore, sign the SALT II quickly so that we may be able to settle as soon as possible and together the matter of the Pershing 2 and other 'cruise missiles'."

Yet, it is doubtful that this call has been heard. In effect, even if it has deployed its SS 20 above all against China, the USSR has always indicated that it intended to preserve its advantages gained in Europe and

FOR OFFICIAL USE ONLY

that this superiority was totally non negotiable. A discussion of the reduction of armaments in Europe was acceptable. However, as to the armaments themselves. . . on 6 October Brezhnev confirmed this, emphasizing that, deploying its SS 20, the USSR had not changed in the least the numerical importance of its nuclear armaments. As early as 9 October President Carter replied that Brezhnev's suggestions were not "constructive," and that the Europeans should "modernize their defense" before negotiating.

We shall mention merely as a reminder, for it has nothing to do with the substance of the debate, the suggestion made by Brezhnev on 6 October of withdrawing unilaterally 20,000 men and 1,000 tanks from the zone of deployment of Soviet forces in the GDR. Perhaps the East Germans may have been touched by this anniversary gift. However, the Western general staffs would find it hard to see in this a serious gesture, particularly in a country in which the USSR keeps 20 divisions, 10 of which armored, or a total of 400,000 men. The promotion of detente cannot be accomplished with these 20,000 soldiers and 1,000 tanks.

COPYRIGHT: 1979 "le Nouvel Observateur"

5157  
CSO: 3100

10  
FOR OFFICIAL USE ONLY

FOR OFFICIAL USE ONLY

THEATER NUCLEAR FORCES

UNITED KINGDOM

'THE TIMES': NATO MUST CONTINUE PLUGGING DEFENSE GAPS

LD261153 London THE TIMES in English 26 Nov 79 p 10 LD

[Editorial: "NATO's Nuclear Cover"]

[Text] The Russians have been trying very hard to discourage NATO from modernizing its medium range nuclear weapons in Europe. Mr Brezhnev had an array of sticks and carrots in his speech of 6 October, and Mr Gromyko has just been in Bonn to reinforce the message, threatening dire consequences for political relations in Europe if NATO goes ahead. So far NATO has been standing firm, though the Dutch have been wobbly, so it seems reasonably certain that the decision to modernize will be taken at the ministerial meeting in Brussels in mid-December. At the same time NATO is putting together a package of proposals on arms control to match those of Mr Brezhnev, so there is just a chance that by the time the new weapons are ready for deployment (in three years, perhaps) they will not be needed.

This two-pronged approach is clearly the right one. No sane person wants to exacerbate tension in Europe or to arm more than necessary. It would be folly to pass by even the slimmest chance of negotiation. But there is not enough in Mr Brezhnev's offer to justify putting off modernization in the hope that the need for it can be negotiated away. If negotiations failed--and they probably would if the stimulus for them were removed--the military imbalance in Europe would become even worse than it is now and the political risks of trying to restore it would become greater.

The military case for modernization is very strong. NATO strategy is based on the doctrine of flexible response. This means having the ability to make a controlled response to any level of threat from the smallest border incident to full-scale intercontinental warfare. In recent years a gap has been opening in the middle range of the scale. The Soviet Union has been deploying a new generation of nuclear weapons for the European theater, notably the SS-20, which is an accurate, mobile missile with three warheads, and the "backfire" bomber. Both these systems have ranges of over 3,000 miles and could reach Western Europe from the Urals. Yet they themselves cannot be reached from Western Europe except by obsolete and increasingly vulnerable aircraft. They have a sort of sanctuary status, uncontrolled by the SALT agreement and out of reach of European weapons.

11  
FOR OFFICIAL USE ONLY



FOR OFFICIAL USE ONLY

In an escalating conflict Europe could, therefore, find itself having to jump straight from battlefield nuclear weapons to intercontinental annihilation. While this could frighten the Russians it could also tempt them to calculate that the United States would not risk its own cities for the sake of Europe. Dr Kissinger confirmed in a recent speech that this might not be a wholly irrational calculation.

Hence the NATO plan to deploy 108 Pershing II missiles and 484 ground-launched cruise missiles in Europe. Naturally the Russians try to prevent a decision as they have tried to avert every important NATO decision over the past thirty years, but they are wrong to depict it as a new threat emanating from West Germany. The weapons will remain under American control and are no more than a response to Soviet modernization. It is important that the Russians should not come to think that they have a veto over NATO decisions. Yet Mr Brezhnev's speech of 6 October deserves examination--Mrs Thatcher's initial reaction was far too brusque. He announced the unilateral withdrawal of up to 20,000 Soviet troops and 1,000 tanks from East Germany and offered to reduce the number of medium range weapons in the western part of the Soviet Union. He also proposed extending the confidence-building measures of the Helsinki final act relating to the notification of troop movements and maneuvers. Clearly his immediate aim was largely tactical and propagandist. His proposals were not tabled in negotiations, and Western governments were not given the normal advance warning. Moreover in their present form the proposals do not amount to very much. The Soviet Union has about 400,000 troops in East Germany, so it would not miss 20,000. Nor would it be any weaker for removing obsolete missiles--the International Institute for Strategic Studies calculates that with 120 SS-20s already in place only another 140 are needed to do the work of the 590 SS-4 and SS-5 missiles still deployed; and SS-20s are coming in at the rate of 50 a year.

Nevertheless, if the Russians are genuinely worried about the nuclear confrontation in Europe they must be given a chance to prove it. Their proposals fall naturally into categories already covered by existing or imminent negotiations--SALT 3 (which could in fact start even if SALT 2 is not ratified by the U.S. Senate), the Vienna talks on troop reductions, and next year's second review of the Helsinki final act. If the Russians really have something to offer, these negotiations will give them opportunities to show it. Meanwhile NATO must continue to plug the gap in its defences. After all, it was only the prospect of a NATO decision that prodded Mr Brezhnev into action.

COPYRIGHT: Times Newspapers Limited, 1979

CSO: 3120

FOR OFFICIAL USE ONLY

COUNTRY SECTION

FRANCE

ROLE OF LEFTWING CERES FACTION IN PS-PCF RELATIONS

Paris LE NOUVEL OBSERVATEUR in French 15 Oct 79 pp 55-56

Article by Thierry Pfister: "Jean-Pierre Chevenement's Mistake"

Text When Jean-Pierre Chevenement was still only the leader of the minority in the PS Socialist Party, Francois Mitterrand, meditating in Latche, on his estate in the Landes region, seemed eager to talk to his visitors "Jean Elleinstein ought to be a member of the Socialist Party and Chevenement, a member of the Communist Party." From the rostrum at numerous meetings of the PS, the first secretary often took the opportunity to make similar remarks, whether he was calling the CERES Center for Socialist Studies, Research and Education a "communist-leftist potpourri," or describing it as "a false Communist Party, made up of lower middle class." When it was pointed out to him that Chevenement and Elleinstein were more useful to the left with each of them in their present jobs, Francois Mitterrand answered with a smile: "No, because it isn't the same thing, Elleinstein does not sit on the Central Committee of the PCF French Communist Party."

This difference has, since then, become more important because Jean-Pierre Chevenement has once again become a member of the national secretariat of the PS and in addition Francois Mitterrand needs the votes of the CERES to retain a majority within his own party. So, the deputy from Belfort and his friends remain faithful to the analyses and to the methods which the first secretary used to make fun of. There has just been a new illustration of this in the interview granted on 6 October to OUEST-FRANCE by Jean-Pierre Chevenement. "Is it by chance that the break of 1977 came about over the subject of the nationalizations which the PS had instructed Michel Rocard to carry out?" the head of the CERES wondered, not very innocently. According to him, the deputy from Yvelines "is responsible to a large extent for the failure of the left."

This statement stirred up deep feelings within the Socialist Party. If the friends of Michel Rocard have tried to avoid public controversy, the minority faction, led by Pierre Mauroy, has reacted sharply. As for Daniel Percheron, the first secretary of the powerful Pas-de-Calais federation, he even called for the resignation of Jean-Pierre Chevenement as national secretary of the PS.

FOR OFFICIAL USE ONLY

Actually, the idea expressed by the head of the CERES is not new. Chevenement has always thought, since the presidential election of 1974, that the rapprochement between the PS and the faction led by Michel Rocard, as well as by Edmond Maire, was undermining the union of the left. He was all the more hostile to this turn of events since it provoked the "marginalization" of the CERES. The experience of the campaign of Francois Mitterrand in 1974 had, if that was necessary, opened his eyes. He and his friends had been carefully kept away by the common candidate of the left. Mitterrand had preferred to use new economic teams, headed by Jacques Attali and Michel Rocard. And it is true that the platform presented at that time by the candidate was affected by this change. The neo-Marxist logic of the CERES, which is close to that of the communists, was replaced by new views, which were hardly compatible with the system of economic thought of the PCF. And the change since then has become more pronounced.

#### Important Ambiguities

Nevertheless, when the PCF chose to make the break in 1977, it was based on an evaluation of the whole of the political and institutional balance of power. Before making the issue of the nationalizations an area of confrontation with the PS, the leadership of the PCF had planned to stress other subjects. If this one was finally decided upon, it was certainly because of its symbolic value but also because, at the time of the negotiations over the "Common Program" in 1972, the discussions on this subject had left major ambiguities unresolved. First of all, the future of the subsidiaries of the groups scheduled for nationalization. And, at that time, the socialist negotiator was Jean-Pierre Chevenement.

Although he admits that his statement in OUEST-FRANCE "could have been more polite," the head of the CERES is guilty however not of a slight error but of a serious mistake. And from two points of view.

1.--With respect to the Communist Party, Jean-Pierre Chevenement is justifying after the fact the campaign led by the communists and aimed at holding the PS solely responsible for the split in the union of the left. The PCF leadership was not fooled and by 7 October, Charles Fiterman was stressing the fact that the declarations of the socialist leader expressed "a point of the greatest importance, which each worker, each democrat should note: the communists were right." Rene Andrieu drove home the point 3 days later in his editorial in L'HUMANITE.

The argument over who was responsible may, at first glance, seem secondary. Nevertheless, it could become decisive in the context of the competition, within the left, between socialists and communists. The PCF has prided itself for 30 years on having a single will which permitted it to broaden noticeably its zone of influence, while the socialists, on the contrary, were suffering from the memory of their past compromises. If the mythology of unity could be appropriated by the socialists to the detriment of the PCF, the rebalancing of the left, which was achieved by Francois Mitterrand, would be solidly anchored. On the contrary, if the image of the PS once

FOR OFFICIAL USE ONLY

FOR OFFICIAL USE ONLY

again becomes cloudy, if there are doubts raised about its desire for an alliance, the communists can hope to reconquer, in time, the ground they have lost over the last 8 years. Through his declaration, Jean-Pierre Chevenement has contributed to placing in doubt the real intentions of the socialists.

This is not the first time that the head of the CERES, by entering the territory of the PCF, has placed his own party in the wrong. Right after the failure to put the "Common Program" into action, and while Georges Marchais was constantly appearing on television, asking for the socialists to "take a step forward," and Francois Mitterrand was trying to hold his positions Jean-Pierre Chevenement in November 1977 had proposed new concessions to the national convention of the PS. Something which, the next day, was well appreciated by the editorialist from L'HUMANITE.

On the shape of Europe, as an Southeast Asia, on the vents in Portugal earlier, as on the analysis of the Soviet Union today, the CERES continues to take public positions which are merely justifications of the criticism of the PS by the PCF.

2.--With respect to the Socialist Party. One of the dangers facing the PS is changing itself into a giant PSU /Unified Socialist Party/. Francois Mitterrand has often warned his friends to be on guard against this, in recent years. He was thinking especially of Michel Rocard, an expert, it is true, in this area, since he is a former national secretary of the PSU. The "PSU-ization" (as the socialists call it) of a political groups, what does that mean? Internal quarrels as complicated as they are unremitting, which alienate public opinion and tire out the militants. In fact, that is just what is happening in the PS. Its sections are already losing members, while its strength at the polls has stopped growing.

#### Well Trained Supporters

Fatigue and discouragement are natural, as soon as a party subordinates its political stance to internal problems and analyses the society that it claims to lead only as a function of the balance of power between the tendencies running through it. That is what "PSUization" is. And that is exactly what is going on now in the PS.

The Metz congress had already offered an illustration of this. Jean-Pierre Chevenement confirms this drift. Right after the call to order--and to calm--made by the Executive Bureau of the PS, on 10 October, and under the pretext of explaining himself, he returned to the charge. According to him, the criticism he is receiving has as its goal modifying the objectives of the "Socialist Program." By refocusing the controversy on this text, of which he is the principal author, the head of the CERES is revealing his concern that a general agreement, even a mere broadening of the majority of the PS, might come about through this text. As soon as Francois Mitterrand, because of the broadening of the majority, no longer needed the votes of the CERES, the influence of Jean-Pierre Chevenement could be blocked. An

FOR OFFICIAL USE ONLY

FOR OFFICIAL USE ONLY

influence which is expressed not only in the texts, but also on the militant level because the supporters of the CERES, who have been active for a long time, work within the PS more effectively than those that Paul Quiles is trying desperately to make us of on behalf of the first secretary.

COPYRIGHT: 1979 "le Nouvel Observateur"

8956  
CSO: 3100

FOR OFFICIAL USE ONLY

FOR OFFICIAL USE ONLY

COUNTRY SECTION

FRANCE

REALINEMENT OF EUROCOMMUNIST PARTIES TOWARD MOSCOW

Paris L'EXPRESS in French 15-21 Sep 79 p 104

[Editorial by Jean-Francois Revel: "Normalization All-Around"]

[Text] The one-eyed observation of the various communist parties, that is to say their observation in an exclusively national context, and not in the international context that is theirs, prevents us from seeing the massive phenomenon of these last months: the clear realignment of western communist parties toward Moscow. This is new proof that we cannot understand anything about the evolution of the different communist parties if we analyze them in terms of exclusively internal politics while refusing to see the simultaneous nature of changes in several countries at the same time.

Enrico Berlinguer, the commander in chief of the "Euro-communist" parties, after having taken his vacation in the USSR, for the first time since he became secretary general of the PCI, has just been solemnly and officially received in Moscow by Leonid Brezhnev in the presence of the CPSU chief ideologist Mikhail Suslov. The joint communique published at the conclusion of the meeting constitutes the pure and simple cancellation of previous Italian pronouncements on the "autonomous roads" toward socialism and on a certain freedom of criticism with regard to the Soviet model. In 1979 the chief of the PCI salutes, indeed, "the successes of the Soviet people in the economic, scientific, cultural and social fields." He admits that anti-sovietism and anticommunism are again synonymous, still according to this same communique, from which has disappeared, moreover, all reference to the "Italian road towards socialism." We read there instead, this infinitely less autonomist pronouncement: "Berlinguer expressed the ideas of the Italian communists on the problem of the struggle for socialism." At the same time, in an article from the journal RINASCITA, published with great fanfare as a new manifesto of the PCI, Berlinguer forcefully reaffirms the perenniality of the sacrosault Leninist "democratic centralism," that is to say, the absolute power of the party's bureaucracy, and especially of its king, the secretary general.

FOR OFFICIAL USE ONLY

FOR OFFICIAL USE ONLY

One notes a similar rehardening on the part of a communist party geographically far distant from Europe--the Japanese Communist Party, which, in the spring, also signed a joint communique with the CPSU saluting the success of "efforts undertaken to reach a normalization of relations between the two parties." We see this word "normalization" figuring in the communist texts themselves. It is notably weighted with meaning in the case of the Japanese Communist Party, in which Moscow had tried openly to provoke a split (as in the Spanish party) and which, as a result, had suspended all relations with the Russians. Moreover, at the very moment that Georges Marchais himself was on very bad terms with the Russians, he had paid homage to the Japanese Communist Party.

Today we are very far removed from these icy relations. We are familiar with Marchais' emphatic remark about the "globally positive picture" of Soviet communism, to be placed parallel to the Italian Gian Carlo Pajetta's statement that the USSR is "really socialist," which, alas, is doubtlessly true. L'HUMANITE has published this year a spate of laudatory articles about the USSR. One of the last ones (5 September) is titled: "Permanence of Economic Growth." At a time when the USSR is again in full crisis over its food products, this is quite amusing. Let us not forget that Georges Marchais has just revealed, at the Festival of L'HUMANITE, his admiration for a well-known humorist, the late Bernard Raynaud.

Just as Berlinguer had refrained from making any visits to the USSR except for one in January 1976, Jean Kanapa, former chief of the PCF's international section (who passed away in September 1978), had, in the same way, avoided during the last two years of his life meeting face to face with Boris Ponomarev (in charge of the "fraternal parties" in the Kremlin). That is not the case with his successor, Maxime Gremetz, who appeared in the USSR this summer to confer with the very same Ponomarev. There again was a joint communique, in which the two no longer speak of "differences," without returning, nevertheless, to the old "complete identity of views," but content themselves with "expressing the points of view of their respective parties."

The "complete identity of views" between Soviet and French communists is nevertheless evident in an important area and even the most important area of all: foreign policy. Rarely had the role of guardian of Soviet interests in western Europe and defender of Soviet imperialism been assumed by the PCF with so much flaming vigilance.

For instance, to point out the weakening of western defense and the corresponding ascent of Soviet military power is called by the PCF "resurgence of an armed Europe." To want to better coordinate the defenses of western nations, to refuse a future Soviet protectorate, is to become enmeshed in "European cog-wheels." "An extensive press campaign," writes Rene Andrieu in his 12 September editorial in L'HUMANITE, "supports this project, as bear witness especially the distressing publicity in LE MONDE about the unleashing of the third world war by the Soviets, and Jean-Francois Revel's editorial in L'EXPRESS, which evokes the Soviet 'menace' with the

FOR OFFICIAL USE ONLY

FOR OFFICIAL USE ONLY

latest arguments prompted by the Pentagon." In short, everything that can drain Western Europe's defenses and strengthen the pseudo-nationalist myth of an absolute independence and of a total refusal of international cooperation of French defenses is consecrated bread for the Soviets and the gospel for the schemers of the reactivated PCF, as it is for the simpletons of deteriorated Gaullism.

Finally, just as Moscow normalized the opposition from Georges Marchais, he normalized the opposition from the PCF's intellectuals. And how useful and well-managed was this cardboard opposition after the treason of the split in the Union of the left! How this opposition kept the public entertained, with the well-timed connivance of the "bourgeois" press, and succeeded in creating diversion by eluding the issue of the causes of that treason in order to substitute hazy speculations about the coming democratization! Certain of these dissenters were, surely, honest and sincere. Let us not confuse them with the old campaigners, blusterers of manipulated opposition, become the puppies of normalized obedience. Once more, they have sold well the cure-all magic potion of eternal democratization.

When L'HUMANITE, the day after its Festival, runs the simple and mysterious headline "Le Million" (The Million), it cannot have anything to do with the sale of the newspaper, (less than one-tenth of this figure), nor with the number of members in the party (less than half that figure); it can only deal with the number of times that the party made believe that it had commenced its democratization.

COPYRIGHT: 1979 s.a. Groupe Express

9545  
CSO: 3100



FOR OFFICIAL USE ONLY

COUNTRY SECTION

FRANCE

ANTISUBMARINE WARFARE WEAPONS, TACTICS AGAINST NUCLEAR SUBS

Paris STRATEGIQUE in French Mar 79 pp 51-98

[Article by Admiral Rene Besnault, French Navy retired: "Origin, Activities, and Survival of the SNLE (Conclusion)"]

[Text] The author's first experience with his subject was obtained at the height of the Battle of the Atlantic [in World War II] and then along the Norwegian coast. His postwar assignments in the French Navy involved mainly sea duty. He is a graduate of the French Naval War College where he later served as instructor and then dean of studies. He is also a graduate of the Naval Staff College, Greenwich, England, and served on the staff of the French Institute for Advanced National Defense Studies. Admiral Besnault retired from active duty in 1978.

Enemies of the SNLE [Fleet Ballistic Submarine, SSBN]

To measure the vulnerability of SSBN's, one has to know more than simply how they can be destroyed. It is necessary also to have a much more comprehensive picture of how they may be prevented from accomplishing their mission, what means may be used against them, and how these means may be employed. To obtain this complete picture, one has to consider the SSBN weapon system as a whole. In fact, failure of one link in the chain is sufficient to break the chain. We are, therefore, compelled to take into consideration those means that are used not against a single SSBN or even against a nation's entire SSBN fleet, but against the facilities that condition their operations, either immediately, such as command and control systems, or ultimately, such as logistical support facilities. In addition, as a general rule, certain components of the weapon system, and mainly the SSBN at sea, have to be accurately located just before they are attacked. Consequently surveillance forces and equipment must be included among the SSBN's enemies. All things considered, the list of its enemies may be drawn up as follows: surface surveillance forces and equipment, strategic nuclear forces, other means of attacking the

FOR OFFICIAL USE ONLY

FOR OFFICIAL USE ONLY

SSBN on and above the surface, underwater geographic surveillance or interdiction systems, air and surface ASW [antisubmarine warfare] forces, and submarines employed in the ASW role.

#### Surface Surveillance Forces and Equipment

Photographic air reconnaissance very quickly assumed an important intelligence role. This form of reconnaissance became systematic during World War II when advances in cameras, photographic techniques, and photo interpretation made it one of the most important, most reliable, and most accurate sources of military intelligence. The American U-2 shot down over Sverdlovsk in 1960 and photographs of Soviet installations in Cuba published in 1952 drew public attention at the time to this type of reconnaissance. But the use of satellites was a big step forward in air reconnaissance, even though less publicized.

The latter are the "spy" satellites employed by the United States, the Soviet Union, and probably China. Naturally, all of their capabilities are not public information, and statements made about them are rarely completely candid. Nevertheless, it is not impossible to form a critical opinion of these satellites: First, by using the scientific or commercial information released about them; secondly, by noting the decisions--satellite launches, treaties, diplomatic actions, etc.--the major powers are compelled to make public concerning basic facts they otherwise try to conceal. It is certain that both the Russians and the Americans can photograph, measure, and count installations on the earth's surface. Hundreds of photographs taken by satellites have been published. On some there is enough distinguishable detail to draw, for example, an accurate map of the space center at Cape Canaveral. On others, one can see icebergs, oil slicks on the ocean surface, etc. There have been reports of objects of a few decimeters in length or width being visible on such photographs. These reports are based on accurate technical data: film of exceptional grain, sensitivity, and speed, and cameras with a focal length of several meters. Without claiming to replace reconnaissance by aircraft, the satellite does have the advantage of being able to fly over any territory in peacetime and cover immense surface areas within a reasonable period of time.

Whether it be by aircraft or satellite, it is common practice to operate on several wave lengths of visible light or infrared by means of colored filters, (1) thereby making it possible to detect or identify new details. With this technology, it has been possible to determine ocean areas rich in plankton, or chart the course of a river extending into the sea. Photos taken at night bring out in sharp relief those objects with higher external temperatures. With such satellites, it is possible to detect heat sources of a certain intensity on the earth's surface. Hence no rocket launching can escape their notice. Certain infrared radiations are detectable at night, in all kinds of weather, and even through cloud layers. (2) Television has now been added to the range of techniques

FOR OFFICIAL USE ONLY

## FOR OFFICIAL USE ONLY

commonly employed in air reconnaissance. Aircraft equipped with high-resolution cameras (945 lines in one known case) are capable of transmitting images in real time. The same is true with pilotless aircraft, missiles with command guidance or homing guidance systems, and also satellites such as the first Tiros (observation satellites with television and infrared capabilities).

As we can see, there are many ways of observing what is happening above or near the surface, and there is no doubt that remarkable results are obtained. Nor is there any doubt that these various techniques have their limitations. They are limited first by the requirement for more or less favorable weather, propagation, or other conditions; secondly by the quality of the methods and equipment employed; and lastly by the existence of countermeasures. Consequently there is no assurance that satellite imagery will always be up to rated performance standards. Successful imagery through several hundred kilometers<sup>(3)</sup> of the earth's atmosphere requires specific conditions: clear, dry, or calm weather, contrast, etc. From a geometric standpoint, development has gone as far as the current state of the art permits in increasing the photographic scale--minimal altitude, maximum focal length--but at the same time, coverage has been reduced. The same situation applies to photographs taken from aircraft: by descending lower, certain constraints are avoided and the scale is increased, by the surface area covered is reduced. Furthermore, there are always more or less lengthy intervals of time between two successive observations and, as a result, a fleeting or moving phenomenon is likely to escape detection. The probability of detection, and simultaneously the capability of identification, can be enhanced, of course, by submitting an area to several complementary types of observation. But this requires more resources and greater expenditures, so that, in practice, it is impossible for one country, even a very powerful country, to maintain surveillance of everything all the time and by every means. This is why on certain critical occasions the Soviets have launched an increased number of satellites. For instance, during the Indian-Pakistani war of 1971, eight Cosmos satellites, six of them photographic, were launched within a period of 3 weeks. And during the Arab-Israeli war of 1973, eight Cosmos satellites were launched in 2 weeks. The fact that the United States did not step up its satellite launchings on those two occasions does not invalidate these examples. Actually the United States uses much larger satellites which it generally does not have to recover to collect their data, because either their imagery is transmitted in the form of radio signals or the exposed film is returned to earth, upon command, in jettisonable capsules.

These different methods focus attention on one important point, namely the time it takes before the information obtained can be put to practical use. For instance, while it does take time to bring a satellite back to earth or even to recover film capsules, the transmission of imagery by electrical signals is much faster. A photo reconnaissance aircraft has to return to a suitable base, but this is no longer necessary for a guided

## FOR OFFICIAL USE ONLY

missile or remotely piloted vehicle transmitting live television pictures that can be retransmitted great distances by relay satellites. These examples are sufficient to give one an idea of the great variety of possible methods. Nevertheless, apart from limited tactical uses, there is always a lapse of time between the observation of an event and its exploitation, and it may range from a few minutes to several days. American early warning satellites would need at least 90 seconds to detect a rocket firing, but this information still has to be transmitted and exploited.

The first countermeasure employed against air reconnaissance was camouflage. At the present time, use is being made of synthetic materials that exhibit for infrared film the same characteristics as the ambient medium or environment: it is the surface of an object that reflects solar energy within the "photographable" bands of visible light and close infrared light. Beyond these wavelengths, radiometers or spectrometers can detect, within the limits of the atmospheric windows, infrared radiation emitted (and not reflected) by the surface of warm objects and solely by their surface.<sup>(4)</sup> Generally speaking, the methods mentioned here--visual, photographic, and television--are limited to the vicinity of the surface and are liable to such countermeasures as camouflage and decoys. It is possible, in particular, to saturate, to blind infrared cameras or infrared sensors by deliberate emissions in appropriate wavelengths. The best proof of the inadequacies of observation is that American-Soviet arms limitations agreements apply to only certain types of equipment. For instance, the number of silos may be verified but not the number of missiles. The possible effectiveness of countermeasures is acknowledged in that each of the parties "promises not to interfere with the other's national technical facilities." The transmission of television signals by relay satellites furnishes another illustration. Advances made in this field could enable ordinary television receivers to pick up broadcasts throughout the world. This would mean internationalization of news programs, propaganda, etc. The USSR had the United Nations impose controls on direct television broadcasting by satellite. On that occasion, the USSR hinted at possible countermeasures, including some in space. In plain language, this means the jamming of broadcasts and possibly the destruction of relay satellites. In fact, it is common knowledge that interceptor satellites have been tested. Such satellites are capable of destroying, or inspecting, other satellites in orbit.

Radio and radar transmissions are subjected to very close monitoring on the surface of the globe. They are intercepted and the position of their transmitters is located. They are analyzed and recorded not only by satellites but also by a great number of aircraft, ground stations, and ships. The most famous of such ships is probably the U. S. Navy's Pueblo which was seized and impounded by North Korea in 1968. This misadventure should not make anyone overlook the presence of Soviet

## FOR OFFICIAL USE ONLY

intelligence trawlers that continuously crisscross the seas of the world. Above all, it must not make anyone overlook the fact that many of these methods are not limited to just a few nations, but that warships and combat aircraft possess, at least at the tactical level, observation, surveillance, reconnaissance, and countermeasures capabilities that make the surface of the oceans a highly active area in this respect. Such activity may include detection, position finding, gathering information carried by radio waves and radar signals, or determining the very nature of those waves and signals so as to know how to counter them effectively at the proper time. These two aspects, radio and radar of electronic warfare were covered in sufficient detail [in a previous article] from the submarine standpoint<sup>(5)</sup> that here we need only recall how the submarine can shield itself from electronic warfare measures by submerging, and also the risks it takes when indiscreetly surfaced. It should be noted, in this connection, that the Russians and American have ocean surveillance satellites equipped with radars, infrared and other types of radiometers which enable them to plot ocean currents, determine sea conditions, etc.

The United States and the USSR are currently the only countries employing methods and equipment quantitatively and qualitatively adequate to inform them, before other countries, of what is happening all over the world. These two powers will detect, sooner or later, any fairly large ground installation and any activity of some duration. Even though other countries have lesser capabilities in this field, they can still detect any breach of security discipline by a surfaced SSBN, indeed even when it is submerged near the surface. Yet the thicker the layer of protective water, the lower the risk. In fact, it does appear that, as things now stand, an SSBN running deep completely avoids detection by the surveillance methods mentioned herein, methods applicable mainly to phenomena in the atmosphere or on the earth's crust. This does not mean, quite the contrary, that one should disregard their underwater penetration capabilities. It would be inaccurate, however, to say that they have made the great ocean bodies transparent. It would be even rash to say that advances made in these methods will necessarily be detrimental to the SSBN weapon system.

## Strategic Nuclear Forces

The SSBN weapon system is not safe a priori from ballistic missiles or strategic bombers. The range of SLBM's [Sea-Launched Ballistic Missile], destructive power, accuracy, velocity, and number were discussed earlier [in a previous article]. Still it may be useful to note that the United States and the Soviet Union have more than 1,000 ICBM's, not to mention their shorter-range strategic missiles. The bomber is the only one of the triad's three delivery means whose number has decreased. But there are still hundreds of long-or medium-range bombers in service: more than 400 American, approximately 800 Russian, plus the 48 British Vulcans. Some of their performance characteristics are noteworthy: the B-52 has a (maximum) effective operating range of 20,000 kilometers and the Tupolev Backfire is said to have a maximum speed of Mach 2.5.

24  
FOR OFFICIAL USE ONLY

## FOR OFFICIAL USE ONLY

Are strategic nuclear forces capable of preventing an enemy SSBN from firing? This obviously raises the question of the second strike capability of SLBM's, a question whose terms vary greatly depending on the component of the weapon system targeted by the FNS [Strategic Nuclear Forces]. Apart from the case of a sort of preemptive bombing of a geographical area, a case to be discussed later, the target's position has to be known with a certain accuracy. This accuracy is more difficult to obtain when the target is mobile: communications between the intelligence services locating the SSBN, the command authority making the decision to destroy it, and those forces assigned the destruction mission, all take a certain amount of time that is likely to cause some uncertainty about the target's actual position. Admittedly the integration of technical facilities or the delegation of responsibilities can reduce this amount of time, but it appears impossible to eliminate it completely. An SSBN's vulnerability can differ greatly depending on its location, in other work, whether it is in port, at sea, on the surface, submerged, etc. The weapon system's shore-based installations should be easy targets, however, although a distinction must be made between large, conspicuous support facilities and certain small, interchangeable, and indeed mobile facilities. It is certain that installations handling communication between the high command and the submerged SSBN are among likely FNS targets, as is also the high command itself, because their destruction or neutralization would affect the system's functioning. An operational research study has been made of the nuclear bombing of a vast and deep ocean area.<sup>(6)</sup> From this study it emerges that 60 27 megaton bombs "would be sufficient" to cover the Barents Sea and Kara Sea, lethally destroying the submarines submerged therein. Regardless of what one may think of this possibility, it does have the merit of drawing attention to a few of the SSBN's essential vulnerability factors: necessary number of SSBN's, dispersion of their firing positions, selection of patrol areas and transit routes. Moreover, no possibility should be excluded without thorough examination, even the possibility of employing SLBM's against enemy SSBN's.

## Other Means of Attacking On and Above the Surface

In addition to strategic nuclear forces, there are numerous other means of attacking the SSBN weapon system on or above the surface: air warfare and electronic warfare, land-based or carrier-based forces capable of sabotage and destruction with such means as guns, missiles, or bombs, without excluding tactical nuclear weapons. The targets remain the same as those attacked by strategic nuclear forces. There is one basic difference, however, namely that it becomes possible to defend these targets by means adapted to those employed by the attacker and related to the security of installations and forces and no longer to the strategy of deterrence. Even if this security is not total, it may be deemed satisfactory as long as the SSBN's nuclear strike capability remains secure.

FOR OFFICIAL USE ONLY

A second difference stems from the fact that in order to counter the weapon system's mission it is not necessary to attack the system with weaponry. Electronic countermeasures are sufficient, mainly the jamming of signals transmitted to SSBN's. The technical capabilities of jamming are well-known and the armed forces of certain powers have highly elaborate equipment: mobile radio direction-finding stations, airborne jammers, etc. Some of these devices have the capability of both locating and destroying a transmitter, or jamming its emissions. There are also counter-countermeasures: mobility of transmitters, changing frequency or modulation, attacking jammers, etc. These are the oldest and probably the best known tactics of electronic warfare.

The means examined here are designed in principle for targets on land or on the ocean surface. They have very little chance of being employed in directly attacking an SSBN out of port.

Although still effective on an SSBN leaving port or on one that has involuntarily surfaced, these means give way to specialized ASW forces and equipment the moment the submarine has submerged.

Fixed Underwater Surveillance or Interdiction Systems

It is relatively easy to submerge, even in deep water, hydrophones linked to a central shore-based station where the acoustic signals received are processed and exploited. The noisemakers thus detected can be tracked, and to some extent, identified by their acoustical "signature." It is possible in this way to establish surveillance networks covering geographical areas within which the subsurface traffic situation is known at all times. If the source of the sound is strong enough, the submarine noisy enough, the hydrophones can pick it up at a range of tens of nautical miles depending on propagation conditions. Much greater ranges can be obtained via favorable sound channels that have to be sought frequently at great depths. At such distances, however, the source of the noise may probably not be accurately located. Geographical underwater surveillance networks stretch along the coasts of the United States and extend beyond them to Canada, the Bahamas, and probably elsewhere. The United States has been spending large sums on such systems for years now. There are similar systems in the Barents Sea, a strategic area of prime importance to the Russian Navy. Others of a more localized or point character are probably installed in various appropriate spots, such as the mouth of the River Clyde, for example. These systems are subject to various limitations. Their scope is restricted somewhat by the distance of the hydrophones from the shore data-processing stations. That is why in the United States these networks have been augmented by mobile systems. These are "passive linear systems" towed under water by surface vessels. Their detection data is processed by the shore station in the same way as data from the other systems. Furthermore, the systems have limited power of discrimination: it is relatively easy to distinguish a submarine from another noisemaker, but it is more difficult to

FOR OFFICIAL USE ONLY

distinguish between two classes of submarines of nearly similar displacement and design. Lastly, hydrophones are not insensitive to bad weather, to countermeasures (decoys, explosions, etc.) and their performance in shallow waters is considered mediocre.

On the other hand, shallow waters are mine warfare's privileged domain:<sup>(7)</sup> ground mines, moored mines, magnetic mines, acoustic mines, pressure mines, and contact mines can be laid so as to make certain areas dangerous or else bar narrow passages. In this latter role, mines can be associated with obstructions, barrier nets, etc. In shallow waters it is also possible to lay magnetic detection loops linked to shore stations to which they report the passage of any ship with sufficient magnetic field.

At the Law of the Sea Conference held in Caracas in 1974, Mexico proposed a ban on the installation of military devices by foreign countries on another country's continental shelf. Regardless of what may become of this particular proposal, the extension of fixed underwater surveillance systems will most likely be subjected to political constraints. It will be recalled, in this connection, that the treaty banning nuclear weapons from the seabed does not apply to SSBN's.

All things considered, it is certain that a country has the right to prohibit subsurface navigation within its territorial waters and is entitled to detect offenders and even bar them from the shallow part of those waters by permanently installed devices. It is equally certain that a country can keep itself quite accurately informed about subsurface traffic by fixed surveillance systems well beyond the customary 12-nautical mile limit of its territorial waters. Moreover, it can legitimately assert, for economic reasons, the right to maintain surveillance of the contiguous sea area out to 200 miles from its shores, but the quality and accuracy of this information declines with distance until it is ultimately reduced to merely a few random and inaccurate detections.

#### ASW Weapon Systems Carried by Surface Ships

Surface combat ships contribute to barring submarines access to ocean areas by employing radars and radar detectors, radio monitoring facilities and visual surveillance, and the threat of guns and missiles. At the same time, some of these ships, ASW destroyers (or destroyer escorts and frigates) endeavor to seek out and sink submerged submarines by means of weapon systems combining a sonar unit and a weapon as a bare minimum.

Like submarines,<sup>(8)</sup> ASW destroyers generate various noises which surface turbulence tends to intensify and make more frequent: movement of the helm, variations in the speed of propellers, and erratic flow of the water.



## FOR OFFICIAL USE ONLY

Since destroyers have rather noisy propulsion systems--reciprocating engines, diesels, or steam turbines--and, moreover, are visible on the surface, the tendency was to ignore noise and security discipline and make unrestricted use of active sonar. The search for increased sonar ranges ultimately led to the use of low frequencies and higher transmitting power. Present-day sonar units are readily capable of using resurging sound waves far from the ship and some very powerful units resort to waves reflected from the ocean bottom. Active sonar range depends on the perceptible dimensions of the target and varies considerably with propagation conditions, and to such an extent that any figures claimed for this range are highly debatable. It is not entirely false, however, to say that high-frequency hull-mounted sonar equipment has a normal range of 2,000-3,000 meters on a submarine sound while low-frequency sonars have ranges of 6-7,000 meters, and under favorable conditions, 10,000 or more meters. Lastly, the powerful range of a low-frequency sonar can extend the 20-30 nautical miles in a resurgence, and much further for certain units using reflections from the ocean floor.

Mounted under the hull--as is still generally the case--the sonars of ASW destroyers follow the hull's frequently abrupt movements, remain close to shipboard noises, and are subjected to propagation conditions within the thermal layer. To free the sonar from these disadvantages, it was decided to tow its transducer at a certain depth. Furthermore, propulsion systems are changing: variable-pitch propellers, gas turbines, low compression ratio diesel engines, and nuclear reactors have already made their appearance. Lastly, movement of the platform has been reduced by mechanical stabilization equipment, thereby enabling the destroyers to employ certain weapon systems. But the introduction of towed linear surveillance systems apparently promises to orient the detection effort, and perhaps submarine warfare itself, in a new direction. These systems are passive sonars consisting of a long towed array of hydrophones strung out at some distance--several hundred meters--behind the ship and under water at a depth that has not been made public but which, in any case, keeps them away from the wake and the surface. In this way, it is possible to pick up very weak acoustic signals, including those in sternward directions that are generally unfavorable in this respect. Range depends naturally on the noise generated by the submarine, but it is definitely a matter of miles, and under exceptional propagation conditions, of tens of nautical miles. These ranges depend also on the noise generated by the destroyer itself. Hence it is reasonable to assume research will be directed to developing quieter ASW destroyers, thus permitting them to make still further use of passive detection equipment.

Detection is not sonar's only function, nor is range its only interesting characteristic. Identification is another of its functions. Not only the quality and displacement of the echo can contribute to identification,

## FOR OFFICIAL USE ONLY

but also the submarine's tell-tale noises--propeller's beat, sound spectrum's characteristics--that can furnish a sort of acoustic signature. After identification comes the attack. Again the sonar must furnish the course, speed, and depth if possible, of a target that is never visible. On the basis of this information, a fire direction center will then prepare firing orders and data for the weapons.

A certain uniformity is necessary between the range of the sonars and the range of their associated weapons: depth charges, rockets, and torpedoes. Conventional explosive depth charges are launched out to distances of 1,000 to 2,500 meters, depending on the mortars (launchers). After a slow descent, they explode at a preset depth. They have a "kill" radius of approximately 200 meters. In an effort to increase these ranges and reduce time to target, and consequently surprise the submarine, rockets (air homing) were employed, and then ASW torpedoes. Some of these so-called "heavy" torpedoes are fired directly from ASW destroyers. Their ranges are generally 10,000, 20,000 and even 30,000 meters, with speeds of 30, 40 and even 50 knots. The shorter ranges obviously correspond to the higher speeds. Given the fact that a submarine can travel at 30 knots and hear a torpedo coming from afar, the torpedo is not really dangerous unless fired at close range. Hence it is necessary, once again, to shorten the time to target if the submarine is to be surprised. To accomplish this, navies are employing light torpedoes, carried to a position directly above the submarine by either a helicopter or a missile, at times supersonic, with a 6 to 10-nautical mile range. Both the heavy and light ASW torpedoes have active acoustic homing guidance, a small sonar designed to lock on to the submarine when arriving near it and then guide the torpedo to the submarine despite the latter's evasive action. A good ASW torpedo ought to be able to track any submarine down to its maximum operating depth, a capability that apparently only the most modern torpedoes possess. The United States and the USSR also have nuclear depth charges with an estimated submarine kill radius of 2-3 nautical miles. Such depth charges are a way of eliminating the need to know a submarine's exact location, but their employment remains subject to tactical and meteorological restrictions, and much more so to political constraints. These nuclear depth charges would be launched by a long-range missile: ASROC [U.S. Antisubmarine Rocket], SS-N-14(?) [Soviet cruise or winged missile].

Countermeasures can, of course, be taken against ASW weapon systems: silence, decoys, and anti-echo coatings effective against sonars, and evasive action against weapons.

ASW destroyers do not have either the speed or endurance of their nuclear adversaries. Furthermore, the limited room they have and their instability are such that their sonars do not perform as well as fixed hydrophone systems. Yet, in addition to their ability to take action above the surface, they have subsurface acoustic detection and attack capabilities that are generally well integrated into one or more systems. Their value stems

## FOR OFFICIAL USE ONLY

from the grouping of all these capabilities upon a single mobile, rugged and durable platform, and the resultant rapidity of action. There are numerous ASW weapon systems carried by an extreme variety of ships, and all navies have not reached the same stage of achievement or even know-how in this field, much of which is kept secret. It appears reasonable to believe the United States is ahead of all other countries in detection capabilities as well as in weaponry. From a quantitative standpoint there are hundreds<sup>(9)</sup> of surface ships with an ASW capability: cruisers, frigates, corvettes, gunboats, destroyers, and destroyer escorts of which--the heavier ones--are exclusively or primarily ASW-oriented. Naturally, the two superpowers lead all others, but Japan and Great Britain, with some 60 ASW destroyers, and France, with some 40, have a significant number.

## ASW Aircraft

Naval aircraft--maritime patrol aircraft, ASW helicopters, and carrier-based ASW aircraft--also have many means of taking action on the surface. But at least two devices permit them to penetrate the subsurface medium, namely sonobuoys and magnetic anomaly detectors (MAD).

Dropped from a helicopter or airplane, the sonobuoy separates into two parts: a float and a sonar unit. The float carries the radio transmitter that relays signals detected by the sonar to the aircraft. The sonar is connected to the float by cable and descends to a preset depth. Generally there are two possible depths: one is 15-20 meters against submarines at periscope depth, the other is several hundred meters, so as to get below the thermal layer. This active or passive sonar is not disturbed by noises generated by the float, but its small size<sup>(10)</sup> limits its performance, particularly in heavy seas. Another method consists in having the aircraft drop an explosive charge whose sound wave is reflected back from the submarine and is detected by a suitable buoy. Sonobuoys are usually employed in groups either to track a fast submarine or to place a barrier in its path.

The MAD is essentially a magnetometer whose sensor element is mounted in the tail of the aircraft or skims along the top of the water, drawn by a helicopter. At the present state of the art, it does not function in seawater. It is considered to have a short range<sup>(11)</sup> which depends, of course, on the intensity of the "anomaly." For a medium-sized submarine, this detection range is probably a matter of hundreds of meters rather than thousands of meters.

Maritime patrol (PATMAR) aircraft are heavy land-based aircraft, but specialized in naval warfare. Capable of remaining in the air for very long periods--20 hours in some cases--they can operate at great distances from their coastal bases, 600 or even 1,000 nautical miles. The electronic warfare equipment, missiles, bombs and mines they carry, enable them to fully participate in surveillance of maritime areas. They are also armed

FOR OFFICIAL USE ONLY

with specific ASW weapons--depth charges and torpedoes--associated with MAD and sonobuoys.<sup>(12)</sup> Throughout the world there are some 700 to 800 PATMAR aircraft: Breguet Atlantique, Lockheed Orion, Ilyushin-38, Hawker-Siddeley Nimrod, and the Soviet Beriev 12 and Japanese PS-1 airplanes. The largest number belong to the nuclear powers: 300-400 to the United States, about 200 to the USSR, some 40 to France, and about 30 to Great Britain. The United States can also employ an additional 100-150 ASW aircraft from carriers. Although they are lighter and have less endurance, carrier-based aircraft do have the carrier's mobility, thereby enabling them to operate in areas inaccessible to PATMAR aircraft.

Helicopters are relatively slow and have limited operating range when compared to aircraft. Their advantage, however, is that they can operate from smaller ships, such as helicopter carriers designed specifically for that purpose, or even regular destroyers. In addition to MAD and sonobuoys, ASW helicopters carry a sonar they can submerge while hovering, and such associated weapons as depth charges or torpedoes.

Despite the stabilizers on certain ships and the imposing size of the large aircraft carriers,<sup>(13)</sup> the operation of carrier aircraft may occasionally be impeded by sea conditions. Such is the price--admittedly small--paid for extreme strategic mobility. Carrier-based or not, ASW aircraft and helicopters have short or unreliable subsurface detection ranges. But vis-a-vis the submarine, they do have great speed and, with the present status of weaponry, almost total impunity.<sup>(14)</sup>

#### Submarine in the ASW Role

The submarine's first role was attacking warships. It was quite natural that this role be extended to encompass enemy submarines whenever they laid themselves open to attack on the surface or even by simple lack of periscope discipline. Attacking completely submerged submarines was an altogether different story, and it was not until the development of sonar that simple tracking became possible. During World War II, certain sonar-assisted attacks were made but there apparently was never any claim made of a successful attack achieved solely by use of sonar. What would this situation be today?

Because it can choose, within certain limits, its depth and avoid the doubly detrimental turbulence of the surface, the submarine is predisposed to passive sonar. And there are passive sonars, of the "towed linear system" type, designed for use by submarines and capable of being employed when completely submerged. These systems and other more widely-used passive sonars, such as the French acoustic rangefinder, make it possible to obtain, at least under certain conditions, the noisemaker's range at the same time as its bearing, and also determine its nature, if not identify it. It is plain to see that the submerged submarine can, without a breach of security discipline, obtain accurate information on what is happening in the liquid medium surrounding it. It should also be noted that the noise generated by the submerged submarine may well be detected by another

FOR OFFICIAL USE ONLY

FOR OFFICIAL USE ONLY

submarine without the noisemaker's knowledge. It is in each submarine's interest, therefore, not only to improve its use of sonar but also to reduce its own noise. Besides it is much easier to listen when one's own submarine is silent.

The torpedo, the submarine's favorite weapon, has acquired unquestionable ASW capabilities. The most remarkable of the submarine-launched ASW torpedoes<sup>(15)</sup> is the American Mark 48 previously mentioned as part of the SSBN's self-defense armament. But for most torpedoes currently in service, it seems reasonable to count on much more modest capabilities. A "medium-changing" air-water nuclear missile has been added to the arsenal of American and Russian submarines: the American SUBROC [Submarine Rocket] and the Soviet SS-N-15. SUBROC is launched from the submerged submarine's regular torpedo tube, emerges from the water, maintains a supersonic, inertially-guided rocket trajectory until it reaches the target area where it releases its nuclear warhead that then descends into the water to a predetermined depth and explodes. This missile is equipped with a BQQ-2 or BQQ-5 sonar system and has a 30-mile range. These weapons--torpedoes and air-water missiles--are designed to be fired against a noisemaking submarine, because all firing data--bearing, range, course, and speed--are obtained solely by sonar.

Even though the problem of identifying the noisemaker is probably not completely solved, we may assume that, from a technical standpoint, combat between totally submerged submarines is now possible. In the absence of individual identification, it is relatively easy for the superpowers to separate friendly and enemy submarines geographically, since each power knows the location of its own submarines, but such separation is tantamount to barring its own and also third-party submarines from certain areas.

"Be quiet and listen closely to others." Such appears to be the golden rule for submerged submarines, no matter who they or their adversary may be. Because the conventional submarine spends a significant part of its time recharging its batteries with its diesel engines, thereby making it both noisy and deaf, it has no hope of winning in this game. Yet, there are still many conventional submarines in service throughout the world, nearly 150 of these in the USSR, and their anti-SSBN employment cannot be ruled out, particularly in waters not too far from their own bases. On the other hand, nuclear attack submarines (SSN) appear to be perfectly suited to the anti-SSBN role. SSN's have all the qualities of the nuclear submarine. They can carry the same detection gear and approximately the same ASW armament. The SSN has lesser displacement (4,000-7,000 tons), though the trend is to increase this tonnage. At the same time, however, the more recent SSBN's have a displacement of 10,000 tons. In a face-to-face confrontation between two submarines, large displacement is certainly not an advantage.<sup>(16)</sup> It offers a bigger and less maneuverable target. The SSN is reportedly faster than the SSBN as a general rule. How do their silent-running speeds compare? The answer, if it were known, would

FOR OFFICIAL USE ONLY

FOR OFFICIAL USE ONLY

vary with the adversaries compared. In fact, there is no longer much in common, in this respect, between the first SSN's--the American Nautilus or the Soviet N--and the very recent Los Angeles. It may reasonably be estimated that the Americans are in advance of the others in sonar and ASW torpedo development. It must be noted also that all SSN's are not designed for the same primary mission. For instance, 45 of the 85 Russian submarines of this type carry SS-N-3 or SS-N-7 cruise missiles as their primary weapons, and are, therefore, not predisposed to ASW, despite the torpedoes they also carry.

All things considered, while it is possible to conclude that the SSN represents a dangerous adversary for the SSBN, it cannot be said that one has assured superiority over the other. A great deal depends on the class of each of the opposing vessels and in a more general way, on the circumstances of their encounter. In any case, it can be said that in a battle between two nuclear submarines, neither one would enjoy the advantage their common character gives them over surface ships and conventional submarines. With the exception of China, which has only one SSN about which little is known, only three countries are capable of marshaling SSN's: the United States, the USSR and Great Britain.(17)

#### Cooperation Between the SSBN's Different Enemies

Maritime patrol aircraft and carrier-based aircraft and helicopters have the mission of working with ASW ships. All have the equipment--radio, radar and navigational--necessary to cooperate effectively and fully. ASW aircraft, helicopters, and destroyers constitute a wide range of more or less complementary combat means, whether it be when responding to different incidents or when reinforcing each other in the same incident. As a result, the overall effectiveness of an ASW group of naval aircraft and surface ships is certainly greater than the sum of the effectiveness of each of its components. It is relatively easy, by marshaling these means into a well-balanced unit, to obtain a highly-integrated ASW instrument capable of searching, detecting, locating, tracking, and attacking a submarine, with continuity, and should the occasion arise, by capitalizing on its lack of noise and security discipline on the surface. The undersea areas they reconnoiter are rather limited, but thanks to the instrument's mobility, these forces can concentrate on choice localities.

Air and sea ASW forces are the normal instrument for the exploitation of information obtained by fixed underwater surveillance systems. Such cooperation is made possible by modern high-speed data acquisition and transmission equipment, and would be most imperative in the event of a crisis or war. But ASW forces thus employed would be more or less restricted to the surveillance system's geographical area.

The submarine in its ASW role, as in its other roles, can also benefit from information obtained from other sources. The submarine itself can also furnish information, despite the fact that its air communications

FOR OFFICIAL USE ONLY

FOR OFFICIAL USE ONLY

links lack security. But do these links permit it to cooperate tactically with ASW destroyers? Nuclear power has certainly given it sufficient speed to do so. Acoustic transmissions are certainly possible, but are dangerously lacking in security for the submarine and are of uncertain range, (18) with the result that the presence of a friendly submarine in the vicinity of an ASW force still appears to be a source of mistakes that are difficult to avoid.

There are other forms of normal or possible cooperation between the SSBN's different enemies. For instance, the strategic nuclear forces normally receive some of the data they need thanks to surface surveillance systems. But how is it possible to go beyond any necessary coordination when the parties involved, for example, the tactical forces and the strategic nuclear forces, are designed for profoundly different basic missions: the tactical forces are combat forces while the strategic nuclear forces tend to avoid combat? Obstacles to operations above the surface and operations below the surface are of a different kind. At times, the means are perfectly integrated, as is the case on board ASW destroyers and aircraft. And at times, difficulties arise in communications, respective tasks, or simply specialization.

Without wishing to exclude desirable types of cooperation, it must be said that the threshold of nuclearization, on the one hand, and the refractive surface separating the air and sea mediums, on the other, are symbols, each in its own way, of a certain compartmentalization between the enemies of the SSBN weapon system.

Comprehensive View

From this survey of the different forces and equipment capable of obstructing operations of the SSBN weapon system, one gets the impression that the old dispute about submersibles is indeed out-of-date: even the pure submarine is allowed very few incursions outside its own proper realm, namely the ocean depths, a realm now threatened by the encroachment of fixed underwater detection systems. But generally speaking, there is a certain incompatibility between distance and sonar accuracy. It also seems that developments in ASW, still mainly acoustical, prompt the destroyer as well as the submarine to maintain increasingly greater silence and move towards greater use of passive sonar. Possible advances in certain technologies such as magnetism and lasers, (19) for example, must not be underestimated. But at the present time and within a strategic space that remains extremely vast, the SSBN's secrecy and concealment appear assured, starting at a certain depth, from all of its enemies except the SSN.

Once detected, however, the SSBN is exposed to extremely effective weapons. It itself has just as effective weapons against surface forces and other submarines, the SSN's included. But it is currently incapable of attacking its air enemies. As for strategic weapons, they obviously merit being discussed separately and within the context of the system as a whole.

FOR OFFICIAL USE ONLY

Lastly, it is clear that SSBN's, like the rest of the weapon system for which they set the pace, approach confrontation under conditions that vary greatly with their nationality: geographical conditions and the quantity and quality of forces and equipment obviously influence any confrontation,

Confrontations

Each one of the enemies of the SSBN weapon system has its own specific characteristics that have enabled us to define its potential threat to this or that link in the system. But the activities of an SSBN follow a definite cycle during which it is placed in a number of highly different situations from a vulnerability standpoint: stay in port, departure from port, in transit--part of it on the high-seas--to its patrol area, in its high-seas patrol area, possible course through narrow passage, and lastly--for it must be considered--the launching of its missiles. To obtain a comprehensive view of the system's vulnerability, it is necessary to consider the SSBN's confrontation with its enemies in each one of these situations, and without thereby overlooking its shore-based support facilities. During these confrontations, it may be necessary to picture different politico-military conjunctures because these do govern in great measure the nature of the friendly and enemy forces capable of contributing to the mission's success or failure and the geographical conditions of their intervention.

Vulnerability of SSBN's in Port and of Their Logistical Support Facilities

In port, a submarine loses everything that had given it secrecy. It is visible on the surface, deprived of its mobility, and subject to air reconnaissance in the same way as the logistical support facilities surrounding it. In port, an SSBN is generally engaged in repair, maintenance, and resupply tasks that can be performed in only a small number of naval bases, a list of which can be easily compiled. On the basis of this information, its location can be accurately determined despite precautions which its size and the activity surrounding it make rather futile. It is possible, of course, to disperse SSBN's in unc customary anchorages, provided these are available. But even in this case, there is little chance that they will remain unnoticed for long.

Once its location is known, the SSBN in port is altogether vulnerable to attack by strategic nuclear forces. Protecting it against nuclear explosions appears to be even more difficult than protecting an ICBM in its silo or a bomber in its hardened shelter. It can be considered a normal counterforce nuclear strike target in the same way as other components of the system: navy yards, navy bases, weapons storage sites, logistical and administrative support facilities, etc. Such a situation is related to the general strategy of deterrence, and only the success of that strategy can provide valid protection for the SSBN in this situation. Furthermore, it should be pointed out that since these are coastal installations, the threat could more likely come from an enemy SSBN on station a short distance away, with the advantages of accuracy and



## FOR OFFICIAL USE ONLY

surprise such proximity gives its SLBM's. In fact, in attacking SSBN bases, it is not necessary to resort to ICBM's or strategic bombers refueled in flight. Medium-range bombers or IRBM's would be adequate in many instances. For example, the Soviet Petropavlovsk SSBN base is less than 1,800 kilometers from Chinese territory and 900 kilometers (500 nautical miles) from the American island of Attu in the Aleutians. The British-American Holyloch base at the mouth of the River Clyde and the Russian Polyarnyi base at the mouth of the Murmansk River are 2,500 kilometers apart via the great circle.

Against nonnuclear forces, the number, dispersion, and protection of SSBN's in port, the multiplicity of their bases, all regain their full importance, because it takes a certain number of such forces to assure success against a suitably armed and manned defense. In this case, a great deal depends on the respective strength of the opposing forces.

Because their position is known and fixed, SSBN's in port and their logistical support facilities enjoy no advantage and are no different, in this respect, from other "persons" of the triad. They depend for their security on either the overall nuclear deterrent or special security measures taken in their behalf. The fact that this state of affairs is not specific to the SSBN weapon system must not stop us from considering it here to the extent that it affects that system's vulnerability. Indeed any attack on the SSBN's themselves, or on their repair, maintenance, and supply installations would likely have an impact on the nuclear strike capability in the short or long run. On the other hand, their destruction, even total destruction, would not immediately interrupt this nuclear strike capability. The country attacked could, in effect, under certain conditions, retain use of its SSBN's at sea for weeks and even months. We have already<sup>(20)</sup> seen that the SSBN exercises its deterrent power fully and directly only when on patrol. We now know that it enjoys no special privileges when in port. Its employment is curbed when in this position.

#### Vulnerability of Command and Control System

Another component of the SSBN weapon system is the command and control system. Like the SSBN logistical support system, it encompasses land-based facilities. But from a vulnerability standpoint, it differs fundamentally from the logistical support system in that its destruction might well immediately interrupt the weapon system's strike capability, SSBN's on patrol are actually at the end of a communications net for the issuance of orders. This net originates with those top-level officials who have sole authority to approve the use of nuclear weapons, and then extends through transmitting stations to the submerged submarine. Any break in the net would make it impossible for the SSBN to receive the order to fire. At worst, interruption of all communications with all SSBN's at sea would be tantamount to crippling the entire system, at least temporarily.

## FOR OFFICIAL USE ONLY

It is difficult but not impossible to camouflage, bury, alter, in short, keep a command post site secret. On the other hand, it is impossible to mask the existence of fixed long- and very long- wave antennas, some of them several hundred meters high. The same is true about antennas suspended from tethered balloons and erected only as needed. In contrast, mobile transmitters like those installed in aircraft--U.S. Navy C-130's--can pass relatively unnoticed among other aircraft and move all over the world. They can even compensate for their lower transmitting power by flying close to SSBN patrol areas (with sufficient precautions so as to avoid giving any clues on the location of these areas). Long-wave transmissions are not the only ones a submerged submarine can receive. By raising an antenna above the surface of the water,<sup>(21)</sup> it can also receive short-wave transmissions, though possibly with less reliability. A short-wave transmitting facility is something much less elaborate, less expensive, and easier to conceal than long-wave transmitters. It is not much more discreet or unobtrusive, however, the moment it begins transmitting.

Once their location is known, command, control, and communications installations are far from being invulnerable to a nuclear attack. But they can be hardened, buried deep underground equipped with retractable antennas and underground wire communications, etc. It must also be noted that the Russians and Americans have agreed by treaty to each have two defensive nuclear antiballistic missile sites: one for retaliatory weapons and one for the national capitol, the preeminent command and decision-making center. Providing it is limited to a few areas, which is the case, this defense can be effectively maintained by the two superpowers. In any case, the keen desire to preserve deterrence is apparent in this agreement. Admittedly the agreement is a commitment made solely by two powers to each other, but even if one country deliberately wanted to launch a first strike denying another country any retaliatory capability, it would have to destroy all of the target country's communications or all of its command centers simultaneously. This simultaneity appears to be quite difficult to achieve if the command centers are numerous and interchangeable, if the communications systems are made redundant and separate by their frequencies, circuits and kind of procedures, in short, if the overall system's structure is not like that of a single line that can be cut at any one spot, but like a flexible and unpredictable grid. As an example, the United States and the USSR each operate some 10 ultra long-wave transmitters on their territory, to which must be added the U.S. Navy's 14, known, airborne transmitters.

Command and control systems are not only liable to strategic nuclear attacks but are also threatened by "other means": raids, bombing, sabotage, jamming, etc. A defense can be organized against such means and the stakes involved are so high that a considerable effort in that direction is warranted. This is a priority matter that transcends the SSBN weapon system and applies to the strategic nuclear forces in their entirety and to all those persons and installations capable of putting those forces into action. Yet, even if the funds and effort allotted to securing installations and persons were inadequate, the attacker would still not

## FOR OFFICIAL USE ONLY

be sure of achieving simultaneous destruction. How can combat operations whose outcome is inevitably uncertain be coordinated between themselves and also with the operations of the strategic nuclear forces in such a way as to obtain total success everywhere? Jamming, even when coupled with the use of direction-finding equipment to locate the transmitting stations, is also plagued with problems. Jamming long-wave and short-wave transmissions are two different things. Transmitting powers involved are on the order of 1 to 100, wave propagations are different, and distances from receiver to transmitter to jammer are important factors. The transmitter, far from taking no action, can change frequency, antenna, relay transmitters, etc., while the "jammer" must try to find the transmission once again and then adapt itself, as it were, to the transmission, with all the time this entails. It does seem, therefore, that whether it be attacks or jamming, the defender is in a better position than the attacker who, for his part, is obliged to obtain flawlessly successful results.

All things considered, each command, control, and communications facility taken separately seems highly vulnerable. In view of its importance in the dialectic of deterrence and of the fact that it must retain its capability of transmitting the order to fire, this complex of installations and persons merits priority attention from the standpoint of security and ability to survive a first strike. In particular, it is obviously necessary to multiply, disperse, differentiate, and make more flexible through mobility and agility, the circuits of a network from which it would thus be impossible to sever all links in one fell swoop.

## Vulnerability of SSBN When Leaving Port

It was no doubt necessary to recall and group, as we have done, a certain number of basic facts about the vulnerability of land-based facilities and the SSBN's themselves when in port, but the cycle of deterrent operations really begins when these submarines leave the port. The SSBN must keep its position secret, in other words, dive and begin its transit run to its operational area without allowing anyone to track it. Its necessary surface run to its dive point inevitably includes a shallow-water section in which it is liable to the enemy's offensive mines. This section is more or less lengthy depending on the port and the course taken. For example, an SSBN outbound from Polyarnyi reaches waters 200 meters deep before it has even left Soviet territorial waters. Contrariwise, an SSBN leaving Holyloch, at the mouth of the Clyde, has to cover approximately 150 miles of water less than 200 meters deep, part of which is outside British territorial waters. In all cases, a mine warfare effort has to be made, including minesweeping, reconnaissance of the seabed, mine clearing and disposal. These operations are easier when conducted above one's own continental shelf. Beyond the 200-meter depth level, the danger from mines can be said to decrease significantly.

The SSBN now has to get to a point suitable for its dive, in other words, a point that is unpredictable by the enemy, safe from prying eyes, and

## FOR OFFICIAL USE ONLY

removed from excessive commercial shipping traffic, a point beyond which the SSBN will find great freedom of movement in three dimensions. Because the SSBN can be spotted in port, its departure will be noticed within a more or less short period of time. Even though the time of its departure is not known, the place is. It is tempting, therefore, to concentrate detection and tracking forces and equipment at that place: spy ships, ASW forces, or other means. During its surface run, the SSBN is subjected to the same surveillance measures as in port, but in coping with all of its enemies, it now has a certain latitude in choosing the opportune moment. To mask its presence, it can make use of favorable weather, light, and other conditions, ruses, course changes, false departures, etc., while constantly maintaining extreme communications security. The SSBN makes its departure in its own waters with which it is very familiar, waters close to friendly bases. It is easy, therefore, to position the forces required to keep it informed of the location of other forces, to employ the most effective countermeasures, such as radar and sonar among others, to simulate or dissimulate its presence. Besides it is perfectly lawful, even under ordinary circumstances, apart from any acute crisis, for a country to purely and simply exclude foreign air or naval forces from its territorial waters. It is equally legitimate to demonstrate, beyond territorial waters, its determination to oppose any attempt to shadow the SSBN. The escort forces needed to express this determination in concrete fashion must, therefore, be kept ready to intervene. Under these conditions, no enemy surface ship or aircraft can reasonably hope to escape notice or avoid countermeasures.

The same is not true with regard to a submerged enemy submarine, particularly an SSN, whose detection is much more uncertain, and which could, thanks to its lack of noise, attempt to follow the SSBN by sonar without the latter being aware of it. But the approaches to a strategic naval base are most suitable sites for the installation of underwater surveillance systems and obstruction likely to keep a foreign submarine away. The effectiveness of these systems can, of course, be reduced by countermeasures, but in addition, the enemy submarine may be subjected to intense sound transmissions, to maneuvers dangerous to it, and even to depth charges. Such conditions are altogether explainable within the training or test areas that surround naval bases in all countries of the world. The SSN is not, however, necessarily the SSBN's enemy. It can be employed in support of the SSBN, as a decoy, or even in an extreme case, to get rid of an adversary.

There is a definite benefit to be derived from shadowing an SSBN, because the latter would then be threatened and would thereby lose most of its deterrent power. Let us assume, therefore, that, in spite of all the difficulties involved, a country does decide to initiate such a shadowing operation at the outlet from a foreign base. To do this, it has to maintain a certain number of aircraft and ships on permanent lookout. The SSBN's necessary travel from its base to its operational area is frequently

## FOR OFFICIAL USE ONLY

very long, in any case it is measured in thousands of miles. This requires an increased number of lookout aircraft and ships. In addition, for this shadowing decision to really affect the opposing weapon system, it must be applied to all combat-ready SSBN's, with each one having to be either shadowed at sea or watched for at the outlet to its base. When we consider that the United States has 41 SSBN's and the USSR 68, and that a high percentage of nuclear powered submarines are combat ready, we can gauge what an effort this would mean for a navy compelled thereby to operate far from its bases. The "defender," on the contrary, operates in close proximity to its logistical support facilities and its air and naval bases where it is free to regroup its forces as and when necessary. It is the attacker who is likely to be the first one to grow weary of a contest that is much more costly to him than to his opponent and offers him no real assurance of success in exchange. We cannot, however, rule out the possibility that a major power might openly block the exit from an SSBN base. This would create a "Cuban" type crisis and it must be acknowledged that the nuclear threshold would be reached the moment the attacked country had committed to this conflict all of the suitable forces it possesses.

It should be noted that the SSBN leaving its base is a perfect target for a counterforce strike because it constitutes a strategic nuclear capability which, to all appearances, is combat ready. But given its mobility and consequently the uncertainty about its exact position, it would have to be attacked with a massive nuclear strike. This option is not consistent with the concentration of friendly air, naval or other forces in the same area. Consequently, the SSBN can be confronted with only one or the other of the two threats at a given moment.

As we have seen, the SSBN makes its way out of port under highly varied and very special conditions but the one common aspect every departure operation has is the change it must make in the SSBN's situation: the passage from the "known" to the "secret," the capability of beginning its transit without being tracked. Except for extreme cases in which there would be a risk of triggering nuclear escalation, the success of this operation seems to be within the capabilities of even a medium-sized naval power.

#### Vulnerability of the SSBN on the High Seas

Once out of port, the SSBN dives and thereby loses, temporarily at least, the detectability it had in its previous situation. It may be assisted for an additional period of time by friendly forces who will continue to discourage possible pursuers or deceive them about the course it has taken. But it soon finds itself left essentially on its own with a mission to perform. It must first get to a patrol area within a specified time, with the course and speed requirements this entails. Sometimes it has to move through narrow passages which place it in a dangerous position.<sup>(22)</sup> At the end of this transit run, the SSBN arrives in an area where it must remain for weeks, ready to receive the order to fire and carry it out properly, which means proceeding rapidly to a precise launch point,

## FOR OFFICIAL USE ONLY

In the course of this patrol, the SSBN will come up against a certain number of devices and forces qualified to search for it, track, identify, or attack it: surface and seabed surveillance systems, ASW air, submarine or surface forces, and also strategic nuclear forces. Moreover, it will be furnished only indirect support by friendly forces with whom it has no convenient communications and from whom it can normally expect only information relayed to it by the land-based command authority.

## Its Detection

An SSBN on patrol can usually stay sufficiently removed from underwater geographical surveillance networks so as to run only an extremely small risk of being detected by those systems. Actually it is relatively easy to determine their location and their capability decreases with the distance from the coast to which they are linked. Without ruling out long-range detection, the effect of a surveillance system is primarily to restrict the SSBN's field of action and thus move it away from its land targets and deprive it of entire compartments of the ocean. These systems can be deafened, saturated, and deceived by explosions or other acoustic signals caused or generated in the open sea within international waters outside the coastal power's sovereignty, and conducted systematically enough or randomly enough so that no correlation can be established with the SSBN's movements. The best way, however, for SSBN's to regain at least part of their field of action is to be as silent as possible. In this way, they actually irreparably lessen the effectiveness, range and coverage of a costly and complex system,

The SSBN cannot operate in the same way in coping with surface surveillance systems and methods. Its breaches of security discipline relative to the latter stem from two sources: the need to recheck its navigation daily and to climb to a minimal submergence depth periodically to receive radio transmissions. The navigational check requires a very brief raising of periscope or receiving antenna. The SSBN's exposure above the surface is, consequently, minor because of its duration, geometric dimensions, and passive character. Nevertheless, on these occasions the SSBN does remain at a minimal submergence depth for a few minutes. It, therefore, runs a certain risk of detection in which weather conditions are a most important factor. Calm seas and clear skies are favorable to reconnaissance. Bad weather, fog, haze, mist, precipitation and wind favor the submarine. At any given moment, these conditions are what they are, but the SSBN can to some extent choose its own time. It can, for example, wait until night. Furthermore, meteorological conditions are a factor considered in selecting the patrol area. It does seem that as things now stand such limited exposure must escape high-altitude observation including the advanced detection techniques of satellites. The situation is quite different with respect to aircraft, helicopters and ASW ships. In a calm sea or at very short range, they can detect a periscope that is out of the water. A certain number of procedures--passive sonar, radar signal intercept--whose employment is prompted by the characteristics of the opposing forces, enable the submarine to, if not totally eliminate this type of surprise,

## FOR OFFICIAL USE ONLY

at least make it an extremely rare occurrence. To monitor long-wave transmissions, the submarine does not have to surface, even to a slight degree. All that is required is raising the receiving loop antenna to within some dozen meters of the surface with the submarine remaining much deeper. To receive shorter-wave transmissions, however, the submarine has to show an antenna on the surface. It is, therefore, placed in a position similar to the one for its daily navigational check. The only difference is that this listening operation is likely to take more time. For this reason, it should remain an exceptional and emergency procedure strictly for the purpose of improving the reliability of communications in the extreme case of an enemy attack on command installations. In handling these systematic exceptions to security discipline, there is a broad range of measures and countermeasures that must be taken. The submarine commander has to make a thorough estimate of the situation, weighing the need for such exceptional action against the risk involved in a specific set of circumstances. This risk is usually quite small because of the brevity, rarity and dimension of the breach of security discipline and the vastness of the areas in which it can occur. Nevertheless, it is a risk that must be weighed in an effort to reduce to an even greater extent.

The SSBN on the high seas, whether it be in transit or on patrol, is subject to subsurface search operations conducted by ASW destroyers, aircraft and helicopters. As long as such operations are conducted by noisy destroyers or escort ships--noise made by the ship per se and its active sonar--it can be assumed that the SSBN's passive sonar will give it sufficient warning to take evasive action before being detected, action it can take by submerging without exceeding its quiet speed. The situation would be quite different for a noisy SSBN against a silent or perhaps even stopped destroyer conducting their search operations solely by passive sonar. The area covered by search vessels in this case is very small. It is possible, however, for an ASW group to extend its search sector considerably without increasing its noisiness. It need simply employ its aircraft and helicopters that are practically inaudible under the surface. Passive sonobuoys and MAD can be used by a plane or helicopter without the SSBN even being aware of the threat hanging over its head. The SSBN has no anti-aircraft weapons and its answer to this threat continues to be silence. Such silence can reduce the small detection capability of passive airborne sonars while enhancing its own listening. The risk of acoustic or magnetic detection incurred by the SSBN also depends on sea conditions that may impede destroyers and buoys, on acoustical propagation conditions, on the competence and number of the ASW forces engaged in the search operations, and also on the timeliness of the SSBN's maneuvers and the information it receives. Admittedly, in this connection too, the choice of patrol area is important, because such choice is made with full knowledge of weather and propagation conditions, and the proximity of enemy forces. The fact remains, however, that detection of an SSBN under the sea is totally uncertain.

## FOR OFFICIAL USE ONLY

The risk of detection by an ASW submarine, an SSN as a rule, is also different. Neither of the two opponents starts out with any advantage in this game of hide-and-peek. The winner should be the one who best combines the most efficient listening with the greatest silence. Though the SSBN and SSN, as nuclear submarines, do have many characteristics in common, their respective primary missions are basically different. While the SSBN must play dead most of the time and flee if necessary, its opponent, the SSN, is required to search. In performing its search mission, the SSN has the choice of employing either active sonar or passive sonar. In the first case, its emissions will be heard from a very great distance by the SSBN which, thanks to this warning, will be able to flee in time. But since it is already making noise, the SSN can increase its speed insofar as this improves its chances of detection and lessens the warning time furnished the SSBN. This makes things especially difficult for the latter, in that its evasive action taken by submerging now has much fewer chances of success than against a destroyer. In the second case (passive sonar), the SSN will have to remain silent, otherwise it will be heard first. Its search operations will, consequently, cover very little space and it can count only on the SSBN's possible lack of security and noise discipline when attempting a high-speed escape from a destroyer, or when passing by at a noisy speed. The SSN can, of course, employ the two methods alternately in hopes that its initial use of active sonar will be within detection range. In any case, it is up to the SSN, as the hunter, to take the risks.

Some comparisons might prompt someone to attempt to calculate the risk of detection incurred by an SSBN on the high seas. First, for instance, a comparison between the duration and dimension of the breaches of security discipline and the permanence and sensitivity of the surface surveillance forces and equipment; then between the volume covered by the underwater search means and the extent of the available area in which the SSBN can take advantage of its mobility. But these comparisons vary with such weather conditions as state of the sea, visibility, etc., with propagation conditions, and more so, with the nature of the opposing forces, their number, capabilities, and tactics. Hence, it is apparently difficult to calculate the risk, even though there is no lack of quantitative data. But, in all cases, detection of an SSBN on the high seas does seem to be highly problematic. As a matter of fact, except in the case of a malfunction or damage compelling it to surface, the SSBN can choose, within certain limits, its own time for its breaches of security discipline on the surface and reduce them to very little significance by suitable maneuvers. Under the sea, its capability to remain silent and listen is apparently the most necessary element, because this enables it, in most cases, to be the first to hear and, therefore, take evasive action. Alongside these very favorable factors for the SSBN, mention must be made of the constraints affecting its freedom of action: whether it be in transit or on patrol in the vicinity of its launch point, it cannot deviate therefrom in any direction indefinitely: since it must not inordinately



FOR OFFICIAL USE ONLY

delay its navigational check or the reception of orders meant for it, it also cannot remain at the most favorable depth indefinitely. The importance of a judicious choice of patrol area is obvious. In addition to the distance from underwater surveillance networks, and the seasonal meteorological and acoustical conditions, there are other factors, such as the distance from bases, a factor that determines how rapidly ASW forces can intervene. The risk of detection can also vary greatly with the opposing countries, because of their respective geographical positions as well as their forces and equipment (satellites, for example). Nevertheless, every SSBN has one established advantage that is opposable to any of its enemies. That advantage lies in the very nature of its mission which directs it to hide.

Tracking the SSBN

If a detected SSBN manages to slip away and avoid action, then the contact-- a fleeting radar echo, a distant noise--will have been merely a momentary sign of limited value. To capitalize on this initial successful contact, the SSBN has to be tracked and then identified.

The generally discontinuous character of high-altitude observations is well-known. They are also mainly limited to what is happening on the surface or its immediate vicinity. After running the risk of having been spotted by such observations, the obvious thing for the SSBN to do is to slip away immediately in three dimensions.

In contrast, fixed underwater surveillance systems are capable of more continuity in tracking and even in identification. Their range, however, is geographically limited and this fact allows the SSBN to stay clear of them.

The situation is different with mobile forces. The ASW submarine, the SSN, can continue its initial detection without a break. Being within the same medium, it is the ideal tracker. Their capabilities above and below the surface put ASW groups of destroyers, destroyer escorts, aircraft and helicopters in an excellent position to exploit any lack of security discipline. Hence, the SSBN is in danger of being shadowed during its patrol and thereby losing the best part of its deterrent power. When conducted by an SSN, such a trailing operation could remain secret and consequently trigger no support action in favor of the SSBN. When shadowed by destroyers, however, the SSBN will try to break contact with them by, for example, forcing them to take a difficult course: into a head wind or heavy cross seas. This assumes that prevailing conditions lend themselves to such tactics but does not apply to aircraft whatever the conditions. To escape, the SSBN will have to increase its speed, with all of the noise this generates. Yet, in breaking contact, it can descent to a depth where it finds a protective layer, and shielded by that layer it can resume a quiet speed, after having launched a few decoys. It will be noted that, with the exception of the decoys, not one of these maneuvers will hinder a hunter (or killer) submarine: no difficult course

## FOR OFFICIAL USE ONLY

because of sea conditions, no layer where it cannot follow the SSBN, and the noise generated by the latter at high speed would be a stroke of luck for the hunter submarine. To qualify this advantage somewhat, it must also be pointed out that a friendly submarine (the hunter) operating nearby is a source of confusion for the ASW destroyers and aircraft.

It is obvious, all things considered, that an initial detection or contact is not enough and that subsequent tracking of the SSBN presents a few problems for the pursuers. It is equally obvious that on the basis of this initial detection, promptly and properly implemented surveillance procedures and a concentration of ASW forces will track the SSBN with better chances of success. From that point on, everything depends on the forces and equipment the "detecting" country wants or can allocate to the pursuit operation, and ultimately on the forces and equipment the SSBN's country wants or can allocate to its support. Strictly speaking, the question is no longer one of the SSBN's vulnerability but of a confrontation between two navies.

## Identification of the SSBN

It is not impossible to arrive at an estimate of the number of submarines on the high seas at a given time in a situation free of any major crisis.<sup>(23)</sup> The SSBN figure is relatively easy to determine because of the permanence of the deterrent. On the British-American side there are  $41 + 4 = 45$  SSBN's which we will consider as a single fleet. Given their endurance and two crews, half the fleet can always be at sea. A (previously mentioned) unofficial American study shows in most convincing fashion that the deterrent effect upon the USSR increases very rapidly up to the first 20 SSBN's but hardly at all above that number: 20 is, therefore, the figure we will use for the British-American SSBN's in firing position, a figure that would have to be slightly increased to account for those submarines in transit. The Soviets apparently do not use the dual-crew system. Hence we will reduce the number of combat-ready SSBN's in their fleet to 68 by 50 percent, thereby giving the USSR 17 submarines at sea at all times. The Soviets also have 22 conventional submarines armed with SLBM's. Because of their propulsion system, their combat readiness is quite reduced: three or four at sea at all times. This gives the Soviets a total of some 20 submarines at sea, or the same number as the British-American opposition. Of course, the conclusions of the study on the deterrent effect of American SSBN's upon the USSR cannot be transposed offhandedly to the reverse situation. It can be noted, however, that the vulnerability of the United States to a nuclear strike against cities is manifestly greater, that some Russian SSBN's have only a small number of missiles, and lastly, that Russian SSBN's are generally subjected to geographical constraints.<sup>(24)</sup> All things considered, it is not unreasonable to assume that the USSR is making maximum use of its deterrent potential, in other words some 20 submarines, 17 SSBN's plus 4 conventional submarines, to be specific. Counting the two French SSBN's, we obtain a total of at least 40 SSBN's at sea at all times.

## FOR OFFICIAL USE ONLY

The Soviet Navy has 66 cruise missile submarines whose apparent primary role is to attack surface naval forces: 48 are nuclear-powered (SSGN), a figure that would allow some 10 of these to be at sea at all times, plus a possible 4 or 5 conventional cruise missile submarines (SSG). This capability of approximately 15 (SSGN + SSG) is probably not fully employed. First, inasmuch as they are not part of the deterrent, there is therefore, not the same imperative reason for keeping them permanently at sea. Furthermore, statements by top NATO officials would indicate a lower number: 10, to be specific, including 9 nuclear. The U.S. Navy has 73 nuclear attack submarines (SSN). This enables it to maintain approximately 15 at sea at all times, a number equal to the number of Soviet SSBN's at sea. According to some reports, the 15 American SSN's are charged with maintaining surveillance of the 15 Soviet SSBN's. (It would be rash, however, to see a perfect correlation between these two figures.) A reasonable estimate would place 8 of the 40 Soviet SSN's and 2 of the 10 British SSN's at sea at all times. It is much more difficult to estimate the number of conventional submarines carrying no missiles (SS) that the different countries maintain on the high seas. It can be noted, however, that a large part of the 300 submarines in this category are employed almost exclusively in a very localized defensive role, because either they were built for coastal operations or their country's policy keeps them employed in this role. This is the case with the Swedish and Polish submarines that generally stay in the Baltic, or with the Bulgarian submarines that remain in the Black Sea, without excluding a certain number of Soviet submarines in both of these seas. This is why the number of these submarines on the high seas should be considered very small on the average, two or three dozen perhaps.

Except for those figures pertaining to Western SSBN's, the figures given above are obviously by no means hard and fast, but they do serve to illustrate the point that normally and at all times there may be a good 100 submarines on the high seas, three-fourths of them nuclear-powered, and among the latter, a good 40 SSBN's. There may also be a great deal more than 100 submarines at sea, in a crisis situation particularly. These numbers highlight the problem of identifying an SSBN. The fact that the latter has been detected and is being tracked does not mean it has been identified. Analyzing an acoustic signature is not within the capabilities of just anybody, or even of just any country. Submarines of nearly similar design, like the [American] Lafayette and the [Soviet] Yankee class, may have nearly similar signatures. Now one of the important aspects of a submarine's identity is its nationality, but for the super-powers, the number of units among which such discrimination must be made is very low. Of the estimated probable 100 submarines on the high seas at any given moment, nearly 40 are American and nearly 50 are Russian. Statistically, the odds are high that the submarine detected by one country belongs to the other. In addition, the area in which it is detected may be conclusive indication of its nationality: for instance, outlets into the Atlantic from the Barents Sea. Lastly, the position of submarines is not always secret: some could not exit "incognito" from

FOR OFFICIAL USE ONLY

a closed sea (Baltic, Black Sea), others belong to a military alliance. For the superpowers, therefore, uncertainty subsists in only a very few cases. In the event of a major crisis between these powers, each could actually refrain from any submarine operations in certain areas where--the few interested neutral countries having been duly informed--any submarine detected would be considered as belonging to the opposing party.

Knowing a submarine's nationality is not enough to identify it as an SSBN, and the latter point is most important from the deterrence standpoint. While it is possible for a well-organized and well-balanced air and naval group to shadow a conventional submarine until it surfaces or at least shows its snorkel, the same procedure cannot be applied to a nuclear submarine. Escorting it, while it is submerged, back to its own territorial waters would not only constitute a de facto act of anti-submarine warfare but also a political act that might involve the deterrent capability of the country owning the submarine.

Attacking an SSBN

An armed attack on an SSBN is so serious that no country would deliberately risk mistakenly identifying such a submarine. In any case, such an attack would immediately raise the conflict to the nuclear threshold. Once over that threshold, as long as the enemy maintains contact with the SSBN, the latter runs a high risk of being destroyed by a nuclear depth charge or torpedo. But it can employ its own weapons against the destroyers, and why not do so first if it detects the destroyers first? In such situations, its risk of destruction largely depends on the characteristics of the opposing forces, their weapons, speed, depth and the yield of their warheads. And all navies are certainly not on an equal footing where these capabilities are concerned. But even if it can sink a few destroyers or an SSN, avoid a helicopter, and dodge a plane, the SSBN, regardless of its nationality, is not likely to escape a concentration of these ships, aircraft and SSN's. And it may no longer be able to count on support from friendly forces,

The possible impact of strategic nuclear forces on the risk an SSBN incurs on the high seas must also be considered. On this particular point, it was pointed out earlier <sup>(25)</sup> that except for a sort of preemptive bombing of an ocean area, these forces cannot target an SSBN before having located and identified it. This procedure takes time during which unerring contact must be maintained if valid firing data is to be obtained. At the present time, the ability to maintain this contact appears to be limited solely to air and naval forces that are well-equipped for ASW operations. These forces must also have necessary communications with the high command. We are familiar with the difficulties strategic nuclear forces and tactical forces have in coordinating with each other, particularly during the time of flight of an incoming ballistic missile, 15 minutes possibly. Furthermore, the uncertainty about the SSBN's exact position may be as much as 6-7 nautical miles, thereby requiring explosive power

FOR OFFICIAL USE ONLY

incompatible with the nearness of friendly forces. Under these conditions, why not assign the mission of attacking the SSBN to air and naval forces in contact with the latter and equipped with nuclear depth charges and, in any case, with ASW weapons?

These remarks obviously make no claim to settling a debate that should encompass, inter alia, such factors as developments in high-altitude tracking capabilities and the accuracy of strategic arms in general. They do indicate that, currently and apart from very special cases, (26) it is apparently difficult for strategic nuclear forces to attack a deeply submerged SSBN, whereas ASW forces--destroyers, aircraft, helicopters and submarines--are well-suited to this task.

Partial Conclusions

The restrictions imposed on an SSBN on the high seas are very limited. Its "indiscretions" near the surface must be very few and brief. It must remain relatively close to its firing point. A few precautions in selecting its patrol area, in maintaining secrecy, and especially in controlling noise, are enough to make its detection very doubtful. Accurately fixing its position and, above all, identifying it, necessitate, almost compulsorily, maintaining contact for a certain length of time. This can be done providing suitable forces intervene rapidly. These forces would also be capable of attacking it and possibly destroying it. The importance of the initial detection and the next few minutes are clearly most important. That is when the SSBN on the high seas is liable to find its deep security compromised, a security based on secrecy.

A navy's destruction capability increases with the number of SSBN's in firing position. Simultaneously, the vulnerability of the weapon system as a whole diminishes, providing the system's elements have been discreetly dispersed. The truth is that under such conditions it becomes more and more difficult to destroy all the SSBN's and especially to destroy them at the same time. For this reason, a nation's second strike capability, and consequently the overall credibility of its deterrent, increases with the number of SSBN's it has on the high seas. This number has been estimated to be about 20 for the United States and the Soviet Union, and 2 for France. It may vary with the political situation--crash return to sea duty in a crisis situation, attrition of submarines at sea in the case of prolonged escalation--but only to a very limited extent.

Vulnerability of the SSBN in Narrow Passages

In proceeding to its patrol area, an SSBN may possibly be obliged to sail through narrow passages between shallow waters or foreign coasts, thereby giving the enemy an exceptional opportunity to concentrate its forces on this passage.

For this reason, a greater special effort may be made to assign surface surveillance systems to narrow passages, particularly those systems

## FOR OFFICIAL USE ONLY

capable of continuous operation, such as ship and aircraft radars or monitoring stations installed along the sides of the passage. Provided strict surveillance is continuously maintained there is a high probability of detecting the slightest manifestation of the SSBN above the surface. On the other hand, the SSBN can quite easily refrain from any indiscreet action of this kind for the limited duration of its movement through the passage. Its navigational check or ascent to receive radio messages can be postponed to a more favorable time. It can, therefore, stay at the most favorable depth allowed by hydrographic conditions. In so doing, it foils the surface surveillance effort.

As we have seen, subsurface detection systems can cover only relatively limited areas. This is true with respect to fixed networks that cover specific geographical regions, and true also for surface, air, and underwater naval forces whose effective detection zones are small. But the probability of detection increases very rapidly as the size of the search area diminishes. This is what happens in narrow passages. It is also possible, providing the sides of the passage are in friendly hands, to install obstructions in shallow waters and even hydrophone networks in deep waters. The surface area to be watched by mobile ASW forces is limited thereby and the risk of detection incurred by the SSBN in transit is increased proportionately, without the searcher having to pay dearly: continuous presence of destroyers and aircraft, systematic sonobuoy barriers, SSN stationed at the exit from the surveillance network, etc.

As for the SSBN, the most complete silence is not sufficient to protect it from active sonar detection, especially since it is liable not to find a protective layer because the depth to which it can submerge is likely to be limited. It is true that propagation conditions are often capricious in shallow waters and that poor surface weather can impede search operations, but there are factors over which the SSBN has no control. Nor can it wait indefinitely for such conditions to favor it, because it is bound by the requirement to reach its patrol area on schedule. Many conditions affect the possibility of detecting an SSBN in a passage: length and width of the strait, depth, climate, countries bordering the passage, etc. The impact of these conditions is well illustrated by certain actual situations. For example, a Soviet SSBN sailing out of Polyarnyi to take up station in the Atlantic has to go through two narrow passages: the Barents Channel between North Cape and Svalbard (Spitsbergen), and the channel between Iceland and the Faeroe Islands.<sup>(27)</sup> The first channel is 300 nautical miles wide, but the Svalbard archipelago extends southward in waters less than 200 meters deep to beyond Bear Island. In the remaining 200 nautical miles, jammed with ice at times, the average depth is 400 meters and the two coastlines bordering the passage belong to Norway, a NATO country. (It is true that Russians are mining coal on Svalbard, under the terms of the 1920 Treaty of Paris, and that there are more Russians there than Norwegians.) As for the passage between Iceland and the Faeroe Islands, it is about 230 nautical miles wide, but narrows to 150 miles between the 200-meter depth lines. Soundings there are rarely below 500 meters and ice is no problem. There are American bases in

FOR OFFICIAL USE ONLY

Iceland, and the Faeroe Islands are a dependency of Denmark, a NATO country, like Iceland. Another example can be furnished by an American SSBN leaving Rota near Cadiz [Spain] to take up station in the eastern Mediterranean. Undoubtedly undetected, it will pass through the deep Strait of Gibraltar not far from its base. It will then have to move through the channel of Sicily which is 80 nautical miles wide and where it is difficult to avoid depths of less than 200 meters, but whose northern shore belongs to a NATO country. Geographical conditions also have an impact on the active countermeasures that can be taken against the essentially acoustical detection systems concentrated within narrow passages. These countermeasures nearly always require support from naval forces, and with their help an SSBN could attempt to pass through undetected.

An SSBN detected inside a narrow passage does not enjoy the same freedom of action it has on the high seas, and as a result, it will probably be easier to track. Its presence in that passage is sometimes an indication of its nationality. On the other hand, its attack by strategic nuclear forces is subjected to an additional restriction because of the proximity of friendly or neutral shores.

It is evident that the probability of an SSBN being detected in a narrow passage can be extremely high. If all of a country's SSBN's could be spotted in this way and then shadowed to their firing positions, this would have a serious effect on the system's deterrent capability. In addition, in the event of war, even nonnuclear war, some of these passages, including some in international waters could be blocked, or barred by force of arms. The advantages of avoiding any narrow passage are obvious. They can be gained either by using a base that is more favorably situated from this standpoint, or by establishing a new base. The United States established forward bases in Guam, Holyloch and Rota, but it did this probably to reduce transit time to firing positions more than to avoid narrow passages. It must also be noted that it is not absolutely necessary for an American SSBN to pass through the channel of Sicily. It is already within range of Moscow when on station in the western Mediterranean, and even in the northern Indian Ocean. The situation is much more difficult for the Soviet Union which actually sorely lacks outlets to the oceans. The port of Petropavlovsk is better situated in this respect than the Arctic ports, because it provides a direct outlet to the vast expanses and deep waters of the Pacific Ocean. It does, nevertheless, have the disadvantage of being icebound part of the time. On the other hand, the existence of a forward base on Novaya Zemlya does not seem improbable. That island is far from any foreign base and well situated, at least during some periods of the year, for operations under the ice cap where waters reach a depth of several thousand meters. Navigation under the ice cap does, of course, present some difficulties, but it also provides definite assurances of invulnerability. The SSBN is practically shielded from its enemies, except the SSN and strategic nuclear forces. It can launch its SLBM's from points clear of ice. If such points are not available, it can move out to a launch point on the edge of the ice cap. Consequently, a Delta-class SSBN carrying SS-N-8 SLBM's is free to take up station under the ice cap within range of the urban and industrial centers of the Great Lakes region.

50

FOR OFFICIAL USE ONLY

## FOR OFFICIAL USE ONLY

## Vulnerability of SSBN When Launching Its SLBM's

The firing of an SSBN's missiles is envisaged in this analysis only in case deterrence fails. But the fact is that for this deterrence to exist, firing these missiles must be possible. It must be demonstrated beforehand, in other words, before having to employ them, that their destruction capability is real. How vulnerable then would an SSBN be in this very special situation of firing its SLBM's? Without discussing the antiballistic missile defense, it must be pointed out that the SLBM holds an advantage by keeping the deterred party uncertain as to its launch point. Also worthy of note is the fact that should advances in the antiballistic missile defense require it, the SSBN could move closer to its target at the very last moment so as to make interception more difficult. At that moment, the SSBN's vulnerability is viewed in a new light: it is no longer a question of survival, but indeed, for once, of making sure it fires.

There is no doubt that the SSBN could be detected once its first missile leaves the water, by different surface surveillance means: satellites with infrared sensors, airborne or shipborne radars, etc. On this basis, is it possible to destroy the launcher quickly enough to stop it from firing? The interval between the launch of two SLBM's is known to be less than 1 minute (except perhaps for the older versions). For an SSBN armed with 16 missiles--the most prevalent number per SSBN--total elapsed firing time is, therefore, less than 15 minutes. From the defender's viewpoint, however, this time must be further reduced, because if the defender were to use all of it, that would mean attacking an SSBN after it had already launched its missiles. Moreover, in a city-busting strategy, the first missiles are the most important ones, because they threaten the most "victims." In fact, an SSBN capable of launching its first three SLBM's is extremely deterrent and leaves its adversaries only 2 minutes to destroy it. To prevent it from launching half of its missiles, the defender has even less than 7 minutes. The SSBN could, in principle, cease firing after having launched a few missiles, and then run and hide. Given the post-launch submergence attitude difficulties and the time, even very limited, to get up to escape speed, it would probably take the SSBN not less than 10 minutes to be 3 miles away from the launch point, the order of magnitude of a nuclear depth charge's radius of destruction. At this escape speed, the SSBN would be audible at a great distance. As a result, its security would not necessarily be improved when it began its second series of launches. The real solution would appear to be to increase its rate of fire instead. Even a reduction in the number of SLBM's carried by each SSBN must not be ruled out. The figure 16 was arrived at on the basis of a variety of considerations that are revisable.

At all events, the total firing time of the SLBM's is very short, and that is why the strategic ballistic missile, which is certainly the fastest of the SSBN's enemies, may also be the most plausible. Assuming the SSBN is 2,000-3,000 kilometers from enemy "counterbatteries"--by no means



## FOR OFFICIAL USE ONLY

excessive, considering the range of modern SLBM's--the time of flight is on the order of 10 to 15 minutes. To this, must be added the time it takes the enemy strategic nuclear forces to receive the information (launch of the first SLBM), plus the time needed to compute firing data. It is evident that all SLBM's will have been launched before the first counter-battery missile reaches the launch point. But couldn't an enemy SSBN be assigned this mission, thereby reducing the time of flight? Even though the SSBN's primary mission does not militate for this solution, it must not be ruled out offhand. It is hard, however, to imagine the launching of the first SLBM being immediately detected and fired upon by an enemy SSBN. Communications with an intelligence activity seem necessary. This would take an irreducible period of time that would leave little time for the missile's time of flight. All things considered, the chances of strategic nuclear counterbattery fire appear very slim.

Naval forces could, for one reason or other, be a short distance from the SSBN at the moment it fired, close enough to compensate for their relative slowness. Assuming that a destroyer heads for the launcher's position as soon as the information is received: at a speed of 30 knots, it will have covered 5 nautical miles in 10 minutes. In the same period of time, a torpedo traveling at 45 knots covers 7.5 nautical miles, a distance which, at this speed, is not far from its maximum range. An ASW aircraft already airborne and traveling at a speed of 400 knots will have covered more than 60 nautical miles at 400 knots. A supersonic missile of the SUBROC type has a range of only some 30 nautical miles. It is obvious, therefore, that for one reason or the other, speed or range, these naval forces would have to be extremely close to the SSBN at the moment of its first launch to have any chance of intervening before its last SLBM is fired.

The reaction time allowed enemy forces of all types is apparently very short. Yet, the SSBN's vulnerability while firing depends greatly on another set of circumstances. If the SSBN is unleashing a first strike, the odds are that the enemy will be completely surprised. If, on the other hand, it is launching a second strike, the launcher of the first strike, aware of the danger it is in, can definitely be expected to take active measures to seek and destroy the SSBN's before they fire. These measures will include: centralization and extremely rapid dissemination of intelligence data and reports, advance delegation of authority to fire, and the most judicious deployment of all available forces. In short, reaction times will be reduced by every possible means. It is obvious that under these conditions, an aircraft carrying a nuclear depth charge, for example, would constitute a real danger for the SSBN. It must be admitted, however, that at this stage in the "proceedings," all forces would be engaged and the SSBN's would be benefiting from the actions of their own forces while simultaneously subjected to those of the enemy. Lastly, it should be noted, with reference to the effect of the strategic nuclear forces, that the enemy, having launched the first strike, has already expended at least part of its counterforce capability on other

## FOR OFFICIAL USE ONLY

targets. This reduces the threat to SSBN second-strike launches accordingly. The number of SSBN's is also a factor in this connection. But, whether it be launching a first or second strike, the SSBN that has not been detected beforehand has some time between the launch of its first SLBM and the arrival of enemy weapons. It can, therefore, fire at least its first missiles, the most deterrent ones, and the importance of destroying it lessens with each of the subsequent missiles.

## Conclusions-Prospects

From the different confrontations we have described between elements of the SSBN weapon system and its enemies, it follows that the SSBN on the high seas is in a very special and favorable position against the strategic nuclear forces as well as the other forces. In fact, shore installations, SSBN's in port, leaving port, in narrow passages, or while firing, are located or are seriously liable to be. Contrariwise, detection of an SSBN on the high seas is highly problematic. As long as it is not located, it enjoys an exceptional degree of safety. It is not a possible target for strategic nuclear forces, except in a very special case. Against other forces, it survives through secrecy, and in a way that is largely independent of the balance of forces. This part of the weapon system, in this situation, is especially difficult to destroy in that it normally includes more than one SSBN in firing position, and that all of them would have to be destroyed simultaneously: of what use would it be, from a wise deterrent standpoint, to knock out one of them, if the other SSBN's (28) still remained capable of striking a death blow?

To have such a capability, however, one other condition has to be satisfied. All the time they are in the privileged situation of being undetected on the high seas, the SSBN's continue to depend, for their firing, on a command and control system that does not offhand enjoy the same advantages. That is why this link in the chain must be made as secure so the SSBN's, a goal that can be achieved at the price of some effort.

One part of the weapon system--its logistical support facilities and the SSBN in port--is very vulnerable to strategic nuclear forces. It must be emphasized, however, that even its total destruction would not immediately incapacitate the system, because the SSBN's on the high seas would continue to maintain the nuclear strike capability, providing they remained in communication with their command authority. Another noteworthy point is that even in narrow passages, even when firing their missiles, and even when detected on the high seas, the SSBN's are not very vulnerable to strategic nuclear forces. As a result, the system's ability to survive a first strike is particularly good. In any event, it is much better than the survivability of ICBM's or strategic bombers whose locations are hard to conceal. Of course, the latter are not devoid of all mobility. Striking proof of this was given by the American strategic bombers that were kept on continuous airborne alert for several years. The United States then abandoned this practice in favor of more

## FOR OFFICIAL USE ONLY

effective and less costly procedures, so that its strategic bombers are now based on a certain number of well-scattered, well-protected airfields, but in easily known locations liable to a first strike. Even the ICBM's are not devoid of all mobility: on rails, highways, cross-country vehicles, and even in trenches. But this mobility is very limited and generally obtained at the expense of direct protection. The SSBN's, in contrast, can find in the greater part of the world the few hundred meters of ocean water that are sufficient to protect them and at the same time keep them secret. This confirms their special qualification--suggested earlier<sup>(29)</sup>--for use in the second strike, and consequently their importance to maintaining the general credibility of the deterrent.

Yet what good would it be for an SSBN to escape any nuclear strike only to then be destroyed by other forces? So much depends on the circumstances--number and quality of weapons and detection capabilities in different countries, more or less judicious employment of forces and equipment, geographical, oceanographic, and meteorological conditions--that it is impossible to overlook the risk, even if it is small, of its being detected at sea, and then tracked, identified and ultimately destroyed or prevented from firing. The only eventuality that can currently be dismissed as being very unlikely is that a certain number--still to be determined--of the SSBN's of one country will all be simultaneously prevented from firing. Sooner or later, an SSBN will have to return to base and then leave it again so as to maintain the deterrent's continuity. At that time, certain factors outside of its control, such as the balance of forces, number and geographical location of bases, will have an impact on its safety. Lastly, the importance of obligatory passages must not be underestimated. Here also the balance of forces and even more so the respective strategic positions play a major role. Patrol areas themselves depend on these basic considerations to a certain extent. This is why it would be wrong and dangerous to even think of laying down as a principle that the SSBN is invulnerable. Far from exploiting the weapon's system's exceptional qualities as if they were situational benefits, it is absolutely necessary to seek to maintain them and, if possible, expand them, in spite of adverse circumstances and the course of events.

Lastly, to judge the weapon system's deterrent capacity, it does seem necessary to put oneself in the position of the party being deterred. To do this, confrontation has to be carried to its ultimate point. For this purpose there is a "logic of deterrence" accepted by at least two countries--the United States and the USSR--in their negotiations. This logic, or if you prefer, this dialectic, is known to everyone because the two protagonists openly resort to it, even in discussions with "supporting role" countries. According to this logic, the attacker must eliminate his opposite number's strike capability, completely and in one fell swoop. If really necessary, the attacker could merely weaken that capability enough so that the damage it could still inflict upon him would be tolerable in his opinion. But he would inevitably be unaware of certain basic facts of the situation that depend largely on the adversary. Consequently in this type of assessment of the situation, the attacker

FOR OFFICIAL USE ONLY

would have a tendency to retain a safety margin to compensate for this lack of information: how could he possibly envisage with detachment the risks of a nuclear strike? Indeed there does appear to be a very high probability that a few SSBN's will be able to launch a few missiles. There may be varying views on just how high or even low this probability is, but before he makes his decision, the attacker would have to have a zero probability, or one that is very nearly zero, because those few missiles threaten millions of human lives. SSBN's do possess certain invulnerability factors that contribute considerably to the weapon system's deterrent character. It is this aspect that makes the installation of nuclear ballistic missiles on nuclear submarines a major achievement.

The SSBN's qualities of invulnerability--extreme mobility, the secrecy and protection it enjoys when submerged, the conditions the weapon system as a whole must abide by, number, reliability of communications, etc., the basic facts of the strategic situation, balance of forces, respective geographical position--are all so many essential elements of information necessary to make an assessment of the system's deterrent power or to determine the kind of forces one country needs to deter another. It is also possible to project these elements of information into the future so as to analyze, with less uncertainty perhaps, the risks that confront any development as a result of technological, strategic and political changes, and draw the immediate conclusions therefrom: urgent requirements relative to research, manufacturing capacities and budgetary decisions.

FOR OFFICIAL USE ONLY

FOR OFFICIAL USE ONLY

Table 4. Submarines in Service Throughout World, Grouped by Priority Role

Priority role	Type of submarine	U.S.A.	USSR	U.K.	France	Other countries	Total
Strategic nuclear deterrence	SSBN	41	68	4	4	0	117
	SSB: conventional submarines with SLBM's	0	22	0	0	0	22
Attacking (by missile) surface naval forces	SSGN: nuclear cruise missile submarines	0	46	0	0	0	46
	SSG: convention cruise missile submarines	0	20	0	0	0	20
Attacking SSBN's and surface naval forces	SSN: nuclear attack submarines	73	41	10	0	1	125
	SS: conventional attack submarines	10	120	17	24	304	475
Totals	Nuclear	114	155	14	4	1	288
	Conventional	10	162	17	24	304	517
	Grand Totals	124	317	31	28	305	805

FOR OFFICIAL USE ONLY

FOR OFFICIAL USE ONLY

FOOTNOTES

1. A green filter is conducive to penetrating water.
2. The corresponding bands of the spectrum are called "atmospheric windows."
3. Minimum satellite altitude is generally considered to be 160 kilometers.
4. This does not preclude an internal phenomenon, a change in temperature, for example, from reacting upon the surface. This explains the occasional reference to the detection of submerged submarines by their "thermal wake," a method which thus far does not seem to offer any promise.
5. See section entitled "Submerged Operation" [in previous article of this series],
6. Robert Kuenne, "The Polaris Missile Strike," Ohio State University Press, 1966.
7. The use of mines in deep water is not ruled out, but results are much more uncertain.
8. See discussion on acoustics in section entitled "Submerged Operation" [in previous article of this series].
9. Exclusive of small coastal vessels.
10. Total weight of an (active) sonobuoy is 15-25 kilograms.
11. The distortion in the magnetic field caused by the metal of the submarine decreases with the cube of the distance.
12. PATMAR aircraft can carry several tons of equipment for airdrop.
13. The big American aircraft carriers are more than 300 meters long and have a displacement of 90,000 tons.
14. The British Navy, however, does have a small antihelicopter missile--Sarbacane--capable of being visually launched from submarines.
15. Can also be employed against surface ships.
16. See paragraph on large displacement tonnages in section entitled "Ballistic Missiles" [in previous article of this series].

FOR OFFICIAL USE ONLY

17. See Table 4 at the end of this article,
18. Lasers may possibly contribute something in this field,
19. Laser emissions into the blue and green bands of the visible spectrum have reportedly already made some penetration of the liquid mass possible, but to an extent that is still insufficient for the detection of submarines,
20. See section entitled "Employment of SSBN's" [in previous article of this series].
21. This condition is likely to make the weapon system lose part of the vulnerability it is meant to have. That is why this problem will be reexamined in a subsequent section dealing with the SSBN's vulnerability on the high seas,
22. See subsequent section entitled "Vulnerability of the SSBN in Narrow Passages."
23. Table 4 at the end of this article will help in making such an estimate.
24. See following section on "Narrow Passages."
25. See paragraph on strategic nuclear forces in this article's opening section entitled "Enemies of the SSBN."
26. See subsequent section entitled "Vulnerability of SSBN When Launching Its SLBM's."
27. Other possible passages between the Faeroes and Shetland Islands, the Denmark Strait, etc., appear less favorable.
28. Plus naturally other strategic nuclear forces: ICBM's, bombers, etc.
29. See section entitled "Employment of SSBN's" [in previous article of this series].

COPYRIGHT: 1979 STRATEGIQUE

8041  
CSO: 3100

FOR OFFICIAL USE ONLY

COUNTRY SECTION

FRANCE

FUNCTION OF DTCN OUTLINED, EXPLAINED

Paris ARMEES D'AUJOURD'HUI in French Oct 79 pp 46-47

[Article by General Jean Touffait]

[Text] Among the activities of the Technical Directorate for Naval Construction (DTCN) which are performed for the national navy the activity of "new construction," the production of combat ships, is certainly the best known or in any case is that activity upon which the organization's reputation is essentially based.

The importance of maintenance activities should not be forgotten however: the maintenance of the SNLE [missile-launching nuclear submarine], surface vessels, and attack submarines.

The particular place of new construction is worthy of emphasis however since it represents on the one hand the end result of all of the preliminary studies on materials and equipment and on the other hand the origin of maintenance activities which will be all the more easy to carry out if the construction has been done well.

Operational Management

In its construction activities as well as its research activities the DTCN acts as the General Delegation for Armament's operational manager responsible for the conduct of research and development and the manufacture of materials, aircraft, tanks, armament systems, ships...equipping our forces. In matters of new construction the role of the DTCN is in principle similar to that of the DTAT (Technical Directorate for Ground Armament) since both of these directorates have their own resources for research and large-scale manufacture. The DTCA (Technical Directorate for Aeronautical Construction) and the DTE (Technical Directorate for Missiles) on the other hand rely completely on industry for the manufacture of materials for which they are responsible.

This hierarchical attachment of the DTCN in the accomplishment of its task and in the definition of its responsibilities does not exclude it from close and continuing relations with the naval general staff insofar as

FOR OFFICIAL USE ONLY



FOR OFFICIAL USE ONLY

product definition is concerned. But the fundamental decisions are made within the DTCN. The "customer," the EMM (Naval General Staff), is not the exclusive grantor of "orders." The "contract" that ties it to the DTCN, the "supplier," is the responsibility of the minister of defense with the minister as final arbiter and the general delegate for armament responsible for carrying out these decisions.

#### A Long and Collective Job

Numerous services provided by the DTCN become involved during the four successive phases of conception, construction, and placing in service of a particular type of combat vessel.

A preliminary proposal is prepared by the Technical Service for Naval Construction and Ordnance [STCAN] in response to a military need, expressed by the EMM, for a certain effectiveness characterized by a particular level of performance. The authors of the preliminary proposal, assisted by a team of specialists, formulate the technical solutions which will achieve the sought after performance and estimate the costs involved. The cost effectiveness aspect of the study will later influence governmental authorities in their final decision.

After the initial selection is made the proposal that has been chosen is then given exhaustive study by the same well-equipped team at STCAN with assistance from the construction yard, if known. At the conclusion of this phase it is possible to prepare a descriptive document running to hundreds of pages accompanied by plans and schematics, called "general specifications," which reveal the architectural coherence of the project and specify its performance characteristics. Of course the "estimate" for the work is also prepared during this phase.

Construction begins as soon as the first program authorizations are released. Directed by a STCAN engineer who is the program director it mobilizes the resources of: STCAN, where the specifications for the "installations" are written; DCAN [expansion unknown] at the port of construction (for further information on this subject see the article about the head engineer Tretout); and numerous suppliers (the cost of materials supplied represents from 50 to 70 percent of the cost of the ship) on contracts issued either by the specialized departments of STCAN or by the construction yard. The ECAN at Indret, for the propulsion system, and the ECAN at Ruelle for miscellaneous equipment, are also involved as suppliers. (Both are organizations subordinate to the DTCN).

The placing of the ship in service is marked by two dates: that of the official presentation for official tests, the start of the official sea trials, and the completion of armament, the end of responsibility for new construction and the beginning of responsibility for the fleet maintenance service. Engineers from the DTCN are members of the permanent testing commission as well as local testing commissions and participate actively in this work.

50

FOR OFFICIAL USE ONLY

FOR OFFICIAL USE ONLY

Of course the complexity of a project such as building a warship; the necessity for constructing a prototype whose equipment is not outmoded by the time it goes in service and which must be made operational as rapidly as possible, result in the four phases described above overlapping each other somewhat. Construction usually begins before all the elements within the general specifications have been drawn up and even after the ship is completely armed there will remain some unfinished work before some equipment, specifications for which may have run exceptionally late, can be made operational.

The construction of a combat vessel, and particularly that of a series prototype (never very important otherwise) is thus the collective work of many branches of the DTCN with the aid of numerous industrial firms. Among all those personnel involved, and without any attempt to minimize their merits, I must emphasize the particularly important part played by the two engineers who work very closely together:

The program director (at STGAN) is in charge of the government coordination and of liaison with the general staff, study of the proposal and the establishment of specifications, responsible within the DTCN for the management of expenditures, the handling of delays, overall industrial coordination, and the taking of preparatory steps for maintenance.

The "charge engineer" at DCAN, the shipyard contractor, provides for coordination of construction, assembly, scheduling of installations, and assembling together of all of the materials for armament and replacements. He deals with the designated commander and the armament team and actively participates in the organization of and conduct of tests carried out at dockside and at sea.

General engineer Jean Touffait, born in 1924, is a former student of the Ecole Polytechnique and the Ecole Nationale Supérieure for Maritime Management. His career has been totally devoted to submarines: engineer in charge of construction, research, and plans, and then head foreman at Coelacanth until 1976 when he was named technical director for naval construction.

COPYRIGHT: 1979 - Revue des forces armées françaises "Armes d'Aujourd'hui"

7779  
CSO: 3100

FOR OFFICIAL USE ONLY

COUNTRY SECTION

FRANCE

MINISTER OF INDUSTRY GIRAUD INTERVIEWED

Paris L'EXPANSION in French 21 Sep 79 p 23

[Interview with French Minister of Industry Andre Giraud--date and place not given]

[Text] [Question] On 24 September you presided at the opening of an international symposium on the subject of "Computer Science and Society." The president of the republic said a few words. Most certainly the subject is important, but why must the state organize a debate on the subject?

[Answer] Because exchanging ideas is essential. Our society will be profoundly transformed by the entry of computer science in practically all our human activities. It is necessary for all our fellow citizens to have at their disposal all necessary information to enable them to use their own judgment. We must not enter gropingly into this new era; we must light and beacon the way. The symposium called "computer science and society" replies to this objective.

[Question] The average man feels that computer science threatens his employment. Are there any precise views on the net result of computer science in France?

[Answer] The balance-sheet is incontestably positive. Today computer science in France employs more than 320,000 people of which 72,000 are in the hardware and software industry. This is far superior to the number of jobs abolished by computer science. Between now and 1985, in a rather pessimistic hypothesis, 120,000 new jobs should be created, of which 17,000 should be with contractors and service companies.

It is difficult to evaluate the reduction in employment due to the use of computer science. In fact, in most cases, the gains in productivity which it engenders are compensated by the growth in service needs and the increase in competition between the enterprises which use it.

[Question] And what of the threat to freedom? Computer science will effectively increase the powers of the state. Is good power necessarily weak power? Or does computer science entail intrinsic risks?

62

FOR OFFICIAL USE ONLY

[Answer] The notion of "good power" is so vague.... Yes, computer science entails risks. As a matter of fact that is why the good options must be taken. This applies exactly the same as for all tools with which a nation or society can be equipped; everything depends on its use. Let us illustrate the above: Will computer science be used to accentuate the centralization of power, or, on the contrary, to increase or strengthen its decentralization? It allows either one or the other of these options:

How to protect man from possible excesses from unbridled computer science? On an important point, that of individual freedom, an answer was given by the law voted in Parliament in 1977, whereby every citizen has a right to question and rectify the computer data which concerns him. France is the first one to have enacted this legislation, which many states have imitated since then.

[Question] What is the present place of French industrial computer science in the world?

[Answer] In turnover (15.3 billion francs in 1978) France is fourth behind the United States, the Federal Republic and Japan. It is second in terms of exports as regards services. Among world-wide groups CII-Honeywell-Bull is, with its partner Honeywell, in second position. SEMS (expansion unknown), fourth in this field. Finally, the first three European service companies are French.

[Question] Can France be usefully represented in all the fields of computer science industry? Or must a choice be made? Which are our good points and which are our weak points?

[Answer] France is one of the five countries in the Western world which possesses a complete computer science capacity, including the production of large and medium computers. Only these five countries can be represented in the markets of computer science and teleprocessing systems. The panoply will now have to include the space segment, and there we will also be represented by Ariane and our satellites.

For us this is a matter of having a definite purpose supported by a long-term financial, technical and industrial effort, which, however, is within our reach.

Certainly, we still have our weak points: integrated circuits, large magnetic memory, "time-sharing" data-handling system, intercepted data. We are trying to reduce them, but we must support and exploit our good points: logician, numerical, telecommunication systems, new teleprocessing services.

[Question] Taking this data into account how is France's industrial policy oriented?

[Answer] We help our industrialists become cognizant of new products, new techniques at an early date, promote innovations loosen restraints which hamper growth. Facilitate the acclimatization of new applications of computer science to the French market, informing, training and helping the users to master the computer science tool. Make the French market a launching platform for the conquest of the international market, which is a vital condition for the existence and prosperity of this industry.

[Question] If you were asked to replace the expression "computer science and society" by a verb, which one would you choose?"

[Answer] I would say "Computer science makes society progress."

COPYRIGHT: S. A. Groupe Expansion

7993

CSO: 3100

FOR OFFICIAL USE ONLY

COUNTRY SECTION

FRANCE

DUTIES, ACTIVITIES OF TECHNICAL RESEARCH CENTERS NOTED

Paris ARMEES D'AUJOURD'HUI in French Oct 79 pp 52-53

/Article by Chief Armaments Engineer Paul Talboutier: "Choose Today To Be able To Fight Tomorrow"

/Text Chief Armaments Engineer Paul Talboutier, who entered the Polytechnical School in 1949 and graduated from the school of maritime engineering in 1954, has devoted 23 years of his career, first to the construction and testing, and then to the designing of submarines. He was successively responsible at DCAN /Central Directorate for Naval Weapons and Shipbuilding in Cherbourg for the "Narval" type submarine, for the Submarine Testing Center, and finally for the "Redoutable" type strategic nuclear submarines. Deputy, and then Chief of the STCAN /Technical Service for Naval Construction and Ordnance submarine section, he assured the technical coordination of strategic submarine research, took part in the design of the Agosta attack submarines, and finally directed the "Provence" attack type nuclear submarine design and definition studies. He is now deputy director of research at DCAN in Toulon.

The surface or submarine combat vessel, a true moving fortress, must be able to navigate far from its base for long periods of time in a naturally hostile environment, while always keeping intact the capacity to fight and the immediate availability of its crew, material, equipment, and armament systems for the execution of its mission.

The vessel must be designed for a large defense capacity against both military and environmental attacks, and it must contain or support all the materiel and installations to guarantee propulsion, piloting, navigation, security, the crew's safety, diving (in the case of submarines), radio communications to the outside, detection (electromagnetic, acoustic, infrared, etc.) and identification of all moving things (surface, air, and submarine) present in its vicinity, processing and presentation of the tactical information gathered by the detection, and assistance in command decision-making and so-called offensive or defensive combat actions (armament systems: artillery, missiles, torpedos, etc.).

FOR OFFICIAL USE ONLY

FOR OFFICIAL USE ONLY

The Necessity of Technical Research...

This means that the techniques and technology used in the design and construction of warships are extremely diverse and cover a very vast domain of expertise. Moreover, it must be said that a warship's definition results inevitably from an architectural compromise between the performance requirements, from the viability and maintainability of the various components. This is a difficult compromise because of the numerous constraints of weight, volume, and cost which the designer must consider. With the aim of making the best possible compromise, it is necessary to call upon the latest techniques and technologies in use and accessible when the design of the ship is conceived. On the other hand, the designers and builders of warships and naval war materiel must always conduct research or have research conducted in all the concerned technical areas, so to have at their disposal a sufficiently advanced "state of the art" when the ship's design is approved; to respond with the best chance of success to the operational requirements of the military program of a ship which will be put to sea 4 to 6 years later and which will have a life expectancy of 20 to 30 years!

In parallel with these warship construction and design activities, DCTN /Technical Direction of Naval Construction/, either by its own means or by encouraging outside public or private organizations, conducts research activities in numerous technical areas, doing basic research in areas which are particularly pertinent to it, such as hydrodynamics, submarine acoustics, and living under prolonged confined conditions.

...In the Most Diverse Disciplines

The following list gives only a general idea of the areas covered:

- suitable materials for naval construction, assembly and fabrication procedures;
- protection against marine corrosion, marine paints;
- resistance of structures to forces encountered at sea in regular service and in combat situations;
- hydrodynamics (propulsion, maneuverability, sea worthiness);
- propellers (screws, etc.) and propulsion systems using fossil fuel or nuclear energy;
- naval electrotechnics;
- running noise levels of ships (ways in which propulsion and machine running noises are generated and transmitted to the water and research on their reduction);

FOR OFFICIAL USE ONLY

- submarine acoustics (propagation, emission transducers, reception hydrophones, electronic systems for extraction and treatment of acoustical signals);
- marine applications of radioelectric transmissions (propagation, transmitters and receivers, optimum installation of on-board antennas, long-wave reception under water, discretion);
- electromagnetic detection applied to the aeromarine environment (watch and pursuit radars, radar signal processing);
- application to the aeromarine environment of new means of detection and of the pursuit of targets (infrared, laser, television);
- electronic countermeasures (radar detection and jamming, and interfering radio transmission);
- systems for processing and presenting tactical information and for assisting the command in making decisions;
- automatic systems for pursuit and for weapons control;
- navigation instruments, vertical positioning, marine inertial powerplants;
- marine pyrotechnics (marine munitions, flares, and light signals, military charges for submarine arms, awareness of the electropyrotechnic devices used aboard ships, etc.);
- submarine weapons, particularly torpedos and mines;
- guidance and launching devices for torpedos;
- devices for launching strategic and tactical missiles from submarines;
- living under prolonged confined conditions (control and regeneration of the atmosphere in submarines, psychological effects of atmospheric pollutants).

General Organization and Methods

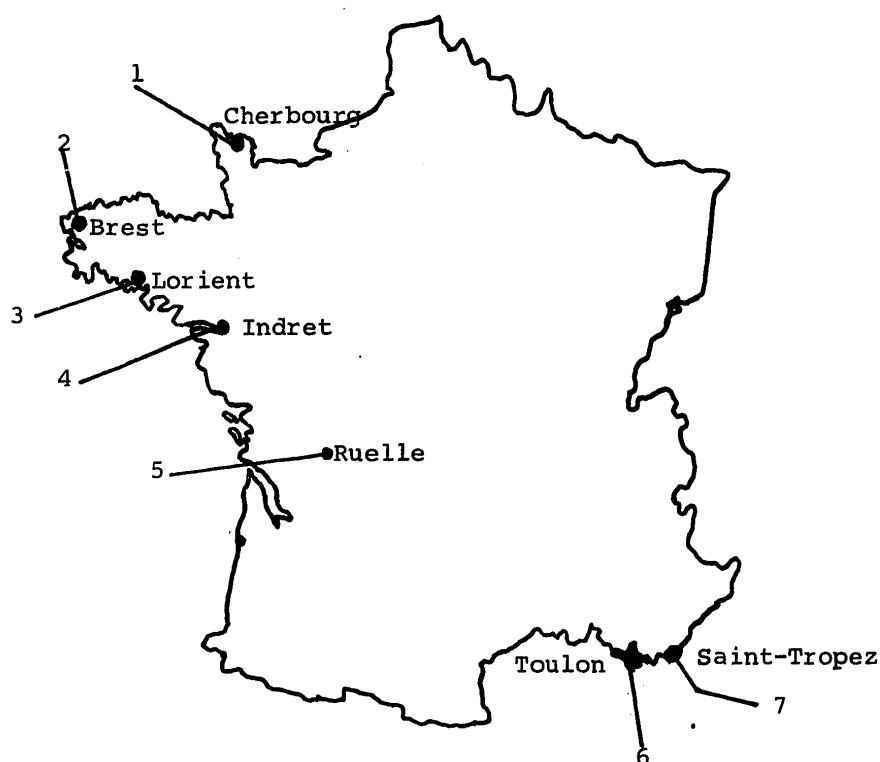
Technical research conducted by DTCN is programmed and directed by STCAN, an agency which is attached to the central administration in Paris, and which is also in charge of design and definition studies for the various types of warships and weapons systems (in the broader sense of the term) which equip them, conforming to the following organizational chart.

The principal directions of research and the corresponding directives are defined by the various STCAN technical groups, each group retaining its own responsibilities for research techniques, project development, the direction of "ships" and "systems" programs, and for regulation in its own technical area. General research coordination is done by a special STCAN group.



FOR OFFICIAL USE ONLY

The research, according to its nature or special requirements, is awarded to either public or private agencies under STCAN's control (by way of contracts or market research), or internal agencies of DTCN and apportioned among its various centers (either at the main level: laboratories for material resistance and structures, STCAN's underwater hull testing basin, technical section of the marine planning center; or in the provinces).



The following are the research agencies installed in the arsenals around the country:

1. DCAN Cherbourg: Cherbourg center for testing techniques and evaluations (CETEC), devoted to submarine research;
2. DCAN Brest: Atlantic submarine research group (GESMA) devoted to the study of mines and submarine acoustics;

FOR OFFICIAL USE ONLY

3. DCAN Lorient: study and research group for ballistic weapons and munitions (GERBAM);
4. ECAN Indret: test facilities and the laboratory of the study and control of materials (LECM) attached to the sub-directorate for tests and studies, doing research on propulsion devices and naval electrotechniques;
5. ECAN Ruelle: engine research group;
6. DCAN Toulon: research sub-directorate, comprising five research agencies: research group for telecommunications and weapons systems (GESTA), research group for pyrotechnics (GERPy), research group for torpedo tubes and launching techniques (GETEL), research group for submarine detection (GERDSM), research group for submarine technology (CERTSM);
7. ECAN Saint-Tropez: research sub-directorate for all torpedo research.

So the work force devoted to technical research, outside STCAN, is about 2,500 people, of whom 450 are engineers and military. Particular mention must be made of the research sub-directorate at DCAN Toulon, which comprises about 2,100 people, including 200 engineers and military. Its location allows it to work closely with EMM's applied studies commission to define the naval materials use policy, thus insuring the adequacy of the research for operational needs.

Hence, DTCN always prepares the warships of tomorrow in cooperation with those who will be the future users.

COPYRIGHT: 1979 Revue des forces armees francaises "Armees d'Aujourd'hui"

9374  
CSO: 3100

FOR OFFICIAL USE ONLY

COUNTRY SECTION

ITALY

CONSIDERATIONS FOR RENEWAL OF THE MEZZOGIORNO LAW

Milan CORRIERE DELLA SERA in Italian 15 Oct 79 p 1

[Article by Romano Prodi: "Business Leaders Looking Toward South"]

[Text] With the approach of the termination of the Mezzogiorno Law, discussion is again being revived on what has been accomplished in the last few years and what should be done in the future. A conference organized by the Democratic League in Erice recently pointed the way for new discussion on the South, a discussion which will be at the center of attention during the next few months. This renewed discussion is quite timely in that the problem of the South has changed before our eyes, even though it is still quite serious both from the quantitative and qualitative aspects.

Let us consider a few basic statistics. The figures tell us that the level of unemployment in Italy is now 7.3 percent of the work force. This information is of no real significance in that for males the unemployment level is 2.8 percent in the North, 4.9 percent in the central area and 7.2 percent in the South. For females the figures become slightly less than 10 percent in the North, 12.8 in the central area and 17.9 in the South.

As is obvious, the figures show a very high rate of employment of males in the North to the point of requiring an increasing influx of foreign workers, whereas the situation is just the opposite when it comes to the women and the South. It would be idiotic to use the same economic policy in the face of such variable data.

A second consideration is the following: despite the unemployment levels, there are increasingly fewer people leaving that area. Confusing earned income with pensions and income of other types and having difficulty in finding housing in the North have in fact caused a great decrease in the migratory flow. As expected, the result is the necessity of making a renewed effort to locate economic activities (industrial and service-type) more toward the South. And this in a period of slow industrial development inasmuch as the availability of worker personnel in the country's southern areas is tending and will tend still more to decrease and therefore be insufficient for the demand.

FOR OFFICIAL USE ONLY

FOR OFFICIAL USE ONLY

The problems encountered by southern firms which migrated to the South and the expectations of companies planning to go there in the near future are described in a well-prepared study made in Emilia by the Regional Federation of Industry. It contains valuable lessons for the future stated in simple language. In the first place, the companies interviewed (nearly all small and medium-sized) relocated in the South to be near market outlets for their products and, frequently, because they were forced to do so by a short labor supply or a shortage of industrial sites in the vicinity of corporate headquarters. However, the role of financial incentives was less effective than anticipated; they helped to some extent but did not result in any great relocation to the South. Moreover, it might seem downright incredible that 34.7 percent of Emilia firms operating in the South did not even request the financial incentives provided for by the law: wasted time and timidity in the face of public administration and all the red tape involved caused more than a third of the companies to reject the pillar on which the policy of the South was based up to now. The lesson is clear: automatic incentives are worth a hundred times more than those which must be obtained through a long series of negotiations. However, what is of greater importance is the difference in the cost of borrowing money, which is unfavorable to the South, and the absence or lack of information regarding the existence of subsidiary firms operating on behalf of third parties.

Business organizations, like peoples or animal herds, do not move about by themselves but rather in groups, because they live by helping each other. This is also a worthwhile lesson. Moreover, we must say that more than two thirds of the companies are satisfied with the initiative taken and would do the same in the future, while 60 percent even have plans for expansion.

Therefore, let us not be influenced only by cases of bankruptcy, which are plain for everyone to see; many fires have glowed under the ashes. To be sure, there is another side of the coin which is evidenced by 30 percent of the firms which encountered maddening obstacles of a material nature but, more particularly, of a human nature. In such instances, it seems that special effort was made to make life impossible for the firms. However, in general, the lack of specialized personnel is the greatest obstacle to development in the South; this is true to the extent that radical change can be achieved only by an overall revamping of professional instructions at all levels, from the most elementary to the most sophisticated. This must be the starting point of the South of the 1980's.

The last consideration concerns the regions in which the firms have located or intend to locate in the future: the Adriatic strip from the Southern Marches to Apulia constitutes the lion's share, with two-thirds of the decisions. This is only partially explained by the region's proximity to the North; the true explanation is that in the Adriatic strip there are fewer influences of a political and social nature. That is, the firms, although wanting to live in groups, are free animals and do not reproduce in captivity. Moreover, it

FOR OFFICIAL USE ONLY

FOR OFFICIAL USE ONLY

must be noted that the number of companies which have plans to invest in the South (with programs already established) has grown considerably in the last few years and is still growing. Therefore, new decisions regarding the South should be based on the simple premise that businesses heading in that direction should adopt foreseeable and rational modes of behavior. New legislation must also be rational, automatic and transparent. It is on these characteristics and not on the liberal dispensing of incentives that the future development of the South should be based.

COPYRIGHT: 1979 Editoriale del "Corriere della Sera" s.a.s.

8568  
CSO: 3104

FOR OFFICIAL USE ONLY

## FOR OFFICIAL USE ONLY

COUNTRY SECTION

TURKEY

## BUSINESS GROUPS SEEK BANK OWNERSHIP

London THE MIDDLE EAST in English Nov 79 p 125

[Text] On paper the Bank of Afyon appears like a bank which one would be keener to get rid of than acquire. Established 52 years ago in the opium-growing town of Afyon in central Turkey, it is the smallest in the country. It has just one branch, which is also its headquarters. Its assets in 1978 were the equivalent of £T10,000 and its profit of £T1,200 was less than what some bank directors in Istanbul make in a month.

However, the bank was recently acquired with every sign of keenness by the up-and-coming Istanbul group of Kozanoglu-Cavusoglu, which is prominent in construction.

The acquisition of the Afyon Bank is the latest in the trend for private-industry groups in Turkey to own their own banks. "In other countries rich people buy Rolls-Royces - in Turkey they buy banks," commented a Turkish economist. The explanation is simple. Credit is tight in Turkey. There is no capital market. A group which owns its bank can both have access to abundant credit and be in a stronger position to get credit from other banks.

The giant KOC group of industries dominates Garanti Bankasi, which it acquired several years ago and put under the management of one of its ex-

ecutives, Erol Aksoy. Sabam, KOC's nearest competitor, owns Akbank, which is managed by Erol Sabanci, one of six Sabanci brothers. Similarly many private banks belong to families or small groups of people.

Owning a bank brings another economic benefit, again peculiar to Turkey. A bank could open unlimited credit lines to its affiliates whereas its credit limits would be restricted to 25% of its capital and reserves for non-affiliates. This was stipulated by the banking law at a time when capital accumulation was low in order to encourage the establishment of large industrial enterprises. With this encouragement, most banks invested in industry. Unlike banks in many other countries, Turkish banks have significant industrial investments and are partners in many major manufacturing operations. Bankers become industrialists and industrialists become bankers.

Prime Minister Bulent Ecevit has recently moved to change these peculiarities of the Turkish banking system. He issued an executive decree amending 26 of the banking law's 85 articles. His object was to wrest control of the commercial banks, which constitute just under half of the 44 banks, from powerful families.

Under the amendment, families will not be allowed to own more than 30% of total equity. Further, a bank's credit to any individual will not be allowed to exceed more than 10% of its paid-up capital and reserves.

The banks were given three years to comply. It is unlikely, however, that the amendment will reach these two goals. First, the decree has to be ratified by parliament, and second, there are many loopholes which may enable the few families to continue with their control of the banks.

"I am not worried," one banker who owns a majority control in a family bank was reported to have commented. "Nobody will be able to get me out of this bank's management chair."

Metin Munir in Ankara

COPYRIGHT: 1979 IC Magazines Ltd.

CSO: 4920

END

73

FOR OFFICIAL USE ONLY