JPRS L/10635

6 JULY 1982

West Europe Report

(FOUO 41/82)

FBIS FOREIGN BROADCAST INFORMATION SERVICE

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.

APPROVED FOR RELEASE: 2007/02/09: CIA-RDP82-00850R000500080009-9

JPRS L/10635

6 July 1982

WEST EUROPE REPORT

(FOUO 41/82)

CONTENTS

GENERAL

ENERGY ECONOMICS SPAIN

NUCLEAR POWER IS ESSENTIAL TO ENERGY-POOR, INDUSTRIAL NORTH

Madrid CAMBIO 16 in Spanish 24 May 82 pp 67-69

[Passages enclosed in slantlines printed in italics]

[Text] The Basque Country is stifled because of energy. If the energy problem is serious throughout Spain due to increased foreign dependency on expensive and scarce oil, the situation is even more serious in Euskadi. This is true, first, because it consumes a great deal of energy due to its high industrial and demographic concentration. Secondly, it does not have energy resources of its own. Within this context, the 11.6 billion kilowatts that Lemoniz should contribute in 1990 are absolutely indispensable. That is 70 percent of the electricity that the three Basque provinces will consume then.

The consumption of primary energy in Euskadi totaled about 9.6 million TCE (equivalent tons of coal) in 1979 and its production was 150,000 TCE. This means its /degree of self-supply is 1.57 percent/, one of the lowest in the world. On the other hand, the degree of self-supply for the entire country was 32.3 percent that year and now is more than 34 percent.

The Basque Country does not produce coal, much less oil. It only has a minimal amount of natural gas and a little electricity from its waterfalls. In 1979, Euskadi imported 75 percent of its electricity from bordering provinces; this percentage went down to 52 percent in 1980.

More than half of the electricity that the Basques consume is "maketa." Recalling that almost all the electricity generated in the Basque Country itself comes from thermal powerplants that operate with fuel (oil), it can be concluded that /only 4.5 percent of the electricity that the Basques consume is generated with their own means/.

This very high energy dependency, especially at the kilowatt level, is even more serious due to Euskadi's great energy consumption: 2.98 TEC per inhabitant compared to 1.83 which is the average consumption per inhabitant in the country as a whole. Energy consumption for industrial use in the Basque Country almost doubles the consumption in the entire Spanish state (7.2 TEC compared to 4.2). The consumption of electricity per inhabitant is more than double: 4.95 in Euskadi compared to 2.63 in all Spain. Therefore, the Basque energy situation does not allow for delays. By 1990, the energy needs of the

Basque Country will be between 13 billion and 17 billion kilowatts, according to a study by the Ministry of Industry and Energy of the Basque Government. Those billions of kilowatts will have to come from somewhere if the Basques want to have electricity.

Oil is the basic energy source today (62 percent) but the dependency on black gold cannot continue at a time when all the countries fight to "escape" from oil and replace it with other energy sources, basically coal and nuclear energy. The strategy included in the study is based on these principles: replacement of oil, investigation of alternative sources and energy-saving measures.

Even in the most optimistic hypotheses, alternative energy sources (solar, wind, fusion) will not take care of more than 4 or 5 percent of the energy demand of the Basque provinces in 1990, according to data in this Basque Government study. Coal can increase its present participation (19 percent) but there are problems with supply and its high degree of pollution (thermal powerplants) in a very densely populated zone. Consequently, nuclear energy remains the most realistic alternative and Lemoniz would contribute 70 percent of the electricity that would be consumed in Euskadi at the end of this decade.

If Lemoniz is the key so that the Basques have light and energy in the coming years, it is also a key to Spain achieving its main energy objective: to reduce dependency on oil, a real currency drain. This would only provide 43.4 percent of the energy consumed in 1990. The start-up of the two groups at Lemoniz will mean a savings of 2.8 million equivalent tons of oil which, at today's prices (at the end of the decade it would be much more), means an /annual/ savings of 70 billion pesetas. On the other hand, the cost of nuclear fuel for the two groups at Lemoniz is about 12 billion pesetas per year today.

Lemoniz' strategic importance for Euskadi and all Spain lies behind the "unequivocal political determination" to advance and complete the temporarily halted nuclear powerplant, according to the meeting held on 12 May between the minister of industry, representatives of the Basque Government and the Iberduero enterprise.

The last push for Lemoniz, under pressure by the terrorist offensive of ETA [Basque Fatherland and Liberty Group], was the formation of the Basque Energy Entity at the beginning of May, the very same day that Angel Pascual Mujica, director general of the nuclear plant project, was assassinated. The objectives of this management company, unparalleled in any other autonomous entity, include "the coordination and control of the activities of the Lemoniz nuclear management company." It seemed to be the last solution to "Basque" the project and end the debate and violence that surround the construction of Lemoniz.

The formation of the Basque Energy Entity which also includes gas necessitated a difficult round of negotiations between the central government, the PNV [Basque Nationalist Party] (Basque Government) and the Iberduero enterprise.

The series of attacks against its installations because of Lemoniz cost it some 2.5 billion pesetas in 1981.

Nuclear Euskadi

Gomez de Pablos, president of Iberduero, said weeks ago that "the problem of Lemoniz is conditioned by political factors that go beyond the capability of the enterprise." He said he was satisfied with the economic chapter in the agreements of constitution of the entity "since they establish that the Lemoniz nuclear plant and the energy that it supplies will continue to be the property of Iberduero."

Garcia Egocheaga, minister of industry and energy for the Basque Government, said recently that "the agreements on the Lemoniz nuclear powerplant will permit the Basque Country to have first-class energy support."

Egocheaga added that the production of its own energy would reach 42.4 percent of the consumption by 1990 (today only 1.57 percent) with Lemoniz. Nuclear energy will mean 29.3 percent of the total energy in Euskadi then. This is greater "nuclearization" than in Spain as a whole where the nuclear energy will mean 15.1 percent of the energy supply at that time.

Until now, Iberduero has spent some 200 billion pesetas on Lemoniz and termination of the project--which will take a year--means an investment of 135 billion pesetas more. The delay of a year in the start-up of the powerplant can mean a loss of 30 billion pesetas for Iberduero. At this time, the halt is costing 100 million pesetas a day.

7717
CSO: 3110/144

STAGES OF USSR, ITALY ECONOMIC COOPERATION

Moscow FOREIGN TRADE in English No 5, May 82 pp 43-49

[Article by Vladimir Medvedovsky]

[Text] For many years the progress of Soviet-Italian trade and economic cooperation has been good and steady. In the field of commerce a stable trend towards economic relations with the Soviet Union was clearly seen way back in the 1950s. In 1948 the countries signed a Treaty on Commerce and Navigation, a Trade Agreement, an Agreement on Payments and many other economic documents which laid contractual and legal grounds for the development of mutual trade.

Annual protocols on trade turnover which established the lists of goods to be exchanged between the two countries were the main regulatory form of Soviet-Italian trade at that time. Sometimes the Italian side refused licences for the export of certain goods to the Soviet Union. This had an adverse and destabilizing effect on the mutual trade exchanges.

One of the reasons curtailing Soviet-Italian exchange was the discriminatory character of the trade "liberalization" policies of the Italian Government. By 1956 ninety-nine per cent of Italy's imports were freed from quantitative restrictions but not the goods coming from the Soviet Union and other socialist nations.

At that time important changes were occurring in Italy's economy. Fixed assets were being modernized and streamlined on a massive scale—all to increase output. The most intensive growth, with the highest industrial rates in Western Europe over 10 per cent per annum, was observed during 1959 to 1963.

An industrial boom and sharper competition on world markets forced Italy's government to revise its policies apropos the Soviet Union and other socialist countries.

Italian businessmen were increasingly worried by the bans and restrictions on exports of certain machines and equipment to the Soviet Union as they lost profitable orders which the USSR foreign trade organizations satisfied elsewhere.

The Soviet Union's vigorous efforts for a long-term, mutually profitable cooperation with Italy were eventually crowned with

success. On December 28, 1957, the two countries signed their first Long-term Agreement on Mutual Goods Deliveries for 1958-1961 as well as an Agreement on Payments in convertible currencies. The switch-over to a long-term basis had an immediate positive impact on the countries' trade turnover.

This period was characterized by intensively expanding business contacts between Soviet foreign trade organizations and Italian firms. The first long-term agreement was concluded in 1960 with the state-owned company ENI on the delivery of 12 million tons of Soviet oil and oil products, and the purchase of Italian-made synthetic rubber, oil equipment and piping.

Many far-sighted Italian businessmen, "captains of industry" came to regard better Italian-Soviet commercial relations as a matter of personal interest and concern. They contributed a lot to stronger business contacts between Soviet foreign trade organizations, on the one hand, and the Italian firms ENI, Montecatini, FIAT, Snia Viscosa, Pirelli, etc., on the other.

In the wake of the success of the first long-term agreement two more trade agreements were concluded between the Soviet Union and Italy: for 1962-1965 and 1966-1969.

Italy's interest in greater exports to the Soviet Union prompted its decision to abate its discriminatory practices in crediting foreign trade. In the late fifties Soviet foreign trade organizations were allowed to purchase Italian-manufactured equipment and machines on five-year and longer state-guaranteed company credits. The limited nature of these credits, however, hampered the growth of trade and Italy started granting long-term banking credits to the Soviet Union in 1962 despite US pressure against this step.

Mutual trade became the subject of discussions at an intergovernmental level. The Italian side took certain steps to improve conditions for the fulfilment of the trade agreements signed by the two countries; also, the trade policy climate in Italy became relatively better with longer lists of goods allowed for licence-free imports to Italy and less other restrictions.

The changes in reciprocal trade terms in the early sixties encouraged new contracts between Soviet foreign trade organizations and Italian firms. For example, a new agreement was signed with ENI in 1963 effective up to 1970 for the sale of 25 million tons of Soviet oil in exchange for products of the ENI enterprises. At that time it was one of the biggest Soviet foreign trade transactions.

In the latter half of the 1960s Soviet-Italian trade could boast of quite a few long-term, large-scale and mutually profitable projects such as the construction of the Volga Motor Works in cooperation with FIAT and cooperation with ENI which continues today. These large-scale ventures undertaken under respective agreements between the two countries were christened "transactions of the century".

The twelve-year period from 1958 to 1969, covered by three

four-year agreements, was marked with a 7.5-fold increase in Soviet-Italian trade (from 66.4 million rubles in 1958 to 493.5 million rubles in 1969). The list of exchanged products has been considerably expanded. Italy's long-term banking credits to finance its exports of equipment to the Soviet Union were of great service.

At the same time certain quantitative and other restrictions on Soviet imports to Italy continued to negatively affect Soviet-Italian trade.

The determined efforts of the Soviet Union for discriminatory-free relations with Italy were rewarded. On January 15, 1970, the Long-term Trade Agreement for the period between 1970 and 1974 was signed between the Soviet Union and Italy.

Certain principles reaffirming the Sides' intention to support further promotion of both their bilateral relations and all-European cooperation were incorporated in the Agreement on Expanded Economic, Industrial and Technical Cooperation for a ten-year term signed in July 1974.

A new phase began in Soviet-Italian cooperation in the mid-1970s, particularly, after the Helsinki Conference on European Security and Cooperation. Traditional trade was supplemented with economic and industrial cooperation. On October 29, 1975, Soviet Foreign Trade Minister N.S. Patolichev and Italian Minister of Foreign Affairs M. Rumor signed a Long-term Programme of Extended Economic and Industrial Cooperation between the Soviet Union and Italy.

During the official visit to Moscow of Italy's President G. Leone an Agreement on Soviet-Italian Economic Cooperation was signed on November 20, 1975.

During the 1979 official visit to Italy of Soviet Foreign Trade Minister N.S. Patolichev an Agreement on Soviet-Italian Economic Cooperation for 1980-1985 and a Protocol to the Long-Term Programme of Extended Economic and Industrial Cooperation between the Soviet Union and Italy were concluded.

The Long-Term Programme of Extended Economic and Industrial Cooperation of October 29, 1975, the Supplementary Protocol to this Programme, the Agreement on Economic Cooperation for 1980-1985 and other Soviet-Italian arrangements on economic matters translated the principles of the Helsinki Final Act into actual fact.

In the late 1970s the two countries' economic cooperation reached its highest level. Its assets are as follows: long-term contractual foundation; stability; mutual benefit; vast business experience; many good traditions; large-scale and good prospects.

In November 1980 Italian Foreign Minister E. Colombo paid an official visit to the Soviet Union. Says the joint Soviet-Italian communiqué following this visit: "The Soviet Union and Italy come out for the further strengthening of their trade, economic, scientific and technical relations to the mutual benefit of both countries."[1]

The most effective working mechanism assisting Soviet-Italian

[1] *Pravda*, November 13, 1980.

economic, industrial and technical cooperation is the Joint Commission on Economic, Scientific and Technical Cooperation functioning by now for over fifteen years. It coordinates the drafting of economic agreements and programmes and works out recommendations for large-scale cooperation projects.

The 12th session of the Commission in Rome (March, 1981) made a significant contribution to the growth of Soviet-Italian trade relations. The sides expressed their intention to continue efforts for extending cooperation, putting the increased mutually beneficial trade on a more balanced and harmonious basis, specifically, through a wider assortment of exchanged goods. Progress in fulfilling the Long-Term Programme of Extended Economic and Industrial Cooperation was considered and agreement reached on speedier drafting a new Long-term Programme of Soviet-Italian Economic, Industrial and Technical Cooperation up to 1990 following a decision taken at the Commission's previous meeting.

Soviet-Italian Trade Turnover
(mln rubles)

	Turnover	Soviet Exports	Soviet Imports
1971	494.6	233.1	261.5
1975	1,426.8	638.0	788.8
1976	1,778.5	1,069.3	709.3
1977	1,880.8	1,090.5	790.3
1978	1,970.7	1,112.1	858.6
1979	2,155.1	1,292.0	863.1
1980	3,034.3	2,100.8	933.5

The session confirmed the good prospects available for Soviet-Italian relations to expand in economics, industry, science and engineering.

The fact that the economy of the Soviet Union and that of Italy mutually supplement each other is important for the further progress of Soviet-Italian trade and economic relations. The Soviet Union has vast resources of practically all minerals and a highly developed industrial potential. It is interested in the products of the following Italian industries: automotive; mechanical engineering; metallurgical; chemical and petrochemical; textile; food and flavour; also, consumer goods.

In the last decade (1971-1980) Soviet-Italian trade turnover increased sixfold.

In 1972 Italy ranked seventh in the Soviet Union's trade with advanced capitalist countries. In 1980 it moved up to the fourth place (after the FRG, Finland and France).

The bulk of Soviet exports to Italy consists of mineral raw materials and metals. In 1980 the share of oil and oil products, and of gas in total Soviet exports to Italy was equal to 57.5 and 24 per cent respectively:

Deliveries of machines, equipment and transport facilities increased from 2.8 million rubles in 1971 to 21.2 million rubles in 1980. The Soviet Union exports to Italy: metal-cutting tools, forges and presses, power generating and electrical equipment, material-lifting equipment, looms, black-and-white kinescopes, tractors, motor vehicles, bearings, instruments and devices. However, their share in the total Soviet exports to Italy is insignificant.

Several joint Soviet-Italian companies are active on Italian markets. These are as follows: Stanitaliana, established in Milan, 1971, sales of lathes, presses and forges; Ruslegnio, established in

Rome, 1974, sales of timber, pulp-and-paper products; Nafta (Italy), established in Rome, 1976, oil and oil products; Enital, established in Milan, 1977, mainly Soviet-made machines and equipment; and Tecnicon, in Genoa, engineering services and licences. Some of them are also engaged in import operations.

Imports of machinery and equipment from Italy rose from 136.4 million rubles in 1971 to 408.4 million rubles in 1980. The Soviet Union imports mainly the following items: complete sets of equipment for the automobile, metallurgical, food, textile, chemical, construction materials and other industries: also, metal-cutting lathes; forges and presses; cranes and loaders; industrial fixtures, measuring devices, ships and marine equipment; increasing amounts of piping.

Large-scale, long-term agreements and contracts between Soviet foreign trade organizations and Italian firms and their efficient fulfilment are now traditional aspects of the two countries' business relations.

Since 1974 Italy has been receiving Soviet natural gas under the 1969 agreement with ENI providing for more than 100,000 million cu.m. of gas to be supplied within the next twenty years. Under the same agreement the Soviet Union has been receiving from Italy large-diameter pipes, materials and equipment for the gas industry. In 1975 another contract was signed with ENI for an extra delivery of 20,000 million cu.m of Soviet gas in 1978-2000.

Negotiations are drawing to a close on the participation of several West European countries in the construction of a gas pipeline to the USSR western border and on extra deliveries of Soviet natural gas to Western Europe, including Italy. A long-term contract for the delivery of oil to the AGIP firm (a member of ENI) in 1978-1980 has been fulfilled. Uranium for Italian atomic plants is being enriched at Soviet enterprises under a long-term contract with another ENI member: the AGIP Nuclear company, for Italian atomic power stations.

The General Agreement of May 8, 1974, between the USSR Ministry of Foreign Trade and ENI provides for cooperation in the compensation-based construction of six chemical enterprises in the Soviet Union to produce carbamide and other chemicals. Equipment for three carbamide-producing plants has already been delivered to the Soviet Union. To pay for it the Soviet Union has started deliveries of ammonia to Italy.

The General Agreement of 1974 between the USSR Ministry of Foreign Trade and the Finsider metallurgical association on long-term (1975-1979) cooperation has been fulfilled. Under this agreement Italy shipped to the Soviet Union some two million tons of large-diameter pipes; the Soviet Union supplied Italy with some four million tons of coal, seven million tons of iron ore and other raw materials for its steel-making industry.

In July 1980 a protocol was signed in Rome to extend the above agreement for a further five-year period (1981-1985) envisaging deliveries of Soviet primary materials for Italy's iron-and-steel

industry in exchange for various metal products, including large-diameter pipes and steel plate.

Today the Finsider and Finmeccanica associations are delivering equipment for the Volga-Don Atommash works.

In the late 1960s Pirelli supplied equipment for the Balakovo factory which makes tyres and other rubber articles for the Volga Motor Works. Later Pirelli began delivering to the same factory individual types of equipment for manufacturing KamAZ truck tyres. In 1980 Pirelli completed its shipments of tyre-making equipment for passenger cars and trucks to the Soviet Union.

The COMAU machine-tool association (a FIAT subsidiary) is completing its deliveries of equipment for the Cheboksary tractor factory. Cantiere Navale Breda, part of the state-owned EFIM association has built at its ship yards in Venice three liquid ammonia carriers for the Soviet Union. The firm De Nora is supplying our country with caustic soda and chlorine-producing equipment.

A comparatively new and promising form af cooperation, i.e., compensation arrangement, has been gaining ground since the early 1970s in Soviet-Italian relations. Among the first Italian firms to cooperate in compensation-based large-scale ventures was Montedison. The agreement of September 27, 1973, between the Soviet foreign trade organizations Techmashimport, Sojuzchimexport and Soyuspromexport, on the one hand, and Montedison, on the other, provided for cooperation in building seven plants in the Soviet Union in the course of 10-12 years to produce carbamide, acrylic acid nitrile, freons and other chemicals, and for deliveries of Soviet-made chemicals to Italy.

At present Tecnimont is supplying the Soviet Union with dispersed dyes producing equipment to be re-paid in Soviet deliveries of ammonia and methanol to Italy. The firm is also shipping to our country equipment for a plant to produce dyes for leather.

The 1973 agreement with Montedison was a success and the sides decided to extend their cooperation. On March 12, 1980, the USSR Ministry of Foreign Trade and the company signed a General Agreement on cooperation in constructing chemical enterprises in the Soviet Union and on mutual deliveries of chemicals.

The well-known Italian firm, Snia Viscosa, has supplied to our country, under a compensation arrangement, equipment for a plant to produce caprolactam from toluene. Under another contract it will go ahead with supplies of equipment for a nitron fibre-producing factory.

Compensation agreement and contracts with Italian firms so far cover mainly chemicals manufacture and the gas industry. This form of cooperation may be extended to the manufacturing industry.

Soviet foreign trade organizations also do business with medium and small-size Italian companies. For example, FATA, Morando, Giustina, Berardi, Valfat and others. They sent equipment to the Kama Truck Factory in the city of Naberezhnye

Chelny; Telettra supplied equipment for the Baikal-Amur Railway; and Selenia—radars for air traffic control. In the early 1970s Ji and Ji delivered to the Soviet Union the complete livestock breeding equipment for feeding cattle and pigs and also equipment for producing balanced fodder. Today the firm delivers to the Soviet Union special mixed feeds and milk-regenerating equipment for livestock breeding complexes. Moreover, medium-and small-size Italian firms are often invited to take part in large-scale projects of Soviet-Italian economic cooperation as sub-contractors.

It should be noted that the opportunities available for broader Soviet-Italian economic cooperation are not always used to the full. Certain factors which stand in the way of normal progress in mutually profitable economic relations are still at work.

The "cold war"-originated lists of so-called strategic goods banned for export to the Soviet Union and other socialist countries are still in force in Italy. Customs tariffs apply to some 40 items in the export list approved in 1975 by Italy's Ministry of Foreign Trade and that of Finances. Specifically, these include certain types of electronic equipment, machine-tools, aviation equipment and navigation and radio communication facilities, aircraft fuels and lubricants, a number of chemicals, etc.

Quantitative restrictions of Soviet exports to Italy also continue to be a serious hindrance.

On May 6, 1976, the Italian Ministry of Foreign Trade together with the Ministry of Finances issued a decree (effective as of July 1, 1976) which governs the flow of imports to Italy. The decree makes imports contingent on the country of origin. Countries are broken down into codified geographical zones: zone "A" (Common Market countries, their overseas territories and associated countries; also, some developing countries in the Caribbean and the Pacific); zone "B" (the Soviet Union and European socialist countries); and zone "C" (Japan).

Attached to the decree is a list of goods with over 200 tariffed items which in fact means quantitative restrictions imposed by Italy on imports. These restrictions apply in the main to goods from the Soviet Union and other socialist countries.

In March 1975 Italy liberalized imports of natural gas from the Soviet Union. In July 1979 it applied the same measure to imports from the Soviet Union of mazut, diesel fuel, gasoline, paraffin and a number of other oil products.

Today quantitative restrictions continue to be imposed on Soviet exports to Italy of the following goods: bearings, tractors, motor vehicles, cast iron, ferroalloys, steel strip in rolls, steel pipes, sodium bichromate, window glass, etc.

At the 12th session of the Joint Soviet-Italian Commission the Soviet side pointed out that the operative quantitative restrictions on imports of certain Soviet goods to Italy formed a hindrance to their expanded deliveries, and emphasized the need for further liberalization of imports from the Soviet Union.

After Italy introduced the uniform EEC customs tariffs the duty levied on industrial products imported from the Soviet Union and other socialist countries runs from 5 to 20 per cent, not a favourable condition relative to the duty-free imports of similar goods allowed in from the Common Market countries.

Of late Italy has very often made use of protectionist plays such as special monetary and credit policies (restricted currency remittances and payments abroad; a special tax on transfer of money abroad) which has adversely affected purchases of Soviet goods, specifically, machines, equipment and manufactures, by Italian firms.

Particular attention should be given to deliveries of Soviet equipment and machines to Italy. Several examples of good progress on the local market can be cited. In 1972 two YAK-40 planes were sold for the first time to Italy. In 1971-1973 seven *Kometa* hydrofoil ships were delivered to Italy. They are b[illegible] used for passenger carriage, specifically, tourists, near the coasts of Sicily and Capri. Also won recognition Soviet-made UAZ cross-country minibuses which the Italian team used in auto-rally on African roads. On the whole, however, it needs saying that Soviet deliveries of machines and equipment to Italy are far from being exhaustive of the export potentialities of the Soviet engineering industry, and of the needs of the Italian economy. The problem was discussed at all meetings of the Joint Commission. It was stressed that the existing situation was not consistent with the present-day level and character of economic cooperation between such advanced industrial nations as the Soviet Union and Italy. Both sides expressed the opinion that it was necessary to expedite the studies already underway of specific possibilities for expanding the export of Soviet machines and equipment to Italy.

The Soviet market is of interest to Italy. Italian business sections increasingly favour continued détente, the broadening of traditional trade and economic relations with the Soviet Union based on mutual benefit and good prospects. Their viewpoint was clearly outlined in G. Agnelli's (President of FIAT) article in *Europeo*, in which he arrives at the unambiguous conclusions that resorting to economic sanctions against the Soviet Union is a great error. Moreover, it is a threat to world peace, and, vice versa, development of trade relations can facilitate a return to detente.[2]

The 26th CPSU Congress emphasized that the line of the Soviet Union for broader international economic cooperation remained invariable as a principled course in international economic relations reflecting the purposefulness of the Soviet foreign policy for the maintenance of peace and the development of détente and mutual understanding among nations.

The Soviet state regards cooperation with industrial capitalist countries as a factor stabilizing

[2] *Europeo*, No. 26, 24 giugno, 1980.

international relations. Therefore, it stands for the development of these relations on the basis of equality and mutual benefit.

Recently a book, *Leonid Ilych Brezhnev. Pages of Life* has been published in Italy. Addressing the Italian reader L.I. Brezhnev says: "I believe that the Soviet Union and Italy can go far along the road of cooperation—political, economic and cultural. Much has been done by both sides towards achieving this aim.... Following the policy of detente and raising their cooperation higher from one stage to another our countries can make an important contribution to a healthier political climate in the Mediterranean, on the European continent and throughout the world.

"The Soviet Union comes out most definitely for such a relationship with the Republic of Italy."[1]

There are all prerequisites for continued fruitful economic and industrial cooperation between the Soviet Union and Italy in the eleventh five-year-plan period.

[1] *Pravda*, March 28, 1981.

CSO: 3120/66

ECONOMIC

SPAIN

FACTORS RESPONSIBLE FOR CURRENCY DEVALUATION LISTED

Madrid CAMBIO 16 in Spanish 17 May 82 pp 56-59

[Text] You do not have to be one of the oldest in the place to remember when you could get a dollar for a duro. The last civil war began with this exchange rate. Since then, theirs has proliferated and the poor peseta which inflation has left at less than half its value in 5 years has given up ground in its international value. Today you have to pay a duro and 100 pesetas for each dollar.

The drop in the peseta, although slowed in recent days, is a one-way street. The present rate cannot be sustained for long. In recent weeks, there has been unmerciful speculation on the peseta, aided by a plethoric strong dollar. If tourism and the World Games do not remedy it, in a matter of months the figure of 120 pesetas per dollar might be reached.

"If we consider the lack of productivity in the Spanish economy, the most fair exchange rate would be around 120 pesetas," indicated Enrique Kaibel, chairman of the Foreign Trade Committee of the CEOE [Spanish Confederation of Business Organizations]. Sources in the ship construction sector, one of the productive activities most involved abroad, agree with this figure.

In his opinion, the artificial exchange rate for our currency cannot be sustained much longer. "Not only is it desirable that it go down but it is perfectly predictable in view of the real situation of the Spanish economy."

Enrique Kaibel added: "If there were no type of control like in the United States where you can fill a briefcase with dollars and leave freely, the peseta would go down to at least 150 per dollar."

The widespread nature of opinions like this have led to speculation on the peseta which is almost impossible to avoid. In the first 4 months of 1982, the foreign currency reserves lost about $1.4 billion alone. Concretely, in March $800 million went out.

In December 1981, there was a decision to stop the stubborn fall in reserves, valuing gold at market prices although its sale is unthinkable. In this way, the $11.878 billion that were accounted for in November rose to $15.337 billion a month later. In April, we are again at $13.730 billion.

At the Bank of Spain, movements concerning the peseta are planned without any concern. Bank sources indicated: "The balance of payments is one of the most positive aspects of the Spanish economy. The deficit is much better than we expected, exports have pleasantly surprised us, imports continue in moderation, tourism is going stupendously well and expectations are even better. We are not at all concerned."

According to these sources, the surprise in March and the fall in reserves have their origin in the big drop in foreign credits recorded that month. Spanish enterprises have gone faithfully to the international markets in search of financing but, in the first few months of 1982, they preferred to stay at home because credits are in liquidation here due to high foreign interests rates and, especially, the risk of having to repay the dollar credits with pesetas which are continually devalued. This business retreat was immediately made up for by the state which has committed itself to go out at its own risk in search of the foreign capital that the enterprises consider too onerous. International credit to the Kingdom of Spain totaling $450 million is part of this new policy.

What hurts the present exchange rate of the peseta? Spanish exporters themselves, interested in the situation continuing to deteriorate, are the first to contribute their little grain of sand. The traditional mechanism is to retain payment for their exports abroad. If the peseta devaluates, the longer they wait to repatriate the dollars, the more pesetas they will receive in exchange.

This practice was faithfully reflected in 1978. When the exchange rate of the peseta "normalized" after Fuentes Quintana's devaluation, entrance of capital totaled 130 billion pesetas. In 1981, in spite of the strong increase in foreign trade, revenue only reached 40 billion. In the opinion of the experts, this demonstrates the strong retention carried out by Spanish exporters at this time. According to some estimates, the amount awaiting the collapse of the peseta in order to return to Spain is about 200 billion.

Enrique Kaibel stated: "I think this figure is low." He added: "It is necessary to keep in mind that Spanish exports approach 2 trillion pesetas which would mean only 10 percent is pending return to Spain."

An authorized spokesman of the Bank of Spain was skeptical and stated that, if true, we would be in good shape. "I would be very satisfied if it were in our hands to recover these 2 billion whenever we wanted."

He said: "If we had this figure pending return to Spain, it would mean that we do not have any problem with the balance of payments. It would be only a problem of speculation. If only this were true, I would sign right now."

But the peseta is not only affected by the speculation of the exporters. The importers, the most harmed by the devaluation of the peseta, also contribute their grain of sand by anticipating their purchases and paying as soon as possible.

Political uncertainty also supports speculation. The deterioration of the image of the UCD [Democratic Center Union] and the possibility of its decomposition as a result of the coming elections to the Andalusian Parliament also contribute to the fragility of the peseta at a time when it is being demonstrated with statistics that it can compete in all the markets.

Exporting "Boom"

This ability to compete in spite of the groans of the exporters is an unquestionable reality. Exports in February surpassed those in January by 40 percent and those in February 1981 by 57 percent. Luis Linde, technical secretary general of the Ministry of Economy and Commerce, indicated: "Foreign trade is growing about 13 percent a year in real terms, precisely at a time of scant growth in world trade. This growth is so strong that it is impossible to maintain it."

Enrique Kaibel, foreign trade official in the CEOE, recognized that it is still possible to compete today with the dollar at 105 pesetas but he said that the situation is unsustainable. "We have an inflation rate of 7 or 8 points more than our competitors; the peseta will have to be devaluated. Also if we want to liberalize the economy, we would have to begin by liberalizing the exchange rate of the peseta."

In the general conspiracy on the peseta--in which the interests of the exporters, the political situation, the internal economic deterioration, the strength of the dollar and inflation play a part--the behavior of the French franc also participates. The collapse of the French currency will have a contagious effect on the peseta for two reasons: historically the peseta has been submissive to the franc; and the problems that afflict the franc today show what could happen with a socialist governemnt in Spain.

In the midst of the storm, the government and the Bank of Spain remain calm. It is a good indication although perhaps the situation has just overwhelmed them. Not even the fact that Spain's foreign debt--$25 billion--doubles the reserves seems to upset them. They said at the Bank of Spain: "We do not have nor will we have any difficulty getting financing in the international market in the coming years. We are not the United States or Switzerland but we are among the better situated countries. With the problem of the countries in the East and Latin America, U.S. bankers are completely satisfied to work with us. We offer solvency and sufficient credibility that no one has any fear about the capital that he lends us."

In a matter of weeks, the last word will be said. Meanwhile, many thousands of Spaniards try to obtain the necessary dollars for their vacations and even some for reserve while the enterprises with debts in dollars see themselves having to return almost 50 percent more pesetas than they had planned. At the root of the evils of the peseta lies the sad reflection of the many problems that afflict the Spanish economy.

7717
CSO: 3110/144

MILITARY BELGIUM

BRIEFS

LESS AIR FORCE FLYING--Lt Gen Marcel De Smet, chief of staff of the Belgian Air Force, declared recently that because, on the one hand, of a considerable reduction in the operating credits allocated for the purpose for 1982 in relation to the needs expressed $102 million, or a reduction of 2.2 percent) [as published] for flying the planes of the Air Force, and on the other hand, an 8.5-percent increase in the cost of fuel, because of a rise in the U.S. dollar-Belgian franc exchange rate, he would be forced to reduce the air-activity level of the pilots of the FAB [Belgian Air Force] for the year 1982 as a whole from 173 to 150 hours. Referring to the replacement of the Air Force's Mirage 5's, General De Smet declared that the two possible successors are still the F-16 and the Mirage 5 again, and that it would be desirable for a decision to be made during the summer. [Text] [Paris AIR ET COSMOS in French 24 Apr 82 p 47] [COPYRIGHT: A. & C. 1982] 11267

CSO: 3100/651

MILITARY FRANCE

TOULOUSE SPACE TRAINING CENTER TO OPEN IN 1983

Paris AIR ET COSMOS in French 15 May 82 p 11

[Article by Regis Noye: "Toulouse FIAS Center To Be Operational in 1983"]

[Text] Construction work has been under way at Toulouse since March on the FIAS [International Aeronautical and Space Training] Center, which is designed to accept foreign trainees. After having interviewed Mr Pierre Francois on the topic of FIAS activities (see AIR ET COSMOS, No 902), AIR ET COSMOS has this week asked Mr Jacques Joury, director general of FIAS, to provide our readers with a birdseye-view of this Center.

Objectives

The fundamental reason for the creation of an FIAS Center is the need to upgrade the levels of linguistic, as well as scientific and technological, knowledge of foreign students coming to France for training in aerospace careers. Whatever their prior level of training, past experience has shown that these students need a period of remedial instruction of varying duration (1 to 12 months) to bring them up to required entrance levels for the courses they will be pursuing in our schools and specialized training centers. Having established this basic premise, the next consideration was that the Center must necessarily be located in an environment offering at one and the same time a good educational structure and a solid industrial footing in the aerospace domain. The choice finally narrowed down to the city of Toulouse, France's second university city and the seat of a goodly number of aeronautical engineering schools as well as many industrial establishments. The FIAS officials very quickly found there was a dire shortage of student housing facilities in the city. Actually, Toulouse receives 50,000 students a year, of whom 6,000 are foreigners, but has, in its current structure, only 5,000 units of housing, of which only one-fifth can be rented to foreigners... Furthermore, although the city is well equipped with excellent facilities for teaching of the French language, these facilities are nonetheless not altogether suited to the real needs of FIAS students, who must have, in addition, a very thorough mastery of French technical language.

In view of these two findings, the FIAS undertook a study, beginning in July 1980, of the feasibility of building a center with its own facilities for not only receiving and housing foreign students but also for providing them the necessary linguistic and technical training.

The fact is that the CNES [National Center for Space Studies], having already for its part run into the same problems in the Toulouse region with regard to the foreign personnel participating in its international programs, provided strong backing for this project.

An Interministerial Committee decreed on 23 February 1982 the construction of the Toulouse Center under the Southwest Regional Development Plan.

Mr Joury stressed the innovative nature of the FIAS Center, which, as far as he knows, is the first in the world of this kind. He also pointed out the excellent reception accorded this project by the public authorities.

An Investment of 55 Million Francs

The construction and putting into operation of the Toulouse Center represents an investment totaling 55 million Francs. This total is being finance by: The GIFAS [French Aeronautical and Space Industries Group] (12.5 million francs, or about 25 percent); the Ministry of National Education (10 million francs); the Ministries of Defense and Transport (7.5 and 3 million francs, respectively); the DATAR [Delegation in Charge of National Development and Regional Action] (2 million francs); the CNES (1 million francs). To this must be added the very strong support being provided by the local authorities: The Regional Council is participating to the extent of 5 million francs and the General and Municipal Councils of Toulouse have guaranteed bank loans up to a total of 10 million francs, each of them having assumed half the responsibility for reimbursement. FIAS is currently seeking supplementary financing to cover the remaining 4 million francs. In commenting upon the size of the GIFAS's participation, Mr Joury remarked that this is the first time an industrial sector has invested so much in the domain of training.

Capacity for 200 Trainees

The Toulouse Center is situated inside the Lespinet aerospace complex, in the immediate vicinity of the establishments of the CNES, the ENAC [National School for Civil Aviation], the ENSAE [National College of Aeronautics and Space]/SUP'AERO [College of Aeronautics], the Paul Sabatier University, and the LAAS [Automation and Systems Analysis Laboratory]. The terrain on which it is being built measures 28,000 m^2, of which 17,000 m^2 were ceded to FIAS by the CNES and 11,000 m^2 by the ENAC. The covered area measures 13,000 m^2, the rest of the terrain being occupied by an all-sports gymnasium facility and three tennis courts, a parking lot, and greenery. The installations include: one classroom facilities building designed to handle 200 trainees and equipped with 20 classrooms, with language laboratories and with lecture halls; four buildings of living quarters design to house trainees and their families if necessary, that is, 120 single

rooms, 50 studios, 25 apartments for 3 to 4 persons, making possible the housing of around 300 persons all told; a 250-seat auditorium equipped with simultaneous translation facilities; an administration building; a restaurant side by side with the living quarters complex; and a place of worship. While the Center is principally designed to accommodate foreign students, it is worth noting that certain of its installations can be used to fulfill other needs. In particular, its auditorium can be used for meetings, symposiums, etc., during 250 days of the year, with a view to maximizing its profitability. Moreover, while the students are required to vacate the Center upon completion of their "remedial" training period, certain ones among them will always be given the opportunity to return, particularly if they run into housing problems later.

With respect to the training to be offered by the Center, the FIAS plans to draw up a catalog of courses covering a broad enough range of training to meet the specific needs of each group of students. The students will be given, immediately upon arrival, a levels test, and their studies program will be drawn up on the basis of their individual test results. Their progress will be checked periodically with a view to readjusting their programs if necessary. The teaching staff will not be hired directly by FIAS, but rather assigned by the University of Toulouse Le Mirall and by neighboring engineering schools in accordance with the required specialties.

The Toulouse Center is scheduled to open its doors on 1 October 1983 to welcome its first trainees for the 1983/1984 university year. In conclusion, Mr Joury pointed out that everything possible has been done to ensure that the quality of its students will be worthy of the French aerospace industry's expectations and that it will provide an example that other industrial sectors will follow.

9399
CSO: 3100/693

MILITARY FRANCE

THOMSON-CSF INTRODUCES NEW RADAR, IMPROVED CROTALE MISSILE

Paris AIR ET COSMOS in French 15 May 82 pp 76-78

[Article by Pierre Langereux: "Thomson-CSF's New Naval Weapons"]

[Text] On 7 May, the Thomson-CSF [General Radio Company] exhibited to the press its new weapons, built by its various divisions, for the naval forces. The exhibit was held on the new premises of its Submarine Activities Division at Sophia-Antipolis near Nice. This establishment, which was opened only 15 days ago, with 300 employees, will supplement the one installed since 1963 at Cagnes/mer which currently employs 1,000 persons. A second unit will be built at Sophia-Antipolis very soon to house Thomson-CSF's special acoustics techniques.

Market of Over 130 Radars for Maritime Patrol Planes

Thomson-CSF estimates at over 130 units the potential near-term market for its new family of high-performance airborne radars designed for maritime patrol aircraft and for ASW [Antisubmarine Warfare] and surface warfare aircraft.

The three Band-X (9-10 GHz) radars that have now been developed in this family--IGUANE, VARN and AGRION 15--differ as to their use but are identical insofar as concerns their detection of targets. They use the pulse-compression technique, which permits the simultaneous transmission of a high-energy pulse to detect at very long range and a very narrow pulse to eliminate the parasitic effect of the waves (see AIR ET COSMOS, No 795). Thus, Thomson-CSF's maritime surveillance radars have pulses 10 times shorter (nanosecond [ns]) and instantaneous peak powers 35 times higher than conventional magnetron-type radars. Thomson-CSF claims moreover the highest pulse-compression ratio for this type of radar.

The performance characteristics of these new Thomson-CSF pulse-compression radars are remarkable. According to Thomson-CSF, the VARAN has a high detection probability at sea: A submarine periscope at 10 nm [nautical miles] (20 km), a small craft at 30 nm (55 km), a trawler at 45 nm (85 km), a patrol boat at 60 nm (110 km), a merchant ship or frigate at 130 nm (240 km) in a force 3 or 4 sea. These performance figures are 2 to 25 times higher than those of conventional radars (where comparison is possible). Pulse compression is actually the only currently known technique for furnishing the high power and narrow pulse-width

needed to detect targets at sea in bad weather. Radars of this type have already been built in the United States (the Texas Instruments APS 116) and in Great Britain (the EMI Searchwater). But Thomson-CSF has modified the structure so as to be able to mount these radars in small aircraft while maintaining the same performance capabilities with respect to small targets (patrol boats, submarines, etc); this means lighter-weight and, above all, more secretive radars. The VARAN, for example, at 113 kg, is 6 to 8 times lighter and 3 to 9 time more secretive than its competitors (of the pulse-compression type).

The ANACONDA

In addition to their basic detecting function, Thomson-CSF radars can also be used to classify (resolving power a few meters) by the mere addition of a special signal-processing unit. This device, the ANACONDA [Airborne Doppler Coherent Analyzer], provides a real-time, very highly defined image with respect to both distance (inherently excellent) and bearing (with the Doppler processing device via lateral sweeping with a synthetic antenna). But this SLAR [Side-Looking Airborne Radar] function uses the same lightweight antenna (13 kg on the VARAN) as that of the radar, and not a special antenna as do some competitors' radars. Moreover, as regards optical identification techniques (infrared or dim-light TV), SLAR has the advantage of being usable in daylight as well as at night and in all kinds of weather (through clouds, fog, etc), with constant resolution up to over 100 km. The radar can also be equipped with an IFF [Identify Friend-or-Foe] interrogator, like the LMT [expansion unknown] NRAI-IOA [expansion unknown], fitted to the VARAN and IGUANE radars. The VARAN-ANACONDA system is thus three radars in one (surveillance, SLAR and Doppler).

More Than 130 Units

Thomson-CSF's three airborne pulse-compression radars are currently in service or under test.

The IGUANE [On-Board Observation Instrument for Naval Aircraft] is now fully installed aboard the planes of the French naval air arm's Breguet Alize Flotilla based at Nimes or on aircraft carriers. Twenty Five IGUANE radars were ordered to equip the modernized Alizes and Thomson-CSF is planning on supplying 40 additional radars for the ANG's [New Generation Atlantics], the first two prototypes are already flying. The ANG will have the unique distinction of being equipped with an integrated tactical system consisting of an IGUANE radar with IFF interrogator, an IFF responder (NRA19A), an ESM [Electric Scanning Radiometer] system (ARAR 13), and an acoustic system (SADANG [expansion unknown]), organized around a powerful CIMSA [expansion unknown] 15M/125X computer.

The ARCANA [Course-Correcting and Map-Making Equipment for Blind Navigation] is a spinoff from the IGUANE, specially adapted to precision navigation of the FAS [Strategic Air Force] Mirage 4's. Many ARCANA units have been ordered.

The VARAN [Airborne Antiship Surveillance Radar], a lightweight derivative of the IGUANE but with the same performance characteristics (with very-low-noise amplification to compensate for the loss in gain) can be used on all aircraft (planes and helicopters). It has already been adopted by the French Navy's air arm for its Gardian maritime surveillance planes (which, unlike the U.S. Coast Guard's Guardians, use a single antenna). Of the 25 VARAN's planned for the Gardian market, in France and abroad, 10 have already been ordered. A VARAN-equipped Gardian has just returned from a highly successful exhibition tour through India, the Middle East and Senegal (Dakar) where it demonstrated beyond any doubt the capabilities of radar for surveillance over the 200-mile range and as an aid to fishing (schools of tuna at 30 nm). VARAN will be installed shortly on the Dauphin and Super Puma helicopters being built by AEROSPATIALE [National Industrial Aerospace Company] for French Navy and for export. VARAN can also be installed aboard the Nomad and the Transall.

The AGRION 15 [Naval Target, Observation, Search and Identification Equipment], designed for close support of the Navy's forces, has about the same performance characteristics as the foregoing type with respect to maritime surveillance. But in addition, it is designed to provide complete guidance for AEROSPATIALE's AS 15 TT air-surface missile and to designate the forward-scatter target for the putting into operation of this weapon system by helicopter-equipped ships, the whole also forming an integrated antiship tactical system. The AGRION 15 will be put on the Dauphin AS 15 TT missile-armed helicopters (range 15 km) that have been ordered by Saudi Arabia (Sawari contract). Twenty-four AGRION 15 radars have been ordered for the Dauphin helicopters being built for the Saudi 2,000-ton frigates, and Thomson-CSF is planning on a market totaling 40 AGRION 15's with the new AS 15 TT missile orders currently being negotiated. Two Dauphin helicopters equipped with AGRION 15's have already flown and the first launching of an AS 15 TT radar-guided missile is scheduled for the end of 1982.

The NAVTAC

Thomson is also offering a new integrated tactical system, derived from that of the ANG, for medium-sized planes and for navy helicopters. This system, the NAVTAC [expansion unknown] has been specially developed by Thomson-CSF jointly with AEROSPATIALE for a version of the Super Puma designed for export. The NAVTAC system consists of a VARAN or AGRION 15 radar and of a DR 2000/DALIA or a DR 4000 electronic warfare system organized around a computer, and of a tactical display console enabling the management of 200 "contacts" and the presentation simultaneously of some 100 contacts in a two-color display. The NAVTAC can also receive the data transmitted by Thomson-CSF's compact new system of acoustic buoys, the LAMPARO [expansion unknown], as well as those transmitted by a sonar and from the aircraft's navigation system for the putting into operation of weapons.

Antisurface and Antimissile Capabilities of the 'Naval CROTALE'

Thomson-CSF's low-altitude surface-air weapon system, the Naval CROTALE [expansion unknown] has recently been improved to give it now also an antisurface capability against fast patrol boats and an antimissile capability against

sea-skimmer antiship missiles. This improved version of the Naval CROTALE, developed to meet the requirements of Saudi Arabia (Sawari contract), will also be used to equip the French Navy.

The Naval CROTALE is a very-short-range, highly automated weapon system for the interception of aircraft (planes and helicopters) by means of radar-guided or optronically (TV or infrared) guided missiles. The Naval CROTALE is optimized to intercept at a distance of 600 to 8,500 meters from the targets of saturation attacks by planes (equivalent radar area 1 m^2) flying at Mach 1.2 between 50 and 3,000 m of altitude and under a 2 G load factor. For example, three planes attacking at Mach 0.9 will be destroyed: The first at 8.5 km, the second at 4.2 km and the third at 1.4 km, or, respectively, at 28 sec, 42.5 sec and 52 sec following designation of the target. Against non-maneuvering objectives (planes in stabilized flight or helicopters in stationary flight), interception can be effected at a distance of up to 12 km. But now, the Naval CROTALE can intercept, at a distance of 6,000 m, subsonic or supersonic antiship missiles (equivalent radar area 0.1 m^2) flying at speeds up to Mach 2 and at an altitude of from 4 to 3,000 m! Some 45 firings of the Naval CROTALE have already been carried out with an average success rate of 75 percent, 7 of which (all successful) since the beginning of 1982 by the French Navy.

As a result of these improvements, the weapon system has a destructive probability of 80 percent against one missile and of 96 percent against two missiles fired in salvo against the same target. The system's effectiveness is owing mainly to its firepower (8 missiles on ramp and ready for firing), its short reaction time (6 sec), its high-performance missile (supersonic 35 G maneuverability), its precision of guidance (flyby distance 1 m), the power of its bursting charge (15 kg in bursts concentrated within a lethal radius of 8 m), and its proximity fuse (tailored to the geometry of interception). Its antimissile and antisurface capability is mainly owing to a special guidance configuration using a SAT [Telecommunications Corporation] SEID [European Company for Installation and Broadcasting] long-range infrared differential deviation meter; a new Thomson-CSF electromagnetic proximity fuse; and an improved firing computer (increased memory and speed) embodying a new guidance principle.

Thomson-CSF has already delivered the first eight Naval CROTALE launching units ordered by the Navy in 1976 to equip the Saint-Mandrier Naval Training Center and seven ships consisting of three F 67 Tourville-class frigates and four C 70 Georges Leygues-class corvettes. The last of these 8 units was delivered in January 1982. The Navy also ordered in September 1981 five other launching units to equip its new C 70 corvettes beginning at the start of 1984, and it is planned to return to the prototype launching unit used by the testing ship "Ile d'Oleron." The Navy will thus have 14 Naval CROTALE launchers (basic version).

The improved version of Naval CROTALE will be out by the beginning of 1983 and Thomson-CSF plans to carry out its first test launchings starting in June 1983, against balloons and target-missiles (Chukar 2), at the CEL [Landes Testing Center]. This antimissile version is being built for Saudi Arabia, who will receive its first launchers by the beginning of 1984 to equip its 2,000-ton

frigates. Thomson-CSF, however, is negotiating with the official French naval services to re-equip the French Navy with this antimissile version. The decision is tentatively scheduled to be taken by the end of this year with respect to the upgrading of the French Navy's Naval CROTALE's beginning in early 1984.

9399
CSO: 3100/693

MILITARY FRANCE

COMPUTER-ASSISTED DESIGN ADAPTED FOR TANK, WEAPONS PLANNING

Experimental Application For Tanks

Paris AIR ET COSMOS in French 24 Apr 82 p 34

[Article by Pierre Langereux: "The DTAT (Technical Directorate for Land Armament) Is To Carry Out Two-Dimensional DAO [computer aided drafting] Experimentation"]

[Text] One of the most important applications of DAO to weaponry is presently beginning in the DTAT, which is starting a 1-year experimentation program in five of its six establishments. This is the first application of two-dimensional DAO in the design and manufacture of the combat-tank elements made in France at the industrial level.

This experimentation of broad scope, to which the DTAT is going to devote Fr 12 to 14 million, including Fr 6.5 million in equipment will begin at the end of April with the delivery of the DAO tools selected for the operation. They include CII-HB Mini-6 computers associated with Condor software developed by the DRET [Directorate of Research and Technical Studies] in cooperation with the ETCA [expansion unknown] and the INRIA [National Data Processing and Automation Research Institute] and marketed by the CISI [International Computer Services Company]. The programmable graphic terminals (TGP) leased from the CISI will be installed in five big DTAT establishments: the Satory installation (AMX-APX) for design of tank chassis; the Roanne Construction Shop (ARE) for manufacture of tank chassis; the Tarbes Shop (ATS) for design and guilding of turrets; the Bourges Design and Manufacturing Installation (EFAB) for design of light weapons (cannon of 20, 25 and 30 mm) and artillery (cannon of 100 and 120 mm); and the Tulles Weapons Factory (MAT) for manufacture of these weapons.

More particularly, the experimentation will involve application of two-dimensional DAO* to mechanical pieces in the initial phase, and subsequently, extension to the electrical and hydraulic circuits of vehicles and weapons. The DTAT thus plans to use DAO for establishing and correcting plans for chassis (mechanisms), turrets (location) and complete weapons at the preliminary-plan stage through complete development of the prototypes. The work will

*Subsequently, if this experimentation proves satisfactory, the DTAT could envision introduction of a three-dimensional DAO system using the Euclid software, which has the merit of being compatible with the Condor software. But for the moment, the DAO-3D systems are still too expensive for industrial use in establishments such as those of the DTAT.

be concentrated on the chassis of the future EPC (Main Battle Machine) heavy tank or of a derivative of the AMX-30 tank intended for export, as well as on adaptation of the new "arrow projectile" to the 105-mm cannon of the AMX-10 RC light tank and installation of a conduct-of-fire scope on the AMX-30-B2 tank. It is also planned to study the development of a new 25-mm cannon for both armored vehicles and for airplanes and helicopters.

Uses At Military Installations

Paris AIR ET COSMOS in French 24 Apr 82 pp 34-35

[Article: "CFAO (Computer-Assisted Design and Manufacture) Being Developed in All the Establishments of the DGA (General Commission for Armament)"]

[Text] The General Commission for Armament of the French Ministry of Defense set up 3 years ago (1979) a technical-coordination group assigned to study and detail the applications of the CAD [Computer-Aided Design], CAM [Computer-Aided Manufacture] and DAO [computer aided drafting] techniques to the weapons industry.

This "automation in design and production of armaments" group working under the aegis of the Department of Technical Research and Studies (DRET) of the DGA is directed by a senior armaments engineer of the Department of Naval Construction and Weapons (DCAN) of Brest.

But it is actually involved in applications of computer-aided design in the various areas of armament used by the establishments concerned--aeronautical construction (DTCA [Technical Directorate for Aeronautical Construction]) and naval construction (DTCN [Technical Directorate for Naval Construction], missiles (DTE [Missile Technology Directorate]) and telecommunications (SCTI [Central Service for Telecommunications and Data-Processing], etc--as well as in training of the personnel specialized (DPAI [Directorate of Industrial Affairs Programs for Armament]) in the use of these new techniques. In fact, the introduction of CFAO into armament concerns nearly all the establishments of the DGA.

The Central Technical Establishment for Armament (ETCA), attached to the DRET, is working in cooperation with the National Higher School of Advanced Techniques (ENSTA) on a long-term project consisting in setting up an integrated CAD instrument that will be made available to the establishments of the DGA. This system uses in particular a CII Mitra-15 computer in liaison with the Univac 1110 of the Center for Scientific Armament Computing (CCSA). It comprises a shared-time console, a Tecktronix interactive console, an electrostatic printer, and the Euclid software.

The Mechanics-Chemistry-Materials Center (CMCM) of the ETCA, responsible for technical support of the establishments of the DGA in the areas of numerical control of machine-tools and CAD-DAO, also uses the Euclid software for con-

cepts such as the kinematics of deployment of crossing equipment (Gillois bridge) and fitting-out of ships.

The Defense-Analysis Center (CAD) of the ETCA, which is responsible for technical-operational studies in aid of decision-making about future armament, makes broad use of CAD for modeling of weapons systems (vulnerability of tanks and helicopters, modeling of terrain, simulation of missile behavior, etc).

The DGA's industrial organisms--principally, the installations of the Land Armaments Industry Group (GIAT) and those of the DTCN, which have done a lot of work in the area of numerical control--have changed over to CFAO in recent years. In particular, the DCAN of Brest has acquired the SICEN (Computer System for Naval Design and Studies) system developed by Naval and Industrial Construction of the Mediterranean (CNIM) of Seyne-sur-Mer. This software is used in particular by the shipyards of Dunkerque, Saint-Nazaire and La Ciotat, as well as in the Institute of Naval-Construction Research (IRCN). In parallel, a number of university organisms are doing CAD research. The Institute of Applied Data-Processing Research (IRIA), in liaison with the CPAO [expansion unknown] of the ENSTA, has set up a CAD center at Palaiseau and has developed the Euclid software that makes it possible to manipulate three-dimensional objects on an interactive basis. The Toulouse Design and Research Center (CERT) of ONERA [National Office for Aerospace Studies and Research] has brought its research to bear on effective management of the data bases, producing the GERMINAL system developed with the DRET.

11267
CSO: 3100/651

MILITARY TRANSPORT ROUTES HELD IN WAR-READY STATUS

Paris ARMEES D'AUJOURD'HUI in French May 82 pp 10-11

[Article by Col Guy Hardy: "Military Transport Routes in Peacetime"]

[Text] Before a breakout of hostilities, the setting-up of mechanized units, and then, in combat, logistical support of the formations put in the field require sizable road-transport capacity. For this purpose, the Army has set up a peacetime transport organization that is very close to wartime organization.

In recent years, the development of mechanization of combat formations and the increase in the calibers and rates of fire of the support weapons have engendered growing transport-potential needs.

Within the framework of the reoganization measures adopted in 1976-1977, the command has defined an instantaneous carrying capacity designed to safeguard the potential of the big armored units during execution of the initial movements and to move, at the start of action, a sizable part of the supplies necessary for support of the forces during battle.

In parallel with the directions taken in the area of operations transport, the cost-effectiveness studies done by the EMAT [General Staff of the Army] have brought out the fact that the means intended for execution of wartime missions could be used to a great extent to meet the Army's peacetime needs.

This explains the strong development of "peacetime military road transport."

From the Small Package to the Battle Tank

Proper execution of transport in France and in the FRG made it necessary to have a functional organization capable of ensuring centralization of the missions of general interest, to coordinate them, and decentralization in the execution and tracking of them.

The structures that have been adopted are those of wartime. A specialized unit of the support department of the EMAT does the planning of the missions of an interregional character, the execution of which it assigns to the road-transport commands, the regional directors of transport.

These missions, taken into account at this echelon and coordinated with the regional transport, are carried out in favor of the services, including the common services, by the road-transport formations[1] in ministerial reserve or belonging to the big units. They present certain analogies with the wartime formations, for they involve the same materiel, quite often the same depots, and nearly always the same packaging, pallets or containers.

Based initially on a grouping technique, this organization, of permanent type, makes possible the execution of missions, ranging from a day to half a month, by sections or individual vehicles. From experience, it has appeared desirable to superimpose special subsystems on this basic system.

Mass transport of a periodic character, but planned, has thus been developed from 1978 on. On the tactical level, the advantage of moving tank regiments by road for stays in camp or on the occasion of major exercises[2] seemed obvious. In the area of logistical transport likewise, road-transport formations equipped with big carrier groups have acquired the capacity to handle in very short times the loading of freight cargos going to support our overseas forces.

The following year, the EMAT completed the provisions taken at the national echelon by means of an organization designed to handle "transport of small packages," being freight other than munitions and weighing less than 100 kilograms.

This subsystem is used for serving the subscriber establishments on the same day each week without their having to submit special requests. It is based on collection and distribution circuits for each military region, feeding into a national sorting center manned once a week by the 121st Road-Transport Regiment of Montlhery.

The diversity of the materiel and the magnitude of the tonnages to be transported by these various systems make it possible to use practically all the types of truck making up the "war" fleet. While the dispatching of tanks requires specific equipment--the TRH 350 and the Nicolas semitrailer--transport of stores makes it possible to use all types of carrying equipment: medium[3], heavy[4] or semitrailer units.[5] The complementarity of the vehicles offers great flexibility of use, making it possible to handle any eventual incompatibilities among the various loads, the breakdowns to be made at delivery, or inversely, the consolidations to be made fora given direction.

Military road transport is experiencing growing success, based essentially on flexibility of use of facilities that provide door-to-door transport at a competitive cost that generates economies in the Army's budgets. Since 1978, it has made it possible to ship each year an average of 250,000 tons of materiel and 35,000 to 40,000 packages, with 23 million kilometers traveled.

The arrangements made are cost-effective on the economic level, for they make it possible both to amortize materiel and to accelerate the times needed for putting certain spares or supplies in place while limiting the volume of the stores. Furthermore, they guarantee deliveries to the establishments in case of paralysis of the public or private sectors. The balance-sheet is therefore a positive one in all regards.

This organization therefore gives the command relative freedom of action in peacetime. It also is at the origin of an improvement in the operational effectiveness of the transport formations, effectiveness that is perfectly proportioned on the occasion of major exercises. The peacetime missions--whether involving movement of armored formations or activation of the supply chain--are closely related to those of wartime.

In making a bet on development of military road transport, the Army took a reasoned risk, but the reults achieved have been conclusive.

The output of the system, whose structures are firmly in place and whose mechanisms are thoroughly mastered, is now reaching a level that could be raised only by an increase in the personnel strength to be assigned to the missions. As it was conceived, it constitutes an efficient, effective instrument, of a certain usefulness for training the units and still perfectible, of couurse, but immediately available for wartime.

Thanks to the provisions adopted in 1977, the command has thus increased its freedom of action in the field of transport. The value of this should be considered, for in peacetime as in wartime, it constitutes one of the essential factors in the success of maneuvers.

FOOTNOTES

1. Army-corps road-transport regiments, ministerial-reserve road-transport regiments, transport squadrons of the RCS's [expansion unknown], regional road-transport squadrons. (The transport facilities of the services or the common services are generally used within the framework of the needs peculiar to each establishment.)

2. On the occasion of the Meuse 81 exercise of the 1st CA [Army Corps] two tank regiments were transported by the 101st Tank-Carrier Squadron of the 516th RT [Transport Regiment] at Toul.

3. GBC 8 KT or SM 8 and Titan Coder trailer of 3.5-ton capacity.

4. Unic P-270 and Lohr trailer of 11-ton capacity.

5. TR 280 and 25-ton Trailor semitrailer.

Col Guy Hardy, a graduate of Saint-Cyr (class of 1953), has served in the various types of road-transport formation in Algeria, in France, and in the FFA [French Forces in Germany], DEM [expansion unknown]. He holds the BEMS [Diploma in Advanced Military Studies], and has held the post of chief of the transport section of the support department of the EMAT. He is presently deputy senior officer and chief of staff to the inspector general of road transport.

11267
CSO: 3100/712

MILITARY

FRANCE

NEW SNECMA ENGINE TO ALLOW PLANES LOWER ALTITUDE

Paris AIR ET COSMOS in French 8 May 82 p 27

[Article: "The Larzac 04-C20 Is Running on the Bench--This New Version, More Powerful, Will Give the Alpha Jet New Possibilities, Especially in Hot Weather"]

[Text] SNECMA [National Aircraft-Engine Design and Construction Co] has just announced that the first running of the Larzac 04C-20 turbojet took place in Turbomeca at Bordes on 3 March, in conformity with the program set. The Larzac 04C-20 is none other than the Larzac 04X, the development of which was announced on the occasion of the last Le Bourget exposition. This version with increased thrust (1,440 kg on the ground in standard atmosphere, as against 1,350 kg for the Larzac 04C6) is intended for the Alpha Jet customers who use this plane in a particular flight zone (low-altitude penetration) or in more severe atmospheric conditions (hot-weather takeoff). It has good chances, of course, of being adopted by the customers for the Alpha Jet NGEA (New Generation for Training and Attack), the characteristics of which were published in our issue No 896 (cf AIR ET COSMOS of 13 March 1982). At low altitude and high temperature (30 °C), the gain in thrust can be as high as 13 percent.

The guaranteed performance level has been reached as of the first runnings. The specific parts of this new version (the blading of the compressor and of the high-pressure turbine) had already been subjected to various partial tests, on component benches or on engines. The qualification test (50 hours of operation) and the approval test (150 hours) are programmed so as to adhere to the objective of delivery of the first production-run engines starting in mid-1984.

The development of the Larzac 04C-20, like that of the current Larzac 04, is being carried out by the GRTS [expansion unknown] on a cooperative basis, the German companies MTU [Engine and Turbine Co] and KHD [Kloeckner-Humboldt-Deutz] being associated in the program. The two versions, of the same bulk and external geometric configuration, are 100-percent interchangeable, at the level both of the complete engine and of its modules, or even at the elementary-parts level. The additional thrust is provided by several modifications of the stream, to provide an increase in the flow capacity of the high-pressure body, and an increase in the heat level, made possible by the application of new technologies in production of the turbine vanes, the cooling conditions for which are improved (cavity-type vanes, directed solidification).

11267
CSO: 3100/709

MILITARY

FRANCE

BRIEFS

MIRAGE IV CRASHES--A twin-jet Mirage IV of the Strategic Air Force crashed into the sea off Biscarosse in the late morning of Wednesday 21 April 1982, shortly after taking off from the Cazaux air base for a training mission. As we go to press, the pilot and navigator had not been recovered, despite the search operation that was immediately started. An investigation is under way. [Text] [Paris AIR ET COSMOS in French 24 Apr 82 p 47] [COPYRIGHT: A. & C. 1982] 11267

CSO: 3100/651

GENERAL FRANCE

AEROSPATIALE CONDUCTS R&D ON CARBON COMPOSITES FOR SPACE USE

Pairs AIR ET COSMOS in French 8 May 82 p 41

[Atticle by P.L.: "Aerospatiale, Leader in Carbon Composites for Space Use"]

[Text] Aerospatial (ballistic and space systems division) has just presented its carbon-fiber and epoxy-resin space components.

The centerpiece presently being built by Aerospatiale at its Mureaux establishment is the SYLDA (Ariane Double-Launching System), for launchings of two satellites by the European rocket. The SYLDA has the form of an enormous "egg" of 2.8 mm diameter and 3.9 to 4.4 m height, depending on the version, and its two half-shells are constituted by a sandwich with an aluminum beehive coated on both sides with a skin of carbon-fiber/resin composite. The bare mass of the SYLDA is 140 kg. The current version of the SYLDA is conceived for launching satellites of 600 to 1,000 kg with Ariane 1, and the improved version is for satellites of 800 to 1,400 kg with Ariane 3. Three SYLDA's have already been delivered, including the first flight model, which will be used with the next Ariane firing (L5), in September 1982, for the double launching of the European MARECS [expansion unknown] 2 and Sirio 2 satellites. Nine other SYLDA's have been ordered, and will be delivered between now and the third quarter of 1985.

Aerospatiale's aluminum-beehive/carbon-fiber sandwiches will also be used in seven French, European and international satellite programs. These composites will thus go into the construction of some 20 satellites, including the Exosat satellite (structural panels) and its apogee motor (screen and interstage skirt), two MARECS satellites (L-band antenna reflector, 2 m in diameter), five Intelsat 5 satellites (structural panels and--starting with the F-10 model--the central tube), three Telecom 1 satellites (antenna reflectors and solar panels), two Arabsat satellites (structural panels, central tube and solar panels), two TDF-1 and TV SAT satellites (structural panels, solar panels, antennas and adapter), and two Spot satellites (structural panels, payload plate). In addition to these items, there is also a range of truncated-cone adapters (of 25 to 80 kg) for single launchings of ECS [European Communications Satellite], Telecom 1 and Intelsat 5 satellites, as well as the carbon-resin cases of the Spot's flexible solar generator and the skirt of the apogee motor of Exosat.

In addition, Aerospatiale is carrying out a big research-and-development effort in the area of components for space use: in particular, building of prototypes

of monolithic-carbon parts--stiffened antenna reflector (rear surface), wide-diameter (2 m) crown, truncated-cone adapter of modular lattice design (diameters 0.8-1.9 m), a cylindrical sleeve reinforced (inside or outside) and made in a single operation (by thermoretractable mold); but also with satellite antenna reflectors (diameter 0.74 m, 1.5 kg) of stiffened carbon-beehive or Kevlar-beehive covered with a carbon skin (diameters from 0.5 to 0.8 m).

11267
CSO: 3100/709

END