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West Europe Report

(FOUO 15/81)



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WEST EUROPE REPORT

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COUNTRY SECTION

DENMARK

FAEROES' FINANCE MINISTER STEPS DOWN, WARNS OF PROBLEMS

Stockholm VECKANS AFFÄRER in Swedish 29 Jan 81 p 29

[Report by Ulf G. Eriksson based on interview with Demmus Henze]

[Text] A Nordic tax paradise on the way to breaking loose from Denmark, one might call the little Faeroes island group far out in the Atlantic. Dividends are taxed at only 12 percent, bank interest at only 0.5 percent. The population is growing, but the future is not without problems; fishing accounts for 95 percent of exports and is thus entirely dependent on world market prices. "We must transform our fisheries," says Demmus Henze, outgoing finance minister.

Torshavn (VECKANS AFFÄRER)--"Do away with real estate assessments and taxes on real property, minimize the taxes on stock dividends and savings." Demmus Henze, outgoing minister of finance of the Faeroes and leader of the conservative People's Party, would like to give that advice to his Swedish colleague Gösta Bohman.

"That way the Faeroese do not speculate in stocks, real estate, or money transactions," says Demmus Henze. "Here we earn money by honest work."

The Faeroes with their independent position within the Kingdom of Denmark appear today as something of a tax paradise for their tax-ridden Nordic neighbors. Stock dividends are taxed at 12.5 percent, withheld by the company in question. The same is true of savings, where 0.5 percent is paid directly to the treasury. Interest and dividends are thus not counted in with the remaining income.

Real estate taxes and real estate assessments are completely unknown concepts on the Faeroes--a thing that must be felt as sweet music by the many Swedish landowners who are agonizing over what the recent real estate assessments will have in the way of economic consequences.

"Certainly the tax climate here in the Faeroes is considerably more favorable than in the other Nordic countries," Demmus Henze concedes. "But calling our country a tax paradise is wrong. Quite recently we were forced to raise the income taxes quite considerably, and they are nearly as high now as those of other Nordic countries."

But it must be borne in mind that the Faeroese earns at least as much as an income-receiver in the rest of the Kingdom of Denmark. In many cases more.

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A general optimism prevails on the Faeroes. The population growth is good: in 1970 the population increased to nearly 39,000 inhabitants, and now nearly 44,000 people live in the strange little island kingdom way out in the Atlantic.

Not in the EC

"Our big problem is the transformation of our fisheries," says Demmus Henze. "Since the Lagting (= Riksdag) resolved that the Faeroes shall be outside the EC while Greenland, e.g., is in, the possibilities of fishing a long way out have decreased very significantly. In addition, the quotas in the Atlantic and in the North Sea for more and more species of fish have decreased very significantly in recent years.

"There are two ways out of this dilemma: first, a considerable restructuring of the fishing fleet is needed from larger vessels for distant fishing to smaller ones for home fishing, and second, the larger vessels must go to distant seas and continents."

In spite of the 200 nautical mile economic zone around the Faeroes that was proclaimed several years ago, the big fishing trawlers now go a long way from home to make their living. It is especially the floating shrimp canneries that now fish, e.g., in the waters off Guiana on the north coast of South America and along the west coast of Africa.

"Certainly it is a hard conversion that is taking place," Demmus Henze concedes, but he is optimistic. "We have chances of increasing employment quite considerably in this work by further processing the fish we catch. Today about 12 percent of the catch is processed; we hope to be able to double that figure within a few years. In addition we are investing state money in other industries to get them started."

Last spring the Nordic Council again discussed the question of the Faeroes' representation; the goal is for the island group to have a quite independent status in most of the Nordic cooperation.

Demmus Henze regards a break with Denmark as inevitable some time in the first decade of the 2000's. "Denmark and the Faeroes are such different societies that the union must gradually end."

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COUNTRY SECTION

FEDERAL REPUBLIC OF GERMANY

FDP COALITION POLICY IN DIFFERENT LAENDER

Hamburg CAPITAL in German Feb 81 pp 16-17

[Article: "Into the Coalition Bed"]

[Text] Not long ago, the FDP in Rhineland-Palatinate expressed its ambivalent relationship to the governing Christian Democrats in Mainz by presenting CDU Minister President Bernhard Vogel with a hot-water bottle as a morning gift. Vogel, who is governing with a mandate of 51 out of 100 Landtag seats, would prefer to share the power with the FDP. While addressing the party, he had become offensive. He had no intention, the confirmed bachelor said--it just slipped out--"to keep his bedcover open constantly in expectation that the FDP will jump into the coalition bed."

The Free Democrats responded to Vogel's graphic turn-of-phrase and continued the metaphor: They sent the head of government a hot-water bottle to assure that at least his feet would not get cold while he was constantly holding his bedcover open.

Vogel's dilemma: Following a rapid dwindling of voters during the most recent Bundestag election, the CDU in Rhineland-Palatinate will have to fear the loss of its absolute majority during the Landtag elections in 1983. To be able to work better with the liberals, if that time should come, he would like to have them in the cabinet right now. The FDP, however--true to its motto: "No coalition with parties that have an absolute majority"--firmly rejected the idea.

The CDU, on the other hand, will have to make sure right now that its Bundesrat majority will not be endangered by three important Landtag elections--preceding the elections in 1983 in Rhineland-Palatinate and Schleswig-Holstein, the Lower Saxons will elect a new parliament next year. The prospects are certainly not rosy.

To be sure, Bernhard Vogel is most likely to get the support of the liberals. The voluntary opposition by the FDP in Mainz which has existed for almost 10 years is bordering on insanity anyway.

Among all the Land associations, the FDP on the Rhine and Mosel has the most bourgeois structure. The assumption that the overwhelming majority of its voters intentionally voted for the FDP as a liberal antidote at the side of the CDU was confirmed by the results to a survey which was conducted, of all things, by

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Vogel's state chancellery to find out how CDU voters feel about a CDU-FDP coalition: A majority of union voters were against it; among FDP voters, however, two-thirds were in favor of a coalition with the CDU.

Against this background, there seems to be no logic whatsoever to the self-restriction of wanting to control a party, which has a majority by mandate, from the opposition instead of from within the government as a partner. Hans-Dietrich Genscher, federal chairman of the FDP, recognized this a long time ago and gave his party-friends in Mainz the green light for a rapprochement with the Union.

His colleagues in Lower Saxony and Schleswig-Holstein, Ernst Albrecht and Gerhard Stoltenberg, would like to be able to look into the future similarly unconcerned.

In Hannover, a CDU government is governing by itself owing to the fact that during the most recent Landtag elections the FDP fell below the 5-percent limit; the relative majority of votes for the CDU thus became an absolute mandated majority.

The shock led to a change in the FDP Land leadership. To be sure, the current Land chairman, the farmer Heinrich Juergens, tried to keep the party open for a while. Following the spectacular election result for the liberals during the Bundestag election, however, Juergens changed his opinion: The CDU had lost 5.9 percent of its votes; the FDP, on the other hand, had come up with its best election result since 1961, getting 11.3 percent of the votes. As a consequence, according to Juergens, the party will not be able to circumvent the coalition issue.

The Social Democrats surrounding Karl Ravens in Hannover are quite sure: "They will approach us again." Even CDU Chairman Wilfried Hasselmann admitted before his most recent Land party rally that there was an assumption, although "certainly understood," that in 1982 the FDP would probably again decide in favor of the SPD.

Even President Albrecht himself, who at one time had won over the SPD under its then chairman Roetger Gross, following a 2-year "soul massage," is now doing everything to gain the favor of the liberals. At the same time, however, he is preparing an election campaign--beginning with the test run of the communal elections in Lower Saxony in the fall of this year--which will be geared entirely toward his person and the recapture of the absolute majority.

Gerhard Stoltenberg in Kiel will also have to fight for it. During the last provincial-diet elections, the CDU still got the absolute mandated majority with 48.3 percent. At the time, the FDP which was still to the left of the SPD got 5.7 percent. During the Bundestag elections last fall, however, the liberals captured 12.7 percent of the votes in this area.

Stoltenberg can therefore hardly depend on the permanent quarrels of the SPD surrounding Klaus Matthiesen, leading candidate and two-time loser. Even if the SPD continues to hover near the 40-percent mark, the liberals need to add only 2 to 3 percent during the provincial-diet elections to relegate the CDU to the minority--and with it probably to the opposition. If Stoltenberg's wooing remains without success, a coalition cabinet led by the SPD will govern at the Kiel Bay.

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Nevertheless, if Albrecht and Stoltenberg were to go, the Union majority in the Bundesrat would be over; Helmut Schmidt would find himself in exactly the same role as Adenauer: a chancellor who can depend on the support of majorities in both houses.

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COUNTRY SECTION

FRANCE

'SUPER GENDARMES' OF 'GIGN' TO FIGHT TERRORISM

Paris LE NOUVEL OBSERVATEUR in French 2 Feb 81 pp 44-45

[Article by Elisabeth Schemla: "The Elite Tough Guys"]

[Text] To counter terrorists, neutralize "fanatics" and answer the call of "friendly nations," Giscard now has his deterrent force: the supergendarmes of the G.I.G.N. [Intervention Group of the National Gendarmerie]

Captain Christian Prouteau, thirty-six years old, head of the Intervention Group of the National Gendarmerie, is fit as a fiddle. A fanatic holed up in his house in Pauillac (Gironde) last 30 October sprayed him with 53 shots, making his head and neck a regular sieve, but left only harmless scars. Not a shadow of any psychological aftereffects. Spirits intact. Prouteau ought to have worn his bulletproof helmet, according to the rules. "But a leader, especially in action, ought to show his gallantry," said one of his deputies, "and do a bit more than his team. That's the GIGN. In his hospital room in Bordeaux, Prouteau did not want to show his wife his scarred face. But day after day his men, who had come from Paris, took turns at his bedside. "We did not leave him for one moment alone with himself. That's the GIGN...."

They tried in vain not to be an elite corps, hating the nickname "our French James Bond," but these 56 policemen are not a little proud of belonging to the assault group Saudi Arabia preferred over the Americans a year ago to help it quell the Mecca insurrection. They would not give up their place even to assume command of a police squad. In 6 years only one of them has "deserted," heart-broken. "Either your GIGN or me," his wife had warned. And rightly so: these soldiers have an exclusive passion for their mission.

"It all was decided in September 1972 after the slaughter in Munich at the Olympic games," Captain Prouteau recalled. At that time the elite West German sharpshooters, after having carefully prepared their operation, showed their inability to save the hostages held by the terrorists. The final carnage made one wonder: and if the same thing happened in France? The answer was clear: we would do no better than our neighbors. "The GIGN was started from that," Prouteau continued. "Similar to the "anti-gang" of commissioner Robert Broussard, the gendarmerie was entrusted with the task of forming a peace-keeping force able to respond effectively to modern forms of terrorism: hostages, airplane hijackers." The group is empowered to act on French territory, obviously, but also in other countries--French-speaking or not--linked with France by a technical assistance treaty and who request it.

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Muscular Bodies and Solemn Look

Operational in 1974, the GIGN has since become well-known and its super-gendarmes have acquired an international reputation. They were the ones who in Djibouti in 1976 rescued 30 French children taken in a coach by Somali Coast Liberation Front guerillas. They were also the ones in "operation Clairvaux" in 1978, involving two armed mutinous prisoners locked up with two guards in a prison watch tower and threatening them with guns. And they were the ones who intervened in Mecca at the end of 1979. And it was still they, who without gunfire, arrested Corsican nationalists at the beginning of 1980 who had barricaded themselves in Ajaccio's hotel Fesch. The operations were more or less prestigious but always effective.

"The results are there," Prouteau continues. "Since the GIGN's creation we have carried out 84 missions, or an average of 14 per year. We have freed 212 hostages, rendered 49 fanatics harmless, and carried out 63 arrests." Joint GIGN efforts with other Western bloc groups of the same kind have moreover put a stop to hostage-taking, up to a few years ago a favorite method of international terrorism. "For France alone the deterrent effect is unquestionable. In 1973-1974 you could count 18 to 20 hostage takings per year. Today the figure has dropped to three or four, for a variety of reasons."

Within the protective framework of old fortifications at the Parisian suburb of Maisons-Alfort, Prouteau and his men are feverishly preparing for their future missions.

Four officers, 50 non-commissioned officers. Blue tracksuits, muscular bodies, solemn look. Each day at eight o'clock in the morning, regardless of the weather, they jog eight to ten kilometers. They are almost as good as cross country champions. Then they go to the gym where they take up the martial arts--karate, self-defense, hand-to-hand combat, fighting with knives, all reviewed and adapted in the light of experience acquired in actual operations. They are brown belt or black belt.

At noon, home with the family or at the mess, they have lunch. Three thousand calories per day, very little wine, almost no tobacco. At 2 pm they practice shooting. The grande finale: place a bullet in the shoulder of a make believe hostage-taker who is holding his prey against himself; hit the bull's eye, at 150 meters' distance, on a small bottle of gas placed on the ground, and many other exploits as well. Taken together, they shoot a total of 500,000 bullets per year, at 8.5 francs per bullet.

The "sense of responsibilities".

But they can also be seen doing many different things. Go from one building to another, 50 meters above the ground, without any protection, hanging on to a rope. To let themselves slid down a rope along the fourteenth floor, or conversely, climb from one balcony to the next up to the roof using only their hands and feet. They swim regularly, for a long time and very quickly, in their pool. They do skin diving of course. And, on outings, water skilling on the Marne, as good as the best. As parachutists, diving has no mysteries for them. They are also excellent skiers.

And furthermore: they have fun playing gendarmes (of the GIGN) and terrorists, shooting in the air with real bullets. In another drill, whose aim is "to gain perfect control of oneself and a sense of responsibilities," one of them, protected

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by a mere bulletproof vest, lets himself be aimed at, at point blank range (seven, eight meters) by one of his comrades...and says "At first your throat is a little dry, but you gain confidence quickly..." There are always four or five GIGN men out of action due to more or less serious training injuries. Their quarters bears the name of one of them who was killed in a dangerous drill.

In fact they know how to do everything and can do it. "Each intervention poses a precise problem and requires a special strategy. We must be able to respond to all situations. Thus, at Djibouti we had to stay motionless under a blazing sun, with our finger on the trigger, for ten hours. All that is not improvised. It is not enough to be a sharpshooter."

The average age of the GIGN is 29 years. No one is less than 25 years or more than 40. Mature and balanced men are needed. There is only one bachelor among the 56 gendarmes: to enter the group, which is exclusively voluntary, marriage is a sine qua non. It happens that Prouteau rejects a non-commissioned officer because he has three or four children: too many orphans in case of death. The GIGN does not only require physical qualities, far from it. Coming from different backgrounds--children and grandchildren of gendarmes come into close contact with teachers' children--they all have good knowledge of law, of psychology and...politics. Electronics, mechanics, and ballistics are all part of their field of study. "When I recruit," Prouteau says, "I test everything." A deep military secret prevails over those tests.

The equipment, carefully itemized and arranged in underground premises, includes traditional arms and homemade gadgets. This is the domain of Captain Paul Barril, 34 years old, Prouteau's deputy, looking like a very virile Tony Curtis, quite a genius in odd jobs. His inventions are wrapped up in big black attache cases reminding one of those in 007. Material he has had "second thoughts" about is piled on shelves. Glasses to see at night like in the daytime, grenades in polystyrene--not to wound--or to blind someone to throw them off balance--improved endoscopes permitting one to see what is going on in a room without being seen, stethoscopes to locate a man's position through a wall... The list could be endless. "All our efforts," Barril explains, "are directed toward a single objective: avoid killing. It is childish to fire into the crowd in no matter what situation. That is the easy way out. We are meticulous with our equipment because we wish to obtain the maximum of information without shedding blood. For us that is an absolute rule."

Of course blood is shed nevertheless, but only when there is no other solution. In that, the GIGN unquestionably differs from the antigang brigade, and even more so from the increasingly quick-triggered police. True, the State pays for that excellence. Twenty million francs is about the GIGN budget, with the salaries--7,000 francs per month for the two chiefs and 5,000 for their men--coming from the supervising ministry.

"It is a huge budget," Prouteau concedes, "which might seem disproportionate when you think of the investments needed to train gendarmes and update their outmoded equipment." These are gendarmes who are called on to intervene in our daily lives infinitely more often than the GIGN. But the State, in that domain as in others, does not place a price on deterrence.

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COUNTRY SECTION

FRANCE

PRESELECTION TESTS, PROCEDURES FOR ASTRONAUTS VIEWED

Paris MEDECINE ET ARMEES in French Jan 81 pp 9-19

[Article by J. Bremond, R. Carre, R. Auffret, and H. Vieillefond*: "Medical Selection of the Cosmonauts"]

[Text] Within the framework of the French-Soviet collaboration, it was decided that a French cosmonaut would participate in 1982 in a live-in mission on board a Saliout Soviet orbital station. This individual would be in charge of carrying out a program of scientific projects taking advantage of the very special conditions of the space flight.

The national center of space studies (CNES) has asked the Department of Health of the Armies to handle the selection of the French cosmonaut candidates on the medical level.

I. - INTRODUCTION

1) Selection on files

One hundred ninety three candidatures were expressed by the forwarding of a file between November and December 1979. Out of these 193, 26 were presented by women.

Two work groups were entrusted with examining the files:

- the medical selection was done by the practitioners of the CPEMPN of Paris (principal flying personnel medical evaluation center); this first step led to the picking out of 176 files;

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R. Carre, physician in chief, /agregé/ professor of aerospace medicine --
R. Auffret, physician in chief, head of research of the department of health of the armies, head, physician of the in-flight and aerospace medicine laboratory tests -- V. Vieillefond, physician in chief, /agregé/ professor of aerospace medicine.

Reprints: R. Auffret, laboratory of aerospace medicine, in-flight test center, 91220 Bretigny-Air.

Key Words: Astronautics -- Aeronautic and Space Medicine -- Medical Selection.

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- on the other hand, a group of engineers, scientific staff, and administrative personnel working within the CNES examined and classified the files on the basis of criteria including:

technical competency, familiarity with the scientific equipment and operational tasks requiring instantaneous decisions, linguistic capabilities, and participation in sports.

This second step in the selection process narrowed the field down to 72 candidates for the series of physical aptitude tests.

2) Medical Selection

The first step in this process (December 1979 - January 1980) consisted of a preliminary examination at a flying personnel evaluation center (CEMPN), followed by a test to determine sensitivity to disorientation of the equilibration system (vestibular system) conducted in the aerospace medicine laboratory (Lamas) of the flight test center. This test, conceived by the Soviet specialists, is designed to measure the resistance to the discomfort or nausea caused by a prolonged exposure to weightlessness conditions. This examination was the most eliminatory of all the tests undergone by the candidates. The results of this first group of tests led to the selection of 32 candidates (including 8 women).

The second stage (December 1979 - January 1980) included:

- in-depth medical tests carried out by the doctors at the CPEMPN, the department of aeronautic medicine and the teaching hospital Dominique Larrey, and other hospital services at military hospitals;
- psychological tests by CERPAIR and psychiatric tests by CMPCAA (medical center of clinical psychology of the air force);
- special physiological tests by the LAMAS of the CEV (Flight Test Center).

Upon concluding these tests, only seven candidates were found to be physically qualified.

3) Occupational Selection (January - February 1980)

Three series of interviews with the series of candidates who underwent special physiological tests (19) were organized in order to evaluate the general capacity to fulfill the requirements of the mission, the scientific competency, and the linguistic aptitude.

The first series of interviews took place before a group of experts, mostly from outside the CNES and representative of the scientific space community. The purpose of these interviews was not to judge the level of knowledge acquired by the interest in science and the capacity to become rapidly familiarized with new subjects.

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The second series took place before a group within the CNES including engineers, scientific personnel, as well as specialists in international relations, public relations, and administrative matters. The purpose of these interviews was to evaluate the motivation and in particular to assess the capability of the candidates in the function of representation.

The third series was organized with linguistic teaching specialists in order to test the competencies acquired by the candidates who had agreed to make a substantial personal effort to familiarize themselves with the Russian language and, in particular, to test the aptitude for acquiring new foreign languages.

4) Results and Conclusions

At the end of a particularly severe selection process, as far as the level of the physical aptitude tests are concerned, six candidates were pronounced fit according to the medical criteria set forth by the Soviet specialists. It should be pointed out that the French and Soviet medical teams met several times, especially during the selection preparation stage, during which the French physicians were received by the Soviet specialists at training centers. Five were selected at the end of February to begin the training in France, essentially dedicated: to learning the Russian language, to familiarization with space techniques and with the program of scientific experiments to be conducted during the mission, and to an initiation to parachuting and free fall.

After a meeting with the Soviet medical commission in May, four of the candidates were judged to be capable of confronting the stresses of training and space flight both for their physical as well as their psychological qualities.

The two candidates selected in the end were chosen by the selection committee of the CNES on the basis of the entire range of physical, psychological, professional, and human qualities required for the mission. The candidates in question were two air force pilots.

Some statistics:

- the proportion of women has remained almost constant throughout the selection process; from 13% at the time when the files were sent in, it shifted to 17% at the time of the final tests;
- the median age at the beginning of the selection process rose slightly to 35.4 by the final tests, especially under the influence of the vestibular tests with the youngest candidates being the most sensitive;
- the proportion of military subjects increased from 34% to 43% and the proportion of pilots increased from 50% to 100%, with a regular increase at each stage.

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Table I. -- Participation by categories according to the selection phases.

Selection phase Statistics	Preliminary medical examination	First vestibular test	In-depth medical exam.	Special tests	Qualified candidates
Women	18%	15%	25%	26%	17%
Av. age	33.2 yrs	33.3 yrs	34 yrs	34 yrs	35.4 yrs
Military Personnel	34%	39%	37%	37%	43%
Pilots	69%	74%	69%	73%	100%

II. - THE CLINICAL SELECTION

Each candidate was supposed to fill out a questionnaire of medical nature dealing with his history and to schedule a visit with his family doctor.

The analysis of the 193 questionnaires made it possible to eliminate 16 subjects. After a study of the technical files, 67 were scheduled for an aptitude visit with the flight personnel at the evaluation centers of Bordeaux, Marseilles, and Strasbourg. Sixteen were eliminated by this preselection visit. Thirty-two candidates chosen by the national center of space studies were summoned to the CPEMPN of Paris for the clinical stage. This had to conform to the protocol defined by the Soviets for their cosmonauts.

During one week, the examination took place at the Paris CPEMPN, but certain tests were conducted either at the department of aeronautic medicine of the military hospital Dominique Larrey (pulmonary function exploration, continuous 24-hour recording of the electrocardiogram, maximum effort test), or at the Begin military hospital (gynecologic examination for the women, panoramic radiologic examination of the dental arches) or, for certain chemical analyses, at the Percey military hospital.

The clinical examination ascertains the organic and functional integrity of all the systems, of the internal organs, and of the osteo-articular apparatus. It includes a biometric study with measurement of the weight, height, head-buttocks height, and segmentary measurements of the arms and legs.

1) The general medicine examinations

These included for each system a clinical examination coupled with specialized tests.

a) Examination of the cardiovascular system. This includes:

- a clinical examination with determination of the blood pressure lying down and taking of the peripheral pulses;

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- electrocardiogram at rest with twelve leads;
- x-rays of the heart (face, left anterior oblique, right anterior oblique);
- phonocardiography with four bands of frequencies 35 hz, 70 hz, 140 hz, 280 hz, with carotidogram (morphologic and chronologic study: semi-ascension time, ejection time) and chronocardiographic study of the systolic times;
- continuous recording of the electrocardiogram over 24 hr and analysis by computer;
- maximum effort test

The test consists of making an effort of increasing intensity in order to reach the theoretical maximum heart rate (220 - age of the subject). The effort is performed on an ergometric bicycle equipped with an electromagnetic brake. A 40 watt brake is displayed at the beginning and is increased by 20 watts every 2 min until the theoretical maximum heart rate is obtained. Simultaneous recording is performed on peripheral or precordial leads.

The electrocardiogram is recorded: before effort, in recumbent and sitting position; during effort; during the 10 min that follow, the subject remaining seated on the bicycle.

During the same period of time, the blood pressure is measured every min.

b) Examination of the respiratory system

In addition to a clinical and x-ray examination, this includes a classical spiographic study of the ventilatory function.

The parameters measured are: vital capacity, expiratory reserve volume, inspiratory reserve volume, residual volume (using helium), total pulmonary capacity, maximum second expiratory volume, Tiffeneau and Cournand values, plus acetylcholine provocation test.

c) Neurologic examination with study of the motility, reflectivity, coordination, sensitivity, and state of the sympathetic system.

d) Electroencephalogram with SLI and hyperventilation test

e) Clinical examination in order to ensure that there are no anomalies of the lymphatic system or thyroid, plus examinations and palpation of the abdomen and genital organs with rectal examination.

2) The radiologic tests.

These consist of:

- x-ray of the entire spinal column;

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- radiographic examination of the skull;
- x-rays of the sinuses of the face;
- panoramic x-ray examination of the dental arches making it possible to diagnose foci of dental infection as well as anomalies of dental development (orthopantomography);
- intravenous urography with study of the kidneys, ureters, and bladder;
- examination of the upper part of the gastrointestinal tract.

3) Laboratory tests

- hematologic: RBC, WBC, and platelet count, hemoglobin in grams, electrophoresis of the hemoglobin in order to eliminate a hemoglobin disease, globular value, hematocrit, and sedimentation rate of the erythrocytes.
- Serologic examination of treponemas with VDRL reaction, passive hemagglutination reaction of the treponemas, hemolysis reaction with cardiolipid antigen and with Reiter's treponomic antigen, flocculation reaction (Kline).
- Urinalysis with examination: urinary protein, urinary glucose, urinary pH, density, bilirubin, blood chemistry studies, acetone, urinary sediment.
- Parasitologic examination of the stools under direct examination and after concentration, blood chemistry studies.
- Provoked hyperglycemia
- Blood chemistry constants: serum creatinine, serum urine, serum glucose, serum cholesterol, serum lipids, serum uric acid, serum triglycerides, total and conjugated serum bilirubin, blood electrolytogram (serum chlorine, serum sodium, potassium, calcium, and phosphorus).
- Enzyme activities: SGOT transaminases, SGPT transaminases, gamma glutamyl-transferase, creatinine phosphokinase, lacticodehydrogenase.
- Determination of the serum alcohol
- Australia antigen study

4) Ophthalmologic examination

The ophthalmologic examination consists of three stages: a clinical and functional stage, a more precise functional stage, and an electrophysiologic stage.

- a) The clinical stage permits:

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- study of the visual acuity from close-up and a distance with and without correction;
- study of the refraction;
- measurements of the heterophorias from close-up and a distance using a stick and a Maddox rod;
- measurement of the punctum proximum of convergence and accommodation with the proximeter;
- measurement of the morphoscopic threshold with stereograms and the TNO test;
- measurement of the morphoscopic threshold with Beyne's scotoptometer;
- study of the chromatic sense with the Ishihara tables;
- clinical examination of the eyegrounds, of the anterior segments;
- study of the extrinsic and intrinsic motility;
- measurement of the ocular tone with the Goldmann aplanoptomer.

b) The functional stage is designed to evaluate the central photopic function in one eye with:

- study of the sensitivity conducted with the Friedman equipment;
- study of the chromatic sense performed with the Hue de Farnsworth 100 test taking into consideration a possible axis of anomaly and the total score of the errors, and with the Nagel anomaloscope for the calculation of the Rayleigh quotient;
- study of the recovery of visual acuity after dazzling and of the adaptation to lateral dazzling with the Comberg recording nyctometer.

The photoscopic visual field is explored with the Goldmann perimeter, studying three isopters (peripheral, middle, and central) and the area of the blind spot.

When it is found to be necessary an orthoptic evaluation or a study of the night vision is performed with the Goldmann Weekers adaptometer.

c) the electrophysiologic stage consists of the recording of an electroretinogram in white and red according to the dynamic method of Jayle.

5) ORL examination

- Clinical: with study of the nasopharyngotubar functioning, examination of the eyes, larynx, and nose.
- Impedance measurement test in order to evaluate the tympano-ossicular system and the tubar permeability.

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- Cochlear: perfect language intelligibility, the tonal audiometric determination must be strict, and it is necessary that the subjects display a curve that does not indicate a deficiency greater than or equal to 20 dB over more than one frequency, even the shrill frequencies.

- Vestibular function: clinical examination is completed by the following tests: electronystagmographic study of a latent spontaneous nystagmus, eyes open, eyes closed, in light, and in darkness, labyrinthine stimulation (rotating pendulum test, hot and cold temperature tests)

Finally the vestibular function will be tested in the chapter on special tests conducted at the Bretigny flight test center.

6) Results

Out of 32 candidates, 14 were eliminated by this medical visit, with varying causes of elimination:

a) ophthalmologically unfit: 6

- insufficient acuity + astigmatism of two diopters + biological diabetes + thickening of the wall of the left maxillary sinus;

- degenerative chorioretinal lesions;

- Adie's syndrome + right renal ptosis;

- insufficient acuity + poor night vision

- benign neoforation of the posterior layer of the right iris, relative amblyopia of the O.D.

- right eye uveitis + poor effort test

b) Radiologically unfit: 4

- C₅C₆ congenital vertebral block both anterior and posterior;

- asymmetrical cervical block with static disturbances accompanied by unilateral alterations of anterior vertebral foramen + biological diabetes with hypertriglyceridemia;

- L₅ spondyloslysis with spondylolisthesis (slipping more than 1 cm). Accentuated pinching of the L₅S₁ disc;

- ptosis of the left kidney with pyelo-ureteral junction syndrome enhanced by the ptosis;

- rather accentuated ptosis of the left kidney with mild excretory reverberation.

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c) Otorhinolaryngologically unfit: one

-osteoma of the right frontal sinus + several EEG anomalies (several theta bursts well localized in the left temporal region)

d) unfit with respect to medical findings: one

- respiratory function exploration: asthma + L4L5 disc pinch.

3) Electroencephalographically unfit: 2

- presence of discrete anomalies of slow delta and theta waves in the left temporal region

- bitemporal intermittent theta bursts reaching a maximum on the right, very keen response to SLI + slight right renal ptosis

f) unfit from the laboratory standpoint: 2

- biological diabetes, but these two subjects had another reason for being eliminated

III. - THE PSYCHOLOGICAL SELECTION

Outside of the indications furnished by the Soviet specialists for evaluating the various personality aspects, we were given the broadest latitude for choosing the psychological tests to be administered to the men and women candidates.

This choice was dictated by the need to track down among the candidates those that appear to be the most qualified obviously to assure the success of the mission but also to undergo a training of close to two years and to adapt to the particular environment of this training program (disorientation in a strange country, plus culture and language problems).

The experience acquired in 1977 for the selection of the Space Lab live load astronauts was certainly useful to us, but there was an important difference between these two selections. Although in 1977 it was only a question of a scientific task to be performed on board on Spacelab, the cosmonaut who will fly in the USSR in 1982 in addition to his important scientific mission will also have to participate in the piloting of Soyouz. This has resulted in the adding of a certain number of tasks used in France by CERPAIR for the selection of military or civil pilots.

This psychological selection lasts about three days, two days of which are in the week preceding the medical selection, which has made it possible to compile results for 32 candidates.

It includes four successive phases reflecting different methods: performance tests, personality tests, group tests plus clinical and psychiatric interviews.

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1) The performance tests

These include eight written tests and two psychomotor tests.

Certain of the written tests correspond to the hypothesis formulated by Guilford of the existence of a general adaptation capacity represented by four factors called: numerical, spatial, verbal, and social adaptation. The first three factors were evaluated by the following tests:

- numerical factor and nonverbal logical reasoning: Domino 70;
- spatial factor: four sub-tests to determine visualization in space and mental manipulation of different geometric images;
- verbal factor: tests BV 12 and BV 16 of Bonnardel evaluating similar relationships pertaining to the word and linguistic capacities pertaining to the phrase.

The social adaptation factor was partly evaluated by the group tests described below.

These written tests were supplemented by two tests to evaluate the immediate memory of numbers and shapes and two tests used for the selection of pilots: interpretation of instruments on board; reading of dials and numerical tables.

Finally, two psychomotor tests, also used for the selection of pilots, were administered during the week following the special tests: a reaction time test with discernment, a test (polyreactograph) evaluating the concentrated attention, diffused (or divided) attention, and the mastery of attention.

There is not enough space here to present the details of the results obtained. We would simply like to point out that in relation to the reference populations (university level for the general tests, flight personnel candidates for the other tests) our candidates fell in the middle above the median of the reference populations with a smaller distribution, i.e., a greater homogeneity except for the spatial tests for which we did not find any difference.

2) The personality tests

Numbering seven, for six of them they were recommended by the Soviet experts for their renown and worldwide utilization, the objective being to pin down as much as possible the "normal" personality and to detect possible psychopathologic tendencies. These studies included three projective tests: Murray theme apperception test (composing of stories suggested by deliberately imprecise images), the Rorschach test (ink spots), and the Rosenzweig test (tolerance to frustration). The normal personality was described by the Cattell 16 PF determination, which permits a 16-point profile to be established (whence its name) and to be compared to a reference profile by calculating a coefficient of similarity. In the absence of a more adequate reference, we chose the profile of the American airplane pilots such as it was worked out by Cattell.

The psychopathologic tendencies were explored by means of two questionnaires: the Eysenck personality inventory, which makes it possible to determine the place of

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the subjects on two scales, the one an extraversion-intraversion scale (expansiveness, social contacts) and the other a neuroticism scale (emotional liability and neurotic disturbances under the effect of stress); and a questionnaire for the detection of psychopathologic tendencies developed by CERPAIR, I.P. 9.73, which makes it possible to determine where a subject lies on nine scales (eight psychopathologic scales and one validity scale). The latter questionnaire makes use of the French pilot selection tests.

3) The group behavior tests

These tests, conducted since 1975 on airline pilot candidates, were designed to place the candidates in a situation of interacting in the midst of a group so as to determine the subject's usual mode of reaction. Four criteria--decisiveness, capacity to make judgments, strictness of logic, and attitude toward obstacles plus social insertion, cooperation, tolerance, and intellectual honesty were judged in two different situations: group discussions on two subjects chosen by the whole group from a list of general subjects plus problem solving. These tests are conducted in teams of six candidates with behavior observation by three psychologists.

The results of these group behavior tests have proved to be very interesting in their richness and have been found to be very useful by the final selection committee of the CNES.

4) In-depth clinical and psychiatric interview

Conducted by psychiatrists at the medical center of clinical psychology of the air force (CMPCAA), this individual interview lasts 30 to 40 minutes. It is a free interview dealing with the biography of the subjects and focusing on a search for anomalies and undesirable personality traits. Having a knowledge of the results of the group and personality tests, the interviewer is able to summarize all the available information and to consequently direct the course of the interview.

5) Final synthesis

At the end of these four phases corresponding to different approaches, an overall opinion is formulated comprising four categories:

- very favorable: subject in whom particularly outstanding performances are observed along with characteristics showing a great deal of promise;
- favorable: subject in whom no anomaly or pejorative peculiarity is noted but in whom the performance level of the preceding category is not reached;
- favorable with reservation: subject in whom the evaluation has shown weak points or somewhat pejorative peculiarities despite the high level of the qualifications otherwise;

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- unfavorable: subject in whom at least one peculiarity seems to be incompatible with the success of the training program or of the mission.

IV. - SPECIAL SELECTION TESTS

The aerospace medicine laboratory of the in-flight testing center is the only laboratory in France with means of simulation permitting this selection (centrifuge, reduced pressure chamber, revolving armchair, ergometer, plus means of functional exploration and measurement). It also has medical teams and techniques specializing in the compilation and interpretation of physiologic parameters designed to determine the influence of aeronautic and space stress on man.

Our purpose is to present the special tests and to succinctly describe the results of this selection.

The 19 candidates presented (14 men and 5 women) underwent the following tests: acceleration tests in centrifuge, vestibular tests on revolving armchair, orthostatism tests on rocking table (tilt test) and in low pressure chamber (low body negative pressure), hypoxia test at heights, and muscle exercise tests on ergometer.

During these tests, the following physiologic parameters were recorded:

- cardiovascular (heart rate, blood pressure, electrocardiogram, change in volume of circulating blood, and cardiac output by electric plethysmography);
- respiratory parameters (rate, tidal volume, alveolar ventilation, oxygen consumption and exhaling of carbon dioxide, plus hemoglobin oxygen saturation);
- vestibular (electronystagmographic, psychometric scale of sympathetic dystonia);

These parameters recorded continuously on magnetic tapes and visualized graphically in time are analyzed on the computer.

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Fig. 1. - General view of the centrifuge nacelle. A candidate gets ready to undergo a transverse acceleration + Gx. The equipment for monitoring and measuring the physiologic parameters will be noted (Cl. CNES).

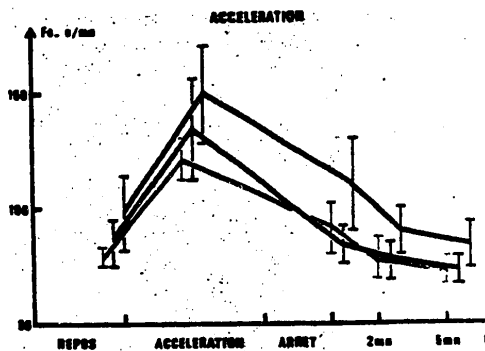


Fig. 2. - As soon as acceleration begins the heart rate accelerates and returns to the rest values a short time after stopping the centrifuge. From top to bottom: longitudinal acceleration + 5 Gz, transverse acceleration + 10 Gx and + 8 Gx. It will be noted that the accelerations + Gz have a greater cardiovascular effect.

Repos = rest; arret = stop; mn = min

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1) Acceleration tests in centrifuge

These are designed to explore the cardiovascular and respiratory adaptation of the candidates to accelerations undergone upon departure of the rocket and upon reentry into the atmosphere of the space ship at the end of the mission.

The accelerations are produced by the centrifuge consisting of a vertical rotation shaft to the end of which is fastened a nacelle that is free to tilt. The establishment of the acceleration is obtained by launching with compressed air catapult, relieved by an electric motor. The combination of these two conveniently adjusted drive systems makes it possible to obtain an acceleration establishment of 1 g/sec.

Each candidate undergoes on the one hand accelerations perpendicular to the large axis of the body in extended position (transverse accelerations) of + 8 Gx for 60 sec and of + 10 Gx for 20 sec and on the other hand accelerations parallel to the axis of the body in sitting position (longitudinal acceleration) of + 5 Gz for 30 sec.

We are dealing here with large accelerations and this test has proved to be very discriminatory.

Four candidates out of 17 were eliminated at the + Gx accelerations and 4 candidates out of 12 were eliminated at the z accelerations.

The cardiovascular anomalies having led to elimination essentially consisted of a marked hypotension possibly extending to the point of loss of consciousness, reduction of the visual field, or disturbances of intracardiac conduction. In contrast, a good tolerance to acceleration is represented by an elevation of the heart rate, a maintaining of the blood pressure without constriction of the differential, and cardiac and peripheral outputs permitting a good cerebral and retinal irrigation.

2) Vestibular tests

These are tests to determine tolerance to the accumulation of composite Coriolis accelerations stimulating the semicircular ducts of the vestibule.

These tests were conducted on an armchair rotating at a constant speed of 180°/sec.

During an initial two-minute test, the subject alternately bows his head at the frequency imposed on his right shoulder and then his left shoulder. This test is designed to detect candidates who are sensitive to motion sickness and therefore unable to tolerate space sickness.

This test eliminated for discomfort 44% of the subjects presented. A second rotating test of 8 minutes' length performed a few days later made it possible to detail the tolerance to Coriolis accelerations and to pronounce judgment as to the adaptability of the subject to space sickness.

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During this test, the subject bends his head every sixteen seconds along an antero-posterior axis.

The intensity of the vestibulo-sympathetic reactions were evaluated by the Khilov scheme. The degree of severity of the motion sickness upon stopping the test and fifteen minutes later was determined quantitatively according to the Graybiel and Miller scale.

Hypotensive tendencies, significant changes in heart rate, as well as the length and extent of sensorial illusions were also taken into consideration.

The night before the tests, the subjects were asked to abstain from taking any alcoholic beverages or any medication having an anti-seasickness effect. A check of the principal anti-seasickness drugs was done on the urine sample at the end of the tests.

Out of 19 subjects tested, five were eliminated.

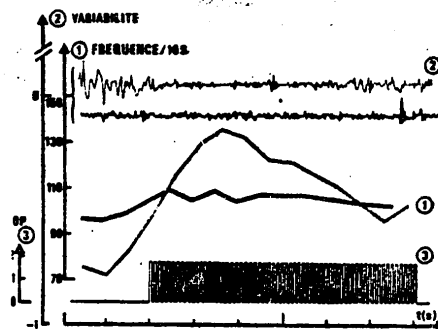


Fig. 4. - The study of the heart rate and of its variability provides information on the vestibular tolerance. One of the candidates (black curves) shows a stable heart rate (curve 1); the variability is almost nil (curve 2). He is tolerant to motion sickness. Another subject (gray curves) shows a significant heart rate variability represented by a tachycardia. This candidate presented seasickness during the same stimulation.

variabilite = variability; frequence/ 10 s = rate/ 10 sec.

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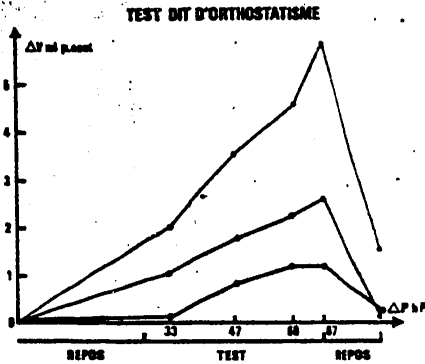


Fig. 5. - The variation of the leg volume expressed in ml per 100 ml of tissue increases as a function of the negative pressure exerted on the lower half of the body.
 Above, tracing of an intolerant candidate. There is a very significant venous stasis.
 The central curve represents the mean values obtained in the 17 candidates.
 Below, tracing of a candidate particularly tolerant to the test.

Test dit d'orthostatisme = orthostatism test; p.cent = per hundred; repos - rest.

3) Orthostatism test

One of the major physiopathologic effects of weightlessness is a new distribution of the circulating blood volumes producing an increase in the central blood volume to the detriment of the infracardiac peripheral zones.

Two tests making it possible to evaluate the normality of the adaptative cardiovascular reactions have by now been well-codified and their results acknowledged by the corps of specialists. The first, called "L.B.N.P." (low body negative pressure), consists of applying a negative pressure progressing in stages to 7 kPa to the lower part of the body. The test lasts 15 minutes.

The second imposes postural changes on the subject (standing position, lying horizontally, lying head down at 15 and then 30°).

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The normality of the cardiovascular responses is essentially evaluated by measurement of the blood volumes contained in the veins of the legs and on the basis of their mobilization. Out of the 17 candidates that appeared for the test, 4 were eliminated for major hypotensive disorders or for functional disturbances of the venous circulation.

4) Hypoxia test at heights

The tolerance to abrupt variations in barometric pressure and the normality of the barofunction of the sinuses and of the middle ear were tested during a series of climbs to 5000 m followed by rapid descents (45 m/sec).

During a stay of 30 minutes at 5500 m. the cardiovascular and respiratory tolerance to hypoxia was evaluated.

One candidate out of 17 was declared to be unfit during this test following the occurrence of an illness of hypoxic origin.

5) Muscle exercise test

This test was conducted on an ergometric bicycle in order to determine the adaptations of the respiratory and cardiovascular systems to muscle exercise. It makes it possible to select the individuals most qualified to do physical work with the muscles in space since it is known that working under weightless conditions requires an extremely high metabolism level.

The exercise level is fixed at 80% of the maximum theoretical heart rate.

The exercise begins with a power of 100 W for men and 80 W for women. It is then progressively increased by 5-minute W steps until the desired heart rate is obtained.

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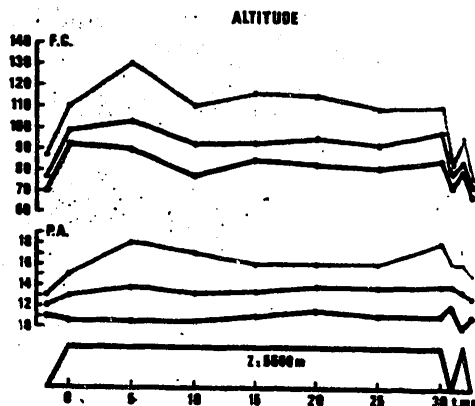


Fig. 7. - Above: during stay at 5500 m, the heart rate increases up to the fifth minute and then stabilizes. The central curve represents the middle values and the other two the extreme values found. Below: during stay at heights, there are no significant changes in blood pressure. The upper curve represents the transitory and emotional course of the systolic blood pressure.

F.C. = heart rate; P.A. = blood pressure; t.mm = time in minutes.

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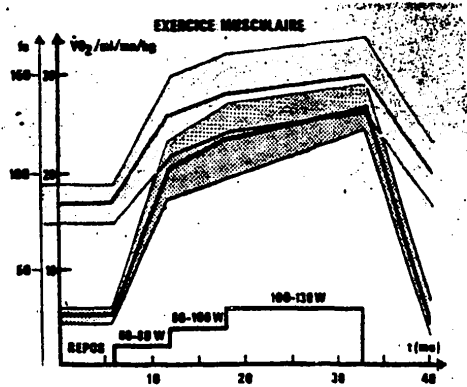


Fig. 9. - During muscle exercise, the oxygen consumption (black curve) increases in proportion to the value of the mechanical power developed. The heart rate (gray curve) follows a parallel course in conformity with the findings of Astrand.

Exercise musculaire = muscle exercise; repos = rest; t (mn) = time (minutes).

CONCLUSION

Out of the 19 candidates that appeared for the special tests, 5 were recognized as being medically fit to conduct the mission, 2 were selected, and 12 were permanently eliminated.

The latter figure may appear to be excessively high in relation to the selection done in 1977 for the Spacelab project or in relation to the number of candidatures. It is explained by the severity of the criteria demanded both on the cardiovascular as well as the vestibular level. These are in effect the two tests that were the most discriminatory.

Out of 50 candidates that appeared for the vestibular tests 22 were eliminated by the 2-minute preliminary test and out of the 19 candidates who underwent the second 8-minute test another 5 were eliminated.

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As far as the accelerations are concerned, out of the 17 candidates that appeared 8 were eliminated.

The stresses of life during a space flight and of living in weightlessness impose rigor as far as the cardiovascular and vestibular functions are concerned.

It should be pointed out that among the five candidates chosen at the end of this selection, all were pilots with various degrees of qualification and specialty.

Moreover during the selection process, the percentage of pilots chosen only showed an increase between the preliminary tests and the final aptitude tests for the hiring of cosmonauts (45% pilots upon examination of the files, 69% after preliminary medical examination, and 100% at the end of the selection process). It appears logical that the pilots would have cleared all the selection steps taking into account their professional past and their better adaptation to aeronautic stress (accelerations, hypoxia, sensorial illusions). These data coincide perfectly with the results published both after the selections made in the United States as well as in the Soviet Union where the majority of astronauts are former military pilots, particularly test pilots.

Finally, the proportion of women remained almost constant throughout the selection process and it is also those women who had aeronautic experience who made it past the first stages.

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COUNTRY SECTION

ITALY

INTERVIEW WITH REPENTANT TERRORIST SANDALO

Milan L'EUROPEO in Italian 19 Jan 81 pp 84-89

[Article by Marcella Andreoli: "This Is How To Defeat the Red Brigades"]

[Text] This is an interview with Roberto Sandalo, the Prima linea [Front Line] militant arrested on 29 April in Turin. When he was jailed, he followed the example of Patrizio Peci and Carlo Fioroni and collaborated with the police. The interview was conducted in jail.

Roberto Sandalo is the second "repentant terrorist" who has agreed to talk with a newspaperman. The first was Marco Barbone, one of the murderers of newspaperman Walter Tobagi (L'EUROPEO No 44). The result of this interview was a first-hand description of the reasons that led him, like other arrested terrorists, to turn his back on armed militancy and to make a contribution to the destruction of subversion. Sandalo's words are also an answer, from a distance, to the memorandum written by Marco Donat Cattin in France before he was arrested.

But the interest in this document goes much further than the human drama of a terrorist who stopped believing in the "fight against the heart of the state." From the interview--free of the smoke of propaganda, not subjected to the microscopic scrutiny of the sociologist, but experienced personally--come the true reasons for terrorism: From the distant murder of Luigi Calabresi, concerning which Sandalo tells a story that is much different from the one for many years accepted as fact, to the present day demonstrations of armed struggle. It is a long and tortuous itinerary which must be undertaken if we want to understand the roots of a phenomenon that has altered the development of Italian society in the last 10 years and if we finally want to defeat terrorism.

[Question] Listen, Sandalo, why did you decide to talk?

[Answer] At the time of my arrest 8 months ago, political and personal conditions had developed that obliged me to question a political plan that no longer had anything to do with the network of the proletarian organization within the class. For months and months, Front Line was totally estranged from debate on the work of the masses and on its retraining, a debate that should have given primacy to politics. Front Line continued an abstruse "criticism of arms," and episodes like Via Ventimiglia at Turin (ed. note: The attack on the Fiat Plant school) were the obvious examples of this coarse subjectivism.

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[Question] You are the third repentant after Fioroni and Peci. Did you follow their example or did you make your choice for other reasons?

[Answer] Aside from the fact that you newspaper people have invented the word "repentant," I hope these events are not measured on a scale. In any case, I don't even know who Peci is. I only knew a "Mauro" who in February 1980 spoke to me about the Red Brigades, and I only learned from the newspapers later that he was Patrizio Peci. Let us say, then, that I knew him "politically" and that, since our experiences were different, I have no reason to emulate him by confessing. However, at the time of my arrest, I was no longer a militant in any organization and to find myself mired in a colossal investigation against an armed group, far from the tensions of the workers, made me reflect considerably on my past.

[Question] A Turin judge said some time ago that there is a "race to repentance." Why so many repentants?

[Answer] So many young people confessed because they could hold out no longer; they no longer felt that the guerrilla fight which lasted for so many years was real and that, despite this, they had not succeeded in mobilizing the working forces on the basis of a plan of insurrection. That means that many had exchanged rightful class demands for their immediate availability to combat. Yes, there were really many militants who had decided to confess. But unfortunately, the "turnover" is ending and the government has not given, and so far has not wanted to give, a political reply by passing legislation to open an "escape route" from these networks.

[Question] The confession of Michele Viscardi marks the end of Front Line. Do you agree?

[Answer] There is no doubt that Front Line, as an organization, is losing the national logistical sector almost totally. It lost the structure that permitted it to reproduce operational and political capabilities despite reverses. Instead of attributing this presumed end of Front Line to Viscardi, I would attribute it to the persons responsible for the national organization. It is incredible that a person on an intermediate level like Viscardi would know about an endless number of places, of bases, of persons in the organization and thus could later have pointed them out and reported them to the police.

The fact is that in Front Line there was an absolute lack of compartmentalization, so everyone knew everything. This was an eminently political shortcoming deriving from the absence of political support and development on the command level of Front Line. So much so that that level did not begin a process of reconversion in the objectives and plans and instead continued on the same old road.

[Question] But is Front Line really finished?

[Answer] Probably it is hanging on the ropes. The few fugitives remaining will not be able to do anything but hope for contact with the Red Brigades if the latter accept them to "help" those who went off course. At this point, government aid to help the so many youths who would like to end a clandestine existence would be decisive. It would be necessary to those who have already abandoned the armed struggle as well as to those who would be willing to quit but fear long imprisonment.

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However, we should be careful to avoid claiming victory and confusing the dissolution of Front Line with the end of the armed struggle because there are still too many unsolved problems in the social reality of our country. This cannot but feed creeping conflict and guerrilla warfare. The possible results would be increasingly more tragic. Unfortunately the government has a tendency to delay things, perhaps seeking a showdown that would only be harmful to those who are in the hands of another "justice," and I refer to Judge D'Urso. Legislation is necessary: Only thus can there be a political reply by the government.

[Question] How is life as a repentant? Are you afraid?

[Answer] I think that the problem of security exists and that as far as I'm concerned the future will exist if I can start life over. It would be a mistake if the armed organizations were to waste time in an absurd "manhunt."

[Question] And how do you expect to start a new life?

[Answer] Certainly I will leave this country...I love the mountains and I hope to be able to retire to some valley to meditate.

[Question] What caused you to join the armed party?

[Answer] After years of militancy in Lotta continua [Continuing Struggle] in 1976 and 1977, the intensification of social tensions led me and other comrades to believe that a phase was opening that could lead to the outbreak of long-term civil war, especially because of the economic crisis. We had emerged from a long debate on the "problem of power" that caused a large split in Continuing Struggle and especially those of us in command positions in that organization believed this process of war to be real.

[Question] Why did you join Front Line and not, for example, the Red Brigades?

[Answer] The choice of Front Line was tied to the need for a bipolar plan: To remain present within the movement and at the same time to build within it what we called the "institutions of class power," that is the fighting clandestine network. For us, former members of Continuing Struggle, this was the most credible and practicable hypothesis.

[Question] What is your educational background?

[Answer] I received my degree in science in 1976 and now I am an auditor in law. I also served in the army as an officer in the Alpine Troops in the Tyrol. I went to military school for 6 months.

There Is no Single Summit of Terror

[Question] What was your first approach to politics?

[Answer] In high school, above all in terms of antifascism and alternative concessions at school, such as Monte-ore, the open meetings. Consider that in 1971 I was a member of the PSIUP [Italian Socialist Party of Proletarian Unity].

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[Question] But what is the difference between Front Line, Red Brigades, and Independence?

[Answer] I will try to be as brief as possible. Front line was developed by making a single organization out of the proletarian sectors and those of some social categories typical of the hidden economy and of underground work, the youth in the poor quarters, the unemployed. This, for example, led to the birth of the experience of the proletarian "Rond" at Turin. Organizationally, this meant postponing until a "civil war" the problems of the party, and development of the independent class organization and its institutions. Centralization existed only in defining a national leadership cadre that would function as the fulcrum concerning every political and military undertaking. The attempts to build a national logistical sector, commissions, units that would control expenditures, remained only in the planning stage. The result was the lack of any compartmentalization as a result of which, as I said, everyone knew everything.

The Red Brigades, instead, have a "distant" origin with no reference to the PCI. Their terms of analysis and prediction concerning the establishment of a "civil war" go back at least to 1969 and even then I believe that the BR [Red Brigades] were acute enough to define a clandestine cadre that would have the ability to rebuild headquarters and columns each time militants and bases were discovered. This was possible because the BR had always given priority to the requirement of building the party and had studied economic analysis and the structure of the state which we in Front Line had not even skimmed. Thus their militants had a precise picture of the political phases that had developed in the country in recent years. On the other hand, the BR never believed in the hypotheses of insurrection that were dear to Independence and in part to Front Line. This was decisive because they remained outside those levels of "movement" that made it possible for the police to pick up certain political trails and to unmask entire networks.

Independence was (aside from the political and organizational points of reference such as the magazine ROSSO [Red] or the Via dei Volsci group or the Veneto political groups) a true collection of groups, etc., which, instead of making "worker centrality" the center of attention as the BR did, saw in the emergence and enhancement of a "new" social level the beginning of tensions and movements which, under their own power and under the pressure of the economic crisis, would develop creeping forms of insurrection. The "night of the fires" in the Veneto in 1979 are an example. But those who speak of Independence as a single organization are mistaken both in method and in their study of social movements in Italy.

[Question] Do you agree with the thesis which says that the BR, Front Line and Independence can answer to a single summit?

[Answer] Not only do I disagree, but I consider that thesis unlikely. It is a theory that leads straight to foreign plots. "A single thread that links subversion:" This is what the newspapers have been saying for years.

When Judge Nicolo Amato deposited the indictment on the investigations of the Moro case, it was shown not only that all the members of the Via Fani command were Italians, but also that they were all well-known. Precisely because the organizational paths and theories were different, each group (BR, Front Line, Fighting Communist Formations) had its own command and executive structure. Only in the period from April to May 1978 was there a process of unification, which was unsuccessful, between the FCF and Front Line."

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[Question] Why do you think red terrorism was born in Italy? And why did it explode following the end of the strategy of tension?

[Answer] Excuse me, but did you believe that after so many years of bad government, of emigration, of boss domination of the factories, there would not arise a force or an organization that would put aside democratic methods, believing perhaps that it represented the tensions of the majority of workers? Or did "someone" perhaps believe that precisely as a result of the strategy of tension, there would be an end to any hope of renewal in Italy? Do you remember how many attempts to overthrow the government there have been? It was precisely on the basis of these fears that as early as 1972 there was a coagulation of forces which, within the left, decided that their first priority was the problem of a new resistance. If, then, there were enormous errors, that is another matter.

I Told the Truth about the Donat Cattin Case

[Question] When did you know Marco Donat Cattin? And when did you know his father?

[Answer] I got to know Marco very well when in 1975 he went to work in my high school as a librarian. I met his father on the morning of 25 April 1980 when his wife invited me to her house to ask for exact information on where Marco was at that time.

[Question] How do you feel about Marco Donat Cattin? And what do you think of his father?

[Answer] I have always respected Marco and we were really friends, but when I understood that he hid his reason for leaving Front Line behind the alibi of building a nonexistent "organization for communism" in order to go abroad, I was really very disappointed. By acting thus he involved persons who did not have the means to go abroad while he had plenty.

What can I say about his father? I am not about to pass judgment on his role as a Christian Democrat. Perhaps he is arrogant; perhaps he knows he "counts" in Italian political life. However, I want to emphasize one fact: I consider him an honest person and surely a stranger to the "good" life of bribes and scandals. At least these were my impressions. If I nevertheless accused him, together with Cossiga, of aiding in Marco's escape abroad, it was only because I adopted a correct attitude. I told the truth. But I know: At times the truth hurts.

[Question] Now that Marco Donat Cattin has been arrested, what is your opinion of the memorandum he published in the daily LIBERATION?

[Answer] Undoubtedly Marco chose the road of personal political defense considering that it does not seem to me that he has an organizational rear guard to protect him. By denying my statements about his father and Cossiga, he hopes to be able to cast doubt on the rest of my confession. But that is a vain attempt above all because my statements are backed up by dozens of objective checks and even by confessions of other comrades, not only from Turin. For example, Marco Barbone and Michele Viscardi. Marco Donat Cattin says he is a member of the class that was a protagonist of social subversion in recent years, but, unlike others, he allows himself to be arrested in a place that is the least political of all: A Paris restaurant in the company of a young lady.

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The Prisons Will Be the Center of the Conflict

[Question] Is it possible the fathers may have influenced their children's choices?

[Answer] I believe that if they had any influence at all, this would be decisive during adolescence when one begins to comment on and assess what is around him. If certain principles are instilled, rather than indulging in a don't-give-a-damn attitude, or singing praises of a motorcycle or a beachhouse, a young man grows up confidently attentive to social tensions and is more concerned with renewal, rather he can become a protagonist of these things for better or for worse. Look at the case of the antifascist or ex-Partisan parents: Do you believe that they have taught their own children to stand by and watch when what they built ran the risk of being destroyed? I don't believe in the parents who have merely instilled "culture" in their children, perhaps passing themselves off as intellectuals.

[Question] And what about your father?

[Answer] I admire him because of the enormous sacrifices he made for me and my mother. I esteem him because of his past as a Partisan commander and for having taught me a profound sense of family and of work. Dignity first of all: "It is better to eat only bread and onions, but to be free!" My relations with him have become stronger than ever and are directed toward regaining my freedom, even though this may take a long time. We have always been united and aware that the little we have was the fruit of the work of all three. My father worked at the Fiat plant for 24 years. My mother and I worked at cleaning offices for 10 years at six in the morning with our heads held high.

[Question] Why have so many children of the bourgeoisie become terrorists?

[Answer] Ask Marco Donat Cattin.

[Question] There is talk of bad teachers like Toni Negri. What influence did he have on you or on other militants in the armed struggle?

[Answer] Perhaps by having contributed to supplying us with the instruments to analyze the economy, the government, class composition in the industrial centers. All this, naturally, while "covering himself" behind the professorships or "the beautiful world" of proletarian antagonism and perhaps hoping for recognition, at the right moment, of the armed organizations.

[Question] What influence did Renato Curcio have?

[Answer] He overturned the concept of the role of the state as the only holder of the power of decree. This encouraged many militants of the old extraparliamentary groups, who were disappointed by years of a philosophy of holding meetings, to convince themselves that a counterpower could be developed.

[Question] What influence does the historical group of the BR, whose members have been in prison for years, have on the armed struggle?

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[Answer] An influence from the point of view of political analysis and the development of theory for persons who function outside the prisons. The fact is that the prison has become the biggest center for the circulation of those theories. Together with the factories, it will be the center of the clash in coming months. It is up to the government to take consistent initiatives to avoid this trend toward an "internal war" by supplying political answers. Or could there be someone who would like to spark an "internal war?"

[Question] Where and how did you learn to use weapons? Are there military instructors for neophytes of terrorism?

[Answer] At the beginning, we went to a grotto in a Piedmont valley with a few 7.65's. The instructors, as you call them, were comrades who at best had done military service.

[Question] Do you know anything about the paramilitary camps in Italy or abroad?

[Answer] The only camps I have ever been in were those of my battalion of Alpine troops in Alto Adige.

[Question] Were there contacts between Italian terrorists and those of other countries, and what were they?

[Answer] There may have been informal contacts of a political nature. The French NAPAP were the closest to Italian reality, they were tied to the movement or what remains of it.

[Question] Why have so many Front Line militants taken refuge in France? Is it because it was a good operational base?

[Answer] What operational base! At times castles are built where there is not even room for a hut.

[Question] Roberto Rosso, who was recently arrested after the confession of Michele Viscardi, is considered the ideologist of Front Line. Is this true?

[Answer] I can say that Rosso is a comrade who has years and years of political work behind him from the time of his militancy in Continuing Struggle. For those who know him, to say that he is a person of great intelligence is, I believe, the most objective opinion. I should like to note that it is time to stop creating "fetishes" or to build myths around this or that person, confusing his function with his intellectual and political status and vice versa.

[Question] What can you tell about the murder of Commissioner Calabresi, which today seems to have been the first one carried out by the extraparliamentary left?

[Answer] It is time that those who for years have hidden behind false slogans, or cheap opportunism, step forward and assume all their own responsibilities. It has been too easy to throw rocks and then hide one's hand after so many had picked up the rock.

[Question] What can you say about Feltrinelli's death?

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[Answer] There is no denying the "positive nature" of this man who, despite his social and personal conditions, paid personally for an error of assessment of an entire generation.

[Question] You are the first terrorist who has accused politicians. Were you aware that your confessions concerning the escape of Marco Donat Cattin could have caused the resignation of Prime Minister Cossiga?

[Answer] I have never indulged in political calculation.

[Question] Do you think that if the government had been more vigilant it could have subdued terrorism in time? Marco Barbone, one of the murderers of Walter Tobagi, was surprised at the boldness of the government's intervention in repressing the phenomenon.

[Answer] But how could the government have been more vigilant when not only was it not able to solve its own contradictions, but it has not even arrived at verification of the truth on episodes long ago such as the assassinations in Piazza Fontana? I fear, rather, that now they are once again underestimating the terrorism problem: My appeals to people to convince themselves that the "truce" will end soon have had no response from politicians. Will there be an effort or not to provide a way out for those who quit, or are they waiting for everyone to be "recompacted?"

[Question] Front Line has admitted one of the most "incomprehensible" political crimes, the murder of Judge Emilio Alessandrini. Why do you think a leftist terrorist group killed a judge who had made a decisive contribution to unmasking subversion on the right and its ties with the secret services?

[Answer] Front Line killed Alessandrini because he was an intelligent judge who had understood certain threads that were useful in unmasking our organization. And furthermore, because he was a democratic judge, perhaps more committed than others against terrorism, even to the point of contributing to the establishment of a staff of magistrates who specialized in that field. By killing him, the intention was to strike a hard blow at those magistrates, who, however, were not "disarmed" even after the murder of Judge Guido Galli.

[Question] What effect did Alessandrini's murder have on the movement? Is it true that many had second thoughts about armed struggle and its validity beginning with that murder?

[Answer] Certainly, what remained of the "movement" understood nothing more than the event in itself. I would put the crisis you talk about in the context of the autumn-winter of 1979-1980--also because I lived it myself--when there was the Front Line attack on the factory administration school of Turin and the Red Brigade campaign against the forces of order. In our view the shooting was directed at labels, at uniforms, at functions.

The Moro Case Opened the Road to Confession

[Question] What effect did the Moro case have on the movement?

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[Answer] It forced dozens and dozens of comrades to take positions for or against armed struggle at an absolutely premature moment for such an operation. The result was progressive detachment of the fighting communist organizations from the political terrain and from real situations, up to the definitive destruction of the margin of solidarity between ourselves and the beginning of the confessions.

[Question] After months of truce, red terrorism has emerged again. Do you think it will still have a long life or is this a backlash?

[Answer] Do you believe that terrorism is a transitory phenomenon and that it will pass after a few years like a fashion? Or perhaps it is no longer reasonable to believe that this phenomenon is an expression of present and latent tensions of this society, of its contradictions?

[Question] Is there a grand old man of terrorism?

[Answer] I don't know what you are talking about.

[Question] Let's talk about prison. Can we speak from now on about a "prison danger?"

[Answer] There is a prison reality with more than 3,000 political prisoners. You draw your own conclusions.

[Question] What measures should the government take to smooth the way to repentance, to help those who repent and to help restore them to society?

[Answer] Make legislation operational that would restore freedom quickly to those who really have detached themselves from terrorism, as after all was guaranteed us at one time by some parties. In particular, there should be no punishment for those who for some time now have distanced themselves from any armed group, and are in prison because of the confessions of some ex-fellow-travelers. Furthermore, there should be an amnesty for minor crimes related to terrorism.

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COUNTRY SECTION

ITALY

PCI-LABOR UNION TENSIONS REPORTED

Communist Offensive in Unions

Milan IL MONDO in Italian 23 Jan 81 pp 24-25

[Article by Alessandro Caprettini, "The Transmission Shift"]

[Text] In the factory offensive, the PCI speaks out against the workers' discontent and nudges the CGIL to follow suit. Reports among the confederations emerge lacerated.

"The PCI has been on the offensive since last July, when the party mobilized the base to oppose the solidarity fund, and signs [of opposition to it] are increasing in an alarming crescendo," they say at CISL. Examples: CISL and UIL union chiefs cite the disputes at the gates of Fiat, the acrimonious quarrels over FLM's adhesion to the International Metalworkers' Federation (FISM), closely allied to world CISL, and the current demand to postpone EUR-bis and the debate on economic democracy. These episodes all indicate the same thing: union circles and the major Italian labor party are in a tense state of agitation.

"There is no doubt," says Nino Pagani, CISL confederal secretary, "that we are facing a broad communist offensive, aiming to preponderate in an area where the search for autonomy was beginning to yield results. The motives? "With the idea of national unity behind us, the PCI cannot permit itself to remain split between the bad humored base and the union, with its increasingly institutional role," explains Enzo Mattina, UIL secretary for the metalworkers.

In union circles, wracked by more and more embittered disagreements, some observers believe that the communist offensive is not only reopening the party's rifts with the CISL and UIL but also threatening a new one, for the first time with the CGIL. There is no lack of signals, from the party press' official reprimands of the PCI directorate to the letters the confederation receives daily from communist members concerning the decisions it has taken. Pio Galli, FIOM leader, recently received one from Ansaldo workers in Genoa, roundly excoriating him for his organization's divisive adhesion to FISM, and threatening to cast FIOM to the same fate met by the Polish official unions after the founding of Solidarity. There have also been instances of open conflict -- in Milan, for one, the frontal clash between Alfa Romeo's Ho Chi Minh cell and the provincial union on the problem of liquidation.

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Such dissension does not occur only outside the walls of CGIL headquarters; within them, it is pitting those directors who are "sensitive to the call of the forest," as Pagani describes them, "against those who, with more dignity, try to bring coherency into the welter of words sacrificed on the altar of autonomy."

Aside from the breaks it might well cause both within the CGIL and in CGIL's reports with the other two confederations, where can the PCI's new strategy lead? What will be its immediate and its long-range consequences?

"Useless to hide the fact that the PCI's tactical maneuvers are destroying union autonomy, and making it much more difficult to take decisions and initiatives," is the diagnosis of Eraldo Crea, CISL's confederal secretary. And Domenico Buttinelli, social democrat and UIL secretary, adds, "The real problem at this point is whether or not the CGIL leaders can hold out against party pressures. It seems to me that Lama is resisting, but apart from him, already you can detect various gradations of autonomy. And all of them are giving in little by little."

Particularly on the intermediate and base levels, the contrasts appear to be deepening. "In Rome you can always march together somehow," declares a leader of UIL's building construction workers, "but elsewhere it's a disaster. In Palermo the same as in Florence, in Venice just as in Turin." "It's something of a nightmare that in none of three long-standing disputes -- like the one in the Maccarese, another in the universities and the confrontation with the region -- have the factions been able to come to any agreement with the CGIL," laments Luca Borgomeo, CISL secretary in Rome.

Among those who deplore the PCI's mounting pressures, some are advancing suggestions for attenuating it. "There is only one way to do it," says Elio Giovannini, CGIL secretary and PDUP member. "Start a real revolution and wipe everything out, beginning with the directorate. It makes no sense to talk about good communist union members and evil communist politicians. The truth is something else: the PCI has appropriated a void that the unions have ignored for too long. I mean the rising discontent in the factories. In this context, it is absurd to limit themselves, as they are doing, to digging trenches and hoisting their various confederal banners. What they need is self-criticism. They should go back to the factories to find out where they went wrong and how they can begin all over again." For Valeriano Giorgi, CGIL socialist, "Now the CGIL must confront uncomfortable questions and scrap the demands of those who want to revive old concepts."

Aside from the thorny problem of the 0.50 percent tax ("It is odd," observes Giogio Benvenuto, secretary general of UIL, "that the PCI, MSI, Confindustria and banking circles should agree on this point"), many questions concerning the degree of cohesion among the confederations still remain to be resolved, among them the value of the contingency point, absenteeism, mobility, old age indemnity and a reduction of working hours.

"The outcome of the political debate within the PCI will exert a strong influence," Mattina maintains. "Giorgio Napoletano's program for greater democracy could spur the call for autonomy by Lama and his colleagues." Others, however, fear that greater autonomy in the party might make matters worse in the factories. "You can just imagine what will happen," says Benvenuto, "when the PCI assembles the rank and file in the factories to tell them that this is the worst of all possible governments, overlooking the concessions the unions make to Giulio Andreotti's regime

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on the issue of liquidations and holidays. They said nothing then, not even about the 175 lire increase in the cost of gasoline."

A definitive clarification of the impact the PCI's new switch will make on the CGIL and its rapports with the CISL and UIL will not be long in coming. Soon, in fact, the lines for the contractual platforms will be traced. "If the most general bases for compatibility are kept in mind, such as the economic situation and the 3-year plan, then there must be an agreement," says Bruno Bugli, UIL secretary. "Otherwise the situation could turn really ugly."

Scheda Interviewed

Milan IL MONDO in Italian 23 Jan 81 p 25

[Interview with Rinaldo Scheda: "Scheda--But the Base Is With the PCI"]

[Text] Worried ("Yes, there is too much dramatizing"), anxious about the impasse in which the unions find themselves ("There is a mass of problems we must clear up"), and argumentative with those who try to maneuver ("Let us first see what the workers want"), Rinaldo Scheda, CGIL confederal secretary, firmly rejects charges of PCI interference and CGIL submission to the will of the communists.

Question: ...And yet many people see what has happened with the 0.50 percent tax issue -- I mean the postponement of the debate -- as a sign of a return to home base.

Answer: Nonsense. They don't seem to realize that the famous 0.50 percent tax idea was totally improvised one night last July, without any discussion whatever on the unitarian level. What do they want now? Suddenly the basis of a whole unitarian strategy?

Question: The fact remains that after the PCI said no, the CGIL backed out.

Answer: By no means. For one thing, the communist party has different ideas from ours on the subject (Franco Rodano, for example, is not contrary). For another, from the beginning we have raised reasonable doubts -- and not by mere chance -- about one of the three different proposals that should have been brought up in Milan. Moreover, let me say that in many assemblies there has been an avalanche of protests against setting up such a fund.

Question: Yes, but they say that the assemblies had a predominantly communist attendance.

Answer: I was present at many of the meetings, and I can assure you that the majority of CISL and UIL workers rejected the tax because the purpose of it is not altogether clear.

Question: Then why do the CISL and UIL repeatedly denounce the CGIL for its subsiveness to the PCI?

Answer: I am very preoccupied by the way those two confederations are dramatizing the issue. We have only asked for another review of the problem. Do you think it is

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possible that a new strategy, which calls for a union to administer investments, can be decided on the spur of the moment? And in the very year the conventions are to be held?

Question: Apart from the fund, a lot of people see massive PCI interference in union affairs, and they're complaining about it.

Answer: The PCI is a reality; doesn't that count? We have mediated with Francesco Cossiga, with Arnaldo Forlani and Cesare Romiti; shouldn't we talk with a tremendously popular force like the PCI, too? What do they want, a union referendum against the PCI?

Question: In other words, their protests are unjustified, is that it?

Answer: Not at all. If you want justified protests, go to hear the workers' complaints. In the factories they're fed up with the endless "stings" they have to contend with. There are people in the opposition, it's useless to pretend not to see that. And here it is that you have the workers meeting with the PCI, which is contesting the government. But while the unions should also get a move on, what are they doing? At this point I am convinced that Giorgio Benvenuto and others would be far more combative if the stings came not from Forlani but from a government of the left.

Question: There were stings, too, during the period of national unity...

Answer: And our relationship with the workers went into crisis. That's why, as I see it, the unions must bestir themselves. They must recover their proper role; that's why I am eager to see the assemblies of the rank and file stand on their own feet. The 0.50 percent fund could have been -- and could still be -- one of the subjects of discussion. But there are others, too, extremely important ones, from the government's fiscal policy up to the opening of the contractual phase. Let us talk about these things, but let us avoid false maneuvering. I am sure that then the search for unity could make real forward strides.

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COUNTRY SECTION

SWEDEN

SAAB, ERICSSON AND VOLVO COOPERATE TO CONTEST U.S. SPACE LEAD

Stockholm VECKANS AFFÄRER in Swedish 29 Jan 81 pp 30-33

[Article by Annika Halldin]

[Excerpts] Several thousand satellites--including a hundred or so commercial ones--are in orbits around the earth today. And the satellite industry is becoming a more and more interesting branch for the high-technology firms. European industry is now forming consortia to break the American dominance. From Sweden it is chiefly Saab-Scania, L.M. Ericsson, and Volvo that are taking part in the international space war.

Today there are ca. 100 commercial communications satellites out in space. (Counting all satellites, i.e. military and other non-commercial satellites, the figure comes to several thousand.) According to a forecast made by the consulting firm Future Systems, Inc., in Washington in 1977, the demand for communications satellites by the year 2000 will be another 179. But today that estimate is considered to be rather cautious, and the figure that is mentioned instead is 200. A communications satellite costs an average of ca. 400 million kronor in its orbit--i.e., including the launching, which accounts for not quite half of the total cost. Thus it is not a gigantic market that the satellite manufacturers are fighting for as things stand today, and "space" in general is not a big thing for the firms that are active in the field.

'Satellites Only the Tip of the Iceberg'

"But then the satellites themselves are only the tip of the iceberg," says Fredrik Engström, managing director of Svenska Rymdactiebolaget [Swedish Space Corporation]. "The really interesting thing is the development of various services on the ground when the satellites have begun to be used as they should be. He who is sitting on the space system has the key to the ground services in his hand."

It is the knowledge of this, of course, that has led so many high technology-oriented firms to invest in costly space technology. So many that there is actually an overcapacity in the space industry. Fredrik Engström says: "Today nine firms in Europe have enough capacity to be the chief supplier of satellites. In 10 years there will surely be only 5 or 6 left. Every project is so big--and calls for such big investments--that the smaller firms have no possibility of coping with it."

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Another difficulty for the European space industry is meeting the hard competition from the Americans. For one thing, the United States has many years' start in the matter of commercial applications of space research, rocket launchings, etc. For another, the extensive military space program in the United States involves volumes that give the American industry technological and economic advantages.

But in the last 10 years Europe has put a great deal into making itself more independent of American space technology:

- European space cooperation, which was formerly confined to research, has been expanded to embrace a number of satellite application programs. This applies to everything from telecommunications (ECS, European Communications Satellites) to aeronautics (Aerosat), navigation (Marecs), and weather (Meteosat).

- Within the ESA (European Space Agency) the member countries have jointly planned and built the rockets Ariane (which will get its real baptism of fire in the spring in connection with the launching of the second satellite in the series Intelsat V [International Telecommunications Satellite]) and the space module Spacelab (which is expected to make its debut in space during 1983).

- A number of European firms have combined into consortia to create effective alternatives in the fight for buyers' orders. The Swedish space firms Saab-Scania and L.M. Ericsson are working partly through these consortia--Saab in Mesh, LM [Ericsson] in Star, and the LM subsidiary Svenska Radio AB (SRA) in Cosmos.

But this development has caused a certain number of squeaking sounds in the works, too. As long as it was a matter of pure research work the international cooperation ran smoothly. But with commercialization of applications of space technology the climate became harsher. "Space research has outgrown its swaddling clothes," says Fredrik Engström. "The Swedish space industry is now sitting and watching the elephants dance in the china shop--and trying to avoid getting cut by the fragments."

Sweden Looking On While the Elephants Dance

One example of this elephant dance is the production of the German-French Euro-satellite. A few years ago the member countries of ESA were working together to produce a heavy satellite, called H-sat, for the European TV market. But after a hard fight Germany and France withdrew, saying that they were the only ones that had a market of their own at the time. The West German firms Messerschmidt-Boelkow-Blohm and AEG-Telefunken and the French firms Aerospatiale and Thomson-CSF formed the consortium Eurosatellite and began a project of their own--TV-Sat--which will begin transmitting over the two countries in 1984.

What was left from the crash of the H-sat project came together in L-Sat. But since this British-Italian development agency had no obvious market, the project wound up more or less in a backwater.

Having a market is thus really a central consideration in the space industry. And here the Swedish space industry has good chances--in spite of the fact that the controversial Nordsat has been shelved for an indefinite period. Since the Riksdag approved the proposals in the space bill in 1979 for a greatly increased investment in Swedish space activity, the government has given the green light for two Swedish projects.

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One of these is Viking, a scientific satellite that was built by Saab-Scania and the American firm of Boeing. Viking is expected to be sent up together with the French-Swedish remote-analysis satellite Spot in the spring of 1984. It will be transported by the European carrier rocket Ariane, while Saab is responsible for the on-board computer and Volvo Flygmotor for the combustion chambers for the rocket engines.

The other is Tele-X, a satellite originally conceived for experiments with various telecommunications and data services (telephony, image transmission, data services, direct TV, mobile communication). At the Space Corporation they are counting 100 percent on Tele-X's also becoming a commercially practicable product. "We are sure that Tele-X is financially sound, that we shall get a business started that is profitable in itself, not just in the form of spin-off effects," says Fredrik Engström. "And that there will be customers; we have already got an agreement with the Telecommunications Board that it will take Tele-X over at market value when the satellite is in orbit. After 1990 Tele-X, with a total of three satellites, will be showing a profit."

The systems responsibility for Tele-X rests on Saab-Scania and LM. They are also counting on getting other industrial firms in the Nordic countries into the project--e.g., Elektrisk Bureau and Kongbergs Vapenfabrik [the Kongsberg Arms Factory] in Norway, Christian Rossing in Denmark, and Nokia in Finland. But a great deal of purchasing is being done outside of the Nordic area--primarily from the French-German manufacturers in the Eurosatellite consortium. In return, Sweden is demanding that LM and Saab-Scania be allowed to trade on the French-German market and that Saab and LM work third countries jointly with the firms in Eurosatellite.

The market for new types of telecommunications services that Tele-X is looking into have already begun to be exploited--in the United States. Several firms, including Satellite Business Systems, have already been formed for transmission of office services of various kinds, teleprinting of periodicals, electronic mail, etc. American studies suggest that 50 percent of all data and video traffic will go via satellite by the year 2000. And it is estimated that nearly 10 percent of all business travel can be eliminated by conference TV within the next 12 to 15 years.

One of the World's Fastest-Growing Industries

"But Tele-X has certain characteristics that differentiate it from the existing communications system in the United States," says Henry Scheffe, who is responsible for coordination of the space activity within L.M. Ericsson. "The transmitting effect will be of greater dimension in Sweden, and that means that it is possible to have simpler and cheaper earth stations here. For us at LM, earth stations are an important piece of the space puzzle, and we have already sold a number of smaller stations for transmission experiments and data communication in Sweden, Austria, Switzerland, etc."

Some 15 to 20 countries are already employing telecommunications satellites for national use, and this represents a big potential, not least of all in the underdeveloped countries. The growth rate is about 25 percent per annum, making the telecommunications industry one of the world's fastest-growing industries.

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Since the space sector is also strategically important--and not without a certain prestige, one might perhaps add--the politicians are playing an important part in the development of the industry:

It is the political game that makes structural rationalization difficult in the FRG, where the space industry is thriving around Munich (headquarters town of MBB [Messerschmitt-Bölkow-Blohm] while 1,500 men are out of work in Bremen (Chancellor Schmidt's home town) now that the Spacelab project has been closed out there.

It is political decisions that are behind the big investment in the Ariane rocket --an investment that was made so that Europe would not find itself totally dependent on the United States. "But it was an investment that was necessary for economic reasons as well," Fredrik Engström points out. "Price-setting on rocket launchings has hitherto been entirely dependent on the decision of the American Senate. The advent of Ariane has lowered the price pressure on space transports."

In Sweden, too, as is well known, politics plays a decisive part in the development of the space industry. In this year's budget the Ministry of Industry allots 170 million kronor to the space activity, in line with the 1979 budget bill, which stipulated a trebling of the allotment compared to previous years. Aggressive state investments like, e.g., Tele-X also create a catalyst for the Swedish electronics industry, in which not only LM and Saab but also Luxor, Philips, and others can join and furnish computer terminals, subscriber equipment, etc.

Philips Head: "Fight to the Finish Over Nordsat"

"Tele-X makes it impossible for us to break out in any way from the fight to the finish that raged around Nordsat," says Olle Franzén, head of Philips, who is counting on it that the increased possibilities of transmitting data fast and cheaply will lead to nearly all offices' availing themselves of teletex systems, word processing by computer, etc., in the future.

But so far it is thus primarily Saab-Scania and LM Ericsson (including the subsidiary SRA), and to a somewhat smaller extent Volvo Flygmotor, that have gotten revenue from the Swedish and European space investments:

Saab-Scania took the big step out into space in 1967, when the Mesh consortium got an order for a scientific satellite, TD-1. The total cost fell in the order of magnitude of 200 million kronor, of which 35 million kronor wound up with Saab, where it was one of the biggest export orders of that year.

Saab-Scania: Some 10 Satellites on Order

The next milestone came in 1973, when Mesh got the order to manufacture a test satellite, OTS-1, in hard competition with Star. "That order laid the foundation for our continued advance--today we have contracts for some 10 satellites. And every satellite means 5 to 10 million kronor for Saab-Scania, which is responsible for the data processing on board," says Gert Larsson, who is commercially responsible for the space activity within Saab-Scania.

But Saab-Scania also operates on its own--both in the Swedish Viking and Tele-X projects and in Ariane, where the Swedish firm is responsible for the on-board computer. In addition to the initial program for the rocket, Saab-Scania has contracts for 10 to 20 computers, each of which costs around a million [kronor].

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"The space activity accounts today for about 25 percent of the R sector (robot and electronics sector), which in turn makes up 25 percent of the flight division," says Gert Larsson. "In terms of turnover we are approaching 100 million kronor, and that is not much, of course, in a concern with a turnover of about 15 billion. But it is important to bear in mind that the space activity involves an internationalization, and that we are making successive breakthroughs and finding new applications for our technology all the time."

LM's participation in the Star consortium has involved only scientific satellites thus far. The first was GEOS, which was sent up in 1977. Today there are three research satellites with LM antennas out in space and another three are under development or ready to launch. The price per antenna outfitting varies between 5 million and 20 million kronor.

Outside the framework of the consortium, LM has also gotten orders in connection with the international purchasing organization INMARSAT's order for ESA's so-called Marecs (navigation satellites). [INMARSAT = International Maritime Satellite Organization.]

LM will be responsible for signal generation in the satellites, and development and production fall in the order of magnitude of 20 to 30 million kronor. In addition, LM together with Saab is the chief contractor in the Tele-X project.

"The space program is thus a very small part of LM's total business, but it is interesting from the telecommunications standpoint, and we see it as a natural extension of our operations. We hope our investment in space will give us an extra foothold on the ground," says Henry Scheffe.

So far Volvo Flygmotor has only participated in the manufacture of the carrier rocket Ariane.

Last year the turnover rose to 15 million kronor and the stock of orders to 38.4 million kronor for the current rocket version.

"For Ariane 3, which will be partly reusable, we have designed a new kind of combustion chamber in two parts, and the prototype is already in the process of manufacture," says Ulf Olsson, who is responsible for the space activity within Volvo Flygmotor.

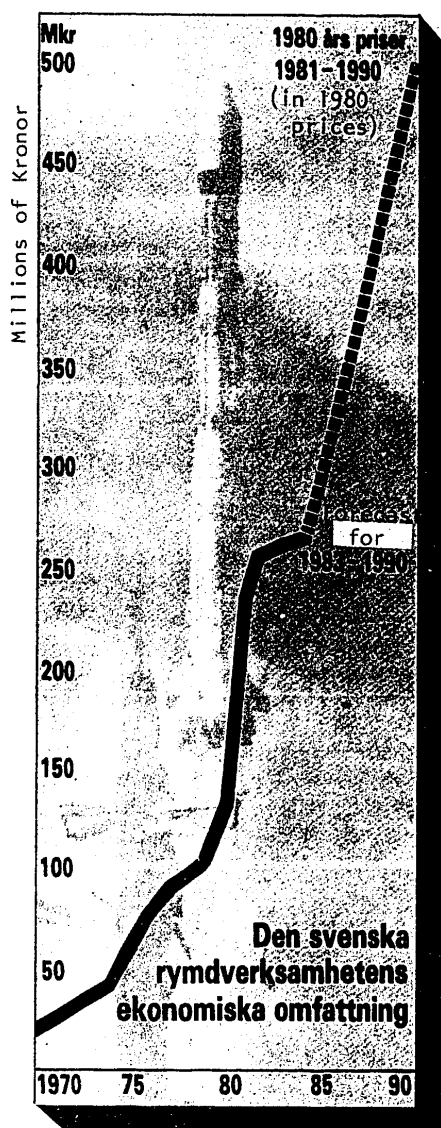
Series production of these products is thus gradually getting under way as well.

For Ariane 4 there are some plans to make the jet nozzle of fiber-reinforced plastic. And when we get to the fifth generation of European rockets, Volvo will offer a new type of jet nozzle.

"On the satellite side we should like to be in on manufacturing the fuel tanks for the motors that lift the satellite into its orbit for the French-German Tele-Sat," says Ulf Olsson. "But since the West German firm Erno also makes such products, we probably have not got much chance."

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The economic scope of Swedish space activity.--The curve of Swedish space activity is rising almost as steeply as the rockets that are launched. For the 1970-1983 period the figures are based on the documents presented in support of appropriation bills for the State Delegation for Space Research and its predecessors. The forecast for the 1983-1990 period (which is expressed in 1980 kronor) assumes that the Tele-X project will be carried out.

NASDA (National Space Development Agency) is Japan's space agency.

The State Delegation for Space Activity and the Swedish Space Corporation also belong in this group [with NASA, ESA, CNES, DFVLR, and NASDA]. The Space Corporation's function consists (in part) of implementing the Swedish space analysis and remote analysis program, developing satellites for communication, earth observation, etc., and operating the rocket launching field Esrange in Kiruna.

Suppliers Combine in Consortia

The big development organizations' cooperation with high-technology firms in their member countries has led to an extensive space industry. In Europe the suppliers have joined together in consortia in which the cooperating partners can get together in groups:

MESH stands for the French Matra, the West German Erno, Saab-Scania, the British Aerospace (Hawker-Siddeley Division), the Dutch Fokker, the Italian Aeritalia, and the Spanish Inta. The consortium also has joint work with TRW in the United States.

Star consists of Dornier (FRG), Thomson-CSF (France), LM Ericsson (with the Italian subsidiary Fiar), British Aerospace (Bristol Division), SEP (France), Contraves (Switzerland), Laben (Italy), and Sener (Spain).

Cosmos stands for a combination of ETCA (Belgium), Messerschmidt-Boelkow-Blohm (FRG), SNIAS (France), Marcon Space and Defense Systems (England), and SAT (France). The Swedish LM subsidiary Svenska Radio AB is an added member.

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The commercial exploitation of satellites got under way in 1965 when the telecommunications satellite Early Bird was put into operation. Early Bird was the first of a long line of satellites within the so-called Intelsat [International Telecommunications Satellite] system. Today there are 12 Intelsat satellites in operation. In Europe space research got under way later, and it was not until the beginning of the 1960's that the countries began to cooperate to make themselves independent of the big powers. Two organizations were created: ELDO (European Launcher Development Organization) for the manufacture of rockets and ESRO (European Space Research Organization) for joint research in the field of space.

ELDO got into difficulties in 1973 after some unsuccessful launching attempts in which the rockets exploded. Within ESRO there was a gradual shift of direction from research toward various space technology applications. As a result of this it was agreed early in the 1970's that the cooperation, in addition to the scientific program, would include a number of optional application programs for utilitarian satellites (weather, air traffic, telecommunications, etc.), and a laboratory module (Spacelab) that will be launched with the American Space Shuttle in 1983. Sweden takes part in all of this except for Spacelab. Since the agreement involves ESRO's stopping its probe activity, Sweden and its Swedish Space Corporation, formed in 1972, could take over the rocket launching field Esrange in Kiruna. At the same time it was decided that ESRO would be replaced by a new organization--ESA (European Space Agency), which today has 11 members.

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COUNTRY SECTION

SWEDEN

BOHMAN'S ECONOMIC PROGRAM NOT ADEQUATE TO STEM DECLINE

Stockholm VECKANS AFFÄRER in Swedish 29 Jan 81 p 19

[Article by Johan Myhrman, acting professor of economics at the Commercial University, Stockholm, and member of the council on business cycles of SNS (Research Association for Industry and Society)]

[Text] The budget estimates were recently presented to the Riksdag by Gösta Bohman, Minister of Economy. About a month earlier the council on business cycles of SNS published its analysis of the situation. It concluded with a discussion of various policy alternatives for coping with some of our critical economic conditions. Gösta Bohman evidently took this as an implied criticism, and this led him to express himself in various connections very condescendingly concerning our suggestions. In SvD [SVENSKA DAGBLADET], 11 January 1981, for example, he says: "Therefore I am strongly negative, I repeat once more, toward the argument being advanced by certain economists and certain people in industry that by some sort of sudden action we could straighten out our problems all at once." In a business council with many participants it is not certain that all are in agreement on every detail, but Bohman's characterization of our suggestions does not agree at all with our analysis.

I shall explain my own view of the problem here.

Sweden's economy has serious and deep-rooted balance problems. We also had them in the 1920's and 1930's. At that time they had to do chiefly with widespread unemployment. From the social point of view that is a more serious problem than the economic difficulties of today, when for the time being we have no widespread unemployment. The problems we are facing now, however, are paradoxically even harder to solve, because they are due to more deep-rooted and long-term economic and political malfunctions. The question now is how we are to bring about such a balance in our economy that future generations shall not have to suffer because we chose to pursue a policy that leaves them a heritage of an impossible burden of debt.

Our deep-rooted balance shortcomings consist of an unreasonably low solidity and profitability in the economy, of a balance of payments deficit that is approximately 4 percent of the GNP, and of a budget deficit that is close to 12 percent of the GNP. The high cost situation makes it hard for our industry to compete successfully on the world market. If Sweden is to continue to rely on market economy for production of goods and services, this must be straightened out.

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It will not work to rely on the market mechanism as an economic system and at the same time exclude some of its most vital functions. If profitability and solidity are taken away, most of the dynamics of the economy disappears, and with it the motive power in the economy that is represented by aggressive investments. Private investments in Sweden are also very low.

The enormous budget deficit simply continues to grow. Certainly somewhat different opinions exist as to how this is to be measured, but discussions of these threaten to draw attention away from what is to be done about it. No other country has been able to have a budget deficit of the order of magnitude of 10 percent of the GNP year after year without getting into serious difficulties. In other countries they begin to talk about a crisis program for the country's economy when the budget deficit approaches 5 percent of the GNP. In Sweden there is talk on the part of the government about an economy program that will have as its objective coming down in the course of 5 years to a deficit of 5 percent of the GNP! Have we a national lack of crisis consciousness?

The budget deficit at full utilization of capacity becomes in practice the same as if we borrowed abroad to avoid giving up all the private and public consumption we indulge ourselves in with the production we manage to achieve. We could avoid borrowing abroad if we cut down on our private consumption--but is there anybody that believes that the Swedish people would go along with that to any great extent? In that case it is the public consumption that is to blame.

We shall continue borrowing abroad at the rate we are doing and more for a good while to come with the budget deficit that the government is planning. This borrowing requires ever greater interest payments besides amortization. That way we shall have to tighten our belts to a quite uncomfortable extent throughout the 1980's. That would be a very good thing to avoid, but the government's economic policy with a lack of strenuous efforts to speed up Sweden's economy is leading to a decade of stagnation.

That directs the searchlight on the nature of the problem. In an economy with the infirmities of old age on the production side we shall have a very painful and lengthy period of illness and convalescence if a Keynesian and/or monetaristic demand policy is the only medicine against general overconsumption. Measures also need to be taken here to vitalize the production side. We need a supply policy.

What I mean by this is that if Sweden's economy grows by only about 2 percent a year, as the government is assuming, a very severe adjustment process is needed, and one that will be socially difficult to carry out, during the reduction of our overconsumption that must begin immediately. If, on the other hand, Sweden's economy could be speeded up so that the growth rate increased to 3 percent a year instead, or perhaps even 3.5 percent, the adjustment could take place with much less gnashing of teeth.

In addition to the cost adjustment that must be brought about as quickly as possible, a powerful supply policy is required for this. It would consist of several measures, with reduction of the income tax graduations, a substantial reduction in the budget deficit, and elimination of supports to inefficient enterprises as important components. I do not imagine for a moment that these measures would save Sweden's economy overnight; there has never been any question of any such quick

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solutions, Mr Minister. On the other hand it is quite clear that if Bohman and the government continue with the economic policy that has been pursued thus far, i.e. patching at the situation with small marginal measures, the road to adjustment will become still harder to tread. In my view cost adjustment and a supply policy of clearly discernible magnitude are needed, and as soon as possible. We already have the labor of Sisyphus ahead of us.

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