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26 April 1982

West Europe Report

(FOUO 26/82)

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CONTENTS

GENERAL

REVELATIONS BY NEO-FASCIST 'REPENTANT' TERRORIST TISEI

Milan PANORAMA in Italian 1 Mar 82 p 49

[Article by Antonio Carluccci: "What a Big, Dumb Black Mole!"]

[Text] The repentant Tisei's confessions open a new chapter in the enquiry into the "state massacre."]

The latest broadside against the carabinieri has been fired. Aldo Tisei, 28, the most important black terrorist of those who have collaborated with the magistracy after their arrest, has made serious trouble for two colonels, one a major, the other a former captain. For these two members of the armed forces his accusations have been so exact that the Roman judges have signed warrants of arrest against them. The major, Sergio Vecchioni, until his arrest a liaison officer with Criminalpol, and Sandro Spagnoli, ex-captain and businessman since his discharge, have both ended up behind bars. As for Salvatore Pappa and Luigi Caraco, both lieutenant colonels, the judges did no more than issue a judicial communique and cancel their passports.

Vecchioni, now confined in Fort Boccea, Rome military prison, has had to defend himself against grim charges: having for years favored the members of the black cell headed by Prof Paolo Signorelli, marked by the judges as one of the top leaders of fascist terrorism. According to Tisei, an iron pact between the fascists and the officer--for five years commander of the Tivoli company, 30 kilometers from Rome--called for information in exhange for his protection.

The first contact between Vecchioni and Tisei occurred in 1975. From information furnished by the black terrorists, the carabinieri discoverd the cache of pistols and other weapons captured in an underworld armory. From this initial contact between confidant and police, the affiliation expanded to other actions. "We turned over to Vecchioni the information we collected during our investigations into the local reds, and [in return] he guaranteed us adequate protection," Tisei told Judges Alberto Macchia and Roberto Napolitano.

This compact was functioning smoothly when the carabinieri officer advised Tisei and Sergio Calore, a fascist accused of murder, to take a change of air for a while: the carabinieri in Tivoli had recieved a firm request from

Rome for data on the black terrorists in the area. But the problem was resolved within a few weeks with a watered-down report.

Much different in the Sandro Spagnoli story. Tisei maintains that this ex-officer had always been a militant in the Ordine Nuovo, the extreme rightist group which had gone underground after it was dissolved, although it was responsible for some of the goriest crimes committed by fascist terrorism. To provide better cover, Spagnoli decided to enlist in the carabinieri. Was he an infiltrator beyond suspicion? This is a question the judges continued to ponder even when they read the list of black militants commanded by the ex-officer, who is now accused of armed assault. Just when he was on guard service with his unit at the Celio military hospital, the escape of Nazi criminal Herbert Kappler was being prepared and carried out.

These facts involving the carabinieri are the latest in a long series outlined in hundreds of pages of interrogation. When Aldo Tisei went to prison in the spring of 1981 for extortion against the businessmen of Tivoli, the judges investigating black terrorism had no interest in him. But then he let it be known that he had something to say and, within a few days, proved to be a goldmine of information.

Lest it be thought that he was telling fables, he promptly confessed to having conceived two murders--of Judge Vittorio Occorsio and Adelmo Cipriano, one of whose relatives was a weapon collector and target of the neofascists. Then came a robbery in which millions of lire were seized at the Ministry of Labor and various bank holdups. This revelation Tisei followed by reconstructing the history of Ordine Nuovo and other units of the terrorist right.

He explained how professor Signorelli became head of the group in 1976, first by maintaining close contacts with the unit's former leaders who had fled abroad (Salvatore Francia and Elio Masagrande), then abandoning them to realize his own ideas in organizing the Autonomia Fascista movement on two levels, one clean and public, the other clandestine, ready for "military action" and holdups for self-financing.

A position of outstanding importance now went to Aldo Tisei, particularly after the arrest of Pierluigi Concutelli, who assassinated Judge Occorsio in January 1977. Following that event, Tisei rose to the rank of the band's military chief in tandem with Sergio Calore. Thus, the repentant was always abreast of everything that happened; he also gathered information on the black terrorists' past exploits. In fact, he offered the judges a hitherto unpublished witness report on the role played by Stefano Delle Chiaie, recognized leader of the Avanguardia Nazionale, at the same time full time confidant for the Ministry of the Interior in the case of the Piazza Fontana massacre and the complicity of all black terrorist units which helped Franco Freda escape from obligatory confinement in Catanzaro.

But the repentant did more than clarify details of many episodes which the magistracy had been probing for years. His revelations have been new and highly disturbing. Incredible at first was his account of fascist espionage

in behalf of the Libyans in exchange for arms, drugs and money. And when Tisei declared that the corpses of two youths killed by mistake could be found in a small artificial lake on the periphery of Rome, the investigators obtained firm confirmation of the secrets he had up his sleeve.

Before opening the chapter on the carabinieri, Tisei had told another tale, one that landed Germano Sangermano, Florentine lawyer and ever a defender of fascist killers, in jail. "he was the liaison between our comrades in jail and the organization."

9653
CSO: 3104/158

LIST OF PRO-SOVIET PERSONALITIES IN PCI

Milan PANORAMA in Italian 1 Mar 82 pp 35-38

[Article by Matteo Spina: "All Brezhnev's Men"]

[Text] This is the list of the personalities who remain faithful to the USSR, and their real political weight.

As Vadim Zagladin, CPSU vice deputy of international relations, confided to Adalberto Minucci, member of the PCI secretariat, the Soviets have no intention of abetting or financing a rupture within the Italian communist party. And as PANORAMA has been able to ascertain in Moscow, the CPSU only wants to stimulate the debate, and provoke censure against the present PCI leadership, promote efforts to document and disseminate information on the socialist countries, just as INTERSTAMPA, the review founded by Ambrogio Donini and his feisty septuagenarian comrades, is doing.

The Soviets are counting on Armando Cossutta and his numerous friends all over Italy, in sympathy with the old-time partisans. Hoping for active Italian-USSR exchanges, they rely on the tough elements in the unions, detecting favorable prospects in the South, in the traditionally labor zones of the North, the region of Veneto, and the red cities of Emilia and Tuscany. After taking an extensive poll in many regions of Italy, PANORAMA can now trace a map of the PCI members who do not see "the propulsive thrust of the October Revolution" as exhausted by any means.

Paolo Robotti--Communist worker of the first generation, brother-in-law of Togliatti, iron-bound Stalinist, even though he was imprisoned and tortured in the USSR during Stalin's regime. In 1980 Roberto Napoleone published his book "Chosen From Life." In his presentation he declared positively that had the PCI summit broken off with Moscow, it would have been swept into oblivion.

Roberto Napoleone--Before undertaking INTERSTAMPA, among other publications he issued the works of the Czechoslovak Husak. Always in difficulties, nevertheless he disdains charges that the East is financing his current project.

Ambrogio Donini--For the nth time, this octogenarian professor has thrown himself into the pro-Soviet adventure with youthful confidence. After the PCI's protests on the Soviet takeover in Prague in 1968, he organized a

"conservative" pressure group which, it was said, followed a program which had much in common with the Manifesto group.

Guido Cappelloni--Party administrator responsible for the Middle Classes Section and typical apparatchik, he is known to be moderate in internal politices but pro-Soviet in international affairs.

Nino Pasi--Former NATO commander, senator of the independent Left, he was among the first to spend full time in pro-Soviet agitations at the PCI base, participating in dozens of assemblies in every part of Italy. He publishes a review STRUGGLE FOR PEACE.

Luigi Cioffi Degli Atti--Vicepresident of the Central Control Commission, PCI unit endorsed by many old-time leaders, some of them once consigned to the periphery by Togliatti. Shy, unwavering in his loyalty to the party, he is considered more a case of conscience than anything else.

Giulio Cerreti--78, collaborator of Sorel, Thorez and Togliatti, from 1932 to 1945 he was a member of the PCF Central Committee. The USSR awarded him the Victory medal. Elected to the Constituent Assembly, he served in four parliamentary legislatures. He is on the board of directors of INTERSTAMPA, and contributes to it an anti-Berlinguer column.

Giorgio Colorni--Partisan ex-commander and former chief editor of UNITA. He resigned his post as secretary of the Milan Togliatti section because of irreconciliable difference with the party's central committee decisions.

Guido Valabraga--50 years old, expresident of the Italian Youth for Zionism, ex-director of the Contemporary Hebrew Documentation Center, for years a collaborator in the Middle East section of RINASCITA, today professor of Near East history at the University of Bologna. He is one of the drafters of a document drawn up by the leaders of the Alliotta section rejecting the party leadership's resolution and the decisions of the central committee.

Alberto Maria Cavallotti--Deputy to the Constituent Assembly, he is an adherent of the old guard in every respect. On Sunday, 14 February, in Milan, with Nino Pasti he co-presided at the assembly of the pro-Soviet peace committee. In his speech he declared, "We are much stronger than the 50,000 men recruited in the streets by the Solidarity union."

Giovanni Pesce--Gold medal Resistance winner, 64, he headed the Milanese armed partisan group. He was a Togliatti bodyguard, later full time functionary in the Milanese federation, but abandoned the militia when Cossutta stripped Alberganti of his post as secretary. Today he is president of the City of Milan private vigilance police. His speech before the presidency of the pro-Soviet assembly at Anpi, Milan, was greeted with enthusiastic applause.

Serio Ricaldonea--Onetime Alfa Romeo worker and director of FGCI in Milan during the 1950's. Now somewhat estranged from the party, he works for the Milan Italia-Vietnam association. Under his sponsorship, numerous telegrams of solidarity were dispatched to Cossutta.

Antonio Costa, Leonardo Banfi, Alfredo Novarini, Gianfranco Rossinovich, Elio Del Pizzo--After the state of siege was proclaimed in Poland these five Milanese communal councillors abstained from a motion passed at the Palazzo Marino denouncing "Soviet imperialism," signed by the communist group among others.

Lauro Casadio--A partisan in his youth, today vice president of the Lombardy region. In Milan he is considered a trusty ally of Cossuta, whom he has followed since 1956, year of the clash between the old Stalinists and the young party innovators led by Cossurra and supported by Amendola. He likes to define himself as an "Amendola-Longhiist."

Bruno Cerasi--Former partisan and member of federation units since 1946. He is now sports assessor for the province of Milan. More than a veteran Stalinist, he is classified as a "pure-blooded Cossuttaite."

Arnaldo Bera--Wholly loyal to Giuseppe Alberganti, ex-member of the secretariat. Decidedly a Stalinist of the old guard, ex-senator, today a member of the INTERSTAMPA board of directors.

Alessandro Vaia--73 years old, with an honorable record as commander of the Garibaldi Battalion in Spain. After the war he was vice secretary of the Milan federation in charge of the Office of Cadres. Highly regarded by all in the Milan PCI branch, he is considered the "eminence grise" in its relations with the USSR, the man best fitted to lead the party's most nostalgic current in the shadows.

Manlio Pirola--He is one of the worker cadres most esteemed in the party, ex-president of the Pirelli internal committee, former secretary of the Bicocca Temolo section. When he was abruptly dismissed by Pirelli, he joined Cossutta in the Milanese provincial secretariat. Since 1976 he has headed the Milk Center and participated on the Milan PCI federal committee.

Amerigo Ciocchiatti--Ex-senator for Varese, 70, he wrote enthusiastic letters to NEW TIMES, the Soviet weekly published in Italian, to endorse the USSR's good motives.

Alfio Caponi--City councillor in Perugia, ex-senator, and historical figure in the struggles of the Umbrian share croppers.

Bruno Donatelli--56, president of the Narni (Terni) Italia-USSR, with 300 members one of the strongest branches in Italy.

Dino Rebbio--Retired, 52, enormously popular secretary of PCI section 39 in Turin.

Adelio Albarello--Former deputy, president of Italia-USSR in Verona. He organized an active nucleus of dissidents, deplored by the Veneto PCI as "a thorn in its side."

Salvatore Careri--55, ex-regional deputy, currently secretary of the Palermo Noce section. He told PANORAMA, "I do not think that the USSR has exhausted its propulsive thrust toward socialism. Thanks to it, today there are free peoples."

Carmelo Lupo--Of Palermo, 39, formerly naval shipyard laborer, now member of the regional FIOM-CGIL secretariat. To PANORAMA he declared, "I was a pro-Soviet when I joined the party many years ago, and I still consider myself as such."

Salvatore Rindone--A native of Catania, PCI deputy, 38, credited with an extremely long series of party jobs on the local, regional and national level.

Luigi d'Auria--One of the PCI party founders in the province of Naples, At 75, he is a popular party figure in Campania.

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RADAR, ATTACK QUALITIES OF NEW GENERATION ALPHA JET DESCRIBED

Paris AIR ET COSMOS in French 13 Mar 82 pp 26-31

[Article by Gerard Collin and Jacques Morisset: "The 'New Generation' Alpha Jet Trainer/Support Plane--a Very Advanced Weapon System, Unparalleled for an Airplane of This Class"]

[Text] In about a month, a modified Alpha Jet will fly at Toulouse-Colomiers, specially modified to receive a conduct-of-fire system designed for battlefield attack, advanced in technology, and presenting operational characteristics far superior to airplanes of its category. This plane's possibilities are such that its promoters do not hesitate to speak of a new-generation Alpha Jet. Although is official designation--at least as far as its first cumstomer, Egypt, is concerned--is Alpha Jet MW2,* we have therefore adopted, for the present article, the expression New-Generation Alpha Jet Trainer and Attack Plane, or "Alpha Jet NGEA," which corresponds perfectly to the operation carried out by the Dassault specialists with a view to developing this new fighter.

The Alpha Jet was originally, and remains, a tandem two-seater and twin-jet plane, designed for carrying out basic-training missions, advanced-training missions and tactical-support missions. The advances achieved over the trainers of the preceding generation are considered remarkable by the users: its flying qualities are excellent, tailspins can be done without danger, its piloting characteristics are very close to those of the most modern fighters, and its firing-training or fire-support capacity is considerable, thanks to carrying capacity rarely achieved on an airplane of this size. Added to this are sizable internal volume available for mounting supplementary equipment, the high security offered by the twin-jet design, and considerable range due to the combination of three factors: very carefully worked-out aerodynamics (reduced drag), large internal fuel capacity, and low fuel consumption by the double-flow Larzac 04 turbojets (developed by SNECMA [National Aircraft Engine Design and Construction Co] and Turbomeca).

The Past, the Present...

The Alpha Jet program, launched by Dassault and Dornier at the request of the French Air Force and the Luftwaffe, made it possible first of all for these

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* The MS1 is one of the versions--of conventional type--presently offered for export.

air forces to modernize their fleet, but with the FRG favoring the fire-support function and France the advanced-training function. Other air forces soon took an interest in the Alpha Jet, and to date, some 10 countries have chosen the Franco-FRG airplane (543 planes). The countries mentioned so far are Belgium (33 planes), Abu Dhabi (6), Ivory Coast (6), Togo (5), Morocco (24), Nigeria (12), Qatar (6), Egypt (45) and Cameroon (6). More than 330 have been delivered to date, including a little more than 100 to France and 150 to the FRG. To fill these orders, two assembly lines were initially installed in the promoting countries, but without duplicating the models made. The maximum output of 13 planes per month was reached last year.

...and the Future

This, we are tempted to write, is the past and the present; as for the future, it is marked by the development of the Alpha Jet NGEA, already ordered by Egypt (two)* and Cameroon. We note first of all that rational use of modern combat planes such as the Mirage 2000 requires ongoing operational training in conduct of fire. But simulators (which also happen to be very expensive) do not entirely fill this need; whence the necessity of a trainer with advanced equipment, of the same technological level as the reference airplane. Apart from the new-generation Alpha Jet, such a plane does not exist, for a very simple reason: its design requires experience with the combat plane that is possessed only by the builders of airplanes of this type. And Dassault is the only one offering a complete range: the Mirage III, Mirage F1, Mirage 2000, Alpha Jet, etc. With its industrial logic thus combined with its experience, Dassault was the builder in the best position to develop a plane such as the Alpha Jet NGEA, with the synergy fully effective and making it possible to develop, from the basic airplane, a machine capable of evolving over time and of being fully valid at the end of this century.

As for Egypt, that country will be the first to use a panoply of airplanes as formidable as that which joins the Mirage 5-E2 with the Mirage 2000 and the Alpha Jet NGEA. Before going on to consideration of the Alpha Jet NGEA's avionics and armament, we mention also that the Alpha Jet's airframe and engines will also be capable of evolving. The engine currently mounted on the assembly line is the Larzac 04C6, characterized by its having an oil accumulator that makes it possible to extend the range of reverse-thrust flight. But SNECMA, Turbomeca, MTU [Motor and Turbine Company] and KHD [Klockner Humboldt Deutz] are already developing a Larzac 04X that offers in particular the advantage of furnishing, at low altitude and high temperature (ISA [International Standard Atmosphere] + 15 °C), 13-percent more thrust. For a given mass and runway length, the Alpha Jet equipped with this improved Larzac version will be able, for example, to take off at outside temperature some 10 degrees higher.

In parallel, it would also be possible to envision an increase in carrying capacity, which is already 2.5 tons for outside loads, with the internal fuel tanks (1,520 kg of fuel) full.

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* Egypt has ordered 20 MS1's for training and conventional attack, and 15 MS2's for "high-precision" attack. It should be noted that the same country is going to receive some Mirage 5E2's, equipped with an identical weapons system.

The Alpha Jet NGEA

Practically since the Mirage IV, Dassault has progressively developed the weapons-systems capacities of its combat planes. Since the first analog computers for attack and bombing, the processing of information has been largely digitalized. There have been very important developments of the data-pickup devices themselves, especially as regards the kinematic pickups--for altitude, bearing, speed, position. The progress at this level has recently taken the form of adoption of inertial power plants of the 1-nautical-mile-per-hour-or-better class; as regards Dassault, this occurred first with the Super Etendard, but now it is the case also with the Mirage 3, 5 and 50, the Mirage 2000, 4000, etc, and now with the Alpha Jet.

By virtue of its weapons system, the Alpha Jet NGEA is a "mini-Mirage 2000," overall, except for the radar.

It carries:

--a SAGEM [Company for General Application of Electronics and Mechanics] ULISS-81 inertial power plant. This power plant is in the "80" series of ULISS's, already adopted on Super Etendards ("80"), export versions of the Mirage F1, Mirage 5 and Alpha Jet ("81"), and the Indian Jaguars ("82"). In addition to the inertial-power-plant function (bearing, course, speed, position), this power plant also functions as a computer for attack, for management of the Digibus multiplexed digital-bus line, for aerodynamic calculations and for elaboration of the summary data presented in the heads-up sight;

--the Thomson-CSF [General Radio Co] VE-110 haeds-up sight adapted to the Alpha Jet, with its symbol generator;

--a Thomson-CSF TMV-630 laser telemeter;

--and therefore a Digibus multiplexed digital-bus connection analogous to that of the Mirage 2000. The rest of the avionics is relatively more conventional: radionavigation, communications, IFF [information friend or foe], radioaltimeter, weapons-control housing, etc.

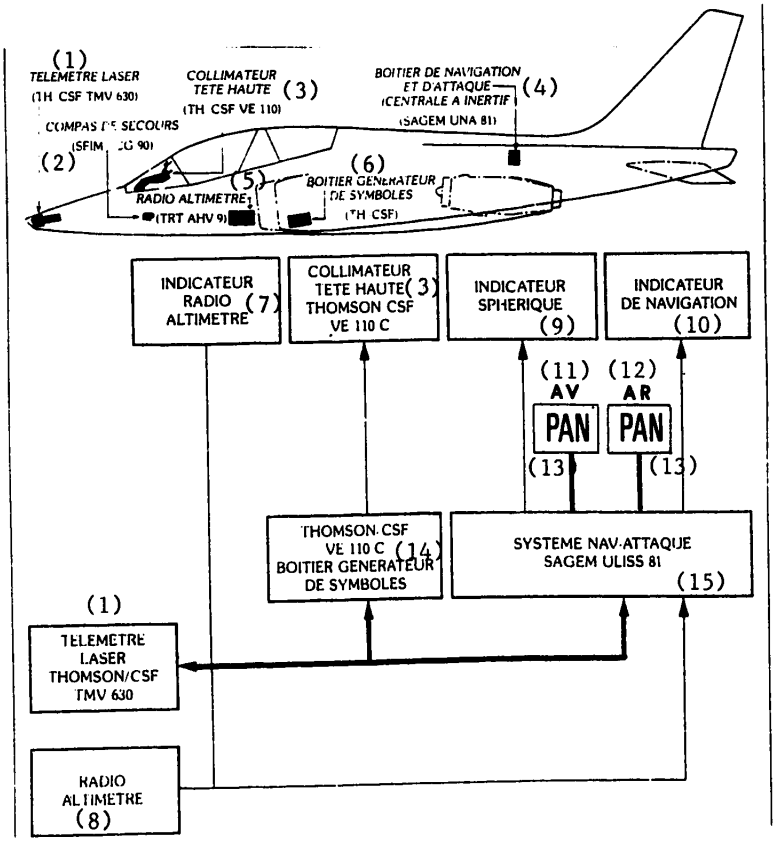
It should be noted that it has been easy to integrate these modern avionics into the Alpha Jet: the space available in the electronic "holds" was sufficient; the electric-power supply was also sufficient; only the 400-VA [volt-ampere] converters (ATEI [Electronic Industrial Techniques Applications Co]) had to be replaced by 1,000-VA converters, also made by ATEI.

"Nav-Attaque" Family of Systems

One of the most interesting aspects of the Alpha Jet NGEA is that this airplane fits in with a logic of avionics-systems development which, practically speaking, has existed from the Mirage III's to the Mirage 2000/4000's, with the Mirage 5, Super Etendard and Mirage F1 and 50 inbetween, covering many types of weapons: bombs, missiles, cannon, rockets.

The family of SNA's (Navigation and Attack Systems) is based essentially on the principal elements consisting of: SAGEM's ULISS family of inertial power

Installation of the Alpha Jet's Inertial Navigation and Attack System



Above, the installation sites of the essential elements of the Alpha Jet NGEA's avionics. Below, a synoptic diagram of the system. The bold line represents the Digibus multiplexed digital-bus connection. The two "PAN's," fore and aft, are the inertial-power-plant command and visualization stations.

Key:

1. Laser telemeter (Thomson-CSF TMV-630)
2. Emergency compass (SFIM [Measuring-Instruments Manufacturing Co] CG-90)
3. Heads-up collimator (Thomson-CSF VE-110)
4. Navigation and attack housing (SAGEM UNA-81 inertial power plant)
5. Radioaltimeter (TRT [Radio and Telephonic Telecommunications] AHV-9)
6. Symbol-generator housing (Thomson-CSF)
7. Radioaltimeter indicator
8. Radioaltimeter
9. Spherical indicator
10. Navigation indicator
11. Fore
12. Aft
13. [expansion unknown]
14. Thomson-CSF VE-110 C symbol-generator housing
15. SAGEM ULISS-81 "Nav-Attaque" system

plants, the heads-up cathode-tube sights (VE-110, 120 or 130) from Thomson-CSF (and ESD [expansion unknown]), the radars (AGAVE [expansion unknown], Cyrano IV or RDM [Multipurpose Doppler Radar]), for which can be substituted laser telemeters for particular mission purposes, even at the cost of the volumes available in the nose. The flexibility of installation of such systems on an airplane such as the Alpha Jet is greatly strengthened by the integration made possible by the Digibus multiplexed digital connection, which in effect offers greate ease of interconnection by comparison with point-to-point connections. This bus line architecture also offers great self-testing and maintenance capacity.

Finally, it appears that the avionics system of the Alpha Jet NGEA is the logical result of the weapons sytems already developed for the Dassault family of combat planes. There are three consequences of this fact:

--the first is that the Alpha Jet NGEA's avionics system has, for practical purposes, already flown; integration of it into the new carrier that the Alpha Jet constitutes should therefore be only a simple routine matter in the last analysis. Furthermore, integration has already been achieved without difficulty on the Bretigny bench, with Dassault's considerable experience with equivalent systems taken advantage of in this case too;

--the second is that a Dassault customer can define, for two or three types of weapons-carrying planes, avionics systems that offer a high degree of commonality, which has obvious advantages in the matter of logistics: spare parts, bench-testing, training of maintenance personnel, etc. This is the case with Egypt, for example, with the Mirage 2000, the Alpha Jet NGEA (called "MS2" in this case) and the Mirage 5E2's (modernized);

--the third consequence is that the pilots themselves will have, between one plane and another, an avionics system from the same family, which also presents several advantages, and training in the Alpha Jet then becomes a real preparation for an advanced system such as that of the Mirage 2000.

To our knowledge, Dassault is the only builder in the world who can thus offer this avionics-system "family" approach, which testifies to the effort made by the airplane builder and its principal associates (SAGEM, Thomson-CSF, ESD) to obtain maximum synergy between a modern avionics and the airplanes carrying it.

The Advantage to the NGEA

What does the NGEA version of the Alpha Jet offer by comparison with the preceding versions? The answer to this question first calls for consideration of some of the possibilities offered by the system:

--the inertial power plant offers great attitude precision (on the order of 1 minute of arc) and speed precision (on the order of 1 meter per second). This overall precision gives high quality of kinematic reference for sighting and triggering of fire. The navigation precision (better than 0.8 NM [nautical mile per hour CEP [circular error probable ?] is advantageous first of all in its short-term potential (as in the CCPI/PI [continuous calculation of point of impact]/PI [initial point] attack mode; see below): the quality of navigation is such that a localization precision of some 10 meters can be guaranteed after

readjustment on a known point for several minutes, which is sufficient to ensure maximum effect of the weapons used.

Overall, thanks to the inertial power plant, the navigation and attack system is higher performance characteristics than a conventional system with gyroscopic power plant and Doppler: the precision of the inertial power plant is not affected by accelerations (in close maneuvers, for example). Likewise, an inertial power plant does not suffer from the fluctuations of the echoes encountered by the Doppler on the ground, or from the weakness of the Doppler echoes in calm seas.

Navigation is fully autonomous, and the inertial power plant offers precision better than 0.8 NM/hour CEP, readjusted from time to time in accordance with the needs of the mission;

--the laser telemetry makes it possible to readjust the airplane's navigation on a known point (a steeple, an accident of relief, etc) with precision to a few meters; the telemeter also makes it possible, in attack modes, to measure the distance to the objective, and therefore to trigger fire with great effectiveness. Of course, a laser telemeter, even if it is more precise in measurement of distance to an objective on the ground, does not give all the possibilities offered by a radar. But it does not cost what a radar does either, and it is relatively easy to install in an airplane. In the case of the Alpha Jet NGEA, the airplane is thus equipped with a "laser nose"; the optical window cuts across the airplane's nose slantwise.

By comparison with a "telemetry" calculated by triangulation (distance + radiosonde altitutde), direct measurement by laser is, of course, distinctly more precise, being free of the errors of distance evaluation and of altitude fluctuation due to the accidents of the relief flown over.

Several Modes

The Alpha Jet NGEA has five modes of attack: CCPI, CCPI/PI, delayed CCPI, CCPL [continuous calculation of point of drop], CCPL/PI.

--CCPI for braked bombs, cannon and rockets--that is, principally for the weapons fired with flat trajectory. A reference mark presented in the sight gives continually the point of impact on the ground of the weapon chosen; the pilot triggers fire when this reference mark coincides with the target.

--The CCPI mode exists also in the CCPI/PI version, which offers the possibility of designating a known point (called the initial point) in relation to the target.

--The delayed-CCPI mode, used for braked or even superbraked bombs. In this case, the high downgrade of the trajectory means that the target is out of the sight's field of view before fire is triggered ("the rear sight is...too low"). In this case, a phantom target appears in the sight's field, and the pilot triggers fire when the phantom target and the likewise fictitious point-of-impact reference mark coincide.

--The CCPL mode, used for smooth bombs and certain braked bombs. The pilot triggers his attack by means of a laser-telemetry designation of the target.

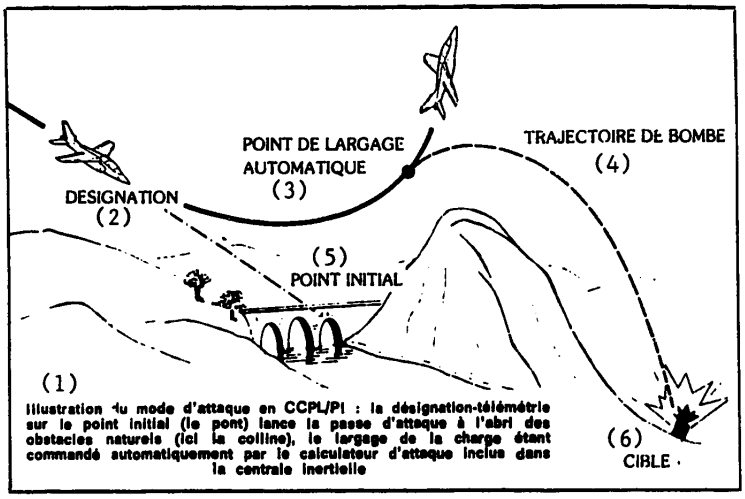


Illustration du mode d'attaque en CCPL/PI : la désignation-télémétrie sur le point initial (le pont) lance la passe d'attaque à l'abri des obstacles naturels (ici la colline), le largage de la charge étant commandé automatiquement par le calculateur d'attaque inclus dans la centrale inertielle

Key:

1. Illustration of the CCPL/PI attack mode: the telemetry designation on the initial point (the bridge) launches the attack pass under cover of the natural obstacles (here, the hill), with dropping of the payload commanded automatically by the attack computer comprised in the inertial power plant. 2. Designation 3. Point of automatic dropping 4. Trajectory of bomb 5. Initial point 6. Target

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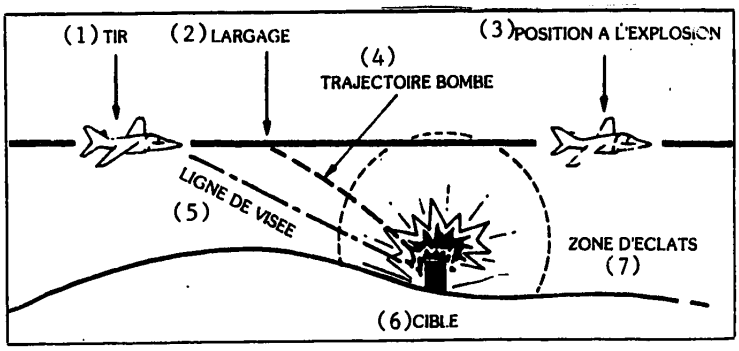


Illustration of the delayed-CCPI attack mode, in which the objective is outside the sight's field; a phantom objective is created to provide for the firing of braked or superbraked bombs.

Key:

1. Firing
2. Dropping
3. Position at explosion
4. Bomb trajectory
5. Line of sight
6. Target
7. Burst zone

The attack computer then takes charge of the sequence; it begins by giving the pilot the pull-out order, so as to prepare for the pilot's "disengagement." In

doing so, the computer continually calculates the bomb's point of impact on the basis of its behavior in ballistic flight. Firing is triggered automatically when the calculated point of impact coincides with the objective designated at the beginning of the sequence.

--The CCPL mode makes it possible to use a phantom target that is offset by a quantity (geometric vector) that is known in relation to a real objective. The pilot then designates the phantom target: an accident of relief that is known very precisely in terms of longitude/latitude coordinates, or in terms of relative distance/bearing magnitude, in relation to the objective. This designation is associated with a laser telemetry that makes it possible to adjust the Alpha Jet NGEA's navigation to within a few meters.

Navigation is then continued by means of the inertial power plant. Because of a deviation of less than 0.8 NM/hour (CEP), a simple calculation shows that over a distance of some 10 kilometers, this position retains a precision on the order of some 15 meters--in other words, a precision more than consistent with the zone of effect of the weapons used.

This mode, called CCPL/PI, then enables the airplane to engage its attack in the best way, so that the plane can remain "covered" for as long as possible under the protection of natural obstacles (hill, valley, cliff, etc). Thus the entire initial approach from adjustment/designation on the phantom objective can be done under cover, without possibility of direct detection by the enemy attacked.

Because of the automatic pull-out and dropping commands, the attack will have the benefit of maximum surprise effect; for what is involved is an attack without ever seeing the target--and thus, vice-versa, without ever being seen by it.

The maximum distance between the initial point and the target is on the order of some 10 kilometers; this distance is related to the short-term quality of the inertial power plant's deviation.

The distance between the dropping point and the target is, of course, limited by the range (ballistic) of the bomb--typically a maximum of 4 or 5 kilometers. The resulting overall precision at impact (navigation precision + precision of ballistic flight) is a few 10's of meters, which is still entirely consistent with the radius of action of the bombs used.

The CCPL/PI mode offers--it should be noted--the considerable advantage of enabling the pilot to prepare for his mission (before leaving on it) by offering him the possibility of entering the coordinates of the adjustment point and enabling him subsequently to adjust his navigation, and thus to engage the attack phase before reaching the front line--and therefore under the best calm conditions. He is then freer in his movements, especially in order to see to his own defense.

The total NGEA system thus offers a range of attack and firing modes from direct fire--target in the sight's field, with continuous calculation of point of impact (CCPI)--to the "stand-off" firing modes (CCPI/PI). This latter mode of-

fers the least vulnerability, but presupposes a short-term kinematic reference of very high quality--that is, position equivalent of less than 1 nautical mile per hour, levels beyond the reach of the conventional combinations of Doppler and gyroscopic power plants.

It has also been calculated in Dassault that the Alpha Jet NGEA (wihout even taking into account the laser telemetry, and on flat terrain) offers the following gains in firing precision by comparison with a "conventional" Doppler-gyroscopic power plant version:

--CCPI (superbraked bomb) at 400 knots, 200 feet: 30 percent;

--68-mm rocket: at 1,500 m, 400 knots, 10° dive: 40 percent;

--cannon: 5° dive, 400 knots at 1,000 m: 20 percent.

The NGEA's advantage increases if the terrain overflown is irregular, for laser telemetry adds 10-percent precision by comparison with use of the radioaltimeter.

Soon to Be Flying

The NGEA program is under way. A mockup bench has already been in operation at Dassault in Bretigny since last Fall. A complete bench for integration of the navigation and attack system began functioning at Bretigny in February. The first NGEA plane is to fly at the beginning of April. The first delivery (to Egypt) is to be at the beginning of next year. Two other benches will be built: one for the Toulouse plant and the other for Egypt.

The Alpha Jet NGEA is obviously a long way beyond the trainers transformed into attack planes by the addition of external attachment points and conventional avionics. The Alpha Jet NGEA is indeed unique, and comes as an extension and natural complement of the Mirage 3 and 5/Mirage F1/Mirage 2000 family. It will be surprising if other buyers, after Egypt and Cameroon, do not come along.

Total Safety in Case of Ejection

Among the elements contributing to the ease of use of the Alpha Jet and the security of its use, we mention the landing gear, of Messier-Hispano-Bugatti design, with low-pressure tires and of such dimensions that an increase in total mass can be envisioned with few modifications (wheels and brake), and the ejection seat. The French Alpha Jets are equipped with type-Mk 4 ("zero-90") Martin Baker/SEMMB [expansion unknown] seats, and the FRG Alpha Jets with Stencel S-III S "zero-zero" seats. The Belgian Alpha Jets also have Martin Baker seats --B10N "zero-zero." The customer indeed has the choice: since the Martin Baker Mk 10, for example, is also used on the Mirage 2000 (and the F1), the customer may be interested in choosing the same type of seat for a fleet composed of two or three types of plane. This is the case with Egypt in particular.

We note finally that the Alpha Jet take the window-glass fragilization system equipped with a pyrotechnic sequence, developed by Dassault at Velizy and ensuring absolute safety. This system, qualified up to 600 knots, is the last word in fragilization; it eliminates the ejection-speed limits.

PHOTO CAPTIONS

1. p 27. Under an Alpha Jet wing, two examples of load-carriers developed and produced by the Rafaut company: at left, a bi or tri adapter, type AM1000/2000, carrying two Beluga bombs from MATRA [Mechanics, Aviation and Traction Co]/Thomson-Brandt, and at right, a TG600 releaser-ejector (14-inch loads, maximum of 1,450 pounds/650 kg) carrying a drum.

2. p 29. This configuration--one of the very many already flight-tested--shows that in addition to the four modular 400-kg bombs, the plane can also carry a fifth bomb by using the under-fuselage cannon-container attachment point.

11267
CSO: 3100/473

'DATEX 82' EXERCISE TESTS ATTACK, DEFENSE, DETECTION CAPACITY

Paris AIR ET COSMOS in French 20 Mar 82 pp 26-28

[Article by Jean de Galard: "'Datex 82': Air Defense Put to the Test--This Major Exercise Is Integrated with a Vast Logistical Operation This Year"]

[Text] It was in the heart of the Detection and Control Center of Cinq-Mars-la Pile, near Tours--the most modern of Europe's air-defense installations, presented to the press for the first time--that Lt Gen Bernard Capillon of the Air Force, air-defense commander and Air Force commander of the air-defense forces, chose to comment at length on "Datex 82."

This major exercise, which once a year enables the Air Force to train its air-defense personnel--in particular, the crews, the interception controllers and the ground-to-air gunners--under conditions as close to reality as possible--was held last Tuesday and Wednesday. It is a punishing and constraining operation--in our last issue we stressed the fortunate compromises that it occasioned on the part of the civilians and the military--but a necessary one, since it makes it possible to evaluate the capacities of the national air-defense system. It put into action not only radar and sight surveillance organisms, the air bases and all of the Air Force's active defense facilities (airplanes with their air-to-air weaponry, ground-to-air missile batteries and double-barreled antiaircraft cannon), but also elements of the Navy and of the Army. Datex 82 therefore made it possible to put the coordination of all the components of air defense to the test. Furthermore, this year like last year, Datex was integrated into a vast logistical operation (exercise Ex Log) started on 15 March, the purpose of which was to check the effectiveness and coherence of the measures to put the Air Force on a war footing in the areas of backup and technical support of the forces. The aim was also to check the ability of the manufacturers and maintenance centers to increase their rates of delivery or repair of materiel in a situation of sudden crisis.

The balance-sheet provided for at the end of the exercise involved 2,750 results: 1,200 defensive and 1,550 offensive, with the latter involving the participation of airplanes of the Strategic Air Forces, the Tactical Air Force and air forces of allied countries: the FRG, Spain, Great Britain, Italy, The Netherlands, and American and Canadian forces in Europe. The air-space zones affected by Datex 82 ranged from low altitude (500 to 4,000 feet, 150 to 1,200 m) to high altitude (flying levels above 320-340). This exercise was to entail

the closing of some 20 airports to traffic under IFR [Instrument Flight Rules] conditions.

Datex 82, which was carried out in accordance with the usual safety norms and with respect for the rules concerning nuisances, did not, of course, correspond to any particular fictive political-military situation.

The CDC [Detection and Control Center] of Cinq-Mars-la-Pile

The CDC of Cinq-Mars-la-Pile was put into operational service on 27 October 1980. It is operated by 370 persons, including 200 controllers. It is one of the 10 stations that support the Air Defense Command in the execution of its missions. The CDC's and Satellite Detection Centers (CDS) that belong to the air-defense chain of command are installed at Contrexeville, Drachenbronn, Doullens, Mont-de-Marsan, Lyon Mont Verdun, Nice Mont Agel, Brest, Romilly and Narbonne.

What characterizes this center, which is located 30 km downstream from Tours and occupies a very central position, geographically, is that it is the most recent and most modern station of the STRIDA (Air-Defense Data Processing and Representation System) system, the automation of which began 20 years ago.

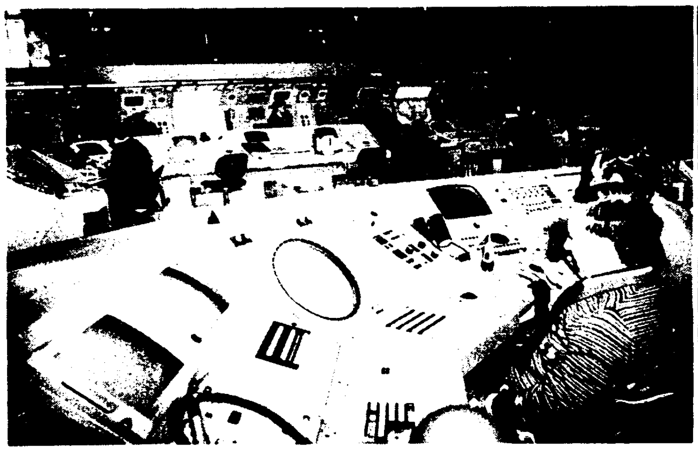
STRIDA, as we recall, is based on two essential principles: real-time processing of radar data and linking of the stations, both among one another and between each of them and the Air-Defense Operations Center (CODA) located at Taverny. This linked network offers multiple reconfiguration possibilities that enable one to make up for the unavailability of one radar station or another. STRIDA's chain of command involves three levels:

--the satellite detection centers, which may be either civilian or military and which do not have any operational function; they normally have only facilities for detection and for extraction of digital plots, linked to one or more CDC's;

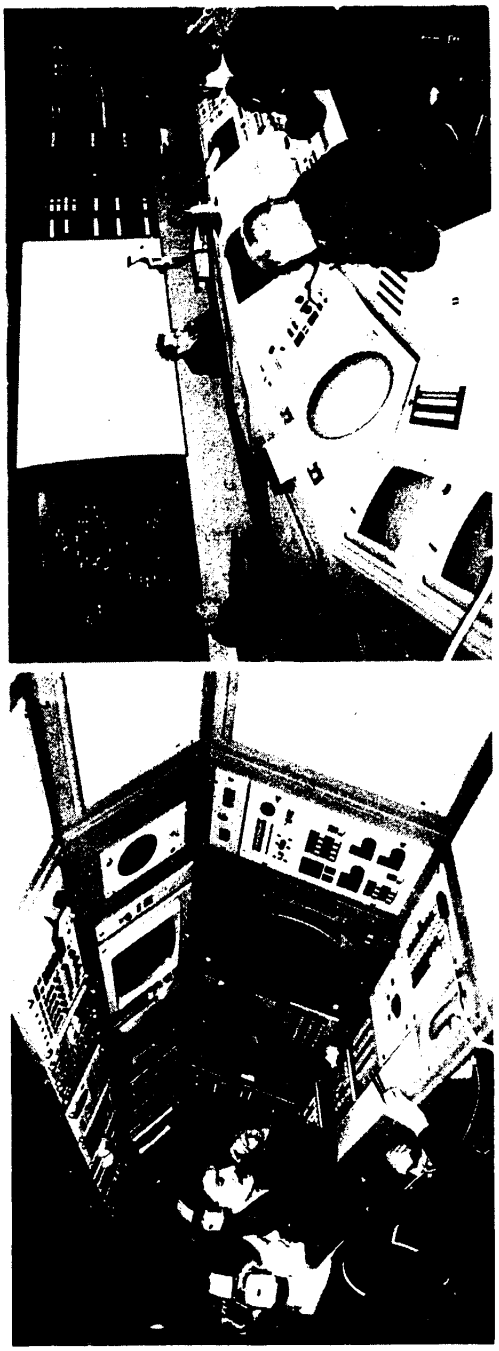
--the detection and control centers, which constitute the basic units of the system and provide for: establishment and transmission of the general air situation in the zone of responsibility of each of them; management and control of the interceptor planes; control of military operational traffic and coordination with the other traffics, for the purpose of proper management of the air space;

--the CODA. This main center, installed at Taverny, has an emergency center installed at Mont Verdun. As the organism for synthesis and command linked with the CDC's and with the allied air-defense systems (NADGE [expansion unknown], 412-L and Combat Grande), it has permanent responsibility for threat evaluation, broadcasting of alert, and general conduct and coordination of operations.

The CDC's of Nice and of Tours are equipped with new-generation materiel (Visu IV); the Drachenbronn station--the oldest--is still equipped with CAPAC [expansion unknown] Visu II materiel; the CDC's of Doullens, Contrexeville, Lyon and Mont-de-Marsan are equipped with standard CAPAC III Visu III materiel. Visu IV is distinguished from Visu III by the independence of the consoles; each of them constitutes, in fact, a minicomputer that provides for its own image-gen-



In the control room of the Cinq-Mars-la-Pile center. Upper photo: in the foreground, the DCC (Civilian Coordination Detachment) station, operated by civilian air-traffic controllers; in the middle ground, the stations of the chief of Traffic-Coordination Control (CCT) and of the chief of Interception Conduct (CCI); in the rear, the high consoles (execution stations). Lower photo: the station of the chief of air-situation control (photoreport: Michel Isaac).



Upper photo: close-up view of a work station at a high console. The visualization screen is of the Visu IV type; on the flat part are the selection keyboard (labels and visual display) and the alphnumeric keyboard. Lower photo: the Tours-zone operations center. It is part of the operational-control chain.

eration and its own management, by means of a microprogrammed computer block. The improvements incorporated in the equipment of the Visu IV involve mainly the typing of instructions, presentation of data (colored cards), and technical organization.

The operations room of the CDC of Cinq-Mars-la-Pile has been built underground at a depth of 25 m (at the level of the bed of the Loire), and connects with a large group of underground galleries used by an Air Force depot.

The missions of the CDC have a triple character. Where air-defense missions are involved, a distinction has to be made between aerial surveillance and interception guidance. The former is done continually and makes it possible to establish the general air situation in the national air space at any time. It comprises the conventional phases of detection, identification, threat evaluation and broadcast of alert. Guidance of the interceptors makes it possible to carry out the sky-policing mission: guidance of the fighter planes on alert toward any unknown or infringing aircraft; assistance to any aircraft in trouble; control of fighter-pilot training missions.

The CDC of Cinq-Mars-la-Pile can also handle military operational traffic-control missions: offensive, liaison, reconnaissance, tactical-suuport and in-flight refuelling missions and control of the flights of the trainers of the Fighter School (GE 314) based at Tours.

The third type of mission--NBD (nuclear, bacteriological, chemical)--is the preparation and broadcasting of radioactive alert: on the one hand, activation of the BGA (General Alert Office), and on the other hand, activation of the CEDAR (Center for Evaluation and Broadcasting of Fallout Alert). The alert is broadcast both to the armed forces and to the population at large.

On the surface, the radars (a Satrape radar plus a 23-cm 2D main radar, plus three manual altimetry radars), the radio centers, the living area and the radio relays constitute four distinct blocks.

A number of IBM computers (360/30, 370/135, 3031) do the processing of all the radar data received. Very advanced logical elements make it possible in particular to transmit air-defense data to Taverny and the other stations automatically, to aid in decision-making and to control interceptions.

In the STRIDA stations of the first and second generations, using the VISU II's and III's, a linear modeling has been adopted. In the Visu IV stations, such as those of Nice and Tours, the performance characteristics of the computing units and the new form adopted for the consoles, as is shown by the photos on the preceding pages (the low consoles are for direction and the high ones are for exploitation), have led to a new layout: the direction consoles are grouped at the center of the room, while the exploitation consoles are attached to the walls and are in the direct view of each section chief.

The visualization capacity of the CDC of Cinq-Mars-la-Pile represents a square area of 4,800 km on each side. The center can provide 26 simultaneous data-transmission connections and the central computer makes it possible to process

1 million pieces of information per second. Thirty-two simultaneous interceptions can be done.

An electric power plant installed underground ensures the center's autonomy in case of need.

The COZ [Zone Operations Center] North

Air-defense operations at the national level are directed from the CODA of Taverny, which, as we recall, has an emergency center installed at Lyon Mont Verdun. The national territory is itself divided into four air-defense zones whose limits coincide with the four air regions (but without strict superimposition of these limits). Under the authority of a general officer, each zone has an operations center (COZ) that conducts the operations at the regional level. The COZ North is installed at Cinq-Mars-la-Pile; it is geographically "very close" to the detection and control room of the CDC of Cinq-Mars. The COZ Northeast is installed at Contrexeville; the COZ Southeast, at Lyon; and the COZ Southwest, at Mont-de-Marsan.

The COZ North, responsible for instantaneous conduct of air-defense operations in the north and west of the country, has at its disposal three Mirage F1 wings, based at Creil, Cambrai and Reims; three CDC's (installed at Cinq-Mars-la-Pile, Brest and Doullens); and connections, proper to each of these CDC's, with the civilian, allied and neighboring organisms and, as the case may require, with the Navy's ships at sea.

The missions of the COZ North are carried out in six areas:

--identification surveillance of all aircraft penetrating into its zone;

--tactical direction of air-defense missions, in peacetime as well as in time of crisis, war or exercises;

--distribution of the training missions among the control centers;

--supervision of proper execution of military operational-traffic controlled flights;

--direction of search and rescue operations involving civilian and military aircraft presumed to have suffered accidents;

--conduct of in-flight operations for aircraft in trouble (general-aviation aircraft in particular).

Its facilities are, on the whole, those of the CDC for everything related to detection, processing, exploitation and visualization of data, as well as to communication transmissions. In the operations room of the CDC, it has a civilian coordination detachment (DCC) that participates in air-space management by ensuring, with it, coordination of civilian and military air activities.

Responsible for activation of the Coordination and Rescue Center (CCS) around the clock, it received 126 alerts last year, resulting in the initiation of 17 operations.

In case of tension, crisis, or exercise, such as Datex, the COZ North becomes the HQ of the general commanding the North air-defense zone. In the operational-control chain that encompasses the operations rooms of the air bases, the Crotale firing sections, the control squadrons and the Military Coordination Detachments (DMC's) installed with the civilian control organisms, the COZ is the last link before the CODA, the Air-Defense Operations Center, at the heart of the air-defense command.

Exploitation of Datex

For every major air-defense exercise of the type held in the skies of France last Tuesday and Wednesday, there is a very detailed expoitation of the results. This exploitation involves a fine restitution of the operations of attack, defense, detection and neutralization. It yields valuable information about the rates of activity, the thresholds of saturation. In this regard, it should not be concluded from the short duration of the exercise--48 hours--that it corresponds to what the national air defense would be capable of supporting in time of crisis. The restitution of the operations also furnishes valuable information on everything that has to do with logistics: availability and reaction time, especially this year, in view of the fact that the Ex Log and Datex exercises were simultaneous. It makes it possible to evaluate the capacities and the deficiencies correctly.

The dates for Datex 83 have already been set. The exercise will take place at the beginning of March next year.

11267
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MILITARY FRANCE

TRAINING, RECRUITMENT, SELECTION OF HELICOPTER PILOTS

Training Methods

Paris ARMEES D'AUJOURD'HUI in French Mar 82 pp 41-42, 47

[Article by Colonel Michel Mage, French Army, commandant of the Army Light Aviation Tactical Training School; a Saint Cyr graduate, class of 1945, his past assignments include: executive officer, 1st Artillery Regiment, G-4, 3d Military Region, and C.O. 1st GALDIV [Division Light Aviation Group]; he served in Indochina and Algeria, and holds a BEMS [certificate of advanced military education]: "Instruction in ALAT"]

[Text] ALAT [Light Army Aviation] schools have the mission of forming proficient pilots capable of serving in operational units. But these schools must also train, with the assistance of other service schools, all support personnel, nonspecialists, and other enlisted men assigned to ALAT.

Upon reading the title of this article, "Instruction in ALAT," your first reaction is undoubtedly: "Ah yes, pilot training."

Pilot training is, of course, the major training activity because, year in, year out, some 120 officers and noncommissioned officers must receive the basic technical knowledge and skills required of a helicopter pilot. Yet this training is but the initial phase of a lengthy apprenticeship and continuing instruction and training designed to assign to units those operational pilots capable of effectively holding their own in combat.

Pilots, however, constitute only 40 percent of all ALAT officers and NCO's. Hence ALAT's specific training activities also encompass all those persons who are either aircrew members or ground personnel who keep the aircraft flying: mechanics, radio operators, air traffic controllers, meteorologists, firemen, photographers, and simulator instructors.

This article's title covers, therefore, a broad subject area and my comments cannot possibly cover all aspects.

Helicopter Pilot

ALAT's Specialization Training School at Dax has the mission of providing basic helicopter pilot training to officers and NCO's of the French Army, Navy, Gendarmerie, and Customs Service, plus military personnel from a certain number of foreign countries.

The course is 7 months for NCO's and 9 months for officers, because the latter also get an additional period of observer training. These courses may seem long to the unitiated reader, but their objective is far different from simply learning to fly solo, a skill that can be acquired in some 20 lessons taken in a flying club. Course lengths in foreign armies are similar to ALAT's.

At Dax, the student pilot must learn to fly under all possible day-night conditions: nap-of-the-earth as well as at 3,000 meters in mountainous terrain, and in bad weather with horizontal visibility reduced to 800 meters. A pilot must also know where he is at all times and be able to employ all methods of navigation. Lastly, he must be able to land his helicopter in a small clearing, on a valley floor, or on a mountain peak with just enough room for his skids. He must do all this without neglecting his regular military training and while keeping himself in good physical shape.

After the primary flight training phase, the school program, therefore, includes cross-country flying, low-and very low-level navigation, night contact training, mountain flying, and instrument training designed to teach the young pilot to make instrument landings utilizing radar or beacons and markers. These activities total approximately 130 flying hours in Alouette 2 and Gazelle SA 341 helicopters.

Operational Pilot

After that, however, this "conventional" pilot has to be transformed into a combat pilot, in other words, given the knowledge and skills required to make maximum effective use of his helicopter in combat operations. Effecting this transformation is the role of the ALAT Tactical Training School at Le Luc.

This additional training begins with the "Voltac" or tactical flying course. The school devised this special course and it now has been copied by all foreign army aviation schools. Its purpose is to teach pilots how to perform and survive on the battlefield by using terrain for cover while flying at appropriate speed over and around obstacles.

Certain pilots are then trained as gunners and missile operators or reassigned to transition training into the SA 330 [Puma tactical transport helicopter]. After this, they all spend 3 years putting their training into practice and acquiring their own experience in a unit with the guidance and advice of their seniors.

The next course of instruction and training is for pilots having 1,000 flying hours. In this course, they receive the additional knowledge and skills

required of an aircraft commander: particularly the special procedures for flying as member of a patrol, further training in flying by instruments, and detailed instruction on identification of ground and airborne equipment and weapons likely to be encountered on the battlefield. Upon graduating from this course, the noncommissioned officer may be considered an operational pilot.

Squadron Commander

The process described above for NCO's is not easily applicable to commissioned officers who are assigned to ALAT after having served as lieutenants in a regiment. In their case, primary flight training is followed by more intensive tactical training which rapidly qualifies them as patrol leaders.

But their most important phase of instruction occurs when, after 3 years service in a unit, they are about to be assigned as squadron leaders. This phase is the ALAT "captains course" similar in length and general subject matter to the company commander courses offered in other service schools. In the ALAT course, however, emphasis is placed on the internal operation of a squadron, the missions of the three types of regimental helicopter squadrons--reconnaissance, antitank, and utility-tactical transport—and lastly on thorough familiarity with the organization, equipment, weapons, and tactics of French Army divisions and corps, echelons which the squadron commander is frequently called upon to support. This special instruction and training is indispensable.

Support Personnel

A pilot is capable of flying, however, only because of the presence alongside him of comrades in arms who have received equally intensive technical instruction and training.

1. Mechanics first of all. They are almost as numerous as pilots in ALAT units. They greatly outnumber them, however, if we include the mechanics in third echelon maintenance activities.* All of these mechanics or repairmen--airframe, engine, avionics, and radio mechanics, plus flight controllers or engineers--receive nearly all of their instruction and training outside ALAT at the Advanced Ordnance School in Bourges.

2. Air traffic controllers operating Spartiate radars, meteorologists, and fire safety officers, all receive their basic instruction and training in civilian or joint service schools.

3. ALAT nonspecialists--18 percent of ALAT's total personnel strength--and its 3,000 privates must not be forgotten because without vehicles, refueling tankers, and ground-based radio facilities, the helicopter is but a lifeless machine. All of these personnel have to be trained to perform the same overall combat mission.

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* Third edition: Major repairs that are an Ordnance responsibility.

Hence instruction and training is a priority matter not only in ALAT schools but likewise in all ALAT units.

Training Costs and Facilities

What is the cost of this peacetime instruction and training? In personnel, equipment, and helicopters or flying hours, this cost accounts for 20 percent of ALAT's total budget. At first glance, the bill seems quite high. Yet can a student pilot fly for an hour without requiring an hour of an instructor pilot's time? And how can annual flying hours be expressed other than in the hours of work performed by a mechanic?

Admittedly modern technology is making it increasingly possible to use simulators as training aids. For instance, there are flight simulators for the SA 330 and Gazelle helicopters, plus a HOT [antitank missile] fire simulator. But while these aids do facilitate the instructor's task, they do not exclude his presence in the large majority of cases. For the time being, however, simulators are capable of imparting only a certain knowledge and not real know-how.

Some 10 years ago, a missile operator's training program included the firing of 10 live rounds. Today, a HOT operator completes his training by firing one real missile after having "fired" about 500 with a simulator.

Mountain Training

The pilot training program at both the ALAT Tactical Training School and ALAT Specialization Training School includes a mountain training phase. Why? The answer is simple. Except for those who live in them, mountains mean wild and jagged terrain, an unusual and hence hostile environment with surprising reactions that are at times difficult to foresee. Yet all of our crews must be capable of operating in mountainous terrain in support of our Alpine troops. It is, therefore, altogether logical to teach our pilots to fly in this environment where they can sharpen their skills and become more aware of the limits of their equipment. This training is progressive and always includes a pre-mountain phase before flying above 2,000 meters. At that altitude, the pilot will be confronted with a view altogether different from what he sees in flat open country. He will fly in thinner air and will have to land in extremely varied terrain such as ridge lines, slopes, and valley floors. His chief ally--or enemy if he misunderstands it--will be the wind that may even prevent him from making some landings. Consequently mountains are, as for the alpinist, a veritable training school. For that reason, ALAT operates a permanent flight training center in Saillagouse, near Mont Louis. All French pilots and many foreign pilots train there.

The obvious conclusion is that instruction in ALAT represents a considerable investment. It is still a very modest expenditure, however, if we compare it with the cost of the equipment trainees are being taught to use. Furthermore, it is necessary if ALAT units are to perform their assigned missions effectively.

New Selection Criteria

Paris ARMEES D'AUJOURD'HUI in French Mar 82 pp 43-44

[Article by Captain Maurice de Vasselot de Regne, chief of the ALAT aircrew personnel selection branch center; a 1966 graduate of Saint Cyr (EMIA), he first served as a platoon commander in the Armor; after earning his wings as a helicopter pilot in 1972, he was assigned as instructor pilot at the ALAT Specialization Training School in Dax and later as C.O. 3d Squadron, 5th Light Helicopter Group; he has logged a total of 3,000 flying hours: "Recruitment and Selection of ALAT Personnel"]

[Text] In 1956, Headquarters ALAT approved the use of psychological-technical tests in its aircrew personnel selection process. These tests were devised by the Air Force Center for Applied Psychology Studies and Research (CERPAIR) in Le Bourget. For the past few months, these tests have been administered to women candidates for helicopter pilot training.

Following the 1973 decision to transform ALAT into exculsively a helicopter force, the Directorate of Armament Research, Studies, and Techniques (DRET) directed the Center for Applied Psychology Research and Studies (CERPA) in Toulon to develop a new aircrew personnel selection system.

After a feasibility study based on a survey of 165 instructor pilots and 800 student pilots throughout their training, an ALAT selection branch of the 1st CS [Selection Center] was established on a trial basis on 10 May 1977. Because of the results obtained, the ALAT aircrew personnel selection branch center was officially activated in the Fort Neuf [New Fort] at Vincennes on 13 April 1981.

Recruitment

ALAT officers and NCO's are drawn from extremely diversified sources.

Officers

Cadets attending the military academies at Coetquidan--ESM-EMA [Special Military Academy (former Saint Cyr)-Interarms Military Academy]--who opt for service in ALAT are required to take the flight physical and psychological-technical tests for aircrew personnel during their first year after graduation while attending the lieutenant's course at one of the service schools. After 2 years of troop duty as a platoon commander, they are required to confirm their option before being assigned to the Flight Training School at Dax.

Approximately 150 officers in each graduating class at Coetquidan opt for ALAT, but the latter's annual requirement is only for 30 officer pilots.

Noncommissioned Officers

There are several recruitment methods:

1. Direct Recruitment

Young persons recruited by army information centers and meeting the "branch 09" eligibility requirements prescribed for admission to the National Noncommissioned Officers School (ENSOA) at Saint Maixent, are given a flight physical and aircrew personnel psychological-technical tests. They are selected by Headquarters ALAT.

2. Lateral Recruitment

Regular NCO's of the army's arms and services who are under 30 years old and have at least 5 years of service may be admitted into ALAT after having been rated "aircrew qualified" upon completion of their flight physical and psychological-technical tests.

3. Semidirect Recruitment

EVSO's [volunteer student NCO's] who have successfully completed the ENSOA course and who meet the same eligibility requirements as applicants for direct recruitment are offered the opportunity of serving in ALAT upon graduation from that school.

Before being assigned to the Flight Training School at Dax they must have served 2 years in a troop unit after having obtained the BMP 1 [First Degree Professional Military Certificate]. In addition, their "aircrew qualified" status must be revalidated.

'Branch 09' Eligibility Requirements

SIGYCOP [physical profile]: 1 2 2 1 1 2 2; NG [expansion unknown]: 12 or higher; NS [expansion unknown]: 3 or higher; general knowledge test; score of 15 or higher; height: between 1.6 and 1.9 meters.

Certain air force and navy noncommissioned officers may apply for aircrew duty in ALAT. Eligibility requirements are described in directives specific to each of the two services.

Selection

The aircrew personnel selection branch center administers a batter of tests adapted to ALAT requirements: tests to measure an applicant's aptitude for helicopter pilot training and his adjustability to military life.

The selection system's originality consists in introducing tests designed to assess the applicant's military and aeronautical motivation and study any vulnerability manifested during stressful situations.

The battery of tests includes:

1. A neurophysiological examination designed to screen out applicants who display certain traits liable to make them unfit for operational flying.

2. Psymochetric questionnaires that inquire into the applicant's antecedents, his military and aeronautical motivation, and his psychometric and temperamental characteristics.

3. Psychomoter tests or simulated flying tests, the results of which are used to construct a perfectibility curve. The applicant's behavior during these tests is also scrutinized.

An applicant's processing in the selection branch center ends with an interview with the clinical psychologist attached to the center and an officer observer-pilot. A synthesis of the results is prepared jointly by the psychologist and the chief of the aircrew selection branch center. The resultant classification of applicants cannot be considered to be a positive index of success or failure but merely a statistical index expressed as a percentage chance of success.

The ALAT selection branch also examines helicopter pilot training applicants for the Gendarmerie, Ordnance Corps, Paris fire brigade, Civil Defense Organization, and Customs Service. It processes approximately 1,000 applicants per year.

In 1980, 52 trainees were accepted for the ENSOA; 48 of them graduated and were promoted to NCO rank; 47 of these NCO's entered the Flight Training School and 39 are now rated pilots.

Thus the success rate from admission to the ENSOA to graduation from the ALAT Flight Training School is 75 percent.

Any selection system whose validity is not checked regularly is liable to become ineffective quite rapidly. For that reason, parts of the test battery were validated during the trial phase. Such partial validation has continued with regard to all applicants accepted for pilot training since July 1973.

The new selection system is based on modern methods of obtaining and interpreting, in real time, a well-rounded picture of the applicant's personality.

The system uses situational tests that place the applicant as closely as possible in real-life situations faced by a pilot. These tests constitute the first step in seeking an essential correlation between the selection of personnel and their military and technical training.

The continuous effort to enhance efficiency and performance in the use of complex and sophisticated equipment demands of aircrew personnel a high degree of skill and military motivation.

Their processing at the ALAT aircrew personnel selection branch center in Vincennes is the first stage in the selection of this personnel.

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MILITARY FRANCE

COLONEL URGES PREPARATION FOR CHEMICAL WARFARE

Paris ARMEES D'AUJOURD'HUI in French Mar 82 pp 62-64

[Article by Colonel Claude Meyer, commandant of the French Army NBC (Nuclear, Biological, Chemical) Defense School. After graduating from Saint Cyr (ESMIA), class of 1955, Colonel Meyer served in artillery regiments and staffs. He completed his advanced technical military education (BTEMS) in chemistry in 1965 and has since then had various duty assignments in NBC units and staffs: "Chemical Warfare, Past and Future"]

[Excerpts] The television viewer and even the least informed reader cannot help but note the frequent references to chemical warfare in all of the media these days. This situation raises the following question: Have chemical weapons--introduced onto the battlefields in 1915 but absent therefrom during World War II--definitely fallen into disuse or, on the contrary, must indications of their seeming resurgence be taken seriously? The following article does not discuss the problem of protecting civilian populations from this threat. It examines chemical warfare from the standpoint of forces conducting combat operations. Nor does it deal with biological warfare which is altogether different in nature from chemical warfare. The article expresses the author's personal views and does not necessarily reflect official French Ministry of Defense and Armed Forces policy.

Preparation for war implies extensive knowledge of the threat in all of its forms so as to enable us to cope with it and turn the situation to our advantage. If we were to ignore or overlook an entire major category of weapons possessed by a potential enemy, we would be under an insurmountable handicap. The specificity of chemical weapons, with their background of terror and the inhuman aspect we attribute to them, would make the situation even more serious. That is why it is essential for us to examine with the greatest possible care the chemical risks in the context of a European conflict during the period 1980-2000 and be clear-sighted enough to draw the necessary inferences from such study.

From a technical standpoint, the new toxins are extraordinarily more effective than first-generation toxins. This qualitative "leap" is measured by a factor of approximately 50 for nonpersistent agents--those called gases for a long time--and reaches a factor of 500 for certain persistent agents, i.e. those which enter into the body through the skin in the form of undiscernible droplets. Consequently a man can be incapacitated by minute quantities of such substances and their employment requires merely reasonable logistical support.

Furthermore, recent advances have further increased the effectiveness of modern chemical agents: thickened toxins that impede decontamination measures, mixtures that complicate protective measures.

We are, therefore, obliged to conclude that the nature of chemical warfare has changed. If not a new type of warfare, it is at least one that must be viewed in an entirely new light. Technical progress has radically changed basic tactical considerations. Chemical warfare is now militarily "credible." What is known about the available means of waging chemical warfare? How prepared are the armed forces of the world's major nations?

It is common knowledge that the Western World's chemical warfare capability is that of the United States. In the 1950's that country made a very great effort and built itself a respectable arsenal of modern chemical weapons. But failure to have replaced it in time has caused the arsenal to become obsolescent. As a matter of fact, chemical ammunition occasionally poses serious storage and preservation problems and much of it has to be disposed of for safety reasons.

The U.S. armed forces are currently believed to have a chemical weapons stockpile equivalent to 35,000 tons of toxins. In the U.S.A. there is a certain noticeable desire to "upgrade and update" this arsenal by getting back into chemical weapons production.

For while the American capability has eroded, such is not the case in Soviet bloc countries where there has been a continuous massive investment in chemical warfare. The ratio of chemical warfare forces is considered to be 10 to 1 in favor of the East. Actually this figure is probably an underestimation because of the geographical distribution of stocks. Moreover, experts concure in acknowledging the excellent level of operational and psychological readiness of the Warsaw Pact forces. Their troops train with real chemical agents. Staffs take chemical warfare factors into consideration in their planning. There are chemical warfare specialists assigned at all command echelons. The Soviet Union reportedly has some 100,000 men in its so-called "chemical" troops.

All of this has changed the tactical context and created conditions conducive to an imbalance. All of this blurs the reasons for refraining from the use of chemical agents, reasons that may formerly have prevailed.

Geneva Convention

All of this brings up a philosophical question. What influential role could international conventions play? Whenever chemical weapons are at issue, the temptation is to take cover behind the Geneva Protocol of 1925 which prohibits the use of "asphyxiating, toxic, or similar gases" and casts "the civilized world's" discredit upon this type of weaponry.

To begin with, however, this protocol was a follow-up to several other agreements--the most important one having been signed at The Hague in 1899--all prior to World War I, and all of which remained a dead letter in 1915.

Furthermore, the signatories actually agreed only not to use chemical weapons first, while reserving the right to retaliate in kind. Thus the slightest incident, the slighest provocation, would be enough to trigger a general chemical war through a series of successive reactions.

Lastly, the actual validity of referring to world opinion is questionable. Could the fear of international reprobation restrain nations fully prepared for such disapproval from using a type of weapon capable of giving them a major advantage?

The great powers are, of course, quietly continuing chemical disarmament talks at the Geneva Disarmament Conference. Yet even though an agreement is theoretically not impossible in the long run--despite some very slow progress--we have every right to be skeptical about such an agreement's significance if it does not include a system of verification. But implementation of such a system on national territories does appear to be utterly impractical, and especially since certain modern production methods would make it possible to easily foil any inspection.

Consequently the deterrent character of international conventions is not such as to reassure us when faced with the risk of chemical warfare.

The aforementioned conditions--decisive technical developments, acknowledged absence of balanced forces, and skepticism about the effectiveness of agreements--mean that dodging the issue by referring to past conflicts would now be tantamount to our assuming a suicidal attitude. In other words, we cannot finesse our way out of this problem.

This necessitates preparing our armed forces for chemical warfare. To maintain our operational capability, such preparation must render us capable of withstanding, without excessive losses, any attacks liable to be launched against us.

This problem has long been neglected. Hiding behind the broad concept of "special weapons," some persons placed chemical and nuclear weapons in the same category. This had the dual advantage of artificially moving the threat away from the troops by placing it in the military-political sphere, and of completely handing the problem over to specialists.

Now, however, a new and contrary pattern seems to be commanding attention. Literature on the subject indicates that chemical warfare is being conventionalized. While nuclear weapons remain capable of completely changing the nature of a conflict, chemical weapons can strike anytime and anywhere on the battlefield like conventional weapons.

Meeting the Threat

The threat thus having been defined and confirmed, one vital question remains: Are we prepared to meet it?

These past few years, France, like its allies, has taken cognizance of its current necessities. Our units are equipped with first-generation equipment. Our personnel are receiving increasingly better instruction and training. Above all, however, we have entered an important stage characterized by the following measures: issuance of second-generation individual protective clothing and equipment plus detection and warning devices; activation of NBC defense regiments at army corps level, thereby enabling commanders to concentrate their reconnaissance and decontamination efforts on a required area; offering staff-officer courses at the Army NBC Defense School, courses based entirely on operational considerations. Our progress is on a par with that being made by our allies. In general, there is no noticeable difference between our standards and those of our allies. This is quite normal in view of the present very active cooperation in chemical warfare matters.

Does this mean then that everything is running smoothly in the best of chemical worlds?

Unfortunately things are not that simple. The truth is that chemical defense will long remain cumbersomely restraining. Suitable protective measures can, of course, save the lives of most troops provided they are well-trained. Defense against liquid toxins requires complete protection of the body. The effectiveness of protective clothing has a severe counteraction, however, in the form of physiological discomfort, and the higher the temperature the greater the discomfort. Hence a choice would have to be made between acceptance beforehand of losses due to chemical agents, an intolerable situation, and a reduction in the operational capacity of units through physical and psychological attrition, a situation that is not much more satisfactory.

It is even less satisfactory when one realizes that the heavy odds are that the enemy will not have similar handicaps inasmuch as he will seek to make maximum use of his advantage by attacking preferably those forces incapable of retaliating in kind.

Is this problem therefore insolvable? Is there no appropriate response to this challenge?

A larger and larger number of Western experts believe and write that there is only one feasible solution which would consist in reducing the present

imbalance so as to keep the enemy from yielding to temptation.

It is sound tactics to encumber the enemy by compelling him in turn to fight swaddled in unwieldy and exhausting protective clothing and have the pace of his maneuver slowed by the multiple precautions he would have to take. Yet the risk of such tactics cannot be accepted without caution.

A drastic solution with the attendant dangers inherent in proliferation? Certainly, and the problem is not a simple one. But it has to be faced because, here as in other fields, military history shows us the deterrent character of certain balances, even partial balances.

Thus, for nations desiring to have a coherent defense, the fact of arming themselves with a limited chemical arsenal could contribute to banishing the specter of chemical warfare. Though paradoxical, would this not be the most effective way of complying with the Geneva Convention?

8041
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CNES PLANS NEW BUILDINGS FOR SATELLITE PROJECTS

Paris AIR ET COSMOS in French 6 Mar 82 pp 42, 48

[Article: "New CNES Space Installations in Toulouse"]

[Text] The forthcoming development at the Toulouse Space Center [CST], which is operated by the CNES [National Space Studies Center], of activities for the operation of satellites, and in particular application satellites (SPOT, Telecom 1, TDF 1, Sarsat-Sargos), will involve the construction, beginning this year, of two new buildings (see AIR ET COSMOS No 867) with a surface area of 7,400 m^2, or one-tenth the existing area of the buildings of the CST.

The first new building--provisionally given the name "Space Systems" building--will house, in three stories, the Center for the Processing of Space Messages (CRIS), the Mission Control Center (CCM) for "SPOT," the two Specialized Control Centers (CCS) for TDF-Export, and the "Sarsat" project. This building will have a surface area, spread out on three stories, of 2,855 m^2.

The necessary equipment for the management of the "SPOT" system--at the Aussaguel-Issus image-reception station, at the Center for the Processing of Space Messages (CRIS), and at the Mission Control Center (CCM)--will be very substantial. There will be no fewer than 15 calculators of the Solar type, with their accessories, which will take up 150 m^2 of floorspace at Aussaguel-Issus for the image-reception station, and 1,100 m^2 for technical installations and about 35 offices at the CST. Two zones will be provided for the operation of the "TDF 1" satellite.

One of them will be for the installation of the specialized control center for the preoperational "TDF 1" satellite, whose principal mission is to provide for the management of the platform and of the payload, as well as for maintenance on board the satellite. This control center will be connected to two other stations (a switching station at Berceney-en-Othe and specific station) and to the center for operation of the payload.

The other zone for the "TDF 1" satellite will involve the installation of a control center serving operational satellites, the responsibility for which will be turned over to the CNES (particularly for the Swedish satellite

"TELE-X"). This center will also be able to provide for the maintenance, on a temporary basis, of these satellites during "receiving" operations when they are in flight, or in case of a failure of domestic systems for the maintenance of the satellites. It will also be able to be used in the development and preparation of particular operations.

For the "Sarsat" project, a station to receive and process signals from American and Soviet satellites is presently being set up at the "Sarsat" mission control center, where distress signals will be processed. This center will be connected, on the one hand, to the other control centers of the countries participating in the program and, on the other hand, to French and foreign rescue centers which will direct rescue operations. The functioning of the alarm service of the control center will be handled by a team from the Directorate General of Civil Aviation assigned to the CST, while the initial startup of the station is to be handled by the CNES. The teams will provide for a continuous watch, 24 hours out of 24.

The demonstration phase of the "Sarsat-Cospas" project will last for at least 1 year. It will begin in 1982, 4 months after the launching of the first satellites such as the "NOAA-E." The first few months will be reserved for technical trials for systems evaluation. The experimental distress beacons are now being developed.

The second building will have a surface area of 2,470 m^2. It will be assigned to the SPOT-Image Company, which is charged with the promotion and commercial sale of imagery provided by the "SPOT" satellite throughout the world.

At the time of the launching of the "SPOT" satellite, expected in May 1984, the SPOT-Image Company will have need for: 500 m^2 for a photographic laboratory, 300 m^2 for information offices, 250 m^2 for the reception of customers, and 250 m^2 for files and office space for 39 people by 1985 (50 people in 1990).

As this building will be constructed for the SPOT-Image Company out of the CNES budget, the SPOT-Image Company will pay the CNES annual rent for the building and for services rendered.

FIAS Center

In addition, in response to the growing demands for training of foreign engineers and technicians which have resulted from the interest shown by many countries in space technology, the CNES has decided to join in the effort undertaken by the French Aeronautical and Space Industries Group (GIFAS) to establish a Center for International Aerospace Training (FIAS) in Toulouse. The CNES is putting at the disposal of GIFAS 17,000 m^2 of land adjoining the National Civil Aviation School (ENAC) for the construction of the Toulouse center of the FIAS, which will include: a classroom building (450 m^2), a conference room (with space for 250 people), and a residence for the students (200 rooms, a restaurant, and a gymnasium).

Construction of these projects, which will begin in February, will be completed at the beginning of the 1983-1984 university year.

5170
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MISSION, PROBLEMS OF SECURITY, INTELLIGENCE SERVICES

Amsterdam VRIJ NEDERLAND in Dutch 20 Mar 82 p 10

[Report by Rudie van Meurs: "How Was That Again with the Intelligence Services?"]

[Text] Two years ago the Internal Security Service (BVD) had been in existence for 35 years. In his congratulory speech, Minister H. Wiegel (Internal Affairs) took into account that the question about the "good faith" of the service would come up again and again. "We must not lament that or get irritated about it," he soothed those present. "It is the democracy itself which puts this thorn in our flesh, and it is good that it stings."

The lumps and wounds this thorn leaves behind regularly become public. Just last week it became known how the BVD misled a widow from The Hague in order to spy on a former member of the Red Youth from her front room. That same day HET VRIJE VOLK described the attempts of the BVD to increase drastically the number of confidential posts in the government -- while according to policy that number should be decreased instead The Internal Security Service, during its 37 years of existence, has become the most famous -- or the most infamous if you like -- espionnage service in the Netherlands. An apparatus with 750 permanent civil servants, part of whom operate from the headquarters at Stadhouderslaan in The Hague and another part of whom work in the "external service." Yet, the BVD is only one of the intelligence- and security services of the Netherlands.

Last week the Foreign Intelligence Service (IDB) caused a controversy. The ALGEMEEN DAGBLAD reported an exit of civil servants who can no longer cope with the tensions. Not because their work is so nerve-racking, but because the personnel policy is failing. It has been like that for years. Already in 1977 the report of the permanent chamber commission on intelligence and security mentioned problems within the IDB. "They were partly in the personnel area, and partly they concerned the limitation which charges the co-workers of the service only with the gathering of information and does not give them the opportunity to involve themselves also to some extent with the judging and evaluating of that information for its possible significance in the forming of policy." A change was made in the organization, but the gentlemen remained dissatisfied. The Foreign Intelligence Service falls directly under the prime minister (general affairs).

The task of the IDB is "the gathering of information on foreign countries which can be of importance to the government." Until recently the information gathered

by the Foreign Intelligence Service has been 80 percent of a military nature, while the remainder is in the political-economic area. For a long time already, the ministers wanted the "political-economic area" to gain more importance. That did not happen. The foreign espionnage service is led by officers of the external service who come primarily from the Marine Corps of the Royal Navy and those people have their preferences. There are also military intelligence services: the Naval Intelligence Service (MARID), the Land Forces Intelligence Service (LANID), and the Air Force Intelligence Service (LUID). Those three services operate under the responsibility of the minister of defense. LANID, for example, recently went after a former military man in Land van Heusden and Altena who had founded a grassroots group of the Organization of Conscientious Objectors in his hometown. The three military intelligence services have a grand task: they must "gather information about the potential and the military forces of other powers, which is necessary for a proper build up and effective utilization of the military forces." Moreover they must gather information "necessary for the protection of the army." One might say that the Foreign Intelligence Service and the military intelligence services are involved in active espionnage for the Dutch Government. The five intelligence- and security services have a coordinator who falls under the responsibility of the prime minister. That coordinator is a powerful man. He is authorized to "invite other government bodies, government services and civil servants to supply information considered necessary by him to carry out his task."

And the various intelligence services, in their turn, can reap advantage from that. But the most powerful of all is the Internal Security Service of which H. Beernink said on one occasion (but that was before he was minister of internal affairs and responsible man of the BVD): "In my opinion the BVD, as an institution, as a secret police, means a violation of the Dutch polity as desired by the legislator. It is a shame that the government has preserved this institution after the war."

The BVD, just like the other services, operates secretly. Its task is to "gather information concerning organizations, groups and individuals with respect to whom -- in view of their goals or actual activities -- there are serious suspicions that they are a danger to the survival of the democratic legal order in the state, or that damage to the security or other important interests of the state is to be feared from them." And the BVD further serves "the promotion of measures to protect information whose secrecy, in the interest of those sectors of the government service and of industry, is of vital importance for the keeping intact of society."

Which those organizations are that want to overthrow the democratic legal order is determined primarily by the BVD itself. The secret services are controlled by the permanent chamber commission for intelligence- and security services (the parliamentary group chairmen of the big parties) which meets in secret. Thus the democracy is being preserved.

The espionnage and counter-espionnage services are assisted in their work by the Police Intelligence Service (PID) which is housed in any good-sized police bureau; the protection officials of the departments, Second Chamber and other government services; the military police and especially the border guard; the security officers of the larger Dutch companies such as Philips, Holland Signaal and DAF; and officials in the tax service. And that is only a small handful. A complete inventory of all secret operations would approximately furnish the picture of one half of the Netherlands controlling the other half.

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