

UFOs and Defense: What Should We Prepare For?

-An independent report on UFOs written by the French association COMETA. This report details the results of a study by the Institute of Higher Studies for National Defence.-

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“Stripping the UFO phenomenon of its irrational layer”

Forward by Professor André Lebeau,
Former chairman of the Centre National d'Etudes Spatiales (CNES)
[French National Center for Space Studies]

It is not looked on highly in certain scientific circles to be preoccupied with phenomena that are deemed to come under the heading of popular mythology or that are, at any rate, outside the realm of science. Such was the case with [the theory of] stones falling from the sky, which was long considered in our country to be the stuff of fable. However, the day that a meteorite shower over the town of Laigle permitted a collective and indisputable observation, it entered into the domain of science. One century later NASA, no doubt hastily, elevated these stones to proof of the existence of primitive life on Mars.

Phenomena of this type pose a preliminary problem for the scientific approach: does a scientific fact exist?

When the phenomenon is a matter of experimentation, the criterion to be used is simple; the reproducibility of the experiment is the touchstone and furnishes the fact that must then be interpreted. But the situation is more difficult when the phenomenon is not open to experimentation, when repeated observation is the only basis on which one can go, as is the case in astronomy and for the most part in geophysics. However, when the fact, albeit rare, is collectively and indisputably visible, it is easy to elevate it to the status of scientific object. The existence of eclipses, comets, and novae has been recognized since ancient times, even though their interpretation long contained – and sometimes still contains – a religious dimension. Thus collective and simultaneous observation plays the same role as the reproducibility of experiments.

This is not true when the event is not only rare but discrete as well, and when there is a very small amount of evidence at each occurrence, which opens the door to various suspicions. Unidentified flying objects, or UFOs, fall into this category. One runs up against additional difficulties in the case of UFOs, firstly that of how many human activities, especially since the beginning of the space age, have generated atmospheric phenomena the origin of which is not immediately ascertainable by those who observe them. In any case, UFOs, the origin of which cannot be attributed to either a human source or a natural mechanism that has been identified by science, are

mixed in with a background noise the origin of which, although difficult to identify, is not at all mysterious.

Moreover, and above all, the existence of unexplained manifestations, both in the atmosphere and occasionally on the surface of the earth, inevitably gives rise to a fundamental question: are we alone in the universe? Could some of these phenomena be the work of extraterrestrial beings? This question gives the UFO issue a sociological, media-related, and even religious dimension in a domain that is not that of science and scientific methods. And it is the very existence of this dimension that elicits reactions of rejection in the scientific community.

However, a dispassionate examination of the situation should lead those who believe in the value of scientific method to consider that the very existence of a strong irrational environment is another reason to apply the precepts of this method to the issue of UFOs.

COMETA has tried its luck at this in the report that it is presenting, supported, namely, by the work performed by GEPAN, which later became SEPRA. The significant place granted to sightings, to testimonies, and to the analysis of cases that have been explained shows the major role played here by the establishment of facts. But we also find in this document a reflection on the hypothesis of extraterrestrial intelligence and of the importance that it could have if the work came together to confirm it.

This report is useful in that it contributes toward stripping the phenomenon of UFOs of its irrational layer. When all is said and done, the question of determining whether or not those who created this layer believe in the existence of extraterrestrial visitors, concealed in a variety of phenomena that are surprising in appearance but commonplace with respect to their cause, is of no real importance. What a scientist believes is important in the conducting of his research because this is what motivates and drives him. But his belief is not important to the results of his research nor does it have any effect on those results if he is meticulous.

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UFOs AND DEFENSE

What should we prepare for?

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Cover:

Photo taken on September 4, 1971, directly over the Tilaran range in Central America by an airplane from the National Geographic Institute of Costa Rica (Bernard Thouanel collection).

“Concrete problems are raised that call for a response in terms of action”

by **General Bernard Norlain,**
Former director of the Institut des Hautes Etudes de Défense Nationale
[Institute for Advanced National Defense Studies (IHEDN)]

When General Letty visited me in March 1995 at my office at IHEDN to explain to me his project for creating a new fact-finding committee on UFOs, I assured him of my interest and referred him to the management of the IHEDN Auditors Association (AA), which gave him its support. Knowing that some twenty years earlier the AA had produced and published a preliminary report on the subject in its bulletin, it was but time to update it.

Denis Letty seemed to me to be the perfect one to spearhead this task; one month earlier, in February, he had organized, within the framework of the Ecole de l'Air [Air Force Academy] Alumni Association, a conference on unidentified aerospace phenomena. Before a large public, some of our comrades, former pilots, spontaneously related their encounters with UFOs. The person in charge of studying these phenomena at the CNES then presented his papers, and a well-known astronomer described a scientifically acceptable version of the extraterrestrial hypothesis.

The fields of knowledge affected by the UFO phenomenon are very diverse, and General Letty was able to find within the AA, but on the outside as well, numerous experts whose efforts he coordinated. This list of high-level civilian and military degrees of the members of his committee is very impressive: officers, engineers, and specialists in the physical scientists, life sciences, and social sciences were able to deal with all aspects of the study.

This is not a purely academic study. Concrete problems are raised, and not just for civilian and military pilots, that call for a response in terms of action. The makeup of COMETA [Committee for In-Depth Studies], which is the name of the committee, took these into account. Almost all of its members have, or had during the course of their careers, important responsibilities in defense, industry, teaching, research or various central administrations.

I express the wish that the recommendations of COMETA, which are inspired by good sense, will be examined and implemented by the authorities of our country. The first report of the AA favored the creation within CNES of the only civilian government agency known in the world dedicated to the study of UFOs. May this new report, which is much more in-depth, give new impetus to our national efforts and to indispensable international cooperation. IHEDN will then have well served the nation and, perhaps, humanity.

“Consider all of the hypotheses”

by Denis Letty,
Air Force General, 2nd Section, AA (35)

The accumulation of well-documented sightings made by credible witnesses forces us to consider from now on all of the hypotheses regarding the origin of *unidentified flying objects*, or UFOs, and the extraterrestrial hypothesis, in particular. UFOs are now a part of our media environment; the films, television broadcasts, books, advertisements, etc., dealing with UFOs amply demonstrate this.

Although no characterized threat has been perceived to date in France, it seemed necessary to the former auditors of the Institut des Hautes Etudes de Défense Nationale (IHEDN) to take stock of the subject. Along with qualified experts from extremely varied backgrounds, they are grouped together to form a private in-depth fact-finding committee, which was christened COMETA.

This committee was transformed into a COMETA association, which I chair. I would like to thank General Bernard Norlain, former director of IHEDN, and Mr. André Lebeau, former chairman of the Centre National d'Etudes Spatiales, without whom COMETA would not have been born.

In addition, I wish to acknowledge the various people who agreed to give their testimony or to contribute to this study, and namely:

Jean-Jacques Vélasco, Head of SEPRA at CNES,
François Louange, Chief Executive Officer of Fleximage,
Jean-Charles Duboc, Jean-Pierre Fartek, René Giraud, civilian and military pilots,
Edmond Campagnac, former technical director of Air France at Antananarivo,
Michel Perrier, Squadron Commander, Gendarmerie Nationale
M. Soun, of the Direction Générale de l'Aviation Civile [Civil Aviation Agency]
Joseph Domange, Air Force General, Auditors Association delegate general.

I must also thank the commander of the Air Force Air Operations Command Center for its participation during the investigation into flight AF 3532 on January 28, 1994.

Among the members of COMETA who spared no effort for close to three years, it is possible for me to list:

Michel Algrin, State Doctor of Political Science, attorney-at-law, AA (35), (1)
Pierre Bescond, Weapons Engineer General, 2nd Section, AA (48),
Denis Blancher, Chief of Police, Police Nationale, Ministry of the Interior,
Jean Dunglas, Doctor of Engineering, Honorary Engineer General, Rural, Water, and Forest Engineering, AR (48)
Bruno Le Moine, Air Force General, 2nd Section, AA (41),
Françoise Lépine, Fondation pour les Etudes de Défense [Foundation for Defense Studies], AA (33),
Christian Marchal, Chief Mining Engineer, Research Director at ONERA [National Aerospace Study and Research Office],
Marc Merlo, Admiral, 2nd Section, AA (35),
Alain Orszag, Doctor of Physical Sciences, Weapons Engineer General, 2nd Section.

(1): AA or AR xx: auditor of national or regional promotion no. xx.

INTRODUCTION

In 1976, a committee of the Institut des Hautes Etudes de Défense Nationale (IHEDN) chaired by General Blanchard of the Gendarmerie Nationale opened the unidentified flying objects file. The objective: to make proposals for organizing research and the collection of data on these phenomena. The goal was achieved, because the recommendations of this committee were followed in the creation of the Groupe d'Etude des Phénomènes Aérospatiaux Non Identifiés (GEPAN) [Unidentified Aerospace Phenomena Study Group], the precursor to the current Service d'Expertise des Phénomènes de Rentrée Atmosphérique (SEPRA) [Atmospheric Reentry Phenomena Consulting Department], an agency of the Centre National d'Etudes Spatiales (CNES), which is in charge of this file. Twenty years later, it seemed useful to us to take stock once again of the knowledge regarding these sightings, which are becoming of greater and greater interest to a large public that is often convinced of the extraterrestrial origin of UFOs. Just look at the number of films or television broadcasts on this subject.

For the sake of convenience with respect to language, we will use the term UFO (Unidentified Flying Object) generally instead of the more scientific term UAP (Unidentified Aerospace Phenomenon).

Without a doubt, the phenomenon remains and the number of sightings, which are completely unexplained despite the abundance and quality of data from them, is growing throughout the world. On the ground, some sightings, like the Trans-en-Provence sighting in 1981, have been the subject of in-depth studies proving that something did in fact land on the ground and parked there. Civilian and military pilots have provided gripping testimonies, often corroborated by radar recordings, as was the case recently in France. In view of the lack of irrefutable proof regarding the origin of these phenomena, the need for understanding persists.

We will devote the first part of this report to several particularly remarkable French and foreign cases.

In the second part, after having recalled the current organization of the research on these phenomena in France and abroad, we will evaluate the work being done by scientists worldwide who are interested in UFOs and are proposing, as we will see, partial explanations that are based on known laws of physics.

Some of these (propulsion systems, nonlethal weapons, etc.) could become realities in the short, medium and long term.

We will review the principal global explanations proposed, focusing on those that are in keeping with the current scientific data, which range from secret weapons to extraterrestrial manifestations.

The UFO phenomenon involves defense in the broad sense and calls for a certain number of measures, which we will examine in the last part:

- [providing] civilian and military pilots with sufficient information to teach them adapted conduct when faced with these phenomena and, more generally, [providing] the public and decision-makers with information,

- developing the actions of SEPRA and promoting supplemental scientific monitoring, or even research, actions,

- considering the strategic, political, and religious consequences of a possible confirmation of the extraterrestrial hypothesis, the bizarre connotation of which it is advisable to eliminate here and now.

Facts and Testimonies

Before going further, it seems worthwhile to us to present several facts and testimonies that in themselves justify the interest of the in-depth study that we are going to develop below:

- three testimonies of French civilian and military pilots who encountered UFOs in flight,
- five major aeronautical cases in the world,
- three sightings from the ground,
- four cases of close encounters in France.

These few examples are among the hundreds of remarkable, that is to say credible and well-documented, cases observed around the world in recent decades. None of these cases has been explained, whereas the majority of times the investigations enable the origin of the phenomena observed by the witnesses to be determined; we will give two significant examples of this.

Testimonies of French Pilots

Three French pilots who encountered UFOs in flight came to testify before the committee. Their testimonies are all the more interesting because they can be evaluated better than other aerial phenomena since they pertain to the aeronautic world.

M. Giraud, Mirage IV pilot (March 7, 1977)

The sequence of events of this incident was reconstructed from radio exchanges between the pilot and the controller, which are routinely recorded and kept for a specific period of time in accordance with the procedure in force at all control centers. The incident occurred on March 7, 1977, at around 2100 hours local time during the Dijon flyover when the Mirage IV was returning, the autopilot system engaged, to Luxeuil after a night mission. [The aircraft was] at an altitude of 9600 m and approaching the speed of "Mach 0.9." The flight conditions were very good. The pilot (P), Hervé Giraud, and his navigator (N) observed a very bright glow at "3 o'clock" (time code) from their aircraft, at the same altitude, coming on a collision course and approaching very

rapidly. We will designate it "assailant" (A1) in the rest of the account. P queried the Contrexéville military radar station that controlled them to ask whether they had a radar contact on the aircraft coming towards them. In fact, P and N thought that it was an air defense interceptor, as is currently being used, that was seeking to intercept their aircraft to then identify it with its identification beacon.

The radar controller (C), who did not have a corresponding radar contact on his scope, gave a negative response and asked the pilots to check their oxygen. This request on the part of the controller is a standard emergency procedure; it shows that the controller is so surprised by the crew's question that he suspects an oxygen problem capable of causing a "hallucination."

"Assailant A1" maintained its course towards the Mirage IV. P initiated a bank to the right toward A1, a bank which he was forced to keep tightening (3 to 4 g) in order to try to maintain visual contact on A1 and to keep it from positioning itself to the rear. Despite this maneuver, A1 moved behind the Mirage IV at an estimated distance of 1500 m. At this point P reversed his bank to regain visual contact on A1. He saw the glow move away to "11 o'clock." He resumed course to Luxeuil. But 45 seconds after he resumed course to Luxeuil, feeling like he was being "watched" according to his own words, P told N, "you wait and see, it's going to come back." And in fact, an identical glow, which we will call A2, appeared at "3 o'clock."

P then initiated a very tight bank (6.5 g) to disengage his aircraft from what he now considered to be a real threat. The glow followed the Mirage IV's maneuver in order to position itself to the rear at an estimated distance of 2000 m. P reversed, as before, and once again saw the glow disappear under the same conditions. C still did not have a radar contact on "assailant A2." P and N continued their flight and returned normally to the Luxeuil base.

Those are the facts. Two points should be emphasized:

- only a combat aircraft could have had performance comparable to that of A1 and A2 (speed, maneuverability). In this case, C would have had a radar contact on this aircraft, especially at that altitude, a contact that he would have seen all the better since there was no other traffic in the vicinity of the Mirage IV.

- given the apparent maneuvers of A1 and A2, regardless of whether or not they were the same craft, their speed could only be supersonic, which, in the case of combat aircraft, would be manifested on the ground by a very loud sonic boom due to the phenomenon of the focusing of the shock wave generated by the bank. This would have been noticed in the surrounding area, especially since it was nighttime. But no sound was heard in the region.

1.2

Testimony of a Fighter Pilot (March 3, 1976)

Since this pilot (P) wanted to preserve his anonymity, the following lines are extracted from the written deposition that he wished to send to us (he revealed his name subsequently; he is Colonel Claude Bosc). On March 3, 1976, P, then a student pilot at the Combat Flight School at Tours, was making a solo night flight in a T-33 training aircraft. The mission consisted of navigating at an altitude of 6000 m following a Rennes-Nantes-Poitiers itinerary, then landing at Tours. Several aircraft were following the same itinerary at 5-minute intervals. The night was dark but cloudless, and the towns could be detected very clearly at the flight altitude in question. Visibility was greater than 100 km. While he was flying stabilized at an altitude of 6000 m, at a speed of 460 km/h, P first saw straight ahead, very far off in the distance (at the detection limit of lights on the ground) what he at first thought was the launching of a green signaling flare.

In 1 to 2 seconds, this flare exceeded the altitude of his aircraft by 1500 m and seemed to level off in space before descending in his direction. It approached at a dizzying speed on a collision course with the aircraft and filled the entire front windshield of the cockpit. Thinking that impact was inevitable, P let go of the joystick and crossed his arms in front of his face in a reflex protection gesture. The aircraft was completely enveloped in a very bright and phosphorescent green light. P

saw a sphere (S) that avoided his aircraft at the very last moment and passed over his right wing grazing it, all within a fraction of a second. P retained the following memory of this incident:

- S was not very large (1 to 2 m in diameter),
- S was extended by a tail, which was comparable to that on a comet, that was also a fluorescent green color,
- the center of S consisted of a very bright white light (magnesium-fire type),
- the sighting lasted a total of less than 5 seconds.

P, who was very shocked by this phenomenon, informed the radar controller, ensuring the control of the mission on the ground; the controller had not detected anything on his radar scope. Upon return, two other pilots who had followed the same itinerary as P stated that they had seen the phenomenon, but from a distance.

1.3

Air France Flight AF 3532 (January 28, 1994)

Jean-Charles Duboc (P), captain of Air France flight AF 3532, was assisted by Copilot Valérie Chauffour (CP) in making the Nice-London connection on January 28, 1994. At 1314 hours, while they were cruising at an altitude of 11,900 m in the vicinity of Coulommiers in Seine-et-Marne [Department] under excellent meteorological conditions, the chief steward, who was present in the cockpit at the time, pointed out a phenomenon that appeared to him to be a weather balloon. His sighting was immediately confirmed by the copilot. P, who in turn saw it, first thought that it was an aircraft banking at a 45° angle. Very quickly, however, all three agreed that what they were seeing did not resemble anything that they knew of. The excellent visibility and the presence of altocumulus clouds permitted P to estimate that the phenomenon was at an altitude of 10,500 m and at a distance of approximately 50 km. Taking into account its apparent diameter, they deduced that the craft was large. They were struck by the changes in the shape of the craft, which first appeared in the form of a brown bell before transforming into a chestnut brown lens shape, then disappearing almost instantaneously on the left side of the aircraft, as if it had suddenly become invisible. P reported to the Reims Air Navigation Control Center, which had no information on any mobile air presence in the vicinity. However, following the existing procedure, Reims informed the Taverny Air Defense Operations Center (CODA) of the sighting made by the crew and asked P to follow the "Airmiss" procedure upon landing.

CODA did in fact record a radar track initiated by the Cinq-Mars-la-Pile control center at the same time that corresponded in location and time to the phenomenon observed. This radar track, which was recorded for 50 seconds, did cross the trajectory of flight AF 3532 and did not correspond to any flight plan filed. It should be noted that the phenomenon disappeared from the view of the crew and the radar scopes at the same instant. The investigations conducted by CODA enabled both the hypothesis of a weather balloon to be ruled out and the precise crossing distance of the two trajectories to be determined, consequently bringing the approximate length of the craft to 250 m in length. It should be noted that the Northern Regional Air Navigation Center (CRNA), which handles 3000 movements per day, has investigated only three cases over the last seven years, one of which was that of flight AF 3532.

Aeronautic Cases Throughout the World

It is appropriate to specify that those cases that have been sighted from aircraft are considered to be aeronautic cases. This chapter describes five significant cases that occurred in different parts of the world and which were the subject of an investigation by the authorities of the countries in question. In four cases, the objects were detected both visually and by radar. In the fifth case, they were observed by a number of independent witnesses.

2.1 Lakenheath (United Kingdom) (August 13-14, 1956)

The joint USAF – U.S. Air Force – and RAF [Royal Air Force] military bases of Lakenheath and Bentwaters are located 30 km northeast of Cambridge with respect to the first and near the coast to the east of this city with respect to the second. Unknown aerial objects followed by their radars during the night of August 13 to 14, 1956, were judged “*unidentified*” by the report published in 1969 by the Condon Commission tasked with evaluating the research of the U.S. Air Force on UFOs (cf. Chapter 9). In September 1971, the magazine *Astronautics and Aeronautics* published a study of the case by Thayer, the radar expert on the Condon Commission, which was based in part on a study presented in 1969 by Professor MacDonald, an atmospheric physicist. For the record, we point out that on several occasions, and namely in 1976, Philippe Klass, editor of the journal *Aviation Week and Space Technology*, attempted to criticize this work and to reduce the case to a series of ordinary events (meteorites, radar propagation anomalies, etc.). The incidents began at the Bentwaters base, preceded, between 2100 and 2200 hours, by unusual sightings of the approach control radar [center], which we will not go into in further detail. They took place as follows:

- At 2255 hours, the radar detected an unidentified object moving east to west passing over the base, always almost into the wind at an apparent speed of 2000 to 4000 miles per hour (mph), or 3200 to 6400 km/h. No sonic boom was mentioned. The personnel of the Bentwaters control tower said they saw a bright light flying over the ground from east to west “*at an incredible speed*” at an altitude of approximately 1200 m. At the same time, the pilot of a military transport plane flying over Bentwaters at an altitude of 1200 m stated that a bright light passed under his plane tearing east to west “*at an incredible speed.*” The two visual sightings confirmed the radar detection.

- The Bentwaters radar operator reported these concurring radar and visual sightings to the shift supervisor at the Lakenheath [air] traffic radar control center, an American noncommissioned officer to whom we are indebted for a quite detailed report of these sightings and those that follow. The report, which was sent to the Condon Commission in 1968 by the then retired NCO, is coherent and does not contradict the documents in the USAF [Project] Blue Book file except in a few minor points: among these documents, the regulation telex sent by Lakenheath to the Blue Book team on the day of the incident and the report forwarded two weeks later to that same team by American Captain Holt, an intelligence officer at Bentwaters.

- The shift supervisor at the Lakenheath base alerted his radar operators. One of them detected a stationary object approximately 40 km southwest of the base, almost in the axis of the trajectory of the supersonic object seen at 2255 hours. The shift supervisor called the Lakenheath approach radar [center], which confirmed the sighting. The radar technicians at the air traffic control center suddenly saw the object immediately go from immobility to a speed of 600 to 950 km/h. The shift supervisor notified the base commander. The object changed direction several times, describing line segments ranging from 13 to 30 km, separated by abrupt stops for 3 to 6 minutes; the speed

always went from a value of zero to a value of some 950 km/h without any transition.

Visual sightings were made from the ground and confirmed the high speed and astounding accelerations. The regulation telex sent by Lakenheath concluded: "*The fact that rapid accelerations and abrupt stops of the object were detected by radar and by sight from the ground give the report definite credibility. One can only believe that these sightings may have some meteorological or astronomical origin.*"

- After 30 to 45 minutes, the RAF sent a night fighter, a Venom two-seater, in pursuit of the object. The Lakenheath air traffic radar control center guided it in the direction of the object 10 km east of the center. The pilot acquired the target visually and on radar, then lost it. The center then directed the plane 16 km to the east of Lakenheath; the pilot again acquired the target and said, "*my machine guns are locked onto him.*" A short time afterward, he once again lost his target; but the target was followed by the radar operators at the center. They informed the pilot that the object had made a rapid movement to position itself behind him and was following him at a short distance. The pilot confirmed [this]. Watched by the radar technicians, the pilot tried every maneuver for about 10 minutes in order to move back behind the object (steep climbs, dives, sustained turns), but he didn't succeed: the UFO followed him at a constant distance according to the ground radars. Finally, low on fuel, he returned to base, asking that someone tell him whether the object continued to follow him. The UFO did, in fact, follow him for a short distance, then came to a standstill. The radar technicians then saw the object make several short moves, then leave in a northerly direction at about 950 km/h and disappear from radar range at 0330 hours.

- A Venom sent to replace the first had to quickly return to base due to mechanical problems before having been able to establish contact with the object.

Thayer concluded his article in the journal *Astronautics and Aeronautics* in this manner: "*If one considers the strong credibility of the information and the coherence and continuity of the reports, as well as their high degree of "strangeness," this UFO case is certainly one of the more troubling cases known to date.*"

2.2

The RB-47 Aircraft in the United States (July 17, 1957)

This case, which appears as "*unidentified*" in the Condon report, has been cited and studied extensively for 40 years. Physicist James MacDonald published the results of his investigation in 1971 in the journal *Astronautics and Aeronautics*. Philippe Klass, the aforementioned journalist, then endeavored in 1976 to trivialize the facts, which was highly contestable from the outset. The bulk of this interpretation was refuted at the end of 1997, upon completion of an in-depth investigation contained in a memorandum from the aerospace technology researcher Brad Sparks.

We will summarize here the important sequences of events of the case, which show a luminous unidentified flying object detected at night not only by sight and on radar, but also by pulsed microwave emissions coming from its direction:

The RB-47 was a bomber the bomb bays of which had been converted to hold three officers each equipped with means enabling emissions from ground radars to be detected and their azimuth direction, but not their distance or the nature of the signals, to be specified. In the south central region of the United States, where the aircraft was making a training flight that day, numerous radar stations were emitting signals the frequencies of which were close to 3000 MHz and the pulses of which lasted 1 microsecond and occurred every 600 microseconds. The radars scanned the horizon four times per minute.

Three other officers (pilot, copilot, navigator) were in the cockpit and, as a result, could

themselves see out of the aircraft. The six officers were questioned by MacDonald in 1969. They related that:

- The first incident took place above Mississippi, probably at around 0930Z (0330 local time), when the aircraft, going back to the north from the Gulf of Mexico, was approaching the coast a little to the east of the Mississippi delta, flying at Mach 0.75. Captain MacClure detected on his screen a blip corresponding to a pulsed microwave source located behind and to the right of the RB-47 (at "5 o'clock") that rapidly passed the aircraft and turned around it, departing again on its left in the other direction (between "6 o'clock and 9 o'clock"). The source was therefore airborne and supersonic. MacClure noted the characteristics of the signal: they were those of the aforementioned ground radars, with the exception of the length of the pulses, which were 2 microseconds. He did not report this incident immediately, thinking that it was perhaps a malfunction of the electronics. As Klass writes, at the time there were no supersonic aircraft either in the United States or in the USSR large enough to transport a radar the signal from which possessed the characteristics that were observed.

- The following incident occurred at 1010Z in Louisiana, when Commander Chase, pilot, and Captain MacCoyd, copilot, saw an intense bluish-white light aim at the aircraft from "11 o'clock," then jump from their left to their right and disappear while it was at "2 o'clock." Klass showed that this object was perhaps a meteorite the trajectory of which caused an optical illusion, but, at the time, Chase and MacCoyd wondered whether it wasn't a UFO. Hearing them, MacClure remembered his prior detection and looked for a signal of the same type.

- He found this signal at 1030Z, which was identical to the previous one and, perhaps by coincidence, came from "2 o'clock." This signal was confirmed by Captain Provenzano, whose detector was itself also able to operate at around 3000 MHz. It could not have been the signal from a fixed radar, because its "2 o'clock" direction remained unchanged when the aircraft followed its route to the west for several minutes. The aircraft entered Texas, then came within range of the "Utah" radar [center] located near Dallas. The crew reported to Utah, which detected both the aircraft and an object maintaining a constant distance of 18 km from it.

- At 1039Z, still in Texas, Commander Chase perceived a large red light, which he estimated was moving 1500 m below the aircraft at approximately "2 o'clock." The aircraft was flying at an altitude of 10,500 m, and the weather was perfectly clear. Although the commander was not able to determine either the shape or the size of the object, he had the distinct impression that the light was emanating from the top of the object.

At 1040Z, he received authorization to pursue this object and notified Utah. He slowed down, then accelerated; Utah informed him that the object was mirroring his movements, all the while maintaining a constant distance of 18 km.

- At 1042Z, Chase accelerated and saw the red object turn to the right in the direction of Dallas; this was confirmed by MacClure.

- At around 1050Z, a little to the west of Dallas, the object stopped and simultaneously disappeared from the view of the radars (Utah and the onboard radar that had just detected the object when the RB-47 had approached it) and from MacClure's screen (the disappearance of an object from a radar screen is less surprising nowadays; it calls to mind the active stealth technologies currently in development and even in operation). The aircraft then banked to the left. MacClure picked up a signal that was perhaps the one from Utah. Visual and radar contact were regained.

- At 1052Z, Chase saw the object drop to around 4500 m. He had the RB-47 make a dive from 10,500 to 6000 m. The object then disappeared from his view, from the Utah radar, and from MacClure's screen simultaneously.

- At 1057Z, still near Dallas, the object reappeared on MacClure's screen, and Utah indicated

that it had prepared a "CIRVIS" (Communications Instructions for Reporting Vital Intelligence Sightings) report, a secret urgent radio report sent to the Air Defense Command, which is mandatory in the event of a sighting by the Air Force of an unidentified aerial object. At 1058Z, the pilot regained visual contact at "2 o'clock." A few minutes later, seeing his fuel reserves drop, he decided to return and headed roughly north toward Oklahoma City. The object then positioned itself behind the aircraft at a distance of 18 km, as reported by Utah, which tried to send fighter jets in pursuit of the unknown [object]. The object, flowing lower than the RB-47 and behind it, could not be seen from the cockpit, but it was detected on MacClure's screen until Oklahoma City, well outside the range of the Utah radar. Then it suddenly disappeared from the screen at 1140Z.

23

Tehran (September 18 to 19, 1976)

This incident took place during the night of September 18 to 19, 1976. Different newspapers worldwide reported it more or less accurately: for example, *France-Soir* in the September 21st issue. An American citizen took laborious steps with the U.S. authorities to obtain a report, invoking the freedom of information act. He finally obtained it from the Defense Intelligence Agency (DIA). Other U.S. documents have been obtained since then.

Interviews with generals and the Iranian air [traffic] controller involved in this affair enabled the DIA report to be confirmed and supplemented a bit, namely with the mention of proper names. The following summary resulted from a reading of the all the information:

- At around 11:00 p.m. on September 18, the Tehran airport control tower received several calls reporting a strange immobile luminous object in the sky above the Shemiran residential district in the northern part of the capital. The person in charge of the night shift, Hossain Perouzi, went out to look at the object with binoculars. He testified that he saw a rectangle, probably corresponding to a cylindrical object, the ends of which pulsed bluish-white lights. In the middle of the object, a small red light described a circle. Perouzi reported this strange sighting to the Imperial Air Force Command, which alerted General Youssefi, the third in command of this air force. He went out on his balcony and saw an object similar to a star, but much bigger and brighter; he ordered a Phantom F-4 reaction aircraft, the mission of which he directed through Perouzi as intermediary.

When the F-4 came to 45 km from the object, its flight instruments and all its means of communication (radio and intercom) suddenly stopped working. The pilot aborted the interception and headed for his base. The crew then regained use of their instruments and means of communication.

- A second F-4 was sent by General Youssefi. The UFO's echo on its screen was similar to that of a Boeing 707. The F-4 approached the UFO at a relative speed of 280 km/h. When it came to 45 km from it, the UFO accelerated and maintained a constant distance of 45 km from the F-4. The crew was not able to determine the size of the object because it shone so intensely. Its brightness came from lights arranged in a rectangle, changing rapidly from blue to green, to red, and to orange.

- Suddenly a bright object with an apparent diameter one half or one third of that of the moon exited the UFO and headed rapidly for the F-4. The pilot tried to shoot a Sidewinder missile at the object, but at the same instant his fire control console and his means of communication (radio and intercom) became inoperable. He promptly initiated a bank and a dive, but the object changed direction and pursued the aircraft at a distance of approximately 6 km. Finally, the object moved

inside the F-4's bank and departed in order to reenter the UFO from which it had exited.

- A short time afterwards, an object again exited the UFO and rapidly headed straight down to the ground. The F-4 crew waited to see it explode, but the object seemed to touch down gently and shine a very bright light over an area 2 to 3 km in diameter. The crew, momentarily blinded, orbited long enough to recover their night vision before landing at the Tehran airfield. It noted that it lost communications (radio and intercom) whenever their aircraft crossed a certain zone. It should be pointed out that a civilian aircraft also lost communications when it crossed that zone. The next day, the crew was taken by helicopter to the place where the object had apparently landed, a dried up lake, but it didn't find any trace [of the object].

An attached note from DIA was just as astonishing as the report itself; it indicated that the information had been confirmed by other sources and ended with this assessment:

"A remarkable report. This case is a classic that meets all the necessary conditions for a legitimate study of the UFO phenomenon:

- a. the object was seen by multiple witnesses in different locations....,*
- b. the credibility of many of the witnesses was strong (an aviation general, qualified crews, and experienced air navigation crews),*
- c. the visual sightings were confirmed by radar,*
- d. similar electromagnetic effects were reported by three different crews,*
- e. several crew members experienced physiological effects (loss of night vision due to the brightness of the object),*
- f. an extraordinary degree of maneuverability was demonstrated by the UFOs."*

The attempt by Klass to trivialize this case shows how solid it is.

2.4

Russia (March 21, 1990)

This case took place at night in the Pereslavl-Zalesski region east of Moscow. It was reported in an article by Aviation General Igor Maltsev, Air Defense Forces commander, which appeared in the newspaper *Rabochaya Tribuna* ("Workers' Tribune") on April 19, 1990, entitled "*UFOs on Air Defense Radars*" (cf. the book by Marie Galbraith referenced in Chapter 9.1).

The article mentions the dispatch of combat aircraft on a mission to intercept the UFOs detected. General Maltsev, who summarized over one hundred visual sightings collected by unit commanders, stated:

"I am not a specialist in UFOs, and therefore I can only link the data together and express my own hypothesis. Based on the data collected by these witnesses, the UFO was a disk 100 to 200 meters in diameter. Two lights were flashing on its sides... In addition, the object turned around its axis and performed an S-shaped maneuver in both the vertical and the horizontal planes. Next the UFO continued to hover above the ground, then flew at a speed two to three times greater than that of modern combat aircraft... The objects flew at altitudes ranging from 100 to 7000 m. The movement of the UFOs was not accompanied by any type of noise and was characterized by an astounding maneuverability. The UFOs appeared to completely lack inertia. In other words, in one fashion or another they had overcome gravity. At present, terrestrial machines can scarcely exhibit such characteristics."

San Carlos de Bariloche (July 31, 1995)

Source SEPPA

Aerolineas Argentinas flight AR 674, a Boeing 727 en route from Buenos Aires, was 140 km from San Carlos de Bariloche, a tourist resort in the central Andes where it was preparing to land. At that precise instant, a power outage plunged the town into darkness, and the pilot received the order to stay on standby for a few minutes before making his final approach. When he began his approach, the pilot noticed a strange star. At the same time, the control center put a second airplane that had arrived in the sector on standby. Flight AR 674 continued its approach, but when it had completed its turn and was in the axis of the runway, an object resembling a large aircraft appeared on its right side and flew parallel to it! This object had three lights, one of which was red, in the middle of it. The airport lights failed again, and the runway and approach ramp lights also went out. The airplane on standby observed the same phenomenon from its position.

Since the pilot could not land, he pulled up and turned again in order to reposition himself in the axis of the runway. At that moment, the object, which had become luminous, moved behind the airplane, stopped, ascended vertically, and once again stopped. It moved back in front of the airplane before finally disappearing in the direction of the Andes Cordillera. The crew and passengers of flight AR 674, those on the other airplane, the airport controllers, and some of the inhabitants of San Carlos watched this unusual aerial ballet dumbfounded.

This case is interesting in more than one respect:

- the sighting was corroborated by multiple independent observers both in flight and on the ground,
- the phenomenon lasted several minutes,
- there were different trajectories, some of which closely followed those of the airplane,
- there was an observation of an electromagnetic phenomenon (the lights of the town and the airport went out) directly related to the presence of the object.

Sightings from the Ground

This chapter deals with sightings from the ground, two of which were reported to the committee by direct witnesses of the phenomena observed. Here again, their testimonies are all the more interesting since they pertain to the aeronautic world and the phenomena were observed during the day.

Phenomenon Observed by Numerous Witnesses at Antananarivo (August 16, 1954)

Testimony before the committee

Edmond Campagnac (C), a former artillery officer and former chief of technical services for Air France in Madagascar who is now retired, came to testify before the committee. The phenomenon described below occurred on August 16, 1954, in Antananarivo. It was seen by several hundred witnesses.

At 1700 hours, when the personnel of the Air France office were waiting for the mail to arrive, someone spotted a "large" green "ball" in the sky moving at high speed. The first thought of the

witnesses was that it was a meteorite. The phenomenon disappeared behind a hill, and they thought that the green ball was going to crash into the ground and that they were going to feel the impact.

However, it reappeared after a minute. In passing directly over the observers, it revealed itself to be "a sort of metal rugby ball preceded by a clearly detached green lens[-shaped portion] with sparks issuing from the rear." In the estimation of the witnesses, the "ball" was the length of a DC4 airplane, or some forty meters long. The green lens[-shaped portion] separated itself [and remained] a little less than 40 m out in front, with fairly long sparks [coming out] in the rear. The craft flew over Antananarivo at an estimated height of 50 to 100 meters, an estimation that was made possible by comparison with the height of a nearby hill. When the craft was moving, shop lights went out, and animals exhibited a real anxiety.

After having flown over Antananarivo, the craft departed in a westerly direction. When it flew over the zebu park in the town, the craft caused a violent fright reaction among them. This is a surprising detail, since normally these animals do not show any agitation when Air France planes pass by. Two or three minutes later, an identical craft was observed 150 km from there above a farm school. There, too, the herds were overcome with panic. If the craft sighted was the same one as the one in Antananarivo, its speed would have had to be on the order of 3000 km/h. According to C's account, General Fleurquin, Commander-in-Chief in Madagascar, assembled a "scientific commission" to conduct an investigation into these phenomena. No trace of this investigation could be found in the Air Force archives; however, GEPA (Groupe d'Etudes des Phénomènes Aérospatiaux [Aerospace Phenomena Study Group]) bulletin no. 6 of the 2nd half of 1964 described this sighting.

3.2

Sighting by a Pilot of a Saucer Close to the Ground (December 9, 1979)

GEPA/SEPRA investigation and testimony before the committee

At the time of the incident, former Air Force Lieutenant-Colonel Jean-Pierre Fartek (F) was a Mirage III pilot in the 2nd fighter squadron at Dijon. F is currently a pilot for a private company. F was living, and still lives, in the same village near Dijon. His house is located at the end of a housing development looking out onto fields. Approximately 250 m away is a grove of trees with an average height of 15 m at maximum. On December 9, 1979, at around 9:15 a.m., F and his wife saw an unusual object (hereinafter called M) in the field near their house. The weather and visibility were excellent. M, the dimensions of which they estimated to be 20 m in diameter by 7 m thick, was hovering approximately 3 m above the ground in front of the grove of trees, which partially concealed it. In complete agreement with his wife, witness F described it as:

- having the shape of two superposed saucers with very distinct contours inverted one on top of the other and not exhibiting any portholes or lights,
- being metallic gray on the upper portion and darker (bluish) on the lower portion, with a perfectly delimited separation between the upper side and the underside of the craft. This color difference could not be due to a difference in lighting given the position of the sun,
- in constant motion as a result of three slight oscillations, the frequency of which was not very rapid, like something trying to balance,
- not making any noise,
- not causing any turbulence on the ground either when it hovered or when it departed,
- not having left any trace on the ground.

After observing it for a period of time which was hard for him to determine, F saw M oscillate faster; he had the impression that M tilted slightly forward (as a helicopter does after lift-off when it

begins level flight). F saw M leave in a horizontal direction at a very low altitude without making any noise, without leaving any trail, and at a very high speed and disappear on the horizon in a few seconds. F reported [the incident] to the Gendarmerie de l'Air at the Dijon air base. He thought he knew that other people had seen the phenomenon but had not dared to go report it, namely, his neighbors and their children, who reportedly made the same sighting.

This sighting by a pilot professionally well informed of aeronautical phenomena was never explained.

3.3

A Case of Multiple Witnesses at a Russian Missile Base (July 28-29, 1989)

Heading the UFO reports declassified by the KGB in 1991 is a file relating to an army missile base near Kapustin Yar in the region of Astrakhan, which was related in Marie Galbraith's book (cf. Chapter 9.1). The English-speaking public learned of it through the Muscovite journal *AURA-Z* of March 1993. Military personnel from two centers on the base prepared written depositions of their visual sightings, which were made under good visibility conditions. The file, which is incomplete, does not mention any possible radar detections. It begins with a brief summary of the case, the author of which was an anonymous KGB officer, followed by an account of seven written testimonies:

- Five testimonies from the first center were provided by Lieutenant Klimenko, two corporals, and two soldiers. On the night of July 28 to 29, these military personnel sighted UFOs between 2215 and 2355 hours at a distance of 3 to 5 km. Up to three objects were seen simultaneously. One object silently made jerky movements, with very abrupt starts and stops, and periods of immobility. All of the witnesses saw a fighter jet attempt to approach one UFO, which escaped at lightning speed, "giving the impression that the aircraft was hovering." Only the noise from the aircraft was heard, whereas the UFO must have reached supersonic speed.

- Two other testimonies from a center near the first one concern the sighting of a UFO from 2330 to 0130 hours at a distance ranging from a few kilometers to 300 m. This UFO was described by Second Lieutenant Volochine as a disk 4-5 m in diameter, surmounted by a brightly lit hemispherical dome. The second lieutenant attached a sketch of the saucer to his deposition. The saucer sometimes moved abruptly, but soundlessly, and sometimes remained immobile 20-60 m above the ground. In the company of soldier Tichaev, Volochine saw it emitting a phosphorescent green light, hovering 300 m from them and some 20 m above a missile depot; it illuminated this depot for several seconds with a moving beam of light.

In a report that was consistent with the report of his superior, soldier Tichaev stressed the lack of noise made by the object, even when a short distance away, which prevented him from confusing it with a helicopter. The two witnesses, who were joined after some time by the guard team, had watched the maneuvers of the object above the center and the surrounding area for two hours.

Close Encounters in France

4.1 Valensole, Alpes-de-Haute-Provence [Department] (July 1, 1965)

In-depth investigation by the Gendarmerie Nationale

At Valensole on July 1, 1965, Maurice Masse, who left his home at 5:00 a.m., headed for his lavender fields located on the plateau near the village. Before starting his tractor at around 6:00 a.m., he lit a cigarette and at that moment heard a hissing sound that attracted his attention. Emerging from behind a scree, he saw an object resting in his field approximately 90 m from him. Its shape was reminiscent of that of a "Dauphine" automobile standing on six legs with a central pivot. He approached it with caution, at a distance of ten meters or so, thinking he might surprise people about to steal his lavender from him. He then saw two small beings, one of whom, who was turned in his direction, reportedly pointed a tube at him that he took from a sort of bag hanging on his left side. Maurice Masse indicated that he was totally immobilized in place, numbed and paralyzed, but completely aware of the events that were unfolding before his eyes. The two beings then got back in their craft. He watched them while they were behind a sort of dome, and he heard a heavy noise when the object lifted up off the ground. He also remarked that the tube that was under the object, touching the ground, began to turn, as well as the six legs, which retracted under the machine. The object then ascended in a vertical direction before tilting diagonally and disappearing more rapidly than a jet. Maurice Masse remained immobilized in this manner for about 15 minutes before coming to, then resuming his work and going to tell his story in the village, where the gendarmes, having learned of the incident, questioned him during the day.

The Valensole gendarmerie force, then the Digne investigations squad, investigated this case for several days. The investigations of the gendarmerie established the existence, at the spot indicated by Maurice Masse, of a depression impressed into the ground, which had been soaked in that place. In the center of it was a cylindrical hole 18 cm in diameter and 40 cm deep with smooth walls. At the bottom of the hole were three other bent holes 6 cm in diameter. Along the object's axis of flight, over some one hundred meters, the lavender beds were dried up. This phenomenon lasted for several years, during which time the witness tried in vain to replant the plants within a radius of several meters around the tracks.

Despite a few contradictory elements in Maurice Masse's account, the data collected by the two gendarme brigades confirmed the plausibility of the facts, particularly the effect on the environment and on the witness himself, who slept twelve to fifteen hours a night, followed by the paralysis of which he had been a victim, for several months. The investigation into the witness's character did not turn up any specific information that would permit one to suspect him of mythomaniac behavior or of staging a hoax.

Cussac, Cantal [Department] (August 29, 1967)

GEPAN/SEBRA investigation

The Cussac incident has occupied a special place among the UFO cases, since a counterinvestigation was conducted in 1978, as an example, at the request of the GEPAN scientific council. On August 29, 1967, at around 10:30 a.m., during a beautiful sunny morning on the high plateaus in the center of France, two young children were watching the family's herd. The dog that accompanied them alerted them that a cow was getting ready to jump over the low wall of the enclosure. The boy, who was 13 years old at the time, got up to make the cow come back, when he spotted four children whom he did not recognize on the other side of the road. Surprised by what he saw, he called his sister, when he noticed an extremely bright sphere back behind the unknown children. They then realized that these were not children but small black beings whose height did not exceed 1.20 m. Two of them were standing next to the sphere, another was kneeling before it, and the fourth, who was standing, held in its hand a sort of mirror that blinded the children. The boy tried to call out to them, but the small beings then hurriedly returned to the sphere. The children saw them rise from the ground and penetrate the ball from the top, diving in head first. The sphere took off with a hissing sound, then rose into the sky describing a continuous spiral movement at high speed. The dog barked, the cows started to moo, and a very strong odor of sulfur filled the air. The counterinvestigation began in 1978 with a team of investigators from GEPAN and qualified outside advisors, one of whom was a former examining magistrate.

The highlights of this counterinvestigation did not have to do with the facts or the account, but with new elements such as secondary witnesses found at the site who provided supplemental information and strengthened the credibility of the case. In particular, a gendarme who arrived on the scene immediately following the incident found tracks on the ground at the place indicated by the children and noted the very strong odor of sulfur. Likewise, another witness also came forward who admitted being in a granary close to the site and clearly remembered a hissing sound very different from that of a helicopter of the time.

The reconstructions at the site in the presence of the two main witnesses confirmed both the descriptive accounts and the circumstances that followed the sighting. At the time the children gave off a strong odor of sulfur, but, above all, they suffered from physiological disorders, and their eyes ran for several days. These facts were certified by the family doctor and confirmed by their father, who was mayor of the village at the time. In the conclusion of this counterinvestigation, the judge gave his opinion on the witnesses and their testimony: *"There is no flaw or inconsistency in these various elements that permit us to doubt the sincerity of the witnesses or to reasonably suspect an invention, hoax, or hallucination. Under these circumstances, despite the young age of the principal witnesses, and as extraordinary as the facts that they have related seem to be, I think that they actually observed them."*

Trans-en-Provence, Var [Department] (January 8, 1981)

GEPAN/SEPRA investigation

In Trans-en-Provence on January 8, 1981, at around 5:00 p.m., a man who was building a small shed for a water pump in his garden reportedly was witness to what is perhaps one of the most unusual cases ever observed and studied in France. A reflection of the sun on something moving in the sky supposedly attracted his attention, allowing him to observe the descent, then the abrupt landing on a platform of earth located below his house, of a silent metal object. The object, which was ovoid in shape, did not exhibit any apparent projections, wings, control surfaces, or engine that would permit one to liken it to some type of aircraft. The object rested on the platform of earth for a few short seconds, still without emitting any noise, then it took off and disappeared at high speed in the azure blue sky. The account could stop at this simple visual sighting if there hadn't been visible mechanical tracks and imprints in the shape of a crown, which pushed the case into the domain of the unexplained.

The gendarmerie and then GEPAN conducted an in-depth investigation including numerous interviews with the witness and his neighbors. The expert's appraisals of the ground – the taking of soil and plant samples followed by analyses – showed unequivocally that it really was a case of an unidentified heavy metal object that had actually landed on the platform of earth. The analyses of plant samples taken at the site indicated that they were not dealing with any type of [known] aircraft, or even a helicopter or military drone, which were hypotheses that were considered and analyzed. The vegetation at the landing site – a sort of wild alfalfa – had been profoundly marked and affected by an external agent that considerably altered the photosynthesis apparatus. In fact, the chlorophylls, as well as certain amino acids of the plants, exhibited significant variations in concentration, variations which decreased with the distance [of the plants] from the center of the mechanical track. These effects disappeared completely two years later, thus revealing a specific and particular type of trauma. According to Professor Michel Bounias of the ecology and plant toxicology laboratory of INRA [National Institute for Agronomic Research] who performed the analyses, the cause of the profound disturbances suffered by the vegetation present in that ecosystem could likely be a powerful pulsed electromagnetic field in the high frequency (microwave) range. Studies and research are still being conducted in regard to this case and numerous leads have been explored. None of these leads has been able to satisfy all of the conditions that would enable the object that landed in Trans-en-Provence on January 8, 1981, to be identified with certainty, and this is all the more true with respect to the determination of its origin.

4.4 **Nancy, Meurthe-et-Moselle [Department], the so-called
"Amaranth" Case (October 21, 1982)**

GEPAN/SEBRA investigation

The "Amaranth" Case concerns the sighting during the day by a witness, a cellular biology researcher, of an object that hovered above his garden for 20 minutes. The testimony recorded by the gendarmerie less than 5 hours after the sighting is summarized as follows:

- The witness was in his garden in front of his house at around 12:35 a.m. after work on October 21, 1982; he saw a flying craft, which he first took for an airplane, come from the southeast. He saw a shiny craft. He indicated that there were no clouds, that the sun was not in his eyes, and that visibility was excellent. The craft's speed of descent was not very great, and he thought that it was going to pass over his house. Once he realized that the trajectory of the craft was bringing it toward him, he backed up 3 to 4 meters. This craft, which was oval in shape, stopped approximately one meter from the ground and remained hovering at this height for about 20 minutes.

- The witness stated that since he had looked at his watch, he was absolutely certain about the length of time the craft hovered. He described the craft as follows: ovoid in shape, approximately 1 m in diameter, 80 cm thick, the bottom half metallic in appearance like polished beryllium and the upper half the blue-green color of the inner depths of a lagoon. The craft did not emit any noise, nor did it seem to emit any heat, cold, radiation, magnetism, or electromagnetism. After 20 minutes, the craft suddenly rose straight up, a trajectory which it maintained until it was out of sight. The craft's departure was very fast, as if it were under the effect of strong suction. The witness indicated, finally, that there were no tracks or marks on the ground and the grass was not charred or flattened, but he did remark that when the craft departed, the grass stood straight up, then returned to its normal position.

The interest of this sighting, apart from its strangeness, lies in the visible traces left on the vegetation and, namely, on an amaranth bush, the tips of whose leaves, which had completely dried up, led one to think that they had been subjected to intense electrical fields. However, despite short time delays before intervention, the sampling conditions and then the storage of the sample did not permit this hypothesis to be verified definitively. Based on an earlier study on the behavior of plants subjected to electrical fields, it emerged that:

- the electrical field, which was what probably caused the blades of grass to lift up, had to have exceeded 30 kV/m,

- the effects on the amaranth that were observed were probably due to an electrical field that had to have far exceeded 200 kV/m at the level of the plant.

Counterexamples of Phenomena That Have Been Explained

The cases reported in the preceding chapters have remained unexplained, despite the richness of their data. Such cases are in the minority. Many sightings of aerial phenomena made in France that the witnesses could not understand and reported to the gendarmerie have been explained after a short investigation by the gendarmerie and/or GEPAN/SEPRA: the causes of these have been the moon, planets, aircraft, weather balloons, reflections from automobile headlights on clouds, etc., and, very rarely, hoaxes. Sometimes the investigation yielded more unusual explanations. We will give two examples.

5.1

A Strange Object Crosses a Highway (September 29, 1988)

GEPAN/SEPRA investigation

An auto mechanic driving on the Paris-Lille freeway saw an enormous red ball cross the road a few dozen meters away from him and roll down below the road. Casting reflections of light and enveloped in dense smoke, it finally came to a halt in a field. Troubled by this disturbing observation, the auto mechanic apparently reported it to the highway gendarmes. On the chief's orders, the gendarmerie then sealed off the freeway and a zone several kilometers around the object. The principal witness and his family were taken to the hospital, where they underwent a series of examinations. Civilian and military security officers went to the site of the incident, equipped primarily with Geiger counters. At that time, in fact, they were waiting for the Soviet satellite *Cosmos 1900*, which was equipped with a nuclear power generator, to fall, and precise instructions had been given. When consulted, CNES very quickly informed them that *Cosmos 1900* was overflying the Indian Ocean at that very moment. Did the red ball come from space? Advancing with caution, monitoring their nuclear radiation detectors, the security specialists drew near a sphere approximately 1.50 m in diameter. Under the bright light from the searchlights, they saw that it bore no sign of the considerable heat build-up or mechanical effects that atmospheric reentry would have produced. It appeared to be intact, and small mirrors covered its surface. No smoke or radioactivity were detected near it.

It was later learned that this sphere, which was intended to serve as a decoration at a Jean-Michel Jarre concert, had fallen from the truck that was carrying it to London. The small mirrors stuck to its polystyrene casing were for reflecting the show's lighting effects...

5.2

A Bright Glow in a Village in the Dombes Region (March 10, 1979)

GEPAN/SEPRA investigation

On March 13, 1979, the local [gendarmerie] force of a small village in the Dombes region was alerted by an inhabitant who said he had seen an unidentified flying object over the town during the night of March 10 to 11. In the course of its investigation, the [gendarmerie] force recorded a total of four testimonies, three of which were totally independent of one another. The first witness, a restaurateur in the village, described the phenomenon as a bluish and purplish luminous mass slightly oval in shape and around 15 meters in length. The light was so bright that the village square was lit up as if it were broad daylight, to such a degree that the public lighting, which goes on automatically, went out. Two other witnesses, who were in a car close to the village, reported that

this luminous mass preceded their vehicle on the road about 2 m ahead of them. They informed the gendarmes that this light went out suddenly after an orange-colored light appeared on each side of the glow. Finally, a fourth witness, a fish farmer, said he had been awakened that night by a dull noise and had seen a bright bluish glow. The next day, all the fish in one of his fish hatchery tanks, catfish, were found dead. The presence of a power line hanging over the tank enabled the gendarmes to focus their investigation on phenomena of an electrical origin.

GEPAN/SEPRA did the same during the investigation that it conducted on the site a few days later. It discovered very quickly that the 10-kV power line hanging over the tank had melted. The information provided by [the French electricity company] EDF enabled them to demonstrate that since this line was some thirty years old, it was very likely that corrosion and oxidation of the aluminum wires had caused a power arc effect in the line, probably in conjunction with a corona effect. This would explain, on the one hand, the bluish glow and the noise heard by the witness and, on the other hand, the public lighting going out. The glow was, in fact, bright enough to trigger the photoelectric control cell, which was located close to the melted line.

Finally, the fish died as a result of being poisoned by drops of aluminum that fell in the tank for several minutes.