

TECHNICAL EXPERTISE REPORT

No. 1435 / 11.05.1996

Issued following the request made by Mr. Gregorian Bivolaru to perform a technical expertise concerning the causes of the fire on the 25th of February 1995, at 04:16, accompanied by an explosion, at Str. Serg Turturica no. 4, bl 70B, sc. 1, ap. 2, basement, sector 5, Bucharest.

I. GENERALITIES

1.1 On the 17th of May 1995, Mr. Gregorian Bivolaru and myself had a talk concerning the objective and the focus points of the technical expertise regarding the fire outbreak on the 5th of February 1995, in the above mentioned apartment. This expertise should synthesize the causes and the circumstances of the fire, in order to facilitate the solving of the case by the penal investigation authorities, namely the 18th Police Station, knowing that another technical expertise was performed immediately after the fire, when a series of actual imprints existent at that time could be noticed and analyzed by the judicial technical expert. The fact that Mr. Gregorian Bivolaru hires a technical expert during the penal investigations is based on the law no. 79/1971, as well as the Civil Procedure Code, article 201/204 and the Penal Procedure Code, article 116/127.

1.2 The technical expert Eng. BURNEA NICOLAE MIHAI resident in Bucharest, str. Lt. Av. Garofeanu Ion nr. 24, sector 5, telephone 4104348, a judicial expert with identification card no. 2700-2210/1993, issued by the Ministry of Justice – Organization and Human Resources Department

He is a member of the Technical Experts Corps of Romania (Bucharest branch), the General Society of Technical Experts S.A., the General Association of Assets and Patrimony Evaluators from Romania, the General Association of Engineers from Romania (AGIR), "Tehnic Expert Consult" Company.

2. THE OBJECTIVES OF THE TECHNICAL EXPERTISE

Considering the fact that the disaster (the fire followed by deflagrations and explosions) has caused the destruction of all the goods, as well as the degradation of the apartment in percentage of 35-40%, in the discussion with Mr. Gregorian Bivolaru we have decided to re-analyze the following topics from the previous Expertise Report (registered with no. 9108/23.03.1995), which the penal investigation authorities possess as well:

2.1. The actual cause or causes which generated the fire.



2.2. The causes of the degradation of the installation behind the gas-cooker (hose-coupling pipe and the respective adapters)

2.3 The fire starting point, the way of propagation, amplification and generation of the deflagrations and the explosion.

2.4. Whether the owner of the apartment has adequately used the own domestic appliances, as well as the goods in his rooms.

2.5. The dynamics of the fire, some overall remarks, mainly whether there was negligence in the use of the gas-cooker and of other devices or whether the fire was caused by unknown persons.

3. BACKGROUND OF THE TECHNICAL EXPERTISE

3.1. The re-analyzing of the previous technical expertise registered at S.E. G.T. S.A. with no. 9108/23.02.1995, which was based on the following:

a) detailed on site examination by the expert when, after the extinction of the fire, many traces could be thoroughly analyzed (as a specialist in different areas, pyrotechnical effects, as well as the causes for their occurrence); it was possible to study the elements (circumstance, causes, effects) of the fire outbreak and to establish with a great degree of credibility who, how and why caused the fire and its effects.

We include the pictures taken at that time, and which represent evidence of the analyzed traces, evidence that must be considered at present time by the penal investigation authorities, in order to exculpate the owner.

b) statements of neighbors, taken in those hot moments, knowing the fact that after an appreciable time some statements may change for a multitude of reasons.

c) requests (verbal and written), made by the owner of the apartment to the police and the fire brigade to investigate, analyze and establish the causes of the fire, given the fact that there was no one in the apartment that night.

d) studies concerning a multitude of similar cases, outcomes of similar events, as well as the significant experience of the technical expert in this field.

4. ANALYSIS OF THE ESTABLISHED OBJECTIVES

4.1 Actual causes of the fire

Answer:

The intentional degradation (by unknown persons) of the adapter that connected the back part of the gas-cooker to the natural gas supplying pipe.

This degradation of the connection installation of the gas-cooker was technically explained in detail in the previous expertise, on pages 3-4.



From the beginning we excluded the negligence of the owner regarding the use of the gas-cooker. The negligence of leaving the gas-cooker turned on could have led to other effects in time. The gas-cooker could have been stopped by the supplier cutting the main pipe supply for some reasons, which is excluded since the supplier communicates the shut-down at least 48 hours in advance. Still, admitting this possibility in an extreme case, the moment the gas would have been turned on again, it would have leaked and infiltrated more or less in the rooms depending if the doors were closed or not. The gas could have ignited instantaneously either by maneuvering the switches, or by another person from the outside. If someone were inside, in one of the rooms, he would have suffered extremely serious burns. In this case the installation that linked the gas-cooker to the main gas pipe would have suffered no degradations; still, as can be seen in photograph 4 and 5 from the previous expertise, the connecting system was intentionally degraded by unknown persons. Because the gas accumulated in the rooms must have still been ignited by a fire, the respective person first switched on a small quartz heater which was in the dining room. So, the room in which the natural gases were ignited was the living room and eventually the kitchen. We exclude the use of other natural gas consumers in the bedroom with the purpose of room heating, because it would have provoked the degradation of the adapter between the gas-cooker and the gas pipe.

The small quartz heater was switched on in order to be the source of fire for the accumulated gas leaked from the intentionally damaged hose coupling.

Since from the written and oral statements (available for the previous expertise) it results that several explosions were heard, one could assume (with a small degree of credibility) that the electrical wiring of the refrigerator (only the bobbin, since the engine is completely encapsulated) would have ignited the gas accumulated in the kitchen.

The explosions had different intensities depending on the room for propagation and the speed of evacuation of the burnt gases through the broken windows.

Several rooms that had a large content of gas and a small aeration ways were affected: the kitchen, the bathroom, the hallway. The bedroom was affected less, since there was less gas and the explosion broke the windows, thus providing very quick aeration and reducing rapidly the front.

I do not insist on explaining terms like deflagration, explosion, front, etc because these have been covered in the previous expertise on pages 4 and 5.

4.2 The causes of the degradation of the installation behind the gas-cooker (the hose coupling pipe and the respective adapters) with the role of connection and fixing

Answer: Intentional degradation by unknown persons



The mark analyzed on site shows the perfect cutting along the entire circumference – minus 6 mm – of the screwed end of the adapter. This degradation was exposed to the fire, to the temperature during the explosion, as shown in photos 4 and 5.

It is impossible to assume that the owner would purposely produce this degradation in order to cover a possible negligence.

By the analysis of the trace we concluded that the degradation was done prior to the fire. Besides, this point was detailed on pages 3-4 of the previous expertise.

4.3. The fire starting point, the way of propagation, amplification and generation of the deflagrations and the explosion.

Answer:

I have explained at point 4.1. Furthermore, I add the following: the speed of propagation of the gas ignitions in the different rooms was according to the concentration of gases accumulated in each. The ignition in other rooms was generated by the flames from the initial explosion (living room and perhaps the kitchen). The explosive wave was more or less powerful (the generation of a quick increase in temperature and pressure) depending on the amount of gas accumulated in smaller or larger areas, and on the possibilities of quick evacuation of burnt gases. This explains why the hallway, the kitchen and the bathroom were largely affected, namely the walls, the metal door, and part of the bathroom's floor were badly damaged. The bedroom was less damaged because the explosive wave, also very powerful, broke all the windows thus evacuating the gas and instantaneously reducing the explosive effects and the pressure. This explains why the furniture and the textile material did not burn.

4.4. Whether the owner of the apartment has adequately used the own domestic appliances, and whether he took the appropriate measures for the protection of his apartment and his goods.

Answer: Obviously yes.

The gas-cooker was set in place by a professional and it worked a considerable amount of time. The heater is small, sophisticated and quartz-built, and it couldn't possibly have produced gas and fire.

The security of the apartment was ensured by installing metal bars for every windows and a metal door at the main entry.

As the number of crimes has increased dramatically, and the criminals are more and more "specialized", it was easy to climb the bathroom window that opened to the closed garbage disposal space. One could work silently,



undisturbed, by removing of the metal grating and the house breaking. After having analyzed, I have established the house-breaking method and what needs to be done next. Please consider photographs 12-16, photo boards 6,7,8 from the previous expertise. Besides, there are statements that two persons watching the building had been noticed the previous night.

4.5. The dynamics of the fire, some overall remarks, mainly whether there was negligence in the use of the gas-cooker and of other devices or whether the fire was caused by unknown persons.

As a matter of fact, the questions we planned to answer (the undersigned and the firm's representative) reflect the chronology of the fire generation.

We summarized the following phases:

- the studying by unknown individuals of the layout of the apartment and the house-breaking method
- the actual implementation of the plan after a previous study, by the forceful removal of the bathroom grating, which opened to the closed garbage disposal place.
- The "visiting" of the apartment and the establishing of valuables and the money that could be removed.
- The means of trace removal by setting the fire.

The dynamics of the fire was purposely confusing in order to keep the authors unknown, therefore the actual facts could be established only after a thorough analysis.

I do not insist any more on this aspect or on the phases of the fire ignition since this was covered in detail in the previous expertise on page 6.

CONCLUSIONS

The fire was not caused by improper use of domestic appliances or by another negligence of the owner. The fire was deliberately set by unknown persons, the reason being probably the theft or even the revenge.

Considering that the technical expert was present on site after the extinction of the fire, thoroughly analyzing the traces and evidence which were also used in the previous expertise, and considering also the fact that the evidence was re-analyzed fifteen months later, we reached the same conclusion, the owner of the apartment is not guilty.

As a matter of fact, even the military fire brigade concluded that the circumstances which generated the explosion could not be explained by the normal conditions of the apartment at the time, which leads as well to the conclusion of an outside criminal intervention.



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Considering the more than relevant data shown in the first expertise regarding the causes of the fire ignition and the establishing of the guilt (expertise done by the technical expert), and considering the second expertise, which reached the same conclusions, we state the following:

- any further expertise that would be performed after more than 15 months from the events, lacking the actual traces and evidence (with the purpose of a technical and scientific analysis) will obviously be irrelevant. Eventual charges will clearly be unfounded.

- there is no suspicion as to the owner's guilt in the fire ignition, given the conclusions clearly exposed in the two technical reports.

Judicial expert,

Eng. Burnea Nicolae Mihai.

