

Operative Judicial Photography

Cosmin BUTURĂ

*Romanian Association of Forensic Sciences, Bucharest, Romania
cosminbutura@yahoo.com*

ABSTRACT: Photography is the combination of two sciences that transpose the real moments spent into a single image. The first science, namely the exact science, physics, comprises the use of the lens designed to focus objects or people in a frame defined by the device, with the help of an electronic image sensor. With each pixel produced, the sensor manufactures an electrical charge, which is then processed and stored in a digital image. Towards the end, due to chemical development, a visible image appears, either positive or negative, representing the finished product emitted by the camera. The second science is the science of art, more precisely, the art of graphics, which outlines in an image all the elements that appear within the device's lens. From a graphical point of view, we understand that the device copies all the positive and negative details of objects, elements, people, and phenomena occurring within it. Globally, photography has remained a key aspect of society, influencing human thinking. In most cases, the photos are taken to keep unique moments, which we currently spend with our friends or family members, but which will well-dispose us in the future when we become nostalgic. However, in other cases, the photos remained a balance that supports the truth and lies in their rocking chair. The cameras were and are key technical equipment of the criminal investigation officers because they can accurately show the reality that happened at that time, serving in the confrontation with the statements of the suspect or the defendant. This equipment entered and in possession of the police has evolved, within the legal framework, to the middle rank in the court files from those times and today. So, at present, legally speaking, photos are used on the speed detection devices means of evidence in files that involve different criminal or financial (such as money) offenses, on the sharing of a property (such as urban or extra-urban land), etc. Within this article, the author will treat the art of photography in the field of forensics as follows: on-site shooting procedures, orientation photography, sketching photography, main objects, detail photography, special shooting procedures, corpse shooting procedures, and photographic measurements.

KEYWORDS: art, investigation, tactics, photography, equipment, forensics, dynamism, science

Introduction

This study will analyze the technique of photography used in the criminal field by criminals and investigated together with the judicial bodies. In general, judicial photography is operative because it is used in places where crimes have occurred, crimes against the assets of the owners, and offenses against the private or state financial system. These operations are of fixed importance to the results of the investigations, thus being a precious annex to the criminal case. According to the specialized literature, the camera can no longer be used in the field of forensics without fulfilling certain conditions from a technical point of view. Specifically, a camera must technically satisfy, processing all circumstances or details that can provide a hint in criminal investigation at higher image quality. Furthermore, will be listed the shooting

procedures applied on the spot, according to the specialized literature: orientation photography, sketching photography, main objects photography, detail photography, photography of traces and photographic measurements.

Orientation photo

As the name is, the photo serves to incorporate the image on the spot, in an indicative assembly, meant to identify the area in which the crime was committed. Specifically, orientation photography has the role of capturing in an image all the elements on the spot that could help the judicial research bodies, starting from the neighboring buildings to different objects, different types of landscapes conferred and different types of road infrastructure such as paths, rough terrain roads or paved roads (Buzatu 2013, 40). We must understand that the points of orientation are not cardinal points but in fact are the assemblies of buildings, factory constructions, various road infrastructure constructions, more precisely any element that has a fixed character in the respective location that is not changed from day to day. This aspect is part of the photographs taken in the open places, in terms of closed places, the orientation photo captures the neighboring elements, for example: in the case of a crime committed in the room of a hotel, the neighboring elements that will be captured by the camera (Golunski 1961, 53).

Regarding the technique of making photos, the camera comes to complement it with different accessories that the police and criminals use. One of the accessories of the device is the objective, so the authorities use super-garde and rotary goals, but it can also be opted for a normal goal. Depending on the place of the deed, criminals use other accessories, such as, telephoto lenses, which are used in cases of buildings or explosions, so that the specialized team is not injured. With the advancement of technology, the police departments, especially the criminal department, opted for the purchase of cameras in the air with the help of drones. In this case, we can say that the photos taken in the air offer a larger ensemble in terms of orientation and, at the same time, a new investigation is added, respectively the pathological determination of the suspect (Stancu 2015, 88-89).

Photo sketch

This procedure refers to the photography from the eye level, 1.60 m, having properties similar to orientation photography. They are divided into four categories such as:

1. *unitary sketch photography*: represents the fully rendering of the place of the deed captured in a single image. In principle, the point of station is chosen and implicitly of the focused distance, favorable to the totality of the elements that define the place and circumstances where the deed has been committed.

2. *panoramic sketch photography*: this feature is considered to be similar to orientation photography, according to some specialists in the field, being in fact an alternative to unitary playback for the place of deed, if we talk about a large coverage area and that would be impossible to made in one photo. According to the specialized literature, the panel sketch photography is divided as follows: linear panoramic photography and circular panoramic photography.

3. *pketch photography on sectors*: this technique plays portions from the place of deed, made in several photos but under similar conditions and with the same accessories. This technique is used for example in apartments, office buildings, hotels, etc.

4. *cross-sketch photography*: this technique unites the photos used in the same place but prevented by places with dead angles in which certain details could not come out of a single photo, we speak here of: dark corners, furniture, doors that open only at 90°, etc. (criminalistic.ro, Silviu Predescu).

Photography of main objects

The technique of photographing the main objects is the surprise, with the help of the camera, to some elements from which certain traces left by the perpetrator. In this technique is the photography of the corpse, the furniture objects, different foods, etc. Even if in the photo, the element is present, the need to double the element in another image is important, because in duplicated photography, the element will be highlighted in detail (Costache 2010, 3-4).

These aspects are often neglected by investigators, which is why they appear unclear in the photograms made, such as traces of hands overcome on the coffee table that would indicate that an object in the house has been manipulated by the suspect (the glass), but that object is missing from the overall image of the place. For this reason, it is difficult to prove that the suspect would have put his hand on the glass to use him in different intentions, as long as the photos taken, this action would not have happened. According to specialists in the field, investigators must photograph each object, from a perpendicular position using adequate light, and then mark it with a number. Near these objects, a measuring instrument is attached to determine its size but also the distance from certain edges on its support, such as a graded tape, ruler or centimeter (Manea 1991, 68).

Detail photo

This technique focuses on the dynamism of the research on the spot, where it is the possibility of moving the objects in order to highlight as many characteristic details, the traces but also the way they were placed in the space of the place. The detailed photographs are made at a larger scale, there is also a consistent amount of light arranged behind the device and on its sides, to allow the game of shadows in order to highlight traces left by the suspect. In the forensic technical reports, a difficult differentiation is made between the detailed photography and the actual photography of the traces (Stancu, 2015, 90).

The procedure for conducting detail photo consists of:

- an objective that satisfies the dimensions of detail;
- films with chromatic sensitivity, with a strong contrast and high resolution;
- filters for highlighting details with a color close to the real colors;
- artificial light sources for natural light control.

Special shooting procedures on the spot

Within the special shooting procedures on the spot were used several categories of photographs, having the role of making different images that differ in purpose and way of achievement. To begin with, we are talking about photographing the traces, which are part of the first category of photographs within the procedures, being captured in pictures, the upper and lower limbs of the corpse. In this sense, we must mention that the taking of these photographs will be taken in compliance with the technical conditions. The weapons and different objects used to commit the deed are part of another category within the procedures (Neagu 1993, 376-377).

The process consists of installing the device on a flat surface but parallel to the trace or means of evidence or any element that has as a test role in the research file. As I specified above, the light sources must be arranged on the sides and back of the camera, to allow the game of shadows and direct the natural light. Finally, before the photograph will be available, the measuring instrument that will identify the size of the object and its distance from the initial position and to the final position in which it was found, or from the initial position and its together (O'Hara 1976, 66).

Digital photography

As we specified from the beginning, the photo went through an important modernization process, evolving to this day, more precisely from simple non-color images that could not include in detail elements that are the subject of the sample, until Capturing images with an impressive resolution that can enlarge the image to 50x ultra-laryn angle zoom. Thus, the cameras have come to work on ultra-performances, the images made being easily analyzed computer science, more precisely, they can be easily enlarged, selected, contrasting, etc.

Another positive aspect, made by the intervention of state-of-the-art technology, is to connect the camera to Smart phones with Android or Apple processing system, with the help of Bluetooth or Wi-Fi. This aspect allows the criminals to send the pictures taken on the spot to the forensic laboratories, who can make with the help of the calculation technique, a first report on the content of the photography. For example, according to species, digital traces can be transmitted and processed by the poster-200 system, realizing in a few minutes (Manea 1991, 68-69).

Photographic measurements

This process has the role of establishing the dimensions and distances between the different objects at the scene. There are four categories of photographic measurements such as:

1. *the photographic measurement with the help of the graded ruler*: in the specialized literature, this method is also called two-dimensional photography, which has as its work object, the determination of the linear dimensions of the traces or objects. The ruler is arranged along the object, starting from the lower side (for example: in the case of the victim's foot, the ruler is placed from its sole). This technique is also allowed to use a centimeter (Mircea 1971, 31-33). The measuring instrument is positioned parallel to the object and at the same time as possible in it and in the same plane. In the case of a profile on the floor, the centimeter is placed on the height of the profile to measure its depth. Subsequently, the camera is placed perpendicular to the following, and the above-mentioned lighting will ensure the clear playback of all the details that can lead to new indications in judicial investigation (Vilceanu 2013, 4-5).

2. *the photographic measurement with the help of the graded tape*: according to the data of the specialists, this process presents good results in forensic research. The way of use is appreciated in measuring the distances between objects, measuring large or gauge objects (braking traces from a car), being applied at the time of the photos and the photos of the main objects. The graded tape is made of plastic, with a width of 10 cm and a length that supports up to 10 meters. It is divided into segments of 10 cm, distinguished into black and white non-colors, and sometimes they can be found and numbered. The segment represents a multiple of the focal distance of the device (for example: if we have a focal length of 5 cm, the 10 cm segment will result in the focal distance). The tape is placed on the floor, along the optical axis of the device, the starting point being the one below the objective. This point is marked with the help of the lead thread. The distances of the objects are established by the segments of the graded tape, for example, if between the device and the object at the scene are 30 segments, then it is equivalent to 60 focal distances, according to the formula mentioned above. From this equivalent of 60, the reduction coefficient will decrease, thus resulting in a dimension of 295 cm. There are also other methods of determining the specific dimensions, such as the method of graded milestones that are placed at a distance of 10 m from each other. The method of the floor with equal sides is among the methods of determining the dimensions, this being done with the help of a square floor with the 1-meter side, which is placed at the lower edge of the frame. (O'Hara, 1976).

3. *tridimensional measurements*: these are achieved by using special floors, and the phenomenon is stereophotography. With the help of two objectives, photographers from police departments and forensic laboratories can achieve measurements. According to the researchers, in the future, with the help of holography, the imaginary obtained by the laser radiation can allow a spatial visualization of the objects on the spot.

4. *photogrammetry*: this method is performed in topography, being adapted and implemented in the investigations of the judicial organs, because reconstructions can be made and the surfaces, forms and positions of the objects can be measured. According to the specialists, currently the only scientific method for making dimensional photographic measurements, at a precise level, is photogrammetry. This is based on the principle of stereophotography, which with the help of a device, allows simultaneously to make two images of the same object or surfaces, from two different angles. Subsequently, the two photographs are processed by the return, in order to make the sketch of the criminal field. The device used by judicial research crews is of a Wild type equipped with two rooms arranged at a distance of 40 or 100 centimeters (Vilceanu 2013, 4).

Conclusions

In conclusion, I emphasize the importance of the camera in judicial practice, because the objects that can demonstrate the guilt of the main suspect would have not been used as a concrete means if they were not photographed in the positions found by investigators on the spot.

Judicial photography has led to the resolution of numerous criminal files and, at the same time, to reduce judicial errors. We can say that the camera has now become the eye of the correct justice, whether we are talking about judicial photos or photos from simple citizens who, at the time of photography, caught an event of criminal character or a person who was in general pursuit of crews, by police. However, we can remain at the positive side of the photo, namely, the capture of the unique and beautiful moments, together with the loved ones, in a single camera.

References

- Buzatu, N.E. 2013. *Forensics*. Bucharest: Pro Universitaria Publishing House.
- Costache, M. Hilda-Cristina. 2010. *Criminal-photography procedures used during the on-site research*. Bucharest: Bioterra University-Faculty of Law.
- Criminalistic.ro. 2011. Criminal specialist Silviu Predescu, www.criminalistic.ro.
- Golunski, S.A. 1961. *Forensics*. Bucharest: Științifică Publishing House.
- Manea, V. 1991. *Course of forensic technique*, vol. I. Bucharest: School of Active Officers of the Ministry of Interior.
- Mircea, I. 1971. *Forensics*. Bucharest: Lumina Lex Publishing House.
- Neagu, I. 1993. *Romanian criminal procedural law*, vol. I. Bucharest: University of Bucharest.
- O'Hara, C.E. 1976. *Basic principles of criminal investigations*. Illionis, U.S.: Thomas.
- Stancu, E. 2015. *Treaty of forensics*. Bucharest: Universul Juridic Publishing House.
- Vilceanu, Clara Beatrice. 2013. *Prices applications in digital photogrammetria*, Timisoara.