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Use of FPV Drones for Sports Documentaries

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Abstract.
The role of a cameraman is crucial for creating unique camera movements and to implement good visual force in sports documentaries. FPV drones allow for the greatest immersion through camera movements. Drone operators depict the visual awareness of sports from inside a flying machine that, like an athlete, moves swiftly and accurately. This research used a qualitative approach. Data collection was carried out through studying literature related to sports documentation work. FPV videos are often shown at various professional sporting events, such as at the Red Bull Rampage, an annual extreme mountain bike freestyle competition with a natural track free of synthetic elements or special markings and with only one start and finish line. Based on the analysis of camera movements such as panorama, tracking, titration and crab in the video documentary Redbull Rampage 2021, it was concluded that every movement of the camera plays a diverse role. Camera movement techniques can affect the dramatic speed of each scene and the overall action. This is because with any type of camera movement, there can be variations in the type of shooting and different image sizes.

Keywords: FPV drone, camera movement, dramatic, sports documentary

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1. Introduction

In the world of videography and film, the important role of a camera person is required to create a unique camera shooting angle and movement, so they can be a visual force in the resulting image. The created angle camera is very crucial for the transmission of messages and information that are presented. The angle camera in the sense of audiovisual work is a shooting angle that emphasizes the position of the camera in certain situations when shooting objects. This statement confirms that the camera used when shooting objects or with istlah is more popular ”objects in the vision camera”, which describes the existence of the camera in which position under what circumstances. Using the camera angle is expected to create an event or state of the object in the camera shot to make it look more attractive and illustrate the dynamics of a state. Each shot in the camera view has a certain meaning and value content of the type of angle it uses. With so many angles, more and more stories can be described through videos.

In addition, the selection of different camera angles can also be an icon in the work of film and video.

In its development, video technology, especially in the movement of the camera, has developed very quickly, both from the field of the tool industry and from the creativity of the cameraman himself. One of the technological developments of videography tools is drones. Unmanned aerial vehicles (UAVs) or drones are small aircraft without pilots. It is now more widespread in the military and among people who like photography/videography. In recent years, the use of drones by civilians has increased rapidly until the British House of Lords mentioned that 2014 was the “Year of the Drone”. In 2015, Forbes magazine listed on its website the distribution of one of the owners of the drone brand from its inception to the present. From 2009 to 2010, annual revenue submissions accounted for more than 50% of total sales in North America. And in 2011, the total annual sales presentation increased by up to 280%, while the sales presentation in North America accounted for only about 30% of total sales. The representation of total revenue continues to grow rapidly each year, with drone sales expected to reach $2.28 billion in 2020.

Consumer research into camera drones has led to various forms, e.B. among professional videographers who already use drones as one of the devices in large-scale filmmaking. The Sundance International Film Festival hosted a panel discussion on ”Drone Cinematography and the Future of Cinematography” in early 2015, as well as The Production Guild, when the Association of Professional Film Workers in the UK began examining and investigating the use of drones as professional devices in filmmaking. at the seminar ”How to film with drones” in London, England, on September 23, 2015.

Drones or unmanned aerial vehicles (UAVs) were originally widely used to serve the defense industry. Its tasks include gathering information about the movements of opposing armies and generally for military missions operating remotely [1]. Drones continue to grow based on funngsi and demand. One of them is First Person View, or commonly abbreviated as an FPV drone. FPV drones offer the most epic experience of interacting with drones through a level of immersion that is unlikely to be achieved by any virtual reality. As a pilot, you will be shown a visual awareness from inside the flying machine, which of course moves quickly, quickly and accurately. It offers a completely new and breathtaking view of the world from the upper angle.

Videography as a powerful medium of expression and communication offers an infinite range of perceptions, performances and performances. Just as is the case with the documentary Sport , where a cameraman records activities in motion and movements occur because there is an event. The movement of objects tends to be

fast and action-packed, so it appears dynamic to be used as a videographic object. Therefore, the videographer should have references and exploration angles that vary. In this case, the FPV drone becomes one of the alternative tools for adequate sports documentation.

This research aims to introduce the role of FPV drones, which have more capabilities than other camera drones. Some camera movements that have been made usually cost very high. Therefore, with fpv technology, this drone can reduce cost and time and provide technical convenience.

2. Method

This research uses qualitatively described research methods. According to Sugiyono, qualitative research is a study in which researchers are used as key tools, data acquisition techniques are performed by combination and induction [2]. The justification for this method is because the study wants to know about phenomena that exist under natural conditions, not about laboratories or controlled experiments. According to the subject of this study, namely the use of FPV drones for sports documentation, the researchers use a qualitative approach when describing the data obtained as a result of a study. The data collection takes place by studying sports documentation work with fpv drones.

In studies that use this qualitative approach, researchers act as both key tools and data collectors. By the way, the researchers also have direct experience with the subject of the study, namely fpv drones. Through direct experience, researchers can see and feel first-hand the phenomenon of using FPV drones for sports documentaries. The data collection technique that is carried out is through the observation and documentation of studies in the form of sports documentary work. Observation is directed to the activity of being attentive and taking into account the relationship aspects in the observed phenomenon in order to obtain data on a problem, to become understanding, or as a means of reviewing or re-examining or re-examining previously received information or information [4]. The data you want to get with this technique is an overview of the subject of the study, namely the use of fpv drones for sports documentaries. While the documentation searches for data on topics or variables related to the topic of discussion being studied [3]. With this technique, documentation is done by collecting sports documentary videos with fpv drone yeng obtained through the YouTube channel.

3. Findings and Discussion

The practical use of drones at the consumer level has led to the sharing of videos and aerial images and a drastic increase in the production value of vlogs and home videos. Professional videographers have also used drones to view the landscape from an aerial perspective. The use of drones has brought many advantages in the world of videography. In addition to the relatively cheaper cost, its small size can be more flexible to carry and can reach a variety of situations. In an article by Galvane and Lino entitled "Directing Cinematographic Drones", they explore the directing form of film directing with a different cinematic perspective with drones [4]. Then, in 2018, bonatti's team developed a method to make aerial perspective films through automatically organized drone shots via an app, which is interesting enough here, since Bonatti hesitates with actors, cars and bicycles and follows various camera movements in the production of different types of shots [5].

Camera movement with techniques to follow or follow objects is widely used in sports documentaries. Of course, the camera movement can be done easily and perfectly with a drone. Currently, there are types of drones that specifically aim to record videos from the first-person perspective (FPV). FPV videos are often shown at various professional sporting events. A professional sporting event that always uses FPV drones for documentation is Red Bull Rampage, an annual event that is an extreme mountain bike freestyle competition with nature as a track, no tracks and special markings, but there is only one start and finish line.

Figure 1: Redbull Rampage 2021.

The Redbull Rampage event always takes place live on youtube. One of its documentation systems uses FPV drones. The use of FPV DRONES is intended to photograph with more immersive camera movements. The audience is shown a visual awareness from inside the flying machine, which of course moves swiftly, quickly and precisely. This gives a completely new and impressive view of the world from the upper angle. The camera movement is an attempt to move the camera or subject to create even more space or to give the three-dimensional impression of a room in which people who see as if they are moving in/out or moving to the right/left follow or leave the subject. There are 4 basic camera movement techniques [6]: (1) panning, (2) tilting up/down, (3) dolly shot, (4) crab [7].Of the 4 camera movements, the FPV drone can cover everything more easily. The movement of the camera is necessary to show an object of character and situation, and also to create tension, thereby maximally supporting the performance of a sports documentary.

An example of the documentation of the Red Bull event in 2021 on the Red Bull Bike Youtube channel entitled ”REPLAY: Red Bull Rampage 2021”, which was seen by 1,142,976 viewers, shows attractive and interesting camera movements with FPV drones. Some camera movements and angle shots taken with FPV Drone in Redbull Rampage are as follows:

1. Camera movement with the follow-pan technique

Figure 2: Scene of the driver accelerating on the track.

Follow Pan is the movement of the camera that follows the moving subject that is the pilot who is on the track. This usually serves to keep the visual composition so that it remains proportional in the frame and gives headroom and walking space so that the subject does not cut off on certain movements. In the video work, it can be seen that

the angle used is the high angle, which is the shooting angle directly above the object, so that the position of the object appears exposed from above, so that the audience can feel the speed and atmosphere of the trajectory that the driver is going through. This serves to build the atmosphere of the environment, in which the driver simultaneously creates a visual interaction between the audience and the environment. In addition, the video clip sees the use of long shots, so that the pilots driving on the track see small and visible landscapes around a fairly large area of the track. This is aimed at showing the place around the trajectory, which is ectstrim contoured to increase the tension of the audience.

1. Camera movement with crab technology.

Figure 3: The pilot passes the route in the form of a steep descent.

The movement of the camera in the scene is done with the help of the crab technique, in which the movement of the camera runs sideways or sideways parallel to the subject of the pilot traveling along the route. This crab technique is important for performing dramatic actions, such as the scene in which the pilot's subject accelerates on a track with a very steep altitude. The technique of camera movement with crab is carried out, if dramatic pressure or increased attention is required, then the action of the cyclist should be shown more clearly. Thanks to the movement technique of the crab chamber, the audience can feel the action of the pilot more strongly even when driving on a very steep route. The impression shown in this scene seems tense to the audience. The crab technique is combined with the extreme wide shot, which is the shot that shows objects of the rider with the mastery of the background images of the environment, so that the objects of the rider appear very small. The importance of the extreme long-term image size in image scene number 4 should show the position of the wide, steep and steep trajectory. The captured meaning of the size of this image is that the audience can

feel the incredible tension as they see how high and steep the riders cross the cliffs. While the shooting angle in the scene is a normal angle that matches the view of the audience's eyes or the camera is in a parallel position at eye level with the audience. The implicit meaning of the normal shooting angle is justice, equality or equality, so it is as if the audience is in the same position as the driver.

2. Camera movement with tilting-up technology

Figure 4: The pilot maneuvers on the track.

This scene shows the action of the pilot being maneuvered on the track, making a jump scene and then making a frontal turn. FPV drone pilots take pictures with upwardly inclined camera movement techniques. Tilting upwards is the movement of the camera vertically that looks up from the ground up, this movement is used to drive the eyes of the audience in a particular activity on the theme of the driver maneuvering. Therefore, the camera moves continuously from bottom to top without changing the size of the image, the shooting angle only changes, from normal angle to low angle. Shooting or camera angle from this angle is shooting from a low angle onto a photographic object. This recovery technique is performed by placing the camera in a position below the shooting object. Essentially, the imager has a lower angle than the object. The function of this technique is to create the character of the driver's object in a view of powerful, powerful-looking objects and in a camera shot that is seen in a superior perspective. This perspective is also impressive because the rider's object seems to be larger than the audience.

From the various camera movements that the drone uses, it is certainly not separated from the creativity and skill of the pilot (operator) of the drone itself. In this case, the

drone invites us to know the reality that cannot be achieved by the vision of man in general.

4. Conclusions

FPV Drone is one of the alternative tools to create camera movements in sports documentaries. One of the sports documentaries that is highly enjoyed by the global community is the annual Redbull Rampage event on the Redbull Bike YouTube channel, which has been watched by over 1 million viewers. Redbull Rampage is a freestyle mountain bike competition with a natural steep mountain track. When accelerating on the track, pilots perform extreme maneuvers to overcome the obstacle. Camera movement and camera angle are required to provide a different experience for the audience. In this case, FPV Drone with First Person View is able to provide a more immersive experience to the audience. In order for the audience to continue, you can feel the tension, the fear, in every extreme action of the drivers.

Based on the analysis of camera movement by panorama, tracking, titration and crab in the video documentary Redbull Rampage 2021, it was concluded that every movement of the camera plays a diverse role. Any camera movement technique can affect the dramatic speed of each scene/action. This is because with any type of camera movement, there can be variations in the type of shooting and different image sizes. If the camera is in motion or moving, it will certainly affect the image size of the image and the angle of the camera, so the impression created may vary. In documentary sports, especially in extreme sports such as Redbull Rampage, FPV drones are useful for generating camera movements and hard-to-reach camera angles such as tracking and high-angle techniques.

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