

The Dispositifs of the Eye in the Sky & the Ambivalence of Liveness

Nowadays in-flight entertainment systems are frequently the means for service differentiation amongst airlines. The systems on offer are increasingly complex effective of technological convergence that brings film, television, radio in addition to many other media to the viewer through a single platform. An interesting case in point is the the closed circuit TV system (CCTV), commonly referred to as Eye in the Sky, that provides airline passengers a pilot and/or panoramic view of the aircraft in flight. The medium is literally used in this instance as tele-vision, extending the vision beyond the contour of the aircraft cabin. The service holds a theoretical springboard into the character of liveness, a central concept in television studies.¹

Within the context of this essay, the Eye in the Sky service will function as a theoretical object for the discussion of the two overlapping viewing situations, or dispositifs, that incorporate live footage from outside the aircraft differently. My objective is to expose, what I call, an ambivalence of liveness through the role of that the Eye in the Sky fulfills in the paradox of movement/stillness faced by passenger aviation. This paradox concerns that the aircraft is a mode of transport that needs to bring these passengers to their destination. However, the noise heard and movement felt by the passengers in the cabin of the aircraft is experienced as frightening. In short, passengers prefer a “comfortable stillness and quiet flight” without felt plane movement (Govil 248).

My use of dispositif is in debt to Frank Kessler who suggests the *dispositif* as a heuristic tool for the study of the function and functioning of media through analyzing its production of a “(temporarily) dominating configuration of technology, text and spectatorship” (61).² Herein it is necessary to consider the viewing situations, mode of address, institutional framings as well as technological basis (*ibid.*) The in-flight feature manages to trump the general angst that corresponds to these instances of movement by employing two interwoven spectator intentionalities pertaining to liveness. It manifests in the tourist dispositif and the entertainment dispositif. Both set-ups include liveness with the goal to contribute to the stillness and minimize the anxiety effects of cabin-felt motion.

More specifically, I will begin by offering a diachronic consideration which traces the history of the Eye in the Sky back to Astrovision and its touristic imperative to Zeppelin tours. I then identify and set out the touristic dispositif in the Eye in the Sky which, in part, draws on the sublime, but the constant stream of moving images can also fall to repetition in this instance. Both contribute to the comfortable stillness of flight. Then, I offer a synchronic consideration which compares the inflight feature to motion simulator rides at theme parks and early travelogue film. Herein the entertainment dispositif of the Eye in the Sky will be made apparent. Following, the discussion of the two dispositifs that I have distilled from the same onboard service will be recapitulated. The comparison to travelogue films and motion rides simulators is then used to pinpoint an ambivalence of liveness. In conclusion it will be stated that liveness is most fruitfully assessed in due consideration of the dispositif in which it operates.

The Birth of an Exhibition Site

When the aviation industry was coming into existence, the film viewings in the cabin were nothing more than commercial stunts. In the article “A History of Inflight Entertainment”,

¹ These days, however, it operates much less as ontology, but rather is a constructed ideology (Feuer 1983).

² Kessler suggests it in specific for a historical investigation of a medium.

John Norman White states, "All performances [of early in-flight entertainment] were designed to become events within themselves, not specifically to entertain passengers" (np).³ A variety of film screenings onboard airplanes were planned as media events in the earlier Forties. These events were organized in attempt to capitalize on the media interest for the emerging business sector of passenger aviation. The first known instance of film being projected in the air is such a case. In 1921 an eleven-passenger hydroplane used a DeVry projection machine to show "Howdy Chicago!" in an Aeromarine Airways flight above Chicago.⁴⁵ Aeromarine Airways was specialized in aerial sightseeing, offering panoramic views from the sky. During the flight of 1921, the passengers onboard were shown highlights of Chicago on a single large screen in the cabin as they flew above the city. The event was meant to promote Chicago.

The aircraft was only later recognized as an exhibition site which deserved this label in debt to the efforts of film exhibitor David Flexer. In the Fifties the declining attendance at cinemas encouraged Flexer to seek non-theatrical exhibition spaces (Groening 7). He came-up with the idea of in-flight film and established Inflight Motion Pictures Inc. (IMP). In 1958 Flexer managed to convince Trans World Airlines (TWA) to experiment with airborne film projection (Groening 7). As a regular service to customers in-flight entertainment systems did not take off until July 19 1961⁶ when TWA purchased the first standardized in-flight movie system from IMP. A single screen was installed in first class and 16mm films were projected on it.

The use of the Inflight Motion Picture system by TWA, and later United Airlines initiated inflight entertainment competition. A primary source of that time clarifies the situation: "American Airlines and Pan American Airways have felt the pressure of entertainment competition and have had to find a 'new medium' " ("Cost").⁷ In mid-August 1964 American Airlines purchased the "Videoflight" video tape recorder (VTR) PV-100 Astrovision system from Sony and contracted them to install it on forty-seven of its Boeings

³ Equally Michael Gubisch finds that the early viewings onboard aircraft were initially not meant as means to counter boredom, but rather were used as a means to bring attention to the premier of the films opted for projection in the press (23).

⁴ I have some reservations as to the accuracy of this statement as it suggests that the potential for the use of inflight movies was not recognized as means for entertaining passengers. The caption of the photograph of the flight of 1921 showing "Howdy Chicago!" published in the *Aerial Age Weekly* of August 29 1921 concluded: "The historic flight demonstrated the practicability of movie entertainment for transatlantic aerial commuters in the days to come." The blurb indicates that this earlier flight anticipated the use of Inflight motion pictures for transatlantic flights. *Aerial Age Weekly*, of August, 29, 1921. Vol.13. No25, p.584.
<<http://www.timetableimages.com/ttimages/aerommmov.htm>>

⁵ The first known account of television onboard an aircraft was on May 1932 there was a press demonstration by Harry Lubcke, Director of Television for the Don Lee Broadcasting System, of a self-synchronized cathode-ray type television receiver in Western Air Express F-10 flight above Los Angeles. It received images from the W6XAO Don Lee television station on the ground. The airplane was a good means to show that the Lubcke teleceiver was no longer dependent on city power lines for television synchronization (Pickering).

⁶ ("Aviation: The High See").

⁷ The International Air Transport Association attempted to ban in-flight entertainment in the years 1964-5. The reason for the ban is most likely the fear of raised fares. An article in *Flight International* from February 1965 vocalizes the fear that existed that in-flight entertainment would be used by airlines as an excuse to either raise their present fares or not consider reduction of prices ("Cost"). Foreign carriers wanted to ban in-flight movies because they found that the benefits reaped from showing movies onboard did not correlate to the costs ("Aviation"). The Civil Aeronautics Board rejected the proposal on June 1 1965 arguing that they thought IFE had considerable benefit to the public and disapproved the ban ("Aviation: Victory for Movies": "CAB": "Cost"). The entertainment systems were suddenly seen as a competitive advantage in the industry and used as marketing strategy ("Coffee").

("Aviation: The High See").^{8,9}

Astrovision was then seen as a worthy investment by American Airlines to compete with the IMP system for three main reasons. First off, there was the relative simplicity of using video tape recorder for the flight attendants. The 8mm and 16mm film projectors common to airborne entertainment at the time were found difficult to use by the flight attendants as the film would often rip or roll off of its reel ("Sony History").¹⁰

Moreover, it offered passengers more entertainment diversity. Astrovision was not simply about watching in-flight *film*, but the system actually constituted in-flight entertainment through the technological convergence of film, television and radio. The system was described in October 1964 by the *TIME* as, "quite a variety-show offering: closed-circuit TV pictures of takeoffs, landings and scenery below, full-length movies, local TV shows while waiting on the ground and stereophonic music for traditionalists" ("Aviation: The High See"). The Astrovision system provided live video images from exterior cameras. The application of viewing sites en-route is similar to the 1921 flight above Chicago. Unlike travel promotional programs these two in-flight instances held, or forged, a direct relation between the location of the aircraft and the images the passengers could see. They hereby fulfilled a service closely akin to the sight-seeing tours offered by the Zeppelin. It should be noted that with each new medium a new *dispositif* emerges.

Lastly, the system was made-up of nine-inch video monitors shared by two in first class and nine passengers in coach ("1960s - American"). Twenty-six TV monitors were placed in the overhead luggage compartments. Compared to the common practice of placing an overhead screen in the middle of the cabin, as with the IMP system, the smaller screens facilitated a more private viewing experience (McCarthy 2003: 137).

In practice, the system had several major disadvantages. The VTR system had inferior sound quality as a result of copying sound to magnetic tape. Additionally, color television was becoming the norm, the fact that the system was black and white turned into a major disadvantage (Gubisch 24; White). Whilst having a system with multiple systems was to the advantage of passengers, it was a considerable disadvantage to the airline as the system was rather heavy. Although fuel was cheap at the time it pushed costs up (White np). These disadvantages proved unsurmountable and after just a few years in operation, American Airlines gave up video purchasing a 16mm color project system named "Astrocolor" in 1967 made by Bell and Howell.

The Tourist Dispositif

Having highlighted the major moments in the history of in-flight entertainment the emergence of exterior aircraft cameras can be understood as the consequence of American Airlines eagerness for a competitive edge on the IMP system through medium diversification. Fast-forward to the present day where more and more in-flight systems are being equipped with the Eye in the Sky application, the Astrovision CCTV remediated in color. Just like the Astrovision, it is rooted in a touristic imperative. In the paragraphs to come, I identify and explore what I call the tourist *dispositif* in the Eye in the Sky. Herein I illustrate the way in

⁸ The source equally indicates that Pan Am had a single Boeing aircraft fitted with the system. Gubisch mentions that "Rivals American Airlines and Pan Am reacted with a different strategy and thereby helped video to a premature birth" (26). It remains, however, unclear if Pan Am purchased the system in the end or that it was a single instance. The "Sony History: The Airborne VTR" mentions installing them in both American Airlines and Pan Am. As the account from the Flight International magazine is most specific, and a primary source, I understand it as more accurate.

⁹ The short article in the Flight International refers to it as "the new Videoflight closed-circuit system" and mentions that "Videoflight has been developed by the Sony Corporation of America to the requirements of American and Pan Am in the remarkably short period of three months." However, later they mention the aircrafts being fitted with "Astrovision." The Sony Corporation had a subsidiary called Videoflight Inc. which was established in 1964 and whose primary role at the time was to transfer films to Sony video tape.

¹⁰ In theory the open-reel tapes of the VTR system were supposed to allow for forty times use, but in practice they had to be replaced after a single viewing as the material was poorly handled by cabin crew ("Sony History").

which the exterior aircraft cameras can contribute to a still travel experience perpetuated in part by liveness.

The Eye in the Sky can manifest in various ways depending on the placement of the cameras mounted to the exterior of the aircraft. Some airlines are equipped with a nose-camera alone, but a series of combinations exist with either wing cameras and/or tail camera exist. The wing camera and the tail camera are suited best for panorama views and landmark sightseeing and I find them part of the tourist dispositif.¹¹ They extend the passenger vision and give access to an over the shoulder view of the land and cloudscape. The passenger becomes a voyeur. The panoramic moving images delivered by the tail and/or wing mounted camera contribute to comfortable stillness, in part, through the sublime of the tourist dispositif.

During the flight the breathtaking scenery can be viewed from the tail camera or wing camera. To Joseph Addison and Edmund Burke, "The sublime [as an aesthetic strategy] was constituted through the combined sensations of astonishment, terror and awe that occur through the revelation of a power greater by far than the human" (Bukatman 255). The way that the sublime is structured in the Eye of the Sky is through the continuous wide angle shot from the tail camera which offers a view of the aircraft (Technology), a power greater far than the human, taking control of the skies (Nature). It captures the gigantic capsule penetrating the cloudscape with below the riveting view of limitless land/ocean and, at times, the aircraft casts a large, and astonishing, shadow on the ground below. The camera from the wing camera provides equally impressive land- and cloudscape views. The sublime underscores what was earlier referred to within the stillness/movement paradox as "the comfortable stillness and quiet of flight." It suspends in time.

Then closely tied-in with the touristic imperative of the dispositif is the repetitive sequence of the moving images from the exterior cameras. As the flight cruises from point of departure to destination these images stress repetition, predictability and the mundane. In addition to re-establishing a connection to the act of travel through portrayal on the video screens, the repetition in the image during flight is mundane and uneventful. The effect of repetition is well described by Anna McCarthy in regard to the TV sets in the waiting area:

This kind of proposition about television's relation to waiting - the idea that it transforms the experience by providing and edifying distraction - ignores the possibility that the program's perpetual cycle introduces a jarring sense of conflicting temporalities into the waiting room [...] As a bubble of machinelike, unvarying time, the waiting area's programming loop foregrounds the structure of access, duration, and delay in the waiting environment, heightening, rather than diminishing, awareness of the duration of the wait for those who sit in its presence. (197-8).

What the passenger effectively sees when they select the exterior camera channel on their in-flight entertainment system is the aircraft flying amongst the clouds above land- and/or waterscape. Little changes in the overall picture and, as is the case with the waiting room TV set, the "programming" is looped. This is an act of what Erwin Panofsky described as the temporalization of space, not exactly a desired effect in relation to in-flight entertainment to make time onboard fly. However a positive implication is that the expectation of change is subdued and thereby it could be suggested that the banality can be linked of a feeling of safety. The extended visions from outside the aircraft during mobility represents stability and thereby safety. People are not restricted to this channel, but can switch to it and see for themselves the aircraft seemingly motionless above land or water.

¹¹ Airlines also use travel promotion programs, but then as a "window in potential future" (Groening 7). There programs are part of a marketing strategy that aims to have people visualize themselves visiting the exotic destinations shown onscreen. There are not directly related to the sites below, although sometimes short films are shown as means of introduction to the country of destination. They operate through the medium film rather than television and bear no concern to liveness whilst the Eye in the Sky employs this potential.

Whilst I have referred to the tourist dispositif as contributing to achieving this ideal of “comfortable stillness and quiet of flight”, the paradox resides in the irony that passengers also need some reminder of movement. This is visualized most explicitly in the in-flight moving-map system, commonly referred to as “Airshow.” It provides travelers a map of the journey and with real-time flight data traces the progress of the airplane. Through the Airshow moving map system the stillness of the journey is emphasized whilst at the same time reminding passengers through data visualization that the flight is on track and in motion (Govil 246-8). The actual encounter with movement, as to be discussed, can be dealt with in a different fashion.

The Entertainment Dispositif

The mediation of simple cruising above the land- and cloudscape has a different bearing to liveness than that of take-off and landing. The felt movement and experienced turbulence cannot be prevented, but in the Eye in the Sky put cleverly to use. The danger is downplayed as take-off and landing are positioned as entertainment. In the following paragraphs the ambivalence of liveness will become apparent through the comparison of the entertainment dispositif to motion simulators at theme parks and the travelogue films of *Hale's Magnificent Tours*. The examples have a similar configuration of technology, text and spectatorship to the entertainment dispositif of the in-flight entertainment service. The affordances of the material technology are somewhat noticeably different as airline passengers have access to multiple aerial views and channels. They have some power over the dispositif, which is not the case in motion simulator rides and travelogue films.

Through the comparison it will become clear that liveness deserves the descriptor ambivalence because liveness can be used to reassure passengers as well as heighten thrill. It oscillates between everyday routine and the unexpected. Both travelogue films and motion simulators operate within the theme of travel and are examples in which film simulates liveness to heighten thrill.¹²

There are two main configurational changes that take place in the switch from the tourist dispositif to the entertainment dispositif. Compared to the tourist dispositif the *text* has changed in mode of address: from a voyeur in the moving images from the tail and wing camera to the main character (second-person narrative) in the footage from the nose camera. Moreover, the entertainment dispositif is anchored in take-off and landing, when the passengers feel the aircraft's movement. These moments are anticipated as threats to the stillness of flight.

It is true that passengers can select to view take-off and landing from the tail view. This viewpoint prompts the second-person narrative position rather than the first-person narrative characteristic of the entertainment dispositif. Equally, the nose camera can be accessed mid-flight, but this does not result in an entertainment dispositif which has been explored as a given *configuration* of technology, text and spectatorship.

Shortly after the commencement of taxing, passengers are confronted with the roaring engines of the aircraft as part of take-off. The movements and turbulence experienced create physical symptoms like popping ears and a light feeling in the stomach. Many people experience some stress during this stage of the flight. Writing about the Astrovision, the predecessor of today's Eye of the Sky, Groening found that it “helped turn the most dangerous (and therefore exciting) part of passenger air travel into a contained piece of entertainment, a thrill to witness” (8). Airlines cannot prevent passengers from feeling movement in take-off and landing, however, the use of live footage that roughly aligns itself to the pilot's point of view translates these very real dangers to a source of entertainment.

Because the footage from the cameras outside the aircraft is fed live to the passengers, there is a natural interplay between what the passengers feel in regard to turbulence and what they see happening. This interplay is not natural to travelogue films and

¹² It is equally an ideology employed by television itself.

motion simulators. The airplane seats embody a dual function: its primary role is to offer a seat to passengers while they are being transported to their destination in addition it is employed as a source of entertainment.

The text of the travelogue film and motion simulators is most significantly different from the *Eye in the Sky* in that they both deal with the medium film rather than television. However, particularly at theme parks the motion simulator rides, to heighten thrill, they stage a catastrophe shortly after the visitors have entered the ride. How this thrill works is described by Huhtamo who writes “the need to master the technology was turned into a ritualized game, a reenactment of the struggle between control and catastrophe; the outcome (except in those rare cases when an actual accident happened) was known in advance” (174). The institutional framework in which the motion simulator operates positions the text to be read/experienced as entertainment. This thrill is experienced knowing that everything will return to status quo soon the medium film is not live in a technical sense, all has been pre-recorded. This is done because liveness proclaims that anything can still happen. However, through function as a catalyst to the excitement, the liveness has been simulated.

The unfolding of the ride's narrative happens, like the nose camera of the aircraft, in first-person narrative. The film projected before the simulator, often decorated to match the fictional world of the story (i.e. at the *Back to the Future* ride at Universal Studios visitors step into a DeLorean car), is from the perspective of the park visitor. Like the entertainment dispositif of the *Eye in the Sky*, the story is told in second-person narrative. Whilst the body remains in place before the screen, stirred by the movement of the carriage, the spectator experiences virtual mobility through an illusion of transport (Friedberg 186). The simulation of liveness is not contained to the images enclosed by the frame of the screen. There are staged waiting areas and informative videos prior boarding the simulator which also helps regulate the flow of park goers and turn waiting time into part of the attraction as well (Huhtamo 171; Rabinovitz 57). The visitor is as if sutured into the fiction world.

In the *Hale's Tours* travelogue films the viewing situation was very similar. Spectators sat in mock-up train carriages that jolted. Sound effects were introduced to mimic the real life experience of train travel as if it were happening now. The set-up was an attempt to for the carriage to immerse into the virtual world trapped in the screen's frame. Lauren Rabinovitz describes the effect of the set-up of *Hale's Tours* as follows: “[The travelogue films] attempted to dematerialize the subject's body through its extension into the cinematic field while they repeatedly emphasized the corporeality of the body in all its fixity and in the physical delirium of the senses” (42).

In front of the carriages there is a motion picture displaying scenes from around the world filmed predominantly from the front of the train. This visual perspective was used to contribute to the thrill. The movement of the carriages helps pretend that what is being seen is happening at the moment. However, “It was not unusual for the films to cut regularly to the interior of a railroad car, producing a 'mirror image' of the social space in which the ride film patron was seated. These films were not purely travelogues, then, but were also about the social relations and expectations connected with the experience of travel” (Rabinovitz 51). The use of multiple perspectives already hints at the ambivalence of liveness as they draw on more mundane aspects of travel (i.e. social relations) which aligns it to routine and acts as comforting. To paraphrase Tom Gunning early travel film as such became a mode of transportation (30). Inverting Gunning's words to comment on the *Eye in the Sky*, the mode of transportation becomes itself cinema.

Conclusion

In a phase of experimentation in-flight entertainment was about staging media events to create publicity for film releases and inventions. When Flexer discovered that film could be a way to entertain bored passengers onboard flights he set up IMP, in collaboration with TWA. This partnership positioned IFE as a means for differentiation and a means to acquire an edge over competition. American Airlines' response to the IMP system was by providing more

diversity to the programming employing film, television and radio into one entertainment system. Astrovision emerged from this competitive arena and included the closed circuit TV system that has re-surfaced in present-day commercial passenger aviation.

The multiple camera viewpoints from outside the aircraft that airlines can and at times through an Eye in the Sky service, demonstrates a fascinating potential of liveness. My brief historical consideration aligned the system in part to the touristic imperative of Zeppelin sight-seeing tours and Astrovision. The manifestation of sight-seeing through the remediations of new media constantly alter the dispositif through novel affordances and are worthy of more in-depth study, which has been beyond the scope of this essay.

My concern has been with the tourist dispositif of the Eye in the Sky. It operates in part through the sublime. There is a limited duration now how long the awe effect in the panoramic view of the underlying landscapes and enveloping cloudscape can last. The video feed from outside the aircraft can become repetitive and heighten boredom. In effect, underscores the comfortable stillness and quiet of flight.

The configuration of technology, text and spectatorship can be different in take-off and landing i.e. if the channel is switched to the nose-mounted camera. This visual jump to another perspective changes the mode of address to a second-person narrative. The way the passenger is positioned in relation to the images on the screen, the corresponding movement on the aircraft to this video feed distracts passengers from the eminent danger by staging the dispositif more akin to the institutional framework of entertainment found in the travelogue films of *Hale's Tours* and motion simulator rides at theme-parks.

The crux this essay has been about how liveness in the Eye in the Sky operates in function of the paradox of movement/stillness through two dispositifs. In the tourist dispositif liveness operates through awe and possibly boring in its repetition. The aircraft is relatively still and en-route breathtaking landmarks can be observed. During the turbulent periods of take-off and landing passengers can be alleviated from some of the experience of through the entertainment dispositif which trumps anxiety by positioning the moving images as entertainment. These dispositifs have employed liveness in service of the stillness of flight. This in relative opposition to travelogue films and motion simulator rides where liveness is simulated to heighten thrill. To understand how liveness works should therefore always be examined in good consideration of the configuration of technology, text and spectatorship and institutional context in order to make a meaningful analysis of its function and implications.

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