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During the late seventies and early eighties the consumer videocassette market was dominated by the “format war,” which saw Sony’s Betamax and JVC’s VHS battling one another to become the standard. Considering this business climate companies hoping to enter the videocassette market needed to present a progressive and unique product. While portable formats had been introduced fairly early in the establishment of the video field with devices like Sony’s PV-100 in 1964, the term ‘portable’ remained relative to the massive size of professional equipment, meaning much of the portable equipment was not exactly ideal (Hain). As a company that may have felt particularly threatened by the growing field of video technology, Technicolor attempted to enter the market with a previously unexplored slant on the videocassette; the compact videocassette. The Technicolor 1/4 inch Compact Videocassette is considered to be the first miniature format and a format that, although short lived and unsuccessful, utilized a model of compactness that is commonplace in today’s equipment. (Business Week).

Although most commonly referred to as the Technicolor CVC, or even just “The Technicolor format,” ownership and development was actually a collaboration between Technicolor and the Japanese company Funai. According to a history outline from the Technicolor Corporation, prior to the CVC they were involved only with the medium of film and issues and technology pertaining to that medium. Considering that in 1975 they had, for the time being, produced the last film print using a three strip method (in 1997 they introduced a modernized version of the dye transfer process), it is probable that the

company was uncertain about their future in film and looking to initiate themselves into the video industry, which was rapidly developing. In light of Technicolor's limited engagement with the videocassette field, their collaboration with Funai was logical. Established in 1961, Funai was, and remains, known as a developer, manufacturer and distributor of communication based equipment. They often produce equipment that is branded with lower quality names or brands directly associated with chain stores (Wikipedia). The relationship between Funai and Technicolor was essentially one of re-branding: Technicolor had a recognizable brand that, although not associated with the video or consumer market was familiar and firmly planted in the cultural lexicon. They did not have the resources or expertise to create a product like the CVC, which, although not as recognizable as a brand, Funai did have.

There is some discrepancy between sources regarding the year of the Technicolor Compact Videocassette's introduction. European sources such as Richard Diehl of Lab Guy's World and Silicon Chip claim the equipment was available in 1980. American sources, such as Vidipax, claim it was introduced in 1984. The established introduction of the format to the professional video community in the United States was at the 1982 Winter Video Showcase, which took place in Las Vegas in January of that year (CED Digest). It is possible that the 1984 date is the year it was introduced with the Technicolor logo to the American public. The 1980 date most likely correlates with the product's introduction in other, worldwide markets. Further confusing the issue, a Business Week article from 1981 claims that Technicolor was the "first off the mark" in the United States distribution of CVC's, and had begun their sales "last fall" – meaning 1980. However

the focus of this article was Japanese manufacturers, so it is possible they were referring to manufacture in the U.S., as opposed to consumer availability.

Quarter inch tape had previously been used in the Open Reel 1/4 inch Akai VTR. The purpose of using smaller tape was to reduce the size of the playback device. Upon its introduction in 1969 the 1/4 inch Akai was the lightest of its contemporaries (Vidipax). The Technicolor CVC recognized this possibility of portability through the use of smaller tape. The 1/4 inch CVC was similar in size to an audiocassette, making the CVC just one third of a full sized videocassette. They were housed in durable plastic casings, the dimensions of which were 4 by 2.5 by .5 (Sharpe). A manual for the 335T model puts the weight at just two ounces (Vidipax). The compact videocassette was registered on a low bandwidth and the maximum record time at optimum recording quality was just thirty minutes. They ran at 1.26 ips, with a resolution of 240 lines and an audio rate of 40 decibels with an audio frequency response of 100 to 8 hertz (Video Interchange).

The compact size of the videocassette allowed for the matching recording and playback devices to be significantly smaller than other mechanisms. It is suggested that the format was intended to be the video replacement for 8mm (BeeJay). Two models of recording devices were introduced to the market, the 212E and the 335T. The 212E measured approximately 9.4 by 10.24 by 3.14 in inches, and weighed just 7.17 pounds, making it physically comparable to quality audio recorders of the era. Other portable machines sold around the same time were usually full sized recorders and therefore tended to be nearly twice, if not more, the size and weight. The closest in regards to compactness was the Akai VT-300, which was introduced in 1977 and weighed 13.7

pounds, with dimensions of 11.4 by 9.84 by 4.72. Portable Beta and VHS recorders that were introduced prior to the 212E were gigantic in comparison, with the Sony SL-3000 weighing 20 pounds with dimensions of 13.77 by 11.8 by 5 (Hain)¹. The Technicolor CVC 335T model included a 7.5-inch color television display that allowed for monitoring during recording, immediate playback, and recording off-air material. This added a significant amount of weight, bringing the unit up to 24 pounds, however if one wanted an immediate playback device while doing fieldwork, it was the most portable option (Vidipax). Technicolor issued a camera with the device, a JVC GX-44E. The JVC camera ran off a vidicon tube, which were common at the time. According to BeeJay of Vintage Video, “The vidicon can't produce a picture in poor light, which rather limits its usefulness as a home movie system.” Despite this matching camera, the system was outfitted with a standard 10-pin camera input that was compatible with “any camera of the day” (Hain).

While it is difficult to find first hand accounts or entries in consumer guides regarding what the Technicolor CVC was ultimately used for by those who purchased it, the manual for the 335T, which is viewable on the Vidipax website, suggests a focus on small businesses as users. In the manual, it is noted that the monitor provides “instant video playback – anywhere, anytime . . . whether in a car, conference room, or your favorite chair at home” (Vidipax). One of the progressive aspects of the 212E and 335T was the inclusion of a feature that allowed post-recording sound dubbing. Technicolor suggests that this is useful for “adding of narration or music via microphone to home video movies, sales presentations, or educational tapes.” Their language puts a clear

¹ The measurements that appear on Hain’s website are in centimeters and kilograms. The above measurements are converted to inches and pounds for consistency.

focus towards a user that would not need professional level equipment and would not have the skills to operate difficult equipment. Although it is claimed that the CVC was meant to replace 8mm, the price of the equipment upon its introduction was \$1500, which for most novice home videographers, would be unaffordable, making it likely that the devices were sold mainly to business and educational markets (Silicon Chip).

While the idea of the compact videocassette was progressive and is a size model that is evident in contemporary formats there were many fundamental problems, particularly with the recording devices, that contributed to the quick obsolescence of the format. The largest problem with the CVC was its limited running time. In an attempt to expand the runtime of CVC's, the West German company Grundig, whom at that time Phillips held some shares of, produced the VP-100, which ran CVC's at a slower speed than the Technicolor device (Hain). Obviously the extended runtime came at the expense of the image and was not a suitable substitute for a high quality videocassette with a lengthier runtime. The CVC's incompatibility with other devices was another significant problem. Technicolor and Funai did not issue adaptors for their CVC's, which meant that the consumer had to use specialized CVC devices for recording as well as playback, or the tape had to be transferred to another format.

According to sources that are familiar with the inner workings of the devices, the 212E and 335T, internally, are impressive (Silicon Chip, Diehl). However, the external design and user functions of the mechanism had several lacks that effected the ease of use and greatly limited editing control. The devices had no power switch and went into record mode when the CVC was inserted (Hain). While not one of the prominent issues, this type of operational mode requires the operator be prepared to shoot prior to inserting

the tape, which is difficult on the operator and requires precise shot set-up. The most often discussed drawback of the design of the 212E and 335T was the lack of a pause function. In lieu of a pause function there was a switch on the side of the machine which changed the mechanism to “still-mode while playing,” and made the tracking knobs act as “variable speed control” that allowed the picture to go from still to slow motion to rapid motion. This, however, was more of a playback function, as opposed to the “record-pause” function users would expect from a recording device (Hain).

Along with the problems inherent to the device, the Technicolor CVC also fell victim to competition from established names in the videocassette market that introduced the camcorder around the same time. Although the Technicolor 1/4 inch CVC supposedly put in an effort to replace 8mm film, Sony was more adept at this task with the introduction of 8mm or Video 8 in 1984. In regards to branding, the name of the product offers immediate familiarity to the consumer, albeit updated to the modern video format. Making a name choice like this, which aligns a new product which consumers may not fully understand or be ready to accept with a traditional piece of equipment that consumer had long been comfortable with, was a wise decision on Sony’s part. The format offered a longer running time than the CVC, up to 90 minutes in PAL and 120 minutes in NTSC, and also offered the option to record in LP mode to extend the run time, although at the expense of the image (Wikipedia). The chief competitor of Video 8, VHS-C, also had some distinct advantages over the CVC, and some differences from Video8, which caused a market split. Although a slightly larger format than Video8, one of the greatest innovations VHS-C offered the market was the capability to work within full sized VHS machines through use of an adaptor (Wikipedia). This allowed the

consumer to use the new equipment with machinery they may have already owned, making it financially appealing.

The chief advantage Video8 and VHS-C had over the Technicolor CVC was that they were designed for camcorder equipment, which was a single machine operating as both camera and recorder. Combining the two pieces of equipment marked a significant change in the home recording market. Video8 was introduced along with Sony Japan's introduction of the Handycam camcorder, and VHS-C was designed for various camcorders. Even upon Technicolor's entry into the market, the industry was aware that the technology for camcorders was near completion. According to an article in Business Week, even the Technicolor Company considered their product to be a "stop-gap" in the transition towards camcorders, with the president of Technicolor's Audio Visual Division, Jack W. Minor, admitting that the single unit was the only logical option and that the company was "just a couple years away from that." This raises the question of why Technicolor would bother releasing a mechanism that even they realized was unsuitable. The answer to this may be clear by the considering the statements made by Canon Inc, a company mainly known for film cameras, in the same article. Canon released the same compact videocassette product as Technicolor in the Japanese market and had gained the rights to enter the US market, although it is unclear whether that happened. According to interviewed sources, Canon invested in the two-piece system in an effort to "establish itself as a video-camera company in order to have a voice in standardizing camera-corders." Considering the similarities between Canon and Technicolor in regards to their company identity and minimal work with the videocassette market, it is likely that Technicolor's intentions were similar to Canon's.

While this, on the surface, seems like a wise business move, ultimately the technological jump from two unit systems to camcorders happened too soon after Technicolor 1/4 inch CVC's entry onto the market for Technicolor to establish their brand. While the company's interests seemed to lay more with the compact videocassette format as opposed to its corresponding devices, their introduction of nearly outdated device upon market entry was a decision that expatiated the obsolescence of the CVC and likely hindered their future entry into the camcorder market.