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## **My Father Was an Engineer**

For a generation of Americans, the name “DuMont” stood for innovation, entertainment, and an exciting new medium called television. After World War II, when television took a rapid hold of the country, many people first watched TV on DuMont brand sets, the best receivers that money could buy. While it made its mark as a manufacturer, DuMont Laboratories was most familiar to Americans as the parent company of the DuMont Television Network. In 1946, DuMont used its New York and Washington, D.C., stations as the foundation for one of America’s first television networks. The DuMont network eventually reached from coast to coast. Jackie Gleason got his big break on DuMont, where he and his writers created “The Honeymooners.” Other DuMont stars like Bishop Fulton Sheen and Morey Amsterdam, along with fictional characters like detective Rocky King and the children’s space hero Captain Video, helped Americans make sense of the postwar world and shaped the television programming that followed.

By the middle of 1955, DuMont Laboratories was in shambles and the network ceased operations. Allen DuMont was forced to relinquish control over the company that he founded in 1931. No other company challenged the three-network oligopoly of NBC, CBS, and ABC until 1985, when Rupert Murdoch purchased six stations as the foundation for his new Fox Television Network. The DuMont

story concerns money, power, politics, business, and the birth of commercial television in America. It shows how three large radio networks took control of television broadcasting from 1946 to 1955. Like pioneering entrepreneurs in other industries, from automobiles to computer software, Du Mont and his company were swamped by bigger, tougher competitors. But CBS, NBC, and ABC were not the only parties responsible for the DuMont network's extinction. The Federal Communications Commission (FCC), Paramount Pictures, DuMont's executives, and Allen Du Mont himself all played important roles in the network's many successes and its ultimate demise.

Like much on early television, DuMont programs displayed a charming and somewhat innocent faith in the power of television to enhance the lives of viewers and to help bring about a safer and happier world. This optimistic view of television was most clearly articulated by Allen Du Mont, the head of the company and one of the people most responsible for the postwar introduction of television. The key to understanding how the DuMont network operated, including its successes and failures, begins with the man on top of the DuMont Laboratories television empire. Trained as an engineer, Allen Du Mont had a gift for working with electronics, starting with his first jobs as a production manager at Westinghouse and then at the De Forest Radio Company during the 1920s. Facing unemployment in 1931, Allen Du Mont started DuMont Laboratories with \$1,000. He operated out of the basement of his Upper Montclair, New Jersey, home. Initially, DuMont developed cathode-ray tubes used to display electronic images in instruments. In 1937, the company bought a new factory and moved into television. DuMont's tubes, which could display a TV picture without quickly burning out, made commercial television possible. Historian Les Brown explained that "Du Mont transformed the cathode-ray tube from a fragile, short-lived device to a reliable piece of equipment around which practical TV receivers could be built."<sup>1</sup> In 1938, DuMont began to license its picture tubes to other manufacturers and added a line of receivers to its electronic instruments, establishing itself as one of the country's first manufacturers of TV sets. During World War II, DuMont also built an experimental station in New York which served as the DuMont network's flagship when commercial television was introduced to the country after the war.

DuMont's slogan, "First With the Finest," referred mostly to the company's receivers, which had a reputation as "the Cadillac" of television sets, but DuMont also manufactured high-quality equipment, such as cameras and transmitters, used by television stations.<sup>2</sup> By 1950, DuMont Laboratories had annual sales of \$76 million (approximately \$580 million in 2003 dollars).<sup>3</sup> Allen Du Mont became a folk hero, widely praised for his accomplishments as an inventor and manufacturer of high-quality television equipment. He was also a prototype of the successful American entrepreneur, demonstrating, in the words of *New Yorker* writer Robert Rice, "perseverance, equanimity, intelligence, physical energy, loyalty to associates, devotion to his family, and the strength of mind to be able to refrain from taking more than one cocktail at lunch."<sup>4</sup> Du Mont was a favored speaker at luncheons for professional associations and businessmen. As an executive, he also won awards from a variety of outfits, including *Forbes* (Outstanding Business Leader, 1951) and the American Schools and Colleges Association (Horatio Alger Award, 1949). Du Mont's alma mater, Rensselaer Polytechnic Institute, awarded him an honorary Doctor of Engineering degree in 1944. Throughout the 1940s and early 1950s, magazine articles widely credited Du Mont as a technology guru who also understood the business of TV.

Despite his prominence, Allen Du Mont was not a gregarious or magnetic leader. A typical magazine portrait cautioned that "if one expects to meet the dominant, loud tycoon type, he will be disappointed, for Du Mont is mild, retiring, friendly." The *Popular Boating* profile also noted that Du Mont was not physically imposing. The "short, stocky man" walked with a noticeable limp, left by a childhood polio attack.<sup>5</sup> Even when he started to make money from DuMont Laboratories, Allen Du Mont was not flashy. As the *New Yorker* observed in 1951, "Extreme conservatism governs almost everything he does. He has owned automobiles [from] the same manufacturer (Chrysler) for twenty-five years and has seldom driven any one of them more than fifty miles an hour . . . For the last couple of years, his wife has been urging him to redecorate his office, which contains the same furniture that he has used for years."<sup>6</sup> According to Du Mont's daughter, Yvonne DuMont Stelle, her father did not entertain people from work or bring company business to the family's northern New Jersey home at the end of the day.<sup>7</sup> He also did

not frequently venture into Manhattan to see a Broadway show, a nightclub act, or a live television production, even though Du Mont would have received royal treatment as the head of the network and a minor celebrity in his own right. According to his close friend, Thomas T. Goldsmith, Du Mont enjoyed the local theater around Montclair, New Jersey, but his physical disability sometimes made it difficult for him to travel into the city.<sup>8</sup> Instead, Du Mont spent many evening and weekend hours in the electronic research laboratory located a few hundred yards from his home.<sup>9</sup>

Other than television, Allen Du Mont's passion was boating, something he did alone or with a select group of friends and relatives. Du Mont's boat, the *Hurricane III*, afforded him an opportunity to practice engineering and navigation on the seas. He excelled in "predicted log races," in which boaters calculated the exact time at which they would pass predetermined marks in a course which might run from 35 to 150 miles. The races required participants to consider a number of variables, including the current, tide, and winds. One boating magazine noted that "Du Mont does not win often but he is remarkably consistent and seldom, if ever, has a bad race." As a measure of Du Mont's dedication to boating, he won the American Power Boat Association's national championship for accumulating the most points in races in three consecutive years: 1953, 1954, and 1955.<sup>10</sup> Around the time of the World Series, Du Mont would take his annual cruise from Long Island to Florida, frequently accompanied by Goldsmith, DuMont's longtime head of research. Even on vacation, the two scientists indulged in their shared passion for television during these journeys. Du Mont had a TV on board which he would use to watch the ball games while Goldsmith steered the ship. "We learned a lot about television broadcasting there because we would get signals from distant stations, and we'd survey the performance of television from Maine clear down to the tip of Florida," Goldsmith said.<sup>11</sup> Boating provided a welcome element of risk and excitement in Allen Du Mont's otherwise conservative life outside the office. As Du Mont told Edward R. Murrow in a 1955 interview on *Person to Person* (CBS), "I find that when you get out in the ocean, the problems level off. In other words, any problems that you have in you business, when you're out in the ocean, wondering if you're going to get back or not, why, they don't seem so important."<sup>12</sup>

Many friends and colleagues described Allen Du Mont as gentle and naive, suggesting that these qualities may have hindered the entrepreneur, especially in dealing with his business partners at Paramount Pictures.<sup>13</sup> “If anything, his problem was trusting people and taking them at their word,” said his daughter Stelle. “He gave his word and it was always good, and he expected other people to be the same, and they’re not.”<sup>14</sup> Ted Bergmann, a former DuMont executive, learned about his boss’s ethics when Du Mont asked him to replace Chris Witting as the head of the Broadcasting Division in early 1954. Bergmann explained to Du Mont that there were no Jewish network presidents. “Doc, the major advertisers and advertising agencies do not have Jewish executives and they don’t do business with Jewish executives.”

“What are you talking about?” Du Mont replied. “There’s [David] Sarnoff and there’s [William] Paley.”

“They don’t contact advertisers,” Bergmann explained. “At NBC it’s Pat Weaver, at CBS it’s Jack Van Volkenberg, and at ABC it’s Bob Kintner. You won’t find a Jew in any of those top spots.”

Du Mont then looked at Bergmann and said, “Ted, if any of these companies don’t want to do business with us because you’re Jewish, I don’t want their business.”

“You’ve got to love a man who says a thing like that,” said Bergmann. “And I did.”<sup>15</sup>

The DuMont network needed people like Bergmann, who knew the entertainment business. Even though Allen Du Mont was the president and founder of one of the leading television companies, he had little interest in fundamental aspects of postwar network broadcasting, such as production techniques, aesthetics, scheduling, or advertising sales. Science was his genius and his passion. “My father was an engineer,” remembered Stelle. “He never intended to be president of a major company.”<sup>16</sup> His friend Goldsmith agreed that Du Mont’s “real love was in the laboratory. He was happiest when he was doing technical things.”<sup>17</sup> If Du Mont watched TV, it was mostly to study reception and other technical matters, rather than programing. In a 1951 *New Yorker* profile, author Robert Rice quipped that “Du Mont is always stimulated by Milton Berle’s horizontal resolution, if not his jokes.”<sup>18</sup> Larry Israel, the first sales manager of DuMont’s Pittsburgh station, WDTV, remembered watching television with Allen Du Mont during

one of Du Mont's trips to the station. The company president repeatedly fiddled with the back of the set to adjust the picture. When Israel pointed out that they were watching a wonderful program, Du Mont was not the least bit interested, according to Israel.<sup>19</sup>

Given Du Mont's strengths and weaknesses, it was probably good for the network that he did not try to implement a particular programming style. Du Mont showed little aptitude for, or interest in, running a television network. Even more experienced competitors like William Paley of CBS and David Sarnoff, head of NBC's parent company, RCA, did not know how to fill airtime when they began the monumental job of selling television to the public after World War II. Networks adapted genres and techniques from theater, film, radio, and print magazines, but everything had to be reconfigured. Management turned to young and ambitious executives, producers, directors, and talent on both sides of the camera. Nowhere was this more true than at DuMont.

Working through its national network—including owned-and-operated stations in New York, Pittsburgh, and Washington, D.C.—DuMont was an early leader in television production and distribution. Its programs addressed many of the pressing issues of postwar urban life: crime, communism, faith, gender roles, ethnic identity, and the search for community in old cities and new suburbs. During DuMont's greatest burst of creativity, from 1949 to 1952, the network introduced viewers to a fantastic range of people and programs. On DuMont, a confident daytime television host flirted with his pretty co-host while proclaiming his devotion to mothers everywhere. A space-age superhero confronted intergalactic bullies. A little Jewish comic with snappy one-liners enjoyed fame for a little while, before a big Irish comedian came along to overshadow him, and everybody else on television, with a cavalcade of sketches and characters. Hard-boiled detectives taught criminals that crime doesn't pay, and a Catholic priest showed viewers how stronger faith and morality could solve the world's problems.

The best word to describe television before 1952 on all networks, especially DuMont, is "giddy." Regardless of the genre, DuMont programs celebrated the greatest postwar innovation, television itself, with a playful self-reflexivity and enthusiasm, as if the people making the shows were inviting the home audience to join the amazing new world of television. Whereas the other networks sometimes transferred older

and more experienced radio executives and directors into television, most of the staff at DuMont were not yet professionally established. They were entranced by the magic of television and enthusiastic over the prospect of entering a new industry on the ground floor. DuMont's programs conveyed the excitement that network personnel felt living in New York City and working in the fledgling television business.

The story of how DuMont and three other companies created network television is relevant and inspiring today, given the state of the contemporary television industry. Advances in digital and satellite distribution have created almost unlimited viewing options, but, more than ever before, television executives are prisoners of history and convention, stuck in a losing game. They copy the latest hit shows while desperately trying to craft a unique and recognizable network brand or identity that will stand out amidst the sea of channels. Program genres and visual styles shift slightly from time to time, and channel to channel, but not much is new. DuMont is a reminder of what television was like when everything was new.



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## From Basement to Broadway

One day in 1912, William Du Mont, an executive with the Waterbury Clock Company, bought a new radio kit for his son, Allen, who was home sick. The eleven-year-old boy was confined to the bedroom in the family's Brooklyn home, suffering from a polio attack that left him with a severe limp for the rest of his life. By the time Allen B. Du Mont returned to school almost a year later, he had built a radio receiver and a transmitter. At the age of twelve, Du Mont was hooked on electronic engineering. "Maybe this attack of polio I had was a blessing in disguise," he later said.<sup>1</sup> In 1912, radio was a novelty. Guglielmo Marconi, a young Italian inventor, had patented a successful wireless apparatus and formed the world's first radio company only fifteen years earlier. Throughout the 1910s, a network of amateur operators built radios and shared engineering tips in clubs that they formed across the country. Members did not even have to leave their bedrooms to participate: meetings took place "in the air," on a prearranged wavelength. Since the technology for sending voices over the air had not yet been developed, radio operators generally communicated via Morse code and attempted to send and receive signals over long distances. Hugo Gernsback, editor of *Modern Electrics* magazine and an officer in the Wireless Association of America, estimated that 122 wireless clubs and 400,000 "wireless experimenters and amateurs" were active



in 1912.<sup>2</sup> Radio fired the imagination of Du Mont and thousands of others, introducing them to the magic of instant communication via invisible electromagnetic waves.

After Allen's recovery from polio, the Du Mont family moved to Montclair, New Jersey, where the young man continued to experiment with radio. At the age of fifteen, he earned his wireless license from the government by passing a set of exams that tested his ability to assemble, operate, and repair radio equipment.<sup>3</sup> Du Mont spent every summer vacation from 1916 to 1924 working as a radio operator on merchant ships that took him around the world. These dual passions for broadcast engineering and boating remained with Du Mont for his entire life. In 1924, the promising scientist graduated from Rensselaer Polytechnic Institute in Troy, New York, and took a job with the Westinghouse Lamp Company in Bloomfield, New Jersey. When Du Mont started at Westinghouse, the company was making only 500 radio tubes a day. As demand for receivers continued to boom through the 1920s, Du Mont redesigned the plant and increased output to 50,000 tubes a day. For his efforts, Allen Du Mont earned a Westinghouse employee award and a hefty \$500 bonus in 1927.

In 1928, Du Mont left Westinghouse for a position as chief engineer of the De Forest Radio Company, headed by the legendary radio inventor and entrepreneur, Lee De Forest. Allen Du Mont's few years at De Forest marked the last time until 1960 that he would work in a company bearing someone else's name. De Forest was in the process of reorganization in 1928 and had not produced anything for a year. Applying some of the skills that he honed at Westinghouse, Du Mont helped the De Forest plant produce up to 30,000 tubes a day. He was rewarded with a promotion to vice-president in charge of engineering and manufacturing for the company. Du Mont also had the opportunity to direct De Forest's experimental research in mechanical television, conducting a few early TV transmissions through station W2XCD.<sup>3</sup> In 1931, Allen Du Mont returned from a vacation in Bermuda to find himself out of work and De Forest Radio on the verge of collapse. Perhaps taking a cue from Lee De Forest, Du Mont decided to start his own enterprise, rather than looking for a new job at another firm. The young engineer applied his aptitude for electronics and management to develop cathode-ray tubes for a variety of devices, including television.

## DuMont Laboratories Before Television

At the age of thirty, during an economic depression, with a wife and a two-year-old son to support, Du Mont formed the Allen B. DuMont Laboratories. Although the new company was the riskiest venture of Allen Du Mont's life, he ran the business with typical caution. DuMont Laboratories started with \$1,000 and a three-person staff. The boss saved overhead by operating from the basement of his Upper Montclair, New Jersey home, and supported his family with occasional work as an expert witness in patent litigation cases. Still, Du Mont made sacrifices to keep his electronics firm afloat, borrowing money from relatives and other sources, including his life insurance policy. The entrepreneur later estimated that he invested at least \$30,000 (more than \$400,000 in 2003 dollars) in his company during its first four or five years.<sup>4</sup>

Du Mont initially focused on the design and sale of cathode-ray tubes. In these years before television's commercial introduction, DuMont Laboratories' biggest item was the oscillograph, used for testing electrical equipment. University and government research laboratories were the main purchasers of DuMont's oscillographs.<sup>5</sup> As demand for oscillographs increased, the company moved out of the Du Mont family basement and into a row of five stores that served as a small research and production facility. In 1935, Allen Du Mont formed a partnership with Mortimer Loewi, an investor who stayed in DuMont management through 1953, and formally incorporated DuMont Laboratories. Du Mont celebrated by paying himself a modest salary for the first time. Two years later, DuMont Laboratories sold RCA the rights to one of Allen Du Mont's inventions: a cathode-ray instrument, known as the "magic eye," which was used to tune radio (and later TV) receivers. DuMont invested the \$19,750 that the company received from RCA in a new corporate home, purchasing a plant that had previously served as a pickle factory in Passaic, New Jersey.<sup>6</sup>

Still, the firm was small. In 1938, DuMont Laboratories had \$1,428.16 in cash on hand, and an approximate net worth of about \$60,000 (less than \$1 million in 2003 dollars), with most of its assets in plant facilities and patents.<sup>7</sup> Despite its size, DuMont was a leader in the growing cathode-ray industry. In addition, DuMont's tubes could easily be adapted from oscillographs to serve as picture tubes in television receivers. Rather than merely licensing its patents and selling tubes to other manufacturers,

Du Mont and Loewi saw the opportunity to build on the company's expertise in cathode-ray technology by moving into the emerging industry of receiver manufacturing. They desperately searched for capital to build receivers for home viewers and transmitters for stations. "We felt that it was certainly an advantage to have [additional financing] soon," Du Mont remembered. "Because the longer you waited, the less opportunity to get in on the ground floor" of television.<sup>8</sup> Broadcasting was a secondary concern for Du Mont, intended primarily to make sure that consumers would have programming to watch on the DuMont TV sets. Allen Du Mont also believed that if his company started telecasting, it would stimulate others, who would not want to give DuMont Laboratories the competitive advantage of being the first, or only, TV operator in a particular city. As one of the few corporations ready to sell transmitters, cameras, and other TV equipment, DuMont stood to benefit from a boom in station construction.<sup>9</sup> However, raising money for television during the economic depression was not easy. The company's early financing efforts, including a public stock offering, were not successful. "Very few people had any faith in television," Du Mont later explained.<sup>10</sup>

In July 1938, a major film studio, Paramount Pictures, made DuMont an offer that it couldn't refuse. Paramount was primarily interested in DuMont's research and engineering capacity, which it planned to draw on for its own broadcasting plans. "The purpose of the investment was to develop an organization [with] which we could get equipment of the type we desired to continue our investigation in television, and to invest in a company which we thought had great potentialities for growth as television turned out to be successful," said Paul Raibourn, vice-president of Paramount in charge of television, at a 1952 FCC hearing.<sup>11</sup>

DuMont Laboratories' subsequent operations, based upon the July 26, 1938, contract, were a source of constant scrutiny by the FCC over the years, as the regulatory body assessed whether Paramount "controlled" DuMont. The agreement certainly gave Paramount a number of ways to check Allen Du Mont's power. It divided DuMont's common stock into two classes: A stock (owned by Allen Du Mont, his associates, and anyone else who wanted to buy it on the over-the-counter stock market) and B stock (owned exclusively by Paramount). The Class A stock holders elected three of the company's six directors plus the president and vice-president. Paramount had the power to choose the other three

directors, along with the secretary, treasurer, and assistant treasurer. In exchange for its stake in DuMont, Paramount supplied a total of \$200,000 in cash and loans (about \$2.5 million in 2003 dollars).<sup>12</sup>

Allen Du Mont later regretted giving Paramount so much influence. Over the years, the studio contributed little to DuMont beyond its initial investment, and the FCC prevented the DuMont network from expanding because of Paramount's interest in DuMont Laboratories. Nevertheless, when Paramount made its offer, DuMont had little cash and limited options to finance its expansion into television. The small Passaic tube manufacturer was not operating from a position of strength.<sup>13</sup> The Paramount deal enabled DuMont to withstand a \$95,000 loss in 1939, when the company began marketing receivers to a public that had no experience with home television.<sup>14</sup> Moreover, Paramount's resources, and its implicit confidence in the small electronics firm, attracted the attention of the trade press and distinguished DuMont as an industry leader on the eve of commercial television's unveiling. DuMont Laboratories was no longer a family business.

## **Steady Wartime Progress**

With the Paramount agreement sealed, DuMont produced demonstration models of receivers for New York and New Jersey department stores by the end of 1938.<sup>15</sup> Still, there was little public awareness of the invention, and no programing, until the following year. RCA, the parent company of the NBC radio network, used the 1939 New York World's Fair to introduce its commercial television service. The fair's "Building the World of Tomorrow" theme provided the perfect occasion for RCA president David Sarnoff's announcement that NBC would begin telecasting a regular slate of programs for people to enjoy on new TV sets. The sets would be available at department stores and radio dealerships. Thousands of fair-goers watched Sarnoff and NBC's subsequent programs on receivers displayed in the massive RCA Hall of Television.<sup>16</sup> Sarnoff's telecast focused much of the public and trade press on RCA and New York City, but RCA was not the nation's first, or only, television company. Firms in Philadelphia (Philco, Farnsworth), Los Angeles (Don Lee Broadcasting), and Schenectady, New York (General Electric) had experimented with television

throughout the 1930s, and additional stations in Los Angeles and Chicago came on line between 1939 and 1941.<sup>17</sup>

NBC operated the only New York television station (experimental W2XBS, later WNBT) after the inaugural World's Fair telecasts in the spring of 1939. DuMont obtained a permit to build its own experimental station, W2XWV, in April 1940. It officially inaugurated New York's second TV outlet with coverage of the 1940 elections. DuMont built a small studio and offices for station and network personnel on the 42nd floor of 515 Madison Avenue, a midtown office building. Production soon moved to a larger studio on the second floor, while corporate offices remained on the top level until DuMont moved to its own building in 1954. On July 1, 1941, CBS brought New York's third station (WCBW, later WCBS) on line.<sup>18</sup> NBC, DuMont, and CBS dominated television in New York and the rest of the East Coast through the late 1940s.

Programming on all stations was sporadic and even RCA's W2XBS went dark for two months, starting on August 1, 1940.<sup>19</sup> After America entered World War II, stations broadcast civil defense training programs and government films on topics such as victory gardens and food conservation. Lighter offerings included the occasional ball game, quiz show, variety program, or drama.<sup>20</sup> Compared to film and radio, the typical early television show was awkward and low-budget. The engineers who operated the station labored in DuMont's Passaic factory, building tubes and receivers during the day. They commuted into New York for television duties on Wednesday evenings and Sunday afternoons, the two days that W2XWV broadcast. In addition, anxious to promote the development of television after the war, DuMont lent its facilities to radio broadcasters like WOR and ABC, which were interested in learning about the new medium but did not yet own experimental stations. For example, *Billboard* described the start of a 1943 show called *WOR's Television College*. The program aired over DuMont's W2XWV, but was produced by WOR personnel. "Camera lenses opened on three girls lined up against a curtain backdrop. Why they were there, who they were, or what they were supposed to do remained a mystery for the first ten minutes of the program, though they appeared again and again in the same position, smiling self-consciously and obviously ill at ease."<sup>21</sup>

During World War II, only about 8,000 TV sets were in circulation nationally.<sup>22</sup> The goal of wartime telecasting was not to attract viewers. The

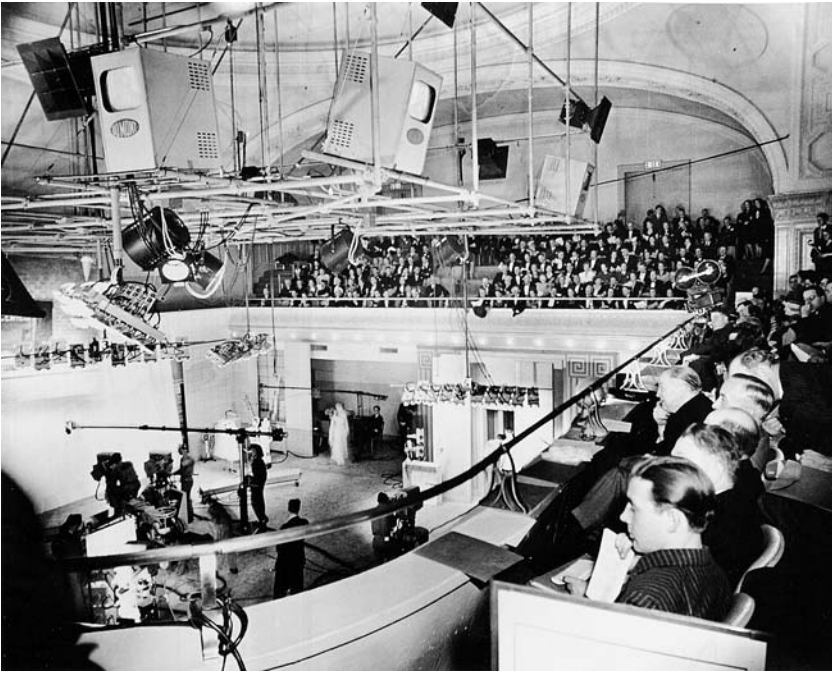
problem of creating and maintaining audiences became an industry obsession only after the war. Instead, telecasters used the delay in television's commercialization, brought on by the war, to test equipment, practice production techniques, and introduce sponsors to television. Almost from the inauguration of its first experimental station, DuMont's sales department devised creative deals for advertisers. Starting in the summer of 1943, DuMont ran a midweek special: on Wednesdays, sponsors could use the studio for commercial experimentation, without charge. In order to stimulate interest in cameras and other technical equipment, DuMont also encouraged "out of town radio station operators, who might be contemplating television stations of their own," to visit W2XWV.<sup>23</sup> These offers demonstrated an ambition and vision that the other stations lacked. At the time, CBS and NBC had eliminated studio operations and simply ran a few films, of little interest to advertisers, to satisfy the FCC's requirement that they remain on the air 4 hours a week.<sup>24</sup> Sponsors eagerly accepted the free airtime on W2XWV, trying everything from short, animated cartoons used as "fill-ins" between shows—a forerunner of the commercials that are standard today—to sponsored news program with live product pitches.<sup>25</sup> By the end of 1943, CBS and NBC followed DuMont's example with their own advertising.

Between 1941 and 1945, electronics firms placed a priority on military research and defense production; however, television research conducted during the war improved the medium and strengthened the leading television broadcasters and manufacturers. Military contracts generated profits that put several firms, including RCA and DuMont, in a stronger position to finance postwar expansion.<sup>26</sup> Although DuMont was still a small firm, with sales of \$176,000 in 1940, business took off during the war years. Starting in October 1940, DuMont manufactured portable radio transmitter-receiver units and cathode-ray tubes for radar and loran navigational instruments. In 1944, as the company's wartime production peaked, DuMont sales surpassed \$9 million (\$91 million in 2003 dollars). DuMont had 120 employees at the end of 1940, and more than ten times that number in June 1945. When it was impossible to build onto the original Passaic facility, DuMont leased a second plant from the U.S. government in nearby Clifton, New Jersey. The factories were later converted to produce television tubes for consumers.<sup>27</sup> By the end of the war, DuMont and its competitors were prepared to launch network television.

## Network Television Begins

In late 1945, DuMont began to experiment with television in Washington, D.C., through its second station, W3XWT. At the time, a total of seven prewar stations were regularly operating a few evenings each week in five different markets: Los Angeles, Chicago, New York City, Philadelphia, and Schenectady, New York.<sup>28</sup> On February 12, 1946, DuMont was ready to conduct a landmark transmission: the first telecast from Washington to New York since the earliest days of mechanical television in the late 1920s. DuMont gave the city's power brokers the first opportunity to become television celebrities. The program included interviews with Paul Porter, Chairman of the FCC, and Sam Rayburn, Speaker of the House. Viewers saw segments from three different remote locations: Capitol Hill, DuMont's downtown Washington studio, and the Lincoln Memorial, where General Eisenhower placed a wreath at the foot of the Lincoln statue as part of a commemorative service.<sup>29</sup> All three New York stations—WABD (DuMont), WNBT (NBC), and WCBW (CBS)—aired the Washington broadcast.

The FCC licensed Washington's Channel Five to DuMont in April 1946. This was the foundation for a permanent network between Washington and New York. At the time, only NBC was further along in developing network television. NBC and Philco, owner of station WPTZ in Philadelphia, had conducted sporadic transmissions between New York (WNBT), Schenectady (WRGB), and Philadelphia (WPTZ) starting in 1939. Stations in all other markets operated independently because of the difficulty and expense of conducting regular network broadcasts. DuMont signaled its intention to move network television out of the experimental era on April 15, 1946, unveiling its new studios located in the auditorium of the John Wanamaker department store in downtown Manhattan and transmitting the opening ceremonies via coaxial cable to Washington. The mayor of New York City, William O'Dwyer, and the governor of New Jersey, Walter Edge, were among the guests for a telecast that featured a few ceremonial speeches about the promise of television along with a short play, a quiz show, and a dance routine. The program also included a segment from Washington with various politicians and the acting FCC Chairman, Charles Denny. *Newsweek* panned the debut of "the country's first permanent commercial television network,"



The view from the balcony at the inauguration of DuMont's Wanamaker studio, April 15, 1946.

*Source:* Allen B. Du Mont Collection, Archives Center, National Museum of American History, Smithsonian Institution.

writing that the speeches were too long and the entertainment “went off with all the enthusiastic gaucherie of high school productions.”<sup>30</sup> Still, DuMont forged ahead. WABD continued to feed programming to the Washington station, which was granted commercial status as WTTG on November 29, 1946.<sup>31</sup> NBC also solidified its network plans in October 1946 by signing a formal agreement to share programming with WPTZ.<sup>32</sup> By early 1947, the New York flagship stations of both DuMont and NBC were airing a few hours of programs, three or four nights a week, for local viewers and affiliates in other Northeast cities.<sup>33</sup> Network television had begun.

## The FCC and Network Television

While several companies announced network plans after the war, the leaders were NBC, DuMont, CBS, and ABC. Through its policy of allocating



TV stations from 1945 to 1952, the FCC ultimately determined which local and national firms would own valuable station licenses and which networks would prosper in the coming years. DuMont was not favored by the FCC. In fact, the commission's allocation system severely hindered the DuMont network and prevented any other firm from starting a fourth network until the mid-1980s.

The FCC allocated a different number of stations to each city. It then invited applications from companies that wanted to build and run these stations. Many of the first TV station operators were department stores, radio broadcasters, or newspaper publishers that were moving into television. Corporations like DuMont Laboratories that wanted to build a television network also applied for local TV station licenses. To ensure diversity of ownership, the FCC did not allow any company to own more than five station licenses. Except for these five stations per company, the FCC did not grant television stations directly to networks.

As they went on the air through the late 1940s, stations filled airtime with a mixture of their own local shows and programs that were produced by the national television networks. DuMont, NBC, CBS, and ABC competed with each other to build a network of stations that would air its productions. A network's survival depended on a strong affiliate line-up, since broadcasters had no means of distributing their programs from city to city without these affiliates. However, most cities were allocated fewer than four stations by the FCC. As a result, there were not enough stations in most markets for each of the four networks to have a "primary affiliate" that was likely to accept all of the programs that it offered. In Boston, for example, the four networks fought for time on only two stations.

The number of channels in each market was limited because of the technology by which television signals were transmitted from stations to home television receivers. Television signals traveled as electromagnetic waves that operated on particular frequencies, or channels. It was the FCC's job to regulate these airwaves and assign frequencies. In June 1945, the commission decided to set aside only thirteen television channels in the VHF (very high frequency) portion of the electromagnetic spectrum. However, no city had more than seven stations because the FCC could not assign adjacent channels (except for channels four and five) in the same city. Stations operating on identical or nearby fre-

quencies interfered with each other. In fact, the FCC found that even stations 150 miles apart had problems if they were operating on the same channel.<sup>34</sup> FCC engineers understood that the only solution was to assign VHF channels that were spaced far away from one another. So, for example, the commission allocated the city of Washington, D.C., four stations: channels four, five, seven, and nine. Because of the problems of adjacent-channel interference, that left nearby Baltimore only three channels: two, eleven, and thirteen.

The FCC further reduced the number of VHF stations in May 1948, designating channel one for safety and emergency use. By the fall of 1948, the FCC recognized that the twelve VHF channels were insufficient to meet the television demands of consumers and potential station licensees. On September 23, 1948, the commission issued an order, soon known as “the freeze,” that halted new authorizations while the FCC examined its plan for assigning stations.<sup>35</sup> The television industry did not come to a total stop during this time. The 123 stations that had already been authorized were allowed to retain their channel assignments. Thirty-seven were already broadcasting, the others were at varying stages of construction. Eventually, 108 actually went on the air before the freeze was lifted in April 1952.

For DuMont, the decision regarding the number of stations in each market was crucial. DuMont needed the FCC to allocate at least four stations in each city, so that each of the four leading networks would have the opportunity to sign a primary affiliate. During the freeze, the FCC decided that the best way to add stations would be to open a new band of frequencies, the UHF (ultra high frequency) band. One option was simply to add several UHF stations in each market, while retaining the existing VHF stations. The advantage of this plan was that it would not have interrupted service or caused major changes for the 108 stations that were operating by 1952, along with the fifteen million national households that had already purchased VHF television receivers.<sup>36</sup> The disadvantage was that the plan depended on the new UHF band to increase the number of stations in each market. In order to watch UHF, consumers would have had to purchase new “all-channel” receivers or special UHF converters. If people could watch VHF stations anyway, there was no guarantee that they would go to the effort and expense of reconfiguring their TV sets for the new UHF stations.

A powerful coalition of local station owners lobbied the FCC to retain the extant VHF stations, with additional UHF channels added as needed.<sup>37</sup> They did not want to move their channels, reconvert engineering operations for UHF, and face increased competition. On the other side, DuMont proposed a more radical system that would not have “intermixed” UHF and VHF stations in a single market. Some cities would have had multiple UHF stations, but no VHF; others would have been VHF-only markets. DuMont expected that the new UHF stations allocated under its plan would have been successful because they would not have been competing against the VHF stations. Without VHF alternatives, consumers in these cities would have purchased new UHF TV sets and converters. Ultimately, DuMont’s plan would have created more stations in each city and a more viable multi-network system: eighty-eight of the top one hundred markets would have had four or more stations.<sup>38</sup>

In its Sixth Report and Order, issued on April 11, 1952, the FCC ended the freeze with a plan that maintained the existing VHF system, despite its limitations, as the primary tool for providing the country with television. In many markets, the FCC authorized additional UHF stations, which were expected to compete with the VHF stations.<sup>39</sup> No established stations were moved to UHF. The commission allocated four or more commercial VHF stations in only seven of the country’s top one hundred markets.<sup>40</sup> The FCC ultimately “took the familiar regulatory protectionist policy of not wishing to upset the applecart, not wanting to change the status quo and disrupt service to the public,” wrote economic historian Barry Litman.<sup>41</sup>

As Allen Du Mont and others predicted in their testimony before the FCC, UHF stations did not challenge the VHF’s. Some went out of business. Others never even made it on air. With so many VHF stations established, the public did not purchase UHF receivers. In May 1954, for example, *Business Week* estimated that there were approximately 26 million VHF receivers and only 2 or 3 million UHF sets in use.<sup>42</sup> Historian James L. Baughman explained, “Many early UHF tuners were poorly designed and all cost more than the sets providing only VHF . . . . As a result, the typical UHF station manager found that his outlet enjoyed only five to twenty percent of the total audience his VHF competitor commanded.”<sup>43</sup> A 1958 Senate report recognized the prescience

and value of DuMont's earlier allocation proposal before the FCC, praising its "breadth of understanding of the problem and [its] professional quality. This comprehensive project . . . saw with lucidity the fatal dangers of intermixture." The report recognized the FCC's 1952 ruling as a "major factor" in the DuMont network's demise.<sup>44</sup> But by 1958, it was too late for the FCC to change its allocation system. Frieda Hennock, an FCC commissioner when the Sixth Report and Order was released, later told a congressional subcommittee investigating the FCC that the real reasons for the allocation decision were not given in the FCC's official notices. Instead, she attributed the flawed plan to the powerful industry lobbyists who "can come in and see this commission day and night and can honeycomb our offices and our staff legally and that is where you get intermixture and all the evils that your [UHF] debacle stems from."<sup>45</sup>

## **The Radio Networks Move into Television**

During the nearly four years of the freeze, the emerging networks—ABC, CBS, DuMont, and NBC—scrambled to persuade the relatively few telecasters on the air to carry their programs. As 1949 began, only about fifty stations were operating in the entire country. Of the twenty-eight cities with television, twenty-one had only one or two stations. These stations usually designated one network as its primary supplier of programming, even though it picked the best programs from all four national broadcasters.<sup>46</sup> While DuMont could get a few of its programs on stations across the country, it had trouble lining up primary affiliates that were likely to air whatever the network offered. Most TV stations were affiliated with either CBS or NBC, the leading radio operators. DuMont was the only television network that did not also operate a radio network, and this lack of broadcast experience was damaging in the fierce competition for affiliates. More than 80 percent of the pre-freeze TV station owners also had AM radio stations in the same markets. As they moved into television, these local operators usually retained their AM network affiliations out of a combination of loyalty and self-interest. The expectation was that radio stars would soon move into television, and local operators feared that the radio networks would yank profitable programs, on radio and television, if stations chose a different television affiliate.<sup>47</sup> In a July 1949 report, DuMont executive