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Michael J. Wilhelm

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NOTES

UHF AND THE FCC: THE SEARCH FOR A TELEVISION ALLOCATIONS POLICY*

The Federal Communications Commission (FCC) has authority under the Communications Act¹ to adopt a nationwide plan to allocate specific television channels to serve specific communities in the United States.² In exercising this authority, the FCC is required by the Communications Act to "provide a fair, efficient, and equitable distribution of . . . service . . ."³

In the 24 years since the FCC established its nationwide allocation plan for television⁴ the distribution of channels has been accomplished in a tortuous, dilatory, and vacillating manner through rulemaking and the adoption of several contradictory and short lived policies.⁵ The FCC in 1962 purported to create "a nationwide competitive television service in which stations in the UHF and VHF bands will constitute integral parts";⁶ however, regulatory action to implement the goal of a nationwide competitive television service has not been forthcoming. Today, as in the past, television stations operating at UHF are generally at a severe disadvantage compared to their VHF counterparts.⁷ Commercial UHF stations are in the minority:

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1. Communications Act of 1934, 47 U.S.C. §§301-97 (1974).

2. *Peoples Broadcasting Co. v. United States*, 209 F.2d 286, 287 (1953). An allocation plan for radio and television stations refers to a predetermination by the FCC as to which communities in the United States shall be eligible for a radio or television station, how many stations shall be available in a given community, and the specific frequencies (channels) that shall be used in those communities. The communities in which channels are available, and the channels that may be used, are published in a Table of Assignments that is part of the FCC Rules and Regulations. The Table of Assignments for television is contained in 47 C.F.R. §73.606 (1974). The Table of Assignments for commercial FM radio stations is reproduced in 47 C.F.R. §73.202 (1974). The table of assignments is not used with standard broadcast (AM radio) stations or with noncommercial educational FM radio stations. Both of these services are allocated on a "protected contour" basis. A standard broadcast station or noncommercial educational FM station may be operated in any community on a showing that the station will not cause interference within the service area of existing stations, and on a showing of community need, proposed programming, and legal and financial qualifications of the applicant, 47 C.F.R. §1.560 (1974) (non-commercial educational FM stations); §73.182 (1974) (standard broadcast stations).

3. 47 U.S.C. §307(b) (1974).

4. *Sixth Report on Television Allocations*, 1 P & F RADIO REG. pt. 3 ¶91.601 (1952) [hereinafter cited as *Sixth Report*].

5. Referring to FCC allocations policy, Professor Glen Robinson has remarked: "If the adoption of rulemaking procedures has any inherent tendency to produce effective, rational, long-range policy planning, it was not discernible in the Commission's various rulemaking proceedings dealing with this problem." Robinson, *The Making of Administrative Policy*, 118 U. PA. L. REV. 485, 532 (1970). For a more extensive criticism of FCC policy planning, see J. Landis, *Report on Regulatory Agencies to the President Elect* (1960).

6. *Sixth Report*, *supra* note 4, ¶433.

7. UHF (Ultra High Frequency) television stations operate in the frequency band

numerically, in terms of the number of operating stations;⁸ demographically, in terms of viewing audiences;⁹ and economically, in terms of advertising revenue.¹⁰ The nation's noncommercial educational (public) stations are concentrated in the UHF band.¹¹ Despite the expenditure of considerable federal, state, and municipal funds¹² and contributions from charitable foundations and individuals, the nation's 147 public stations are not effectively reaching their intended audiences.¹³

There are inherent technical differences between UHF and VHF that arise out of physical laws not amenable to change by regulatory action.¹⁴ Technical differences, however, do not satisfactorily account for the disadvantaged position of UHF stations in the United States. A look at the FCC's actions over the past 23 years indicates that the goal of UHF-VHF parity was within reach had the FCC implemented certain proposals before it, but the agency was unable to act decisively. This presented "the sorry spectacle of an agency desperate for a workable policy, but unable to formulate one . . ."¹⁵ Time has destroyed the viability of many of the proposals

470 to 890 megahertz, channels 14 through 69. VHF (Very High Frequency) television stations operate in the frequency band 54 to 216 megahertz, channels 2 through 13. 46 C.F.R. §73.603 (1974).

8. As of June 1975, there were 242 UHF stations and 607 VHF stations. FCC News Release No. 52517 (July 10, 1975).

9. In terms of potential audiences, there are 66,575,000 TV households in the United States, of which 57,134,800 have UHF reception capability. ARBITRON TELEVISION CENSUS (1973).

10. Only 53 of the 195 commercial UHF television stations realized a profit in 1974. During 1974, six UHF television stations ceased operation. TELEVISION DIGEST FACTBOOK ADDENDA (Jan. 16, 1975).

11. The FCC's designation of not-for-profit stations is "noncommercial educational." 47 C.F.R. §73.621 (1974). At first, these stations were utilized primarily for the broadcast of instructional programming to schools. The emphasis has now changed to the extent that the majority of programming is directed to home viewers and is not "educational" in the formal sense. Hence, the stations have come to be called "public broadcasting" stations, and much of the stations' programming is funded by the Corporation for Public Broadcasting (CPB).

12. The Educational Television Facilities Act, 47 U.S.C. §394 (1969), authorized expenditure of federal funds for matching grants to establish or improve noncommercial educational television stations. The Public Broadcasting Act of 1967, 47 U.S.C. §§390-99 (1970), authorized expenditure of federal funds for public programming on these stations. Some public stations operate as "community stations" supported primarily by viewer or listener contributions, supplemented by federal funds from the above-mentioned sources.

13. For documentation of the difficulties of a UHF public television station in reaching its intended audience, see Application of Greater Washington Educational Telecommunications Ass'n, No. BPEX-238 (FCC Aug. 11, 1972), *denied by* Memorandum Opinion & Order, 53 F.C.C.2d 910 (1975).

14. UHF signals do not "bend" around obstructions as readily as VHF signals. When there is an intervening natural or man-made obstruction between the viewer's receiving antenna and the station's transmitting antenna, a VHF signal will be stronger than a UHF signal, all other things being equal. This phenomenon becomes significant only in rugged mountainous terrain or at receiving locations so distant from the television transmitter that the curvature of the earth intervenes. See P. RUBIN, W. KESSLER, & M. WILHELM, A QUANTITATIVE COMPARISON OF THE RELATIVE PERFORMANCE OF VHF AND UHF BROADCAST SYSTEMS 17 (1974) [hereinafter cited as VHF/UHF COMPARISON].

15. Robinson, *The Making of Administrative Policy*, 118 U. PA. L. REV. 485, 535 (1970).

for achieving UHF-VHF parity. Earlier, alteration of the pattern of UHF and VHF channel assignments to communities in the United States could have been accomplished for the most part by changing numbers on paper, primarily because many stations were not yet in operation on assigned channels. Today, alteration of the assignment plan would require changing the physical facilities of operating stations, a disruptive and expensive procedure.

Thus, the options for achieving parity of UHF and VHF stations are becoming fewer, and the FCC's goal of a "competitive television service"¹⁶ is becoming elusive. The increase in population, the requirements of minority groups for media outlets, and the development of the "public television" concept press the need for additional television service in this country. Fundamental changes can be made in FCC Regulations and policy to meet this need with viable cost-effective channel allocations to make UHF stations competitive with existing VHF stations.

This note charts the uneven course of the FCC in its attempt to provide an allocation plan to make optimum use of the available channels. The note then discusses the regulatory changes necessary to permit the FCC to carry out its mandate from Congress—the provision requiring "fair, efficient and equitable distribution of service."¹⁷

BACKGROUND

Congress created the Federal Radio Commission (FRC), predecessor of the FCC, to remedy the chaos resulting from radio stations operating without regulation or coordination on frequencies and at powers of their choice. The Radio Act of 1912¹⁸ had not proven effective because it required the Secretary of Commerce to grant licenses to United States citizens "upon applications therefor."¹⁹ The statute failed to provide adequate delegation specifying no grounds for discretion in selecting licensees and no enforcement power against stations operating on frequencies or at power levels different from those authorized in the license. When the Secretary of Commerce brought suit against Chicago station WJAZ, owned by the Zenith Radio Corporation, for operating on a frequency different than that assigned in its license, the Court of Appeals for the D.C. Circuit found for the licensee, stating:

If Section 2 [of the Radio Act of 1912] is construed to give to the Secretary of Commerce power to restrict the operation of a station as [the Secretary] contends is done by this license, what is the test or standard established by Congress by which the discretion of the Secretary is to be controlled? Administrative rulings cannot add to the terms of an act of Congress and make conduct criminal which such laws leave untouched.²⁰

16. *Sixth Report, supra* noted 4, ¶433.

17. 47 U.S.C. §307(b) (1974).

18. The Radio Act of 1912, Act of Aug. 13, 1912, ch. 287, 37 Stat. 302 (1912).

19. *Id.*

20. *United States v. Zenith Radio Corp.*, 12 F.2d 614, 618 (D.C. Cir. 1926).

Following this decision, the Secretary of Commerce sought an opinion from the Attorney General on the advisability of an appeal to the Supreme Court. The Attorney General replied: "[T]he present legislation is inadequate to cover the art of broadcasting which has been almost entirely developed since the passage of the 1912 Act."²¹

Interference among broadcast stations increased to an intolerable degree following the *Zenith* decision.²² Responding to the industry's inability to regulate itself,²³ Congress passed the Radio Act of 1927,²⁴ the basic legislation that governs broadcasting today through subsequent incorporation into the Communications Act of 1934.²⁵ With reference to broadcasting, the Communications Act of 1934 states:

In considering applications for licenses . . . the Commission shall make such distribution of licenses, frequencies [and] power among the several states and communities as to provide a fair, efficient and equitable distribution of radio service. . . .²⁶

The Act established two goals for the Commission when it began regulation of television in 1941: first, a choice of frequencies and power such that intolerable interference would not result — the *raison d'être* of the Communications Act; second, a distribution of frequencies that would provide a fair, efficient, and equitable distribution of service. At first, the goals were easily met. The demand for channels was not great so prospective licensees merely requested the channel of their choice in the community of their choice.²⁷ However, in 1945 the Commission inaugurated a Table of Assignments, allocating specific television channels to 140 communities²⁸ chosen on the basis of their market rank in radio advertising revenue. In the 1945 Table of Allocations, the lion's share of channels went to the country's most densely populated communities because of their preeminent radio market rank. New York City, Chicago, and Los Angeles each were assigned seven of the 13 available VHF channels.²⁹ In making this arbitrary choice of the number of

21. 35 OP. ATT'Y GEN. 126, 132 (1926).

22. "By this time it was almost impossible in most places to receive any kind of consistent broadcast signal. Thirty-eight stations operated in the New York area and 40 in the Chicago area alone. A marked drop in set sales resulted from this vitiation of the service." S. HEAD, *BROADCASTING IN AMERICA* 129 (1956).

23. Attempts at self-regulation of the broadcast industry were made at National Radio Conferences held in Washington in 1922, 1923, 1924, and 1925 at the request of Secretary of Commerce, Herbert Hoover, an ardent believer in free enterprise. *Id.*

24. Act of Feb. 23, 1927, ch. 169, 44 Stat. 1162 (1927).

25. Act of June 19, 1934, ch. 650, 48 Stat. 1062 (1934) (*codified at* 47 U.S.C. §§302, *et seq.* (1934)).

26. 47 U.S.C. §307(b) (1974).

27. AD HOC ADVISORY COMM. ON ALLOCATIONS OF SENATE COMM. ON COMMERCE, 85th Cong., 2d Sess., *REPORT ON ALLOCATION OF TV CHANNELS* 19 (Comm. Print 1958).

28. Bowles Supporting Brief, AD HOC ADVISORY COMM. ON ALLOCATIONS TO THE SENATE COMM. ON COMMERCE, 85th Cong., 2d Sess., *REPORT ON ALLOCATION OF TV CHANNELS* (Comm. Print 1958) [hereinafter cited as Bowles Brief].

29. Channel 1 was deleted from the VHF band in 1948 and given over to the land mobile (2-way radio) service, which left the twelve channels (2-13) that make up the present VHF TV band. Report & Order, Docket No. 8487, May 5, 1948.

channels per community, the Commission made no claim that it had authority to adopt such a plan³⁰ under the Communications Act, or that the Communications Act mandated such a plan, or even that the plan comported with the Act's requirement of "fair, efficient and equitable distribution . . . of service . . ."³¹ The assignment of seven channels each to New York, Los Angeles, and Chicago was to have the future effect of depriving surrounding communities of local VHF service, a condition that persists and is of considerable concern today.³²

The granting of television licenses pursuant to the 1945 Table continued until late 1948, when the Commission issued a "freeze" order specifying that no new television station construction permit applications would be accepted.³³ The principal reason for imposition of the freeze was the objectionable interference occurring among television stations operating on VHF channel 4 in the northeastern United States. The Commission had adopted rules³⁴ specifying that stations operating on the same channel (co-channel stations) should be separated by at least 150 miles³⁵ to avoid mutual interference. Inexplicably, with only 37 television stations on the air in the entire United States³⁶ and with other channels available that would not cause objectionable interference,³⁷ the Commission issued a license for WGAL-TV to operate in Lancaster, Pennsylvania, on Channel 4. Lancaster was only 87 miles from Washington, D.C., and 132 miles from New York City. Both these communities had television stations operating on Channel 4.³⁸ Interference in communities lying between Lancaster and the other two communities with operating Channel 4 stations was intolerable. Baltimore, Maryland, for example, received approximately equal Channel 4 signal strengths from WGAL, Lancaster, and WNBW, Washington, D.C., with the result that neither station was viewable. The Commission received complaints regarding co-channel interference from congressmen, senators, the Mayor of Baltimore, and the general public and, in response, initiated a freeze.³⁹ The Commission later commented: "The most important single factor which induced the issuance of the order of September 30, 1948, was the desire to ascertain whether sufficient mileage spacing had been provided between assignments set forth in its table of allocations."⁴⁰ Instituted to give the

30. Report & Order, Docket No. 6780, Nov. 21, 1945.

31. 47 U.S.C. §307(b) (1974).

32. See discussion of the petition of the New Jersey Coalition for Fair Broadcasting in text accompanying notes 225-232 *infra*.

33. Report & Order, Docket Nos. 8975 & 8736, Sept. 30, 1948.

34. Bowles Brief, *supra* note 28, at 40.

35. The 150 mile separation was inadequate to prevent mutual interference. Subsequently, separations of 170, 190, and 220 miles were adopted, the applicable separation being determined by the geographical location of the stations. These separations are in force today. 47 C.F.R. §73.610 (1974).

36. Bowles Brief, *supra* note 28, at 41.

37. Channel 8 was available at Lancaster, exceeded the 150 mile spacing criterion, and was assigned to Lancaster after the freeze.

38. WNBW, Washington, D.C. and WNBT, New York City.

39. COMMUNITY ANTENNA TV J. (Mar. 1975).

40. Third Notice of Further Proposed Rule Making in Docket No. 8736, March 21, 1951,

Commission adequate time to consider the co-channel spacing problem, the freeze was forecast by the Commission to last six months.⁴¹ Three years and eight months later, the Commission lifted the freeze, the docket having grown inordinately complex. In addition to the mileage spacing issue, the Commission added: (1) amendment of the television rules, regulations, and engineering standards;⁴² (2) proposed revision of the Table of Assignments;⁴³ (3) illustrative Assignment Table for Canada, Mexico, and Cuba;⁴⁴ (4) consideration of standards for color television transmission;⁴⁵ (5) utilization of frequencies in the band 470 to 890 mHz for television broadcasting;⁴⁶ and (6) reservation of channels in the Table of Assignments for the exclusive use by noncommercial educational television stations.⁴⁷ What began as a brief and relatively simple rulemaking culminated in a restructuring of the system of television broadcasting in the United States with the release of the *Final Television Allocation Report*, adopted on April 11, 1951.⁴⁸

The matter of VHF co-channel spacing was concluded by adopting requirements for minimum mileage separations for stations operating on the same channel.⁴⁹ Significantly, the mileage separations were applicable to all

41. Bowles Brief, *supra* note 28, at 41.

42. Notice of Further Proposed Rulemaking, July 11, 1949.

43. *Id.*

44. *Id.* Any assignments within 250 miles of the border would have a potential effect on the number of television channels available in the contiguous areas of foreign countries. Because Canada, Mexico, and Cuba had not yet developed television stations along their respective borders with the United States, the Commission assumed that major foreign cities along the border would make use of given television channels, and the United States Table of Assignments was organized so as to protect these hypothetical foreign assignments from interference.

45. Detailed consideration of the extensive proceedings dealing with the choice of engineering standards for color television is beyond the scope of this note; however, this matter accounted in large part for the length of the freeze. The Commission initially approved a Columbia Broadcasting System color system that required a large revolving color filter wheel in front of the receiver picture tube. This mechanical color system was complex and bulky and incompatible with the United States monochrome (black and white) system because a standard monochrome television receiver could not receive the CBS color signals in black and white. Report & Order, Docket No. 8736, Oct. 11, 1950. The Commission's approval of the CBS system was appealed by the Radio Corporation of America. *RCA v. United States*, 95 F. Supp. 660 (N.D. Ill. 1950). A temporary restraining order was granted but later dissolved when the Commission was upheld on the merits. The matter was not finally resolved until after the conclusion of the freeze when the Commission rescinded its approval of the CBS system and adopted the compatible RCA color system in use today. Report & Order, Docket No. 10637, Dec. 17, 1953.

46. The VHF television band extends from 54 to 72 mHz (Channels 2 through 4), 76 to 88 mHz (Channels 5 and 6), and 174 to 216 mHz (Channels 7 through 13). The 470-890 mHz band proposed in Docket No. 8976, during the freeze deliberations, is the UHF band, and contains 70 channels (14 through 83). 47 C.F.R. §73.603 (1951). The 470-890 mHz band was allocated to television broadcasting in the Fourth Report & Order, Docket No. 8976, July 12, 1951.

47. Third Notice of Further Proposed Rule Making, Docket No. 8975, March 22, 1951.

48. *Sixth Report*, *supra* note 4.

49. The minimum separations were specified as 170 miles in Zone I, 190 miles in Zone II, and 220 miles in Zone III. *Sixth Report*, *supra* note 4, ¶142. The zones were geographically defined. Zone I corresponds generally to the northeast and eastern seaboard regions of the United States. It was the Commission's judgment that the "substantially higher

co-channel VHF stations in a given zone, regardless of the station's power or antenna height, and without allowance for mountainous terrain, which would block the signals of one station from the service area of the other and prevent or minimize interference.⁵⁰ Rigid mileage spacing criteria have the advantage of administrative ease and efficiency but are inherently wasteful of spectrum space in not recognizing the effects of terrain shielding⁵¹ and in assuming that co-channel stations will operate at the maximum power and antenna height permitted by the Rules.⁵² Station operation at maximum power or maximum height is often not feasible for economic reasons or in instances where airspace considerations⁵³ preclude the erection of a high tower. Moreover, the mileage separation principle does not recognize the possible use of the interference-reducing properties of directional transmitting antennas.⁵⁴ Although the possibility of interference is the basic reason for requiring stations on the same channel to be separated by a given distance, the Commission has refused to permit a showing of a lack of interference to justify the operation of stations at less than standard mileage spacing.⁵⁵ Rather, the Commission has stated that the "rules with respect to Television . . . recognize no protected contours. Rather they are based on the

density of population" in this area would result in a high concentration of television stations with "overlapping service (coverage) contours." *Id.* ¶¶117, 124. Consequently, those persons affected by co-channel interference between two stations separated by 170 miles would have alternative television service available from other stations in the area. The portion of the United States designated as Zone II was determined to be less densely populated and less likely to be served by a multiplicity of stations, and would require the wide-area, interference-free service that 190 mile minimum co-channel spacing would provide. *Id.* Zone III corresponds to the Gulf Coast area in which television signals tend to propagate for greater distances than in the rest of the country. This anomalous propagation occurs from the "bending" of signals so that they tend to follow the curvature of the earth, rather than taking the "line of sight" path, characteristic of normally propagated signals. Technically, the mode is known as "tropospheric propagation," and its prevalence in Zone III accounted for the Commission's choice of 220 mile co-channel spacing. *Id.* ¶¶121, 125.

50. *Id.* ¶133.

51. For an instance in which terrain shielding was taken into account in VHF allocations, see text accompanying note 176 *infra*. Cf. text accompanying note 198 *infra*.

52. VHF stations in Zone I are permitted a maximum effective radiated power of 100 kw (Channels 2-6) or 316 kw (Channels 7-13) at an antenna elevation of 1000 feet above average terrain. VHF stations in Zones II and III are permitted the same effective radiated power at an antenna elevation of 2000 feet above average terrain. *Sixth Report, supra* note 4, ¶159. For the definition of "average terrain," see 47 C.F.R. §73.684(d) (1974).

53. Television towers constitute a potential hazard to aircraft. The Federal Aviation Administration (FAA) has the authority to declare a tower or other structure a hazard to air navigation, but cannot prohibit the erection of such structures nor require their removal once erected. 14 C.F.R. §77.13 (1974). By incorporating a restatement of the FAA hazard criteria into its Rules and Regulations, the FCC achieves a degree of control over hazardous tower structures by withholding construction permits from applicants who propose utilization of towers that constitute a hazard to air navigation. 47 C.F.R. §73.614 (1974).

54. The directional antenna may be used to restrict radiation, and hence interference, in the direction of a co-channel station. Directional antennas are permitted by the Rules, 47 C.F.R. §73.685 (1974), but not for the purpose of lessening the mileage separation between co-channel stations.

55. *Sixth Report, supra* note 4, ¶128.

concept of affording each station the widest coverage possible”⁵⁶ Thus, while the distance separating two co-channel stations was only one of many controlling factors in interstation interference, the Commission attempted by regulatory fiat to make mileage the *only* criterion. This decision came under continual attack in the years following the issuance of the *Sixth Report*.⁵⁷

USE OF THE ULTRA HIGH FREQUENCIES

As early as 1945, the Commission recognized that the 13 channels then available in the UHF television band were inadequate for nationwide television service.⁵⁸ The VHF band, an arbitrary designation of the band of frequencies from 30 to 300 megahertz (mHz), can accommodate 45 television channels. However, the band must be shared with other services, including the military, civil aircraft communication and navigation, land mobile radio, amateur radio, and FM Radio broadcasting.⁵⁹ Television began with 19 channels in the VHF band in 1941. The military appropriated VHF Channels 14 through 19, and Channel 1 was allocated to the land mobile radio service in 1948,⁶⁰ which left the 12 channels that make up the present VHF television band. The presence of other services in the VHF spectrum precluded the Commission from meeting the need for additional channels by simply expanding within the VHF spectrum.⁶¹ The Commission therefore located 70 new channels (14 through 83) in the ultra high frequencies,⁶² between 470 and 890 mHz.⁶³

The Revised Table of Assignments – The Sixth Report

The *Sixth Report* assigned VHF, UHF, or combinations of UHF and VHF channels to 1274 communities in the United States.⁶⁴ Whether this Table of Assignments provided the “fair, efficient and equitable distribu-

56. *Id.*

57. See text accompanying notes 116, 166, 176, 185, 209, *infra*.

58. Testimony of Comm’r Hyde in *Hearings on the UHF-VHF Allocation Problem Before the Senate Comm. on Interstate and Foreign Commerce*, 84th Cong., 2d Sess. 24 (1956) [hereinafter referred to as the *1956 Senate Hearings*].

59. 47 C.F.R. §2.106 (1974).

60. See note 29 *supra*.

61. *Sixth Report*, *supra* note 4, ¶¶20-21.

62. The frequency range 300 mHz to 3000 mHz. *Id.* ¶¶20-21 n.6.

63. *Id.* ¶¶22-24. The 70 channels do not constitute such an abundance of channels as might first seem apparent. Because of allowance made for UHF television receiver deficiencies in the *Sixth Report*, UHF stations in the same community must be separated by a minimum of six channels. A given UHF channel will preclude the use in the same area of other UHF channels 2, 3, 4, 5, 7, 8, 14, and 15 channels removed. *Sixth Report*, *supra* note 4, app. D, §3.610(c). The above channel separations are referred to as the “UHF Taboos,” and their elimination or reduction is presently under consideration, Notice of Inquiry, UHF “Taboo” Table, 40 Fed. Reg. 23,925 (1975).

64. *Sixth Report*, *supra* note 4, app. D, §3.606. For a detailed treatment of UHF allocations in the period 1952-61, see, Note, *The Darkened Channels: UHF Television and the FCC*, 75 HARV. L. REV. 1573 (1962).

tion . . . of service" mandated by the Communications Act⁶⁵ was first raised before the Commission by the Federal Communications Bar Association.⁶⁶ The Commission endorsed the *Sixth Report*, one Commissioner dissenting, which decision was subsequently upheld in principle by the United States Court of Appeals for the District of Columbia.⁶⁷

In its deliberations that led to the *Sixth Report*, the Commission announced in the *Third Notice of Proposed Rulemaking* that it would use the following priorities in formulating a nationwide Table of Assignments:

Priority No. 1 — To provide at least one television service to all parts of the United States.

Priority No. 2 — To provide each community with at least one television broadcast station.

Priority No. 3 — To provide a choice of at least two television services to all parts of the United States.

Priority No. 4 — To provide each community with at least two television broadcast stations.

Priority No. 5 — Any channels which remain unassigned under the foregoing priorities will be assigned to the various communities depending on the size of the population of each community, the geographical location of such community, and the number of television services available to such community from television stations located in other communities.⁶⁸

When the *Sixth Report* was issued, it was discovered that the Commission had used a sixth unannounced priority in formulating its Table of Assignments, namely that "VHF was used wherever possible in larger cities since such cities have broad areas of common interest."⁶⁹ The FCC's use of this sixth priority was challenged by Logansport Broadcasting Co. when UHF Channel 51, instead of VHF Channel 10, was assigned to Logansport, Indiana.⁷⁰ Logansport Broadcasting's theory was that the Commission's use of an unannounced "priority" violated the notice provisions of the Administrative

65. 47 U.S.C. §316 (1974).

66. Memorandum Opinion, FCC 51-709 (July 13, 1951).

67. "The Commission had authority to adopt a nationwide television allocation plan. The purpose of the creation of the Commission as expressed by Congress, and the mandates pursuant to the purposes, enumerated at great length in the statute furnish ample support for this action." *Peoples Broadcasting Co. v. United States*, 209 F.2d 286, 287 (D.C. Cir. 1953). In the *Sixth Report* Table of Assignments, the Commission had substituted Channel 8 for Channel 4 in Lancaster, Pa. Peoples Broadcasting, which had been an applicant for Channel 9, revised its application to specify Channel 8. This placed Peoples Broadcasting in competition with WGAL, Inc., which had been issued a Commission show-cause order to change to Channel 8. The Commission designated the Peoples Broadcasting and WGAL, Inc. applications for a comparative hearing. Peoples Broadcasting then appealed to the D.C. Circuit, challenging the Commission's authority to implement a table of assignments. It should be noted that the WGAL, Inc. operation on Channel 4 had precipitated the freeze in 1948. See text accompanying note 38 *supra*.

68. *Third Notice of Proposed Rulemaking*, FCC 51-244, app. A (Mar. 21, 1951) [hereinafter cited as *Third Notice*].

69. *Sixth Report*, *supra* note 4, ¶66.

70. The decision to assign VHF Channel 10 to Terre Haute, Indiana, instead of Logansport, Indiana, was made on the basis of Terre Haute's larger population. *Id.* ¶¶455-56.

Procedures Act (APA).⁷¹ The D.C. Circuit disagreed, holding that the APA required only a "description of the subjects and issues involved," a procedure that the Commission "amply fulfilled" in the *Third Notice*.⁷²

Significantly, the *Sixth Report* did not discuss why the channel allocations to existing television stations (the prefreeze stations)⁷³ were considered sacrosanct. The Commission chose to work around these pre-existing channel assignments in 63 communities.⁷⁴ Consequently, the Table of Assignments was less than optimum in conforming to the five priorities set out in the *Third Notice*.⁷⁵ More importantly, however, the Commission's failure to consider channel changes, particularly changes from VHF to UHF for existing stations, led directly to the creation of an intermixed Table of Assignments wherein new UHF stations would have to compete with existing VHF stations in the same area. Acknowledging that it was "reasonable to assume that economic problems [would] be faced by UHF broadcasters in areas where VHF broadcasting exists,"⁷⁶ the Commission stated that intermixture would be only a temporary handicap⁷⁷ and that, in the future, both the UHF and VHF bands would constitute integral parts of a nationwide competitive television service.⁷⁸

The intermixture decision was vehemently opposed by the Du Mont Television Network, which had submitted an allocation plan that assigned four VHF channels to all major cities.⁷⁹ Du Mont argued that: UHF stations in an intermixed market would be at a decided disadvantage to their VHF counterparts because UHF transmitting equipment was less efficient and less powerful than VHF equipment;⁸⁰ UHF signal reception was inadequate in built-up areas or those characterized by rough terrain;⁸¹ potential viewers faced the expense of purchasing UHF converters and antennas;⁸² and

71. 5 U.S.C. §1003(a) (1950).

72. *Logansport Broadcasting v. United States*, 210 F.2d 24, 28 (D.C. Cir. 1954).

73. At the initiation of the freeze there were 37 television stations on the air. The freeze prohibited the submission of applications for new stations. Pending construction permits at the time of the freeze were continued in effect, and the permittees thereof were allowed to construct their stations. As a result, 108 stations were on the air at the conclusion of the freeze, and are regarded as "pre-freeze" stations. Bowles Brief, *supra* note 28, at 41.

74. *Id.*

75. See *Third Notice*, *supra* note 68. The existing pattern of stations in the Northeast, in which seven VHF channels were operating in New York City and no VHF channels were assigned to the state of New Jersey, was an instance of existing noncompliance with the "priorities."

76. *Sixth Report*, *supra* note 4, ¶189.

77. *Id.* ¶200.

78. *Id.*

79. The intent was to provide each city with at least four VHF channels, one for each network (ABC, CBS, NBC, and Du Mont).

80. Initially, the highest power UHF transmitters available had a power output of 1 kw as compared to contemporary VHF transmitters that had available power outputs of from 10 to 50 kw. *1956 Senate Hearings*, *supra* note 58, at 700.

81. In the *Sixth Report*, the Commission admitted that VHF channels were considered more effective in urban areas. See text accompanying note 69 *supra*. See generally VHF/UHF COMPARISON, *supra* note 14.

82. Before the advent of all-channel television receivers, it was necessary for the viewer

advertisers would prefer VHF stations with network affiliations.⁸³ The Du Mont allocation plan would have avoided intermixture in all but one market and was designed to permit survival of four networks. One disadvantage of the plan is that it reduced the number of VHF allocations for noncommercial stations in several cities; however, in view of the fact that noncommercial educational stations were then envisioned as being primarily intended for the transmission of in-school instructional programming, their shift from VHF to UHF would not have been unduly burdensome.⁸⁴ It is difficult to comprehend why the Commission did not give greater weight to the Du Mont proposal. Perhaps the most satisfactory explanation was that of Bowles,⁸⁵ who attributed the Commission's failure to appreciate alternative allocation plans to the "NIH" (not invented here) factor—that is, the Commission regarded the Du Mont allocation plan as inferior, simply because it had not been developed by the Commission.⁸⁶ In September of 1955 the Du Mont Network ceased operation,⁸⁷ proving accurate its prophecy on the adverse consequences of the Commission's *Sixth Report* allocation table.

Du Mont was not alone in forecasting the problems that were caused by intermixture. The Columbia Broadcasting System (CBS), joined by several broadcast licensees and applicants,⁸⁸ also opposed intermixture. Commissioners Jones and Hennock dissented strongly from the *Sixth Report*, noting that the mileage separations created the maximum possible audiences for VHF stations, audiences that UHF stations could never capture because of their technical limitations. In Jones' view, UHF broadcasters in intermixed markets would always be disadvantaged;⁸⁹ Hennock foresaw "serious economic problems facing the development . . . of UHF."⁹⁰

TELEVISION DEVELOPMENT FOLLOWING THE SIXTH REPORT

Within two years following the issuance of the *Sixth Report*, it was apparent that the forecasts of those objecting to intermixture were embarrassingly

to purchase and install a set-top UHF converter, and in most instances, a separate UHF outdoor receiving antenna with its associated "lead-in" cable. The additional expenditure required to receive UHF stations was on the order of \$50 to \$60. *Id.* at 690.

83. See *Hearings on the UHF-VHF Allocation Problem Before the Senate Comm. on Interstate and Foreign Commerce*, 85th Cong., 1st Sess. pt. V (1957).

84. See note 11 *supra*.

85. Bowles Brief, *supra* note 28, at 101.

86. *Id.*

87. "Although it cannot be said that the principles followed by the Commission in the generation of the table of allocations of the *Sixth Report* caused the Du Mont network to be liquidated, it is hard to believe that this was not a major factor." *Id.*

88. Those objecting included, *inter alia*, Meisner Broadcasting Co. and Lehigh Valley Television, Inc., which contended that the Commission was foreclosed by §307(b) of the Communications Act from considering VHF and UHF as equivalent services in making an assignment table. This contention was based on the D.C. Circuit's holding in *Easton Publishing Co. v. FCC*, 175 F.2d 344 (D.C. Cir. 1949), in which the Commission's characterization of AM and FM radio stations as "equivalent aural services" was overturned. The Commission rejected the objectors' citation of *Easton Publishing* as not being on point.

89. *Sixth Report*, *supra* note 4 (Jones, dissenting, at 1).

90. *Id.* (Hennock, dissenting, at 4).

accurate. VHF had prospered. Two hundred and fifty VHF stations were on the air, an increase of 142 over the 108 prefreeze stations. In contrast, five of the 132 UHF stations that had been built since the freeze ended had failed and left the air. Those remaining were programmed for markets in which 85 percent of the television sets could not receive their UHF signals. Realizing that construction of their authorized stations might be a bad investment, 54 UHF permittees, who had expended considerable amounts of money in legal and engineering fees to obtain UHF construction permits, returned their permits.⁹¹ Some few UHF stations in UHF-only markets realized profits, but in intermixed markets the UHF stations still on the air suffered losses and survived only on the assets of their backers.⁹²

In Senate hearings,⁹³ the President of CBS characterized the future of UHF as exceedingly doubtful. With fewer UHF stations to watch, there was little incentive for the public to purchase television receivers with UHF reception capability. The television networks refused to affiliate with UHF stations,⁹⁴ and the advertising agencies avoided placing business with UHF stations, notwithstanding the bargain rates offered for UHF air time.⁹⁵ From a technical standpoint, the UHF broadcaster faced two problems: the unavailability of high power UHF transmitters and the relative insensitivity of the converters used to receive UHF signals.⁹⁶ Even if higher power UHF transmitters had been available, it is doubtful whether the failing UHF stations had sufficient capital to purchase them. Excoriating the Commission for its delay in acting to resolve the problems of the UHF stations, an FCC Commissioner warned that "UHF is in danger of destruction."⁹⁷

91. Bowles Brief, *supra* note 28, at 50.

92. WTAC-TV, a UHF station in Flint, Michigan, operated as the only television station in a market in which 62% of the television receivers were capable of UHF reception. The station had an ABC network affiliation. Yet, despite what were exceptionally favorable conditions for a UHF station, WTAC-TV lost \$10,000 per month, on the average, and was thus forced to leave the air. Flint viewers preferred to watch VHF signals from Detroit, Bay City, and Lansing, and advertising agencies and advertisers refused to accept the station. A UHF station in New England, with no network affiliation, announced at each station break during a given evening that it would award \$1,000 to any viewer who would telephone the station. There was no response, and on the basis of this crude but overwhelmingly conclusive audience survey, the station suspended operations. See generally COMMUNITY ANTENNA TV J. (March 1975).

93. *Hearings on the UHF-VHF Allocation Problem Before the Senate Committee on Interstate and Foreign Commerce*, 83d Cong., 2d Sess. 974 (1954).

94. *1956 Senate Hearings*, *supra* note 58, at 793.

95. *Id.* at 1113.

96. With respect to the power level of available UHF transmitters, see note 80 *supra*. The lack of sensitivity of UHF tuners is a continuing problem today. See text accompanying note 255 *infra*. Sensitivity refers to the "signal gathering" capability of a receiving system. An insensitive UHF receiver requires a stronger signal from the television station than the more sensitive VHF receiver for a comparable picture. The UHF broadcaster was on the horns of a technical dilemma. The available UHF converters were insensitive and required a strong signal from the UHF station, yet the transmitting equipment to furnish the strong signal was not available. *1956 Senate Hearings*, *supra* note 58, at 280 (separate comments of Comm'r Hennock).

97. *Id.*

De-Intermixture

As UHF stations continued to fail, potential applicants for television licenses sought relief from the Commission's intermixture policy by requesting "de-intermixture" — the reallocation of channels so that some communities would have all VHF channels and other communities would have all UHF channels. These attempts were unsuccessful; the Commission simply reiterated its *Sixth Report* conclusions in denying the de-intermixture petitions.⁹⁸ Subsequent attempts were also unsuccessful, but for a different reason. While the Commission conceded that the reasons given in the *Sixth Report* supporting intermixture might have been less than persuasive, it claimed that it was foreclosed from de-intermixing by the fact that applicants or permittees for VHF stations that would be de-intermixed had expended considerable time and money in pursuing their applications.⁹⁹ This reasoning was explored in hearings before the Senate Interstate and Foreign Commerce Committee on what had now become the "UHF-VHF Allocation Problem."¹⁰⁰ FCC Chairman Rosel Hyde enunciated the Commission's position that it would be unfair to grant a VHF channel to an applicant and then rescind that grant and require the applicant to utilize a UHF channel instead. For Hyde, it would have been impermissibly contradictory for the Commission to have granted a permit in the public interest and then to rescind it on the same grounds. Thus, he justified the Commission's maintenance of the existing pattern of assignments in the *Sixth Report* Table of Assignments, commenting that had the existing stations not been constructed and on the air, "the Commission would have wished to make a better distribution of those facilities." In response, Senator Pastore, characterizing the attitude of the Senate committee, said: "In other words, we couldn't be in the mess we are in now."¹⁰¹

Finally, the Commission agreed to reconsider de-intermixture in Madison, Wisconsin; Peoria, Illinois; and Evansville, Indiana. In these communities de-intermixture was a relatively simple task because the allocated VHF channels were unused, although applications for the VHF channels had been submitted.¹⁰² Nonetheless, the Commission again failed to act. Deciding that "both fairness and practicability preclude an ad hoc approach,"¹⁰³ it denied the specific petitions for de-intermixture and instead proposed nationwide de-intermixture rulemaking.¹⁰⁴ The Commission refusal to stay VHF grants in communities that were candidates for de-intermixture was upheld by

98. Broadcast House, Inc., 10 P & F RADIO REG. 7 (1953); Arlington, James Henry, 11 P & F RADIO REG. 322 (1954); Central Texas Television Co., 11 P & F RADIO REG. 329 (1954).

99. Monona Broadcasting Co., 11 P & F RADIO REG. 477 (1954); West Cent. Broadcasting Co., 11 P & F RADIO REG. 482 (1954); Premier Television, Inc., 11 P & F RADIO REG. 909 (1955).

100. 1956 Senate Hearings, *supra* note 58, at 24.

101. *Id.*

102. Notice of Proposed Rule Making, FCC 55-101 (1955).

103. *First Report on De-Intermixture*, 13 P & F RADIO REG. 1511, 1517 (1955).

104. *Id.*

the D.C. Circuit.¹⁰⁵ Thus, while the Commission once again pondered the de-intermixture problem, it continued to grant VHF construction permit applications, making the goal of de-intermixture even more unattainable.¹⁰⁶

Comments submitted in the de-intermixture rulemaking proceedings presented a plethora of solutions to the UHF-VHF problem. Many suggested providing at least three VHF assignments in major markets so that each of the three television networks would have comparable audience coverage.¹⁰⁷ The VHF channels were to be made available by "short-spacing," placing the stations at locations that did not conform to the Commission's mileage spacing criteria,¹⁰⁸ or by making noncommercial channels available for commercial use.¹⁰⁹

The response of the Commission to these proposals must have been disconcerting to the parties who had advocated expanded use of VHF channels. Reasoning that the parties had established that UHF stations were at a demonstrable disadvantage, the Commission concluded that the solution was to place all stations at an equal competitive disadvantage by moving all stations to UHF and abandoning the VHF band to use by other services.¹¹⁰ This was regarded as an ultimate solution, but implementation of the plan was to await "the technical development of UHF to a point where it seems clear to the Commission that it can provide an adequate television service alone."¹¹¹ The inconsistency of this posture apparently never occurred to the Commission. If the solution of the UHF problem was not to be implemented until UHF could "provide an adequate television service alone," then by the time of that happy circumstance, there no longer would be a UHF problem. UHF would then be adequate, and the reason for moving all stations to UHF would have disappeared! While the Commission awaited the circumstances conducive to the ultimate solution of an all-UHF television service, it adopted an interim solution of selective de-intermixture, whereby the Table

105. *Coastal Bend Television Co. v. FCC*, 231 F.2d 498 (D.C. Cir. 1956), *aff'd*, 234 F.2d 686 (D.C. Cir. 1956).

106. The Commission went so far as to exacerbate the problem by amending the Table of Assignments to place a new VHF assignment in Vail Mills, N.Y., in the midst of the all-UHF Albany-Troy-Schenectady market. Greylock Broadcasting, licensee of WETN, Channel 19, protested this drop-in of a VHF channel on public interest and economic injury grounds and petitioned the D.C. Circuit to stay Commission action adding Channel 10 to the Table of Assignments for Vail Mills. The stay was granted, and a motion to reconsider and to vacate the stay order was denied. *Greylock Broadcasting Co. v. FCC*, 231 F.2d 748 (D.C. Cir.), *recon. denied sub nom. Greylock Broadcasting v. United States*, 231 F.2d 750 (D.C. Cir. 1956). However, the proponents of the VHF assignment ultimately prevailed when the D.C. Circuit found that the Commission had not departed from its own rules in making the VHF assignment, and that the court should not interpose its own judgment on a matter in which the Commission had expertise. *Van Curler Broadcasting v. United States*, 326 F.2d 727 (D.C. Cir. 1956).

107. The three networks were ABC, CBS, and NBC, the Du Mont Network having expired. See text accompanying note 87 *supra*.

108. See note 35 *supra*.

109. Comments of National Broadcasting Co., FCC Docket No. 11532 (Dec. 15, 1955).

110. *Second Report on De-Intermixture*, 13 P & F RADIO REC. 1571 (1956).

111. *1956 Senate Hearings*, *supra* note 58, at 940.

of Assignments would be amended to make certain selected market areas all-UHF.¹¹²

The Commission decided to de-intermix six market areas: Peoria, Illinois; Elmira, New York; Springfield, Illinois; Evansville, Indiana; Fresno, California; and the Albany-Troy-Schenectady, New York area. Selective de-intermixture was exceptionally complex and time-consuming, and the Commission once again showed itself incapable of decisive action. Having made a decision for or against de-intermixture, the Commission would then reverse itself on reconsideration or find itself reversed by the D.C. Circuit. To add to the complexity of the process, it was discovered that some of the proceedings had been contaminated by ex parte contacts with Commissioners, requiring *de novo* consideration.¹¹³ By the time the commission had finally reached a decision on a de-intermixture petition, it was likely that the UHF licensee requesting de-intermixture had long since left the air, unable to carry the considerable financial burden of operating the station at a loss and paying the legal fees associated with the interminable Commission and court proceedings. Moreover, while the Commission vacillated the superior economic position of the VHF stations became more firmly entrenched.

Short-Spaced VHF Drop-ins and the Principle of Equivalent Protection

With the failure of selective de-intermixture, the Commission was left without a means of providing a viable third service necessary to provide three competitive network outlets in communities in which there were only two VHF channels in operation. In most communities this meant providing an outlet for the American Broadcasting Corporation (ABC) network which, being a relative latecomer to television, found the available VHF channels in many communities already occupied by NBC and CBS affiliates. Additional spectrum space in the VHF band could not be obtained; the Commission had tried and failed to create VHF channels above Channel 13.¹¹⁴

112. See note 110 *supra*. One of the criteria used by the Commission in its deliberations on de-intermixture was "UHF penetration." In order for a market to be eligible for de-intermixture, it was necessary to show that a "high proportion of sets in use" was capable of UHF reception. Flint, Michigan De-Intermixture, 17 P & F RADIO REG. 1509 (1958). Once again, the logic was circuitous. The markets with a high proportion of UHF sets in use were those markets in which UHF was succeeding, and hence those least in need of de-intermixture.

113. See, e.g., Fresno De-Intermixture, 15 P & F RADIO REG. 1586 (1957), 18 P & F RADIO REG. 1501 (1959); Albany-Schnectady-Troy De-Intermixture, 15 P & F RADIO REG. 1501 (1957), Evansville De-Intermixture, 15 P & F RADIO REG. 1572, *recon. denied*, 15 P & F RADIO REG. 1586, *pet. denied*, 15 P & F RADIO REG. 1771 (1957), *aff'd sub nom.* Owensboro on the Air, Inc. v. United States, 262 F.2d 702 (D.C. Cir. 1958), *cert. denied*, 360 U.S. 911 (1959); WMBD, Inc., 22 F.C.C. 1039 (1957), *aff'd sub nom.* WIRL Television Co. v. United States, 253 F.2d 863 (D.C. Cir. 1957), *remanded on other grounds*, 358 U.S. 51 (1958), *remanded* 274 F.2d 83 (D.C. Cir. 1959) (ex parte contacts); Sangamon Valley Television Corp., 22 F.C.C. 1173 (1957), *aff'd sub nom.* Sangamon Valley Television Corp. v. United States, 255 F.2d 191 (D.C. Cir. 1957), *remanded on other grounds*, 358 U.S. 49 (1958), *remanded*, 269 F.2d 211 (D.C. Cir. 1959), *further remanded*, 294 F.2d 742 (D.C. Cir. 1960) (ex parte contracts).

114. The Commission had inquired of the Defense Department and other users of fre-

With UHF not considered competitive and expansion in the VHF spectrum foreclosed, the only alternative left was to abrogate the *Sixth Report* mileage separation criteria¹¹⁵ to permit short-spacing of VHF television stations. The Commission characterized the short-spacing measure as strictly interim¹¹⁶ since the "major expansion of television [is] indissolubly tied to UHF"¹¹⁷ and "short-spaced VHF assignments are justifiable at this stage only where there is the most pressing urgency for the addition of a third service in major markets."¹¹⁸ The communities eligible for short-spaced VHF assignments were required to meet the following criteria:

1. That the markets selected be included within the 75 major markets of the country.
2. That two VHF stations be already in operation in the market area.
3. That there be minimum dislocation to existing stations.
4. That the proposed assignment not have significant adverse effect on VHF stations assigned to other cities.
5. That the potential gains in service from the new assignment outweigh the potential service areas lost.
6. That no new assignments be made at less than 120 miles co-channel and 40 miles adjacent-channel.
7. That the new assignments conform with international agreements.¹¹⁹

Applying the above criteria, the Commission selected 10 markets for possible short-spaced VHF drop-ins.¹²⁰ Although not articulated in Docket 13340,¹²¹ the Commission apparently chose cities for short-spacing consideration in an effort to place the ABC network in a more competitive position with respect to CBS and NBC. The majority of the cities selected had no existing VHF stations with ABC affiliations, and fresh in the Commission's mind was the fact that its refusal to provide sufficient VHF channels in the *Sixth Report* had been a major factor in the demise of the Du Mont network.¹²²

The Commission's plan for short-spacing required the newly permitted stations to limit their power and antenna height or to utilize directional transmitting antennas to limit the interference to nearby co-channel stations to that interference which would be caused by a full power, maximum

quencies above Channel 13 regarding the possibility of creating 37 additional VHF channels. It was concluded that national defense requirements precluded use of these frequencies for television. Report & Order, Docket No. 13340, FCC 61-994, July 17, 1961 [hereinafter cited as Docket 13340]. *Hearings on Television Allocations Before the Senate Comm. on Interstate and Foreign Commerce*, 86th Cong., 2d Sess. 39 (1960).

115. See text accompanying note 55 *supra*.

116. Docket 13340, *supra* note 114, at 3.

117. *Id.*

118. *Id.* at 2.

119. *Id.* at 3.

120. Baton Rouge, La.; Dayton, Ohio; Birmingham, Ala.; Jacksonville, Fla.; Knoxville, Tenn.; Johnstown, Pa.; Charlotte, N.C.; Oklahoma City, Okla.; Providence, R.I.; and Syracuse, N.Y. *Id.*

121. Docket 13340, *supra* note 114, at 3.

122. See text accompanying note 87 *supra*.

antenna height, co-channel station operating at the minimum mileage separation allowed by the Rules.¹²³ The concept of short-spacing and equivalent protection was vehemently opposed by the Association of Maximum Service Telecasters (AMST), a group of VHF station owners who argued that the status quo in mileage separations should be maintained "to protect existing service to the public," and that "even a limited number of substandard assignments is not in the public interest."¹²⁴ Despite these objections, the Commission decided to proceed "with consideration of a limited number of short-spaced VHF channel assignments,"¹²⁵ although denying expansion of the short-spacing docket to include markets other than the ten contained in Docket 13340.¹²⁶

Once again, after having spent considerable time and effort in developing an interim policy, the Commission was unable to follow it. None of the short-spaced assignments approved in Docket 13340 was ever implemented, and the interim policy was officially abandoned in 1962.¹²⁷ The final results of the interim policy were merely two years of rulemaking, reconsiderations, reports and orders, and memoranda. Surviving Docket 13340 was a valuable technical legacy — the engineering standards for providing equivalent protection when television stations were short-spaced. In terms of providing three competitive network services, however, the interim policy was, like prior Commission efforts to solve the VHF-UHF problem, a failure.

THE ALL-CHANNEL RECEIVER ACT

Subsequent to the failure of short-spaced VHF drop-ins, the Commission embarked on another new policy of expanded use of UHF.¹²⁸ The components of this policy were: (1) selective de-intermixture;¹²⁹ (2) a reallocation

123. See Docket 13340, *supra* note 114, at 4.

124. Memorandum Opinion & Order, Docket No. 13340, F.C.C. 61-1445 at 1 (1961). AMST has been a powerful force in opposing all short-spacing proposals subsequent to the formulation of this policy. Their arguments, largely technical, are that interference protection is truly "equivalent" only at the point where the ratio of desired to undesired signal is equal to 28 dB. At all other locations, the interference is either better or worse than that which would be caused by a "standard-spaced" station; therefore, interference protection from a short-spaced station is never truly "equivalent."

125. Docket 13340, *supra* note 114, at 7.

126. Additional short-spaced VHF assignments had been proposed in the Sacramento-Bakersfield-Fresno, Cal. market, and in Binghamton, N.Y., Harrisburg, Pa., and Waco, Tex. *Id.* at 8. Subsequent petitions to add VHF channels at Worcester, Mass. and Orlando, Fla. were also denied. Memorandum Opinion & Order, Docket No. 13340, F.C.C. 61-1445 (1961).

127. *VHF Drop-ins*, 25 P & F RADIO REG. 1687 (1963). Characteristically, the Commission could not even abide by its abandonment of the interim policy and resurrected it to provide a drop-in for Baton Rouge, La. St. Anthony Television Corp., 2 P & F RADIO REG. 2d 348 (1964), *remanded sub nom.* Louisiana Television Broadcasting Corp. v. FCC, 347 F.2d 808 (D.C. Cir. 1965). Following the remand from the D.C. Circuit, the Commission once again reversed its course and permitted the Baton Rouge applicant to utilize a VHF channel only at a transmitter site that would meet the minimum mileage separation standards. St. Anthony Television Corp., 8 F.C.C.2d 294 (1967).

128. *Fostering the Expanded Use of UHF*, FCC Release No. 62-132 (1932).

129. De-intermixture was proposed for Madison, Wis.; Rockford, Ill.; Hartford, Conn.;

plan to be implemented at an unspecified time, whereby dense population areas would be made UHF-only and VHF channels would be reserved for areas of sparse population or rough terrain;¹³⁰ (3) the expanded use of translators¹³¹ to extend UHF service; and (4) most significantly, a proposal to ask Congress for legislative authority to require that all television receivers be built with integral UHF tuners.¹³² With the exception of the all-channel television receiver proposal, the Commission's new policy had even less chance of succeeding than those that had already failed.

The Commission's ability to de-intermix by arbitrarily changing existing stations from VHF to UHF was severely limited by *Television Corp. of Michigan v. FCC*.¹³³ While the case did not involve a UHF/VHF problem, but rather the move of a VHF station to another location, it gave unprecedented emphasis to the loss of service concept. The proposed move would have provided new service to over 100,000 persons, but it would have deprived 900 persons of existing service. The court held that the deprivation of service to any group was per se undesirable, to be justified only by offsetting factors, and that the gain of 100,000 viewers was not sufficiently offsetting.¹³⁴ In light of this rationale, the Commission would have difficulty in justifying the substitution of a UHF for an existing VHF station since the UHF's smaller service area and the lack of UHF reception capability on most TV sets would inevitably cause some loss of service.

Another factor militating against the success of any further de-intermixture attempts was the mood of Congress. Bills were introduced in both houses to deprive the Commission of the authority to remove VHF assignments.¹³⁵ At the same time, other bills were introduced by the Com-

Erie, Pa.; Binghamton, N.Y.; Columbia, S.C.; Montgomery, Ala.; and the Champaign-Urbana-Danville-Springville-Decatur, Ill. market. The "policy" on selective de-intermixture was merely a replay of previous Commission proposals that had culminated in denial of de-intermixture. See text accompanying note 110 *supra*.

130. See note 14 *supra*. This conclusion was exactly contrary to the position taken by the Commission in the *Sixth Report*. See note 82 *supra* and text accompanying note 69 *supra*.

131. A translator is a low power relay device that receives and re-transmits the signals of a "parent" television station (UHF or VHF). Translators are useful for providing spot coverage of small communities too distant from the parent station to receive it directly or "shadowed" from the parent station by intervening terrain. However, translators are not suitable for wide-area coverage because of their low power and generally limited antenna height. Therefore, use of translators to extend the coverage of a UHF station to furnish "wide-area" coverage is not feasible because of the large number of translators that would be required and the expense of purchase and maintenance of the required equipment. Maintenance of translators is a particular problem because of their usual inaccessibility on mountain tops. See 47 C.F.R. §74.701 (1974).

132. It is arguable that the Commission already had the authority to require the production of sets with UHF tuners under 47 U.S.C. §303(f), without the need for further legislation from Congress.

133. 294 F.2d 730 (D.C. Cir. 1961).

134. *Id.* at 732.

135. H.R. 9267, 9277, 9291, 9293, and 9322 sought to place "certain limitations on the authority of the FCC to delete previously assigned VHF television channels." H.R. 9349 was a "bill to amend the Communications Act of 1934, so as to clarify the intent of Congress with respect to the authority of the FCC in the allocation of television

mission requesting authority to regulate the characteristics of television receivers.¹³⁶ While the large majority of persons testifying before the House and Senate committees favored granting the Commission's request for regulatory authority over receivers, there were several objections.¹³⁷ One was that once the all-channel receivers were in the hands of viewers, UHF would then be sufficiently adequate to justify extensive de-intermixture by the Commission, and that upon de-intermixture, several communities would lose their desirable VHF channels.¹³⁸ The objection was reasonable because even given extreme UHF receiver penetration, a UHF station would not have coverage comparable to that attainable with VHF. The UHF transmitters available at the time were not adequate to provide the regulatory maximum power, and economic factors precluded the purchase of maximum height towers by UHF stations. Moreover, UHF stations were, and still are, at a decided coverage disadvantage in areas characterized by rugged terrain because because of the propagation characteristics of UHF signals.

A further objection was that the scope of authority to be given the Commission was too broad, and could be abused, for example, to require all receivers to be capable of color reception.¹³⁹ This objection was disingenuous as more careful draftsmanship in the legislation could easily remedy overbreadth.

Yet another objection was that once UHF became a viable service as a result of the all-channel bill, the Commission would move all television to UHF, abandoning the VHF band to other services.¹⁴⁰ An all-UHF television

channels." H.R. 457 opposed, "the FCC's position regarding high frequency [*sic*] and ultra high frequency television assignments." H.R. 469 requires, "[t]hat the FCC should not adopt any action requiring a present VHF television station to change its operation to any channel other than another of the present VHF channels." See generally *Hearings on All Channel Television Receivers Before the House Comm. on Interstate and Foreign Commerce*, 87th Cong., 2d Sess., (March 1962) [hereinafter cited as *1962 House Hearings*].

136. H.R. 8031, *A Bill to Amend the Communications Act of 1934 in Order to Give the FCC Certain Regulatory Authority Over Television Receiving Apparatus*, 1962 House Hearings, *supra* note 135; S. 2109, *A Bill to Amend the Communications Act of 1934 in Order to Give the FCC Certain Regulatory Authority Over Television Receiving Apparatus*, Hearings Before the Communications Subcommittee of the Committee on Commerce, United States Senate, 87th Cong., 2d Sess. (February 1962) [hereinafter cited as *1962 Senate Hearings*].

137. Support for the concept of all-channel receivers was by no means unanimous. Congressmen from states in which there were no operating UHF stations opposed the proposal on the basis that it would be an unnecessary expense for their constituents for whom the capability of receiving UHF would be worthless. See *1962 House Hearings*, *supra* note 135, at 70 (statement of Hon. Peter H. Dominick).

138. "The FCC has recently embarked on a widespread program to de-intermix many areas and make them all-UHF. I understand that one of the reasons given for the selection of the cities that were to be de-intermixed in this program was the fact that in those areas there was widespread distribution of sets able to receive UHF. If the power proposed to be conferred by the bills before the committee is not carefully restricted, in a few years this same excuse could be advanced for making any section of the country, or the entire country, all-UHF and doing away with VHF television altogether." *1962 House Hearings*, *supra* note 135, at 39 (statement of Hon. Tom Steed).

139. S. REP. NO. 1526, 87th Cong., 2d Sess. 7 (1962).

140. *1962 House Hearings*, *supra* note 135, at 105, 200-07.

system had been advocated by Commissioner Robert E. Lee; however, other commissioners were adamantly opposed to his proposal, and the possibility of its adoption was remote. Finally, the receiver manufacturers argued that the cost of adding UHF reception capability would be so burdensome to the consumer that the manufacturing industry would experience a drop in receiver sales.¹⁴¹

Although the constitutionality of the proposed bill was also questioned by its opponents, Congress' authority to regulate the characteristics of receivers shipped in interstate commerce was clearly permissible.¹⁴² The outcome of the legislative activity was essentially a bargain between Congress and the Commission. In exchange for its requested all-channel legislation, the Commission agreed to abandon its efforts at de-intermixture for an indeterminate period.¹⁴³

The House and Senate versions of the all-channel bill differed in the extent to which the Commission was to have authority to regulate the performance characteristics of receivers. The House bill¹⁴⁴ provided only that the Commission be given authority to require that all television sets be "capable of receiving" all television channels,¹⁴⁵ and the Committee Report indicated the "committee is not persuaded that it is necessary in the public interest to involve the Commission in the details of television set manufacturing."¹⁴⁶ The Senate, however, believed that the wording of the House bill would allow manufacturers to produce receivers with only the barest capability of receiving UHF signals. Accordingly, the Senate version specified that all-channel receivers "be capable of *adequately* receiving" all frequencies allocated to television broadcasting,¹⁴⁷ and it was this wording that appeared in the statute.

In return for this regulatory authority, the Commission gave Congress the assurance "that the practical need for procuring authority which would permit effective enforcement of this legislation would not involve the Commission broadly in the dealings of television set manufacturers."¹⁴⁸ This gentlemen's agreement that the Commission would tread lightly in imposing regulations on the set manufacturing industry was to have serious repercussions on the success of the legislation in providing a solution to the UHF problem. The All-Channel Act became effective on July 10, 1962. In response to the mandate that receivers must adequately receive UHF,¹⁴⁹ the Commission promulgated regulations prescribing minimum performance standards for the

141. 1962 Senate Hearings, *supra* note 136, at 209. Realistically, just the opposite was true. All-channel legislation would stimulate the construction of additional UHF stations and create a greater market for television receivers.

142. 1962 House Hearings, *supra* note 135 at 124; 1962 Senate Hearings, *supra* note 136, at 6.

143. 1962 House Hearings, *supra* note 135, at 195-98; 1962 Senate Hearings, *supra* note 136, at 6-7, 13-14.

144. 1962 House Hearings, *supra* note 135.

145. S. REP. No. 1526, *supra* note 139, at 5-6.

146. *Id.* at 6.

147. *Id.* at 8 (emphasis added).

148. *Id.*

149. Act of July 10, 1962, Pub. L. No. 87-530, §§303(s), 330, 76 Stat. 150 (1962).

UHF reception capabilities of television receivers shipped in interstate commerce.¹⁵⁰ The standards were truly minimum, reflecting the worst performance of available UHF receivers.¹⁵¹ As a consequence of these lax receiver standards, UHF stations would have to radiate a signal at least 10 times more powerful than their VHF counterparts to attain comparable service.¹⁵² The Commission, in an excess of caution not to involve itself in the "dealings of television set manufacturers,"¹⁵³ actually frustrated the express intent of Congress that television viewers would "in fact get comparable reception from UHF and VHF stations."¹⁵⁴

Technical deficiencies aside, the Commission's all-channel receiver rules may have saved UHF from extinction, but they by no means ensured its health. Manufacturers progressed slowly in equipping receivers with UHF reception capability, and several extensions of the effective date of the all-channel rules were granted by the Commission.¹⁵⁵ The goal of the receiver manufacturers became bare compliance with the minimum performance specifications of the FCC rules at a minimum price; and because the noise values specified in the rules could be met readily, technological development in UHF reception techniques stagnated.¹⁵⁶ One definite result of the all-channel legislation was the end of the intermixture/de-intermixture con-

150. 47 C.F.R. §§15.4(h), (i), and §15.65 (1975).

151. The sensitivity of the UHF portion of the television receiver was expressed in the regulations in terms of a parameter known as noise figure. If the value of noise figure is lower, the receiver has greater sensitivity—its capability of receiving pictures free of objectionable picture snow. The Commission specified a maximum noise figure of 18 dB, despite evidence that noise figures of 9-13 dB were attainable in production receivers. 1956 Senate Hearings, *supra* note 58, at 98 (testimony of Sarkes Tarzian). This action virtually invited manufacturers to produce receivers with the barest capability for UHF reception, and thus limited the effective service area of every UHF station in the country. The difference in performance between a receiver with a 9 dB noise figure and one with an 18 dB noise figure is far greater than the mere numbers would seem to indicate. Decibel (dB) is a logarithmic unit, and each 3 db decrease in receiver noise figure has the same effect on the amount of noise ("snow") in the picture, as would be attained by doubling the radiated power of the television station. Hence a decrease in noise figure from 18 dB to 9 dB would have the same effect as a sixfold increase in the power of the television station. VHF/UHF COMPARISON, *supra* note 14, at 32.

152. The noise figure of a typical television receiver on VHF channels is approximately 8 dB. The difference between the 18 dB noise figure allowed by the Commission for UHF receivers and the 8 dB noise figure typical for VHF, results in a virtual absurdity. For a UHF station to provide equivalent service to a VHF station operating at the regulatory maximum radiated power of 316 kw, 47 C.F.R. §73.614 (1974), the former would have to operate with an effective radiated power of 3160 kw (31.6 million watts). This is 27.6 million watts in excess of the maximum power permitted UHF stations and is both technically and economically infeasible. Additionally, this comparison of UHF and VHF coverage assumes relatively flat terrain in the service area of the stations. Under conditions of rough terrain, UHF is at an even greater disadvantage. VHF/UHF COMPARISON, *supra* note 14, at 17.

153. See text accompanying note 148 *supra*.

154. S. REP. NO. 1526, *supra* note 139, at 8.

155. All-Channel Tuning Rules, 24 P & F RADIO REG. 1033 (1966).

156. HAZELTINE RESEARCH, INC., MEASUREMENT AND SURVEY PROGRAM OF UHF TUNER NOISE FIGURE, REP. NO. 3614 TO THE PUBLIC BROADCASTING SERVICE (1974) [hereinafter cited as HAZELTINE RESEARCH].

troversy. The Commission, heeding the declaration of Congress that national policy favored an intermixed system of VHF and UHF broadcasting, has never again considered de-intermixture.¹⁵⁷

The effect of the All-Channel Act was measurable both in terms of the increase in the number of homes in which UHF could be received and in the growth of the number of UHF stations. When the All-Channel Act was passed in 1962, only 7.17 percent of homes had UHF reception capability. This figure rose to 54.9 percent in 1969¹⁵⁸ and to 86 percent in 1974.¹⁵⁹ From 1954 to 1960, prior to the passage of the All-Channel Act, the number of UHF stations declined, but after the implementation of the bill in 1964 commercial UHF stations proliferated. From 1964 to 1970 the number of stations more than doubled, from 88 to 182.¹⁶⁰ Growth rate then tapered as only 13 stations were added from 1970 until June 1975.¹⁶¹ The number of educational UHF stations has also grown rapidly, from 32 in 1964 to 147 in June 1975.¹⁶² This growth rate of educational stations may be more attributable to the availability of federal funds for station construction from the Department of Health, Education, and Welfare,¹⁶³ rather than to the All-Channel Act.

Survival alone does not imply success, and despite the increase in the number of homes capable of UHF reception and in the number of UHF stations in operation, viewership and profits of UHF stations are significantly below those of their VHF counterparts.¹⁶⁴

THE ALLOCATIONS HIATUS — 1964-1969

From the effective date of the all-channel rules in 1964 until 1969, there was little activity in television allocation matters. Periodic amendments to the Television Table of Assignments added channels in instances where the petitioner could demonstrate a need for new service and where the channel requested met the Commission's mileage spacing criteria.¹⁶⁵ Existing stations requested permission to relocate their transmitter sites, often with increases in power and antenna height, in order to provide improved service. When such relocation or improvement of facilities of a VHF station impinged on the service area of an existing or potential UHF station, the Commission often designated the application for hearing on a UHF impact issue.¹⁶⁶ Waivers of the Commission's co-channel and adjacent channel mileage

157. S. REP. NO. 1526, *supra* note 139, at 8.

158. 39 TELEVISION FACTBOOK 89a (1970).

159. 44 TELEVISION FACTBOOK 95a (1975).

160. *Id.*

161. FCC News Release No. 52517, July 10, 1975.

162. *Id.*

163. 47 U.S.C. §§390-97 (1964), as amended, 47 U.S.C. §§390-95, 390-97 (1969).

164. 44 TELEVISION FACTBOOK 104a (1975).

165. See note 35, *supra*.

166. WLCY-TV, Inc., 27 P & F RADIO REG. 2d 153 (1972) is typical of the Commission's protective attitude toward UHF stations. WLCY-TV, the ABC affiliate in Tampa, Florida, was denied a change of transmitter site on the basis of, *inter alia*, an adverse economic effect on UHF stations WTOG, Tampa-St.Petersburg, WSUN, St. Petersburg, and WXLTV, Sarasota-Bradenton.

separation criteria were granted to existing stations wishing to move their transmitter sites, if such derogation of the mileage separation criteria was *de minimis*. Short-spacing requests resulting in significant derogation of the mileage spacing criteria were usually denied, often at the request of petitions to deny filed by AMST, the defender of full service, wide-area television service.¹⁶⁷

In 1969, five years after the effective date of the all-channel rules, the Commission instituted rulemaking proceedings proposing that comparable ease of tuning be provided for channel selection of UHF and VHF stations on all-channel receivers.¹⁶⁸ The great majority of television receivers in use in 1969 employed continuous tuning for UHF channel selection and the simpler "detent" (click stop) tuning for VHF channel selection.¹⁶⁹ For many viewers, the UHF portion of their receivers was a mystery, and they were incapable of tuning in a UHF channel. Even for those viewers capable of using their UHF tuners, UHF tuning was inconvenient. In the all-channel receiver proceedings, the Commission had been assured by the manufacturers that continued improvements would be made in UHF tuners, resulting in "very substantial improvement in UHF receiver capability, both generally and with respect to ease of tuning, so as to put UHF on a par with VHF."¹⁷⁰ Because these improvements were not forthcoming, the Commission instituted rulemaking that proposed that receivers utilize the same method of tuning for UHF as for VHF. For most receivers this meant that both UHF and VHF channels would be selected by means of detent tuning. Additionally, any tuning aids¹⁷¹ for VHF channel selection were also to be provided for UHF channel selection. Comparable tuning rules were adopted in 1970 in essentially the same form as they were proposed;¹⁷² however, the Rules have been implemented slowly. Presently, the Commission continues to grant waivers of the comparable tuning rules to some manufacturers who claim they

167. See Channel Assignment at Syracuse, N.Y., 21 P & F RADIO REG. 1754 (1961); Tri Cities Broadcasting, 23 P & F RADIO REG. 1045 (1962).

168. Notice of Proposed Rule Making Regarding All-Channel Television Broadcast Receivers, 34 Fed. Reg. 1732 (Feb. 5, 1969).

169. On receivers employing continuous tuning for UHF channel selection, greater care and precision are required to select a UHF channel than a VHF channel. The continuous tuning UHF tuners require the viewer to rotate the tuning dial until the desired UHF channel comes into view in a "window," then to make a more precise adjustment of the tuning knob while simultaneously observing the screen for an optimum picture. VHF channel selection is much simpler, requiring only "clicking" the channel selector to the desired channel—a process called detent tuning. The UHF continuous tuning dials are often small, with channel numbers displayed only every ten channels, requiring the viewer to interpolate between markings to select a desired channel.

170. Notice of Proposed Rule Making Regarding All-Channel Television Broadcast Receivers, 34 Fed. Reg. 1732 (Feb. 5, 1969).

171. This included automatic fine tuning (AFT), tuning meters or lights, automatic signal seeking, and remote control. *Id.* AFT was the most difficult feature to implement at UHF. AFT circuits eliminate the need for the viewer to manually adjust the tuner local oscillator frequency by means of the "fine tuning" control to obtain a satisfactory picture. See Comparable Television Tuning Regulation, 30 F.C.C.2d 444 (1971).

172. *Id.*

are unable to conform.¹⁷³ Thus, it is too early to determine whether the comparable tuning rules have had any significant effect in minimizing the differences between UHF and VHF.

THE MOVE BACK TO VHF SUPERIORITY, 1969 TO PRESENT

In 1968 the Virgin Islands Public Television System submitted a Petition for Rulemaking¹⁷⁴ requesting that Channel 12 be assigned to St. Thomas and Channel 3 be assigned to St. Croix, both channels to be reserved for noncommercial educational use. The petition requested that these channels be assigned as "short-spaced VHF drop-ins" using the criteria in the Docket 13340 proceedings of 1963.¹⁷⁵ The degree of short-spacing requested was unprecedented, 45 miles in the case of Channel 12 and 44 miles in the case of Channel 3, but there were several particularized factors that operated to improve the proposal's chances of success. First, the stations to which the proposed drop-ins were short-spaced¹⁷⁶ were located near the western shore of Puerto Rico. Because of the nature of the rugged terrain in Puerto Rico, the coverage areas of these existing stations were extremely limited. Moreover, the high terrain separating the drop-ins from the operating stations provided a natural shield from interference, making the possibility of co-channel interference exceptionally remote.¹⁷⁷ Second, while UHF channels were available and reserved for noncommercial broadcasts in the Virgin Islands,¹⁷⁸ the exceptionally rugged terrain in the Virgin Islands made their use unsatisfactory. Also UHF penetration¹⁷⁹ in the Virgin Islands lagged well behind that in the continental United States. Finally, the drop-ins were for noncommercial educational use to serve an economically, culturally, and educationally deprived audience, atypical of the average continental United States audience. This factor substantially strengthened the equities of the petition.¹⁸⁰

The petition was vigorously opposed, *inter alia*, by the licensees of commercial VHF stations in the Virgin Islands,¹⁸¹ the licensees of the Puerto Rican stations with which the Virgin Islands drop-in channels would have been short-spaced,¹⁸² and by AMST.¹⁸³ Despite this opposition, the drop-ins

173. Comparable Television Tuning Rules, 33 P & F RADIO REG. 2D 413 (1975).

174. Report and Order, Docket No. 18881, 26 F.C.C.2d 853 (1970).

175. See note 124 *supra*.

176. The stations were WOLE, Channel 12, Aguadilla-Mayaguez, Puerto Rico, a satellite of WAPA-TV, San Juan, Puerto Rico, and WIPM, Channel 3, Mayaguez, Puerto Rico, a satellite of WIPR-TV, an educational station in San Juan, Puerto Rico.

177. See text accompanying note 50 *supra*.

178. These UHF channels were Channel 23 in St. Thomas and Channel 21 in St. Croix, 47 C.F.R. §73.606 (1974).

179. For example, the percentage of receivers capable of UHF reception was much smaller. The Virgin Islands at the time of submission of the petition had a UHF penetration of 20%, compared to a UHF penetration of 75% in the continental United States. Report & Order in Docket No. 18881, 26 F.C.C.2d 853, 854 (1970).

180. "Of the factors involved, perhaps the most significant is the fact that channels for educational, or public television are involved." *Id.* at 859.

181. *Id.* at 861.

182. *Id.*

183. *Id.* See text accompanying note 124 *supra*.

were approved in 1970¹⁸⁴ following two years of consideration by the Commission.

The next attempt at substantial short-spacing was made in August 1972, by the Greater Washington Educational Telecommunications Association (GWETA) licensee of WETA-TV, Channel 26, Washington, D.C. Asserting its finding, confirmed by mail and in-person surveys, that it was not effectively reaching its intended audience using UHF Channel 26, GWETA applied for an experimental authorization to operate on a short-spaced basis in Washington, D.C., on VHF Channel 12.¹⁸⁵ Unlike the Virgin Islands drop-ins, the GWETA proposal did not comport with the "equivalent protection" standards in Docket 13340.¹⁸⁶ For example, one of the proposed co-channel short-spacings was less than the 120 mile minimum prescribed in Docket 13340.¹⁸⁷ Also, the transmitting antenna proposed had a directivity of 18.4 dB, 3.4 dB greater than permitted by the Docket 13340 standards.¹⁸⁸ The effect of such excess directivity would be to cause picture "ghosting" on the signals of the experimental station in the area toward which the transmitting antenna was directionalized to protect co-channel stations. Another conflict was created by the proposed substantial derogation of the adjacent-channel mileage separation criteria in Section 73.610 of the Rules.¹⁸⁹ No standards had been established for the reduction of adjacent-channel mileage separation in Docket 13340, and the application acknowledged that objectionable interference would occur to the signals of WBAL-TV and WJZ-TV, both in Baltimore, Maryland. It was submitted, however, that the loss of service would be offset by the

184. *Id.* at 861. Noncommercial stations have traditionally received more favorable consideration of their short-spacing proposals than have commercial stations, presumably because the factor of "economic injury" to existing commercial services is absent in the case of noncommercial stations. See WHY, Inc., Broadcast Actions, FCC Rep. No. 9538 (Dec. 10, 1970); Nebraska Educational Television Commission, 4 P & F RADIO REG. 2D 771 (1965); South Dakota State University, Broadcast Actions, FCC Rep. No. 7037 (Feb. 16, 1968); Redwood Empire Education Television, Inc., Broadcast Actions, FCC Rep. 7090 (March 6, 1968); Evansville-Vanderburgh School Corp., Broadcast Actions, FCC Rep. No. 8896 (March 11, 1970).

185. Application of Greater Washington Education Telecommunications Ass'n, FCC File No. BPEX-238 (August 11, 1972) [hereinafter cited as File No. BPEX-238]. GWETA took advantage of the Commission's rules respecting experimental stations, asserting that "[t]he values which should be properly used in the various calculations necessary to predict interference, coverage, directional antenna characteristics, precision offset, and similar factors in allocations determinations, remain in dispute, and that a measurements program associated with the proposed experiment would refine those values." Opposition of Greater Washington Educational Telecommunications at 49, FCC File No. BPEX-238 (undated).

186. See text accompanying note 123 *supra*.

187. Docket 13340, *supra* note 114, at 1698. The co-channel short-spacings involved were as follows: 1. To WWBT, Richmond, Va., 102.3 miles, a 66.7 mile derogation of the 170 mile minimum mileage separation criterion in 47 C.F.R. §73.610 (1974); 2. To WHY, Wilmington, Del., 124.9 miles, a 45.1 mile derogation of the 170 mile minimum mileage separation criterion. *Id.*

188. Docket 13340, *supra* note 114, at 1699.

189. The separation between the proposed experimental station and stations WBAL-TV, Channel 11 and WJZ-TV Channel 13, Baltimore, Maryland, was 35.9 miles, 24.1 miles short of the 60-mile minimum specified in 47 C.F.R. §73.610 (1974).

gain in noncommercial service provided by the proposed station and, further, that the Baltimore stations were not widely viewed in the area in which interference would occur.¹⁹⁰

Unlike the Virgin Islands drop-in, the equities in the GWETA proposal did not lie with the petitioner. It is one thing to provide for the specialized needs of an educational broadcaster in a remote territory of the United States and quite another to make an unprecedented change of allocations policy to permit a station that would cause acknowledged widespread interference in the Commission's own back yard in Washington, D.C. The effect of such a grant would undoubtedly be, as claimed by one of the many objectors to the proposal, a finding that "the FCC had concluded that the UHF is simply not good enough — that if it is not good enough for Washington, it is not good enough for the rest of the country."¹⁹¹

Facing practically insurmountable odds, the Commission remarkably gave the GWETA proposal extensive consideration. Three years after submission of the application, the Commission denied it because it did not comport with the Commission's rules respecting experimental authorizations and because the extensive interference that the station would cause would not be offset by the availability of a limited coverage, noncommercial VHF facility in Washington.¹⁹²

The OTP Plan

In October 1972, the Office of Telecommunications Policy (OTP)¹⁹³ issued a report that purported to show that at least 63 VHF channels could be dropped into 100 major markets in the continental United States "without affecting those [stations] already in being and operating in accordance with current FCC rules."¹⁹⁴ The drop-ins were to be accomplished by:

1. Reduction of present distance separation criteria.
2. Use of directional antennas where necessary to overcome slight derogations of distance separation criteria.
3. Increased use of precise offset frequency control.
4. Increased consideration of the advantages offered by terrain shielding.

190. File No. BPEX-238, *supra* note 185, at 52.

191. *Objections of Association of Maximum Service Telecasters, Inc.*, FCC File No. BPEX-238 at 5 (1972). Other objecting parties were: Westinghouse Broadcasting Co., Inc., licensee of WJZ-TV, Baltimore; Northern West Virginia Television Broadcasting Co., licensee of WBOY-TV, Clarksburg, West Virginia; the Consumer Electronics Group of the Electronics Industries Ass'n; The Hearst Corp., licensee of WBAL-TV, Baltimore; the All-Channel Television Society; Jefferson Pilot Broadcasting Company of Virginia, licensee of WWBT-TV, Richmond, Virginia; and Channel 20, Inc., licensee of WDCA, Washington, D.C.

192. Greater Washington Educational Telecommunications Ass'n, 53 F.C.C.2d 1910 (1975).

193. The Office of Telecommunications Policy is an instrumentality of the Executive Office of the President. 36 Fed. Reg. 25413 (1971).

194. Office of Telecommunications Policy, TECHNICAL ANALYSIS OF VHF TELEVISION BROADCASTING FREQUENCY ASSIGNMENT CRITERIA at 5 (1973).

5. Possible simultaneous use of horizontal and vertical antenna polarization.¹⁹⁵

Items 1 and 2 are the standard means of achieving short-spaced assignments, and are set forth in the Report and Order in Docket 13340.¹⁹⁶ The Commission has steadfastly refused to take into account the benefits of precision offset frequency control (Item 3) as a means of interference reduction when co-channel stations are short-spaced.¹⁹⁷ The effects of terrain shielding (Item 4) have been taken into account in short-spacing proceedings on an *ad hoc* basis.¹⁹⁸ Cross polarization (Item 5) arguably would result in reduction of interference between short-spaced stations; however, it has the practical disadvantage of requiring the viewer to use separate receiving antennas, or an antenna rotatable in its plane of polarization, in areas where some stations utilize conventional horizontal polarization and others utilize vertical polarization for the purpose of protecting short-spaced stations from interference.¹⁹⁹

195. *Id.* at 1-2.

196. See text accompanying note 124 *supra*.

197. *Id.* Precision offset frequency control employs exceptionally accurate oscillators referenced to the ground-state of the element Rubidium, (so-called "atomic standards") to place one station's visual carrier frequency above or below the visual carrier of another co-channel station by an amount equal to a multiple of one-half of the horizontal line frequency. While the technique cannot modify the ratio of the desired to undesired signal, it makes the interference generated by the undesired signal subjectively less objectionable. The interference, which, without precision offset, takes the form of wide bars drifting through the picture, appears in a system using precision offset as a finer-grained less objectionable pattern. Additionally, the interference luminance components change polarity in successive lines, and the persistence characteristics of the human eye thus tend to integrate the interference components, effectively cancelling them. The Commission acknowledged the value of precision offset in Docket 13340, refusing, however, to use it as an allocations tool because of the relative instability and complexity of the precision offset equipment available at that time. The stability of precision offset equipment is today orders of magnitude better than at the time of Docket 13340, yet the Commission still does not recognize its value as an allocations tool. See Greater Washington Educational Telecommunications Ass'n, 53 F.C.C.2d 910, 919 (1975).

198. Report and Order, Docket 18881, 26 F.C.C.2d 853 (1970). Recently, the Commission has adopted revised charts for predicting television coverage and interference. The revised charts are used in conjunction with a terrain roughness factor that results in a diminution of predicted interference when rough terrain exists over a propagation path. Significantly, application of the revised charts to predict coverage of UHF stations results in a considerably smaller service area than would be attained through application of the old charts. The new charts show that UHF stations have much smaller coverage than VHF stations, assuming that both are operating at the maximum regulatory effective radiated power and antenna height. The differences are even more marked in areas of rugged terrain because the terrain roughness correction factor affects the coverage of UHF stations to a greater degree than VHF stations. Report & Order, Docket Nos. 16004 & 18052, 53 F.C.C.2d 855 (1975).

199. Cross-polarization takes advantage of the fact that a horizontally polarized receiving antenna is relatively insensitive to signals radiated from a vertically polarized transmitting antenna and vice-versa. To realize the benefits of the proposed technique, one of two potentially mutually interfering stations would utilize horizontally polarized transmissions, and the other would use vertically polarized transmission. Viewers wishing to receive the first station would use horizontally polarized receiving antennas, and viewers wishing to receive the second station would use vertically polarized receiving antennas. However,

Although none of the methods of achieving short-spacing offered in the OTP plan were new, its most serious defect lay in the lack of quality of the engineering work. The Chief of the Commission's Broadcast Bureau, in an internal memorandum to the Chairman of the Commission, summarized the OTP report's flaws as follows:

For your private information, the plan was prepared by an OTP staff engineer who is not fully knowledgeable in the field of TV allocation. Consequently, he failed to avoid several obvious pitfalls—the most obvious of which was his failure to consider all foreign border assignments and U.S. educational assignments.²⁰⁰

The OTP report was issued to the public, and copies sent to the Commission, but OTP made no attempt to implement the plan by petitioning for a rule-making. Nonetheless, the report prompted the Commission to evaluate the feasibility of the OTP plan.²⁰¹ Releasing a document²⁰² highly critical of the OTP plan, AMST²⁰³ pointed out that all but eight of the OTP drop-ins were technically infeasible and that the remaining eight were of doubtful promise economically. In addition the power and antenna height restrictions imposed by the need to protect other stations would unduly limit the drop-ins' coverage. Besides AMST, the merits of the OTP proposal were being adjudicated in the trade press, with the inference by some columnists that

a practical problem arises when the viewer utilizing a vertically polarized receiving antenna attempts to use that antenna for the reception of other area stations that radiate horizontally polarized signals. The vertically polarized antenna will be insensitive to these horizontally polarized signals; thus, the viewer will have to utilize a separate horizontally polarized antenna or employ an antenna that can be changed, in a polarization sense, with a motorized rotator or other means. While these problems are not insurmountable, they do represent an inconvenience and expense to the viewer, probably sufficient to dissuade the majority of viewers from installing the antenna system to receive the short-spaced station employing vertical polarization. Additionally, the full benefit of cross-polarization is realizable only under free-space propagation conditions in which no reflecting surfaces are present in the propagation path. Under practical propagation conditions, reflecting surfaces are present in the path and will cause a shift in the polarization of the reflected signal. Hence, the degree of interference reduction realized from cross-polarization would always be less than under the optimum free-space condition.

200. Internal FCC Memorandum from Wallace E. Johnson, Chief, Broadcast Bureau, to Richard E. Wiley, Chairman, FCC, May 13, 1974.

201. *Id.* See Internal FCC Memorandum from Wallace E. Johnson, Chief, Broadcast Bureau, to the Commission, Nov. 13, 1973; Internal FCC Memorandum from Assistant Chief, Broadcast Bureau, to Chief, Research Branch, Dec. 20, 1973; Letters from W. Dean, Jr., Assistant Director for Frequency Management, Office of Telecommunications Policy, to Raymond Spence, Jr., Chief Engineer, FCC, June 7, 1974, May 30, 1974, Jan. 24, 1974. See also FCC RESEARCH AND STANDARDS DIV. REP. No. RS-74-01 (1974). All of these were concerned with the technical and economic feasibility of the OTP plan. Some were highly critical of the engineering methodology of the plan. An examination of the documents reveals that the Commission viewed the OTP plan as a problem that the Commission would ultimately have to face in the rulemaking proposals that the Commission staff regarded as inevitable.

202. Association of Maximum Service Telecasters, FIRST THERE WERE 85, THEN THERE WERE 67, 66, 62 . . . THEN THERE WERE 28, 25, 16, 8 . . . (Nov. 19, 1973).

203. See note 124 *supra*.

the plan was instigated by the Nixon administration, then in the throes of its Watergate difficulties, in order to threaten anti-administration television stations with competition from short-spaced VHF drop-ins.²⁰⁴

The United Church of Christ Petition

The first action taken to implement the OTP plan was a rulemaking petition submitted jointly on March 26, 1974, by the Office of Communications of the United Church of Christ, Geoffrey Cowan, Monroe Price, Charles Channel, and Walter Baer.²⁰⁵ (Hereinafter the *UCC Petition*.) The petitioners did not specifically endorse the findings of OTP as to the feasibility of the OTP drop-in proposals, but rather asked the Commission to “[c]reate as many new VHF channels as would be technologically practical and serve the public interest by amending the Television Table of Assignments”²⁰⁶ The *UCC Petition* sought to increase the number of VHF channels available for educational use by reserving for noncommercial use any VHF drop-in in a community where there is no VHF noncommercial television reservation.²⁰⁷ Where noncommercial VHF reservations already existed, the *UCC Petition* proposed that the drop-in be “assigned to applicants with substantial minority group ownership and management.”²⁰⁸ Evaluation of the technical merits of the *UCC Petition* is difficult because petitioners have not proposed any specific drop-ins, but rather have taken the more tactically desirable approach of putting the burden on the Commission to “create a new noncommercial VHF reservation in any such community without causing significant deterioration of existing TV signals.”²⁰⁹ The phrase “significant deterioration” in itself is highly significant and the *UCC Petition* is devoid of any suggested standard as to what degree of interference is significant. Interference inevitably involves loss of service, and the VHF stations with which the drop-ins are short-spaced have standing to protest this loss of service in accordance with the holding in

204. BROADCASTING, April 10, 1974, at 23.

205. The Office of Communications of the United Church of Christ (UCC) has played an activist role in several broadcast communications proceedings, the most notable being the contested license renewal of WLBT-TV, Jackson, Mississippi. In that proceeding, the UCC and others filed a successful petition to deny WLBT-TV's license renewal on the grounds of the licensee's discriminatory hiring and programming policies. Lamar Life Broadcasting, 45 F.C.C.2d 325 (1974). In the instant petition, petitioners Cowan and Price are faculty members of the UCLA Law School, petitioner Channel is a UCLA law student, and petitioner Baer is a physicist consultant to the Rand Corporation.

206. Petition for Rulemaking to Amend Television Table of Assignments to Add New VHF Stations in the Top 100 Markets and to Insure that the New Stations Maximize Diversity of Ownership, Control, and Programming, No. RM-2346 (FCC, March 28, 1974) [hereinafter cited as *UCC Petition*].

207. *Id.* at 1.

208. UCC proposes the following criteria: “The Commission will consider substantial local ownership and management by members of each of the minority groups enumerated in 47 C.F.R. §73.125(c) to be a factor of primary significance where (1) there are already two or more television stations in the community, (2) such group or groups are not substantial owners or managers of the existing stations, and, (3) such group or groups comprise a substantial portion of the population of the community.” *Id.* at 3-4.

209. *Id.* at 10.

*Television Corp. of Michigan v. FCC.*²¹⁰ As a result, any drop-in proposal attempted through implementation of the *UCC Petition* would be faced with a protracted adjudicatory hearing at the Commission level and possible appeal to the D.C. Circuit and the Supreme Court.

Impact on the existing system of UHF stations in the United States was not satisfactorily addressed in the *UCC Petition*. Indeed, the UCC's treatment of the UHF impact issue represented a peculiarly circuitous defect in logic. The UCC, asserting that "UHF has developed to the point where it can be accorded co-equal status with VHF,"²¹¹ cited the All-Channel TV Receiver Regulations as producing "dramatic improvements in UHF service"²¹² and mentioned UHF stations WMAA and WAPT in Jackson, Mississippi, as evidence that the "UHF band is now successfully in use in Mississippi."²¹³ The UCC arguments attempted to show that UHF impact should not be a factor in consideration of its VHF drop-in proposal; however, the defect in this argument is that it proves too much. If UHF is as viable and successful as the UCC claims, and if UHF can now "be accorded equal status with VHF,"²¹⁴ then the UCC's goals²¹⁵ may be achieved by the use of UHF channels without change of the Commission's present rules and policy. More importantly, this change can be accomplished without loss of service to existing stations, a result not effectuated by the UCC drop-in proposal. In addition, the service areas of VHF drop-ins may be smaller than those available with UHF because of the need to employ less than the regulatory maximum power and antenna height to protect nearby co-channel stations from objectionable interference. For the foregoing reasons, assuming the UCC's premise of co-equal UHF/VHF status, the UHF stations would be more economically viable because of their larger service areas. If the UCC was aware of the realities of the television industry in the United States, its claim of UHF co-equality is entirely disingenuous and represents an attempt to evade one of the fatal flaws of its VHF drop-in proposal — that the activation of a VHF drop-in in a given area would threaten the economic viability of any existing or future UHF station serving the same area.²¹⁶ Further, the UCC contradicts itself by citing comparative economic projections for a hypothetical independent UHF station in Memphis, Tennessee, and a short-spaced VHF drop-in in the same city,²¹⁷ and then concluding that a new VHF would not be financially

210. 294 F.2d 730 (D.C. Cir. 1961).

211. *UCC Petition*, *supra* note 206, at 14.

212. *Id.* at 12.

213. *Id.* at 10.

214. *Id.* at 14.

215. *Id.* at 3.

216. The VHF drop-in proposal once again raises the problem of the inherent evils of intermixture. See text accompanying note 143, *supra*. The UHF impact issue would be less of a decisional factor in an instance when a VHF drop-in is used for a noncommercial station because the noncommercial station would not be competing for advertising revenue with existing commercial UHF stations. This fact notwithstanding, the noncommercial VHF drop-in would still raise the "loss of service" issue inherent in any short-spacing.

217. *UCC Petition*, *supra* note 206, at 13-14.

economically profitable, whereas a "new UHF would not be financially viable."²¹⁸

The Commission accepted the *UCC Petition*, assigned a rulemaking number, and extended without a terminal date the time for filing comments.²¹⁹ Subsequently, the Commission issued a *Notice of Inquiry*²²⁰ seeking information from interested parties on several specifics pertinent to the *UCC Petition*.²²¹ Commissioner Robert E. Lee, long a proponent of UHF, filed a strong dissent to the issuance of the *Notice of Inquiry*, stating:

If the Commission does not care if it kills off UHF television, it would appear more appropriate to do so explicitly rather than in a casual and indirect way. . . . Should the FCC embark on such a project [of drop-ins] it would confirm a lingering suspicion of collective and individual stupidity.²²²

Lee further claimed that the Commission was breaking faith with Congress because Congress granted the Commission its requested all-channel legislation

218. *UCC Petition*, *supra* note 206, at 14. It is not clear what coverage areas are postulated in estimating that the UHF station would have a prime-time rate of \$158 per hour and the VHF station a prime-time rate of \$503 per hour. It would be erroneous to base the VHF station's rate on a coverage equivalent to existing Memphis VHF stations because the drop-in's coverage area would necessarily be limited as a result of the need to use reduced power and antenna height, and possibly a directional transmitting antenna to "protect" nearby co-channel stations. See text accompanying note 123 *supra*.

219. Parties supporting the petition included the National Black Media Coalition; the Atlanta Board of Education; the Greater Washington Educational Telecommunications Ass'n; the Appalachian Research and Defense Fund, Inc.; the Comm. for Open Media; the Mayor of Louisville, Kentucky; the Governor of Maine; the Advisory Comm. of National Organizations; and the General Manager of WTLC-FM, Indianapolis, Indiana. Parties in opposition included the Nebraska Broadcasters Ass'n; South Central Broadcasting Co.; Gateway Communications, Inc.; A. Earl Cullum Consulting Engineers, WBEN, Inc.; and Universal Communications Corp. VHF Stations, Television Table of Assignments, 40 Fed. Reg. 17321-22 (1975).

220. *Notice of Inquiry*, 40 Fed. Reg. 17321 (1975) [hereinafter cited as *Notice of Inquiry*].

221. a. Whether the "passage of time," population changes, changed understanding of allocations technology, better understanding of viewers' needs, etc., justified a reopening of the matters considered in Docket 13340. *Id.* ¶14. See text accompanying note 119, *supra*.

b. Whether television facilities made possible by short-spaced drop-in proceedings would be "technically and financially sound." *Id.* ¶15.

c. The impact of implementation of the *UCC Petition* upon existing UHF stations. *Id.*

d. The viability of educational drop-in assignments located at transmitter sites distant from their community of assignment. *Id.* ¶16.

e. The effects of directional transmitting antennas using maximum/minimum ratios in excess of the values permitted under existing rules. *Id.* ¶17. See note 54 *supra*.

f. The possible use of precise frequency control as an allocations tool. *Id.* ¶18. See note 197 *supra*.

g. The possible use of cross-polarization as an allocations tool. *Id.* ¶19. See note 199 *supra*.

h. The desirability of affording preference to potential licensees who constitute minority groups, and preference to licensees who propose ownership or management by women. *Id.* ¶21.

222. 40 Fed. Reg. 17321 (1975) (Lee, dissenting). The Lee dissent was referenced, but not reproduced, in the Federal Register. Text of the dissent is contained in the FCC's unpublished mimeograph report of the *Notice of Inquiry*.

“with the express understanding that we at the FCC would not tinker further with the Table of Assignments.”²²³ Immediately following issuance of the notice, AMST requested an extension of time, until October 15, 1975, for filing comments.²²⁴ AMST’s request was granted and presently the fate of the *UCC Petition* and the outcome of the *Notice of Inquiry* are still pending before the Commission.

Fair Broadcasting in New Jersey

In March 1974 at approximately the same time the *UCC Petition* was submitted to the Commission, the New Jersey Coalition for Fair Broadcasting filed with the Commission a *Petition for Notice of Inquiry into the Need for Adequate Television Service in the State of New Jersey*.²²⁵ The petition sought redress of the Commission’s inequitable allocations policy whereby New Jersey is the only one of the fifty states without a commercial VHF station or assignment. In response to the petition, the Commission issued a notice of inquiry calling for comments on petitioner’s proposal for:

1. Allocating a VHF channel not currently in use in New York City or Philadelphia to New Jersey on a short-spaced “drop-in” basis.
2. Reallocating an assignment currently in use in New York City or Philadelphia, designating it for use in New Jersey.
3. Creating a hyphenated dual-community license, thereby “sharing” an existing station in New York or Philadelphia with a New Jersey community.²²⁶

Petitioner has filed comments in response to the notice indicating that it has abandoned proposals one and three above as being infeasible;²²⁷ however, it urged that proposal two be implemented by reassigning Channel 7 from New York City to central New Jersey, in the vicinity of Trenton. Channel 7 currently in use by WABC is the “flagship” station of the ABC network. Recognizing that there is authority for the proposition that the Commission could not give different treatment to ABC’s flagship station than that afforded

223. *Id.*

224. Request of Ass’n of Maximum Service Telecasters for Extension of Time, FCC Docket No. 20418 (May 15, 1975), *granted*, 40 Fed. Reg. 24540 (1975).

225. No. RM-2345 (F.C.C., March 4, 1974).

226. 40 Fed. Reg. 6513 (1975).

227. Engineering studies showed that no VHF channel could be dropped-in in New Jersey consistent with the short-spacing standards of Docket 13340. Engineering Statement of W. Kessler on behalf of the New Jersey Coalition for Fair Broadcasting, FCC Docket No. 20350 (May 26, 1975). The hyphenation or dual-community-of-license proposal was rejected on the basis that it would be “essentially only a formality” because it “would neither alter the service area or market of the station nor move it from its present community of license.” The Coalition’s conclusion was strongly influenced by the experience with WNET-TV Channel 13, a noncommercial station originally assigned to Newark but subsequently moved to New York. According to the Coalition, WNET-TV has not fulfilled its obligations to provide programming service to New Jersey and has refused “to honor its full license obligations.” Comments of the New Jersey Coalition for Fair Broadcasting, FCC Docket No. 20350 (undated) [hereinafter cited as Coalition’s Comments].

other network flagship stations in New York,²²⁸ the Coalition proposes that WABC be moved to a channel now occupied by one of the independent (non-network) New York VHF stations, that the independent station be moved to a UHF channel, and that Channel 7, vacated by WABC, be moved to New Jersey.²²⁹

The Coalition's proposal has gone through the comment and reply comment phase of the Commission's notice of inquiry proceedings. It is unlikely that the Commission will act on the Coalition's petition until the resolution of the UCC Rulemaking proposal.²³⁰ Technically, the Coalition's proposal is unassailable. Channel 7 will "fit" in central New Jersey without derogation of the Commission's mileage spacing criteria. The equities also favor the Coalition's position. From the standpoint of VHF television service, the entire state of New Jersey is nothing but a suburb of New York and Philadelphia. Obviously the allocation in 1945 of seven VHF channels to New York City and no VHF channels to New Jersey²³¹ was unfair to the extent that such an allocation today would not withstand a test of reasonableness if the Commission were creating the Table of Assignments *de novo*. In contrast to the equities, the fact remains that the New York and Philadelphia assignments have remained untouched over a period of thirty years of rulemaking, drop-ins, intermixture and de-intermixture, and successive interim policies. They are unlikely to be changed now, especially in view of the availability of UHF channels for use in New Jersey. The assignment of UHF channels to a given area and VHF channels to another is well within the discretion of the Commission. As the D.C. Circuit has said:

[So] long as the television transmission service, allocated to a community, whether it be solely VHF, UHF, or a combination of both, is determined on the basis of relative need, amounts to a fair and equitable distribution of service for that community, in relation to others, and gives efficient service to the community, the standard set out in Section 307(b) [of the Communications Act] is fully met.²³²

UHF IMPROVEMENT

In January of 1974 a group of commercial and noncommercial UHF broadcasters formed the Council for UHF Broadcasting (CUB).²³³ On Febru-

228. *American Broadcasting-Paramount Theatres, Inc. v. FCC*, 345 F.2d 347 (D.C. Cir. 1965).

229. Coalition's Comments, *supra* 227, at 5-7.

230. The notice of inquiry in the UCC proposal solicits comments on the "broader issues" raised in the Coalition's proposal, making it probable that the Commission will delay consideration of RM-2345 pending resolution of the issues in RM-2346. 40 Fed. Reg. 17321-24 (1975).

231. See text accompanying note 32 *supra*.

232. *Fort Harrison Telecasting Corp. v. FCC*, 324 F.2d 379, 383 (D.C. Cir. 1963).

233. The organization developed through the efforts of an interim coordinating council formed by Richard Block, then Senior Vice-President of Kaiser Broadcasting, which was licensee of UHF stations in San Francisco, Chicago, Detroit, Cleveland, Burlington, Philadelphia, Cambridge, and Corona-Los Angeles. The Kaiser UHF stations have been more successful than most, being well-financed, centrally managed, located generally in large

ary 5, 1975, CUB presented to the Commission its assessment of the problems of UHF and the following recommended solutions:

1. Commission regulatory action to improve the performance of UHF tuners, specifically with respect to Noise Figure.²³⁴
2. Action by the FCC and the Federal Trade Commission respecting the inferior performance of UHF receiving antennas and accessory components.²³⁵
3. A program of consumer education covering proper UHF tuning, UHF capability, and countering misinformation regarding UHF.²³⁶

CUB also approached individual congressmen, OTP, and the Commission staff regarding the UHF problem.²³⁷ As a result Senator Pastore, Chairman of the Senate Communications Subcommittee, inquired into the steps being taken by the Commission to "upgrade the electronic standards of UHF tuners."²³⁸ In reply, the Commission Chairman announced that the Commission would issue a notice of inquiry that was "intended to explore all possible techniques for improvement of UHF performance for improved spectrum utilization, and for improved UHF service to viewers."²³⁹

To what extent the CUB activities were responsible for the Commission's inquiry directed toward UHF improvement is indeterminable. Probably a number of influences combined to generate the proposed notice of inquiry, not the least of which is the implications in the OTP, UCC, New Jersey Coalition, and Greater Washington Educational Telecommunications Association proceedings that UHF, in its present state of development, is inadequate to serve the needs of most communities in the United States. The UHF system and the policy of intermixture were created by the Commission, and with UHF under attack predictably the Commission would assert that UHF is now, or will be in the future, sufficiently competitive so that the proposals for VHF drop-ins are unwarranted.

The notice of inquiry, promised in the FCC Chairman's letter,²⁴⁰ was

markets, and programming heavily to sports oriented audiences. Along with Kaiser CUB's founding membership included the UHF affiliates of the three commercial networks; the Maryland Center for Public Broadcasting; WVIZ, Cleveland, Ohio; the Corporation for Public Broadcasting; and the Public Broadcasting Service. According to its founder, CUB stands for "the proposition that UHF can work." H. Gunn, Jr., *et al.*, *The Case for UHF*, April 6, 1975 (unpublished paper delivered at the Convention of the National Ass'n of Broadcasters).

234. COUNCIL FOR UHF BROADCASTING, FCC PRESENTATION FACT SHEET 2 (Feb. 6, 1975). The noise figure specification for UHF tuners is a maximum of 18 dB, unchanged since the implementation of the All-Channel rules in 1964. 47 C.F.R. §15.67 (1964). See note 151 *supra*.

235. *Id.*

236. *Id.*

237. COUNCIL ON UHF BROADCASTING, REP. NO. 2 (March 19, 1975).

238. Letter from John O. Pastore, Chairman Senate Communications Subcomm., to Richard E. Wiley, Chairman, FCC, March 27, 1975 [hereinafter cited as Pastore Letter].

239. Letter from Richard E. Wiley, Chairman, FCC to John O. Pastore, Chairman, Senate Communications Subcomm., FCC Ref. 6200 (undated) [hereinafter cited as Wiley Letter].

240. *Id.*

issued May 22, 1975.²⁴¹ In a broad sense, the notice does deal with UHF improvements, but the improvements mentioned in the notice may be of questionable benefit to UHF broadcasters and the viewing public. The notice deals principally with revision of the UHF "taboos" — certain mileage spacings imposed on UHF in the *Sixth Report*.²⁴² Because of the taboos, the presence of a given UHF channel in a community will effectively preclude the use of up to 18 other specific UHF channels in that community. The taboos were imposed to take into account the "performance of UHF receivers in rejecting signals on other than the desired channel."²⁴³ At the time the taboo spacings were developed, little field experience respecting the performance characteristics of UHF receivers was available. Some have felt that the Commission exercised excessive caution in establishing the taboos and that certain of them could be eliminated or reduced without causing objectionable interference to existing or future UHF stations.²⁴⁴ The taboos are a waste of spectrum space since each UHF channel precludes the use of up to 180 MHz of spectrum in the immediate area. Accordingly, the Commission, "concerned that *all* services apply the best feasible techniques for efficient spectrum utilization,"²⁴⁵ initiated the taboo inquiry. The critical question, unanswered in the 1975 Notice of Inquiry, is *for whom* should the spectrum be utilized efficiently. There are two possibilities. The spectrum space saved by reduction or elimination of the taboos would be utilized to provide additional UHF channels to relieve the channel shortage existing in certain communities and that will occur in other communities in the future. Another possibility is that the spectrum space saved by reduction or elimination of the taboos would be utilized to make the UHF television band smaller, freeing spectrum space for use by other services or for new standards for sharing UHF bands between television and other services. With respect to the first possibility, there is a technical shortage of UHF channels in some large communities in that no additional UHF channels are available conforming with the Commission's rules respecting mileage separations,²⁴⁶

241. Notice of Inquiry, UHF Taboo Table, 40 Fed. Reg. 23925 (1975).

242. For a given UHF channel, "n," the following minimum mileage spacings must be maintained:

n ± 2, 3, 4, 5	20 mile separation (intermodulation)
n ± 8	20 mile separation (I.F. Beat)
n ± 14	60 mile separation (Sound Image)
n ± 15	75 mile separation (Picture Image)
n ± 7	60 mile separation (Oscillator Radiation)
n ± 1	55 mile separation (Adjacent Channel)

47 C.F.R. §73.698 Table IV (1974). *Sixth Report*, *supra* note 4, ¶¶166-75.

243. Notice of Inquiry, *supra* note 241, at 23926.

244. See N. PARKER, A PROPOSAL FOR THE MODERNIZATION OF THE UHF TELEVISION TABOOS (undated); P. WALKER, SOME PRELIMINARY RECOMMENDATIONS CONCERNING STUDY OF THE UHF TABOOS (Report to Comm'r Thomas J. Houser, FCC, Sept. 28, 1971); H. Eden, H. Fastert, K. Kaltbertzer, *More Recent Methods of Television Network Planning and Results Obtained*, EUROPEAN BROADCASTING UNION REVIEW (April 1960).

245. Notice of Inquiry, *supra* note 241.

246. A frequency search conducted by the author on July 28, 1975, using a proprietary

but the shortage is artificial to a degree since many of the violations of the mileage separation criteria occur with unused UHF assignments in small communities. Therefore, the shortage now existing could be remedied by the Commission's removing UHF assignments from small communities in which there is no foreseeable interest in the activation of a UHF station and reassigning such channels to relieve the channel shortage in the larger communities.²⁴⁷ The decision is largely a question of policy. If the Commission believes that UHF-TV will eventually develop in the same fashion as AM and FM radio, with 4,448 stations and 3,455 stations respectively,²⁴⁸ and that local television stations serving small communities are financially viable, then the UHF assignments to small communities should be preserved. On the other hand, if the Commission takes the experience with UHF to date to indicate that television is too capital-intensive to justify predicting its growth using AM and FM radio as a model and that UHF will not be economically viable in small communities, then the retention of UHF assignments in small communities is not justified and serves only to create an artificial shortage of UHF channels in the larger cities. Accordingly, a finding by the Commission that a channel shortage does exist and that UHF assignments in small communities should be retained may be sufficient to justify a determination that additional television service should be provided by relaxing or eliminating the UHF taboos.

With respect to the second possibility, the spectrum efficiency attained by relaxation or elimination of the taboos may be used to provide spectrum space for other services. The land mobile two-way radio service has already made incursions into the UHF band. In 1969, Channels 70 through 83 were deleted from the UHF band and reassigned to the land mobile service giving that service 78 mHz additional spectrum space, which corresponds to 52,000 two-way radio channels.²⁴⁹ This reallocation of channels had little immediate effect on UHF television since channels 70-83 were then utilized for translator service,²⁵⁰ and the translators on those channels were allowed to continue in service on a noninterference basis with the land mobile service. In 1971 a sharing arrangement for Channels 14 through 20 was concluded, whereby the land mobile service was given access to two UHF channels in several major urbanized areas. The sharing arrangement was realized with little disruption of the UHF television service because of the judicious use of channels, chosen so as not to affect existing stations. Nonetheless, the loss of Channels 70-83 and

computer program, revealed that the UHF band was saturated in the top five markets of the United States (New York City, Los Angeles, Chicago, Philadelphia, and Boston) to the extent that no new UHF channels could be added to the Table of Assignments in these communities, consistent with the Commission's mileage separation criteria.

247. As of July 10, 1975, there were 1,200 UHF assignments in the United States, 47% of which were reserved for noncommercial use. 342 UHF stations were on the air; hence, only 28% of the assigned UHF channels are being used. FCC News Release No. 52517, July 10, 1975.

248. *Id.*

249. Block, Summary of Remarks to Members of the Federal Communications Commission, Feb. 5, 1975.

250. See note 131 *supra*.

the sharing of Channels 14-20 reduced the number of available UHF assignments from the 1200 assignments made in the *Sixth Report* to 900 assignments in the current Table.²⁵¹ The representatives of land-mobile users are seeking further reduction in the number of UHF assignments. One proposal has been made to eliminate all of the UHF taboos and to allocate only four channels in the UHF band for television use.²⁵² While this proposal is extreme, certainly if the UHF taboo notice of inquiry proceeding finds that additional spectrum space can be made available, the land-mobile representatives will request a substantial portion of that space.²⁵³

If the Commission decides to utilize additional spectrum space gained by elimination or reduction of the taboos to provide additional two-way radio channels, the UHF taboo inquiry could operate against the interests of UHF broadcasters. Nonetheless, the item in the taboo notice requesting comments on improvement of receiver noise figure²⁵⁴ holds the promise of significant improvements in UHF station service areas if it is acted upon. As noted previously,²⁵⁵ the poor noise figure of UHF tuners accounts in large part for the supposed inferiority of UHF. The 18 dB noise figure specification in the Rules remains unchanged from that adopted pursuant to the All Channel Receiver legislation in 1962. A recent study commissioned by the Public Broadcasting Service²⁵⁶ revealed that, on the average, the noise figure of UHF tuners used in television receivers of domestic manufacture is 5 dB worse than the noise figure of comparable tuners used in Europe, where most television service is on the UHF band.²⁵⁷ If tuners in United States receivers could perform equivalently to European tuners, the effect would be the same as a threefold increase in the effective radiated power of all United States UHF stations.²⁵⁸ This noise figure improvement could be achieved, based on the European experience, using present technology, at a minimum cost increase of 75 cents per receiver.²⁵⁹

For those parties pursuing UHF improvements, the UHF taboo notice of inquiry is a poor forum in which to raise the matter of needed improvements in UHF tuner performance. The proceeding is primarily directed at spectrum conservation, with only peripheral mention of noise figure, the sole factor

251. Block, *supra* note 249.

252. N. PARKER, *supra* note 244.

253. An indication of the land mobile industry's continuing interest in obtaining additional spectrum space from the TV service is contained in the Report and Order, Docket Nos. 16004 and 18052, 53 F.C.C.2d 855 (1975). In this proceeding, attempts by the land mobile industry to show that television stations had less than their predicted coverage because of inter-station interference were specifically rejected.

254. Notice of Inquiry, *supra* note 241, at 23926.

255. See text accompanying note 156 *supra*.

256. HAZELTINE RESEARCH, *supra* note 156.

257. *Id.* at Tables 1-2. The difference is on Channel 31, close to the middle of the United States UHF band. Comparable differences exist on other channels.

258. See note 152 *supra*.

259. HAZELTINE RESEARCH, *supra* note 156, at 8. The European tuner performance by no means represents the limit of the state of the art, and it is reasonable to assume that United States manufacturers could produce even better tuners if motivated by a Commission rule amendment lowering the maximum permissible noise figure.

in the proceeding that has the promise of making significant improvements in UHF performance.²⁶⁰ A separate petition for rulemaking would be a better vehicle for concentrating the Commission's attention on UHF improvement without involving spurious issues such as the use of the present UHF band by the land mobile service. The proponents of UHF improvement intend to submit such a petition in the near future, and the petition will address itself to issues other than noise figure, including such matters as minimum performance standards for UHF receiving antennas and transmission line.²⁶¹

CONCLUSIONS

The Commission will shortly have before it the comments of all interested parties on three interrelated proposals:

1. Docket 20418, the *UCC Petition* proposing short-spaced VHF drop-ins in the top 100 markets.²⁶²
2. Docket 20485, the *Reevaluation and Revision of the "UHF Taboos."*²⁶³
3. A petition for rulemaking requesting the Commission to revise the UHF noise figure specification in Section 15.4 of the rules, and to set minimum performance standards for UHF antennas and accessories.²⁶⁴

If the past is indeed a prologue, the above proceedings should have a familiar ring to students of the history of Commission practice and policy toward UHF.

In 1962 the Commission abandoned its interim policy of VHF drop-ins in Docket 13340.²⁶⁵ Recognizing that VHF drop-ins were only a stop-gap measure that would have serious impact on UHF development and provide only a negligible benefit to the nation's television system, the Commission made a commitment to UHF and sought the all-channel legislation. The UCC VHF drop-in proposal is similar to Docket 13340²⁶⁶ in its impact on existing and future UHF stations. While minority ownership and control

260. The FCC News Release announcing the Notice of Inquiry is concerned entirely with the spectrum conservation aspects of the proceeding and makes no mention of noise figure or UHF service improvements. FCC News Release No. 10681, May 15, 1975.

261. Transmission line is the "cable" connecting the receiving antenna with the antenna terminals of the television receiver. It is debatable whether the FCC has authority over UHF receiving antennas and transmission lines under the provisions of the All-Channel legislation. See note 132 *supra*. Proponents of UHF improvement are prepared, if necessary, to seek specific legislation giving the Commission such authority or alternatively, to work through such agencies as the Federal Trade Commission to require manufacturers to disclose the actual performance characteristics of their antennas and transmission lines and to eliminate such advertising puffery as "pulls in UHF stations up to 100 miles." See Block, *supra* note 249; Pastore Letter, *supra* note 238; Wiley Letter, *supra* note 239; D. WELLS, UHF COMMENTS, REPORT NO. E-7501 TO PUBLIC BROADCASTING SERVICE (1975).

262. See text accompanying note 205 *supra*.

263. See text accompanying note 241 *supra*.

264. See text accompanying note 261 *supra*.

265. See text accompanying notes 127-128 *supra*.

266. See text accompanying note 116 *supra*.

of VHF stations and the need for additional noncommercial VHF stations are undeniably important concerns,²⁶⁷ they do not approach the "pressing urgency for the addition of a third [network] service in major markets,"²⁶⁸ which was the rationale for the Docket 13340 proceedings. For each community that is a candidate for a VHF drop-in under the *UCC Petition*, the Commission could conclude, as AMST observed in comments on the Greater Washington Educational Telecommunications Association Channel 12 proposal in Washington, D.C.,²⁶⁹ that "if [UHF] is not good enough for Washington, it is not good enough for the rest of the country."²⁷⁰ Granting the UCC Proposal would acknowledge UHF inferiority, would relegate UHF to secondary status in the assignment scheme, and would be a distinct disservice to existing UHF broadcasters who relied on the Commission's statement that the "major expansion of television [is] indissolubly tied to UHF."²⁷¹

The UHF taboo notice of inquiry and the forthcoming petition for UHF improvement provide the Commission with a solution to the dilemma posed by the *UCC Petition*. By restating its commitment to UHF and adopting rules with the potential of bringing UHF into parity with VHF, the Commission can conclude that VHF drop-ins are unwarranted. Because of the interference that the drop-ins would cause and because of the limited service area of the attenuated drop-in stations, the Commission could conclude that the goals of the UCC petitioners will be better served by UHF stations, particularly when UHF reception is improved by the new UHF tuner performance rules.

Throughout its history the FCC has emphasized the technical aspects of channel allocations. It has considered interference contours, microvolts, and megawatts as controlling factors in allocation policy, but a viewing audience has little concern for whether it is encompassed by a given coverage contour, or whether a signal reaches it by UHF or VHF. A viewer's central concern is programming, and if programming is of sufficient interest, he will find the means to receive it. If the existing receivers and antennas are inadequate, the viewers will demand better equipment from the manufacturers, and the manufacturer providing a superior receiver or antenna will be rewarded through increased sales.

The programming of most interest to viewers is network programming, which explains why UHF stations are not more widely viewed. In any community in the United States where three VHF commercial channels are available, those three VHF channels are the ones with network affiliations. There exists not a single community in which a UHF station has a network affiliation, and a VHF station is operating on an independent (non-network) basis. No amount of FCC regulation concerning the technical aspects of UHF transmission will change this situation — it is an accident of allocations history,

267. *UCC Petition*, *supra* note 206, at 5.

268. Docket 13340, *supra* note 114, at 3.

269. Greater Washington Educational Telecommunications Ass'n, 53 F.C.C.2d 910 (1975).

270. Greater Washington Educational Telecommunications Ass'n, 34 P & F RADIO REG. 2d 92, 103 (1975).

271. Docket 13340, *supra* note 114, at 3.

a product of the Commission's failure to adopt a de-intermixture policy soon enough to be able to effectuate it.

If the Commission is interested in solving the UHF problem, then it must take a balanced approach attacking both the technical and programming roots of the problem. To give viability to existing and future UHF stations, it is only necessary to give the UHF stations access to network programming. One means of accomplishing this is to adopt the following rule:

Any VHF station operating in a market in which there are three or more commercial VHF stations and one or more commercial UHF stations shall not maintain network affiliation for a period longer than two consecutive years of its three-year license period.

This rule would require that each VHF station in a market in which there are not three or more commercial VHF stations operate as an independent station for one year of its three-year license period. A commercial UHF station in these markets would then have a different network affiliation available to it each year, subject to contractual agreements with the respective networks. While the networks would not be forced into an affiliation with the UHF station and while the rule would not require the VHF stations to stagger their years of independent operations, the realities of the marketplace would most likely force that result. The authority of the Commission to require that stations limit their amount of network programming is clear. The "Prime Time Access Rule" presently provides:

No television stations, assigned to any of the top 50 markets in which there are three or more operating television stations, shall broadcast network programs offered by any television network or networks for a total of more than 3 hours per day between the hours of 7 PM and 11 PM local time²⁷²

The stated purpose of the rule is to generate more prime-time local programming. The goal of UHF/VHF parity would appear to be an equivalent, if not more compelling, reason for adoption of a similar rule giving UHF stations access to network programming.

Whether the Commission can act with sufficient force through its rule-making to implement such a rule is problematical. In 1970 Professor Glen O. Robinson of the University of Minnesota Law School characterized the de-intermixture proceedings as "the sorry spectacle of an agency desperate for a workable policy, but unable to formulate one despite a seemingly endless parade of rulemaking proceedings."²⁷³ Today, five years later, Professor Robinson's observations are still relevant. The problem will remain unsolved as long as the Commission continues to conform to its one-sided hyper-technical approach to the solution of the UHF problem.

MICHAEL J. WILHELM

272. 47 C.F.R. §73.658(g) (1972).

273. Robinson, *The Making of Administrative Policy*, 118 U. PA. L. REV. 485, 535 (1970).